CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-006

Client Sample ID: MW-72BR-200-3V-Q417
Collection Date: 12/6/2017 2:54:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/9/2017 03:51 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	5300	18	1000		mg/L	2000	12/11/2017 09:39 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	700	2.3	50		mg/L	100	12/11/2017 09:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-007

Client Sample ID: MW-72BR-200-LF_D-Q417
Collection Date: 12/6/2017 10:17:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/9/2017 04:06 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	5300	18	1000		mg/L	2000	12/11/2017 10:09 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	700	2.3	50		mg/L	100	12/11/2017 10:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-008

Client Sample ID: MW-72BR-200-LF_S-Q417
Collection Date: 12/6/2017 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/9/2017 04:21 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	5400	18	1000		mg/L	2000	12/11/2017 10:40 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	700	2.3	50		mg/L	100	12/11/2017 10:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-009

Client Sample ID: MW-62-065-Q417
Collection Date: 12/6/2017 3:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/9/2017 04:36 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	1800	4.6	250		mg/L	500	12/11/2017 11:11 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	420	1.1	25		mg/L	50	12/11/2017 11:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-011

Client Sample ID: MW-64BR-Q417
Collection Date: 12/6/2017 11:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/9/2017 04:52 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	4600	9.1	500		mg/L	1000	12/11/2017 11:41 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	590	1.1	25		mg/L	50	12/11/2017 11:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-012

Client Sample ID: MW-60-125-Q417
Collection Date: 12/6/2017 1:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.20	5.0		mg/L	10	12/9/2017 02:19 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	3200	9.1	500		mg/L	1000	12/12/2017 12:42 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	490	1.1	25		mg/L	50	12/12/2017 12:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-013

Client Sample ID: MW-73-080-Q417
Collection Date: 12/6/2017 2:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/9/2017 05:07 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	3900	9.1	500		mg/L	1000	12/12/2017 01:13 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	460	1.1	25		mg/L	50	12/12/2017 01:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-014

Client Sample ID: MW-74-240-Q417
Collection Date: 12/6/2017 10:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/9/2017 01:48 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	120	0.46	25		mg/L	50	12/12/2017 01:44 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	74	0.23	5.0		mg/L	10	12/11/2017 07:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	LCS-R120734_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120734		
Client ID:	LCSW	Batch ID:	R120734	TestNo:	EPA 300.0			Analysis Date:	12/9/2017	SeqNo:	2860319		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide	1.258	0.50	1.250	0	101	90	110						

Sample ID	MB-R120734_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120734		
Client ID:	PBW	Batch ID:	R120734	TestNo:	EPA 300.0			Analysis Date:	12/9/2017	SeqNo:	2860320		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide	ND	0.50											

Sample ID	N027405-004CMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120734		
Client ID:	ZZZZZZ	Batch ID:	R120734	TestNo:	EPA 300.0			Analysis Date:	12/9/2017	SeqNo:	2860322		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide	0.978	0.50	1.250	0	78.2	80	120				S		

Sample ID	N027405-004CMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120734		
Client ID:	ZZZZZZ	Batch ID:	R120734	TestNo:	EPA 300.0			Analysis Date:	12/9/2017	SeqNo:	2860323		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide	1.067	0.50	1.250	0	85.4	80	120	0.9781	8.69	20			

Sample ID	N027405-014DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120734		
Client ID:	ZZZZZZ	Batch ID:	R120734	TestNo:	EPA 300.0			Analysis Date:	12/9/2017	SeqNo:	2860325		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide	1.249	0.50	1.250	0.08030	93.5	80	120						

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	N027405-012DDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120734
Client ID:	ZZZZZZ	Batch ID:	R120734	TestNo:	EPA 300.0			Analysis Date:	12/9/2017	SeqNo:	2860327

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	5.0						0	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	MB-R120770_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770
Client ID:	PBW	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862144

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	LCS-R120770_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770
Client ID:	LCSW	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862145

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.272	0.50	1.250	0	102	90	110				

Sample ID	N027429-007DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770
Client ID:	ZZZZZZ	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862153

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.920	0.50	1.250	0	73.6	80	120				S

Sample ID	N027429-007DMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770
Client ID:	ZZZZZZ	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862154

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.990	0.50	1.250	0	79.2	80	120	0.9202	7.33	20	S

Sample ID	N027429-012DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770
Client ID:	ZZZZZZ	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862155

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.273	1.0	2.500	0	50.9	80	120				S

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	N027429-007DDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770
Client ID:	ZZZZZZ	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862156

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50						0	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	LCS-RR120764_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	LCSW	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861519

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.108	0.50	2.000	0	105	90	110				

Sample ID	MB-R120764_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	PBW	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861520

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	N027405-004CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861524

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	95.556	10						95.61	0.0607	20	

Sample ID	N027405-004CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861525

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	138.172	10	40.00	95.61	106	80	120				

Sample ID	N027405-004CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861526

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	139.498	10	40.00	95.61	110	80	120	138.2	0.955	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N027405-002EMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861528

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3295.850	250	1000	2224	107	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **LCS-R120764_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120764**
Client ID: **LCSW** Batch ID: **R120764** TestNo: **EPA 300.0** Analysis Date: **12/11/2017** SeqNo: **2861583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.012	0.50	4.000	0	100	90	110				

Sample ID **MB-R120764_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120764**
Client ID: **PBW** Batch ID: **R120764** TestNo: **EPA 300.0** Analysis Date: **12/11/2017** SeqNo: **2861584**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **N027405-004CDUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120764**
Client ID: **ZZZZZZ** Batch ID: **R120764** TestNo: **EPA 300.0** Analysis Date: **12/11/2017** SeqNo: **2861588**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	234.750	10						236.2	0.616	20	

Sample ID **N027405-004CMS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120764**
Client ID: **ZZZZZZ** Batch ID: **R120764** TestNo: **EPA 300.0** Analysis Date: **12/11/2017** SeqNo: **2861589**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	317.202	10	80.00	236.2	101	80	120				

Sample ID **N027405-004CMSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120764**
Client ID: **ZZZZZZ** Batch ID: **R120764** TestNo: **EPA 300.0** Analysis Date: **12/11/2017** SeqNo: **2861590**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	316.116	10	80.00	236.2	99.9	80	120	317.2	0.343	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N027405-014DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861592

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	113.326	5.0	40.00	73.75	99.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-100-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171220C**	QC Batch: **R120963**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/20/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171220C**	QC Batch: **R120963**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/20/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-3V-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 2:54:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171220C**	QC Batch: **R120963**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.16	0.022	0.050		mg/L	1	12/20/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_D-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 10:17:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171220C**	QC Batch: **R120963**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/20/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_S-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 9:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171220C**	QC Batch: **R120963**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.062	0.022	0.050		mg/L	1	12/20/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171219B**	QC Batch: **R120949**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	4.5	0.22	0.50		mg/L	10	12/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171220C**	QC Batch: **R120963**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/20/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-012

Client Sample ID: MW-60-125-Q417
Collection Date: 12/6/2017 1:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171219B**	QC Batch: **R120949**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	4.0	0.11	0.25		mg/L	5	12/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171219B**	QC Batch: **R120949**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	2.7	0.11	0.25		mg/L	5	12/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-74-240-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 10:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171220C**	QC Batch: **R120963**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/20/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R120949**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **PBW**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873078**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R120949**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **LCSW**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.491	0.050	0.5000	0	98.2	85	115				

Sample ID **N027405-009CMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **ZZZZZZ**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873081**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.451	0.50	5.000	4.488	99.3	75	125				

Sample ID **N027405-009CMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **ZZZZZZ**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873082**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.018	0.50	5.000	4.488	90.6	75	125	9.451	4.69	20	

Sample ID **N027405-012CDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **ZZZZZZ**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.470	0.25						4.022	14.7	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R120963**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **PBW**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R120963**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **LCSW**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.482	0.050	0.5000	0	96.3	85	115				

Sample ID **N027429-003CMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **ZZZZZZ**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.637	0.10	1.000	1.657	98.1	75	125				

Sample ID **N027429-003CMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **ZZZZZZ**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873456**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.665	0.10	1.000	1.657	101	75	125	2.637	1.03	20	

Sample ID **N027405-006CDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **ZZZZZZ**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873458**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.124	0.050						0.1567	23.3	20	R

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-001

Client Sample ID: MW-36-090-Q417
Collection Date: 12/6/2017 1:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Boron	730	38	100		ug/L	1	12/16/2017 01:22 PM
Calcium	110000	28	500		ug/L	1	12/16/2017 01:22 PM
Iron	ND	1.8	20		ug/L	1	12/16/2017 01:22 PM
Magnesium	19000	4.4	100		ug/L	1	12/16/2017 01:22 PM
Sodium	1000000	2600	50000		ug/L	100	12/18/2017 07:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-002

Client Sample ID: MW-36-100-Q417
Collection Date: 12/6/2017 11:51:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**		Analyst: **CEI**
Boron	1000	38	100		ug/L	1	12/16/2017 02:13 PM
Calcium	160000	28	500		ug/L	1	12/16/2017 02:13 PM
Iron	140	1.8	20		ug/L	1	12/16/2017 02:13 PM
Magnesium	28000	4.4	100		ug/L	1	12/16/2017 02:13 PM
Sodium	1600000	2600	50000		ug/L	100	12/18/2017 06:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-003

Client Sample ID: MW-910-Q417
Collection Date: 12/6/2017 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Boron	1000	38	100		ug/L	1	12/16/2017 02:21 PM
Calcium	160000	28	500		ug/L	1	12/16/2017 02:21 PM
Iron	140	1.8	20		ug/L	1	12/16/2017 02:21 PM
Magnesium	28000	4.4	100		ug/L	1	12/16/2017 02:21 PM
Sodium	1600000	2600	50000		ug/L	100	12/18/2017 06:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-004

Client Sample ID: MW-36-070-Q417
Collection Date: 12/6/2017 11:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**		Analyst: **CEI**
Boron	180	38	100		ug/L	1	12/16/2017 02:29 PM
Calcium	78000	28	500		ug/L	1	12/16/2017 02:29 PM
Iron	24	1.8	20		ug/L	1	12/16/2017 02:29 PM
Magnesium	17000	4.4	100		ug/L	1	12/16/2017 02:29 PM
Sodium	110000	260	5000		ug/L	10	12/18/2017 06:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-006

Client Sample ID: MW-72BR-200-3V-Q417
Collection Date: 12/6/2017 2:54:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**		Analyst: **CEI**
Boron	2200	38	100		ug/L	1	12/16/2017 02:34 PM
Calcium	270000	28	500		ug/L	1	12/16/2017 02:34 PM
Iron	ND	1.8	20		ug/L	1	12/16/2017 02:34 PM
Magnesium	2500	4.4	100		ug/L	1	12/16/2017 02:34 PM
Sodium	3300000	6600	120000		ug/L	250	12/18/2017 06:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-007

Client Sample ID: MW-72BR-200-LF_D-Q417
Collection Date: 12/6/2017 10:17:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**		Analyst: **CEI**
Boron	2100	38	100		ug/L	1	12/16/2017 02:42 PM
Calcium	290000	28	500		ug/L	1	12/16/2017 02:42 PM
Iron	39	1.8	20		ug/L	1	12/16/2017 02:42 PM
Magnesium	3200	4.4	100		ug/L	1	12/16/2017 02:42 PM
Sodium	3400000	6600	120000		ug/L	250	12/18/2017 06:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-008

Client Sample ID: MW-72BR-200-LF_S-Q417
Collection Date: 12/6/2017 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**		Analyst: **CEI**
Boron	2300	38	100		ug/L	1	12/16/2017 02:50 PM
Calcium	280000	28	500		ug/L	1	12/16/2017 02:50 PM
Iron	34	1.8	20		ug/L	1	12/16/2017 02:50 PM
Magnesium	2700	4.4	100		ug/L	1	12/16/2017 02:50 PM
Sodium	3500000	6600	120000		ug/L	250	12/18/2017 06:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-009

Client Sample ID: MW-62-065-Q417
Collection Date: 12/6/2017 3:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Boron	690	38	100		ug/L	1	12/16/2017 03:10 PM
Calcium	210000	28	500		ug/L	1	12/16/2017 03:10 PM
Iron	ND	1.8	20		ug/L	1	12/16/2017 03:10 PM
Magnesium	24000	4.4	100		ug/L	1	12/16/2017 03:10 PM
Sodium	1100000	2600	50000		ug/L	100	12/18/2017 07:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-011

Client Sample ID: MW-64BR-Q417
Collection Date: 12/6/2017 11:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**		Analyst: **CEI**
Boron	1500	38	100		ug/L	1	12/16/2017 03:18 PM
Calcium	340000	28	500		ug/L	1	12/16/2017 03:18 PM
Iron	330	1.8	20		ug/L	1	12/16/2017 03:18 PM
Magnesium	14000	4.4	100		ug/L	1	12/16/2017 03:18 PM
Sodium	2600000	2600	50000		ug/L	100	12/18/2017 07:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-012

Client Sample ID: MW-60-125-Q417
Collection Date: 12/6/2017 1:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**		Analyst: **CEI**
Boron	670	38	100		ug/L	1	12/16/2017 03:26 PM
Calcium	510000	140	2500		ug/L	5	12/19/2017 08:01 AM
Iron	230	1.8	20		ug/L	1	12/16/2017 03:26 PM
Magnesium	21000	4.4	100		ug/L	1	12/16/2017 03:26 PM
Sodium	1400000	2600	50000		ug/L	100	12/18/2017 07:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-013

Client Sample ID: MW-73-080-Q417
Collection Date: 12/6/2017 2:40:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_171216G** QC Batch: **65964** PrepDate **12/8/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	1000	38	100		ug/L	1	12/16/2017 03:34 PM
Calcium	470000	140	2500		ug/L	5	12/19/2017 07:12 AM
Iron	140	1.8	20		ug/L	1	12/16/2017 03:34 PM
Magnesium	28000	4.4	100		ug/L	1	12/16/2017 03:34 PM
Sodium	2100000	2600	50000		ug/L	100	12/18/2017 07:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-014

Client Sample ID: MW-74-240-Q417
Collection Date: 12/6/2017 10:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**		Analyst: **CEI**
Boron	140	38	100		ug/L	1	12/16/2017 03:42 PM
Calcium	10000	28	500		ug/L	1	12/16/2017 03:42 PM
Iron	3300	1.8	20		ug/L	1	12/16/2017 03:42 PM
Magnesium	1400	4.4	100		ug/L	1	12/16/2017 03:42 PM
Sodium	150000	260	5000		ug/L	10	12/18/2017 07:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-65964**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120897**
Client ID: **PBW**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-65964**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120897**
Client ID: **PBW**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4730.665	100									
Calcium	9706.269	500									
Iron	109.838	20									
Magnesium	9640.945	100									

Sample ID **N027405-001C-MS1**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120897**
Client ID: **ZZZZZZ**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870020**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5424.089	100	5000	726.2	94.0	75	125				
Calcium	121412.864	500	10000	107700	137	75	125				S
Iron	110.283	20	100.0	14.04	96.2	75	125				
Magnesium	28521.567	100	10000	18850	96.7	75	125				

Sample ID **N027405-001C-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120897**
Client ID: **ZZZZZZ**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5448.513	100	5000	726.2	94.4	75	125	5424	0.449	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N027405-001C-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120897**
Client ID: **ZZZZZZ**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	121647.419	500	10000	107700	140	75	125	121400	0.193	20	S
Iron	109.351	20	100.0	14.04	95.3	75	125	110.3	0.849	20	
Magnesium	28589.254	100	10000	18850	97.4	75	125	28520	0.237	20	

Sample ID **MB-65964**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120915**
Client ID: **PBW**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/18/2017**	SeqNo: **2871270**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID **LCS2-65964**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120915**
Client ID: **LCSW**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/18/2017**	SeqNo: **2871271**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20922.885	500	20000	0	105	85	115				

Sample ID **N027405-002C-MS2**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120915**
Client ID: **ZZZZZZ**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/18/2017**	SeqNo: **2871278**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1604471.596	50000	20000	1554000	252	75	125				S

Sample ID **N027405-002C-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120915**
Client ID: **ZZZZZZ**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/18/2017**	SeqNo: **2871279**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1569386.145	50000	20000	1554000	76.9	75	125	1604000	2.21	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-001

Client Sample ID: MW-36-090-Q417
Collection Date: 12/6/2017 1:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	4.6	0.025	0.10		µg/L	1	12/16/2017 01:29 PM
Manganese	140	0.28	2.5		µg/L	5	12/16/2017 01:35 PM
Molybdenum	11	0.039	0.50		µg/L	1	12/16/2017 01:29 PM
Selenium	ND	0.028	0.50		µg/L	1	12/16/2017 01:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-002

Client Sample ID: MW-36-100-Q417
Collection Date: 12/6/2017 11:51:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	4.3	0.025	0.10		µg/L	1	12/16/2017 02:30 PM
Manganese	310	0.28	2.5		µg/L	5	12/16/2017 02:36 PM
Molybdenum	23	0.039	0.50		µg/L	1	12/16/2017 02:30 PM
Selenium	ND	0.028	0.50		µg/L	1	12/16/2017 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-003

Client Sample ID: MW-910-Q417
Collection Date: 12/6/2017 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	4.5	0.025	0.10		µg/L	1	12/16/2017 02:41 PM
Manganese	330	0.28	2.5		µg/L	5	12/16/2017 02:47 PM
Molybdenum	24	0.039	0.50		µg/L	1	12/16/2017 02:41 PM
Selenium	ND	0.028	0.50		µg/L	1	12/16/2017 02:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-004

Client Sample ID: MW-36-070-Q417
Collection Date: 12/6/2017 11:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	12/16/2017 02:53 PM
Manganese	230	0.28	2.5		µg/L	5	12/16/2017 02:58 PM
Molybdenum	4.1	0.039	0.50		µg/L	1	12/16/2017 02:53 PM
Selenium	ND	0.028	0.50		µg/L	1	12/16/2017 02:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-006

Client Sample ID: MW-72BR-200-3V-Q417
Collection Date: 12/6/2017 2:54:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Arsenic	15	0.025	0.10		µg/L	1	12/16/2017 03:04 PM
Manganese	11	0.056	0.50		µg/L	1	12/16/2017 03:04 PM
Molybdenum	79	0.19	2.5		µg/L	5	12/16/2017 03:09 PM
Selenium	ND	0.14	2.5		µg/L	5	12/16/2017 03:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-007

Client Sample ID: MW-72BR-200-LF_D-Q417
Collection Date: 12/6/2017 10:17:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Arsenic	11	0.025	0.10		µg/L	1	12/16/2017 03:15 PM
Manganese	100	0.056	0.50		µg/L	1	12/16/2017 03:15 PM
Molybdenum	75	0.19	2.5		µg/L	5	12/16/2017 03:32 PM
Selenium	ND	0.14	2.5		µg/L	5	12/16/2017 03:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-008

Client Sample ID: MW-72BR-200-LF_S-Q417
Collection Date: 12/6/2017 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Arsenic	13	0.025	0.10		µg/L	1	12/16/2017 03:37 PM
Manganese	36	0.056	0.50		µg/L	1	12/16/2017 03:37 PM
Molybdenum	78	0.19	2.5		µg/L	5	12/16/2017 03:43 PM
Selenium	ND	0.14	2.5		µg/L	5	12/16/2017 03:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-009

Client Sample ID: MW-62-065-Q417
Collection Date: 12/6/2017 3:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	1.7	0.025	0.10		µg/L	1	12/16/2017 03:48 PM
Manganese	2.0	0.056	0.50		µg/L	1	12/16/2017 03:48 PM
Molybdenum	15	0.039	0.50		µg/L	1	12/16/2017 03:48 PM
Selenium	3.7	0.028	0.50		µg/L	1	12/16/2017 03:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-011

Client Sample ID: MW-64BR-Q417
Collection Date: 12/6/2017 11:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	4.2	0.025	0.10		µg/L	1	12/16/2017 04:00 PM
Manganese	1000	0.56	5.0		µg/L	10	12/19/2017 01:11 PM
Molybdenum	68	0.19	2.5		µg/L	5	12/16/2017 04:05 PM
Selenium	ND	0.14	2.5		µg/L	5	12/16/2017 04:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-012

Client Sample ID: MW-60-125-Q417
Collection Date: 12/6/2017 1:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Arsenic	1.6	0.025	0.10		µg/L	1	12/16/2017 04:11 PM
Manganese	11	0.056	0.50		µg/L	1	12/16/2017 04:11 PM
Molybdenum	19	0.19	2.5		µg/L	5	12/16/2017 04:16 PM
Selenium	5.4	0.028	0.50		µg/L	1	12/16/2017 04:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-013

Client Sample ID: MW-73-080-Q417
Collection Date: 12/6/2017 2:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	1.4	0.12	0.50		µg/L	5	12/19/2017 01:17 PM
Manganese	34	0.056	0.50		µg/L	1	12/16/2017 04:22 PM
Molybdenum	36	0.19	2.5		µg/L	5	12/19/2017 01:17 PM
Selenium	3.2	0.14	2.5		µg/L	5	12/19/2017 01:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-014

Client Sample ID: MW-74-240-Q417
Collection Date: 12/6/2017 10:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	13	0.025	0.10		µg/L	1	12/19/2017 01:18 PM
Manganese	43	0.056	0.50		µg/L	1	12/19/2017 01:18 PM
Molybdenum	31	0.039	0.50		µg/L	1	12/19/2017 01:18 PM
Selenium	0.66	0.028	0.50		µg/L	1	12/19/2017 01:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-65979**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120912**
Client ID: **PBW**	Batch ID: **65979**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-65979**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120912**
Client ID: **LCSW**	Batch ID: **65979**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.997	0.10	10.00	0	100	85	115				
Manganese	99.052	0.50	100.0	0	99.1	85	115				
Molybdenum	9.723	0.50	10.00	0	97.2	85	115				
Selenium	9.777	0.50	10.00	0	97.8	85	115				

Sample ID **N027405-001C-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120912**
Client ID: **ZZZZZZ**	Batch ID: **65979**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.743	0.10	10.00	4.629	101	75	125				
Molybdenum	22.777	0.50	10.00	10.82	120	75	125				
Selenium	9.247	0.50	10.00	0.1510	91.0	75	125				

Sample ID **N027405-001C-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120912**
Client ID: **ZZZZZZ**	Batch ID: **65979**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	234.439	2.5	100.0	138.5	95.9	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027405-001C-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120912
Client ID:	ZZZZZZ	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870955

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.547	0.10	10.00	4.629	99.2	75	125	14.74	1.34	20	
Molybdenum	22.863	0.50	10.00	10.82	120	75	125	22.78	0.376	20	
Selenium	8.866	0.50	10.00	0.1510	87.1	75	125	9.247	4.21	20	

Sample ID	N027405-001C-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120912
Client ID:	ZZZZZZ	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870958

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	237.256	2.5	100.0	138.5	98.7	75	125	234.4	1.19	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200	Fax:
Title: Geologist II	Phone: 916-786-3302 Fax:		
Signature: Date: 12/6/2017	Sampled By: Gantt Jeffers		
Project Name: PG&E Topock - GMP	Signature: Date: 12/6/2017		
Project Number: RC000753.801B			

I hereby authorize ASSET Labs to perform the tests indicated below.

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Matrix			
Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
Global ID:		Regulatory	
		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled		
2. Headspace		
3. Container Intact	✓	
4. Seal Present		
5. IR number 2		
6. Method of Cooling: Ice		
Sample Temp: 3.3, 3.1, 3.4, 4.1, 2.7		
Courier: ASSET		
Tracking No.:		

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM 250 mL poly	Metals Dissolved (SW6020A FF) (As, Cr, Mg, Mn, Mo, Se); HNO3 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3 500 mL poly	Metals Dissolved (SW6020A FF) (As, Cr, Mn,); HNO3 500 mL poly	Metals Dissolved (SW6020A FF) (Cr, Mg, Mn, Mo, Se); HNO3 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) 1 liter poly	Specific Conductance (EPA 120.1) 1 liter poly	Total Dissolved Solids (SM2540C) 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) 1 liter poly	Floride (EPA 300.0) 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027405 -01	MW-36-090-Q417	12/6/2017	13:11		X		X	X		X				X	X	X	X		E	4	P	BN	
2	-02	MW-36-100-Q417	12/6/2017	11:51		X		X	X		X			X	X	X	X	X		E	5	P	BNS	
3	-03	MW-910-Q417	12/6/2017	12:01		X		X	X		X			X	X	X	X	X		E	5	P	BNS	
4	-04	MW-36-070-Q417	12/6/2017	11:44		X			X		X				X	X	X	X		E	3	P	BN	
5	-05	MW-720-Q417	12/6/2017	15:30		X														E	1	P	B	
6	-06	MW-72BR-200-3V-Q417	12/6/2017	14:54		X			X		X			X	X	X	X	X		E	4	P	BNS	
7	-07	MW-72BR-200-LF_D-Q417	12/6/2017	10:17		X			X		X			X	X	X	X	X		E	4	P	BNS	
8	-08	MW-72BR-200-LF_S-Q417	12/6/2017	9:35		X			X		X			X	X	X	X	X		E	4	P	BNS	
9	-09	MW-62-065-Q417	12/6/2017	15:45		X			X		X			X	X	X	X	X		E	4	P	BNS	
10	-10	MW-718-Q417	12/6/2017	15:10		X														E	1	P	B	

Relinquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
Gantt Jeffers	12.6.17 16:30		12/6/17@1630
	12/6/17 20:00		12/6/17@2000

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B = (NH4)2SO4/NH4OH		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis.
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

White=Laboratory Copy

Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Global ID:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	
Title: Geologist II	Phone: 916-786-3302 Fax:		
Signature: Date: 12/6/2017	Sampled By: Gantt Jeffers		
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*		
Project Name: PG&E Topock - GMP	Signature: Date: 12/6/2017		
Project Number: RC000753.801B			

Matrix: Ground x; Potable; NPDES; Surface; Sediment; Soil; Other Solid

Sample Receipt Condition: Y / N

1. Chilled ✓
2. Headspace
3. Container Intact ✓
4. Seal Present
5. IR number 2
6. Method of Cooling: ICE

Sample Temp: 3.1, 3.1, 3.4, 4.1, 2.7

Courier: ASSET

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM 250 mL poly	Metals Dissolved (SW6020A FF) (As, Cr, Mg, Mn, Mo, Se); HNO3 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3 500 mL poly	Metals Dissolved (SW6020A FF) (As, Cr, Mn,); HNO3 500 mL poly	Metals Dissolved (SW6020A FF) (Cr, Mg, Mn, Mo, Se); HNO3 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) 1 liter poly	Specific Conductance (EPA 120.1) 1 liter poly	Total Dissolved Solids (SM2540C) 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) 1 liter poly	Floride (EPA 300.0) 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027405 -11	MW-64BR-Q417	12/6/2017	11:50		X			X		X			X	X	X	X	X		E	4	P	BNS	
2	-12	MW-60-125-Q417	12/6/2017	13:20		X			X		X			X	X	X	X	X		E	4	P	BNS	
3	-13	MW-73-080-Q417	12/6/2017	14:40		X			X		X			X	X	X	X	X		E	4	P	BNS	
4	-14	MW-74-240-Q417	12/6/2017	10:00		X			X		X			X	X	X	X	X		E	4	P	BNS	
5	-15	MW-719-Q417	12/6/2017	15:30		X														E	1	P	B	
6																								
7																								
8																								
9																								
10																								

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
G. Jeffers	12.6.17 1630		12/6/17 @ 1650
	12/6/17 @ 2050		12/6/17 @ 2050

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B = (NH4)2SO4/NH4OH		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis.
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
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8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/6/2017	Workorder:	N027405
Rep sample Temp (Deg C):	3.3,3.1,3.4,4.1,2.7	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: N/A Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Sample 14 (MW-74-240-Q417): Sediment observed in the bottle for Diss Metals.

For:

Checklist Completed By: MBC 12/18/2017 Reviewed By: 12/19/2017

nancy@assetlaboratories.com

From: Quennie Manimtim [quennie@assetlaboratories.com]
Sent: Friday, December 08, 2017 10:01 AM
To: 'Daniel Moore'; 'Madsen, Laura'; 'Marlon B. Cartin'
Cc: 'Kalib Sumter'; 'Bush, Dan'; 'Kellogg, Lisa'; nancy@assetlaboratories.com; 'Sample Control'; 'Bloes, Marty'
Subject: RE: Magnesium

Thanks Dan!

From: Daniel Moore [mailto:Daniel.Moore@critigen.com]
Sent: Friday, December 08, 2017 9:54 AM
To: 'Quennie Manimtim'; 'Madsen, Laura'; 'Marlon B. Cartin'
Cc: Kalib Sumter; 'Bush, Dan'; 'Kellogg, Lisa'; nancy@assetlaboratories.com; 'Sample Control'; 'Bloes, Marty'
Subject: RE: Magnesium

You bet. Thanks for letting us know.

From: Quennie Manimtim [mailto:quennie@assetlaboratories.com]
Sent: Friday, December 08, 2017 10:31 AM
To: Daniel Moore <Daniel.Moore@critigen.com>; 'Madsen, Laura' <Laura.Madsen@arcadis.com>; 'Marlon B. Cartin' <marlon@assetlaboratories.com>
Cc: Kalib Sumter <Kalib.Sumter@critigen.com>; 'Bush, Dan' <Dan.Bush@arcadis.com>; 'Kellogg, Lisa' <Lisa.Kellogg@arcadis.com>; nancy@assetlaboratories.com; 'Sample Control' <samplecontrol.lv@assetlaboratories.com>; 'Bloes, Marty' <mbloes@pivox.com>
Subject: RE: Magnesium

Hi Dan,

Thank you for your response on this matter. We will change the method for magnesium to 6010 instead of 6020. We also noticed some samples being requested for Cu and Ni by 6010 and the rest of the other metals (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn) by 6020. Historically the Cu and Ni was analyzed by 6020, can we change the method from 6010 to 6020?

Thanks,
Quennie

From: Daniel Moore [mailto:Daniel.Moore@critigen.com]
Sent: Friday, December 08, 2017 9:09 AM
To: 'Madsen, Laura'; Marlon B. Cartin
Cc: Kalib Sumter; Bush, Dan; Kellogg, Lisa; nancy@assetlaboratories.com; 'Quennie Manimtim'; 'Sample Control'; Bloes, Marty
Subject: RE: Magnesium

Hi Laura/Marlon –

The methods that are included in the COC should be coming from our sampling planning efforts. The methods on the CoC should be what we are expecting to receive from the laboratory. However, as we discussed there would be times that the laboratory would request such method/analyte changes. The QAPP allows for the use of either 6010 or 6020 for the analysis of magnesium. Changing this to 6010 is not an issue from a quality standpoint.

My vote is Asset can change the method for these samples and we will update the database to reflect the change during the login review process.

Dan

From: Madsen, Laura [mailto:Laura.Madsen@arcadis.com]
Sent: Friday, December 08, 2017 9:57 AM
To: Marlon B. Cartin <marlon@assetlaboratories.com>; Daniel Moore <Daniel.Moore@critigen.com>
Cc: Kalib Sumter <Kalib.Sumter@critigen.com>; Bush, Dan <Dan.Bush@arcadis.com>; Kellogg, Lisa <Lisa.Kellogg@arcadis.com>; nancy@assetlaboratories.com; 'Quennie Manimtim' <quennie@assetlaboratories.com>; 'Sample Control' <samplecontrol.lv@assetlaboratories.com>; Bloes, Marty <mbloes@pivox.com>
Subject: RE: Magnesium

Hi,
Dan I had thought some time ago you and Kalib had said you had worked through all the sample analyte methods with Marlon and verified which ones we needed. That is what I was referring to when I spoke to Marlon yesterday. Can you confirm which method should be used for magnesium?

Thanks,
Laura

From: Marlon B. Cartin [mailto:marlon@assetlaboratories.com]
Sent: Friday, December 8, 2017 10:53 AM
To: Dan Moore <Daniel.Moore@critigen.com>
Cc: Kalib Sumter <Kalib.Sumter@critigen.com>; Bush, Dan <Dan.Bush@arcadis.com>; Madsen, Laura <Laura.Madsen@arcadis.com>; Kellogg, Lisa <Lisa.Kellogg@arcadis.com>; nancy@assetlaboratories.com; 'Quennie Manimtim' <quennie@assetlaboratories.com>; 'Sample Control' <samplecontrol.lv@assetlaboratories.com>; Bloes, Marty <mbloes@pivox.com>
Subject: Magnesium

Hi Dan,

We've been receiving COC's recently from Topock for the annual sampling event where Magnesium was being requested for EPA 6020-ICP-MS. Magnesium detection is generally high on Topock samples, if we run by ICP-MS, we will have a high DF due to low detection limit. Also, Mg was historically being done by EPA 6010-ICP. I called Laura about this and she advised me to consult this to you.
Please confirm which method to use so we can start working on the samples. Attached is an example of COC.

Thanks,

Marlon Cartin
Project Manager
California: 11110 Artesia Blvd., Ste. B, Cerritos, CA 90703 | P: 562.219.7435 | F: 562.219.7436
Nevada: 3151 W. Post Road, Las Vegas, NV 89118 | P: 702.307.2659 Ext. 410 | F: 702.307.2691 | M: 702.439.0421
www.assetlaboratories.com

ASSET Laboratories

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-001A	MW-36-090-Q417	12/6/2017 1:11:00 PM	12/20/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-001B			12/20/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027405-001C			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-001D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-002A	MW-36-100-Q417	12/6/2017 11:51:00 AM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-002B			12/20/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027405-002C			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-002D	MW-36-100-Q417	12/6/2017 11:51:00 AM	12/20/2017	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-002E			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-003A	MW-910-Q417	12/6/2017 12:01:00 PM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-003B			12/20/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027405-003C			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-003D			12/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-003E			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-003E	MW-910-Q417	12/6/2017 12:01:00 PM	12/20/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-004A	MW-36-070-Q417	12/6/2017 11:44:00 AM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-004B			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-004C			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-005A	MW-720-Q417	12/6/2017 3:30:00 PM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-006A	MW-72BR-200-3V-Q417	12/6/2017 2:54:00 PM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-006B			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-006B	MW-72BR-200-3V-Q417	12/6/2017 2:54:00 PM	12/20/2017	Groundwater	EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-006C			12/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-006D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-007A	MW-72BR-200-LF_D-Q417	12/6/2017 10:17:00 AM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-007B			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-007C			12/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-007D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-007D	MW-72BR-200-LF_D-Q417	12/6/2017 10:17:00 AM	12/20/2017	Groundwater		Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-008A	MW-72BR-200-LF_S-Q417	12/6/2017 9:35:00 AM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-008B			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-008C			12/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-008D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-009A	MW-62-065-Q417	12/6/2017 3:45:00 PM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-009B	MW-62-065-Q417	12/6/2017 3:45:00 PM	12/20/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-009C			12/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-009D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-010A	MW-718-Q417	12/6/2017 3:10:00 PM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-011A	MW-64BR-Q417	12/6/2017 11:50:00 AM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-011B			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-011C	MW-64BR-Q417	12/6/2017 11:50:00 AM	12/20/2017	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-011D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-012A	MW-60-125-Q417	12/6/2017 1:20:00 PM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-012B			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-012C			12/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-012D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-012D	MW-60-125-Q417	12/6/2017 1:20:00 PM	12/20/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-013A	MW-73-080-Q417	12/6/2017 2:40:00 PM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-013B			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-013C			12/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-013D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-014A	MW-74-240-Q417	12/6/2017 10:00:00 AM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-014B			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-014B	MW-74-240-Q417	12/6/2017 10:00:00 AM	12/20/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-014C			12/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-014D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-015A	MW-719-Q417	12/6/2017 3:30:00 PM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-016A	FOLDER	12/20/2017	12/20/2017		EDD	RWQCB	☐	☐	☐	LAB
			12/20/2017		Folder	Folder	☐	☐	☐	LAB
			12/20/2017		Folder	Folder	☐	☐	☐	LAB

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (760) 781 3338
FAX: (805) 544-8226
Acct #:

Field Sampler: SIGNED Gantt Jeffers

07-Dec-17

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**OXY_DEUT**		
N027405-001B / MW-36-090-Q417	Groundwater	12/6/2017 1:11:00 PM	16OZP	1		
N027405-002B / MW-36-100-Q417	Groundwater	12/6/2017 11:51:00 AM	16OZP	1		
N027405-003B / MW-910-Q417	Groundwater	12/6/2017 12:01:00 PM	16OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N27405A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Oxygen and Deuterium Stable isotopes SFIRM. EDD requirement Labspec7 edata.

Fedex #: 770935832848

	Date/Time		Date/Time
Relinquished by:	12/07/2017 16:00	**Received by:**	
Relinquished by:		**Received by:**	

List of Analysts

ASSET Laboratories Work Order: N027405

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6010B_Dissolved, EPA 6020_Dissolved
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	EPA 120.1, SM 2540C, SM 2320 B

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120656/R120657 **Analyst:** LSR

ASSET #: N027405 **Date Analyzed:** 12/7/2017

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 12/20/2017

2nd Level Reviewer: RLB 12/21/2017 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 12/7/17 1100

Analyst: LSR COND

Standard	Std ID	Reading	Comments
9.42 mS/cm	CINV – 171018A	9.65 @ 19.5°C	% Rec: (90-110%)
1410	170822C	1427 @ 19.5°C	
9982	171018B	10120 @ 19.5°C	
99672	170822E	99600 @ 19.1°C	

	Sample ID	Matrix	Reading	Comments
1	N027404-016D	H2O	10730 @ 19.3°C	
2	17D		15030 @ 19.1°C	
3	18C		971 @ 19.2°C	1413 = CINV 170615G
4	20C		22100 @ 19.1°C	= 1463 @ 19.2°C
5	20CDUP		21700 @ 18.8°C	10000 - CINV 170822F
6	N027405-001D		9280 @ 18.9°C	= 10180 @ 19.6°C
7	2E		7150 @ 19.2°C	99672 - CINV 170831B
8	3E		7180 @ 18.9°C	= 96900 @ 19.4°C
9	4C		969 @ 19.2°C	
10	6D		14690 @ 18.9°C	
Dup	7D		14750 @ 18.9°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: 12/7/17

Analyst:

Julia Ramit 12/20/2017

RB 12/21/2017

Standard	Std ID	Reading	Comments
	COND		% Rec: (90-110%)

	Sample ID	Matrix	Reading	Comments
1	N027405-008D	H2O	14380 @ 18.9°C	
2	8D DUP		14430 @ 18.6°C	
3	9D		5760 @ 18.8°C	
4	11D		12460 @ 19.0°C	
5	12D		8760 @ 18.7°C	
6	13D		10520 @ 19.2°C	
7	14D		865 @ 19.1°C	
8				
9	1413 mS/cm	CINV – 170615G	1471 @ 18.9°C	
10	10000	170822F	10110 @ 19.3°C	
Dup	99672	170831B	97400 @ 19.3°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

ASSET LABORATORIES
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CALIFORNIA | P:562.219.7435 F:562.219.7436
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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00122

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65973/66002/66003 **Analyst:** LSR

ASSET #: N027405 **Date Analyzed:** 12/8,12/11/17

Method: EPA 160.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 12/20/2017

2nd Level Reviewer RLB 12/21/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N027405-001D,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(60.5212 - 60.4624)*1000000}{20}$$

= 2940 mg/L

Reporting result in two significant figures,

TDS = 2900 mg/L

Lilia Ramit 12/20/2017

12/21/2017

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/8/2017 1:13:16 P**
Prep End Date:

Reviewed/ Date: RB 12/21/2017
Initials/ Date: Lilia Ramit 12/20/2017

Prep Batch **65973** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units
mL / mL

Sample ID	Matrix	~~pH~~ Gnd	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-65973	Water	1WST171129A	100	☐	0	0	100	1.000		
MB-65973	Water		100	☐	0	0	100	1.000		
N027405-001D	Grouridwater	5080	100 /20	☐	0	0	100	1.000		
N027405-002E	Groundwater	7150	100 /20	☐	0	0	100	1.000		
N027405-003E	Groundwater	7180	100 /20	☐	0	0	100	1.000		
N027411-001C	Water	1358	100	☐	0	0	100	1.000		
N027411-002C	Water	1587	100 /75	☐	0	0	100	1.000		
N027412-001B	Leachate	60800	100 /2	☐	0	0	100	1.000		
N027413-001B	Leachate	88700	100 /2	☐	0	0	100	1.000		
N027414-001B	Leachate	3860	100 /40	☐	0	0	100	1.000		
N027416-001B	Leachate	93100	100 /1	☐	0	0	100	1.000		
N027417-001B	Leachate	97600	100 /1	☐	0	0	100	1.000		
N027417-001B-DU	Leachate	1	100 /1	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9469 -

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/8/2017 1:13:16 P**
Prep End Date: **12/9/2017 12:00:00**
Reviewed/ Date: RLB 12/21/2017
Initials/ Date: Lilia Ramit 12/20/2017
Prep Batch **65973** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**
Prep Factor Units: **mL / mL** Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-65973	Water		100	☐	0	0	100	1.000		
MB-65973	Water		100	☐	0	0	100	1.000		
N027405-001D	Groundwater		20	☐	0	0	100	5.000		
N027405-002E	Groundwater		20	☐	0	0	100	5.000		
N027405-003E	Groundwater		20	☐	0	0	100	5.000		
N027411-001C	Water		100	☐	0	0	100	1.000		
N027411-002C	Water		75	☐	0	0	100	1.333		
N027412-001B	Leachate		2	☐	0	0	100	50.000		
N027413-001B	Leachate		2	☐	0	0	100	50.000		
N027414-001B	Leachate		40	☐	0	0	100	2.500		
N027416-001B	Leachate		1	☐	0	0	100	100.000		
N027417-001B	Leachate		1	☐	0	0	100	100.000		
N027417-001B-DU	Leachate		1	☐	0	0	100	100.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9469	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171129A	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/11/2017 1:06:31**
Prep End Date:

Reviewed/ Date: RB 12/21/2017

Initials/ Date: Lilia Ramit 12/20/2017

Prep Batch **66002** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH (Conf)	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66002	Water	12712111C	100	☐	0	0	100	1.000		
MB-66002	Water		100	☐	0	0	100	1.000		
N027404-017D	Groundwater	15030	100 /10	☐	0	0	100	1.000		
N027404-018C	Groundwater	971	100	☐	0	0	100	1.000		
N027404-020C	Groundwater	22100	100 /5	☐	0	0	100	1.000		
N027404-020C-DU	Groundwater	1	100 /5	☐	0	0	100	1.000		
N027405-004C	Groundwater	969	100	☐	0	0	100	1.000		
N027405-006D	Groundwater	14690	100 /10	☐	0	0	100	1.000		
N027405-007D	Groundwater	14750	100 /10	☐	0	0	100	1.000		
N027405-008D	Groundwater	14380	100 /10	☐	0	0	100	1.000		
N027405-009D	Groundwater	5760	100 /20	☐	0	0	100	1.000		
N027405-011D	Groundwater	12460	100 /10	☐	0	0	100	1.000		
N027405-012D	Groundwater	8760	100 /20	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

1469

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/11/2017 1:06:31**
Prep End Date: **12/12/2017 11:30:0**

Reviewed/ Date: RB 12/21/2017

Initials/ Date: Lilia Ramit 12/20/2017

Prep Batch **66002** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66002	Water		100	☐	0	0	100	1.000		
MB-66002	Water		100	☐	0	0	100	1.000		
N027404-017D	Groundwater		10	☐	0	0	100	10.000		
N027404-018C	Groundwater		100	☐	0	0	100	1.000		
N027404-020C	Groundwater		5	☐	0	0	100	20.000		
N027404-020C-DU	Groundwater		5	☐	0	0	100	20.000		
N027405-004C	Groundwater		100	☐	0	0	100	1.000		
N027405-006D	Groundwater		10	☐	0	0	100	10.000		
N027405-007D	Groundwater		10	☐	0	0	100	10.000		
N027405-008D	Groundwater		10	☐	0	0	100	10.000		
N027405-009D	Groundwater		20	☐	0	0	100	5.000		
N027405-011D	Groundwater		10	☐	0	0	100	10.000		
N027405-012D	Groundwater		20	☐	0	0	100	5.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9469	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171211C	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/11/2017 1:06:33**
Prep End Date:

Reviewed/ Date: RB 12/21/2017
Initials/ Date: Lilia Ramit 12/20/2017

Prep Batch **66003** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units
mL / mL

Sample ID	Matrix	Cond ~~pH~~	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66003	Water	[illegible]	100	☐	0	0	100	1.000		
MB-66003	Water		100	☐	0	0	100	1.000		
N027405-013D	Groundwater	10520	100 /10	☐	0	0	100	1.000		
N027405-014D	Groundwater	865	100	☐	0	0	100	1.000		
N027422-001A	Surface Water	742	100	☐	0	0	100	1.000		
N027422-002A	Surface Water	3450	100 /40	☐	0	0	100	1.000		
N027422-003A	Surface Water	3450	100 /40	☐	0	0	100	1.000		
N027427-001C	Groundwater	1198	100	☐	0	0	100	1.000		
N027428-001B	Groundwater	3710	100 /40	☐	0	0	100	1.000		
N027428-002B	Groundwater	6060	100 /20	☐	0	0	100	1.000		
N027429-005D	Groundwater	15870	100 /10	☐	0	0	100	1.000		
N027429-005D-DU	Groundwater	1	100 /10	☐	0	0	100	1.000		
~~N027429-006D~~	~~Groundwater~~	~~15720~~	~~100 /10~~	☐	0	0	100	1.000		
N027416-1B		92500	1							

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9469
9664

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/11/2017 1:06:33**
Prep End Date: **12/12/2017 11:30:0**

Reviewed/ Date: RLB 12/21/2017
Initials/ Date: Julia Ramit 12/20/2017

Prep Batch **66003** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66003	Water		100	☐	0	0	100	1.000		
MB-66003	Water		100	☐	0	0	100	1.000		
N027405-013D	Groundwater		10	☐	0	0	100	10.000		
N027405-014D	Groundwater		100	☐	0	0	100	1.000		
N027416-001B	Leachate		1	☐	0	0	100	100.000		
N027422-001A	Surface Water		100	☐	0	0	100	1.000		
N027422-002A	Surface Water		40	☐	0	0	100	2.500		
N027422-003A	Surface Water		40	☐	0	0	100	2.500		
N027427-001C	Groundwater		100	☐	0	0	100	1.000		
N027428-001B	Groundwater		40	☐	0	0	100	2.500		
N027428-002B	Groundwater		20	☐	0	0	100	5.000		
N027429-005D	Groundwater		10	☐	0	0	100	10.000		
N027429-005D-DU	Groundwater		10	☐	0	0	100	10.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9469	Glass Fiber Filter, 47mm
9666	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171211C	1000 ppm NaCl	LCS	100

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/8/17 1313 DD	MB 65973	100	71.6238 71.6235	71.6233 71.6232	
KG	NO27405-001D	20	60.4621 60.4624	60.5211 60.5212	
—	2E	20	60.5865 60.5862	60.6715 60.6710	
3I	3E	20	63.3167 63.3164	63.3954 63.3959	
IX	NO27411-001C	100	76.5922 76.5919	76.6862 76.6865	
A	2C	75	59.1330 59.1330	59.2232 ~~59.2237~~ 2 59.2228	
C	NO27413-001B	2	50.3710 50.3707	50.4916 50.4912	
IS	NO27413-001B	2	61.5391 61.5389	61.7157 61.7160	
IY	NO27414-001B	40	55.5921 55.5924	55.7098 55.7102	
S	NO27416-001B	1	45.7316 45.7316	45.9010 45.9006	

Julia Ramit 12/20/2017

RB 12/21/2017

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Serving Clients
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV

SOLIDS RAW DATA

TEST :TSS/TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/8/17 1F	N027417 001B	1	60.6301 60.6305	60.8006 60.8006	
1L	1B DUP	1	60.2917 60.2916	~~60.49~~ 60.4697 60.4692	
1S	LCS 68973	100	76.5774 76.5774	76.6699 76.6698	

Julia Ramit 12/20/2017

ASSET Laboratories Logbook#8

RB 12/21/2017

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
12/9/2017									
MB-65973	100	71.6235	71.6232	-3	1	-3			MBLK
LCS-65973	100	76.5774	76.6698	924	1	924			LCS
N027405-001D	20	60.4624	60.5212	588	5	2940	5080	0.579	SAMP
N027405-002E	20	60.5862	60.671	848	5	4240	7150	0.593	SAMP
N027405-003E	20	63.3104	63.3959	855	5	4275	7180	0.595	SAMP
N027411-001C	100	76.5919	76.6865	946	1	946	1358	0.697	SAMP
N027411-002C	75	59.133	59.2228	898	1.33333333	1197.33333	1507	0.795	SAMP
N027412-001B	2	50.3707	50.4912	1205	50	60250	60800	0.991	SAMP
N027413-001B	2	61.5389	61.716	1771	50	88550	88700	0.998	SAMP
N027414-001B	40	55.5924	55.7102	1178	2.5	2945	3860	0.763	SAMP
N027416-001B	1	45.7316	45.9006	1690	100	169000	93100	1.815	SAMP
N027417-001B	1	60.6305	60.8006	1701	100	170100	97600	1.743	SAMP
N027417-001BDUP	1	60.2916	60.4692	1776	100	177600	97600	1.820	DUP

Silica Ramit 12/20/2017

RB 12/21/2017

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/11/17 1306 CC	MB 66002	100	70.0784 70.0780	70.0778 70.0781	
K	LCS 66002	100	76-5697 76.5701	76.6634 76.6637	
IJ	N027404-017D	10	61.5309 61.5313	61.6241 61.6246	
H	18C	100	74-5125 74.5130	74-5783 74.5787	
IF	20C	5	60.6223 60.6226	60.7067 60.7070	
A	20C DUP	5	59.1373 59.1377	59.2222 59.2226	
FF	N027405-004C	100	68-3654 68.3658	68.4325 68.4329	
IG	6D	10	60.4506 60.4503	60.5358 60.5351	
T	7D	10	46.0434 46.0436	46.1293 46.1295	
C	8D	10	50.3704 50.3703	50.4597 50.4601	

Julia Ramit 12/20/2017

ASSET LABORATORIES
12/21/2017
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00932

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/11/17 S	NO27405-009D	20	45.7290 45.7295	45.7996 45.7999	
M	11D	10	49.0609 49.0613	49.1337 49.1341	
1C	12D	20	49.3591 49.3594	49.4746 49.4748	
Julia Ramit		12/20/2017			

RLB 12/21/2017

ASSET LABORATORIES
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV
ELAP Cert 2676 | NV Cert NV00922

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
12/12/2017									
MB-66002	100	70.078	70.0781	1	1	1			MBLK
LCS-66002	100	76.5701	76.6637	936	1	936			LCS
N027404-017D	10	61.5313	61.6246	933	10	9330	15030	0.621	SAMP
N027404-018C	100	74.513	74.5787	657	1	657	971	0.677	SAMP
N027404-020C	5	60.6226	60.707	844	20	16880	22100	0.764	SAMP
N027404-020CDUP	5	59.1377	59.2226	849	20	16980	22100	0.768	DUP
N027405-004C	100	68.3658	68.4329	671	1	671	969	0.692	SAMP
N027405-006D	10	60.4503	60.5356	853	10	8530	14690	0.581	SAMP
N027405-007D	10	46.0436	46.1295	859	10	8590	14750	0.582	SAMP
N027405-008D	10	50.3703	50.4601	898	10	8980	14380	0.624	SAMP
N027405-009D	20	45.7295	45.7999	704	5	3520	5760	0.611	SAMP
N027405-011D	10	49.0613	49.1341	728	10	7280	12460	0.584	SAMP
N027405-012D	20	49.3594	49.4748	1154	5	5770	8760	0.659	SAMP

Julia Ramit 12/20/2017

RLB 12/21/2017

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/11/17 1201 JT	LB 66003	100	67.0939 67.0942	67.0943 67.0945	
IX	LCS 66003	100	76.5929 76.5928	76.6887 76.6887	
RR	NO27405-013D	10	62.3285 62.3281	62.3905 62.3908	
KK	14D	100	70.7456 70.7453	70.7964 70.7968	
EE	NO27427-001A	100	68.2223 68.2219	68.2759 68.2763	
IW	7A	40	64.0224 64.0228	64.1494 64.1498	
—	3A	40	60.5857 60.5857	60.7148 60.7152	
21	NO27427-001C	100	63.3072 63.3075	63.4058 63.4061	
20	NO27428-001A	40	71.6147 71.6146	71.7183 71.7187	
8	2B	20	53.7003 53.7007	53.7860 53.7864	

Julia Ramit 12/20/2017

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CALIFORNIA | P:562.219.7435 F:562.219.7436
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NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118

12/21/2017

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/11/17 XX	N027429-005D	10	~~53.6893~~ 49.6347 49.6350 LW 12/11	49.7601 49.7605	
	5D DUP	10	48.8877 48.8877	49.0078 49.0081	
12	~~6D~~	~~10~~	~~53.6893 53.6898~~	53.8131 53.8132 LW 12/12/17	
1K	N027416-001B	1	62.4570 62.4570	62.6393 62.6393	
	Julia Ramit 12/20/2017 RB 12/21/2017				

closing wt: 49.9997 12/12/17 @ 1130

ASSET Laboratories

Logbook#8

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
12/12/2017									
MB-66003	100	67.0942	67.0945	3	1	3			MBLK
LCS-66003	100	76.5928	76.6887	959	1	959			LCS
N027405-013D	10	62.3281	62.3908	627	10	6270	10520	0.596	SAMP
N027405-014D	100	70.7453	70.7968	515	1	515	865	0.595	SAMP
N027422-001A	100	68.2219	68.2763	544	1	544	742	0.733	SAMP
N027422-002A	40	64.0228	64.1498	1270	2.5	3175	3450	0.920	SAMP
N027422-003A	40	60.5857	60.7152	1295	2.5	3237.5	3450	0.938	SAMP
N027427-001C	100	63.3075	63.4061	986	1	986	1198	0.823	SAMP
N027428-001B	40	71.6146	71.7187	1041	2.5	2602.5	3710	0.701	SAMP
N027428-002B	20	53.7007	53.7864	857	5	4285	6060	0.707	SAMP
N027429-005D	10	49.635	49.7605	1255	10	12550	15870	0.791	SAMP
N027429-005DDUP	10	48.8877	49.0081	1204	10	12040	15870	0.759	DUP
N027416-001B	1	62.457	62.6393	1823	100	182300	92500	1.971	SAMP

Silvia Ramit 12/20/2017

RB 12/21/2017

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120683
ASSET #: N027405

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 12/8/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:
Dilution was necessary for N027405-011A due to matrix interference.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/19/2017

2nd Level Reviewer: RLB 12/21/2017 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120833
ASSET #: N027405

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 12/11/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments: Dilution was necessary for N027405-006A to -008A due to matrix interference.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/19/2017

2nd Level Reviewer: RLB 12/21/2017 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N027405-002A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 2.3032 * 5$$

$$Cr^{+6}, \mu g/L = 11.52$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 12}$$

rba 12/19/2017

RLB 12/21/2017

ANALYSIS RUN LOG

INJECTION LOG: 171128A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/28/17 10:57 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/28/17 11:08 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/28/17 11:17 AM	Reported
13	MB-R120468	MBLK	1	Hexavalent Chromium	11/28/17 11:27 AM	Reported
14	LCS-R120468	LCS	1	Hexavalent Chromium	11/28/17 11:36 AM	Reported
15	N027215-001A	SAMP	1	Hexavalent Chromium	11/28/17 11:47 AM	Reported
16	N027215-002A	SAMP	1	Hexavalent Chromium	11/28/17 11:59 AM	Reported
17	N027215-003A	SAMP	1	Hexavalent Chromium	11/28/17 12:08 PM	Reported
18	N027215-004A	SAMP	1	Hexavalent Chromium	11/28/17 12:18 PM	Reported
19	N027215-005A	SAMP	1	Hexavalent Chromium	11/28/17 12:27 PM	Reported
20	N027215-002ADUP	DUP	1	Hexavalent Chromium	11/28/17 12:37 PM	Reported
21	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 12:46 PM	Not Reported
22	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 12:56 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	11/28/17 1:05 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/28/17 1:14 PM	Reported
25	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:04 PM	Not Reported
26	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:16 PM	Not Reported
27	N027215-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:29 PM	Reported
28	N027215-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:41 PM	Reported
29	CCV-2	CCV	1	Hexavalent Chromium	11/28/17 2:50 PM	Reported
30	CCB-2	CCB	1	Hexavalent Chromium	11/28/17 3:00 PM	Reported



Injection Log Summary

Sequence Details

Name:	**IC-07_171128A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**28/Nov/17 15:47:35**
No. of Injections:	**33**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		11/28/2017 10:57	Finished	ICV @5ppb, IWST-171002A
11	PQL@0.2ppb,CCV2,1	12	1000	Unknown		11/28/2017 11:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		11/28/2017 11:17	Finished	ICB R171114C
13	MB-H2O,MBLK,1	14	1000	Unknown		11/28/2017 11:27	Finished	MB R171114C
14	LCS-H2O,LCS,1	15	1000	Unknown		11/28/2017 11:36	Finished	LCS, IWST-171002B
15	N027215-001A,SAMP	17	1000	Unknown		11/28/2017 11:47	Finished	SAMP,10mL
16	N027215-002A,SAMP	18	1000	Unknown		11/28/2017 11:59	Finished	SAMP,10mL
17	N027215-003A,SAMP	19	1000	Unknown		11/28/2017 12:08	Finished	SAMP,10mL
18	N027215-004A,SAMP	20	1000	Unknown		11/28/2017 12:18	Finished	SAMP,10mL
19	N027215-005A,SAMP	21	1000	Unknown		11/28/2017 12:27	Finished	SAMP,10mL
20	N027215-002ADUP,D	22	1000	Unknown		11/28/2017 12:37	Finished	DUP,10mL
21	N027157-001AMS,MS	23	1000	Unknown		11/28/2017 12:46	Finished	MS (5ppb), IWST-171002B,10
22	N027157-001AMSD,M	24	1000	Unknown		11/28/2017 12:56	Finished	MSD (5ppb), IWST-171002B,1(
23	CCV-1,CCV1,1,	25	1000	Unknown		11/28/2017 13:05	Finished	CCV @10ppb, IWST-171002A
24	CCB-1,CCB,1,	26	1000	Unknown		11/28/2017 13:14	Finished	CCB R171031A
25	N027157-001AMS,MS	28	1000	Unknown		11/28/2017 14:04	Finished	MS (5ppb), IWST-171002B,10
26	N027157-001AMSD,M	29	1000	Unknown		11/28/2017 14:16	Finished	MSD (5ppb), IWST-171002B,1(
27	N027215-001AMS,MS	31	1000	Unknown		11/28/2017 14:29	Finished	MS (5ppb), IWST-171002B,10
28	N027215-001AMSD,M	32	1000	Unknown		11/28/2017 14:41	Finished	MSD (5ppb), IWST-171002B,1(
29	CCV-2,CCV,1,	33	1000	Unknown		11/28/2017 14:50	Finished	CCV @5ppb, IWST-171002A
30	CCB-2,CCB,1,	34	1000	Unknown		11/28/2017 15:00	Finished	CCB R171031A
31	SHUTDOWN	35	1000	Unknown		11/28/2017 15:09	Finished	
32	Eluent: R171128A	36	1000	Unknown		n.a.	Finished	Eluent
33	PCR: R171128B	37	1000	Unknown		n.a.	Finished	Post-Column Reagent

rba 11/29/2017

INJECTION LOG: 171208A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/08/17 8:12 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/08/17 8:22 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/08/17 8:35 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/08/17 8:46 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/08/17 8:56 AM	Reported
15	MB-R120682	MBLK	1	Hexavalent Chromium	12/08/17 9:05 AM	Reported
16	LCS-R120682	LCS	1	Hexavalent Chromium	12/08/17 9:14 AM	Reported
17	N027404-001A	SAMP	1	Hexavalent Chromium	12/08/17 9:25 AM	Reported
18	N027404-001AMS	MS	1	Hexavalent Chromium	12/08/17 9:36 AM	Reported
19	N027404-002A	SAMP	1	Hexavalent Chromium	12/08/17 9:45 AM	Reported
20	N027404-002AMS	MS	1	Hexavalent Chromium	12/08/17 9:55 AM	Reported
21	N027404-003A	SAMP	5	Hexavalent Chromium	12/08/17 10:04 AM	Reported
22	N027404-003AMS	MS	5	Hexavalent Chromium	12/08/17 10:14 AM	Reported
23	N027404-004A	SAMP	1	Hexavalent Chromium	12/08/17 10:23 AM	Reported
24	N027404-004AMS	MS	1	Hexavalent Chromium	12/08/17 10:33 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/08/17 10:42 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/08/17 10:52 AM	Reported
27	N027404-005A	SAMP	1	Hexavalent Chromium	12/08/17 11:01 AM	Not Reported
28	N027404-005AMS	MS	1	Hexavalent Chromium	12/08/17 11:11 AM	Not Reported
29	N027404-006A	SAMP	1	Hexavalent Chromium	12/08/17 11:20 AM	Reported
30	N027404-006AMS	MS	1	Hexavalent Chromium	12/08/17 11:30 AM	Reported
31	N027404-007A	SAMP	1	Hexavalent Chromium	12/08/17 11:39 AM	Reported
32	N027404-007AMS	MS	1	Hexavalent Chromium	12/08/17 11:48 AM	Reported
33	N027404-008A	SAMP	1	Hexavalent Chromium	12/08/17 11:58 AM	Reported
34	N027404-008AMS	MS	1	Hexavalent Chromium	12/08/17 12:07 PM	Reported
35	N027404-009A	SAMP	5	Hexavalent Chromium	12/08/17 12:17 PM	Reported
36	N027404-009AMS	MS	5	Hexavalent Chromium	12/08/17 12:26 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/08/17 12:36 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/08/17 12:45 PM	Reported
39	N027404-010A	SAMP	1	Hexavalent Chromium	12/08/17 12:55 PM	Reported
40	N027404-010AMS	MS	1	Hexavalent Chromium	12/08/17 1:04 PM	Reported
41	N027404-011A	SAMP	1	Hexavalent Chromium	12/08/17 1:14 PM	Reported
42	N027404-011AMS	MS	1	Hexavalent Chromium	12/08/17 1:23 PM	Reported

INJECTION LOG: 171208A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027404-012A	SAMP	1	Hexavalent Chromium	12/08/17 1:33 PM	Reported
44	N027404-012AMS	MS	1	Hexavalent Chromium	12/08/17 1:42 PM	Reported
45	N027404-013A	SAMP	1	Hexavalent Chromium	12/08/17 1:51 PM	Reported
46	N027404-013AMS	MS	1	Hexavalent Chromium	12/08/17 2:01 PM	Reported
47	N027404-014A	SAMP	1	Hexavalent Chromium	12/08/17 2:10 PM	Reported
48	N027404-014AMS	MS	1	Hexavalent Chromium	12/08/17 2:20 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/08/17 2:29 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/08/17 2:39 PM	Reported
51	N027404-015A	SAMP	1	Hexavalent Chromium	12/08/17 2:48 PM	Reported
52	N027404-015AMS	MS	1	Hexavalent Chromium	12/08/17 2:58 PM	Reported
53	N027404-016A	SAMP	5	Hexavalent Chromium	12/08/17 3:07 PM	Reported
54	N027404-016AMS	MS	5	Hexavalent Chromium	12/08/17 3:17 PM	Reported
55	N027404-016A	SAMP	1	Hexavalent Chromium	12/08/17 3:26 PM	Not Reported
56	N027404-016AMS	MS	1	Hexavalent Chromium	12/08/17 3:36 PM	Not Reported
57	N027404-018A	SAMP	1	Hexavalent Chromium	12/08/17 3:45 PM	Reported
58	N027404-018AMS	MS	1	Hexavalent Chromium	12/08/17 3:54 PM	Reported
59	N027404-019A	SAMP	1	Hexavalent Chromium	12/08/17 4:04 PM	Reported
60	N027404-019AMS	MS	1	Hexavalent Chromium	12/08/17 4:13 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/08/17 4:23 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/08/17 4:32 PM	Reported
63	N027404-020A	SAMP	5	Hexavalent Chromium	12/08/17 4:42 PM	Reported
64	N027404-020AMS	MS	5	Hexavalent Chromium	12/08/17 4:51 PM	Reported
65	N027404-017A	SAMP	100	Hexavalent Chromium	12/08/17 5:01 PM	Reported
66	N027404-017AMS	MS	100	Hexavalent Chromium	12/08/17 5:10 PM	Reported
67	N027404-017AMSD	MSD	100	Hexavalent Chromium	12/08/17 5:23 PM	Reported
68	N027404-003ADUP	DUP	5	Hexavalent Chromium	12/08/17 5:34 PM	Reported
69	N027404-005A	SAMP	5	Hexavalent Chromium	12/08/17 5:44 PM	Reported
70	N027404-005AMS	MS	5	Hexavalent Chromium	12/08/17 5:53 PM	Reported
71	N027404-020A	SAMP	1	Hexavalent Chromium	12/08/17 6:02 PM	Not Reported
72	N027404-020AMS	MS	1	Hexavalent Chromium	12/08/17 6:12 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	12/08/17 6:21 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	12/08/17 6:31 PM	Reported
75	LCS-R120683	LCS	1	Hexavalent Chromium	12/08/17 6:45 PM	Reported
76	MB-R120683	MBLK	1	Hexavalent Chromium	12/08/17 6:55 PM	Reported
77	N027405-012A	SAMP	100	Hexavalent Chromium	12/08/17 7:05 PM	Reported
78	N027405-012AMS	MS	100	Hexavalent Chromium	12/08/17 7:14 PM	Reported
79	N027405-012AMSD	MSD	100	Hexavalent Chromium	12/08/17 7:24 PM	Reported
80	N027405-013A	SAMP	5	Hexavalent Chromium	12/08/17 7:33 PM	Reported
81	N027405-013AMS	MS	5	Hexavalent Chromium	12/08/17 7:43 PM	Reported
82	N027405-002A	SAMP	5	Hexavalent Chromium	12/08/17 7:52 PM	Reported
83	N027405-002AMS	MS	5	Hexavalent Chromium	12/08/17 8:02 PM	Reported
84	N027405-002ADUP	DUP	5	Hexavalent Chromium	12/08/17 8:11 PM	Reported

INJECTION LOG: 171208A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	12/08/17 8:21 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	12/08/17 8:30 PM	Reported
87	N027405-001A	SAMP	1	Hexavalent Chromium	12/08/17 8:40 PM	Reported
88	N027405-001AMS	MS	1	Hexavalent Chromium	12/08/17 8:49 PM	Reported
89	N027405-003A	SAMP	5	Hexavalent Chromium	12/08/17 8:58 PM	Reported
90	N027405-003AMS	MS	5	Hexavalent Chromium	12/08/17 9:08 PM	Reported
91	N027405-004A	SAMP	1	Hexavalent Chromium	12/08/17 9:17 PM	Reported
92	N027405-004AMS	MS	1	Hexavalent Chromium	12/08/17 9:27 PM	Reported
93	N027405-005A	SAMP	1	Hexavalent Chromium	12/08/17 9:36 PM	Reported
94	N027405-005AMS	MS	1	Hexavalent Chromium	12/08/17 9:46 PM	Reported
95	N027405-009A	SAMP	100	Hexavalent Chromium	12/08/17 9:55 PM	Reported
96	N027405-009AMS	MS	100	Hexavalent Chromium	12/08/17 10:05 PM	Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	12/08/17 10:14 PM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	12/08/17 10:24 PM	Reported
99	N027405-010A	SAMP	1	Hexavalent Chromium	12/08/17 10:33 PM	Reported
100	N027405-010AMS	MS	1	Hexavalent Chromium	12/08/17 10:43 PM	Reported
101	N027405-011A	SAMP	1	Hexavalent Chromium	12/08/17 10:52 PM	Not Reported
102	N027405-011AMS	MS	1	Hexavalent Chromium	12/08/17 11:01 PM	Not Reported
103	N027405-011A	SAMP	5	Hexavalent Chromium	12/08/17 11:11 PM	Reported
104	N027405-011AMS	MS	5	Hexavalent Chromium	12/08/17 11:20 PM	Reported
105	N027405-014A	SAMP	1	Hexavalent Chromium	12/08/17 11:30 PM	Reported
106	N027405-014AMS	MS	1	Hexavalent Chromium	12/08/17 11:39 PM	Reported
107	N027405-015A	SAMP	1	Hexavalent Chromium	12/08/17 11:49 PM	Reported
108	N027405-015AMS	MS	1	Hexavalent Chromium	12/08/17 11:58 PM	Reported
109	CCV-9	CCV	1	Hexavalent Chromium	12/09/17 12:08 AM	Reported
110	CCB-9	CCB	1	Hexavalent Chromium	12/09/17 12:17 AM	Reported
111	N027405-006A	SAMP	1	Hexavalent Chromium	12/09/17 12:27 AM	Not Reported
112	N027405-006AMS	MS	1	Hexavalent Chromium	12/09/17 12:36 AM	Not Reported
113	N027405-007A	SAMP	1	Hexavalent Chromium	12/09/17 12:46 AM	Not Reported
114	N027405-007AMS	MS	1	Hexavalent Chromium	12/09/17 12:55 AM	Not Reported
115	N027405-008A	SAMP	1	Hexavalent Chromium	12/09/17 1:04 AM	Not Reported
116	N027405-008AMS	MS	1	Hexavalent Chromium	12/09/17 1:14 AM	Not Reported
117	CCV-10	CCV1	1	Hexavalent Chromium	12/09/17 1:23 AM	Reported
118	CCB-10	CCB	1	Hexavalent Chromium	12/09/17 1:33 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171208A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**09/Dec/17 02:03:42**
No. of Injections:	**121**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/08/2017 08:12	Finished	BLANK
11	BLANK	2	1000	Unknown		12/08/2017 08:22	Finished	BLANK
12	CCV-1,CCV,1,	4	1000	Unknown		12/08/2017 08:35	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	5	1000	Unknown		12/08/2017 08:46	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	6	1000	Unknown		12/08/2017 08:56	Finished	CCB R171129A
15	MB-1,MBLK,1	7	1000	Unknown		12/08/2017 09:05	Finished	MB R171129A
16	LCS-1,LCS,1	8	1000	Unknown		12/08/2017 09:14	Finished	LCS, IWST-171002B
17	N027404-001A,SAMP	1	1000	Unknown		12/08/2017 09:25	Finished	SAMP,10mL
18	N027404-001AMS,MS	2	1000	Unknown		12/08/2017 09:36	Finished	MS (1ppb), IWST-171002B,10
19	N027404-002A,SAMP	3	1000	Unknown		12/08/2017 09:45	Finished	SAMP,10mL
20	N027404-002AMS,MS	4	1000	Unknown		12/08/2017 09:55	Finished	MS (1ppb), IWST-171002B,10
21	N027404-003A,SAMP	5	1000	Unknown		12/08/2017 10:04	Finished	SAMP,2>10mL
22	N027404-003AMS,MS	6	1000	Unknown		12/08/2017 10:14	Finished	MS (1ppb), IWST-171002B,2>1
23	N027404-004A,SAMP	7	1000	Unknown		12/08/2017 10:23	Finished	SAMP,10mL
24	N027404-004AMS,MS	8	1000	Unknown		12/08/2017 10:33	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	9	1000	Unknown		12/08/2017 10:42	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	10	1000	Unknown		12/08/2017 10:52	Finished	CCB R171129A
27	N027404-005A,SAMP	11	1000	Unknown		12/08/2017 11:01	Finished	SAMP,10mL
28	N027404-005AMS,MS	12	1000	Unknown		12/08/2017 11:11	Finished	MS (1ppb), IWST-171002B,10
29	N027404-006A,SAMP	13	1000	Unknown		12/08/2017 11:20	Finished	SAMP,10mL
30	N027404-006AMS,MS	14	1000	Unknown		12/08/2017 11:30	Finished	MS (1ppb), IWST-171002B,10
31	N027404-007A,SAMP	15	1000	Unknown		12/08/2017 11:39	Finished	SAMP,10mL
32	N027404-007AMS,MS	16	1000	Unknown		12/08/2017 11:48	Finished	MS (1ppb), IWST-171002B,10
33	N027404-008A,SAMP	17	1000	Unknown		12/08/2017 11:58	Finished	SAMP,10mL
34	N027404-008AMS,MS	18	1000	Unknown		12/08/2017 12:07	Finished	MS (1ppb), IWST-171002B,10
35	N027404-009A,SAMP	19	1000	Unknown		12/08/2017 12:17	Finished	SAMP,2>10mL
36	N027404-009AMS,MS	20	1000	Unknown		12/08/2017 12:26	Finished	MS (1ppb), IWST-171002B,2>1
37	CCV-3,CCV,1,	21	1000	Unknown		12/08/2017 12:36	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	22	1000	Unknown		12/08/2017 12:45	Finished	CCB R171129A
39	N027404-010A,SAMP	23	1000	Unknown		12/08/2017 12:55	Finished	SAMP,10mL
40	N027404-010AMS,MS	24	1000	Unknown		12/08/2017 13:04	Finished	MS (1ppb), IWST-171002B,10
41	N027404-011A,SAMP	25	1000	Unknown		12/08/2017 13:14	Finished	SAMP,10mL
42	N027404-011AMS,MS	26	1000	Unknown		12/08/2017 13:23	Finished	MS (1ppb), IWST-171002B,10
43	N027404-012A,SAMP	27	1000	Unknown		12/08/2017 13:33	Finished	SAMP,10mL
44	N027404-012AMS,MS	28	1000	Unknown		12/08/2017 13:42	Finished	MS (1ppb), IWST-171002B,10
45	N027404-013A,SAMP	29	1000	Unknown		12/08/2017 13:51	Finished	SAMP,10mL
46	N027404-013AMS,MS	30	1000	Unknown		12/08/2017 14:01	Finished	MS (1ppb), IWST-171002B,10
47	N027404-014A,SAMP	31	1000	Unknown		12/08/2017 14:10	Finished	SAMP,10mL
48	N027404-014AMS,MS	32	1000	Unknown		12/08/2017 14:20	Finished	MS (1ppb), IWST-171002B,10
49	CCV-4,CCV1,1,	33	1000	Unknown		12/08/2017 14:29	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	34	1000	Unknown		12/08/2017 14:39	Finished	CCB R171129A
51	N027404-015A,SAMP	35	1000	Unknown		12/08/2017 14:48	Finished	SAMP,10mL
52	N027404-015AMS,MS	36	1000	Unknown		12/08/2017 14:58	Finished	MS (1ppb), IWST-171002B,10
53	N027404-016A,SAMP	37	1000	Unknown		12/08/2017 15:07	Finished	SAMP,2>10mL
54	N027404-016AMS,MS	38	1000	Unknown		12/08/2017 15:17	Finished	MS (1ppb), IWST-171002B,2>1
55	N027404-016A,SAMP	39	1000	Unknown		12/08/2017 15:26	Finished	SAMP,10mL
56	N027404-016AMS,MS	40	1000	Unknown		12/08/2017 15:36	Finished	MS (1ppb), IWST-171002B,10
57	N027404-018A,SAMP	41	1000	Unknown		12/08/2017 15:45	Finished	SAMP,10mL
58	N027404-018AMS,MS	42	1000	Unknown		12/08/2017 15:54	Finished	MS (1ppb), IWST-171002B,10
59	N027404-019A,SAMP	43	1000	Unknown		12/08/2017 16:04	Finished	SAMP,10mL
60	N027404-019AMS,MS	44	1000	Unknown		12/08/2017 16:13	Finished	MS (1ppb), IWST-171002B,10

61	CCV-5,CCV,1,	45	1000	Unknown		12/08/2017 16:23	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	46	1000	Unknown		12/08/2017 16:32	Finished	CCB R171129A
63	N027404-020A,SAMF	47	1000	Unknown		12/08/2017 16:42	Finished	SAMP,2>10mL
64	N027404-020AMS,MS	48	1000	Unknown		12/08/2017 16:51	Finished	MS (1ppb), IWST-171002B,2>1
65	N027404-017A,SAMF	49	1000	Unknown		12/08/2017 17:01	Finished	SAMP,0.1>10mL
66	N027404-017AMS,MS	50	1000	Unknown		12/08/2017 17:10	Finished	MS (5ppb), IWST-171002B,0.1
67	N027404-017AMSD,M	1	1000	Unknown		12/08/2017 17:23	Finished	MSD (5ppb), IWST-171002B,0.
68	N027404-003ADUP,D	2	1000	Unknown		12/08/2017 17:34	Finished	DUP,2>10mL
69	N027404-005A,SAMF	3	1000	Unknown		12/08/2017 17:44	Finished	SAMP,2>10mL
70	N027404-005AMS,MS	4	1000	Unknown		12/08/2017 17:53	Finished	MS (1ppb), IWST-171002B,2>1
71	N027404-020A,SAMF	5	1000	Unknown		12/08/2017 18:02	Finished	SAMP,10mL
72	N027404-020AMS,MS	6	1000	Unknown		12/08/2017 18:12	Finished	MS (1ppb), IWST-171002B,10
73	CCV-6,CCV1,1,	7	1000	Unknown		12/08/2017 18:21	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	8	1000	Unknown		12/08/2017 18:31	Finished	CCB R171129A
75	LCS-2,LCS,1	1	1000	Unknown		12/08/2017 18:45	Finished	LCS, IWST-171002B
76	MB-2,MBLK,1	2	1000	Unknown		12/08/2017 18:55	Finished	MB R171129A
77	N027405-012A,SAMF	3	1000	Unknown		12/08/2017 19:05	Finished	SAMP,0.1>10mL
78	N027405-012AMS,MS	4	1000	Unknown		12/08/2017 19:14	Finished	MS (5ppb), IWST-171002B,0.1
79	N027405-012AMSD,M	5	1000	Unknown		12/08/2017 19:24	Finished	MSD (5ppb), IWST-171002B,0.
80	N027405-013A,SAMF	6	1000	Unknown		12/08/2017 19:33	Finished	SAMP,0.1>10mL
81	N027405-013AMS,MS	7	1000	Unknown		12/08/2017 19:43	Finished	DUP,0.1>10mL
82	N027405-002A,SAMF	8	1000	Unknown		12/08/2017 19:52	Finished	SAMP,10mL
83	N027405-002AMS,MS	9	1000	Unknown		12/08/2017 20:02	Finished	SAMP,5>10mL
84	N027405-002ADUP,D	10	1000	Unknown		12/08/2017 20:11	Finished	SAMP,0.2>10mL
85	CCV-7,CCV,1,	11	1000	Unknown		12/08/2017 20:21	Finished	CCV @5ppb, IWST-171002A
86	CCB-7,CCB,1,	12	1000	Unknown		12/08/2017 20:30	Finished	CCB R171114C
87	N027405-001A,SAMF	13	1000	Unknown		12/08/2017 20:40	Finished	SAMP,0.2>10mL
88	N027405-001AMS,MS	14	1000	Unknown		12/08/2017 20:49	Finished	SAMP,1>10mL
89	N027405-003A,SAMF	15	1000	Unknown		12/08/2017 20:58	Finished	SAMP,0.5>10mL
90	N027405-003AMS,MS	16	1000	Unknown		12/08/2017 21:08	Finished	SAMP,5>10mL
91	N027405-004A,SAMF	17	1000	Unknown		12/08/2017 21:17	Finished	SAMP,10mL
92	N027405-004AMS,MS	18	1000	Unknown		12/08/2017 21:27	Finished	SAMP,2>10mL
93	N027405-005A,SAMF	19	1000	Unknown		12/08/2017 21:36	Finished	MS (5ppb), IWST-171002B,2>1
94	N027405-005AMS,MS	20	1000	Unknown		12/08/2017 21:46	Finished	MSD (5ppb), IWST-171002B,2>
95	N027405-009A,SAMF	21	1000	Unknown		12/08/2017 21:55	Finished	SAMP,10mL
96	N027405-009AMS,MS	22	1000	Unknown		12/08/2017 22:05	Finished	MS (1ppb), IWST-171002B,10
97	CCV-8,CCV1,1,	23	1000	Unknown		12/08/2017 22:14	Finished	CCV @10ppb, IWST-171002A
98	CCB-8,CCB,1,	24	1000	Unknown		12/08/2017 22:24	Finished	CCB R171129A
99	N027405-010A,SAMF	25	1000	Unknown		12/08/2017 22:33	Finished	SAMP,10mL
100	N027405-010AMS,MS	26	1000	Unknown		12/08/2017 22:43	Finished	MS (1ppb), IWST-171002B,10
101	N027405-011A,SAMF	27	1000	Unknown		12/08/2017 22:52	Finished	SAMP,10mL
102	N027405-011AMS,MS	28	1000	Unknown		12/08/2017 23:01	Finished	MS (1ppb), IWST-171002B,10
103	N027405-011A,SAMF	29	1000	Unknown		12/08/2017 23:11	Finished	SAMP,10mL
104	N027405-011AMS,MS	30	1000	Unknown		12/08/2017 23:20	Finished	MS (1ppb), IWST-171002B,10
105	N027405-014A,SAMF	31	1000	Unknown		12/08/2017 23:30	Finished	SAMP,10mL
106	N027405-014AMS,MS	32	1000	Unknown		12/08/2017 23:39	Finished	MS (1ppb), IWST-171002B,10
107	N027405-015A,SAMF	33	1000	Unknown		12/08/2017 23:49	Finished	SAMP,10mL
108	N027405-015AMS,MS	34	1000	Unknown		12/08/2017 23:58	Finished	MS (1ppb), IWST-171002B,10
109	CCV-9,CCV,1,	35	1000	Unknown		12/09/2017 00:08	Finished	CCV @5ppb, IWST-171002A
110	CCB-9,CCB,1,	36	1000	Unknown		12/09/2017 00:17	Finished	CCB R171114C
111	N027405-006A,SAMF	37	1000	Unknown		12/09/2017 00:27	Finished	SAMP,10mL
112	N027405-006AMS,MS	38	1000	Unknown		12/09/2017 00:36	Finished	MS (1ppb), IWST-171002B,10
113	N027405-007A,SAMF	39	1000	Unknown		12/09/2017 00:46	Finished	MS (1ppb), IWST-171002B,10
114	N027405-007AMS,MS	40	1000	Unknown		12/09/2017 00:55	Finished	MS (1ppb), IWST-171002B,10
115	N027405-008A,SAMF	41	1000	Unknown		12/09/2017 01:04	Finished	MS (1ppb), IWST-171002B,10
116	N027405-008AMS,MS	42	1000	Unknown		12/09/2017 01:14	Finished	MS (1ppb), IWST-171002B,10
117	CCV-10,CCV1,1,	43	1000	Unknown		12/09/2017 01:23	Finished	CCV @10ppb, IWST-171002A
118	CCB-10,CCB,1,	44	1000	Unknown		12/09/2017 01:33	Finished	CCB R171129A
119	SHUTDOWN	45	1000	Unknown		12/09/2017 01:42	Finished	
120	Eluent: R171208A	46	1000	Unknown		n.a.	Finished	Eluent
121	PCR: R171206A	47	1000	Unknown		n.a.	Finished	Post-Column Reagent

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Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 8:57 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 9:08 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/11/17 9:18 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/11/17 9:27 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/11/17 9:37 AM	Reported
15	MB-R120833	MBLK	1	Hexavalent Chromium	12/11/17 9:46 AM	Reported
16	LCS-R120833	LCS	1	Hexavalent Chromium	12/11/17 9:56 AM	Reported
17	N027405-006AMS	MS	5	Hexavalent Chromium	12/11/17 10:09 AM	Reported
18	N027405-006A	SAMP	5	Hexavalent Chromium	12/11/17 10:20 AM	Reported
19	N027405-007AMS	MS	5	Hexavalent Chromium	12/11/17 10:29 AM	Reported
20	N027405-007A	SAMP	5	Hexavalent Chromium	12/11/17 10:39 AM	Reported
21	N027405-008AMS	MS	5	Hexavalent Chromium	12/11/17 10:48 AM	Reported
22	N027405-008A	SAMP	5	Hexavalent Chromium	12/11/17 10:58 AM	Reported
23	N027430-001A	SAMP	1	Hexavalent Chromium	12/11/17 11:07 AM	Reported
24	N027430-001AMS	MS	1	Hexavalent Chromium	12/11/17 11:17 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/11/17 11:26 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/11/17 11:36 AM	Reported
27	N027430-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:45 AM	Reported
28	N027430-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:54 AM	Reported
29	N027430-003A	SAMP	1	Hexavalent Chromium	12/11/17 12:04 PM	Reported
30	N027430-003AMS	MS	1	Hexavalent Chromium	12/11/17 12:13 PM	Reported
31	N027430-004A	SAMP	1	Hexavalent Chromium	12/11/17 12:23 PM	Reported
32	N027430-004AMS	MS	1	Hexavalent Chromium	12/11/17 12:32 PM	Reported
33	N027430-005A	SAMP	1	Hexavalent Chromium	12/11/17 12:42 PM	Reported
34	N027430-005AMS	MS	1	Hexavalent Chromium	12/11/17 12:51 PM	Reported
35	N027430-006A	SAMP	1	Hexavalent Chromium	12/11/17 1:01 PM	Reported
36	N027430-006AMS	MS	1	Hexavalent Chromium	12/11/17 1:10 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/11/17 1:20 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/11/17 1:29 PM	Reported
39	N027430-007A	SAMP	1	Hexavalent Chromium	12/11/17 1:38 PM	Reported
40	N027430-007AMS	MS	1	Hexavalent Chromium	12/11/17 1:48 PM	Reported
41	N027430-008A	SAMP	1	Hexavalent Chromium	12/11/17 1:57 PM	Reported
42	N027430-008AMS	MS	1	Hexavalent Chromium	12/11/17 2:07 PM	Reported

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Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027430-009A	SAMP	1	Hexavalent Chromium	12/11/17 2:16 PM	Reported
44	N027430-009AMS	MS	1	Hexavalent Chromium	12/11/17 2:26 PM	Reported
45	N027430-010A	SAMP	1	Hexavalent Chromium	12/11/17 2:35 PM	Reported
46	N027430-010AMS	MS	1	Hexavalent Chromium	12/11/17 2:45 PM	Reported
47	N027430-020A	SAMP	20	Hexavalent Chromium	12/11/17 2:54 PM	Reported
48	N027430-020AMS	MS	20	Hexavalent Chromium	12/11/17 3:04 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/11/17 3:13 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/11/17 3:23 PM	Reported
51	N027430-012A	SAMP	1	Hexavalent Chromium	12/11/17 3:32 PM	Not Reported
52	N027430-012AMS	MS	1	Hexavalent Chromium	12/11/17 3:41 PM	Not Reported
53	N027430-019A	SAMP	1	Hexavalent Chromium	12/11/17 3:51 PM	Reported
54	N027430-019AMS	MS	1	Hexavalent Chromium	12/11/17 4:00 PM	Reported
55	N027430-011A	SAMP	1	Hexavalent Chromium	12/11/17 4:10 PM	Reported
56	N027430-011AMS	MS	1	Hexavalent Chromium	12/11/17 4:19 PM	Reported
57	N027430-013A	SAMP	5	Hexavalent Chromium	12/11/17 4:29 PM	Reported
58	N027430-013AMS	MS	5	Hexavalent Chromium	12/11/17 4:38 PM	Reported
59	N027430-014A	SAMP	5	Hexavalent Chromium	12/11/17 4:48 PM	Reported
60	N027430-014AMS	MS	5	Hexavalent Chromium	12/11/17 4:57 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/11/17 5:07 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/11/17 5:16 PM	Reported
63	N027430-015A	SAMP	5	Hexavalent Chromium	12/11/17 5:26 PM	Reported
64	N027430-015AMS	MS	5	Hexavalent Chromium	12/11/17 5:35 PM	Reported
65	N027405-006ADUP	DUP	5	Hexavalent Chromium	12/11/17 5:44 PM	Reported
66	N027430-020AMSD	MSD	20	Hexavalent Chromium	12/11/17 5:54 PM	Reported
67	N027430-002A	SAMP	1	Hexavalent Chromium	12/11/17 6:05 PM	Not Reported
68	N027430-002AMS	MS	1	Hexavalent Chromium	12/11/17 6:16 PM	Not Reported
69	N027430-013A	SAMP	1	Hexavalent Chromium	12/11/17 6:25 PM	Not Reported
70	N027430-013AMS	MS	1	Hexavalent Chromium	12/11/17 6:35 PM	Not Reported
71	N027430-014A	SAMP	1	Hexavalent Chromium	12/11/17 6:44 PM	Not Reported
72	N027430-014AMS	MS	1	Hexavalent Chromium	12/11/17 6:54 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	12/11/17 7:03 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	12/11/17 7:13 PM	Reported
75	N027430-015A	SAMP	1	Hexavalent Chromium	12/11/17 7:22 PM	Not Reported
76	N027430-015AMS	MS	1	Hexavalent Chromium	12/11/17 7:32 PM	Not Reported
77	N027430-012A	SAMP	5	Hexavalent Chromium	12/11/17 7:41 PM	Reported
78	N027430-012AMS	MS	5	Hexavalent Chromium	12/11/17 7:50 PM	Reported
79	LCS-R120834	LCS	1	Hexavalent Chromium	12/11/17 8:00 PM	Reported
80	MB-R120834	MBLK	1	Hexavalent Chromium	12/11/17 8:09 PM	Reported
81	N027431-006A	SAMP	1000	Hexavalent Chromium	12/11/17 8:19 PM	Reported
82	N027431-006AMS	MS	1000	Hexavalent Chromium	12/11/17 8:28 PM	Reported
83	N027431-006AMSD	MSD	1000	Hexavalent Chromium	12/11/17 8:38 PM	Reported
84	N027428-002A	SAMP	100	Hexavalent Chromium	12/11/17 8:47 PM	Reported

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Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	12/11/17 8:57 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	12/11/17 9:06 PM	Reported
87	N027428-002ADUP	DUP	100	Hexavalent Chromium	12/11/17 9:16 PM	Reported
88	N027428-002AMS	MS	100	Hexavalent Chromium	12/11/17 9:25 PM	Reported
89	N027428-001A	SAMP	1	Hexavalent Chromium	12/11/17 9:35 PM	Reported
90	N027428-001AMS	MS	1	Hexavalent Chromium	12/11/17 9:44 PM	Reported
91	N027430-016A	SAMP	5	Hexavalent Chromium	12/11/17 9:53 PM	Reported
92	N027430-016AMS	MS	5	Hexavalent Chromium	12/11/17 10:03 PM	Reported
93	N027430-017A	SAMP	5	Hexavalent Chromium	12/11/17 10:12 PM	Reported
94	N027430-017AMS	MS	5	Hexavalent Chromium	12/11/17 10:22 PM	Reported
95	N027430-018A	SAMP	5	Hexavalent Chromium	12/11/17 10:31 PM	Reported
96	N027430-018AMS	MS	5	Hexavalent Chromium	12/11/17 10:41 PM	Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	12/11/17 10:50 PM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	12/11/17 11:00 PM	Reported
99	N027431-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:09 PM	Reported
100	N027431-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:19 PM	Reported
101	N027431-003A	SAMP	5	Hexavalent Chromium	12/11/17 11:28 PM	Reported
102	N027431-003AMS	MS	5	Hexavalent Chromium	12/11/17 11:38 PM	Reported
103	N027431-004A	SAMP	5	Hexavalent Chromium	12/11/17 11:47 PM	Reported
104	N027431-004AMS	MS	5	Hexavalent Chromium	12/11/17 11:56 PM	Reported
105	N027431-001A	SAMP	10	Hexavalent Chromium	12/12/17 12:06 AM	Not Reported
106	N027431-001AMS	MS	10	Hexavalent Chromium	12/12/17 12:15 AM	Not Reported
107	N027431-005A	SAMP	200	Hexavalent Chromium	12/12/17 12:25 AM	Reported
108	N027431-005AMS	MS	200	Hexavalent Chromium	12/12/17 12:34 AM	Reported
109	CCV-9	CCV	1	Hexavalent Chromium	12/12/17 12:44 AM	Reported
110	CCB-9	CCB	1	Hexavalent Chromium	12/12/17 12:53 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171211A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**12/Dec/17 01:24:03**
No. of Injections:	**113**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/11/2017 08:57	Finished	BLANK
11	BLANK	2	1000	Unknown		12/11/2017 09:08	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/11/2017 09:18	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/11/2017 09:27	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/11/2017 09:37	Finished	CCB R171129A
15	MB-1,MBLK,1	6	1000	Unknown		12/11/2017 09:46	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/11/2017 09:56	Finished	LCS, IWST-171002B
17	N027405-006AMS,MS	1	1000	Unknown		12/11/2017 10:09	Finished	MS (1ppb), IWST-171002B,2>1
18	N027405-006A,SAMP	2	1000	Unknown		12/11/2017 10:20	Finished	SAMP,2>10mL
19	N027405-007AMS,MS	3	1000	Unknown		12/11/2017 10:29	Finished	MS (1ppb), IWST-171002B,2>1
20	N027405-007A,SAMP	4	1000	Unknown		12/11/2017 10:39	Finished	SAMP,2>10mL
21	N027405-008AMS,MS	5	1000	Unknown		12/11/2017 10:48	Finished	SAMP,2>10mL
22	N027405-008A,SAMP	6	1000	Unknown		12/11/2017 10:58	Finished	MS (1ppb), IWST-171002B,2>1
23	N027430-001A,SAMP	7	1000	Unknown		12/11/2017 11:07	Finished	SAMP,10mL
24	N027430-001AMS,MS	8	1000	Unknown		12/11/2017 11:17	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	9	1000	Unknown		12/11/2017 11:26	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	10	1000	Unknown		12/11/2017 11:36	Finished	CCB R171129A
27	N027430-002A,SAMP	11	1000	Unknown		12/11/2017 11:45	Finished	SAMP,2>10mL
28	N027430-002AMS,MS	12	1000	Unknown		12/11/2017 11:54	Finished	MS (1ppb), IWST-171002B,2>1
29	N027430-003A,SAMP	13	1000	Unknown		12/11/2017 12:04	Finished	SAMP,10mL
30	N027430-003AMS,MS	14	1000	Unknown		12/11/2017 12:13	Finished	MS (1ppb), IWST-171002B,10
31	N027430-004A,SAMP	15	1000	Unknown		12/11/2017 12:23	Finished	SAMP,10mL
32	N027430-004AMS,MS	16	1000	Unknown		12/11/2017 12:32	Finished	MS (1ppb), IWST-171002B,10
33	N027430-005A,SAMP	17	1000	Unknown		12/11/2017 12:42	Finished	SAMP,10mL
34	N027430-005AMS,MS	18	1000	Unknown		12/11/2017 12:51	Finished	MS (1ppb), IWST-171002B,10
35	N027430-006A,SAMP	19	1000	Unknown		12/11/2017 13:01	Finished	SAMP,10mL
36	N027430-006AMS,MS	20	1000	Unknown		12/11/2017 13:10	Finished	MS (1ppb), IWST-171002B,10
37	CCV-3,CCV,1,	21	1000	Unknown		12/11/2017 13:20	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	22	1000	Unknown		12/11/2017 13:29	Finished	CCB R171129A
39	N027430-007A,SAMP	23	1000	Unknown		12/11/2017 13:38	Finished	SAMP,10mL
40	N027430-007AMS,MS	24	1000	Unknown		12/11/2017 13:48	Finished	MS (1ppb), IWST-171002B,10
41	N027430-008A,SAMP	25	1000	Unknown		12/11/2017 13:57	Finished	SAMP,10mL
42	N027430-008AMS,MS	26	1000	Unknown		12/11/2017 14:07	Finished	MS (1ppb), IWST-171002B,10
43	N027430-009A,SAMP	27	1000	Unknown		12/11/2017 14:16	Finished	SAMP,10mL
44	N027430-009AMS,MS	28	1000	Unknown		12/11/2017 14:26	Finished	MS (1ppb), IWST-171002B,10
45	N027430-010A,SAMP	29	1000	Unknown		12/11/2017 14:35	Finished	SAMP,10mL
46	N027430-010AMS,MS	30	1000	Unknown		12/11/2017 14:45	Finished	MS (1ppb), IWST-171002B,10
47	N027430-020A,SAMP	31	1000	Unknown		12/11/2017 14:54	Finished	SAMP,0.5>10mL
48	N027430-020AMS,MS	32	1000	Unknown		12/11/2017 15:04	Finished	MS (5ppb), IWST-171002B,0.5
49	CCV-4,CCV1,1,	33	1000	Unknown		12/11/2017 15:13	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	34	1000	Unknown		12/11/2017 15:23	Finished	CCB R171129A
51	N027430-012A,SAMP	35	1000	Unknown		12/11/2017 15:32	Finished	SAMP,10mL
52	N027430-012AMS,MS	36	1000	Unknown		12/11/2017 15:41	Finished	MS (1ppb), IWST-171002B,10
53	N027430-019A,SAMP	37	1000	Unknown		12/11/2017 15:51	Finished	SAMP,10mL
54	N027430-019AMS,MS	38	1000	Unknown		12/11/2017 16:00	Finished	MS (1ppb), IWST-171002B,10
55	N027430-011A,SAMP	39	1000	Unknown		12/11/2017 16:10	Finished	SAMP,10mL
56	N027430-011AMS,MS	40	1000	Unknown		12/11/2017 16:19	Finished	MS (1ppb), IWST-171002B,10
57	N027430-013A,SAMP	41	1000	Unknown		12/11/2017 16:29	Finished	SAMP,2>10mL
58	N027430-013AMS,MS	42	1000	Unknown		12/11/2017 16:38	Finished	MS (1ppb), IWST-171002B,2>1
59	N027430-014A,SAMP	43	1000	Unknown		12/11/2017 16:48	Finished	SAMP,2>10mL
60	N027430-014AMS,MS	44	1000	Unknown		12/11/2017 16:57	Finished	MS (1ppb), IWST-171002B,2>1

61	CCV-5,CCV,1,	45	1000	Unknown		12/11/2017 17:07	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	46	1000	Unknown		12/11/2017 17:16	Finished	CCB R171129A
63	N027430-015A,SAMP	47	1000	Unknown		12/11/2017 17:26	Finished	SAMP,2>10mL
64	N027430-015AMS,MS	48	1000	Unknown		12/11/2017 17:35	Finished	MS (1ppb), IWST-171002B,2>1
65	N027405-006ADUP,D	49	1000	Unknown		12/11/2017 17:44	Finished	DUP,2>10mL
66	N027430-020AMSD,M	50	1000	Unknown		12/11/2017 17:54	Finished	MSD (5ppb), IWST-171002B,0.
67	N027430-002A,SAMP	1	1000	Unknown		12/11/2017 18:05	Finished	MSD (5ppb), IWST-171002B,0.
68	N027430-002AMS,MS	2	1000	Unknown		12/11/2017 18:16	Finished	DUP,2>10mL
69	N027430-013A,SAMP	3	1000	Unknown		12/11/2017 18:25	Finished	SAMP,2>10mL
70	N027430-013AMS,MS	4	1000	Unknown		12/11/2017 18:35	Finished	MS (1ppb), IWST-171002B,2>1
71	N027430-014A,SAMP	5	1000	Unknown		12/11/2017 18:44	Finished	SAMP,10mL
72	N027430-014AMS,MS	6	1000	Unknown		12/11/2017 18:54	Finished	MS (1ppb), IWST-171002B,10
73	CCV-6,CCV1,1,	7	1000	Unknown		12/11/2017 19:03	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	8	1000	Unknown		12/11/2017 19:13	Finished	CCB R171129A
75	N027430-015A,SAMP	9	1000	Unknown		12/11/2017 19:22	Finished	LCS, IWST-171002B
76	N027430-015AMS,MS	10	1000	Unknown		12/11/2017 19:32	Finished	MB R171129A
77	N027430-012A,SAMP	11	1000	Unknown		12/11/2017 19:41	Finished	SAMP,2>10mL
78	N027430-012AMS,MS	12	1000	Unknown		12/11/2017 19:50	Finished	MS (1ppb), IWST-171002B,2>1
79	LCS-2,LCS,1	13	1000	Unknown		12/11/2017 20:00	Finished	LCS, IWST-171002B
80	MB-2,MBLK,1	14	1000	Unknown		12/11/2017 20:09	Finished	MB R171129A
81	N027431-006A,SAMP	15	1000	Unknown		12/11/2017 20:19	Finished	DUP,0.1>10mL
82	N027431-006AMS,MS	16	1000	Unknown		12/11/2017 20:28	Finished	SAMP,10mL
83	N027431-006AMSD,M	17	1000	Unknown		12/11/2017 20:38	Finished	SAMP,5>10mL
84	N027428-002A,SAMP	18	1000	Unknown		12/11/2017 20:47	Finished	SAMP,0.2>10mL
85	CCV-7,CCV,1,	19	1000	Unknown		12/11/2017 20:57	Finished	CCV @5ppb, IWST-171002A
86	CCB-7,CCB,1,	20	1000	Unknown		12/11/2017 21:06	Finished	CCB R171114C
87	N027428-002ADUP,D	21	1000	Unknown		12/11/2017 21:16	Finished	SAMP,0.2>10mL
88	N027428-002AMS,MS	22	1000	Unknown		12/11/2017 21:25	Finished	SAMP,1>10mL
89	N027428-001A,SAMP	23	1000	Unknown		12/11/2017 21:35	Finished	SAMP,0.5>10mL
90	N027428-001AMS,MS	24	1000	Unknown		12/11/2017 21:44	Finished	SAMP,5>10mL
91	N027430-016A,SAMP	25	1000	Unknown		12/11/2017 21:53	Finished	SAMP,10mL
92	N027430-016AMS,MS	26	1000	Unknown		12/11/2017 22:03	Finished	SAMP,2>10mL
93	N027430-017A,SAMP	27	1000	Unknown		12/11/2017 22:12	Finished	MS (5ppb), IWST-171002B,2>1
94	N027430-017AMS,MS	28	1000	Unknown		12/11/2017 22:22	Finished	MSD (5ppb), IWST-171002B,2>
95	N027430-018A,SAMP	29	1000	Unknown		12/11/2017 22:31	Finished	SAMP,10mL
96	N027430-018AMS,MS	30	1000	Unknown		12/11/2017 22:41	Finished	MS (1ppb), IWST-171002B,10
97	CCV-8,CCV1,1,	31	1000	Unknown		12/11/2017 22:50	Finished	CCV @10ppb, IWST-171002A
98	CCB-8,CCB,1,	32	1000	Unknown		12/11/2017 23:00	Finished	CCB R171129A
99	N027431-002A,SAMP	33	1000	Unknown		12/11/2017 23:09	Finished	SAMP,10mL
100	N027431-002AMS,MS	34	1000	Unknown		12/11/2017 23:19	Finished	MS (1ppb), IWST-171002B,10
101	N027431-003A,SAMP	35	1000	Unknown		12/11/2017 23:28	Finished	SAMP,10mL
102	N027431-003AMS,MS	36	1000	Unknown		12/11/2017 23:38	Finished	MS (1ppb), IWST-171002B,10
103	N027431-004A,SAMP	37	1000	Unknown		12/11/2017 23:47	Finished	SAMP,10mL
104	N027431-004AMS,MS	38	1000	Unknown		12/11/2017 23:56	Finished	MS (1ppb), IWST-171002B,10
105	N027431-001A,SAMP	39	1000	Unknown		12/12/2017 00:06	Finished	SAMP,10mL
106	N027431-001AMS,MS	40	1000	Unknown		12/12/2017 00:15	Finished	MS (1ppb), IWST-171002B,10
107	N027431-005A,SAMP	41	1000	Unknown		12/12/2017 00:25	Finished	SAMP,10mL
108	N027431-005AMS,MS	42	1000	Unknown		12/12/2017 00:34	Finished	MS (1ppb), IWST-171002B,10
109	CCV-9,CCV,1,	43	1000	Unknown		12/12/2017 00:44	Finished	CCV @5ppb, IWST-171002A
110	CCB-9,CCB,1,	44	1000	Unknown		12/12/2017 00:53	Finished	CCB R171114C
111	SHUTDOWN	45	1000	Unknown		12/12/2017 01:03	Finished	
112	Eluent: R171211B	46	1000	Unknown		n.a.	Finished	Eluent
113	PCR: R171211C	47	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 12/7/17
Time Prepared: 2:50
Prepared By: ME

Reagent ID:
Sulfuric Acid: 9665
Diphenylcarbazide: CINV - 171164
NH4OH + NH4SO4 eluent: 1471208A
NH4OH + NH4SO4 buffer: 1471129A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	1027404 - 4A	9.55	—	250 mL	250 mL		1471129A
2)	5A	9.51	—				1/2
3)	5A	9.52	—				2/2
4)	6A	9.22	9.32			2 drops	
5)	7A	9.47	—				
6)	8A	9.51	—				
7)	9A	9.12	9.30			5 drops	1/2
8)	9A	9.07	9.32			7 drops	2/2
9)	10A	9.37	—				
10)	11A	9.35	—				
11)	12A	9.52	—				
12)	1027405 - 1A	9.26	9.35			1 drop	
13)	2A	9.05	9.31			3 drops	
14)	3A	9.11	9.32			3 drops	
15)	4A	9.39	—				
	5A	9.55	—				

Sample Preparation

Date Prepared: 12/7/17
Time Prepared: 2:50
Prepared By: ME

Reagent ID:
Sulfuric Acid: 9665
Diphenylcarbazide: CINV - 171164
NH4OH + NH4SO4 eluent: 1471208A
NH4OH + NH4SO4 buffer: 1471129A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	1027405 - 6A	9.54	—	250 mL	250 mL		1471129A
2)	7A	9.50	—				
3)	8A	9.52	—				
4)	9A	9.30	—				
5)	10A	9.58	—				
6)	11A	9.43	—				
7)	12A	9.42	—				
8)	13A	9.40	—				
9)	14A	9.53	—				
10)	15A	9.54	—				
11)							
12)							
13)							
14)							
15)							

Logbook No. 13

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INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 11/28/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0529	0.2484	1.2584	2.5328	3.7596	5.0155	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-171002A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 12/21/2017

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ICV**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2857601**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.092	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2857602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.185	0.20	0.2000	0	92.6	80	120				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857604**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.186	0.20	0.2000	0	93.1	80	120				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857605**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.022	0.20	10.00	0	100	95	105				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **CCV**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.065	0.20	5.000	0	101	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-8**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.027	0.20	10.00	0	100	95	105				

Sample ID **CCV-9**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **CCV**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2017**	SeqNo: **2857639**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.029	0.20	5.000	0	101	95	105				

Sample ID **CCV-10**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2017**	SeqNo: **2857641**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.940	0.20	10.00	0	99.4	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ICV**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.092	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.185	0.20	0.2000	0	92.6	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCV**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.077	0.20	5.000	0	102	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866004**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.215	0.20	0.2000	0	108	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866016**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.152	0.20	10.00	0	102	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCV**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.030	0.20	5.000	0	101	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866040**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.193	0.20	10.00	0	102	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCV**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.045	0.20	5.000	0	101	95	105				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866056**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.294	0.20	10.00	0	103	95	105				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCV**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866060**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.109	0.20	5.000	0	102	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ICB**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2857603**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **CCB**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **CCB**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857618**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **CCB**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857630**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-9**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **CCB**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2017**	SeqNo: **2857640**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-10**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **CCB**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2017**	SeqNo: **2857642**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ICB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866005**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866041**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866051**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866061**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/8/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.140	
CCV-7	4.140	
CCV-8	4.140	
CCV-9	4.140	
CCV-10	4.140	
Average	4.140	
Actual RT Window	4.060 - 4.220	
Applied RT Window	3.940 - 4.340	
MB-R120682	N.A.	N.A.
LCS-R120682	4.140	PASS
N027404-001A	N.A.	N.A.
N027404-001AMS	4.140	PASS
N027404-002A	N.A.	N.A.
N027404-002AMS	4.123	PASS
N027404-003A	4.106	PASS
N027404-003AMS	4.106	PASS
N027404-004A	N.A.	N.A.
N027404-004AMS	4.140	PASS
N027404-005A	3.848	FAIL
N027404-005AMS	3.823	FAIL
N027404-006A	N.A.	N.A.
N027404-006AMS	4.090	PASS
N027404-007A	4.140	PASS
N027404-007AMS	4.131	PASS
N027404-008A	N.A.	N.A.
N027404-008AMS	4.140	PASS
N027404-009A	4.106	PASS



12/21/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/8/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.140	
CCV-7	4.140	
CCV-8	4.140	
CCV-9	4.140	
CCV-10	4.140	
Average	4.140	
Actual RT Window	4.060 - 4.220	
Applied RT Window	3.940 - 4.340	
N027404-009AMS	4.115	PASS
N027404-010A	N.A.	N.A.
N027404-010AMS	4.131	PASS
N027404-011A	N.A.	N.A.
N027404-011AMS	4.131	PASS
N027404-012A	N.A.	N.A.
N027404-012AMS	4.140	PASS
N027404-013A	N.A.	N.A.
N027404-013AMS	4.131	PASS
N027404-014A	N.A.	N.A.
N027404-014AMS	4.140	PASS
N027404-015A	N.A.	N.A.
N027404-015AMS	4.015	PASS
N027404-016A	N.A.	N.A.
N027404-016AMS	4.106	PASS
N027404-016A	N.A.	N.A.
N027404-016AMS	3.890	FAIL
N027404-018A	N.A.	N.A.
N027404-018AMS	4.131	PASS

RLB 12/21/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/8/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.140	
CCV-7	4.140	
CCV-8	4.140	
CCV-9	4.140	
CCV-10	4.140	
Average	4.140	
Actual RT Window	4.060 - 4.220	
Applied RT Window	3.940 - 4.340	
N027404-019A	N.A.	N.A.
N027404-019AMS	4.140	PASS
N027404-020A	N.A.	N.A.
N027404-020AMS	4.048	PASS
N027404-017A	4.140	PASS
N027404-017AMS	4.140	PASS
N027404-017AMSD	4.140	PASS
N027404-003ADUP	4.106	PASS
N027404-005A	4.098	PASS
N027404-005AMS	4.098	PASS
N027404-020A	N.A.	N.A.
N027404-020AMS	N.A.	N.A.
LCS-R120683	4.140	PASS
MB-R120683	N.A.	N.A.
N027405-012A	4.140	PASS
N027405-012AMS	4.140	PASS
N027405-012AMSD	4.140	PASS
N027405-013A	4.106	PASS
N027405-013AMS	4.106	PASS



12/21/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/8/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.140	
CCV-7	4.140	
CCV-8	4.140	
CCV-9	4.140	
CCV-10	4.140	
Average	4.140	
Actual RT Window	4.060 - 4.220	
Applied RT Window	3.940 - 4.340	
N027405-002A	4.123	PASS
N027405-002AMS	4.115	PASS
N027405-002ADUP	4.123	PASS
N027405-001A	N.A.	N.A.
N027405-001AMS	4.056	PASS
N027405-003A	4.123	PASS
N027405-003AMS	4.123	PASS
N027405-004A	N.A.	N.A.
N027405-004AMS	4.140	PASS
N027405-005A	N.A.	N.A.
N027405-005AMS	4.140	PASS
N027405-009A	4.140	PASS
N027405-009AMS	4.140	PASS
N027405-010A	N.A.	N.A.
N027405-010AMS	4.123	PASS
N027405-011A	N.A.	N.A.
N027405-011AMS	3.831	FAIL
N027405-011A	N.A.	N.A.
N027405-011AMS	4.106	PASS



12/21/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/8/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.140	
CCV-7	4.140	
CCV-8	4.140	
CCV-9	4.140	
CCV-10	4.140	
Average	4.140	
Actual RT Window	4.060 - 4.220	
Applied RT Window	3.940 - 4.340	
N027405-014A	N.A.	N.A.
N027405-014AMS	4.131	PASS
N027405-015A	N.A.	N.A.
N027405-015AMS	4.140	PASS
N027405-006A	3.723	FAIL
N027405-006AMS	3.723	FAIL
N027405-007A	N.A.	N.A.
N027405-007AMS	3.748	FAIL
N027405-008A	N.A.	N.A.
N027405-008AMS	3.731	FAIL



12/21/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.148	
CCV-7	4.148	
CCV-8	4.140	
CCV-9	4.148	
Average	4.143	
Actual RT Window	4.063 - 4.223	
Applied RT Window	3.943 - 4.343	
MB-R120833	N.A.	N.A.
LCS-R120833	4.140	PASS
N027405-006AMS	4.090	PASS
N027405-006A	4.090	PASS
N027405-007AMS	4.090	PASS
N027405-007A	N.A.	N.A.
N027405-008AMS	4.090	PASS
N027405-008A	4.090	PASS
N027430-001A	N.A.	N.A.
N027430-001AMS	4.140	PASS
N027430-002A	4.031	PASS
N027430-002AMS	4.056	PASS
N027430-003A	N.A.	N.A.
N027430-003AMS	4.140	PASS
N027430-004A	N.A.	N.A.
N027430-004AMS	4.131	PASS
N027430-005A	N.A.	N.A.
N027430-005AMS	4.148	PASS
N027430-006A	N.A.	N.A.
N027430-006AMS	4.131	PASS



12/21/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.148	
CCV-7	4.148	
CCV-8	4.140	
CCV-9	4.148	
Average	4.143	
Actual RT Window	4.063 - 4.223	
Applied RT Window	3.943 - 4.343	
N027430-007A	N.A.	N.A.
N027430-007AMS	4.140	PASS
N027430-008A	N.A.	N.A.
N027430-008AMS	4.040	PASS
N027430-009A	N.A.	N.A.
N027430-009AMS	4.140	PASS
N027430-010A	N.A.	N.A.
N027430-010AMS	4.140	PASS
N027430-020A	4.140	PASS
N027430-020AMS	4.140	PASS
N027430-012A	N.A.	N.A.
N027430-012AMS	3.848	FAIL
N027430-019A	N.A.	N.A.
N027430-019AMS	4.140	PASS
N027430-011A	N.A.	N.A.
N027430-011AMS	4.140	PASS
N027430-013A	4.115	PASS
N027430-013AMS	4.115	PASS
N027430-014A	4.098	PASS
N027430-014AMS	4.098	PASS



12/21/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.148	
CCV-7	4.148	
CCV-8	4.140	
CCV-9	4.148	
Average	4.143	
Actual RT Window	4.063 - 4.223	
Applied RT Window	3.943 - 4.343	
N027430-015A	4.081	PASS
N027430-015AMS	4.081	PASS
N027405-006ADUP	4.090	PASS
N027430-020AMSD	4.140	PASS
N027430-002A	N.A.	N.A.
N027430-002AMS	N.A.	N.A.
N027430-013A	3.956	PASS
N027430-013AMS	3.965	PASS
N027430-014A	3.723	FAIL
N027430-014AMS	3.723	FAIL
N027430-015A	N.A.	N.A.
N027430-015AMS	N.A.	N.A.
N027430-012A	N.A.	N.A.
N027430-012AMS	4.106	PASS
LCS-R120834	4.148	PASS
MB-R120834	N.A.	N.A.
N027431-006A	4.140	PASS
N027431-006AMS	4.140	PASS
N027431-006AMSD	4.140	PASS
N027428-002A	4.140	PASS



12/21/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.148	
CCV-7	4.148	
CCV-8	4.140	
CCV-9	4.148	
Average	4.143	
Actual RT Window	4.063 - 4.223	
Applied RT Window	3.943 - 4.343	
N027428-002ADUP	4.140	PASS
N027428-002AMS	4.140	PASS
N027428-001A	N.A.	N.A.
N027428-001AMS	4.131	PASS
N027430-016A	4.081	PASS
N027430-016AMS	4.081	PASS
N027430-017A	4.056	PASS
N027430-017AMS	4.073	PASS
N027430-018A	N.A.	N.A.
N027430-018AMS	3.998	PASS
N027431-002A	4.115	PASS
N027431-002AMS	4.115	PASS
N027431-003A	4.090	PASS
N027431-003AMS	4.081	PASS
N027431-004A	4.081	PASS
N027431-004AMS	4.090	PASS
N027431-001A	4.140	PASS
N027431-001AMS	4.140	PASS
N027431-005A	4.140	PASS
N027431-005AMS	4.140	PASS

RB 12/21/2017

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 Unit: ug/L
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

MDL/LOD & PQL Verification 2017

Method Name: **Hexavalent Chromium by IC**
Method Number: EPA Method 218.6
Analysis Date(s): 5/31/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: µg/L

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.103

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.194	**97**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 171128A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/28/17 10:57 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/28/17 11:08 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/28/17 11:17 AM	Reported
13	MB-R120468	MBLK	1	Hexavalent Chromium	11/28/17 11:27 AM	Reported
14	LCS-R120468	LCS	1	Hexavalent Chromium	11/28/17 11:36 AM	Reported
15	N027215-001A	SAMP	1	Hexavalent Chromium	11/28/17 11:47 AM	Reported
16	N027215-002A	SAMP	1	Hexavalent Chromium	11/28/17 11:59 AM	Reported
17	N027215-003A	SAMP	1	Hexavalent Chromium	11/28/17 12:08 PM	Reported
18	N027215-004A	SAMP	1	Hexavalent Chromium	11/28/17 12:18 PM	Reported
19	N027215-005A	SAMP	1	Hexavalent Chromium	11/28/17 12:27 PM	Reported
20	N027215-002ADUP	DUP	1	Hexavalent Chromium	11/28/17 12:37 PM	Reported
21	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 12:46 PM	Not Reported
22	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 12:56 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	11/28/17 1:05 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/28/17 1:14 PM	Reported
25	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:04 PM	Not Reported
26	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:16 PM	Not Reported
27	N027215-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:29 PM	Reported
28	N027215-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:41 PM	Reported
29	CCV-2	CCV	1	Hexavalent Chromium	11/28/17 2:50 PM	Reported
30	CCB-2	CCB	1	Hexavalent Chromium	11/28/17 3:00 PM	Reported

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Injection Log Summary

Sequence Details

Name:	**IC-07_171128A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**28/Nov/17 15:47:35**
No. of Injections:	**33**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		11/28/2017 10:57	Finished	ICV @5ppb, IWST-171002A
11	PQL@0.2ppb,CCV2,	12	1000	Unknown		11/28/2017 11:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		11/28/2017 11:17	Finished	ICB R171114C
13	MB-H2O,MBLK,1	14	1000	Unknown		11/28/2017 11:27	Finished	MB R171114C
14	LCS-H2O,LCS,1	15	1000	Unknown		11/28/2017 11:36	Finished	LCS, IWST-171002B
15	N027215-001A,SAMF	17	1000	Unknown		11/28/2017 11:47	Finished	SAMP,10mL
16	N027215-002A,SAMF	18	1000	Unknown		11/28/2017 11:59	Finished	SAMP,10mL
17	N027215-003A,SAMF	19	1000	Unknown		11/28/2017 12:08	Finished	SAMP,10mL
18	N027215-004A,SAMF	20	1000	Unknown		11/28/2017 12:18	Finished	SAMP,10mL
19	N027215-005A,SAMF	21	1000	Unknown		11/28/2017 12:27	Finished	SAMP,10mL
20	N027215-002ADUP,D	22	1000	Unknown		11/28/2017 12:37	Finished	DUP,10mL
21	N027157-001AMS,MS	23	1000	Unknown		11/28/2017 12:46	Finished	MS (5ppb), IWST-171002B,10
22	N027157-001AMSD,M	24	1000	Unknown		11/28/2017 12:56	Finished	MSD (5ppb), IWST-171002B,1
23	CCV-1,CCV1,1,	25	1000	Unknown		11/28/2017 13:05	Finished	CCV @10ppb, IWST-171002A
24	CCB-1,CCB,1,	26	1000	Unknown		11/28/2017 13:14	Finished	CCB R171031A
25	N027157-001AMS,MS	28	1000	Unknown		11/28/2017 14:04	Finished	MS (5ppb), IWST-171002B,10
26	N027157-001AMSD,M	29	1000	Unknown		11/28/2017 14:16	Finished	MSD (5ppb), IWST-171002B,1
27	N027215-001AMS,MS	31	1000	Unknown		11/28/2017 14:29	Finished	MS (5ppb), IWST-171002B,10
28	N027215-001AMSD,M	32	1000	Unknown		11/28/2017 14:41	Finished	MSD (5ppb), IWST-171002B,1
29	CCV-2,CCV,1,	33	1000	Unknown		11/28/2017 14:50	Finished	CCV @5ppb, IWST-171002A
30	CCB-2,CCB,1,	34	1000	Unknown		11/28/2017 15:00	Finished	CCB R171031A
31	SHUTDOWN	35	1000	Unknown		11/28/2017 15:09	Finished	
32	Eluent: R171128A	36	1000	Unknown		n.a.	Finished	Eluent
33	PCR: R171128B	37	1000	Unknown		n.a.	Finished	Post-Column Reagent

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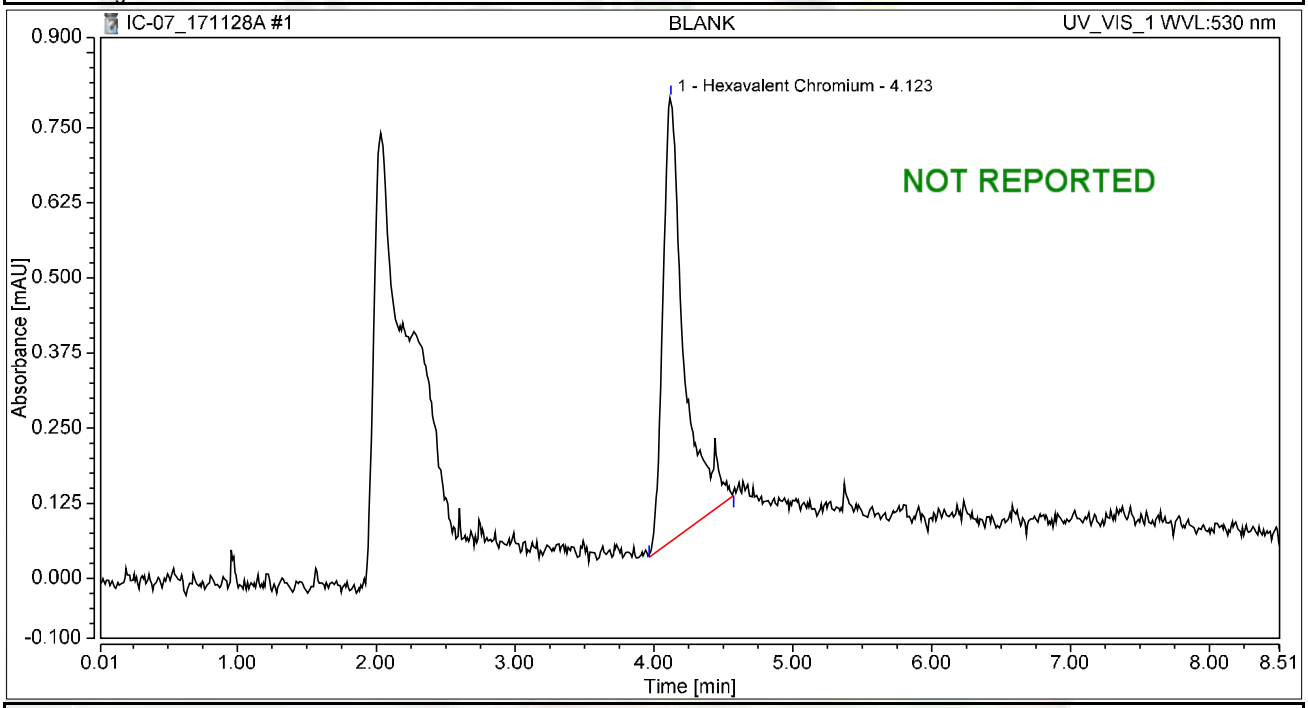
Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

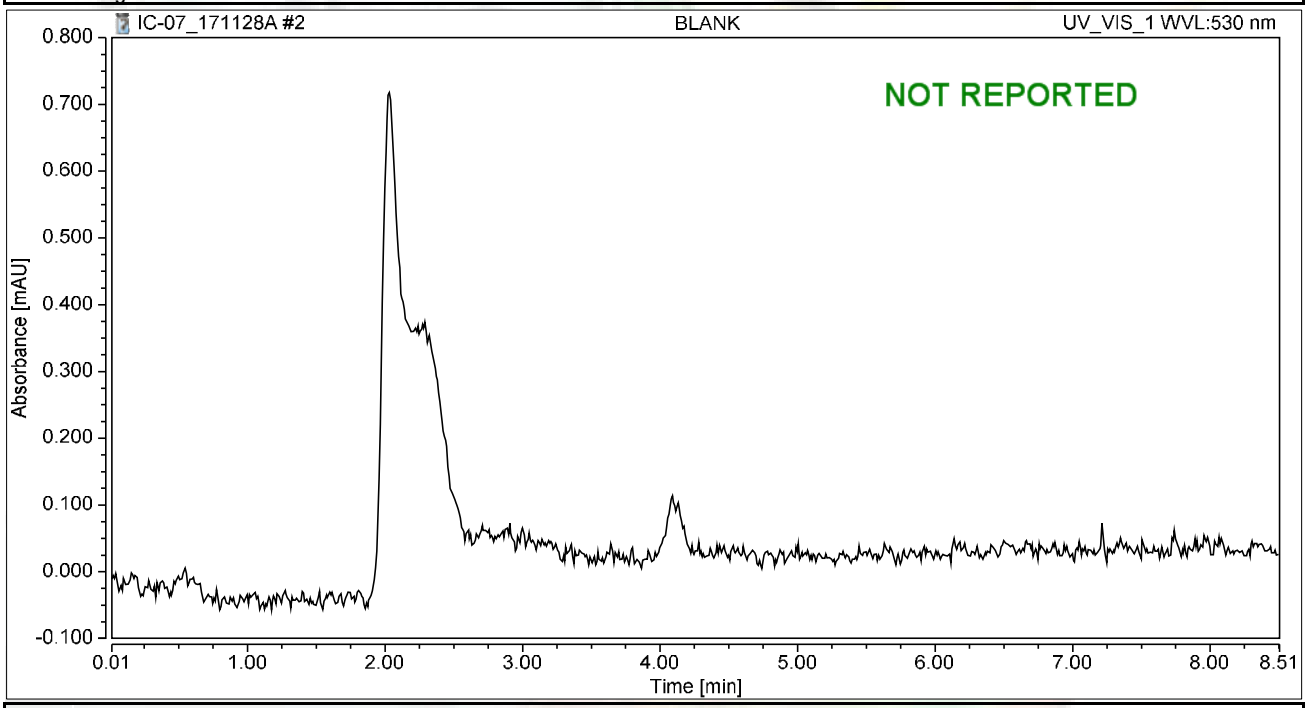
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.130	0.738	100.00	100.00	0.5193
Total:			**0.130**	**0.738**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

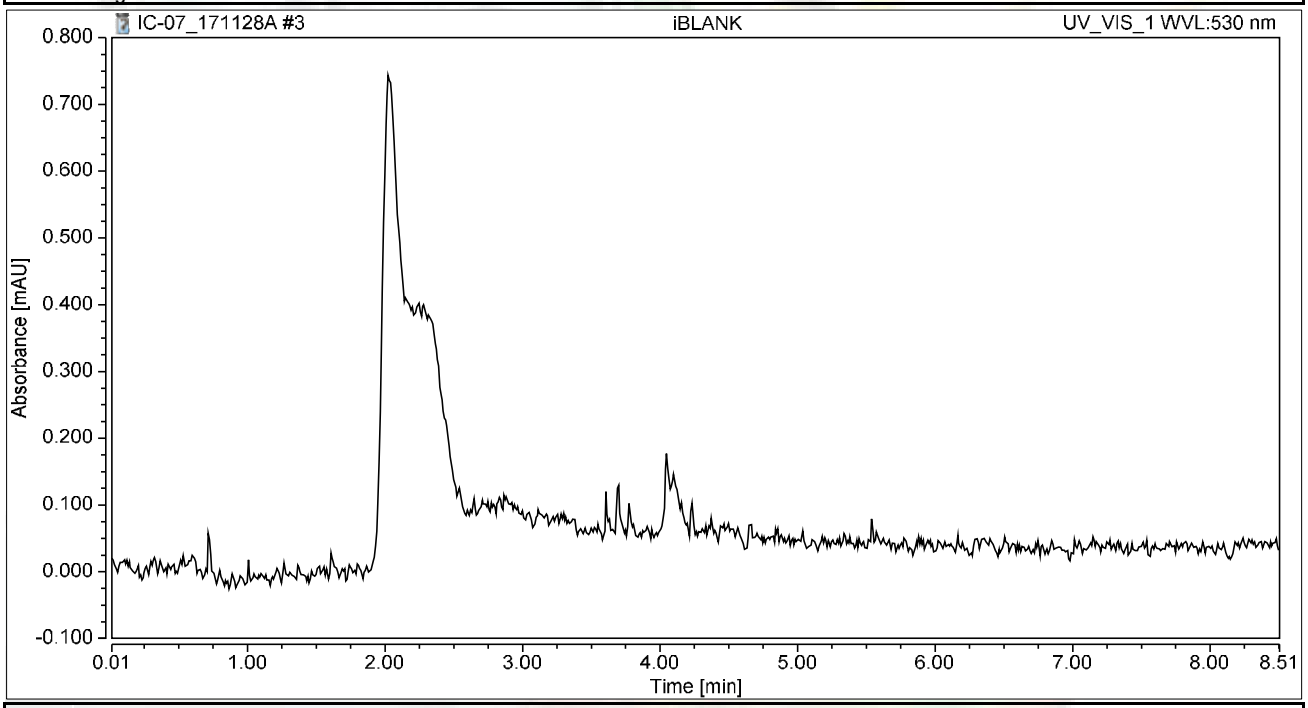
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

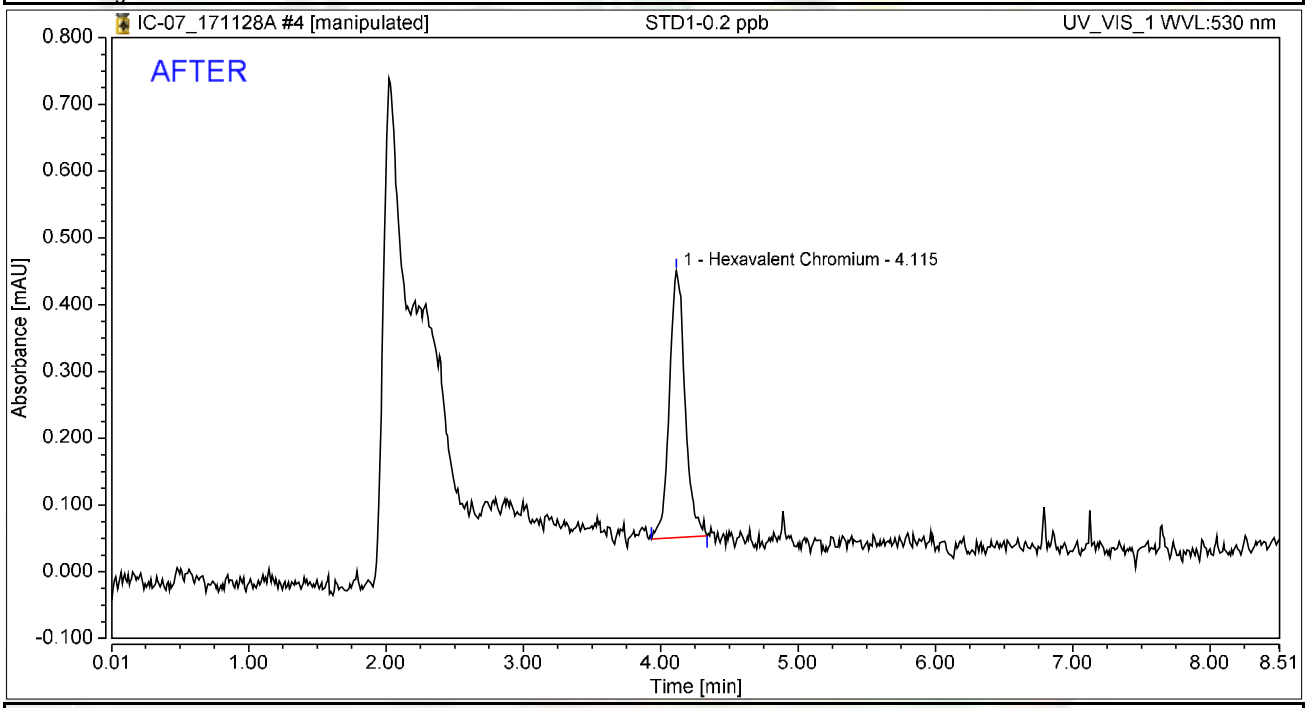
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.053	0.400	100.00	100.00	0.2108
Total:			**0.053**	**0.400**	**100.00**	**100.00**	

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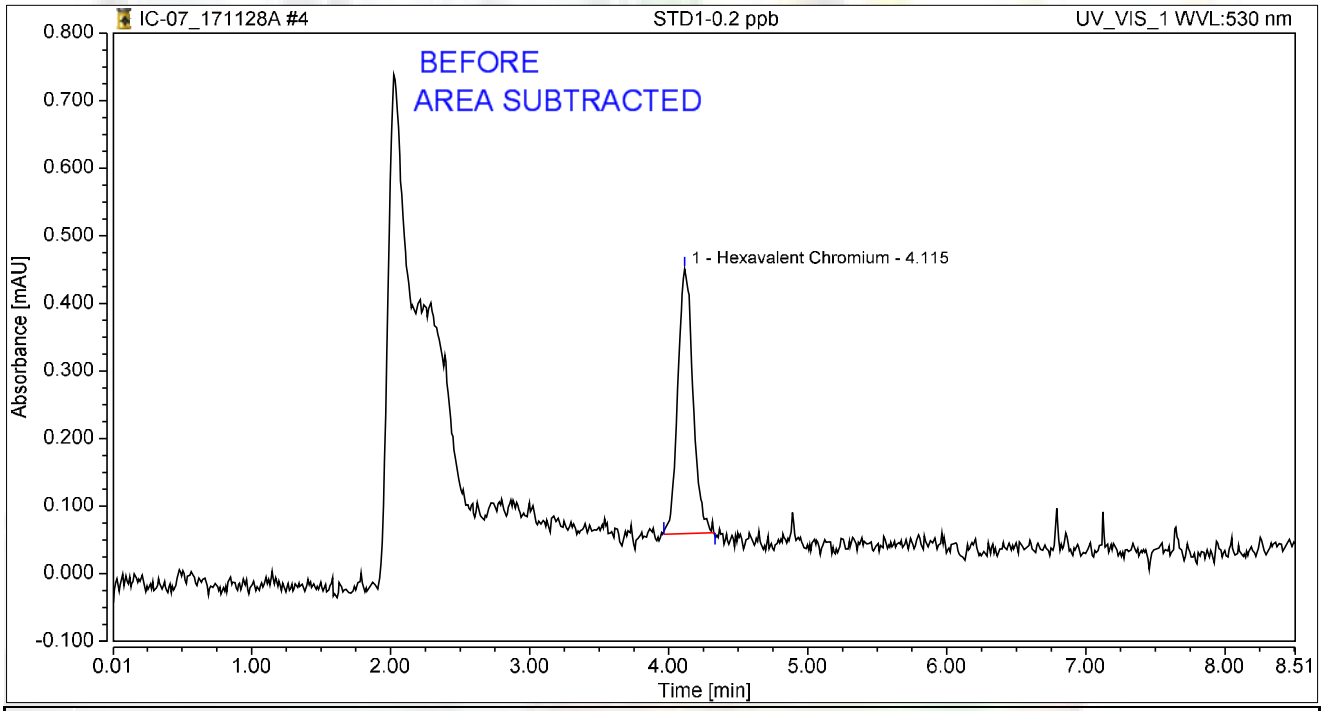
Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.050	0.391	100.00	100.00	0.1957
Total:			**0.050**	**0.391**	**100.00**	**100.00**	

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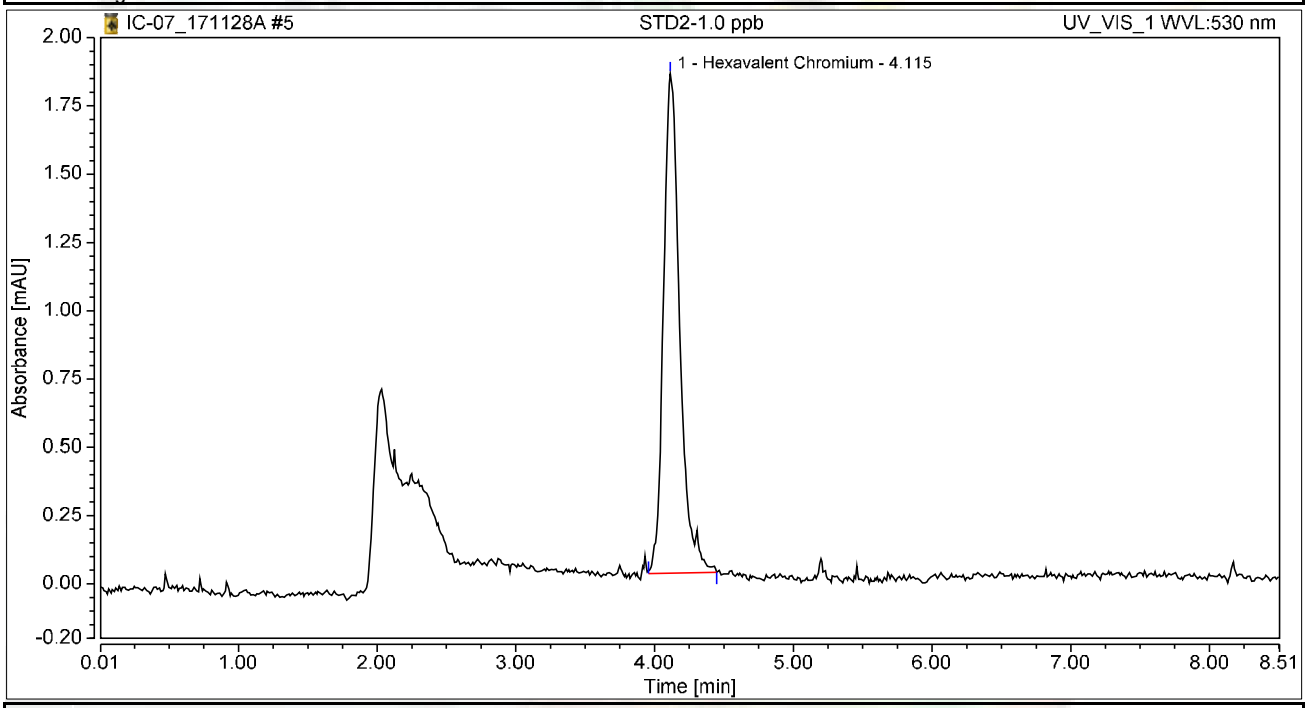
Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

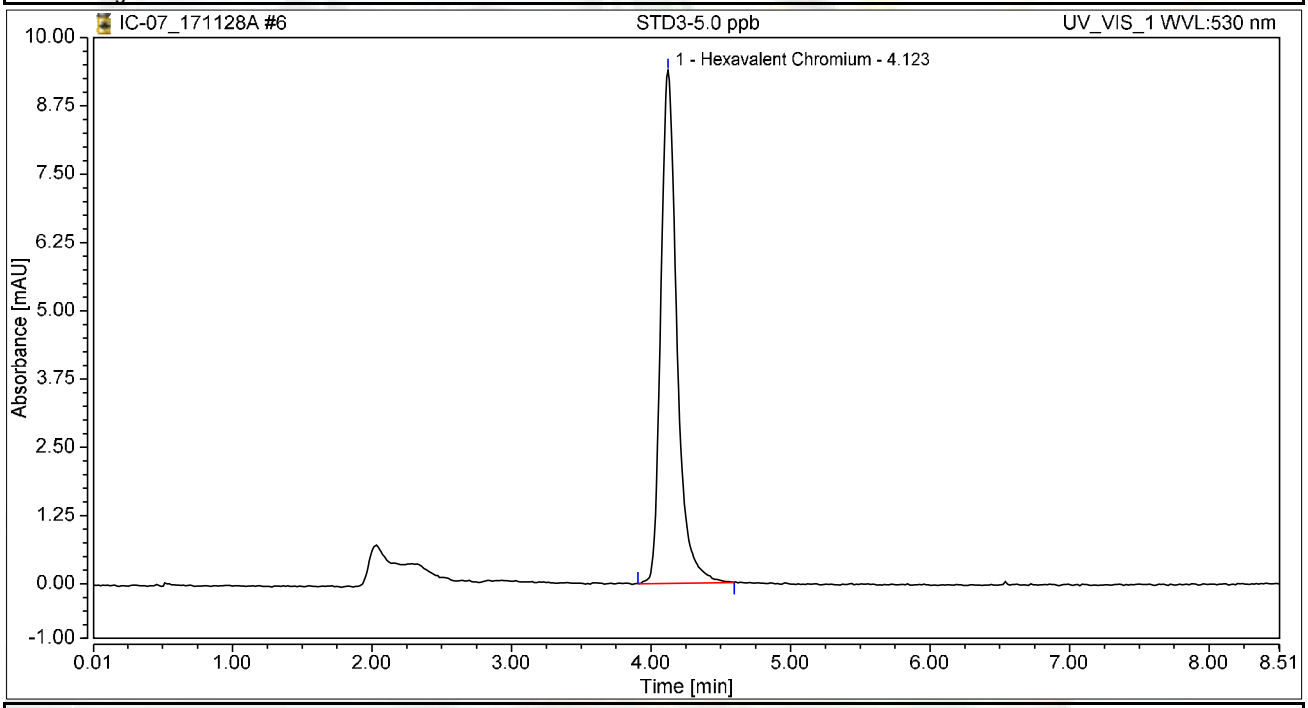
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.248	1.827	100.00	100.00	0.9892
Total:			**0.248**	**1.827**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

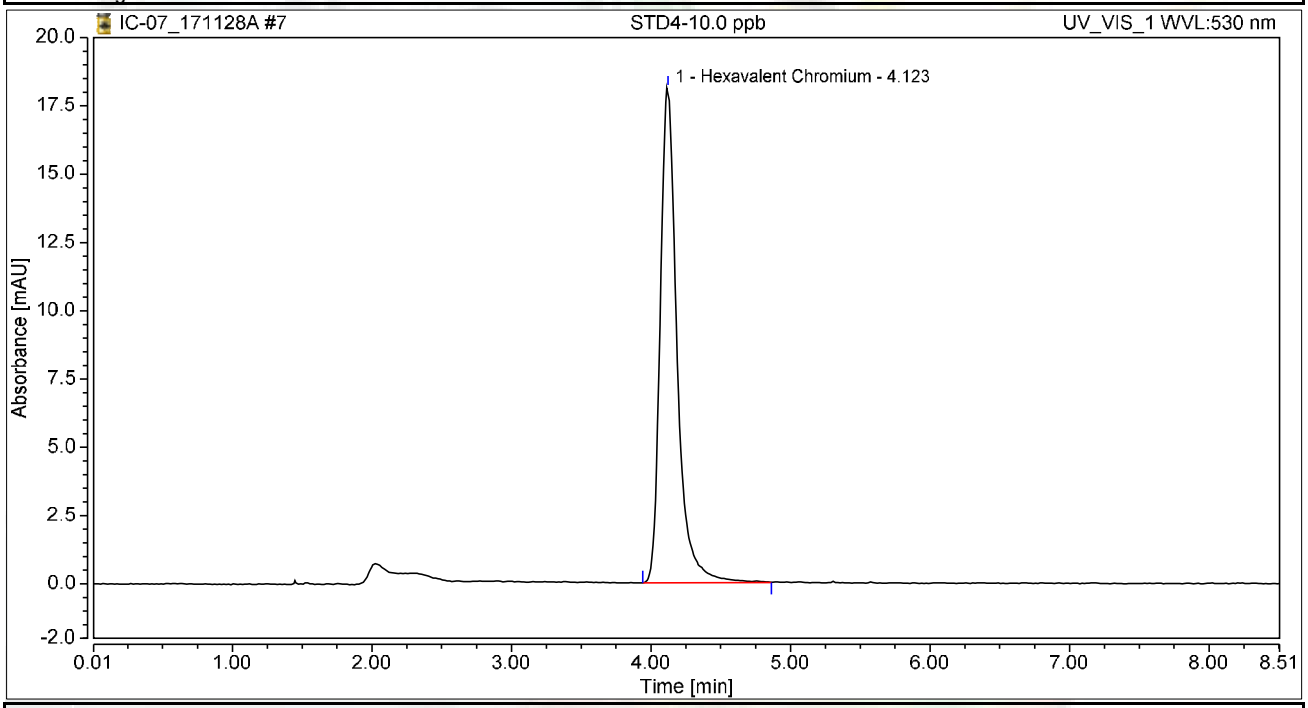
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.258	9.388	100.00	100.00	5.0118
Total:			**1.258**	**9.388**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

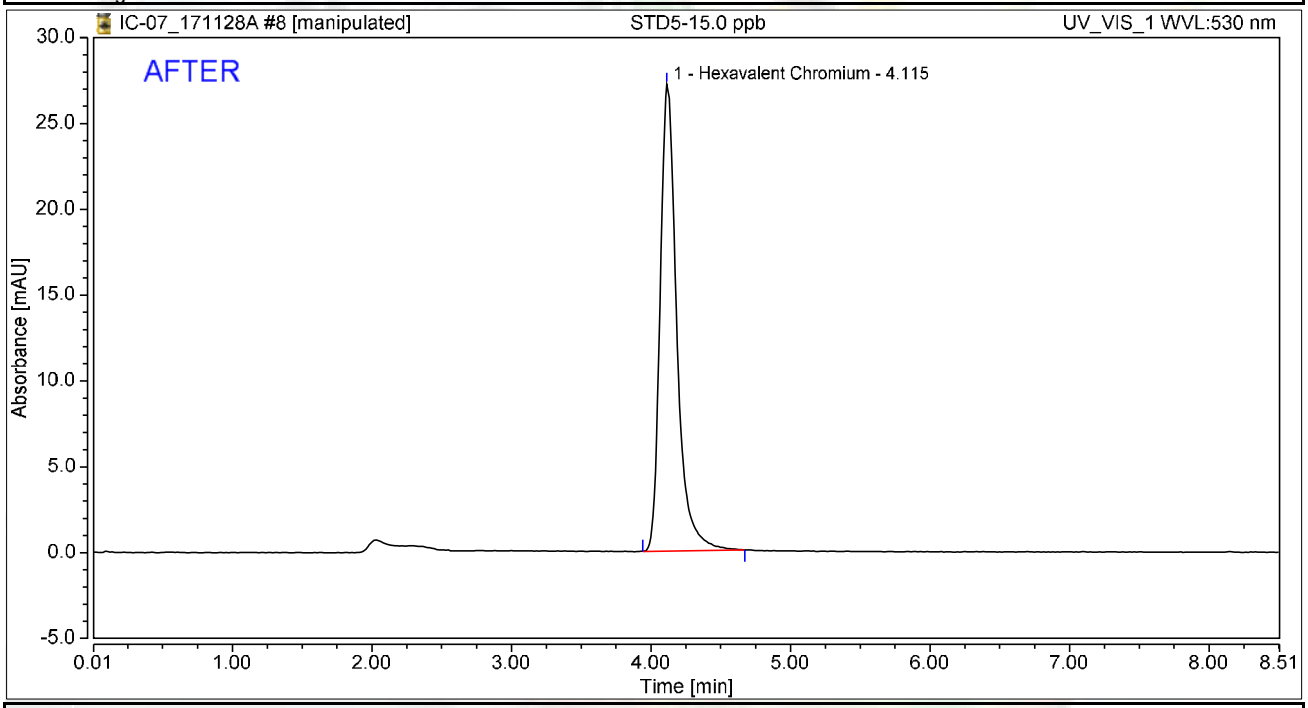
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	2.533	18.115	100.00	100.00	10.0869
Total:			**2.533**	**18.115**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	3.760	27.183	100.00	100.00	14.9728
Total:			**3.760**	**27.183**	**100.00**	**100.00**	

rba 11/29/2017

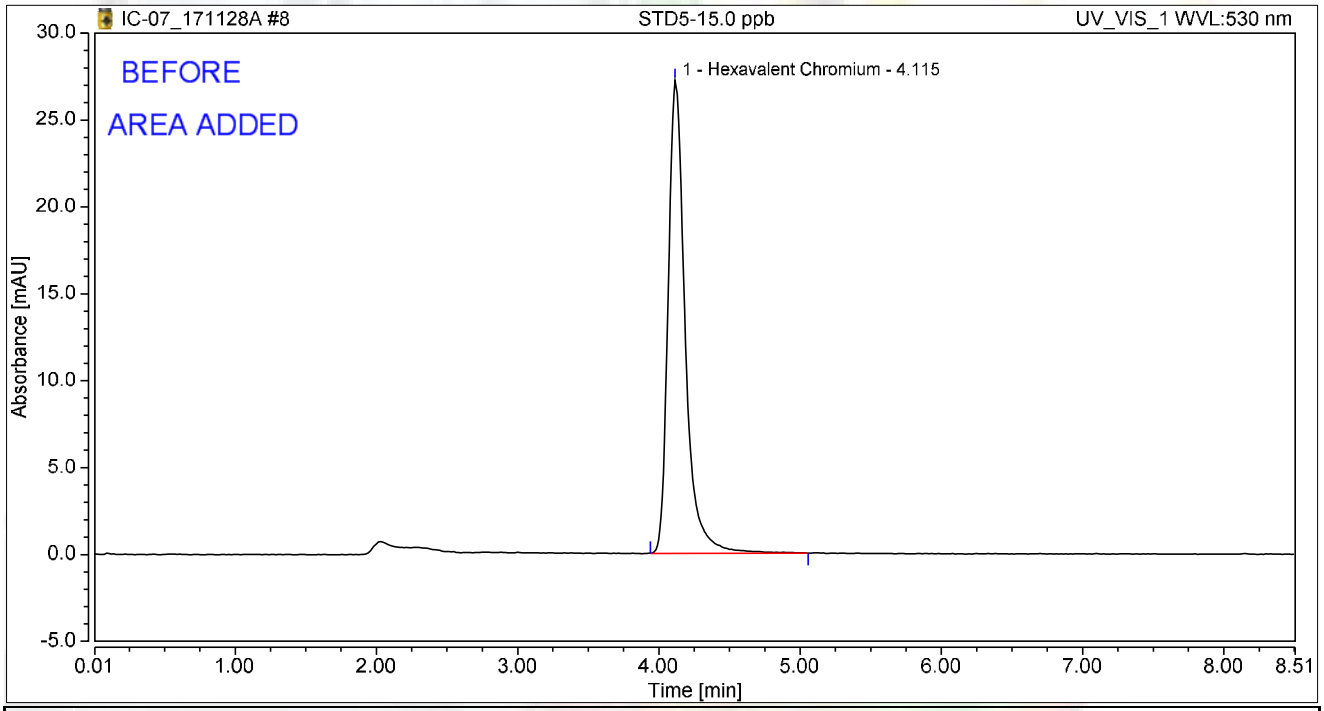
RB 12/11/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	3.807	27.204	100.00	100.00	14.9839
Total:			**3.807**	**27.204**	**100.00**	**100.00**	

rba 11/29/2017

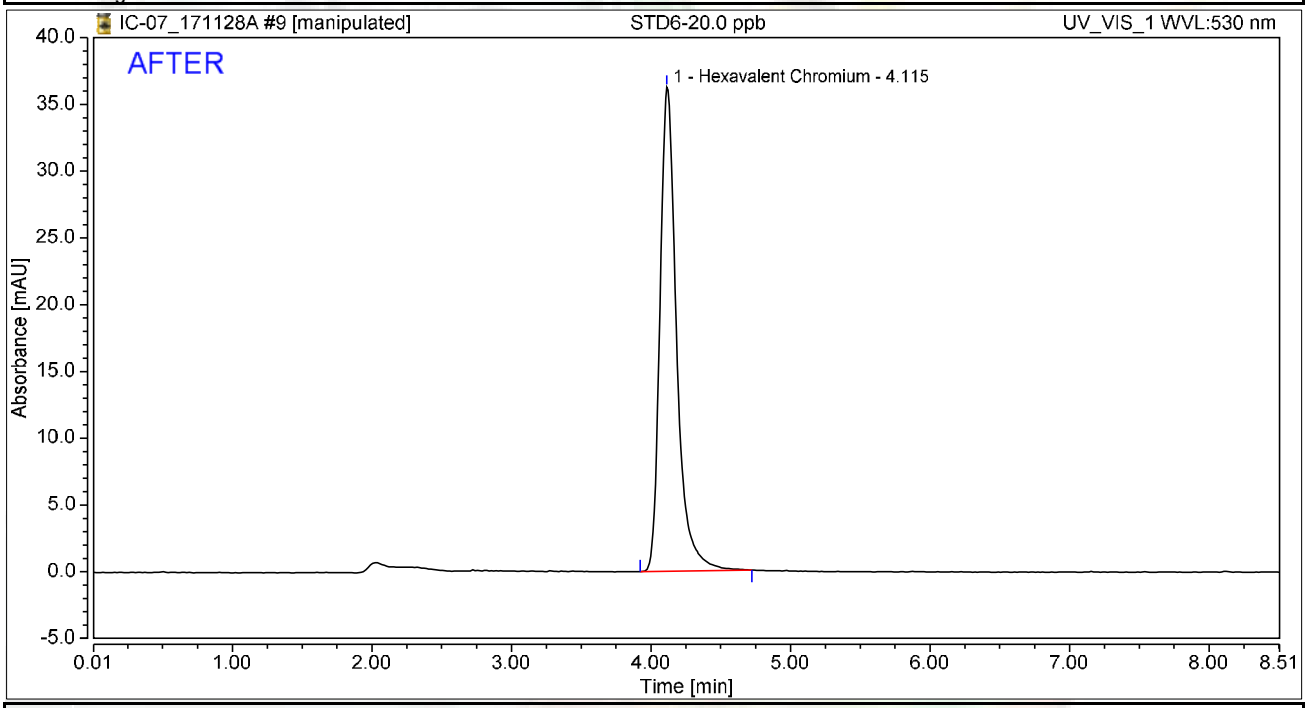
RLB 12/11/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	5.015	36.251	100.00	100.00	19.9744
Total:			**5.015**	**36.251**	**100.00**	**100.00**	

rba 11/29/2017

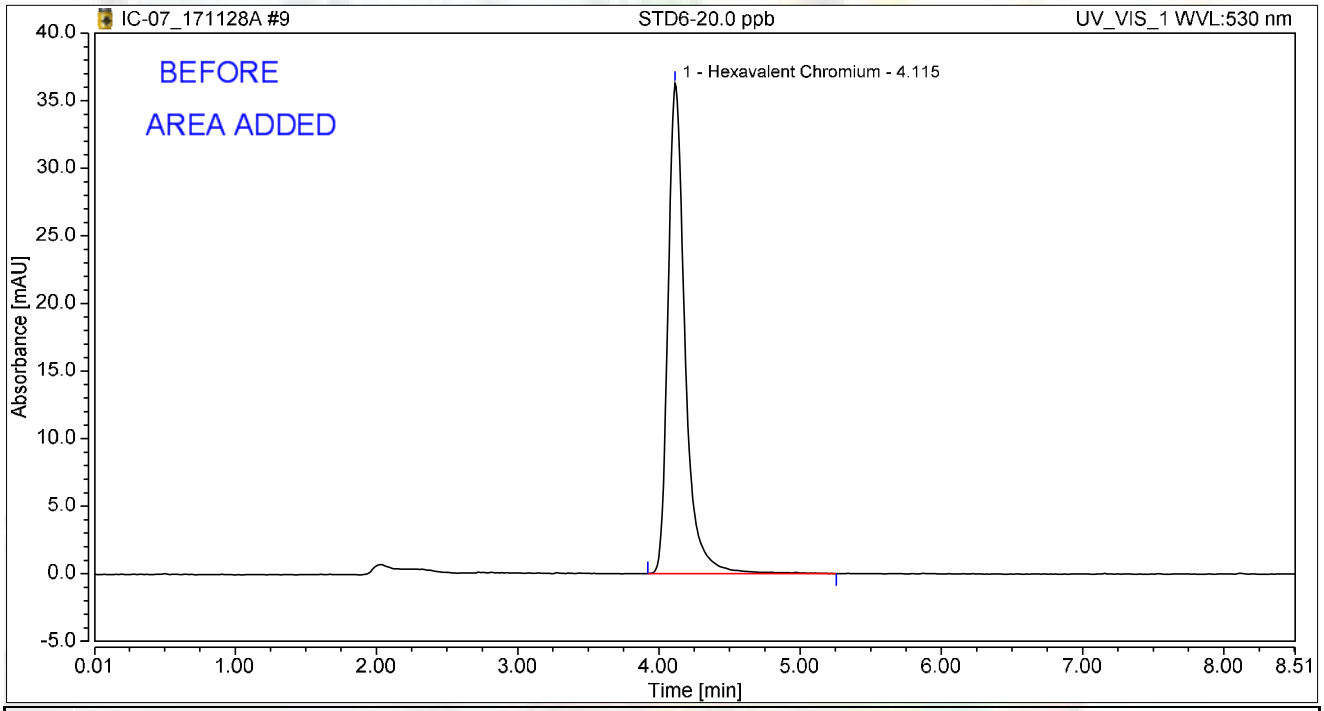
RB 12/11/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	5.092	36.279	100.00	100.00	20.0407
Total:			**5.092**	**36.279**	**100.00**	**100.00**	

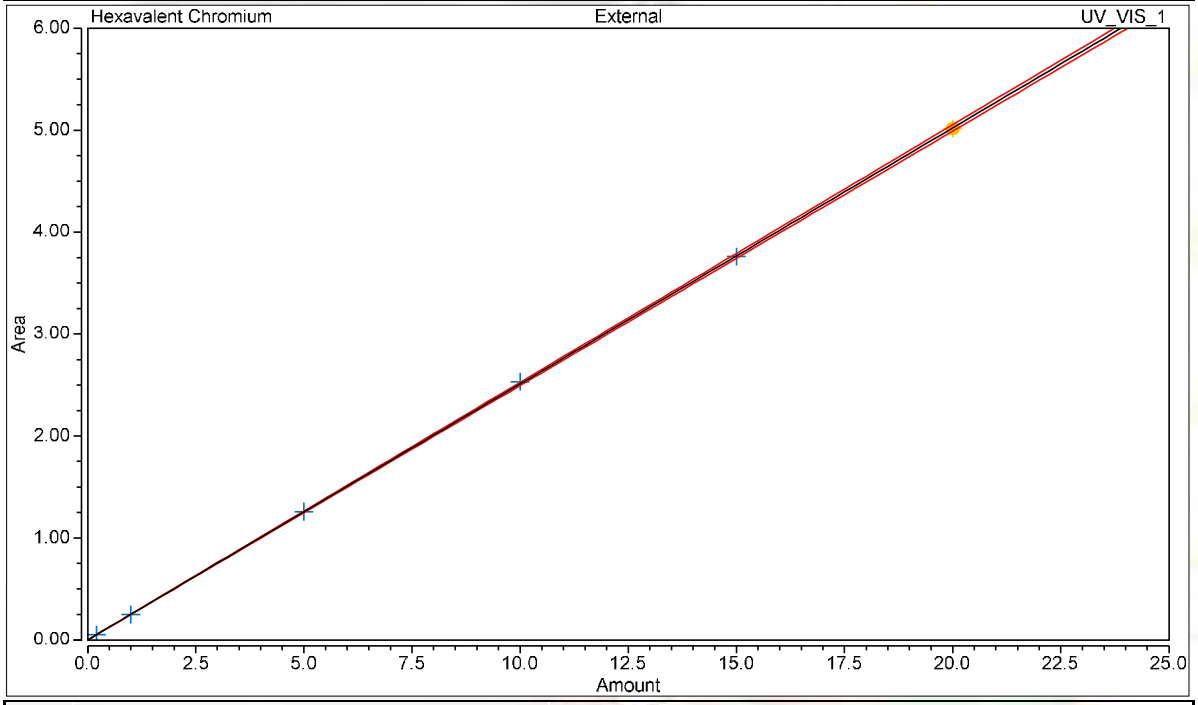
rba 11/29/2017

RB 12/11/2017

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2511
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99997

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

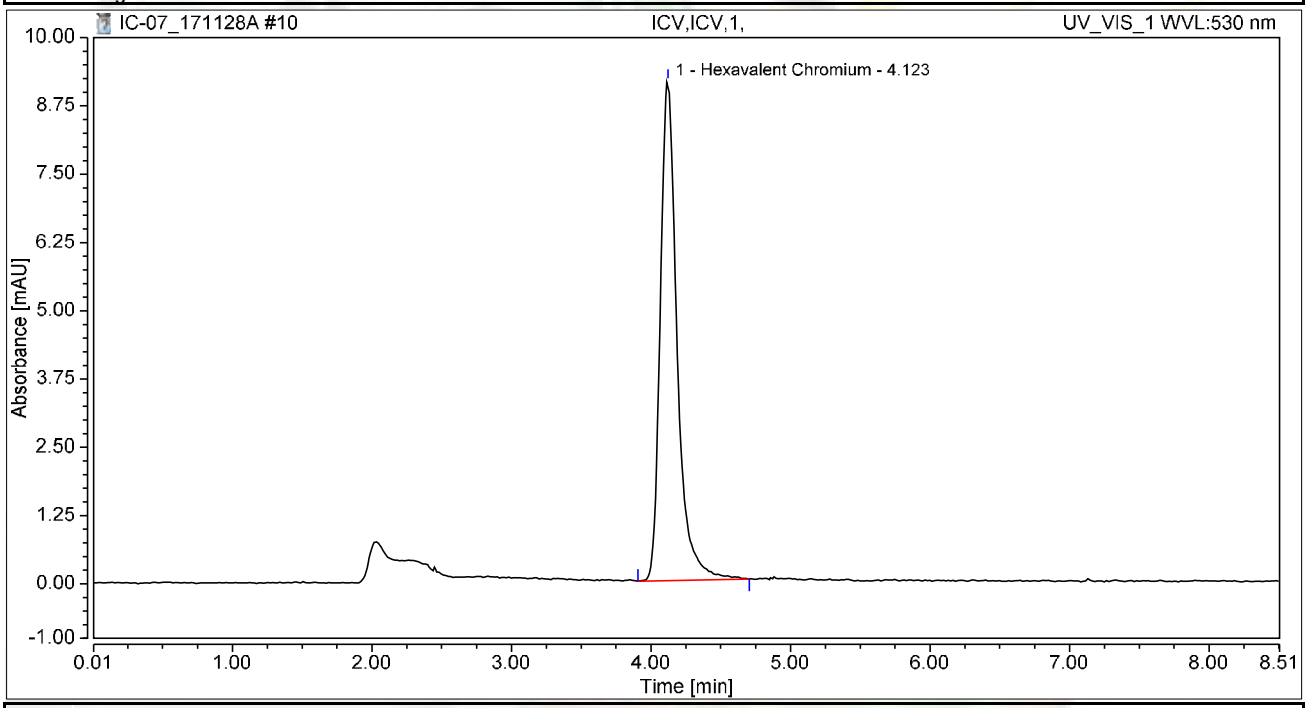
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0529	0.053	0.400
5	STD2-1.0 ppb	02	1.0000	0.2484	0.248	1.827
6	STD3-5.0 ppb	03	5.0000	1.2584	1.258	9.388
7	STD4-10.0 ppb	04	10.0000	2.5328	2.533	18.115
8	STD5-15.0 ppb	05	15.0000	3.7596	3.760	27.183
9	STD6-20.0 ppb	06	20.0000	5.0155	5.015	36.251

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

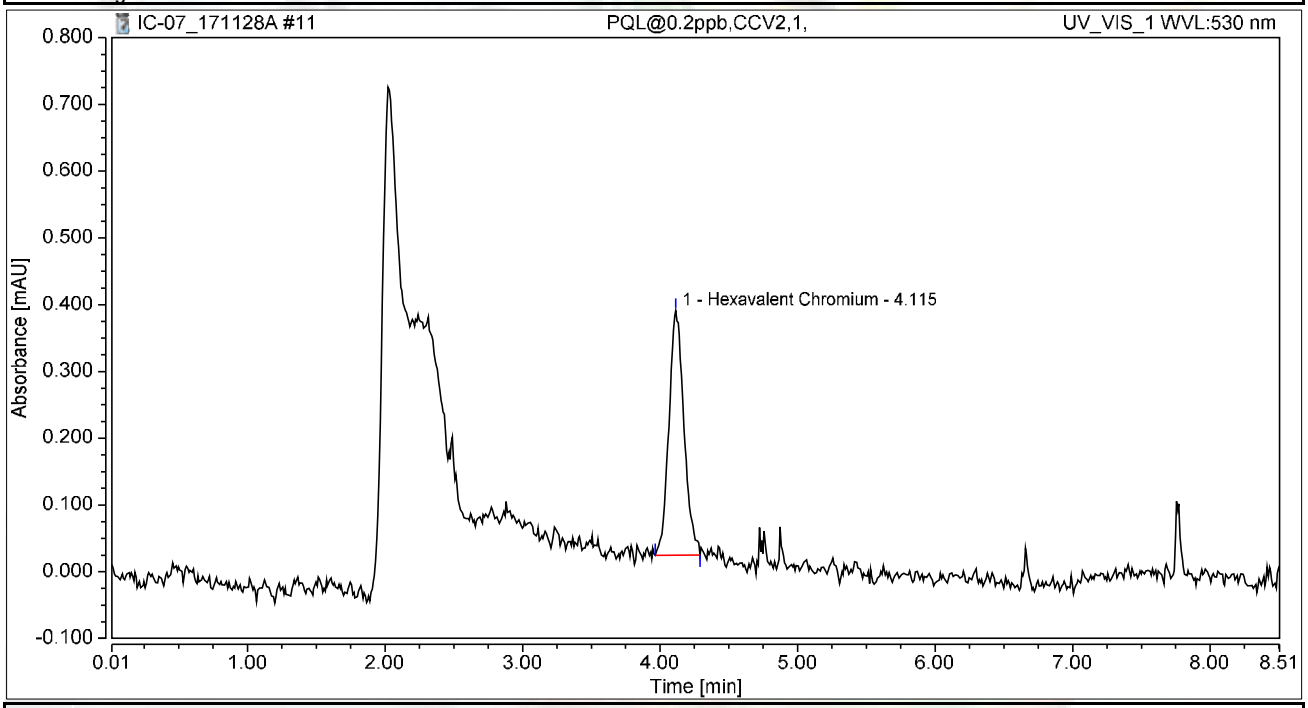
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.279	9.143	100.00	100.00	5.0922
Total:			**1.279**	**9.143**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

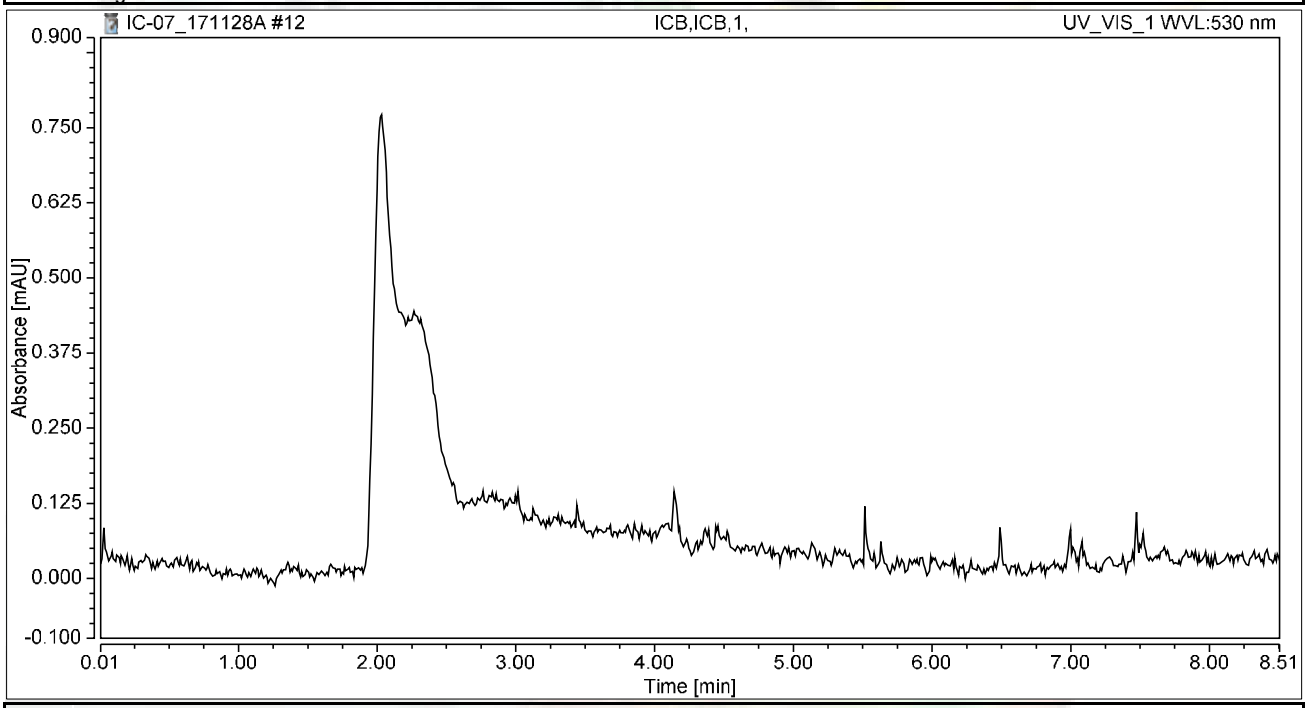
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.046	0.367	100.00	100.00	0.1851
Total:			**0.046**	**0.367**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 171208A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/08/17 8:12 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/08/17 8:22 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/08/17 8:35 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/08/17 8:46 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/08/17 8:56 AM	Reported
15	MB-R120682	MBLK	1	Hexavalent Chromium	12/08/17 9:05 AM	Reported
16	LCS-R120682	LCS	1	Hexavalent Chromium	12/08/17 9:14 AM	Reported
17	N027404-001A	SAMP	1	Hexavalent Chromium	12/08/17 9:25 AM	Reported
18	N027404-001AMS	MS	1	Hexavalent Chromium	12/08/17 9:36 AM	Reported
19	N027404-002A	SAMP	1	Hexavalent Chromium	12/08/17 9:45 AM	Reported
20	N027404-002AMS	MS	1	Hexavalent Chromium	12/08/17 9:55 AM	Reported
21	N027404-003A	SAMP	5	Hexavalent Chromium	12/08/17 10:04 AM	Reported
22	N027404-003AMS	MS	5	Hexavalent Chromium	12/08/17 10:14 AM	Reported
23	N027404-004A	SAMP	1	Hexavalent Chromium	12/08/17 10:23 AM	Reported
24	N027404-004AMS	MS	1	Hexavalent Chromium	12/08/17 10:33 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/08/17 10:42 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/08/17 10:52 AM	Reported
27	N027404-005A	SAMP	1	Hexavalent Chromium	12/08/17 11:01 AM	Not Reported
28	N027404-005AMS	MS	1	Hexavalent Chromium	12/08/17 11:11 AM	Not Reported
29	N027404-006A	SAMP	1	Hexavalent Chromium	12/08/17 11:20 AM	Reported
30	N027404-006AMS	MS	1	Hexavalent Chromium	12/08/17 11:30 AM	Reported
31	N027404-007A	SAMP	1	Hexavalent Chromium	12/08/17 11:39 AM	Reported
32	N027404-007AMS	MS	1	Hexavalent Chromium	12/08/17 11:48 AM	Reported
33	N027404-008A	SAMP	1	Hexavalent Chromium	12/08/17 11:58 AM	Reported
34	N027404-008AMS	MS	1	Hexavalent Chromium	12/08/17 12:07 PM	Reported
35	N027404-009A	SAMP	5	Hexavalent Chromium	12/08/17 12:17 PM	Reported
36	N027404-009AMS	MS	5	Hexavalent Chromium	12/08/17 12:26 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/08/17 12:36 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/08/17 12:45 PM	Reported
39	N027404-010A	SAMP	1	Hexavalent Chromium	12/08/17 12:55 PM	Reported
40	N027404-010AMS	MS	1	Hexavalent Chromium	12/08/17 1:04 PM	Reported
41	N027404-011A	SAMP	1	Hexavalent Chromium	12/08/17 1:14 PM	Reported
42	N027404-011AMS	MS	1	Hexavalent Chromium	12/08/17 1:23 PM	Reported

INJECTION LOG: 171208A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027404-012A	SAMP	1	Hexavalent Chromium	12/08/17 1:33 PM	Reported
44	N027404-012AMS	MS	1	Hexavalent Chromium	12/08/17 1:42 PM	Reported
45	N027404-013A	SAMP	1	Hexavalent Chromium	12/08/17 1:51 PM	Reported
46	N027404-013AMS	MS	1	Hexavalent Chromium	12/08/17 2:01 PM	Reported
47	N027404-014A	SAMP	1	Hexavalent Chromium	12/08/17 2:10 PM	Reported
48	N027404-014AMS	MS	1	Hexavalent Chromium	12/08/17 2:20 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/08/17 2:29 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/08/17 2:39 PM	Reported
51	N027404-015A	SAMP	1	Hexavalent Chromium	12/08/17 2:48 PM	Reported
52	N027404-015AMS	MS	1	Hexavalent Chromium	12/08/17 2:58 PM	Reported
53	N027404-016A	SAMP	5	Hexavalent Chromium	12/08/17 3:07 PM	Reported
54	N027404-016AMS	MS	5	Hexavalent Chromium	12/08/17 3:17 PM	Reported
55	N027404-016A	SAMP	1	Hexavalent Chromium	12/08/17 3:26 PM	Not Reported
56	N027404-016AMS	MS	1	Hexavalent Chromium	12/08/17 3:36 PM	Not Reported
57	N027404-018A	SAMP	1	Hexavalent Chromium	12/08/17 3:45 PM	Reported
58	N027404-018AMS	MS	1	Hexavalent Chromium	12/08/17 3:54 PM	Reported
59	N027404-019A	SAMP	1	Hexavalent Chromium	12/08/17 4:04 PM	Reported
60	N027404-019AMS	MS	1	Hexavalent Chromium	12/08/17 4:13 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/08/17 4:23 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/08/17 4:32 PM	Reported
63	N027404-020A	SAMP	5	Hexavalent Chromium	12/08/17 4:42 PM	Reported
64	N027404-020AMS	MS	5	Hexavalent Chromium	12/08/17 4:51 PM	Reported
65	N027404-017A	SAMP	100	Hexavalent Chromium	12/08/17 5:01 PM	Reported
66	N027404-017AMS	MS	100	Hexavalent Chromium	12/08/17 5:10 PM	Reported
67	N027404-017AMSD	MSD	100	Hexavalent Chromium	12/08/17 5:23 PM	Reported
68	N027404-003ADUP	DUP	5	Hexavalent Chromium	12/08/17 5:34 PM	Reported
69	N027404-005A	SAMP	5	Hexavalent Chromium	12/08/17 5:44 PM	Reported
70	N027404-005AMS	MS	5	Hexavalent Chromium	12/08/17 5:53 PM	Reported
71	N027404-020A	SAMP	1	Hexavalent Chromium	12/08/17 6:02 PM	Not Reported
72	N027404-020AMS	MS	1	Hexavalent Chromium	12/08/17 6:12 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	12/08/17 6:21 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	12/08/17 6:31 PM	Reported
75	LCS-R120683	LCS	1	Hexavalent Chromium	12/08/17 6:45 PM	Reported
76	MB-R120683	MBLK	1	Hexavalent Chromium	12/08/17 6:55 PM	Reported
77	N027405-012A	SAMP	100	Hexavalent Chromium	12/08/17 7:05 PM	Reported
78	N027405-012AMS	MS	100	Hexavalent Chromium	12/08/17 7:14 PM	Reported
79	N027405-012AMSD	MSD	100	Hexavalent Chromium	12/08/17 7:24 PM	Reported
80	N027405-013A	SAMP	5	Hexavalent Chromium	12/08/17 7:33 PM	Reported
81	N027405-013AMS	MS	5	Hexavalent Chromium	12/08/17 7:43 PM	Reported
82	N027405-002A	SAMP	5	Hexavalent Chromium	12/08/17 7:52 PM	Reported
83	N027405-002AMS	MS	5	Hexavalent Chromium	12/08/17 8:02 PM	Reported
84	N027405-002ADUP	DUP	5	Hexavalent Chromium	12/08/17 8:11 PM	Reported

INJECTION LOG: 171208A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	12/08/17 8:21 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	12/08/17 8:30 PM	Reported
87	N027405-001A	SAMP	1	Hexavalent Chromium	12/08/17 8:40 PM	Reported
88	N027405-001AMS	MS	1	Hexavalent Chromium	12/08/17 8:49 PM	Reported
89	N027405-003A	SAMP	5	Hexavalent Chromium	12/08/17 8:58 PM	Reported
90	N027405-003AMS	MS	5	Hexavalent Chromium	12/08/17 9:08 PM	Reported
91	N027405-004A	SAMP	1	Hexavalent Chromium	12/08/17 9:17 PM	Reported
92	N027405-004AMS	MS	1	Hexavalent Chromium	12/08/17 9:27 PM	Reported
93	N027405-005A	SAMP	1	Hexavalent Chromium	12/08/17 9:36 PM	Reported
94	N027405-005AMS	MS	1	Hexavalent Chromium	12/08/17 9:46 PM	Reported
95	N027405-009A	SAMP	100	Hexavalent Chromium	12/08/17 9:55 PM	Reported
96	N027405-009AMS	MS	100	Hexavalent Chromium	12/08/17 10:05 PM	Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	12/08/17 10:14 PM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	12/08/17 10:24 PM	Reported
99	N027405-010A	SAMP	1	Hexavalent Chromium	12/08/17 10:33 PM	Reported
100	N027405-010AMS	MS	1	Hexavalent Chromium	12/08/17 10:43 PM	Reported
101	N027405-011A	SAMP	1	Hexavalent Chromium	12/08/17 10:52 PM	Not Reported
102	N027405-011AMS	MS	1	Hexavalent Chromium	12/08/17 11:01 PM	Not Reported
103	N027405-011A	SAMP	5	Hexavalent Chromium	12/08/17 11:11 PM	Reported
104	N027405-011AMS	MS	5	Hexavalent Chromium	12/08/17 11:20 PM	Reported
105	N027405-014A	SAMP	1	Hexavalent Chromium	12/08/17 11:30 PM	Reported
106	N027405-014AMS	MS	1	Hexavalent Chromium	12/08/17 11:39 PM	Reported
107	N027405-015A	SAMP	1	Hexavalent Chromium	12/08/17 11:49 PM	Reported
108	N027405-015AMS	MS	1	Hexavalent Chromium	12/08/17 11:58 PM	Reported
109	CCV-9	CCV	1	Hexavalent Chromium	12/09/17 12:08 AM	Reported
110	CCB-9	CCB	1	Hexavalent Chromium	12/09/17 12:17 AM	Reported
111	N027405-006A	SAMP	1	Hexavalent Chromium	12/09/17 12:27 AM	Not Reported
112	N027405-006AMS	MS	1	Hexavalent Chromium	12/09/17 12:36 AM	Not Reported
113	N027405-007A	SAMP	1	Hexavalent Chromium	12/09/17 12:46 AM	Not Reported
114	N027405-007AMS	MS	1	Hexavalent Chromium	12/09/17 12:55 AM	Not Reported
115	N027405-008A	SAMP	1	Hexavalent Chromium	12/09/17 1:04 AM	Not Reported
116	N027405-008AMS	MS	1	Hexavalent Chromium	12/09/17 1:14 AM	Not Reported
117	CCV-10	CCV1	1	Hexavalent Chromium	12/09/17 1:23 AM	Reported
118	CCB-10	CCB	1	Hexavalent Chromium	12/09/17 1:33 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171208A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**09/Dec/17 02:03:42**
No. of Injections:	**121**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/08/2017 08:12	Finished	BLANK
11	BLANK	2	1000	Unknown		12/08/2017 08:22	Finished	BLANK
12	CCV-1,CCV,1,	4	1000	Unknown		12/08/2017 08:35	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	5	1000	Unknown		12/08/2017 08:46	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	6	1000	Unknown		12/08/2017 08:56	Finished	CCB R171129A
15	MB-1,MBLK,1	7	1000	Unknown		12/08/2017 09:05	Finished	MB R171129A
16	LCS-1,LCS,1	8	1000	Unknown		12/08/2017 09:14	Finished	LCS, IWST-171002B
17	N027404-001A,SAMF	1	1000	Unknown		12/08/2017 09:25	Finished	SAMP,10mL
18	N027404-001AMS,MS	2	1000	Unknown		12/08/2017 09:36	Finished	MS (1ppb), IWST-171002B,10
19	N027404-002A,SAMF	3	1000	Unknown		12/08/2017 09:45	Finished	SAMP,10mL
20	N027404-002AMS,MS	4	1000	Unknown		12/08/2017 09:55	Finished	MS (1ppb), IWST-171002B,10
21	N027404-003A,SAMF	5	1000	Unknown		12/08/2017 10:04	Finished	SAMP,2>10mL
22	N027404-003AMS,MS	6	1000	Unknown		12/08/2017 10:14	Finished	MS (1ppb), IWST-171002B,2>1
23	N027404-004A,SAMF	7	1000	Unknown		12/08/2017 10:23	Finished	SAMP,10mL
24	N027404-004AMS,MS	8	1000	Unknown		12/08/2017 10:33	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	9	1000	Unknown		12/08/2017 10:42	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	10	1000	Unknown		12/08/2017 10:52	Finished	CCB R171129A
27	N027404-005A,SAMF	11	1000	Unknown		12/08/2017 11:01	Finished	SAMP,10mL
28	N027404-005AMS,MS	12	1000	Unknown		12/08/2017 11:11	Finished	MS (1ppb), IWST-171002B,10
29	N027404-006A,SAMF	13	1000	Unknown		12/08/2017 11:20	Finished	SAMP,10mL
30	N027404-006AMS,MS	14	1000	Unknown		12/08/2017 11:30	Finished	MS (1ppb), IWST-171002B,10
31	N027404-007A,SAMF	15	1000	Unknown		12/08/2017 11:39	Finished	SAMP,10mL
32	N027404-007AMS,MS	16	1000	Unknown		12/08/2017 11:48	Finished	MS (1ppb), IWST-171002B,10
33	N027404-008A,SAMF	17	1000	Unknown		12/08/2017 11:58	Finished	SAMP,10mL
34	N027404-008AMS,MS	18	1000	Unknown		12/08/2017 12:07	Finished	MS (1ppb), IWST-171002B,10
35	N027404-009A,SAMF	19	1000	Unknown		12/08/2017 12:17	Finished	SAMP,2>10mL
36	N027404-009AMS,MS	20	1000	Unknown		12/08/2017 12:26	Finished	MS (1ppb), IWST-171002B,2>1
37	CCV-3,CCV,1,	21	1000	Unknown		12/08/2017 12:36	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	22	1000	Unknown		12/08/2017 12:45	Finished	CCB R171129A
39	N027404-010A,SAMF	23	1000	Unknown		12/08/2017 12:55	Finished	SAMP,10mL
40	N027404-010AMS,MS	24	1000	Unknown		12/08/2017 13:04	Finished	MS (1ppb), IWST-171002B,10
41	N027404-011A,SAMF	25	1000	Unknown		12/08/2017 13:14	Finished	SAMP,10mL
42	N027404-011AMS,MS	26	1000	Unknown		12/08/2017 13:23	Finished	MS (1ppb), IWST-171002B,10
43	N027404-012A,SAMF	27	1000	Unknown		12/08/2017 13:33	Finished	SAMP,10mL
44	N027404-012AMS,MS	28	1000	Unknown		12/08/2017 13:42	Finished	MS (1ppb), IWST-171002B,10
45	N027404-013A,SAMF	29	1000	Unknown		12/08/2017 13:51	Finished	SAMP,10mL
46	N027404-013AMS,MS	30	1000	Unknown		12/08/2017 14:01	Finished	MS (1ppb), IWST-171002B,10
47	N027404-014A,SAMF	31	1000	Unknown		12/08/2017 14:10	Finished	SAMP,10mL
48	N027404-014AMS,MS	32	1000	Unknown		12/08/2017 14:20	Finished	MS (1ppb), IWST-171002B,10
49	CCV-4,CCV1,1,	33	1000	Unknown		12/08/2017 14:29	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	34	1000	Unknown		12/08/2017 14:39	Finished	CCB R171129A
51	N027404-015A,SAMF	35	1000	Unknown		12/08/2017 14:48	Finished	SAMP,10mL
52	N027404-015AMS,MS	36	1000	Unknown		12/08/2017 14:58	Finished	MS (1ppb), IWST-171002B,10
53	N027404-016A,SAMF	37	1000	Unknown		12/08/2017 15:07	Finished	SAMP,2>10mL
54	N027404-016AMS,MS	38	1000	Unknown		12/08/2017 15:17	Finished	MS (1ppb), IWST-171002B,2>1
55	N027404-016A,SAMF	39	1000	Unknown		12/08/2017 15:26	Finished	SAMP,10mL
56	N027404-016AMS,MS	40	1000	Unknown		12/08/2017 15:36	Finished	MS (1ppb), IWST-171002B,10
57	N027404-018A,SAMF	41	1000	Unknown		12/08/2017 15:45	Finished	SAMP,10mL
58	N027404-018AMS,MS	42	1000	Unknown		12/08/2017 15:54	Finished	MS (1ppb), IWST-171002B,10
59	N027404-019A,SAMF	43	1000	Unknown		12/08/2017 16:04	Finished	SAMP,10mL
60	N027404-019AMS,MS	44	1000	Unknown		12/08/2017 16:13	Finished	MS (1ppb), IWST-171002B,10

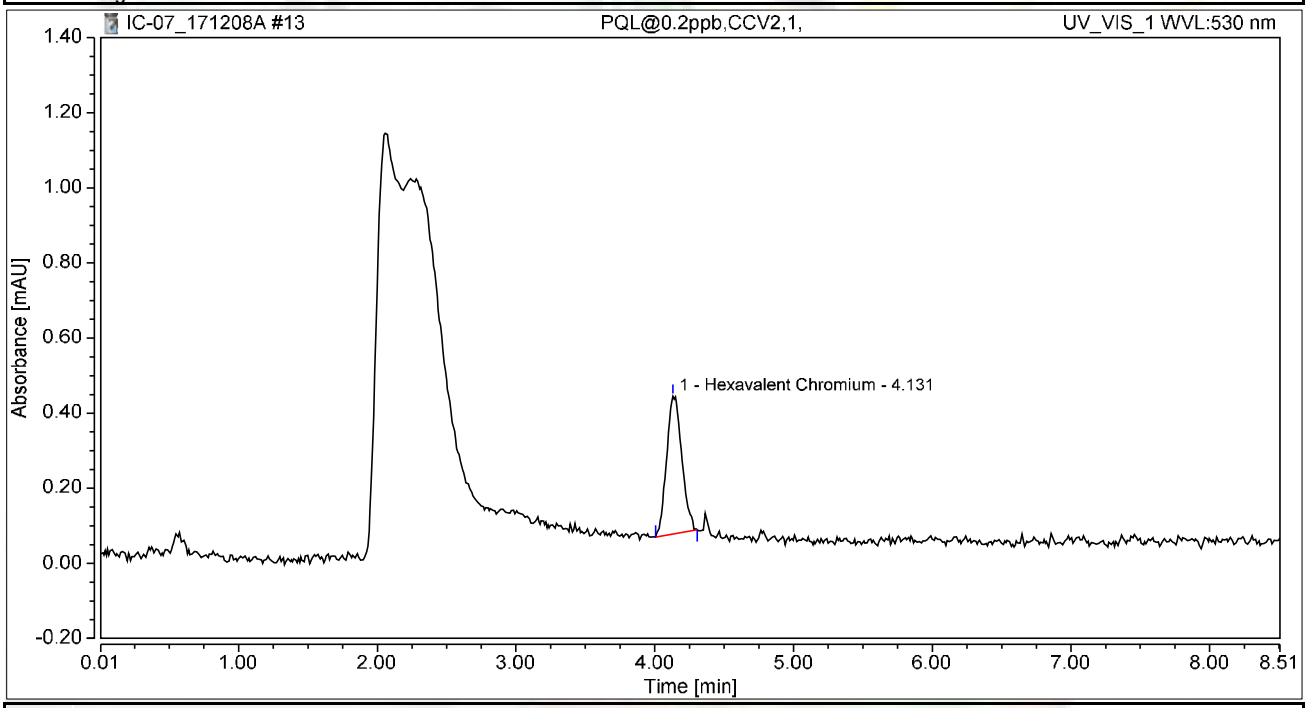
61	CCV-5,CCV,1,	45	1000	Unknown		12/08/2017 16:23	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	46	1000	Unknown		12/08/2017 16:32	Finished	CCB R171129A
63	N027404-020A,SAMF	47	1000	Unknown		12/08/2017 16:42	Finished	SAMP,2>10mL
64	N027404-020AMS,MS	48	1000	Unknown		12/08/2017 16:51	Finished	MS (1ppb), IWST-171002B,2>1
65	N027404-017A,SAMF	49	1000	Unknown		12/08/2017 17:01	Finished	SAMP,0.1>10mL
66	N027404-017AMS,MS	50	1000	Unknown		12/08/2017 17:10	Finished	MS (5ppb), IWST-171002B,0.1
67	N027404-017AMSD,M	1	1000	Unknown		12/08/2017 17:23	Finished	MSD (5ppb), IWST-171002B,0.
68	N027404-003ADUP,D	2	1000	Unknown		12/08/2017 17:34	Finished	DUP,2>10mL
69	N027404-005A,SAMF	3	1000	Unknown		12/08/2017 17:44	Finished	SAMP,2>10mL
70	N027404-005AMS,MS	4	1000	Unknown		12/08/2017 17:53	Finished	MS (1ppb), IWST-171002B,2>1
71	N027404-020A,SAMF	5	1000	Unknown		12/08/2017 18:02	Finished	SAMP,10mL
72	N027404-020AMS,MS	6	1000	Unknown		12/08/2017 18:12	Finished	MS (1ppb), IWST-171002B,10
73	CCV-6,CCV1,1,	7	1000	Unknown		12/08/2017 18:21	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	8	1000	Unknown		12/08/2017 18:31	Finished	CCB R171129A
75	LCS-2,LCS,1	1	1000	Unknown		12/08/2017 18:45	Finished	LCS, IWST-171002B
76	MB-2,MBLK,1	2	1000	Unknown		12/08/2017 18:55	Finished	MB R171129A
77	N027405-012A,SAMF	3	1000	Unknown		12/08/2017 19:05	Finished	SAMP,0.1>10mL
78	N027405-012AMS,MS	4	1000	Unknown		12/08/2017 19:14	Finished	MS (5ppb), IWST-171002B,0.1
79	N027405-012AMSD,M	5	1000	Unknown		12/08/2017 19:24	Finished	MSD (5ppb), IWST-171002B,0.
80	N027405-013A,SAMF	6	1000	Unknown		12/08/2017 19:33	Finished	SAMP,0.1>10mL
81	N027405-013AMS,MS	7	1000	Unknown		12/08/2017 19:43	Finished	DUP,0.1>10mL
82	N027405-002A,SAMF	8	1000	Unknown		12/08/2017 19:52	Finished	SAMP,10mL
83	N027405-002AMS,MS	9	1000	Unknown		12/08/2017 20:02	Finished	SAMP,5>10mL
84	N027405-002ADUP,D	10	1000	Unknown		12/08/2017 20:11	Finished	SAMP,0.2>10mL
85	CCV-7,CCV,1,	11	1000	Unknown		12/08/2017 20:21	Finished	CCV @5ppb, IWST-171002A
86	CCB-7,CCB,1,	12	1000	Unknown		12/08/2017 20:30	Finished	CCB R171114C
87	N027405-001A,SAMF	13	1000	Unknown		12/08/2017 20:40	Finished	SAMP,0.2>10mL
88	N027405-001AMS,MS	14	1000	Unknown		12/08/2017 20:49	Finished	SAMP,1>10mL
89	N027405-003A,SAMF	15	1000	Unknown		12/08/2017 20:58	Finished	SAMP,0.5>10mL
90	N027405-003AMS,MS	16	1000	Unknown		12/08/2017 21:08	Finished	SAMP,5>10mL
91	N027405-004A,SAMF	17	1000	Unknown		12/08/2017 21:17	Finished	SAMP,10mL
92	N027405-004AMS,MS	18	1000	Unknown		12/08/2017 21:27	Finished	SAMP,2>10mL
93	N027405-005A,SAMF	19	1000	Unknown		12/08/2017 21:36	Finished	MS (5ppb), IWST-171002B,2>1
94	N027405-005AMS,MS	20	1000	Unknown		12/08/2017 21:46	Finished	MSD (5ppb), IWST-171002B,2>
95	N027405-009A,SAMF	21	1000	Unknown		12/08/2017 21:55	Finished	SAMP,10mL
96	N027405-009AMS,MS	22	1000	Unknown		12/08/2017 22:05	Finished	MS (1ppb), IWST-171002B,10
97	CCV-8,CCV1,1,	23	1000	Unknown		12/08/2017 22:14	Finished	CCV @10ppb, IWST-171002A
98	CCB-8,CCB,1,	24	1000	Unknown		12/08/2017 22:24	Finished	CCB R171129A
99	N027405-010A,SAMF	25	1000	Unknown		12/08/2017 22:33	Finished	SAMP,10mL
100	N027405-010AMS,MS	26	1000	Unknown		12/08/2017 22:43	Finished	MS (1ppb), IWST-171002B,10
101	N027405-011A,SAMF	27	1000	Unknown		12/08/2017 22:52	Finished	SAMP,10mL
102	N027405-011AMS,MS	28	1000	Unknown		12/08/2017 23:01	Finished	MS (1ppb), IWST-171002B,10
103	N027405-011A,SAMF	29	1000	Unknown		12/08/2017 23:11	Finished	SAMP,10mL
104	N027405-011AMS,MS	30	1000	Unknown		12/08/2017 23:20	Finished	MS (1ppb), IWST-171002B,10
105	N027405-014A,SAMF	31	1000	Unknown		12/08/2017 23:30	Finished	SAMP,10mL
106	N027405-014AMS,MS	32	1000	Unknown		12/08/2017 23:39	Finished	MS (1ppb), IWST-171002B,10
107	N027405-015A,SAMF	33	1000	Unknown		12/08/2017 23:49	Finished	SAMP,10mL
108	N027405-015AMS,MS	34	1000	Unknown		12/08/2017 23:58	Finished	MS (1ppb), IWST-171002B,10
109	CCV-9,CCV,1,	35	1000	Unknown		12/09/2017 00:08	Finished	CCV @5ppb, IWST-171002A
110	CCB-9,CCB,1,	36	1000	Unknown		12/09/2017 00:17	Finished	CCB R171114C
111	N027405-006A,SAMF	37	1000	Unknown		12/09/2017 00:27	Finished	SAMP,10mL
112	N027405-006AMS,MS	38	1000	Unknown		12/09/2017 00:36	Finished	MS (1ppb), IWST-171002B,10
113	N027405-007A,SAMF	39	1000	Unknown		12/09/2017 00:46	Finished	MS (1ppb), IWST-171002B,10
114	N027405-007AMS,MS	40	1000	Unknown		12/09/2017 00:55	Finished	MS (1ppb), IWST-171002B,10
115	N027405-008A,SAMF	41	1000	Unknown		12/09/2017 01:04	Finished	MS (1ppb), IWST-171002B,10
116	N027405-008AMS,MS	42	1000	Unknown		12/09/2017 01:14	Finished	MS (1ppb), IWST-171002B,10
117	CCV-10,CCV1,1,	43	1000	Unknown		12/09/2017 01:23	Finished	CCV @10ppb, IWST-171002A
118	CCB-10,CCB,1,	44	1000	Unknown		12/09/2017 01:33	Finished	CCB R171129A
119	SHUTDOWN	45	1000	Unknown		12/09/2017 01:42	Finished	
120	Eluent: R171208A	46	1000	Unknown		n.a.	Finished	Eluent
121	PCR: R171206A	47	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 08:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

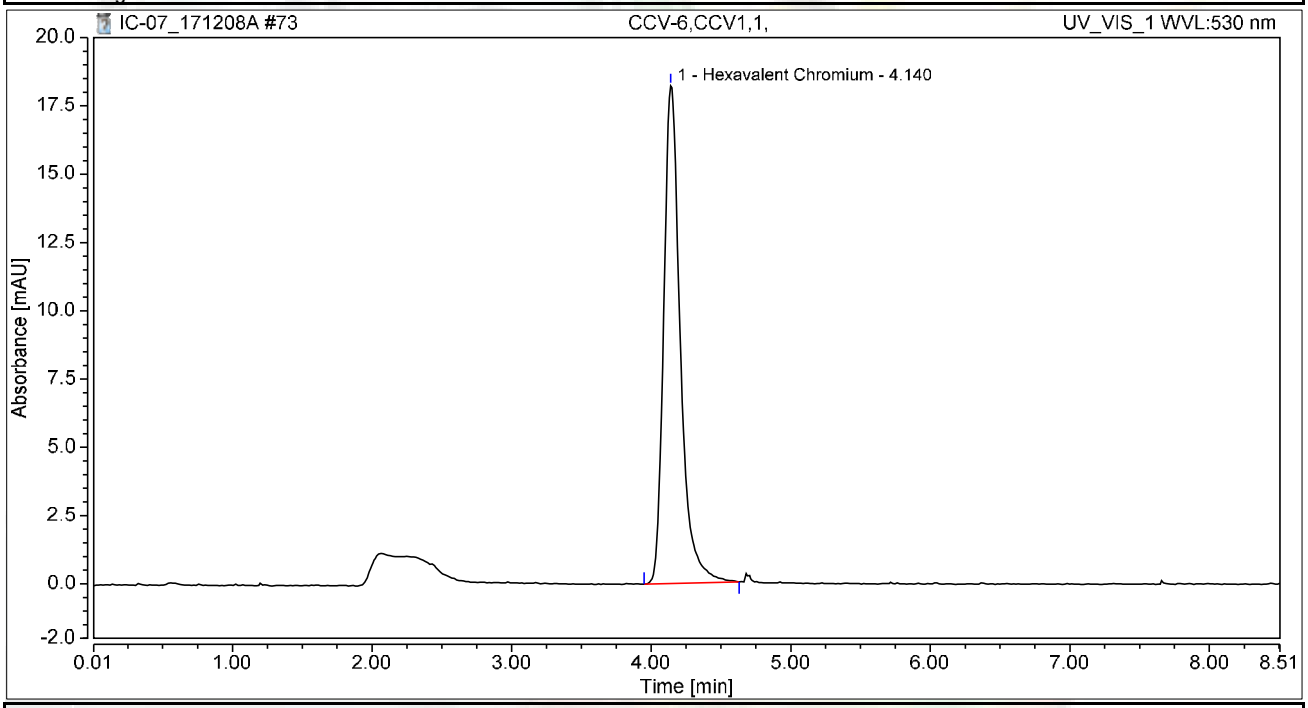
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.047	0.367	100.00	100.00	0.1862
Total:			**0.047**	**0.367**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 18:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

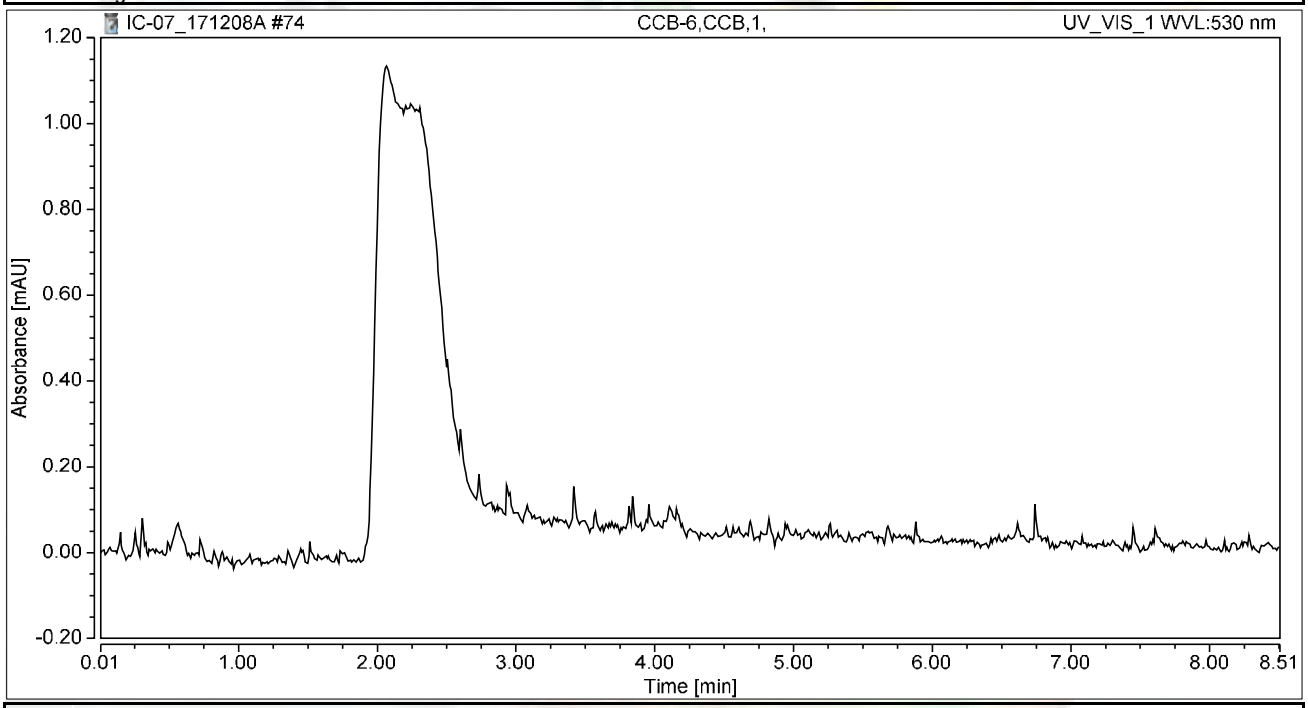
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.516	18.224	100.00	100.00	10.0218
Total:			**2.516**	**18.224**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 18:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

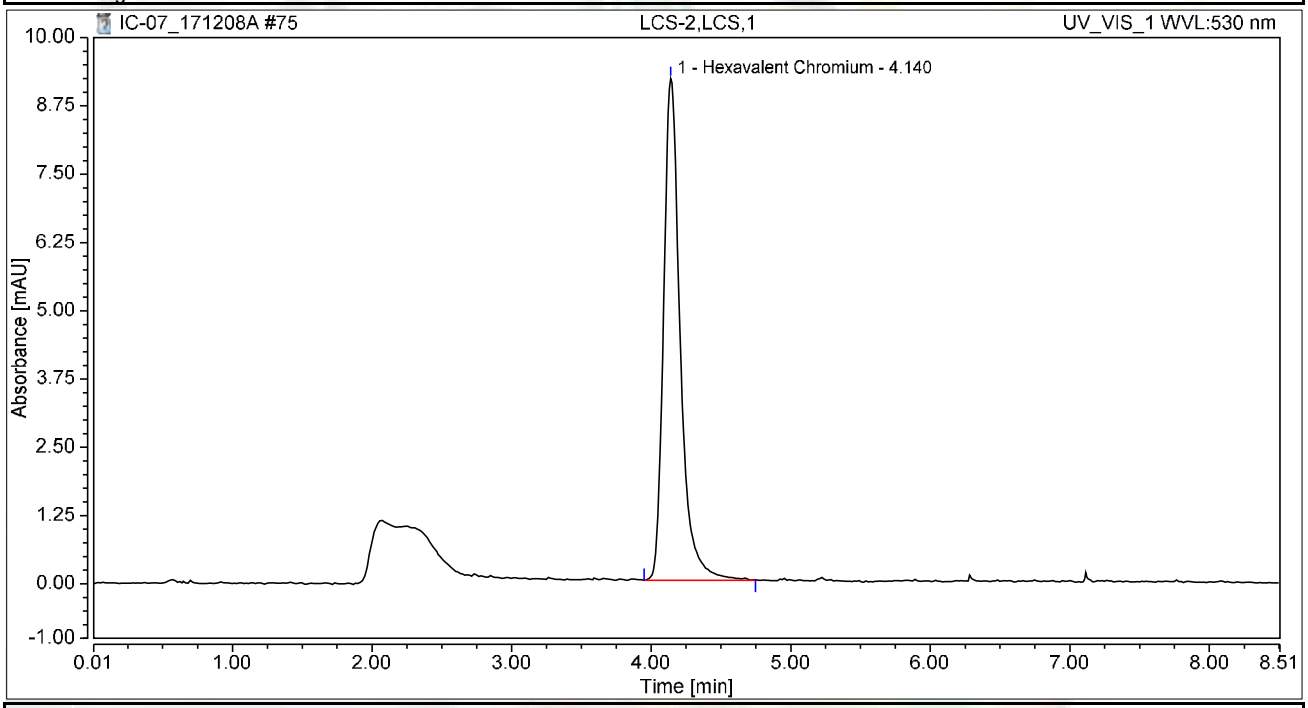
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-2,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 18:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

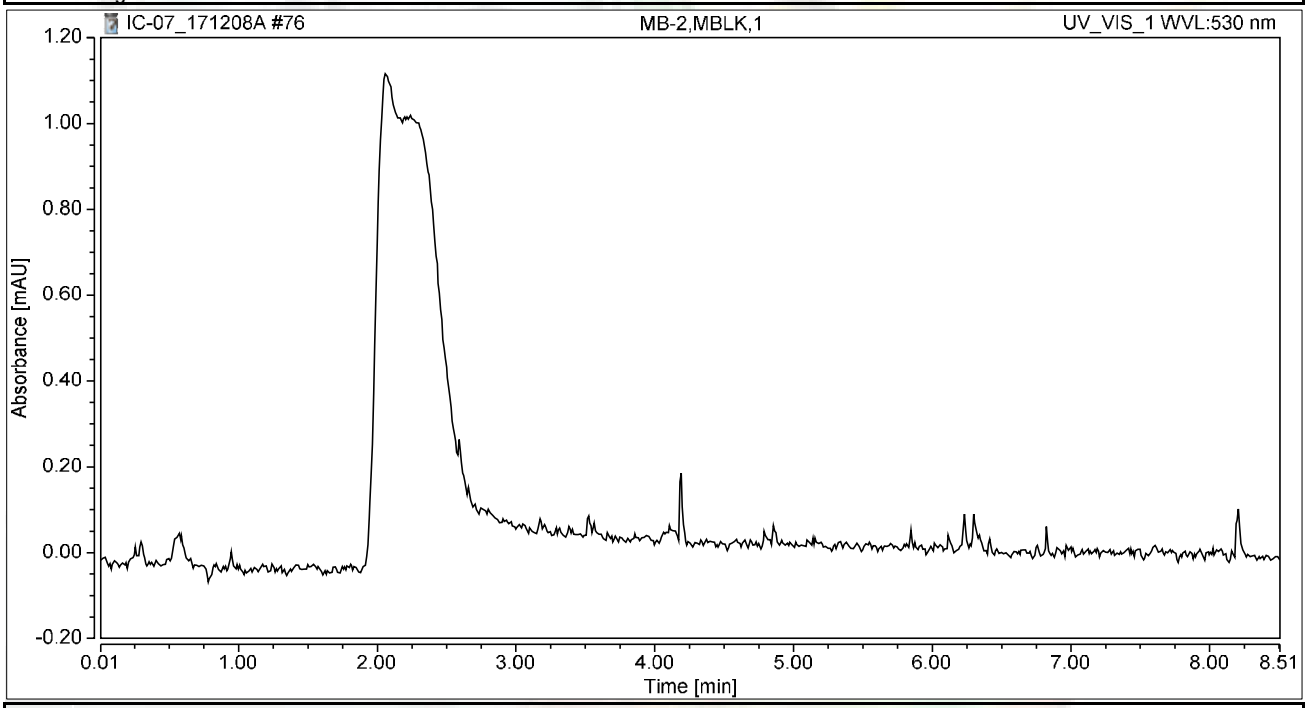
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.271	9.186	100.00	100.00	5.0634
Total:			**1.271**	**9.186**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-2,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 18:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

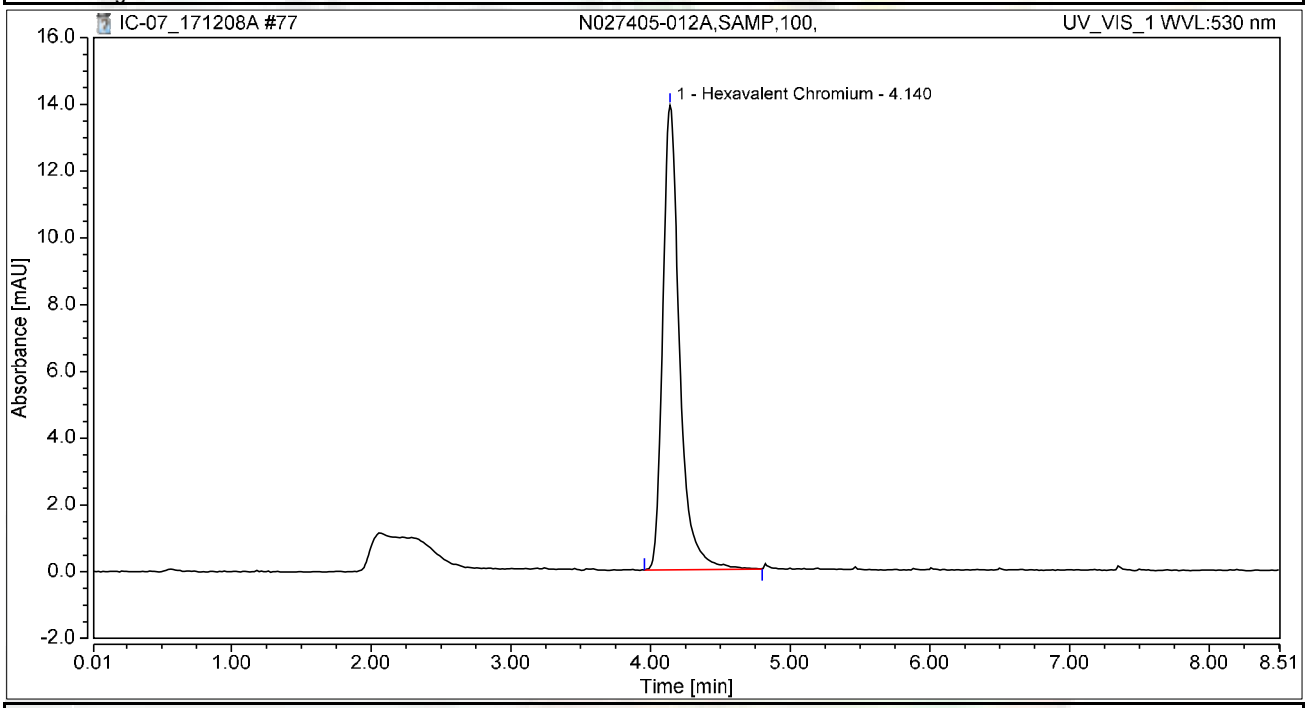
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-012A,SAMP,100,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 19:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

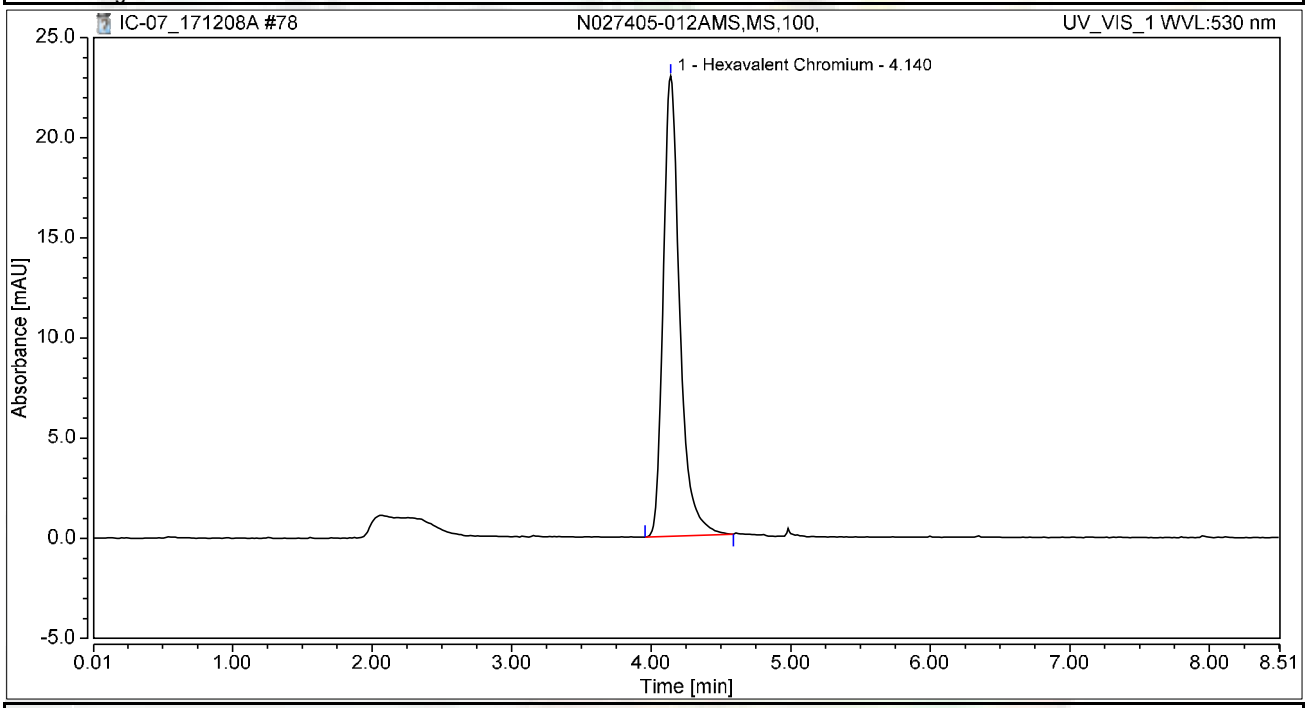
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.938	13.919	100.00	100.00	7.7167
Total:			**1.938**	**13.919**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-012AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 19:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

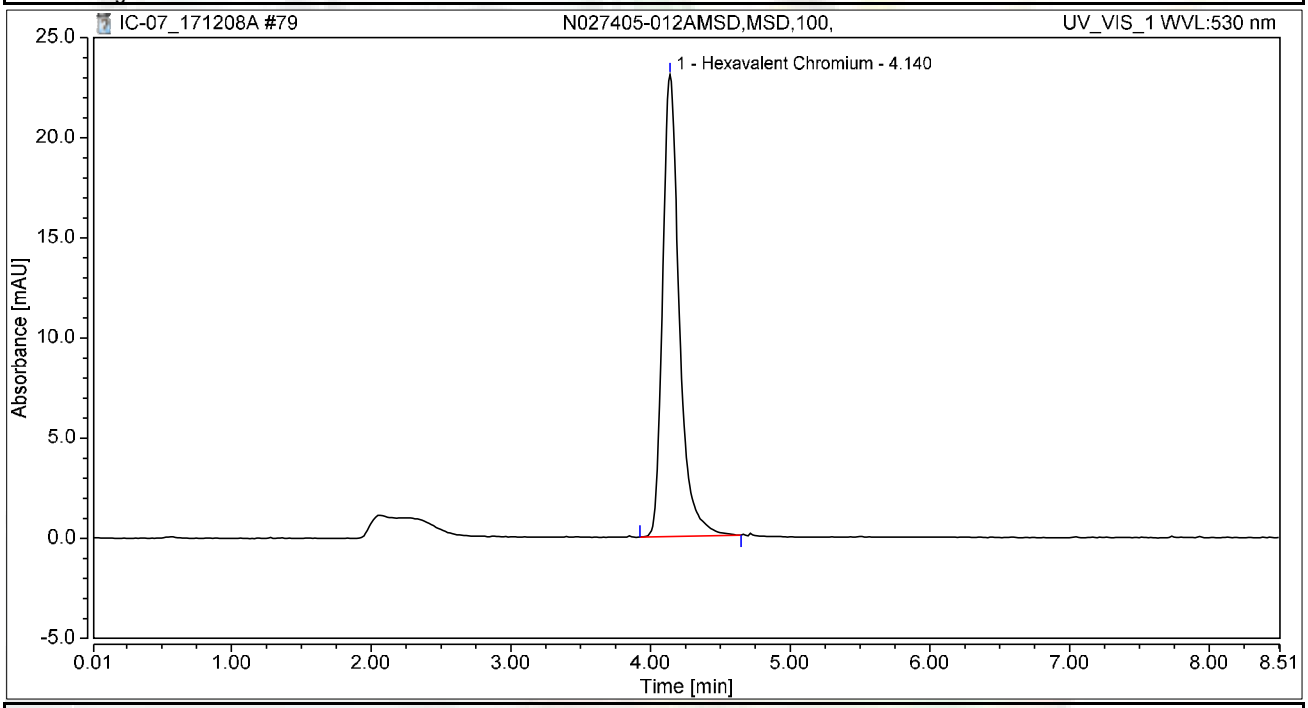
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	3.167	22.980	100.00	100.00	12.6134
Total:			**3.167**	**22.980**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-012AMSD,MSD,100,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 19:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

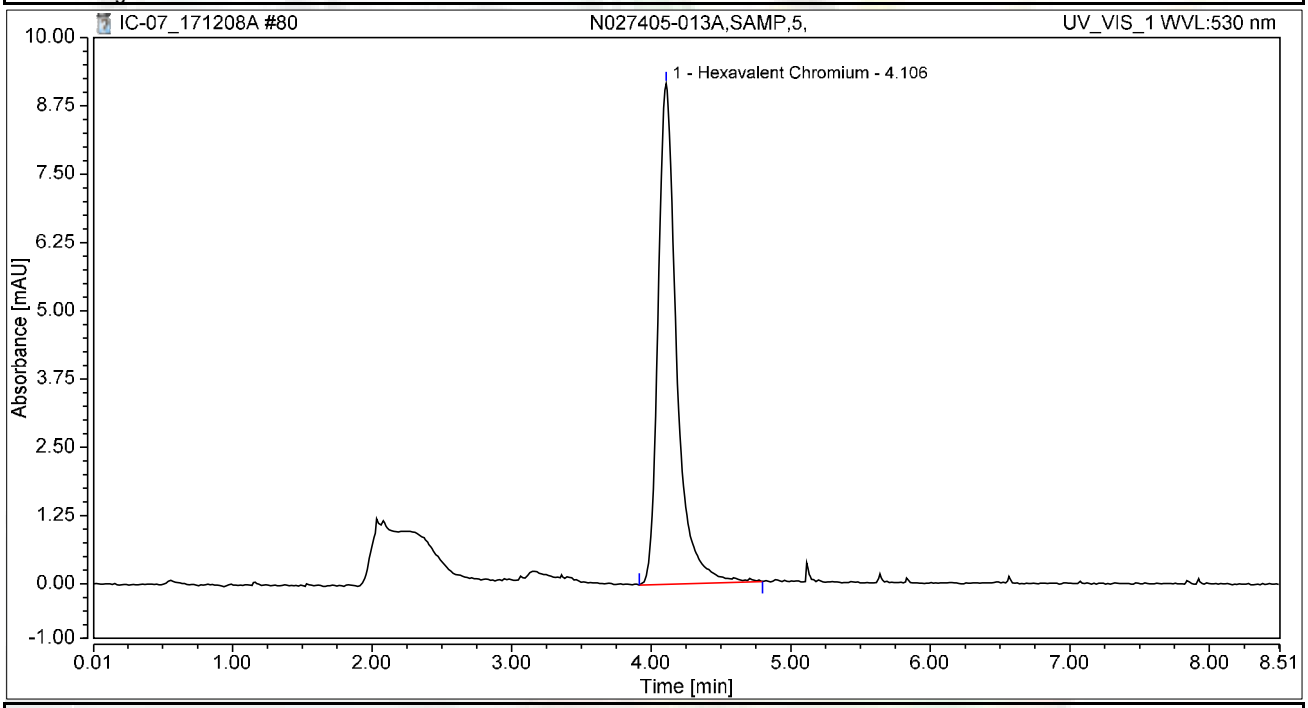
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	3.189	23.057	100.00	100.00	12.6984
Total:			**3.189**	**23.057**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-013A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 19:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

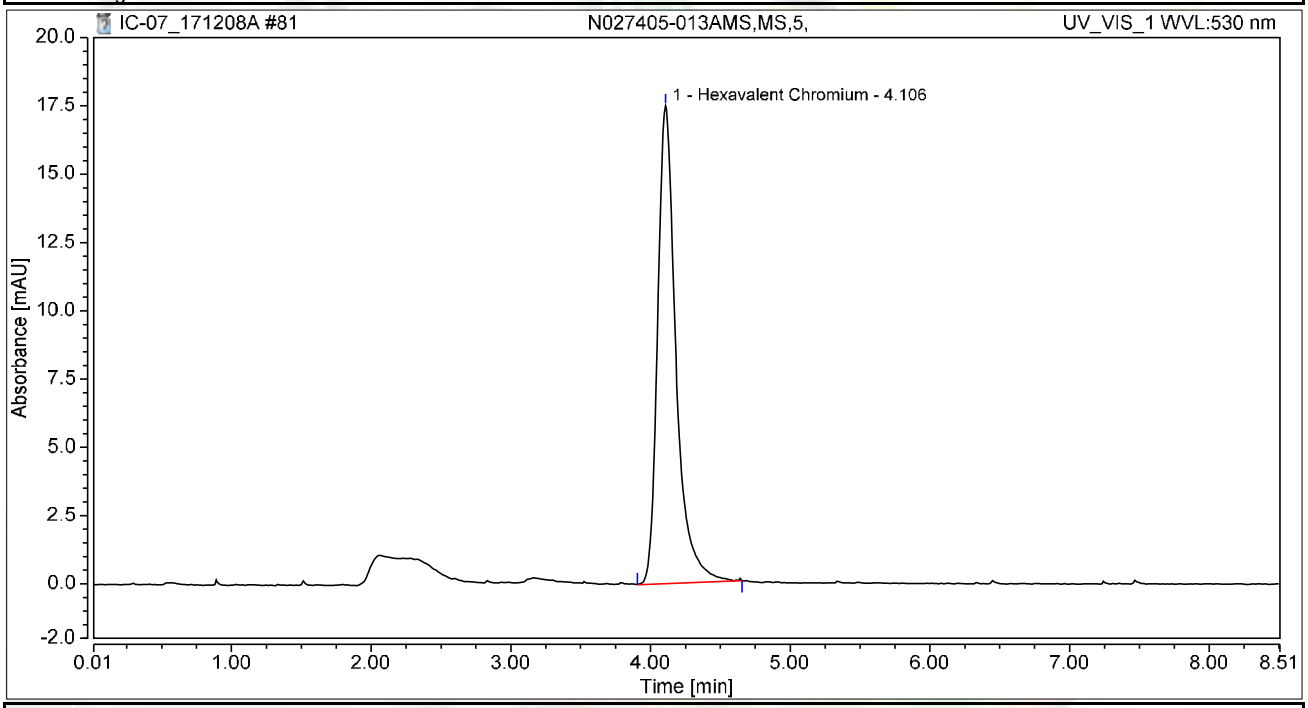
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	1.416	9.163	100.00	100.00	5.6403
Total:			**1.416**	**9.163**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-013AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 19:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

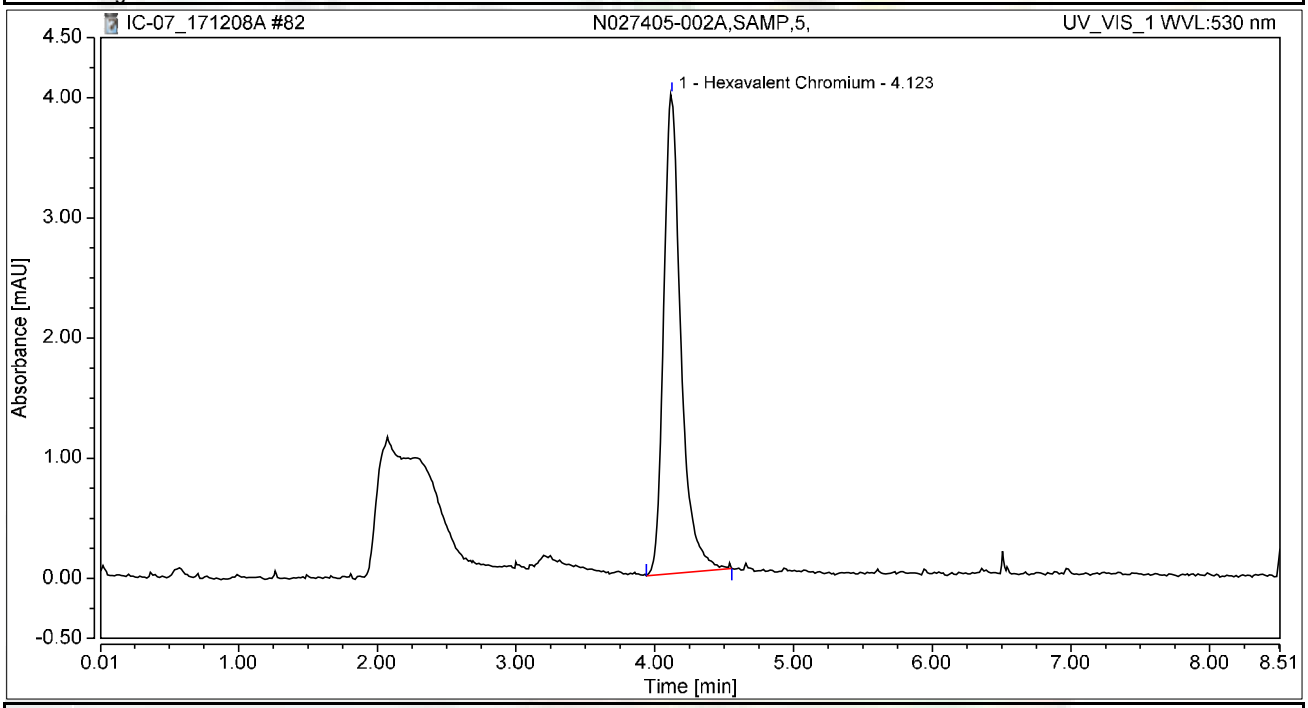
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	2.661	17.492	100.00	100.00	10.5957
Total:			**2.661**	**17.492**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 19:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

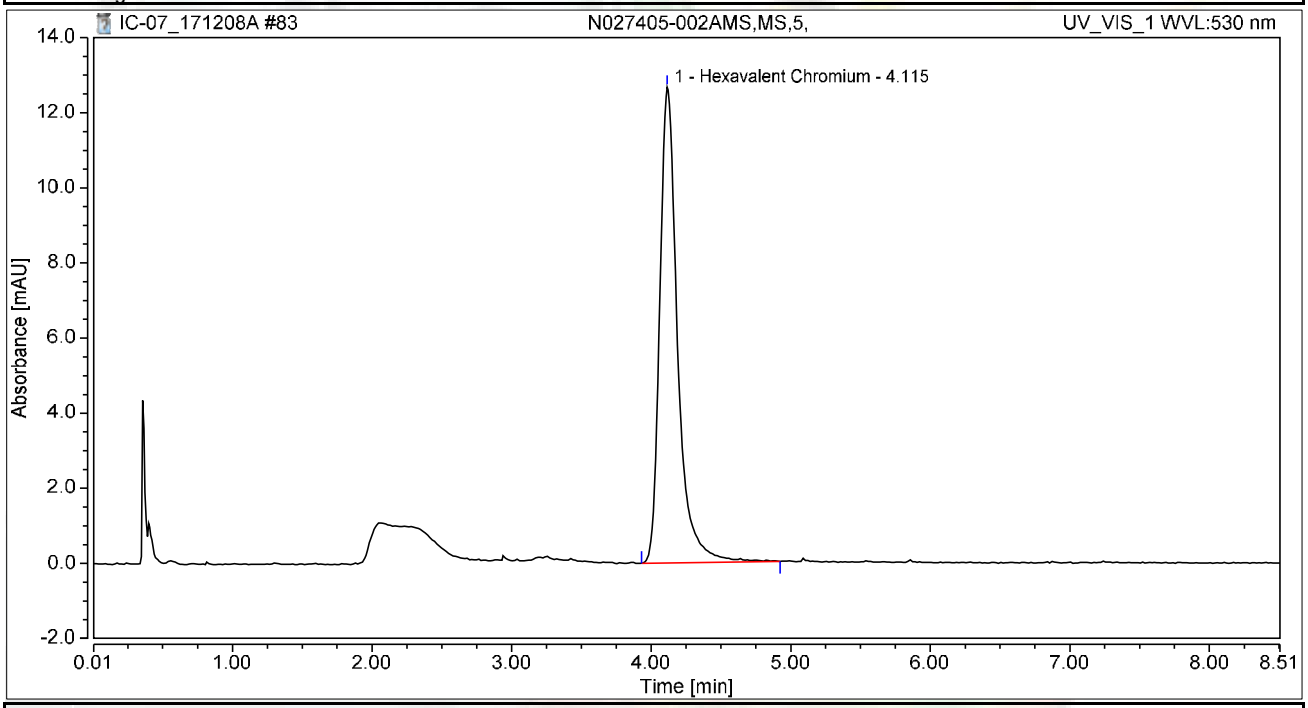
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.578	3.990	100.00	100.00	2.3032
Total:			**0.578**	**3.990**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 20:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

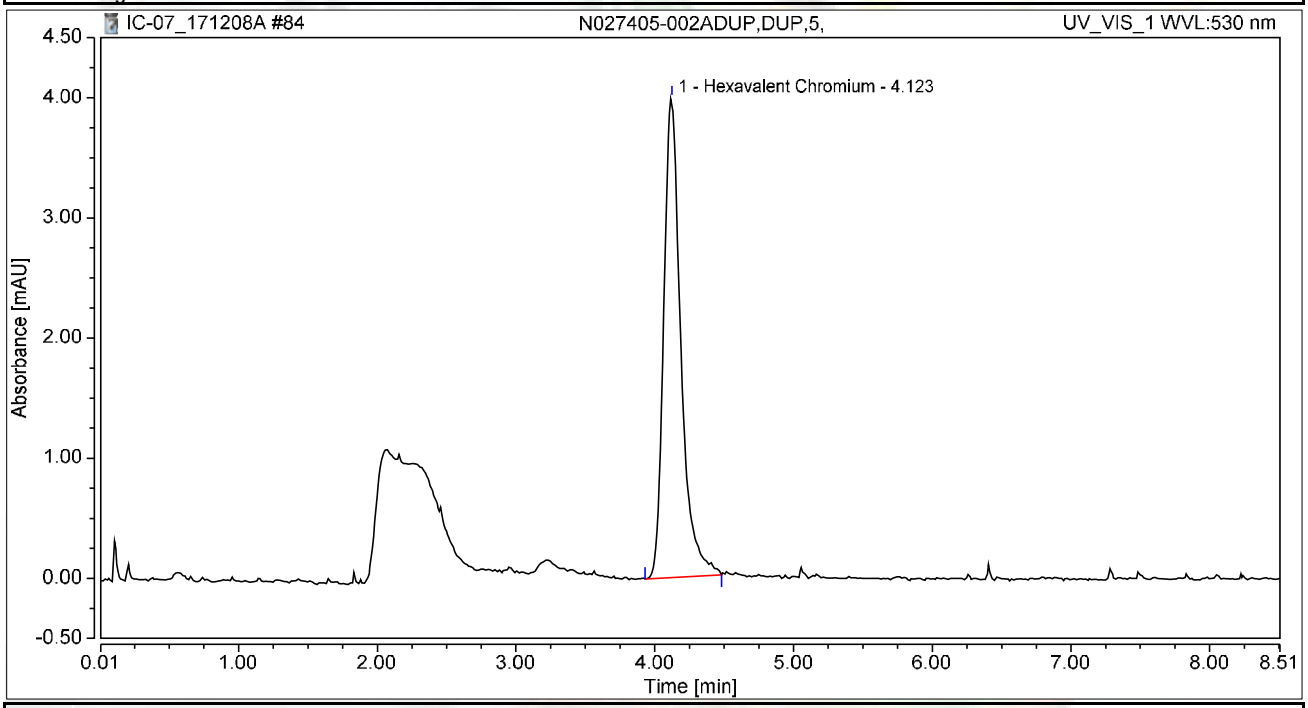
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	1.876	12.669	100.00	100.00	7.4712
Total:			**1.876**	**12.669**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-002ADUP,DUP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 20:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

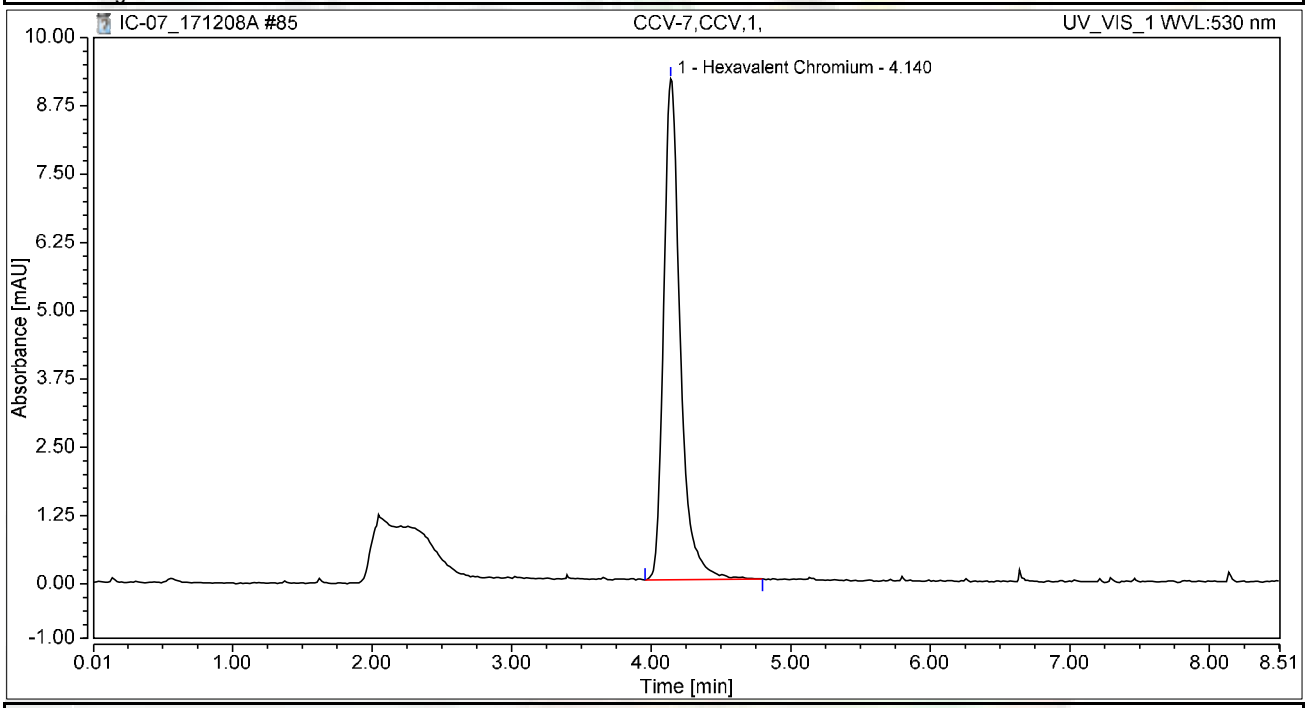
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.575	3.994	100.00	100.00	2.2883
Total:			**0.575**	**3.994**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 20:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

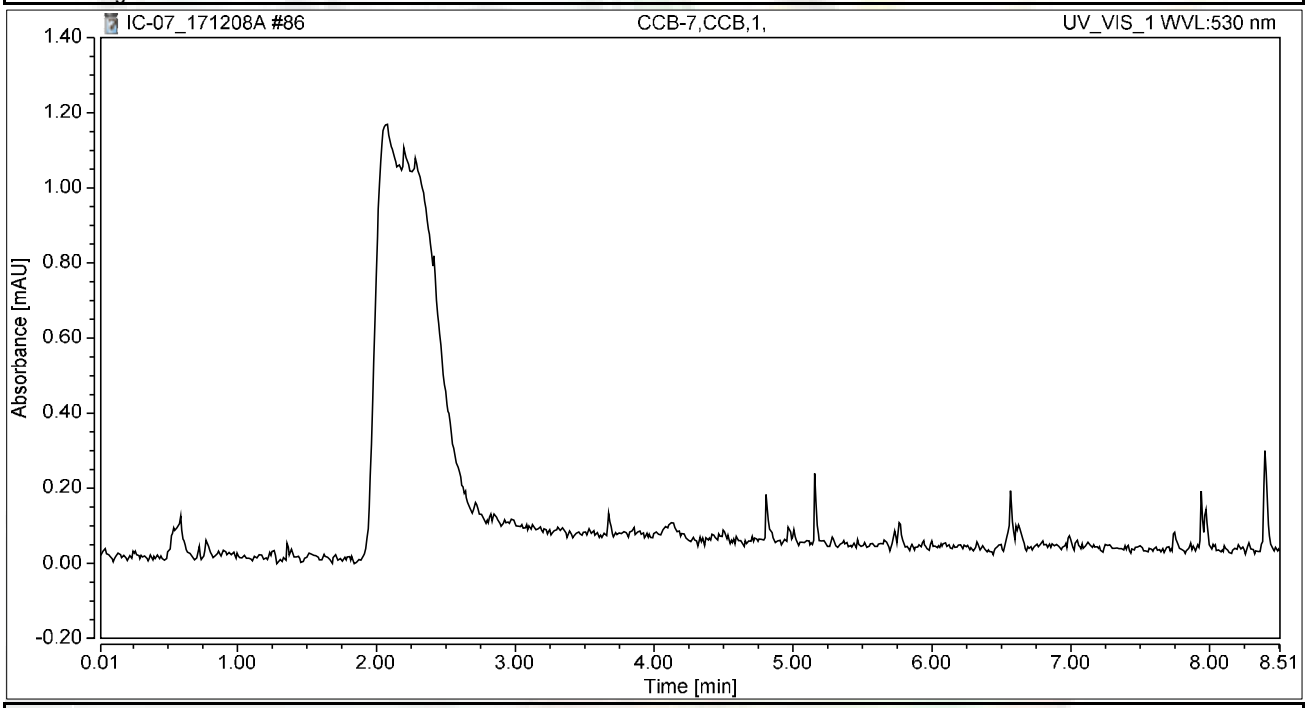
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.272	9.170	100.00	100.00	5.0646
Total:			**1.272**	**9.170**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 20:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

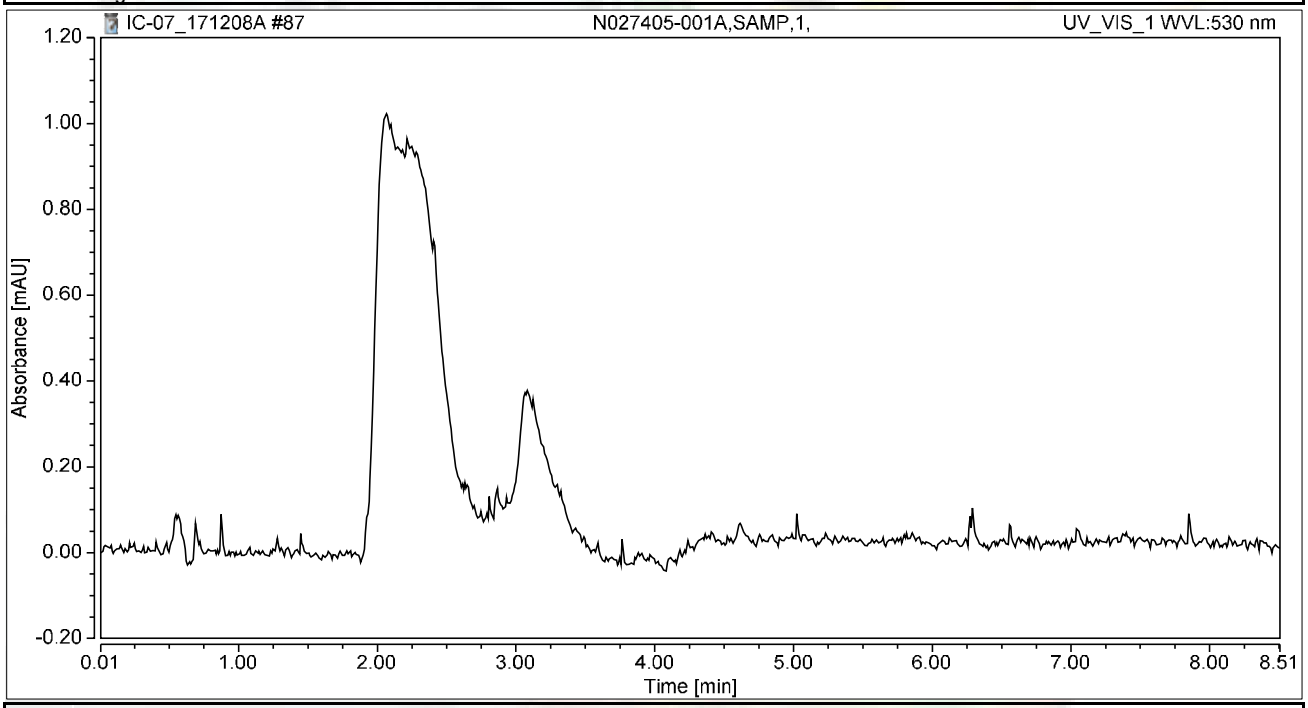
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 20:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

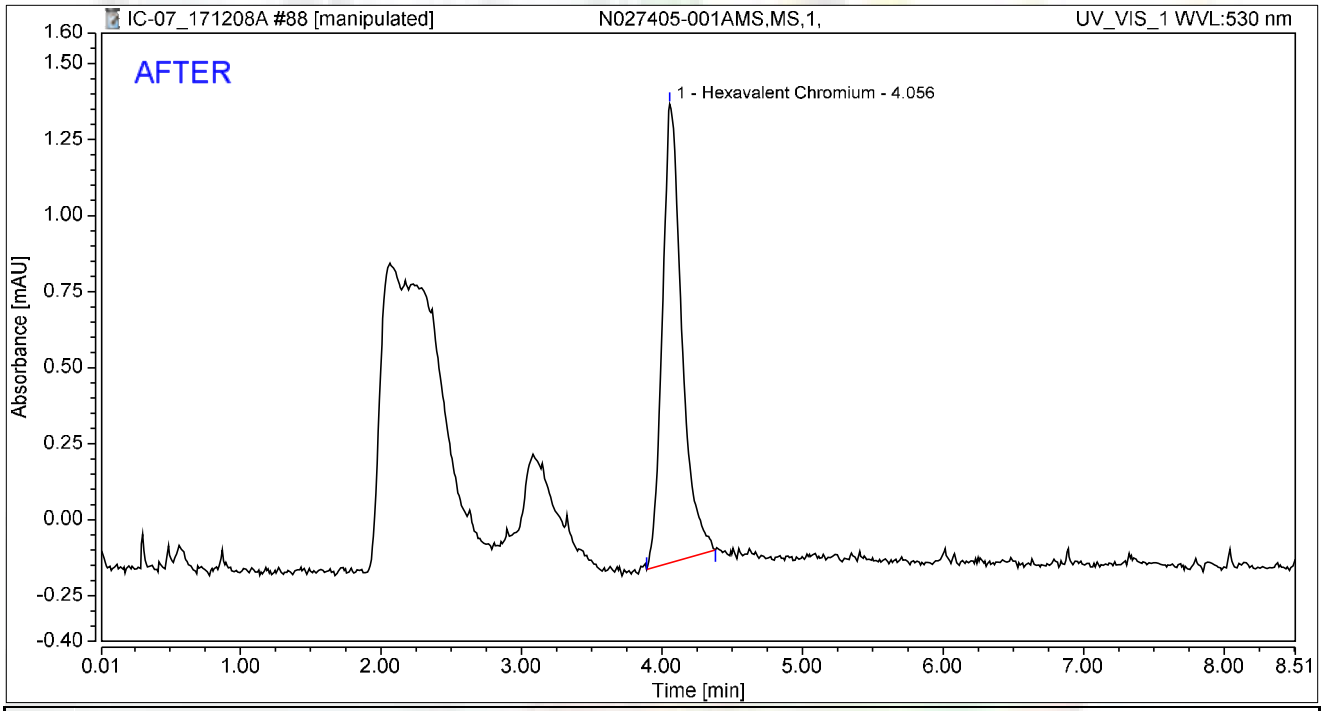
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-001AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 20:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.243	1.508	100.00	100.00	0.9693
Total:			**0.243**	**1.508**	**100.00**	**100.00**	

rba 12/16/2017

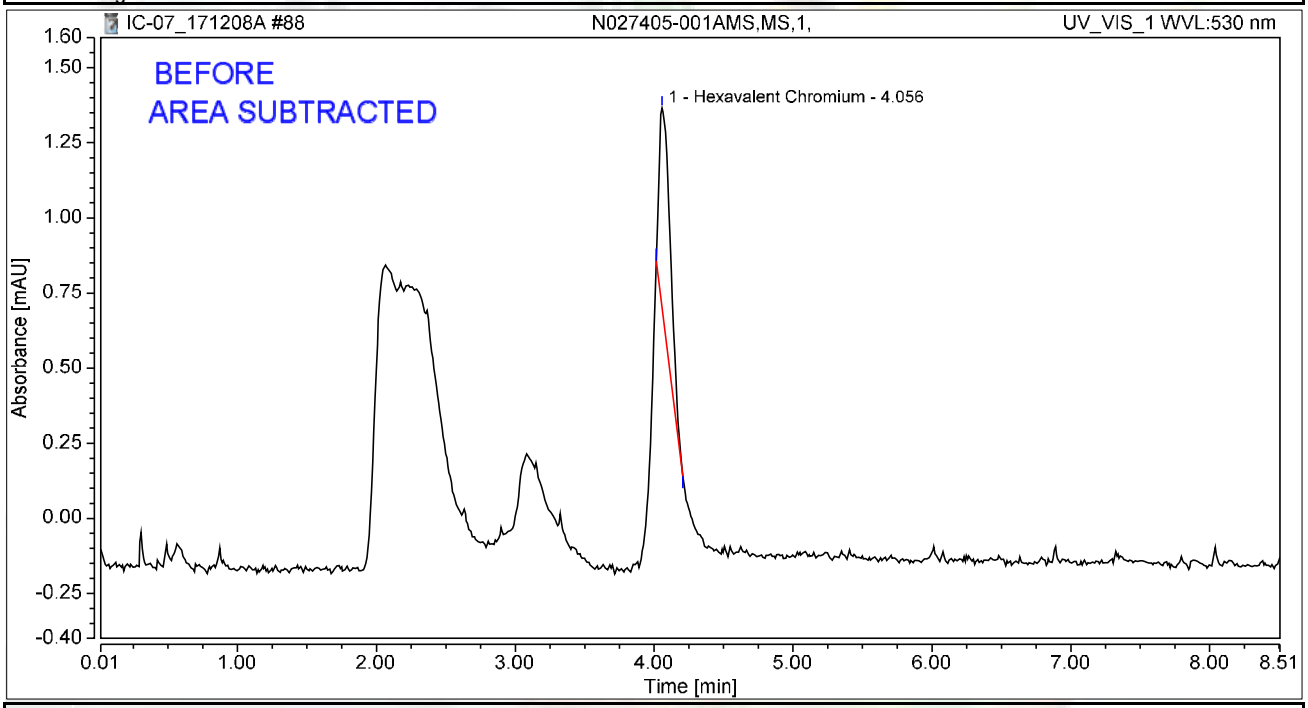
RB 12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027405-001AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 20:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.065	0.664	100.00	100.00	0.2594
Total:			**0.065**	**0.664**	**100.00**	**100.00**	

rba 12/16/2017

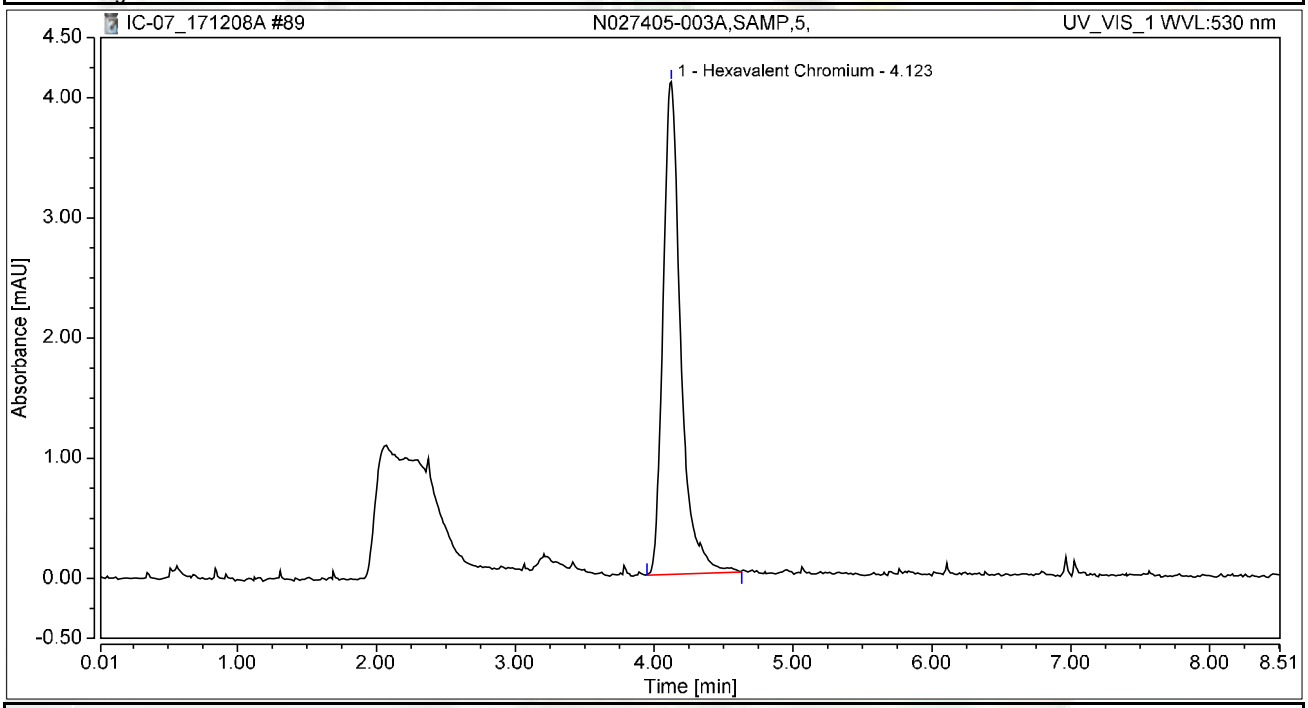
12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027405-003A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 20:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

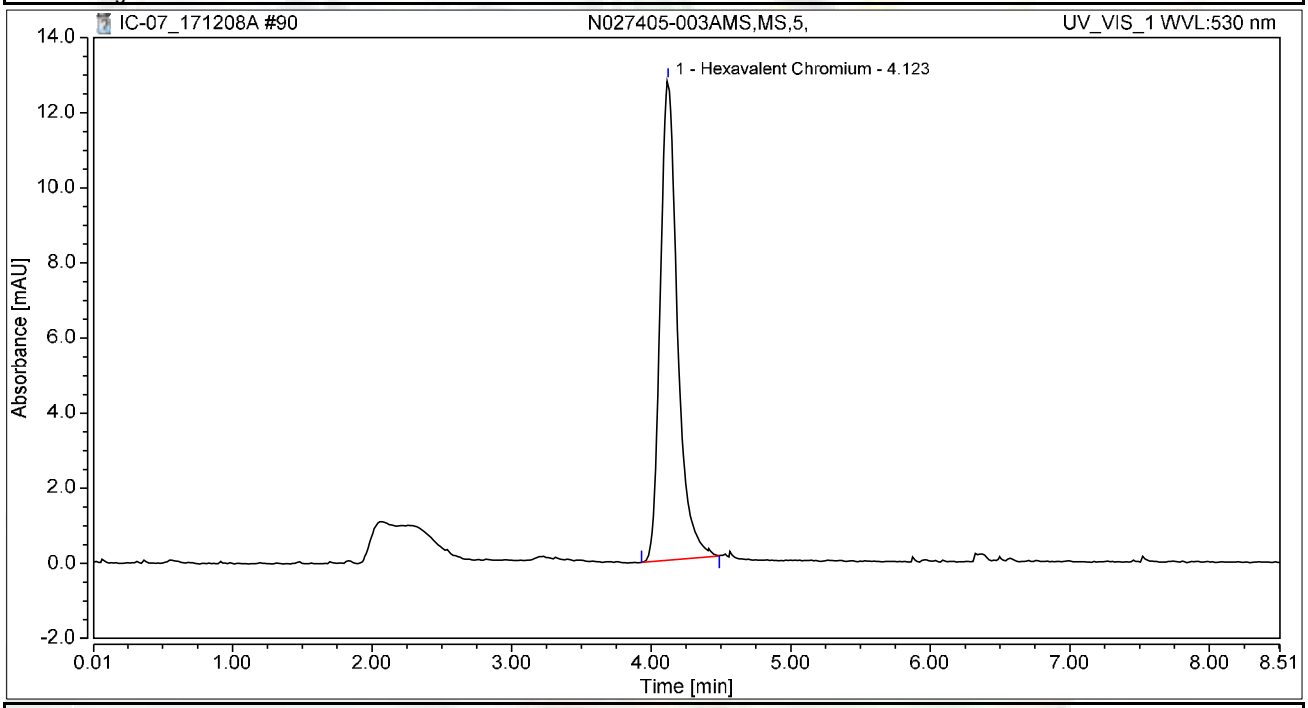
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.603	4.099	100.00	100.00	2.4034
Total:			**0.603**	**4.099**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-003AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 21:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

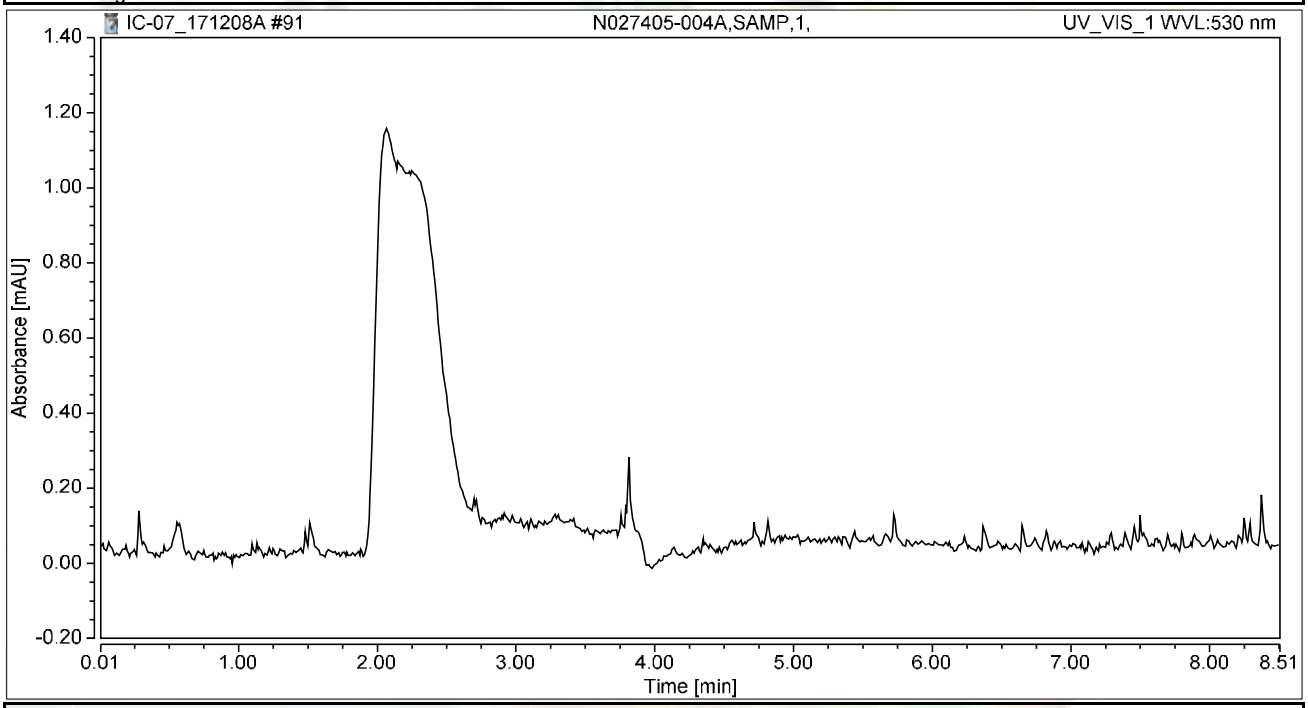
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.834	12.788	100.00	100.00	7.3047
Total:			**1.834**	**12.788**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 21:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

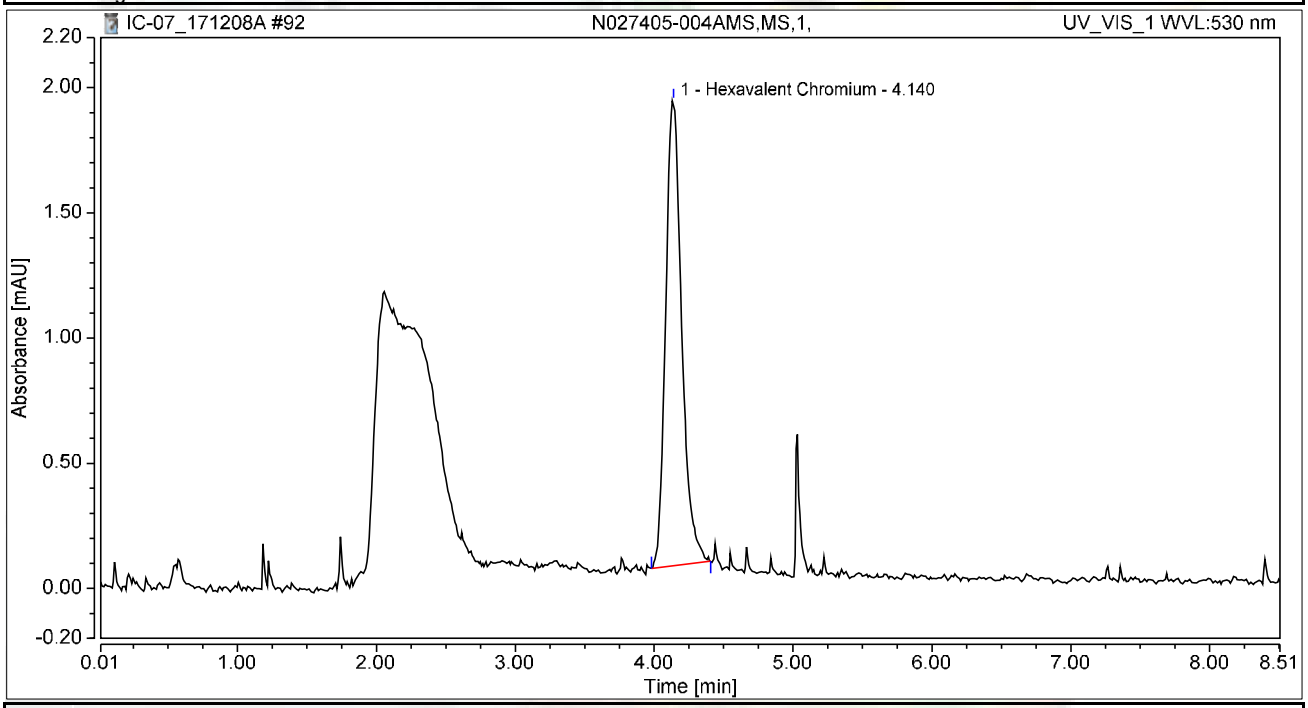
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-004AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 21:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

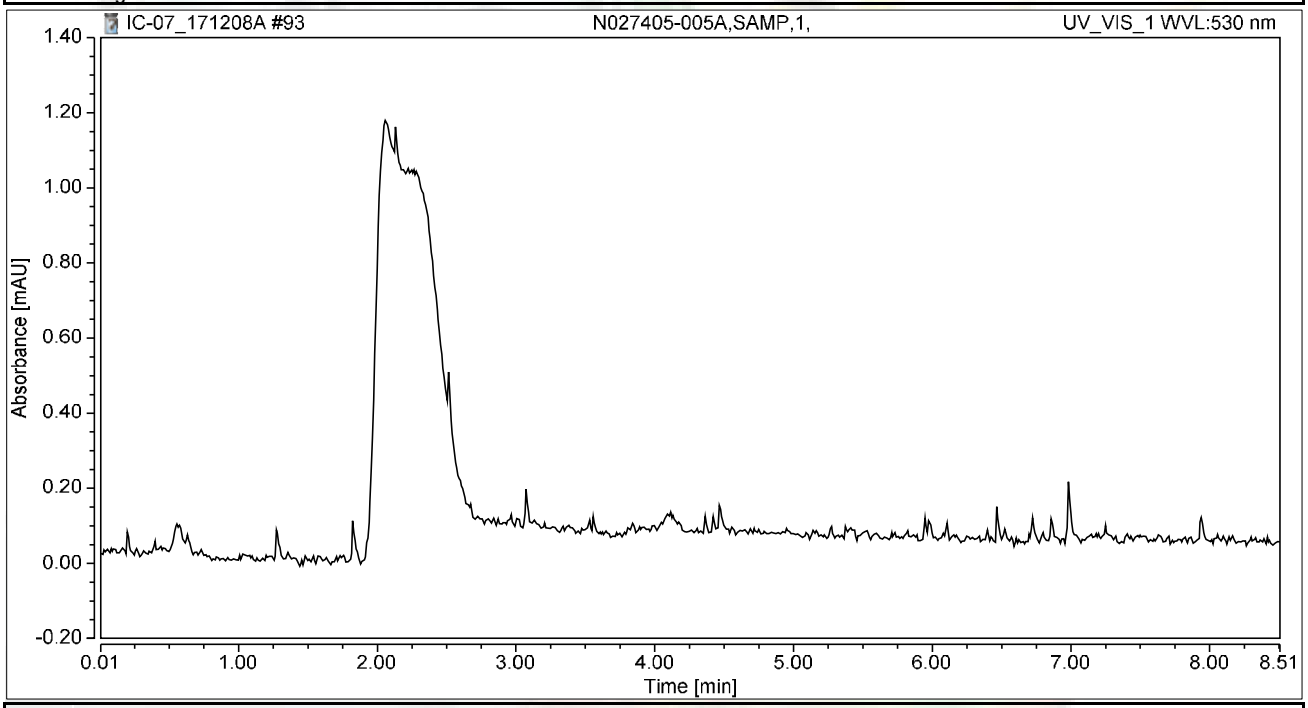
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.249	1.858	100.00	100.00	0.9921
Total:			**0.249**	**1.858**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 21:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

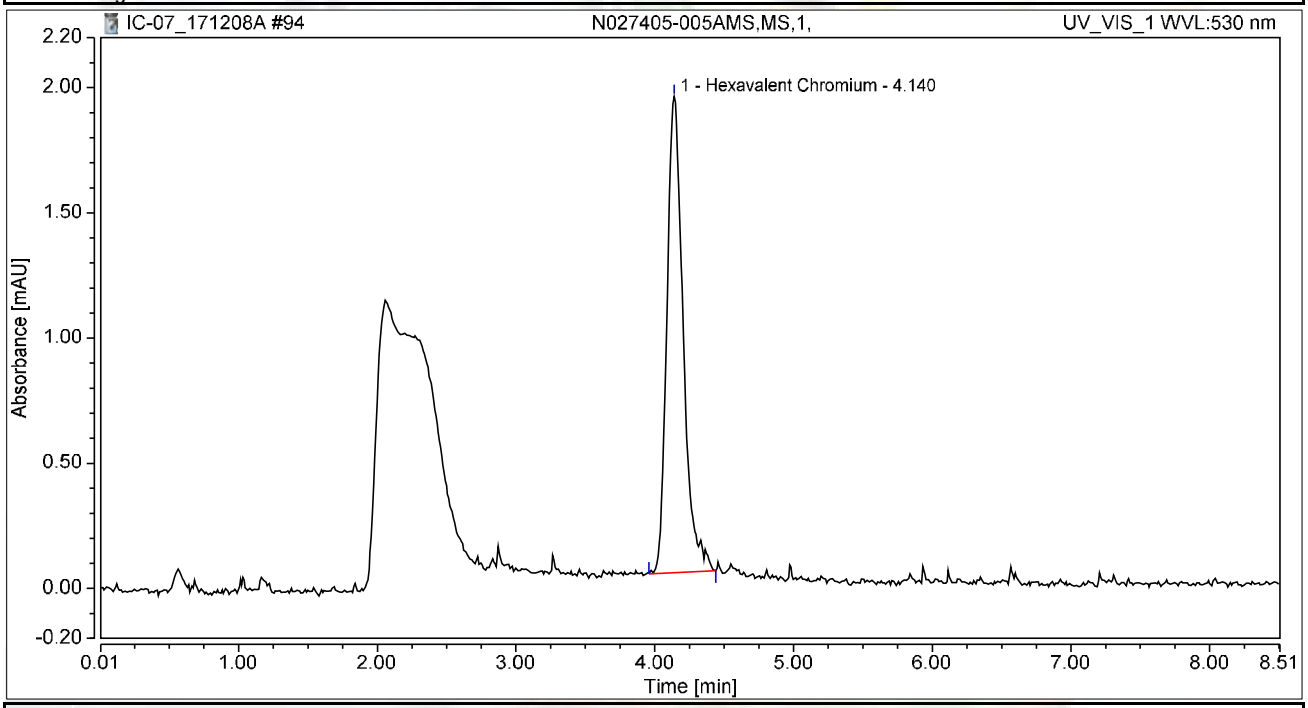
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-005AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 21:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

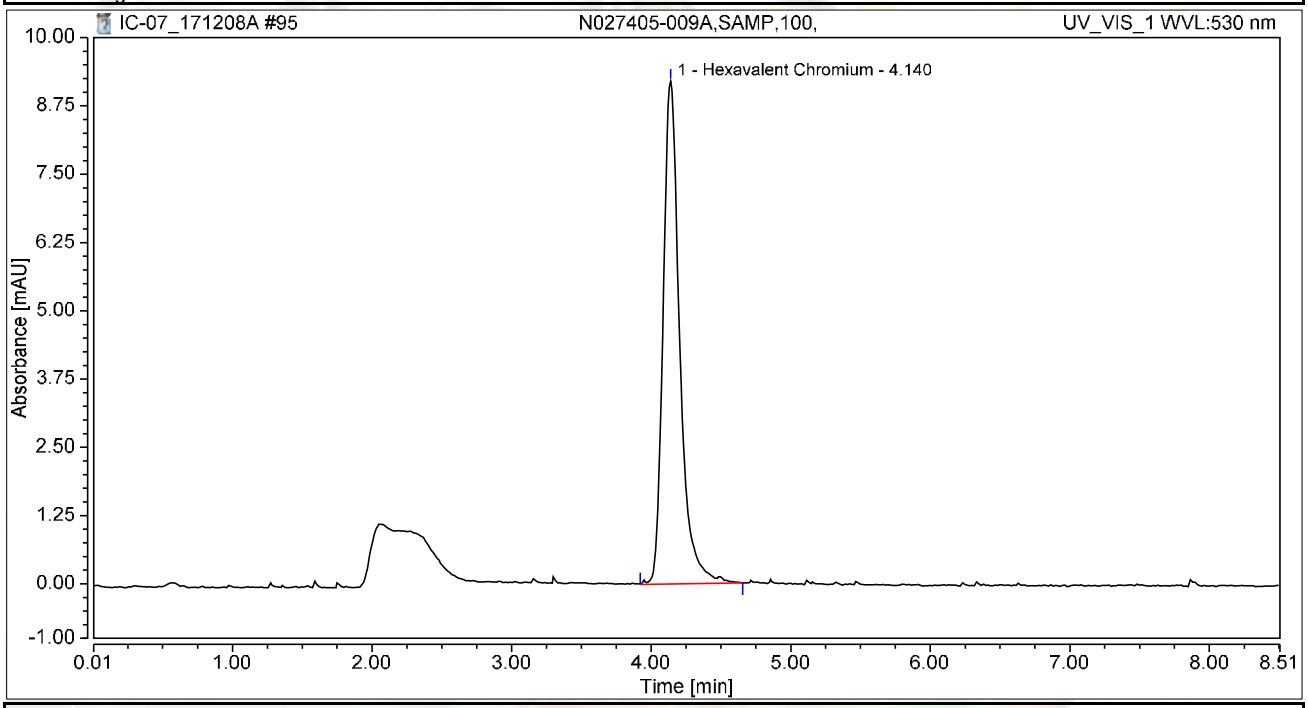
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.259	1.902	100.00	100.00	1.0328
Total:			**0.259**	**1.902**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-009A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 21:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

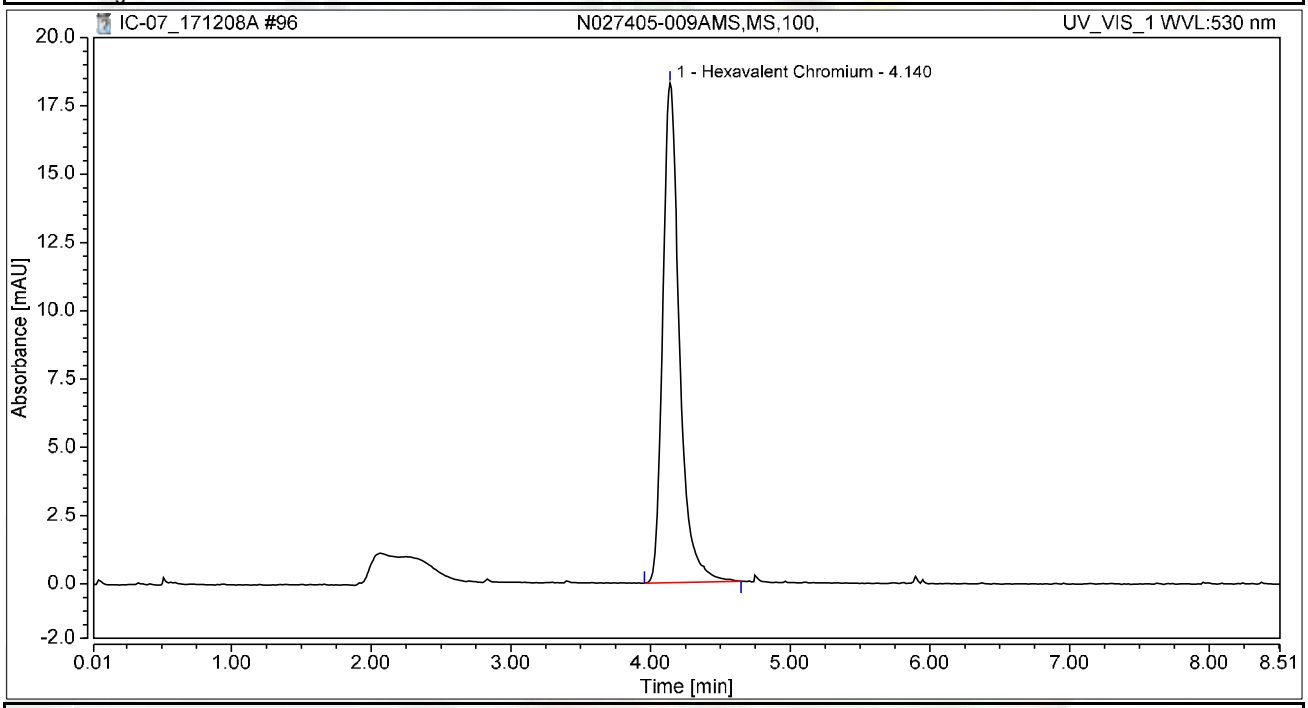
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.277	9.212	100.00	100.00	5.0850
Total:			**1.277**	**9.212**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-009AMS,MS,100,**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 22:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

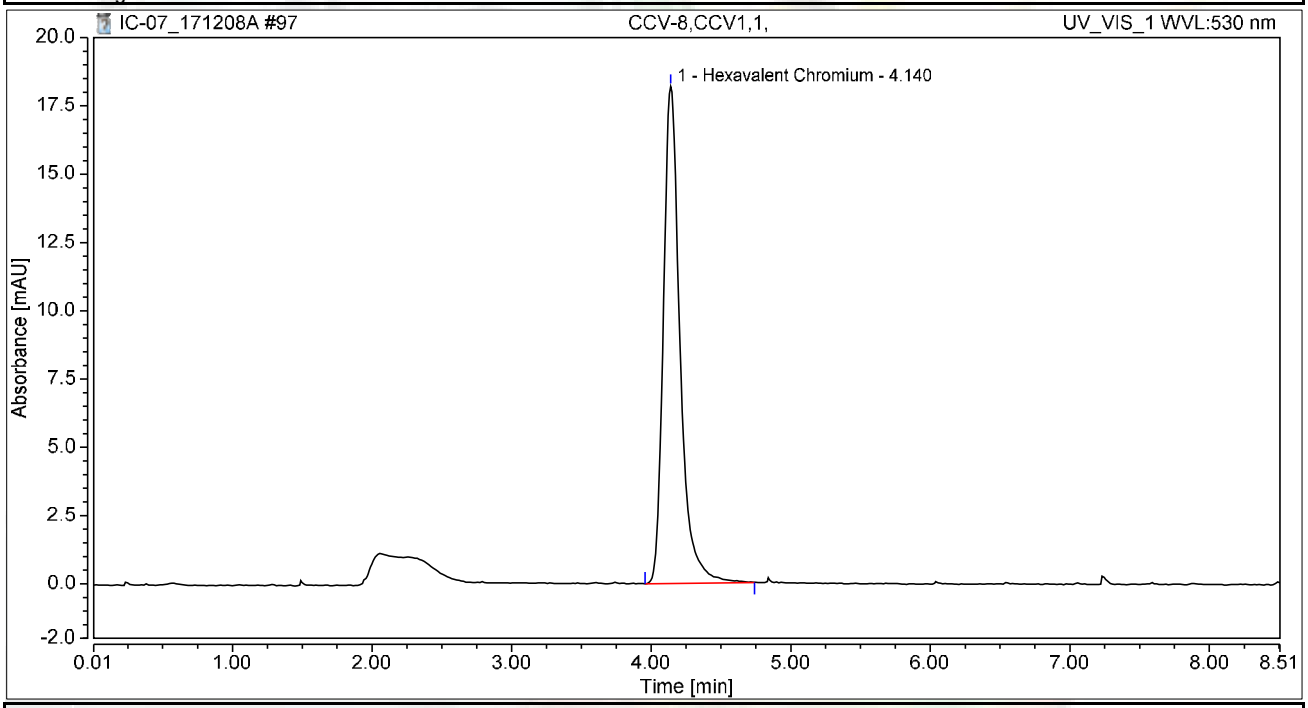
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.528	18.290	100.00	100.00	10.0693
Total:			**2.528**	**18.290**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-8,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 22:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

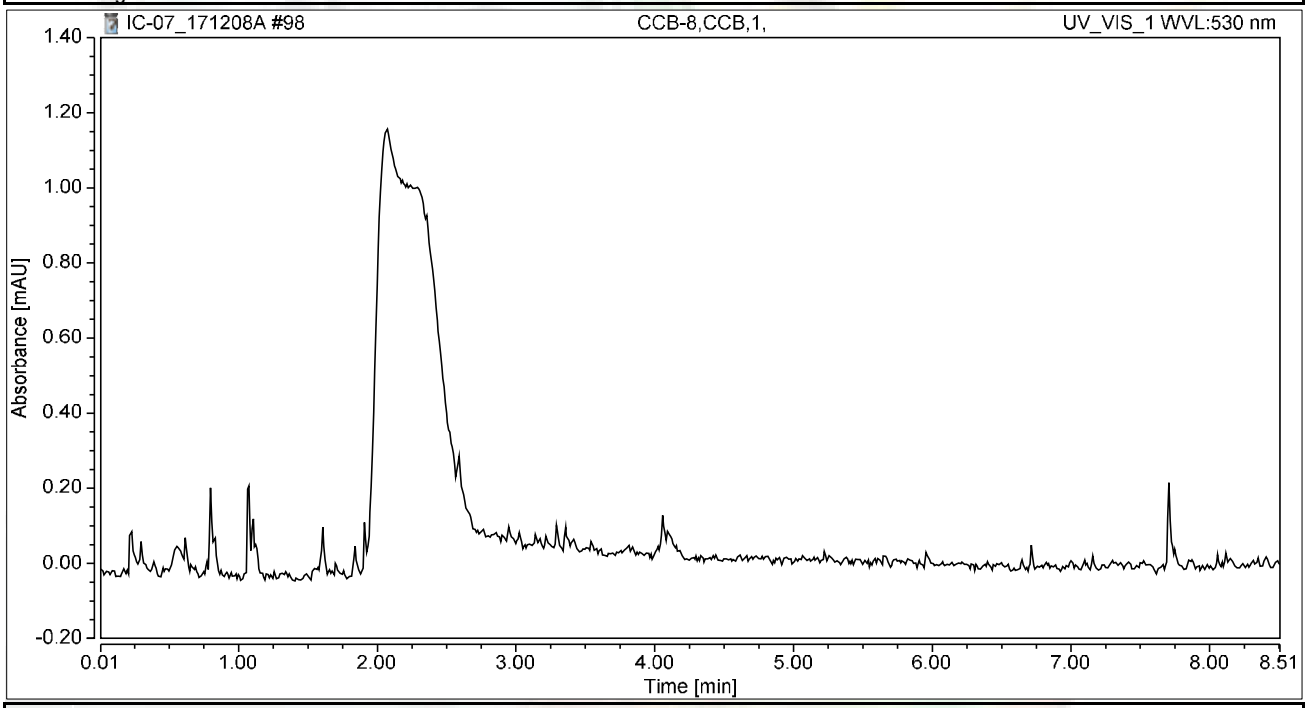
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.518	18.205	100.00	100.00	10.0272
Total:			**2.518**	**18.205**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-8,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 22:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

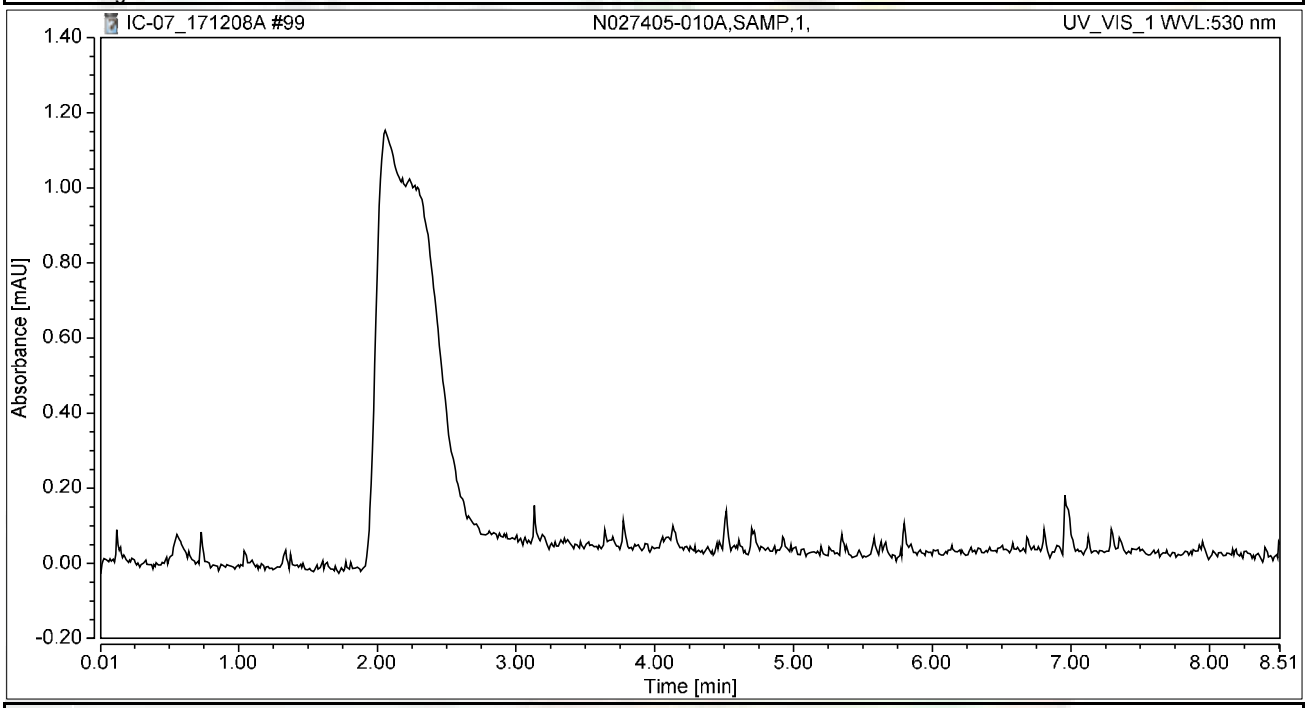
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 22:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

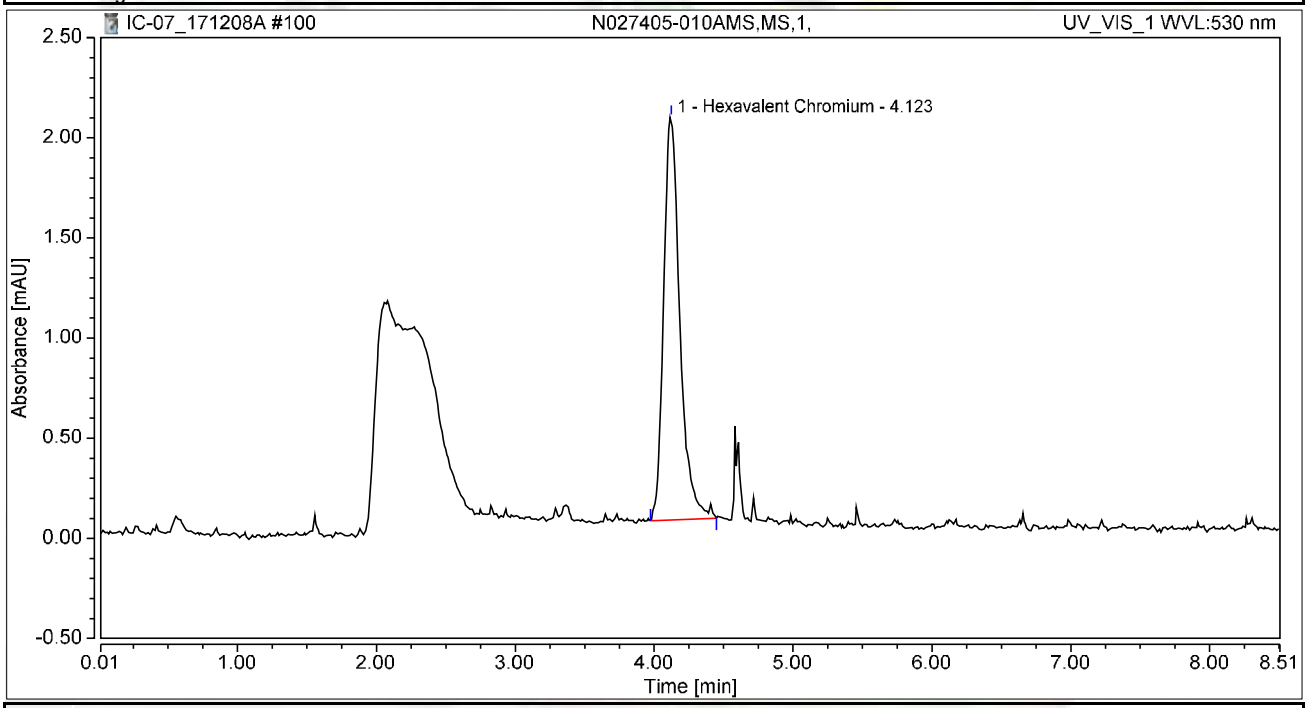
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-010AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 22:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

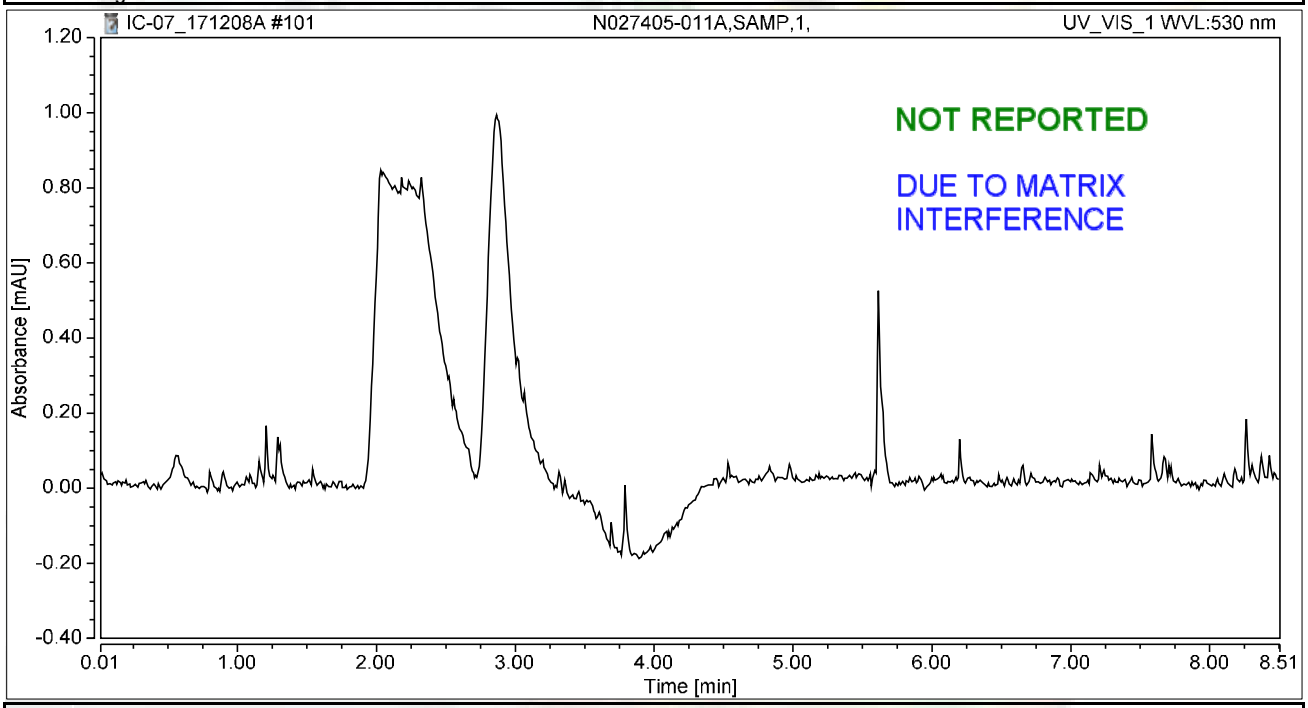
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.273	2.010	100.00	100.00	1.0865
Total:			**0.273**	**2.010**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-011A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 22:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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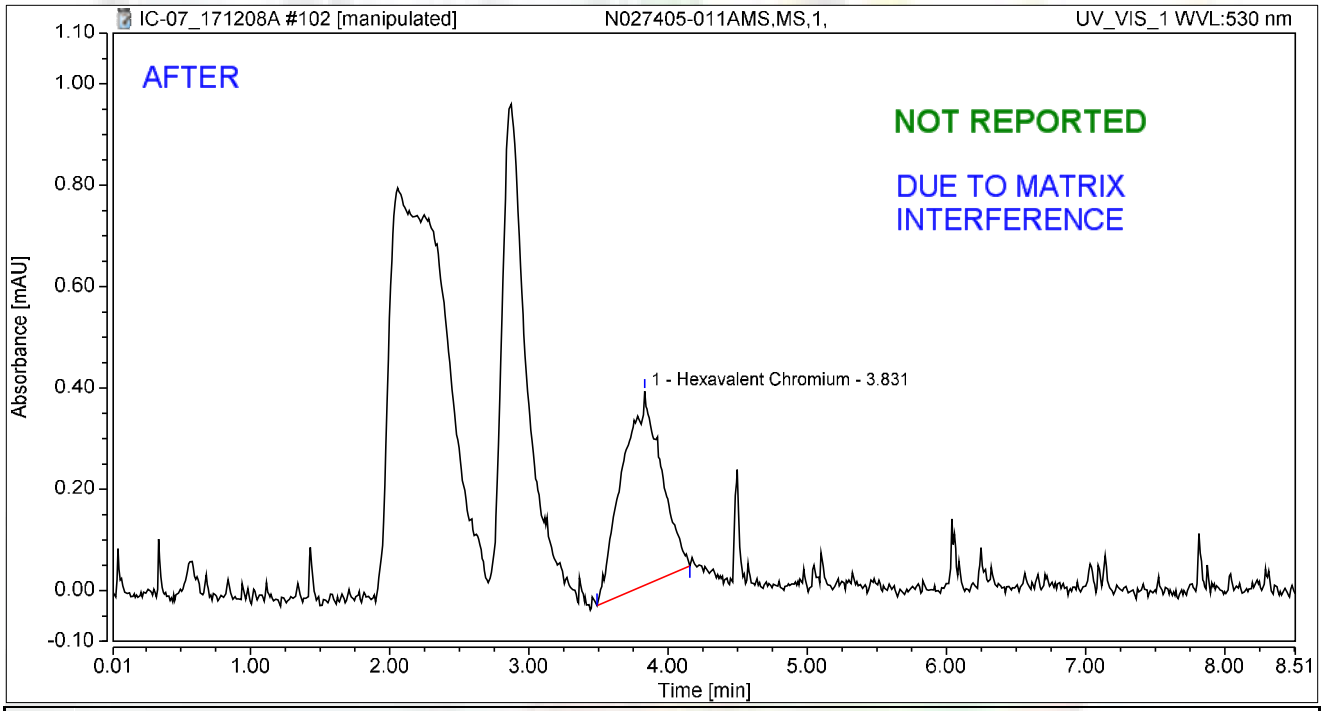
Chromatogram and Results

Injection Details

Injection Name:	**N027405-011AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 23:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.831	0.125	0.383	100.00	100.00	0.4988
Total:			**0.125**	**0.383**	**100.00**	**100.00**	

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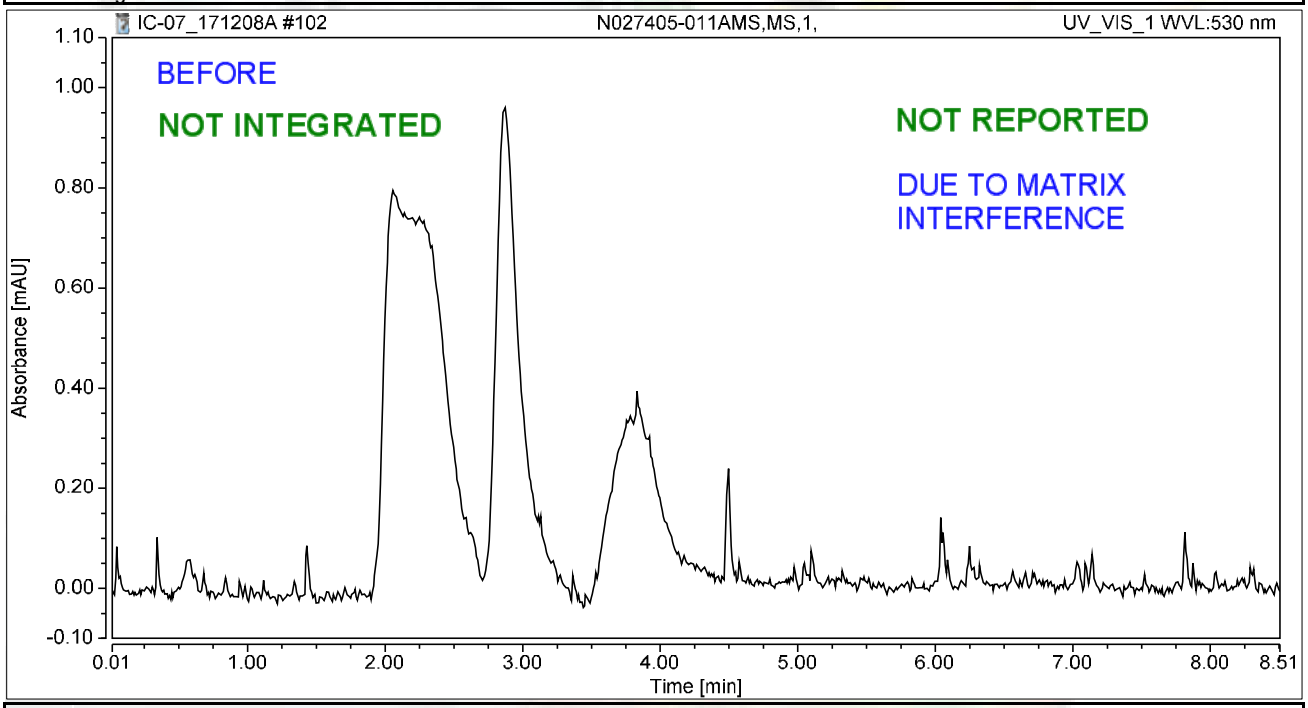
Chromatogram and Results

Injection Details

Injection Name:	**N027405-011AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 23:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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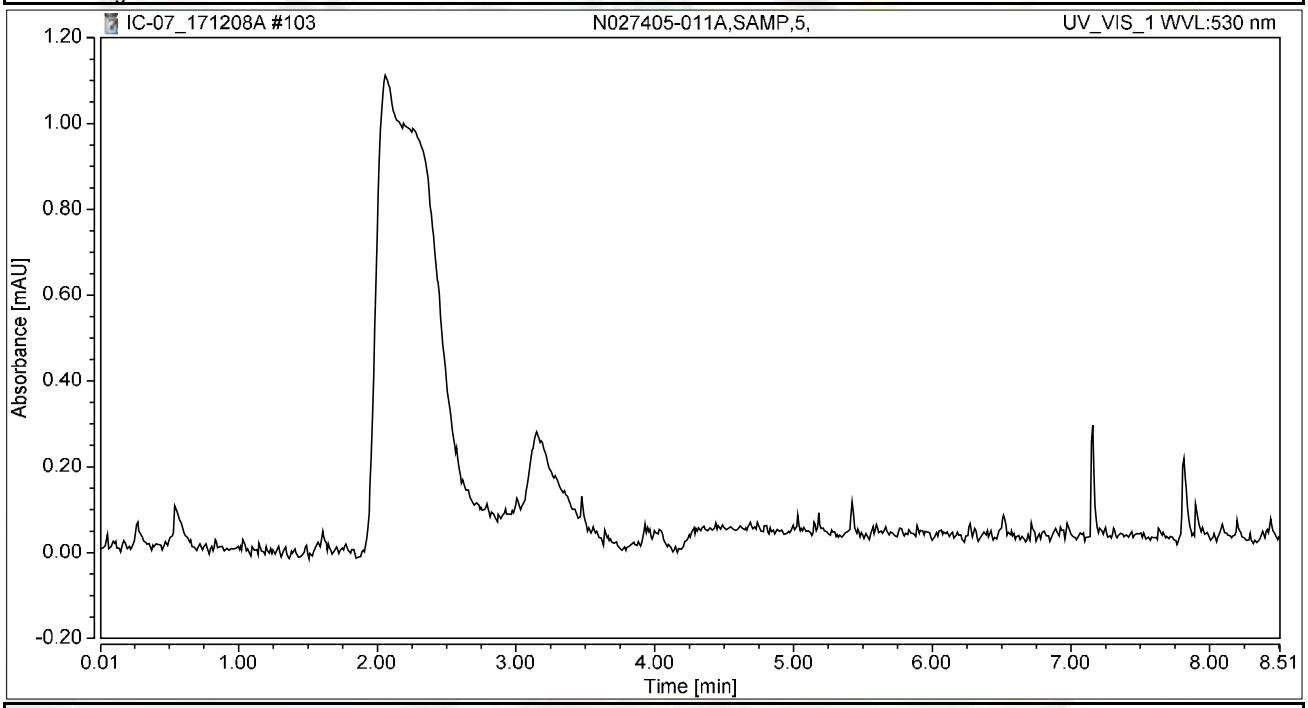
Chromatogram and Results

Injection Details

Injection Name:	**N027405-011A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 23:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

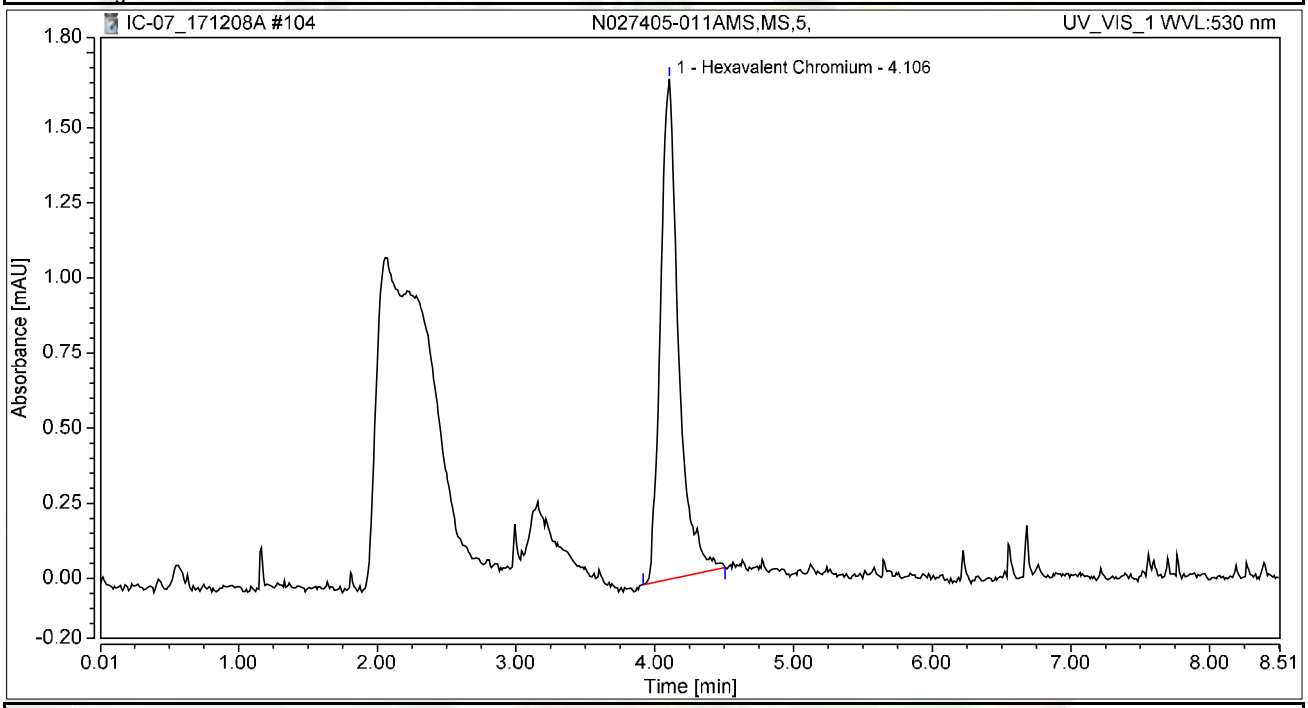
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-011AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 23:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

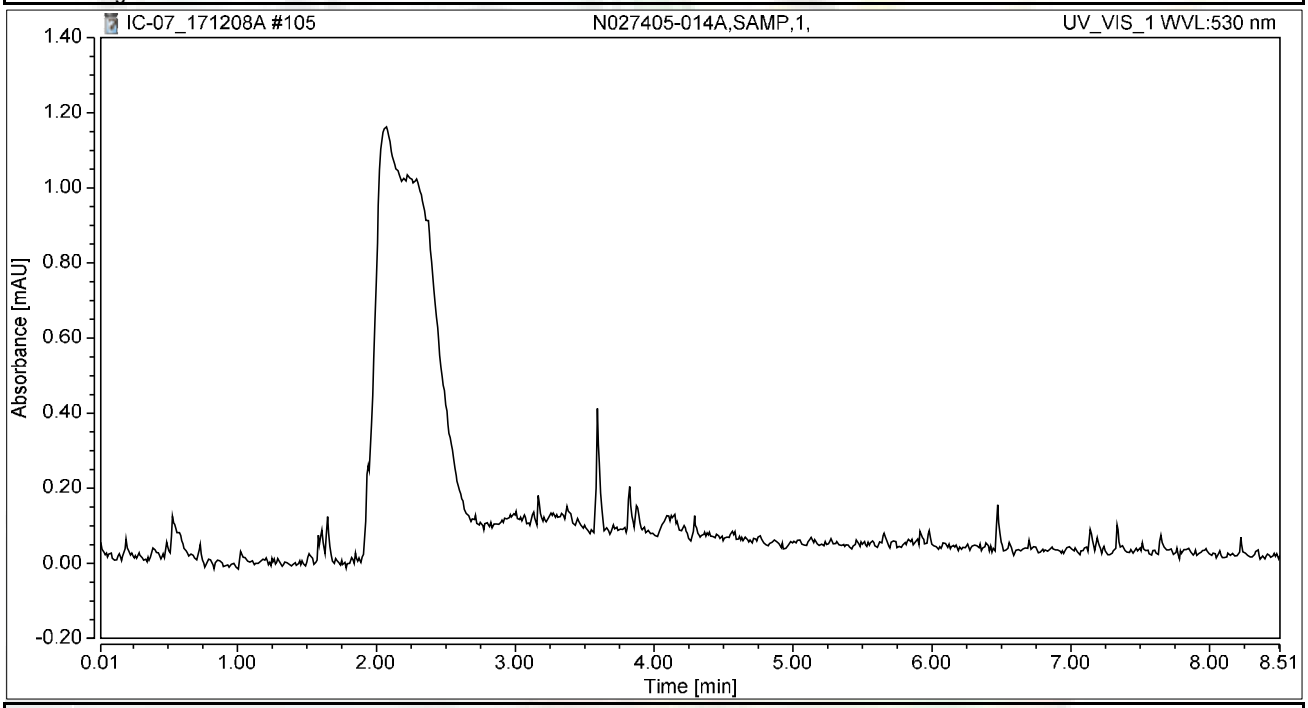
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.252	1.666	100.00	100.00	1.0048
Total:			**0.252**	**1.666**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-014A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 23:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

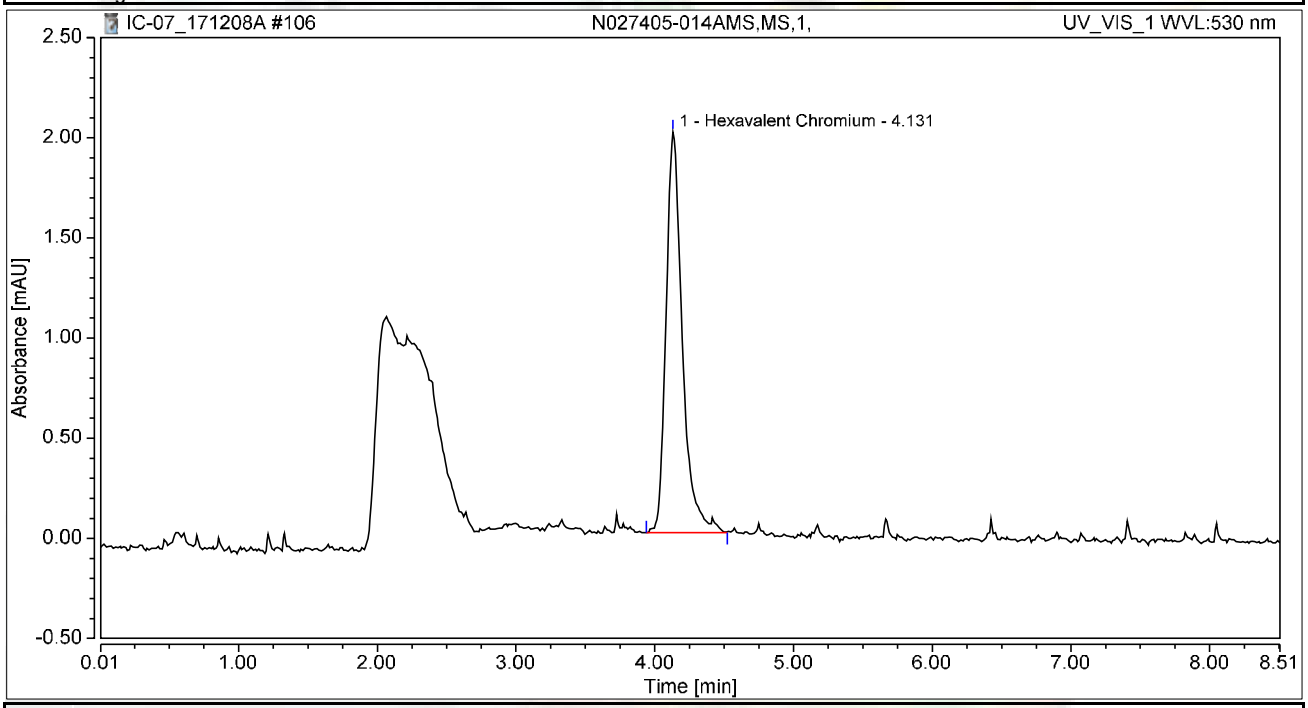
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 23:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

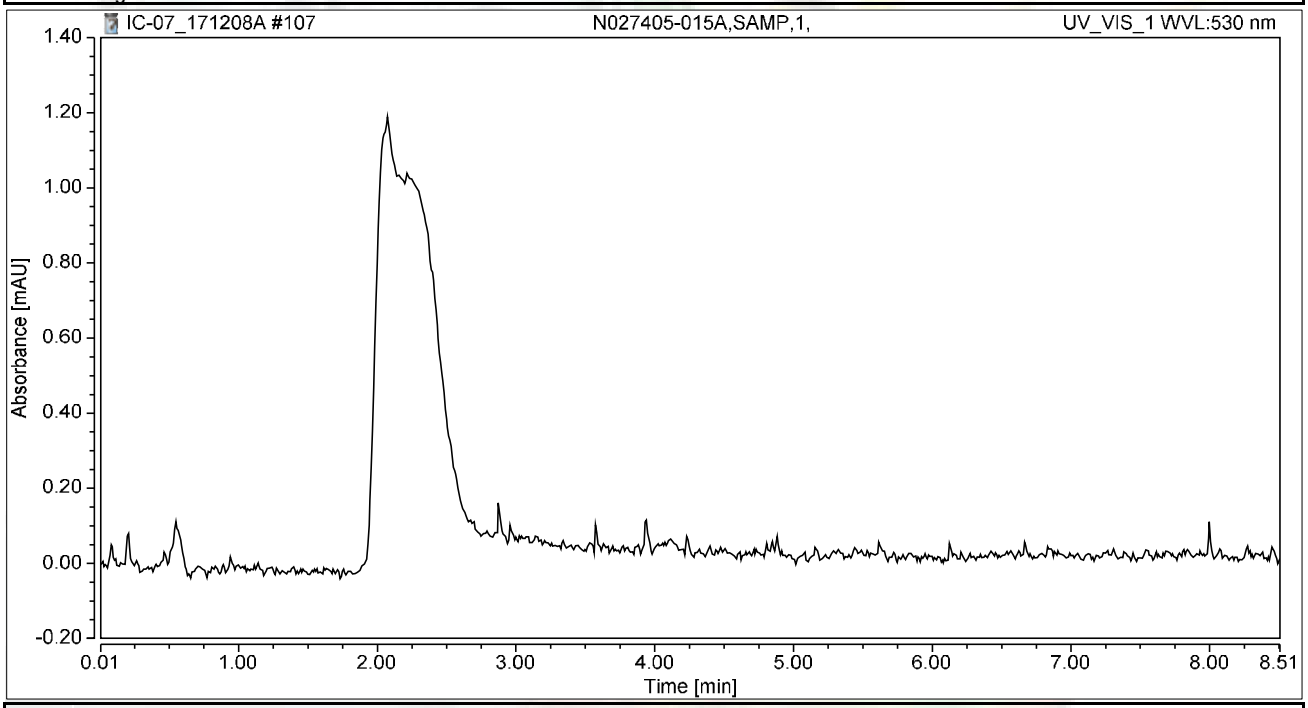
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.273	2.000	100.00	100.00	1.0859
Total:			**0.273**	**2.000**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 23:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

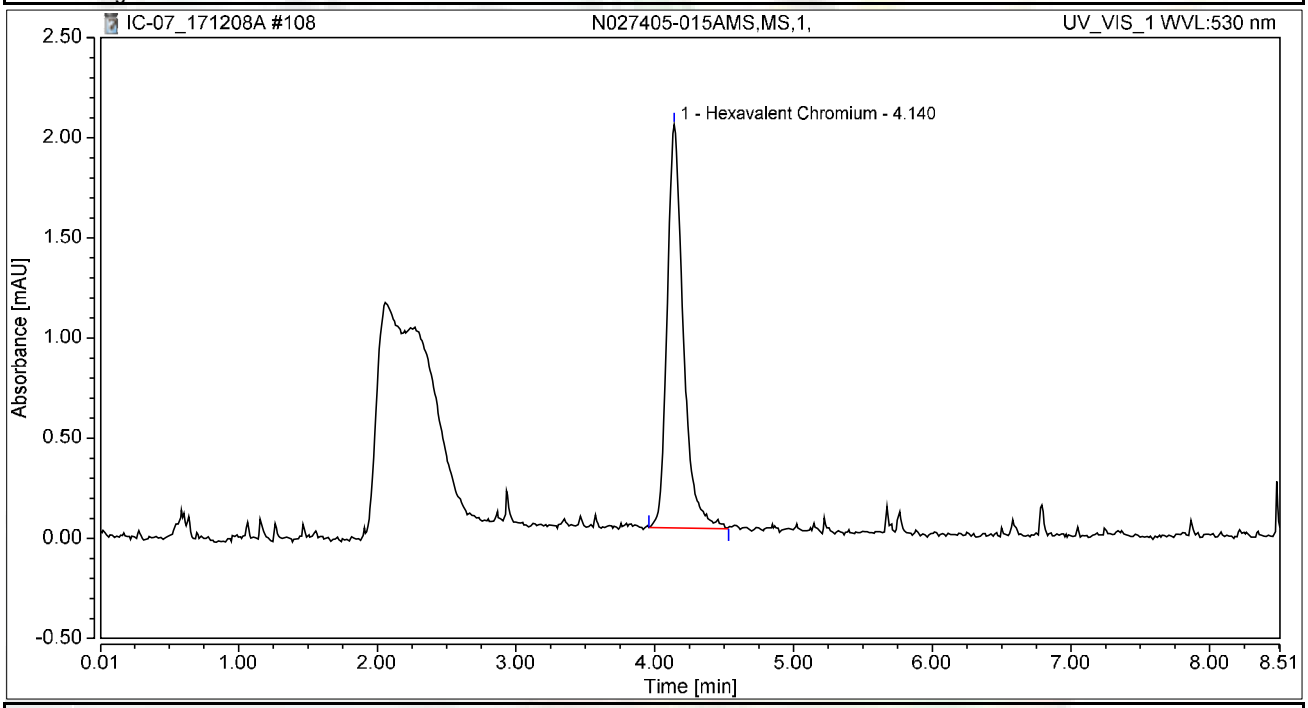
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 23:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

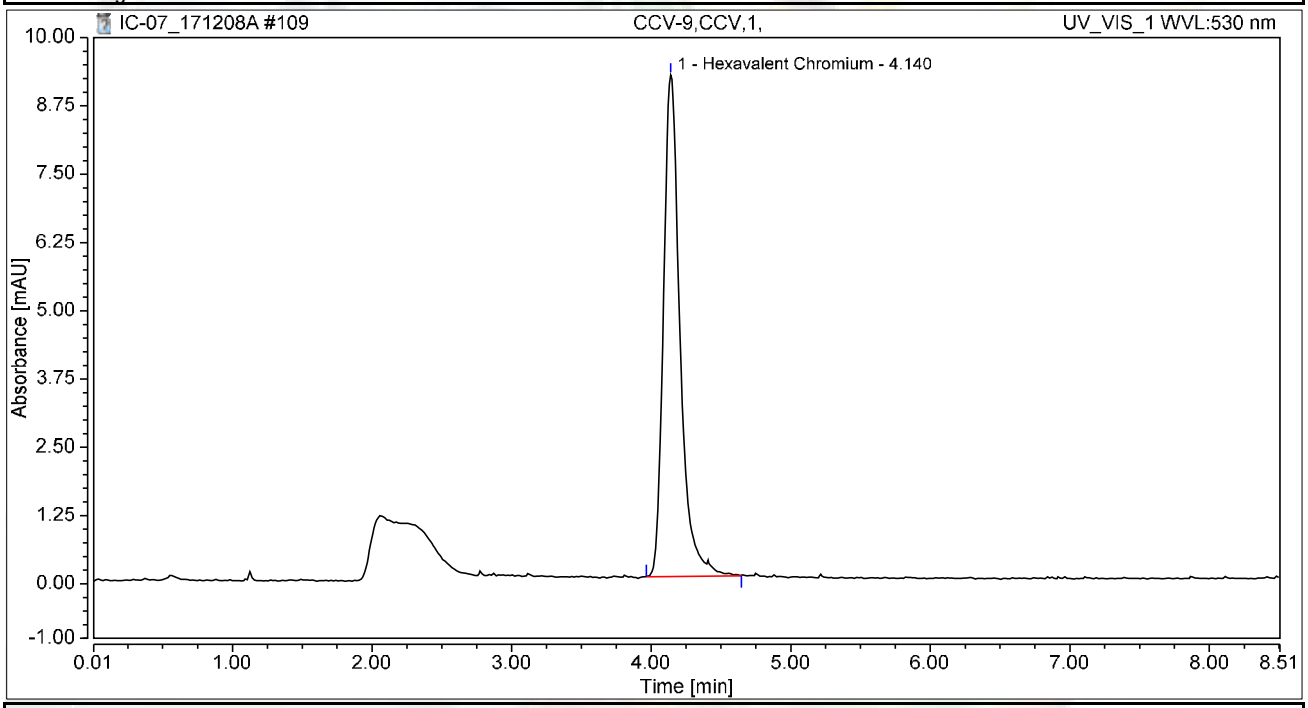
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.273	2.013	100.00	100.00	1.0853
Total:			**0.273**	**2.013**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-9,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 00:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

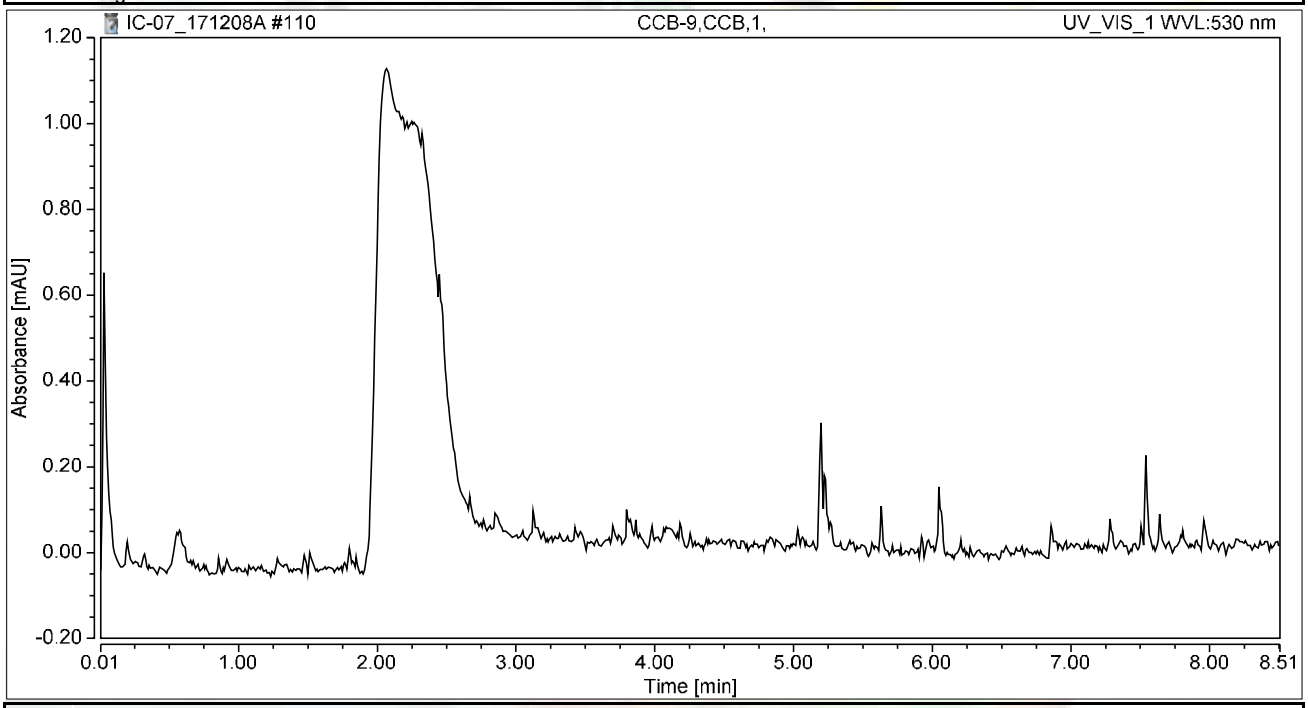
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.263	9.178	100.00	100.00	5.0286
Total:			**1.263**	**9.178**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-9,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 00:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

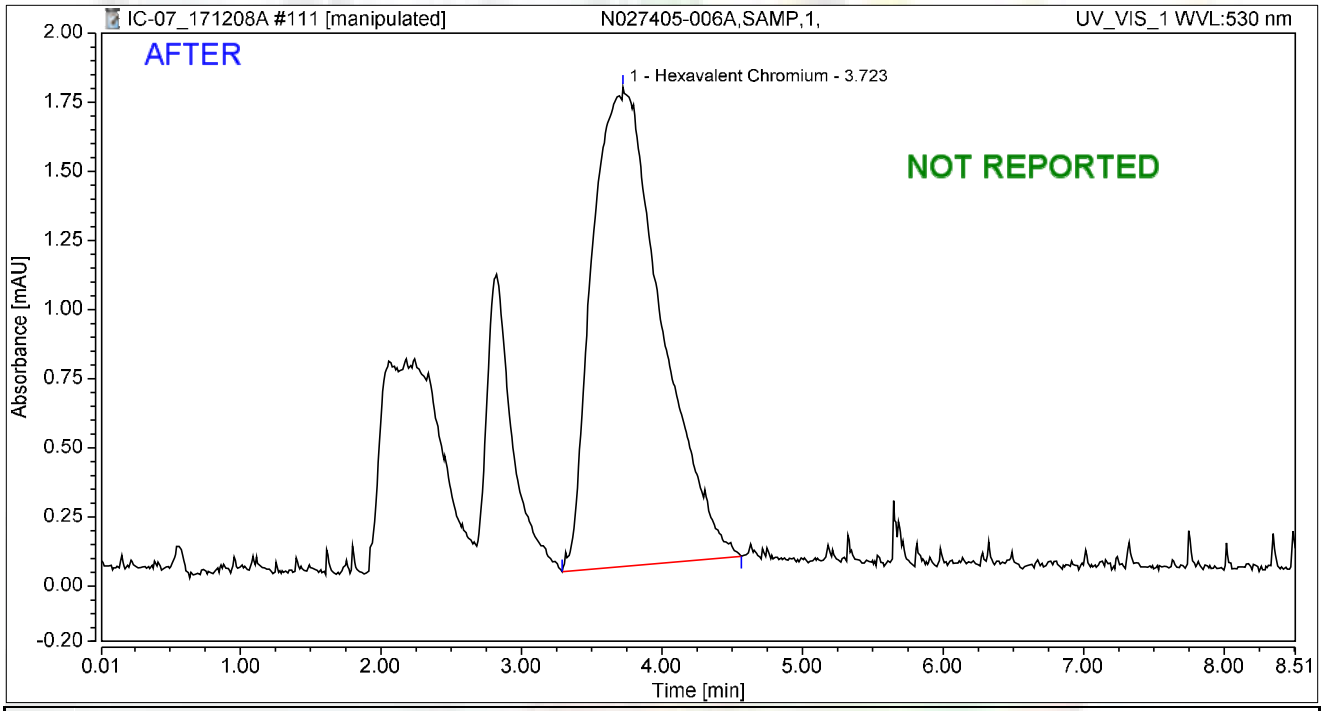
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-006A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 00:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	0.983	1.734	100.00	100.00	3.9133
Total:			**0.983**	**1.734**	**100.00**	**100.00**	

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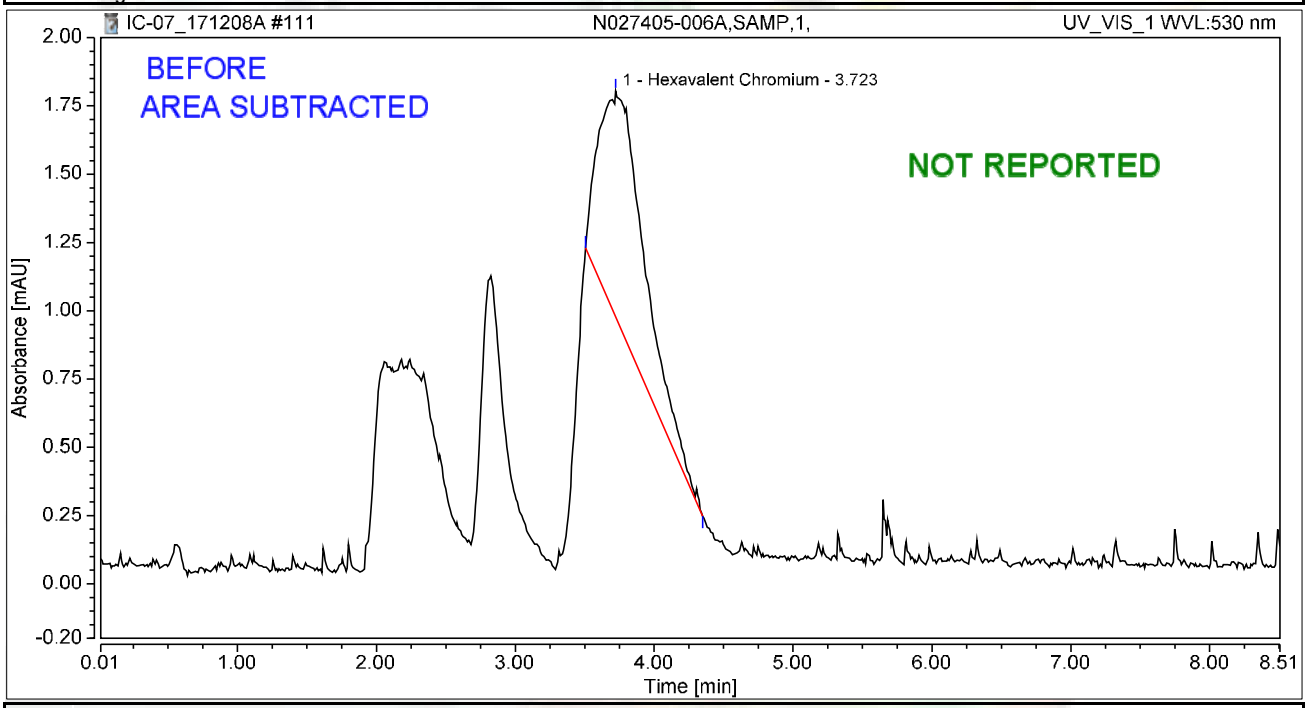
Chromatogram and Results

Injection Details

Injection Name:	**N027405-006A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 00:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	0.322	0.828	100.00	100.00	1.2825
Total:			**0.322**	**0.828**	**100.00**	**100.00**	

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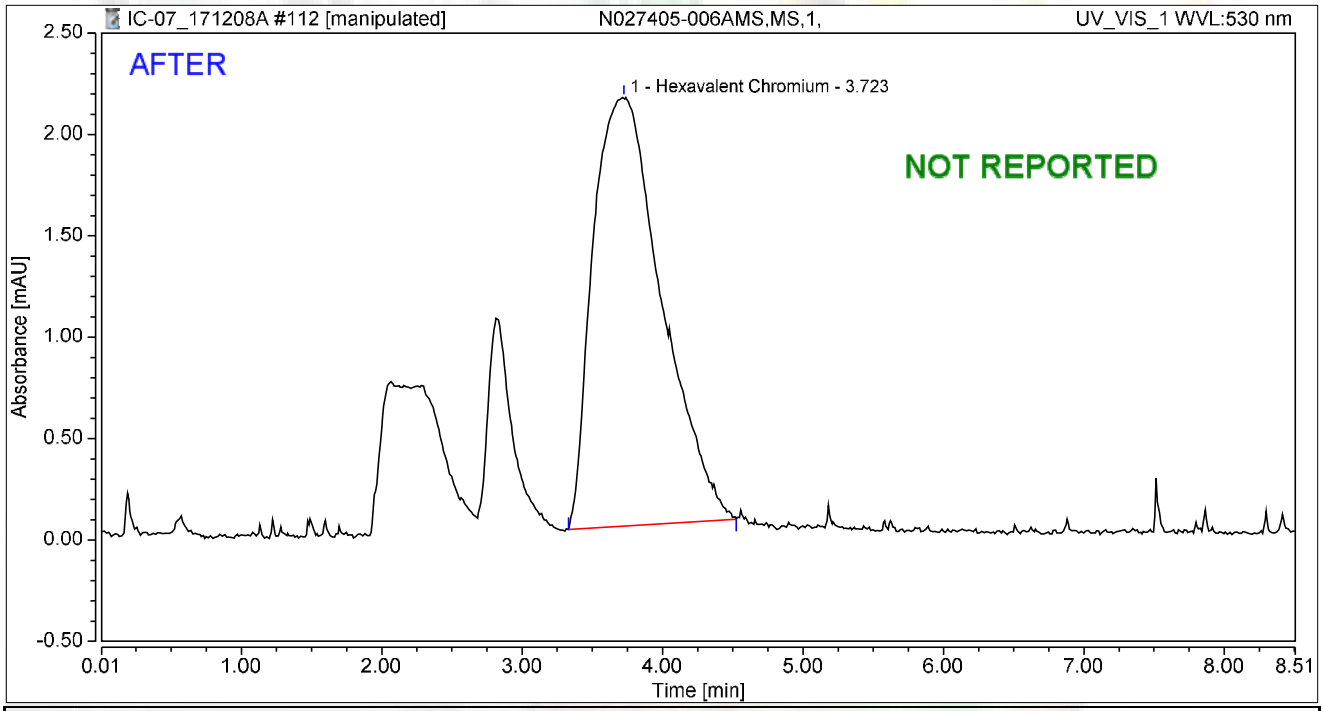
Chromatogram and Results

Injection Details

Injection Name:	**N027405-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 00:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	1.199	2.114	100.00	100.00	4.7736
Total:			**1.199**	**2.114**	**100.00**	**100.00**	

rba 12/16/2017

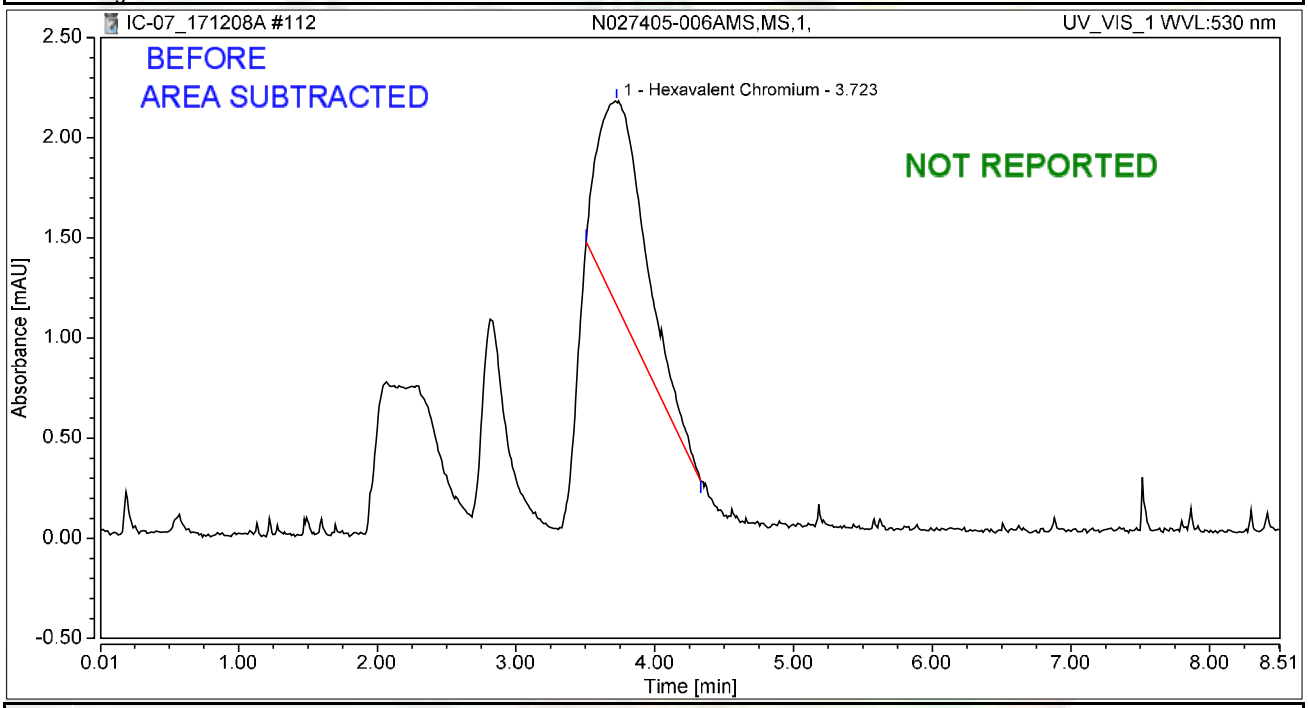
RB 12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027405-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 00:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	0.413	1.016	100.00	100.00	1.6443
Total:			**0.413**	**1.016**	**100.00**	**100.00**	

rba 12/16/2017

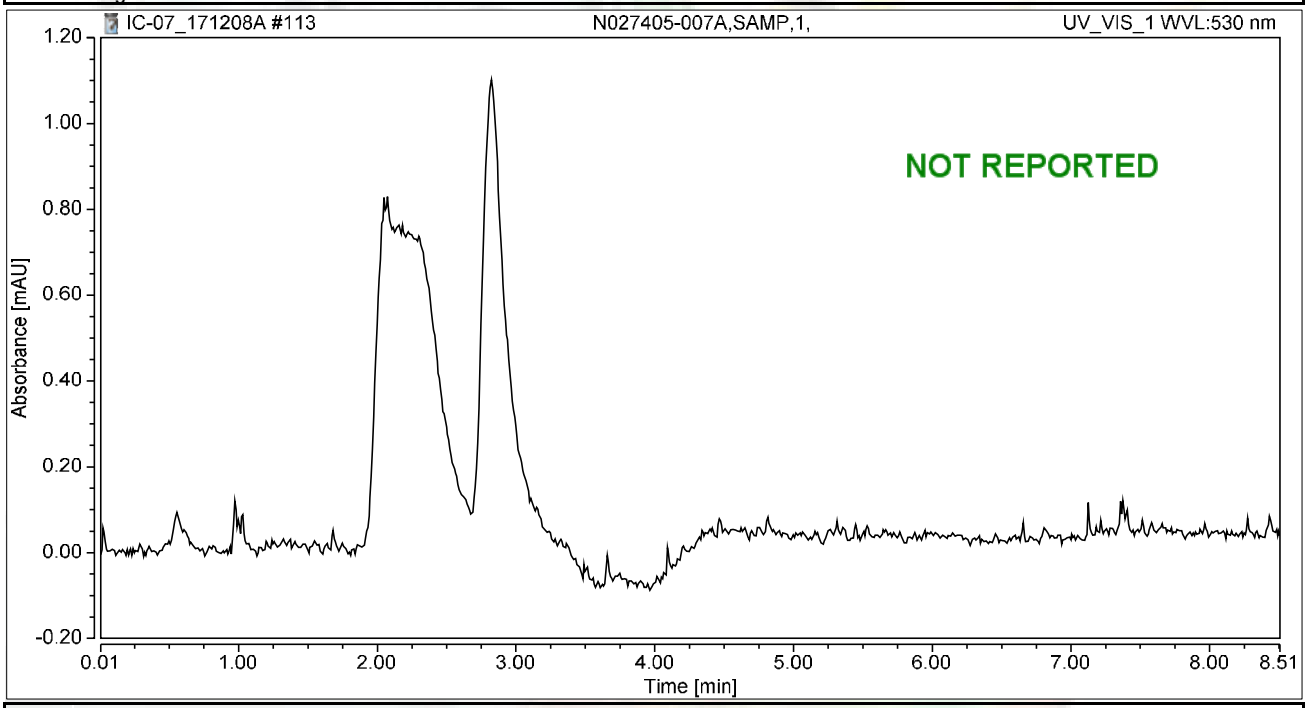
12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027405-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 00:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

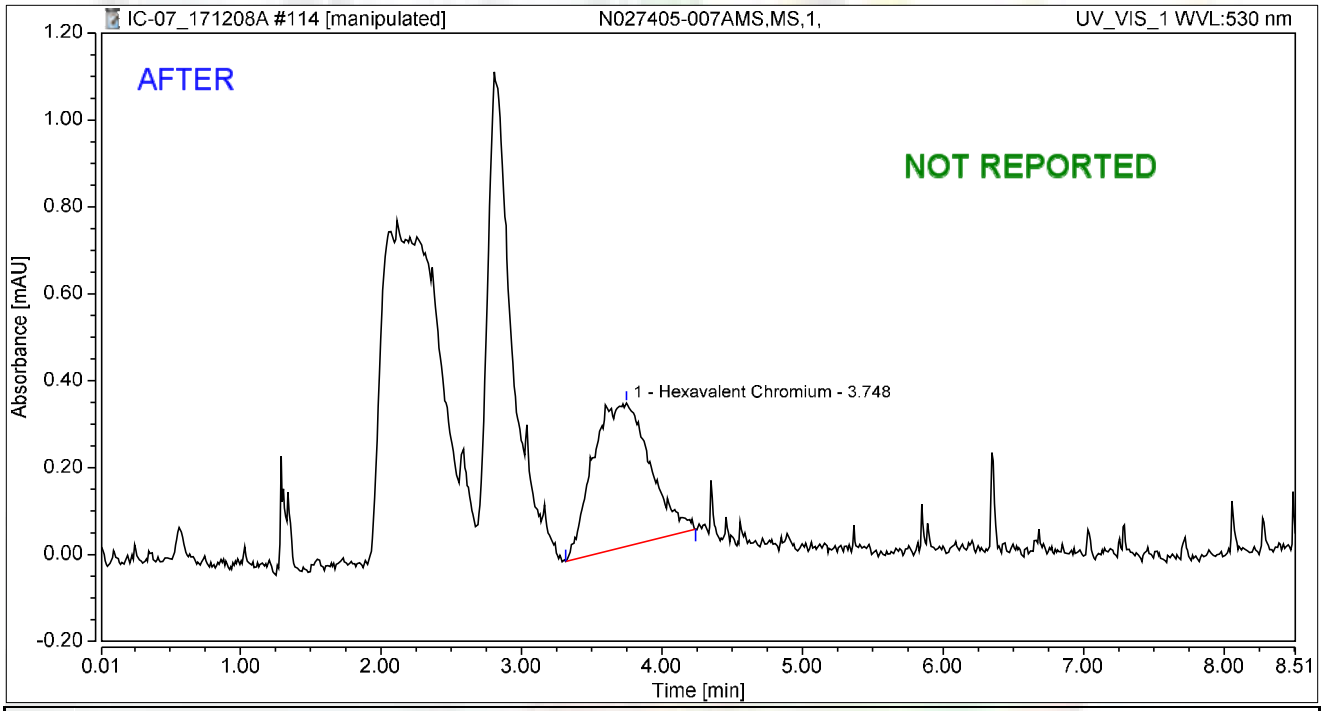
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-007AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 00:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.748	0.157	0.329	100.00	100.00	0.6255
Total:			**0.157**	**0.329**	**100.00**	**100.00**	

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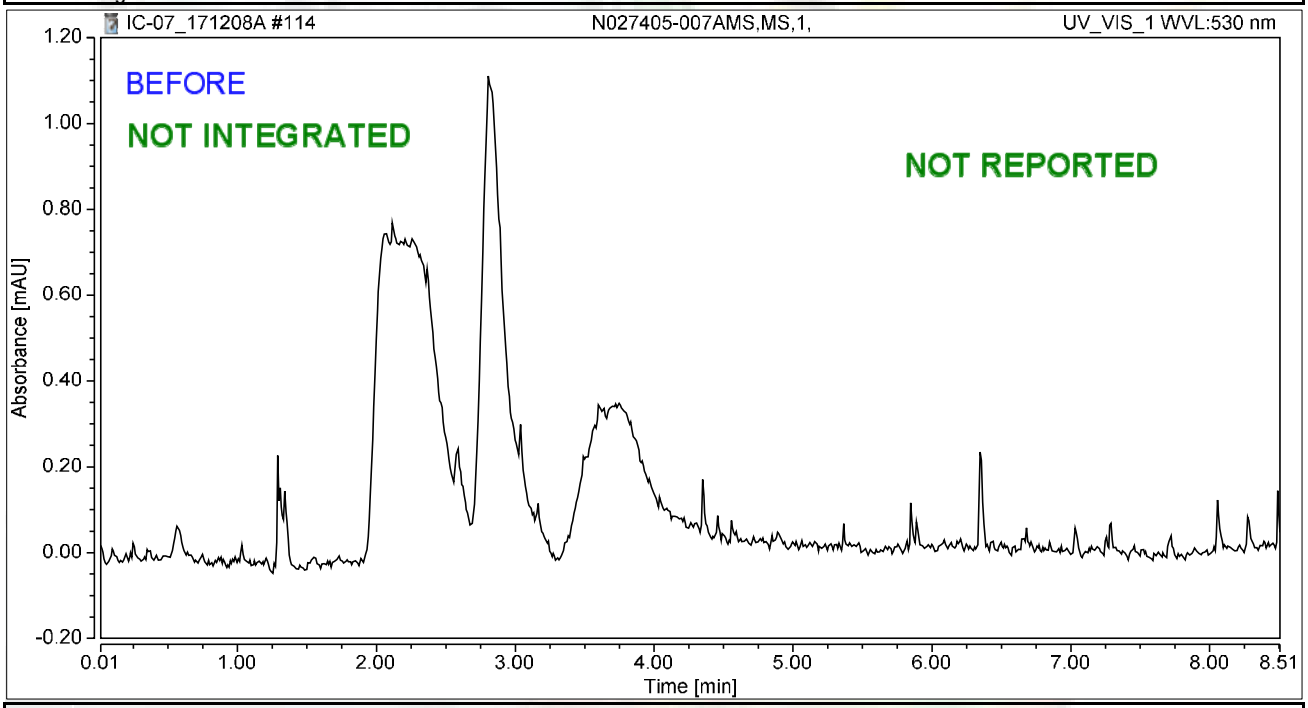
Chromatogram and Results

Injection Details

Injection Name:	**N027405-007AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 00:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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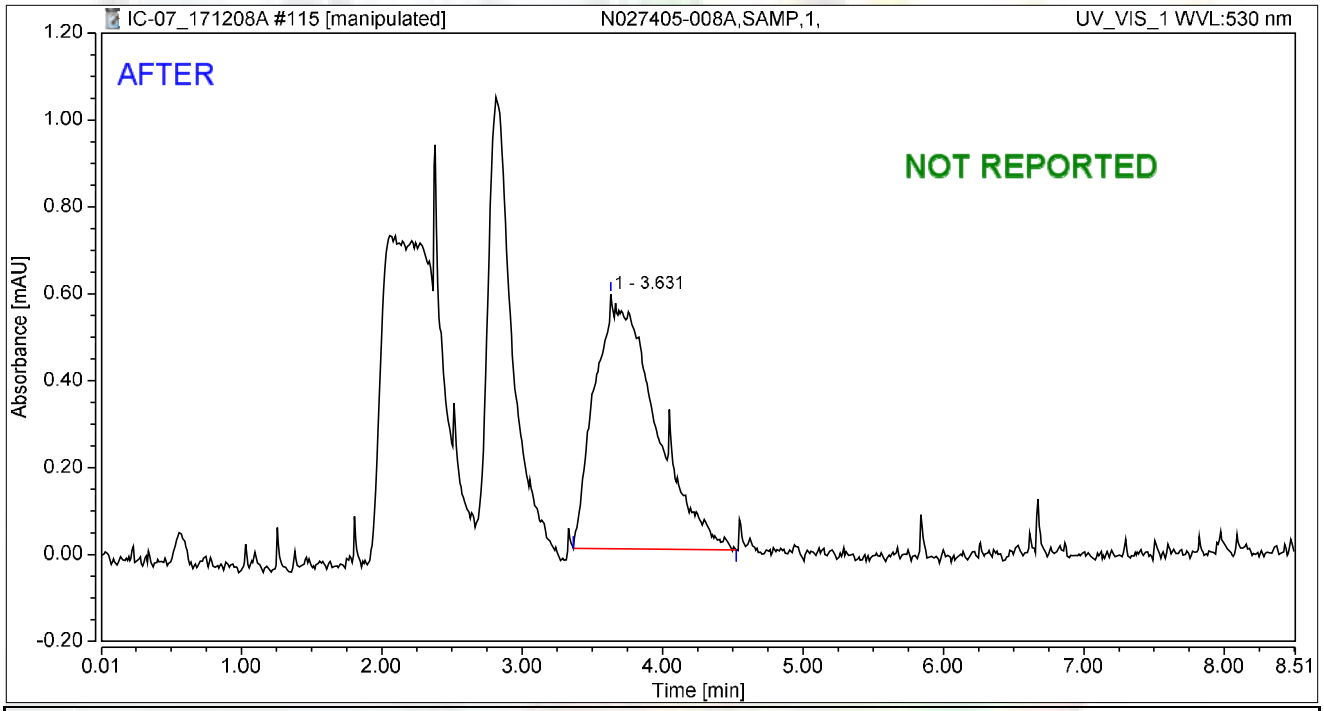
Chromatogram and Results

Injection Details

Injection Name:	**N027405-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 01:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.631	0.292	0.585	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.292**	**0.585**	**100.00**	**100.00**	

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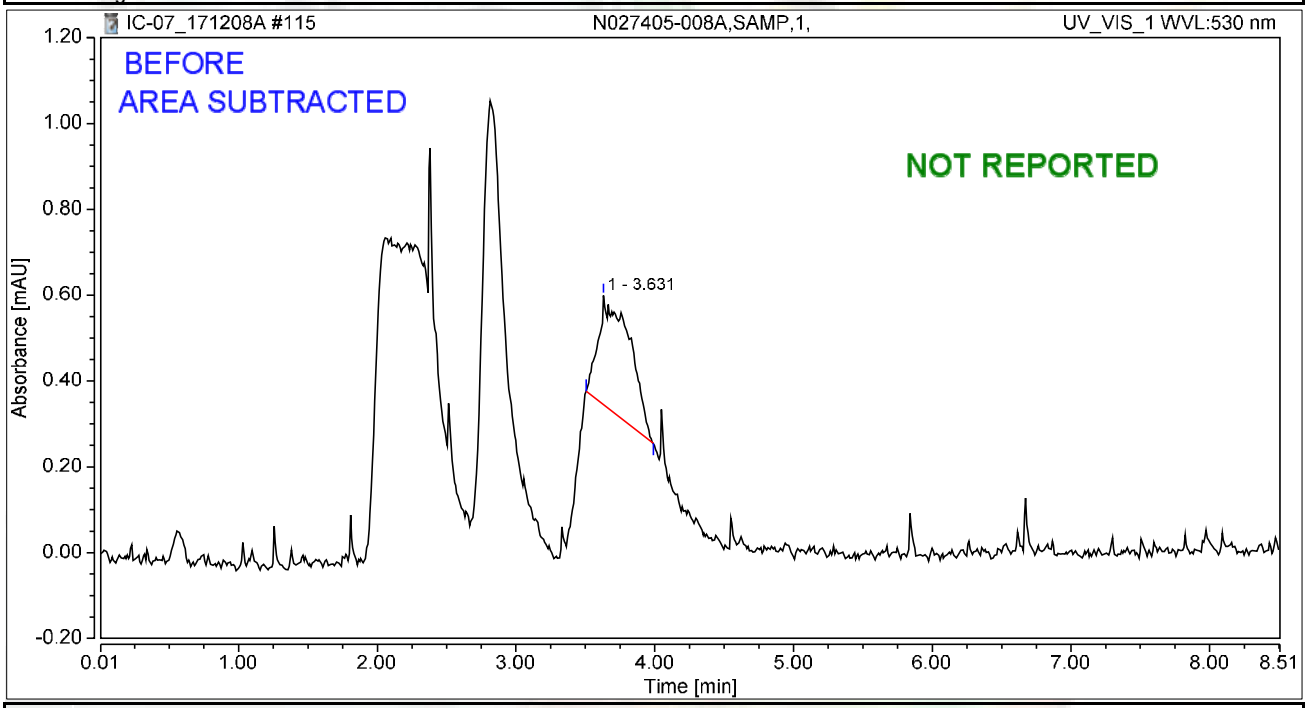
Chromatogram and Results

Injection Details

Injection Name:	**N027405-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 01:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.631	0.071	0.254	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.071**	**0.254**	**100.00**	**100.00**	

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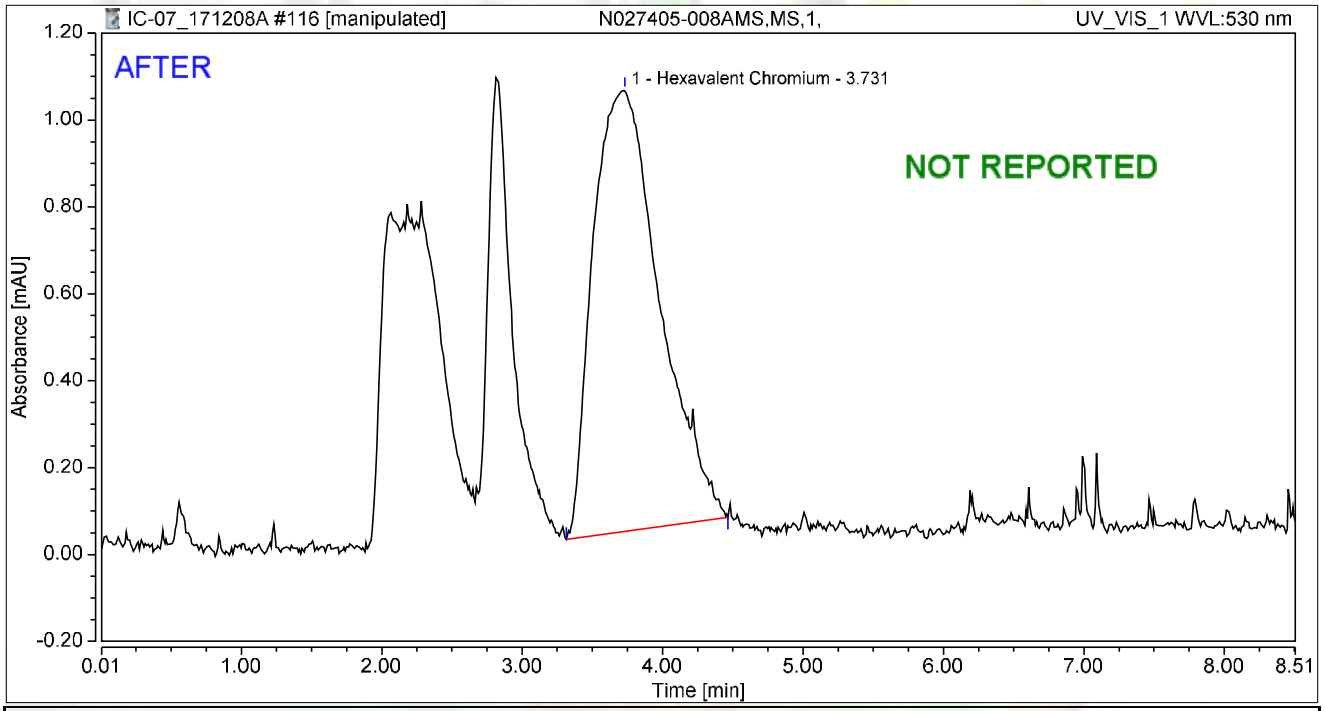
Chromatogram and Results

Injection Details

Injection Name:	**N027405-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 01:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.731	0.559	1.017	100.00	100.00	2.2260
Total:			**0.559**	**1.017**	**100.00**	**100.00**	

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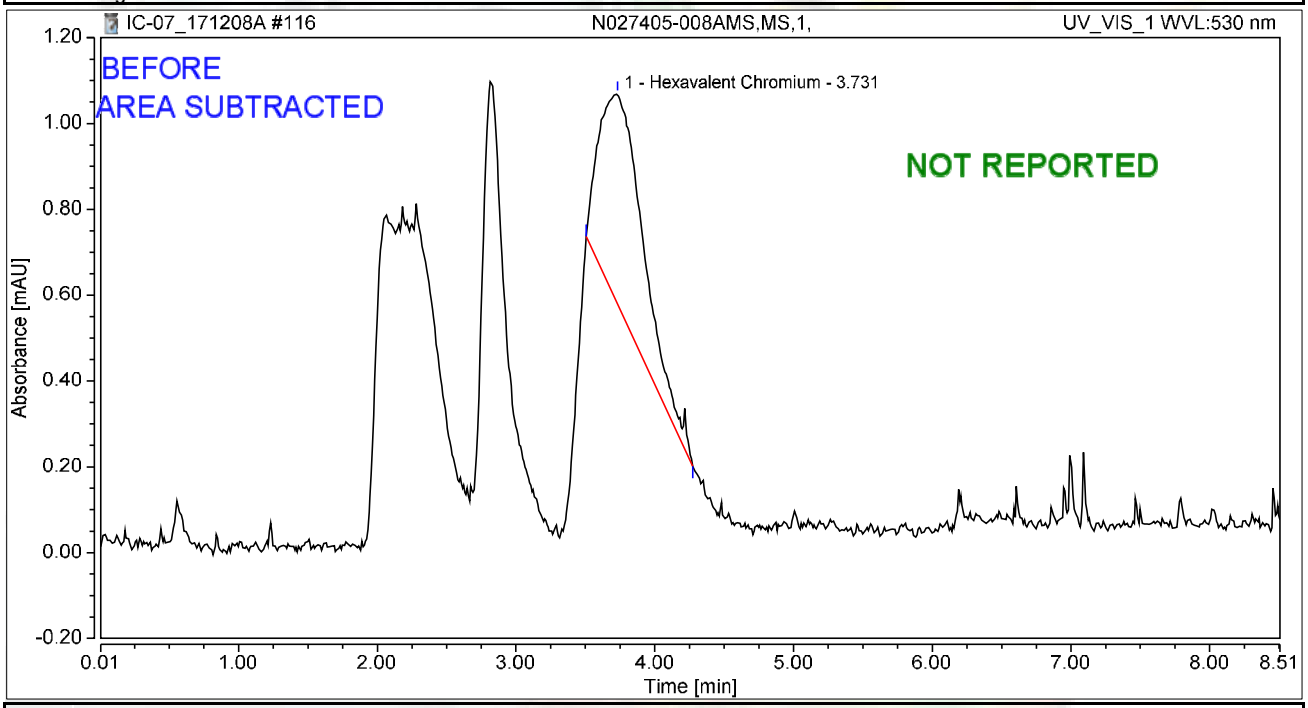
Chromatogram and Results

Injection Details

Injection Name:	**N027405-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 01:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.731	0.182	0.491	100.00	100.00	0.7248
Total:			**0.182**	**0.491**	**100.00**	**100.00**	

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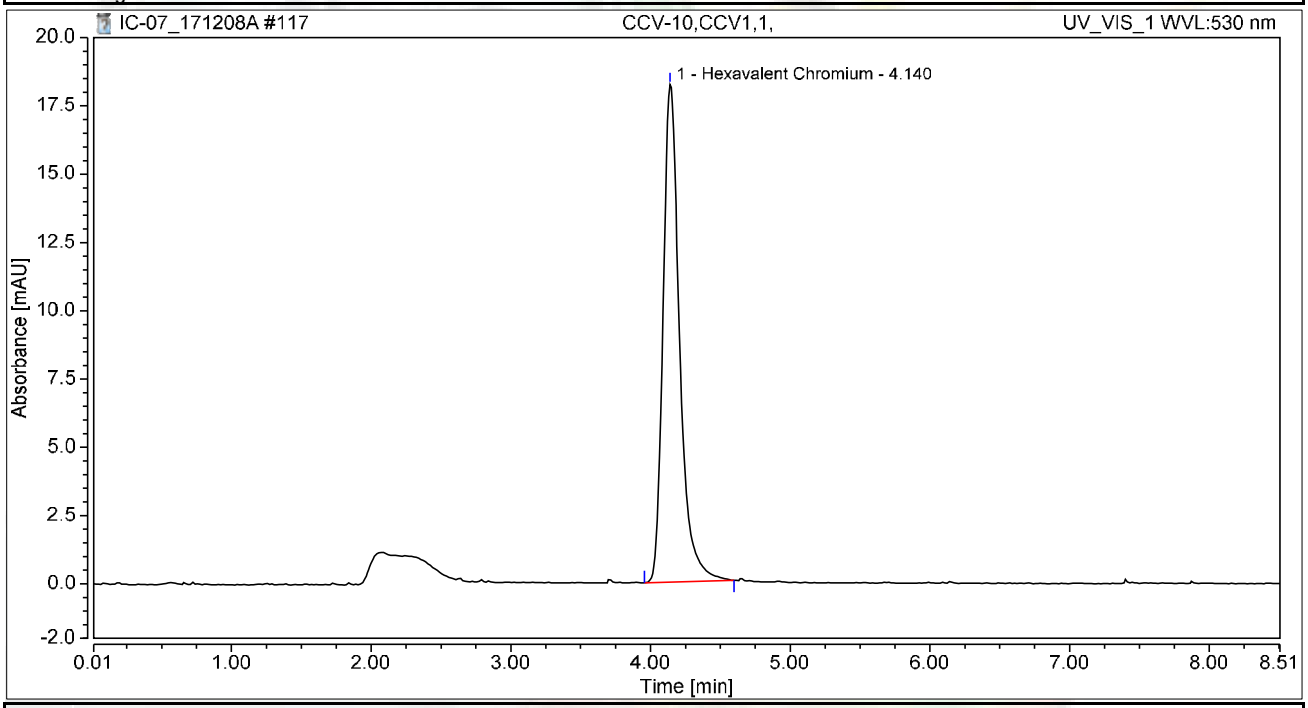
Chromatogram and Results

Injection Details

Injection Name:	**CCV-10,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 01:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

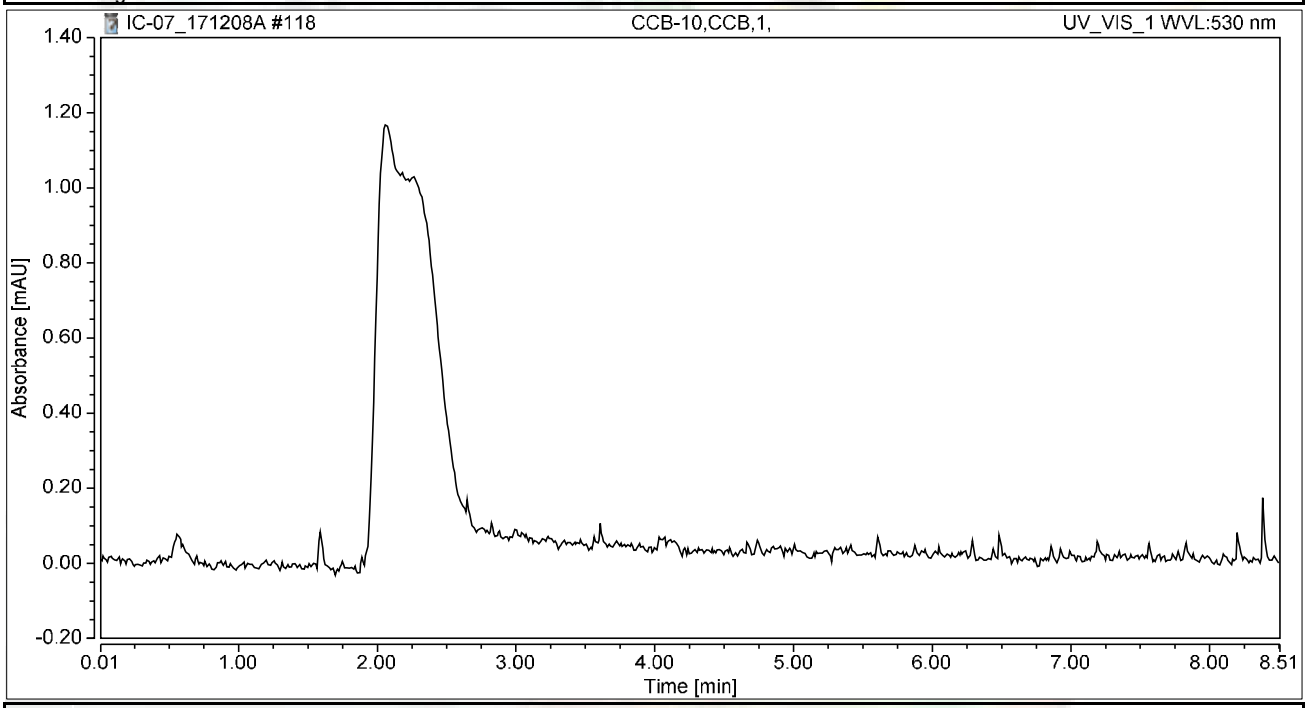
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.496	18.207	100.00	100.00	9.9398
Total:			**2.496**	**18.207**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-10,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 01:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 8:57 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 9:08 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/11/17 9:18 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/11/17 9:27 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/11/17 9:37 AM	Reported
15	MB-R120833	MBLK	1	Hexavalent Chromium	12/11/17 9:46 AM	Reported
16	LCS-R120833	LCS	1	Hexavalent Chromium	12/11/17 9:56 AM	Reported
17	N027405-006AMS	MS	5	Hexavalent Chromium	12/11/17 10:09 AM	Reported
18	N027405-006A	SAMP	5	Hexavalent Chromium	12/11/17 10:20 AM	Reported
19	N027405-007AMS	MS	5	Hexavalent Chromium	12/11/17 10:29 AM	Reported
20	N027405-007A	SAMP	5	Hexavalent Chromium	12/11/17 10:39 AM	Reported
21	N027405-008AMS	MS	5	Hexavalent Chromium	12/11/17 10:48 AM	Reported
22	N027405-008A	SAMP	5	Hexavalent Chromium	12/11/17 10:58 AM	Reported
23	N027430-001A	SAMP	1	Hexavalent Chromium	12/11/17 11:07 AM	Reported
24	N027430-001AMS	MS	1	Hexavalent Chromium	12/11/17 11:17 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/11/17 11:26 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/11/17 11:36 AM	Reported
27	N027430-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:45 AM	Reported
28	N027430-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:54 AM	Reported
29	N027430-003A	SAMP	1	Hexavalent Chromium	12/11/17 12:04 PM	Reported
30	N027430-003AMS	MS	1	Hexavalent Chromium	12/11/17 12:13 PM	Reported
31	N027430-004A	SAMP	1	Hexavalent Chromium	12/11/17 12:23 PM	Reported
32	N027430-004AMS	MS	1	Hexavalent Chromium	12/11/17 12:32 PM	Reported
33	N027430-005A	SAMP	1	Hexavalent Chromium	12/11/17 12:42 PM	Reported
34	N027430-005AMS	MS	1	Hexavalent Chromium	12/11/17 12:51 PM	Reported
35	N027430-006A	SAMP	1	Hexavalent Chromium	12/11/17 1:01 PM	Reported
36	N027430-006AMS	MS	1	Hexavalent Chromium	12/11/17 1:10 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/11/17 1:20 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/11/17 1:29 PM	Reported
39	N027430-007A	SAMP	1	Hexavalent Chromium	12/11/17 1:38 PM	Reported
40	N027430-007AMS	MS	1	Hexavalent Chromium	12/11/17 1:48 PM	Reported
41	N027430-008A	SAMP	1	Hexavalent Chromium	12/11/17 1:57 PM	Reported
42	N027430-008AMS	MS	1	Hexavalent Chromium	12/11/17 2:07 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027430-009A	SAMP	1	Hexavalent Chromium	12/11/17 2:16 PM	Reported
44	N027430-009AMS	MS	1	Hexavalent Chromium	12/11/17 2:26 PM	Reported
45	N027430-010A	SAMP	1	Hexavalent Chromium	12/11/17 2:35 PM	Reported
46	N027430-010AMS	MS	1	Hexavalent Chromium	12/11/17 2:45 PM	Reported
47	N027430-020A	SAMP	20	Hexavalent Chromium	12/11/17 2:54 PM	Reported
48	N027430-020AMS	MS	20	Hexavalent Chromium	12/11/17 3:04 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/11/17 3:13 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/11/17 3:23 PM	Reported
51	N027430-012A	SAMP	1	Hexavalent Chromium	12/11/17 3:32 PM	Not Reported
52	N027430-012AMS	MS	1	Hexavalent Chromium	12/11/17 3:41 PM	Not Reported
53	N027430-019A	SAMP	1	Hexavalent Chromium	12/11/17 3:51 PM	Reported
54	N027430-019AMS	MS	1	Hexavalent Chromium	12/11/17 4:00 PM	Reported
55	N027430-011A	SAMP	1	Hexavalent Chromium	12/11/17 4:10 PM	Reported
56	N027430-011AMS	MS	1	Hexavalent Chromium	12/11/17 4:19 PM	Reported
57	N027430-013A	SAMP	5	Hexavalent Chromium	12/11/17 4:29 PM	Reported
58	N027430-013AMS	MS	5	Hexavalent Chromium	12/11/17 4:38 PM	Reported
59	N027430-014A	SAMP	5	Hexavalent Chromium	12/11/17 4:48 PM	Reported
60	N027430-014AMS	MS	5	Hexavalent Chromium	12/11/17 4:57 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/11/17 5:07 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/11/17 5:16 PM	Reported
63	N027430-015A	SAMP	5	Hexavalent Chromium	12/11/17 5:26 PM	Reported
64	N027430-015AMS	MS	5	Hexavalent Chromium	12/11/17 5:35 PM	Reported
65	N027405-006ADUP	DUP	5	Hexavalent Chromium	12/11/17 5:44 PM	Reported
66	N027430-020AMSD	MSD	20	Hexavalent Chromium	12/11/17 5:54 PM	Reported
67	N027430-002A	SAMP	1	Hexavalent Chromium	12/11/17 6:05 PM	Not Reported
68	N027430-002AMS	MS	1	Hexavalent Chromium	12/11/17 6:16 PM	Not Reported
69	N027430-013A	SAMP	1	Hexavalent Chromium	12/11/17 6:25 PM	Not Reported
70	N027430-013AMS	MS	1	Hexavalent Chromium	12/11/17 6:35 PM	Not Reported
71	N027430-014A	SAMP	1	Hexavalent Chromium	12/11/17 6:44 PM	Not Reported
72	N027430-014AMS	MS	1	Hexavalent Chromium	12/11/17 6:54 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	12/11/17 7:03 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	12/11/17 7:13 PM	Reported
75	N027430-015A	SAMP	1	Hexavalent Chromium	12/11/17 7:22 PM	Not Reported
76	N027430-015AMS	MS	1	Hexavalent Chromium	12/11/17 7:32 PM	Not Reported
77	N027430-012A	SAMP	5	Hexavalent Chromium	12/11/17 7:41 PM	Reported
78	N027430-012AMS	MS	5	Hexavalent Chromium	12/11/17 7:50 PM	Reported
79	LCS-R120834	LCS	1	Hexavalent Chromium	12/11/17 8:00 PM	Reported
80	MB-R120834	MBLK	1	Hexavalent Chromium	12/11/17 8:09 PM	Reported
81	N027431-006A	SAMP	1000	Hexavalent Chromium	12/11/17 8:19 PM	Reported
82	N027431-006AMS	MS	1000	Hexavalent Chromium	12/11/17 8:28 PM	Reported
83	N027431-006AMSD	MSD	1000	Hexavalent Chromium	12/11/17 8:38 PM	Reported
84	N027428-002A	SAMP	100	Hexavalent Chromium	12/11/17 8:47 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	12/11/17 8:57 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	12/11/17 9:06 PM	Reported
87	N027428-002ADUP	DUP	100	Hexavalent Chromium	12/11/17 9:16 PM	Reported
88	N027428-002AMS	MS	100	Hexavalent Chromium	12/11/17 9:25 PM	Reported
89	N027428-001A	SAMP	1	Hexavalent Chromium	12/11/17 9:35 PM	Reported
90	N027428-001AMS	MS	1	Hexavalent Chromium	12/11/17 9:44 PM	Reported
91	N027430-016A	SAMP	5	Hexavalent Chromium	12/11/17 9:53 PM	Reported
92	N027430-016AMS	MS	5	Hexavalent Chromium	12/11/17 10:03 PM	Reported
93	N027430-017A	SAMP	5	Hexavalent Chromium	12/11/17 10:12 PM	Reported
94	N027430-017AMS	MS	5	Hexavalent Chromium	12/11/17 10:22 PM	Reported
95	N027430-018A	SAMP	5	Hexavalent Chromium	12/11/17 10:31 PM	Reported
96	N027430-018AMS	MS	5	Hexavalent Chromium	12/11/17 10:41 PM	Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	12/11/17 10:50 PM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	12/11/17 11:00 PM	Reported
99	N027431-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:09 PM	Reported
100	N027431-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:19 PM	Reported
101	N027431-003A	SAMP	5	Hexavalent Chromium	12/11/17 11:28 PM	Reported
102	N027431-003AMS	MS	5	Hexavalent Chromium	12/11/17 11:38 PM	Reported
103	N027431-004A	SAMP	5	Hexavalent Chromium	12/11/17 11:47 PM	Reported
104	N027431-004AMS	MS	5	Hexavalent Chromium	12/11/17 11:56 PM	Reported
105	N027431-001A	SAMP	10	Hexavalent Chromium	12/12/17 12:06 AM	Not Reported
106	N027431-001AMS	MS	10	Hexavalent Chromium	12/12/17 12:15 AM	Not Reported
107	N027431-005A	SAMP	200	Hexavalent Chromium	12/12/17 12:25 AM	Reported
108	N027431-005AMS	MS	200	Hexavalent Chromium	12/12/17 12:34 AM	Reported
109	CCV-9	CCV	1	Hexavalent Chromium	12/12/17 12:44 AM	Reported
110	CCB-9	CCB	1	Hexavalent Chromium	12/12/17 12:53 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171211A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**12/Dec/17 01:24:03**
No. of Injections:	**113**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/11/2017 08:57	Finished	BLANK
11	BLANK	2	1000	Unknown		12/11/2017 09:08	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/11/2017 09:18	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/11/2017 09:27	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/11/2017 09:37	Finished	CCB R171129A
15	MB-1,MBLK,1	6	1000	Unknown		12/11/2017 09:46	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/11/2017 09:56	Finished	LCS, IWST-171002B
17	N027405-006AMS,MS	1	1000	Unknown		12/11/2017 10:09	Finished	MS (1ppb), IWST-171002B,2>1
18	N027405-006A,SAMP	2	1000	Unknown		12/11/2017 10:20	Finished	SAMP,2>10mL
19	N027405-007AMS,MS	3	1000	Unknown		12/11/2017 10:29	Finished	MS (1ppb), IWST-171002B,2>1
20	N027405-007A,SAMP	4	1000	Unknown		12/11/2017 10:39	Finished	SAMP,2>10mL
21	N027405-008AMS,MS	5	1000	Unknown		12/11/2017 10:48	Finished	SAMP,2>10mL
22	N027405-008A,SAMP	6	1000	Unknown		12/11/2017 10:58	Finished	MS (1ppb), IWST-171002B,2>1
23	N027430-001A,SAMP	7	1000	Unknown		12/11/2017 11:07	Finished	SAMP,10mL
24	N027430-001AMS,MS	8	1000	Unknown		12/11/2017 11:17	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	9	1000	Unknown		12/11/2017 11:26	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	10	1000	Unknown		12/11/2017 11:36	Finished	CCB R171129A
27	N027430-002A,SAMP	11	1000	Unknown		12/11/2017 11:45	Finished	SAMP,2>10mL
28	N027430-002AMS,MS	12	1000	Unknown		12/11/2017 11:54	Finished	MS (1ppb), IWST-171002B,2>1
29	N027430-003A,SAMP	13	1000	Unknown		12/11/2017 12:04	Finished	SAMP,10mL
30	N027430-003AMS,MS	14	1000	Unknown		12/11/2017 12:13	Finished	MS (1ppb), IWST-171002B,10
31	N027430-004A,SAMP	15	1000	Unknown		12/11/2017 12:23	Finished	SAMP,10mL
32	N027430-004AMS,MS	16	1000	Unknown		12/11/2017 12:32	Finished	MS (1ppb), IWST-171002B,10
33	N027430-005A,SAMP	17	1000	Unknown		12/11/2017 12:42	Finished	SAMP,10mL
34	N027430-005AMS,MS	18	1000	Unknown		12/11/2017 12:51	Finished	MS (1ppb), IWST-171002B,10
35	N027430-006A,SAMP	19	1000	Unknown		12/11/2017 13:01	Finished	SAMP,10mL
36	N027430-006AMS,MS	20	1000	Unknown		12/11/2017 13:10	Finished	MS (1ppb), IWST-171002B,10
37	CCV-3,CCV,1,	21	1000	Unknown		12/11/2017 13:20	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	22	1000	Unknown		12/11/2017 13:29	Finished	CCB R171129A
39	N027430-007A,SAMP	23	1000	Unknown		12/11/2017 13:38	Finished	SAMP,10mL
40	N027430-007AMS,MS	24	1000	Unknown		12/11/2017 13:48	Finished	MS (1ppb), IWST-171002B,10
41	N027430-008A,SAMP	25	1000	Unknown		12/11/2017 13:57	Finished	SAMP,10mL
42	N027430-008AMS,MS	26	1000	Unknown		12/11/2017 14:07	Finished	MS (1ppb), IWST-171002B,10
43	N027430-009A,SAMP	27	1000	Unknown		12/11/2017 14:16	Finished	SAMP,10mL
44	N027430-009AMS,MS	28	1000	Unknown		12/11/2017 14:26	Finished	MS (1ppb), IWST-171002B,10
45	N027430-010A,SAMP	29	1000	Unknown		12/11/2017 14:35	Finished	SAMP,10mL
46	N027430-010AMS,MS	30	1000	Unknown		12/11/2017 14:45	Finished	MS (1ppb), IWST-171002B,10
47	N027430-020A,SAMP	31	1000	Unknown		12/11/2017 14:54	Finished	SAMP,0.5>10mL
48	N027430-020AMS,MS	32	1000	Unknown		12/11/2017 15:04	Finished	MS (5ppb), IWST-171002B,0.5
49	CCV-4,CCV1,1,	33	1000	Unknown		12/11/2017 15:13	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	34	1000	Unknown		12/11/2017 15:23	Finished	CCB R171129A
51	N027430-012A,SAMP	35	1000	Unknown		12/11/2017 15:32	Finished	SAMP,10mL
52	N027430-012AMS,MS	36	1000	Unknown		12/11/2017 15:41	Finished	MS (1ppb), IWST-171002B,10
53	N027430-019A,SAMP	37	1000	Unknown		12/11/2017 15:51	Finished	SAMP,10mL
54	N027430-019AMS,MS	38	1000	Unknown		12/11/2017 16:00	Finished	MS (1ppb), IWST-171002B,10
55	N027430-011A,SAMP	39	1000	Unknown		12/11/2017 16:10	Finished	SAMP,10mL
56	N027430-011AMS,MS	40	1000	Unknown		12/11/2017 16:19	Finished	MS (1ppb), IWST-171002B,10
57	N027430-013A,SAMP	41	1000	Unknown		12/11/2017 16:29	Finished	SAMP,2>10mL
58	N027430-013AMS,MS	42	1000	Unknown		12/11/2017 16:38	Finished	MS (1ppb), IWST-171002B,2>1
59	N027430-014A,SAMP	43	1000	Unknown		12/11/2017 16:48	Finished	SAMP,2>10mL
60	N027430-014AMS,MS	44	1000	Unknown		12/11/2017 16:57	Finished	MS (1ppb), IWST-171002B,2>1

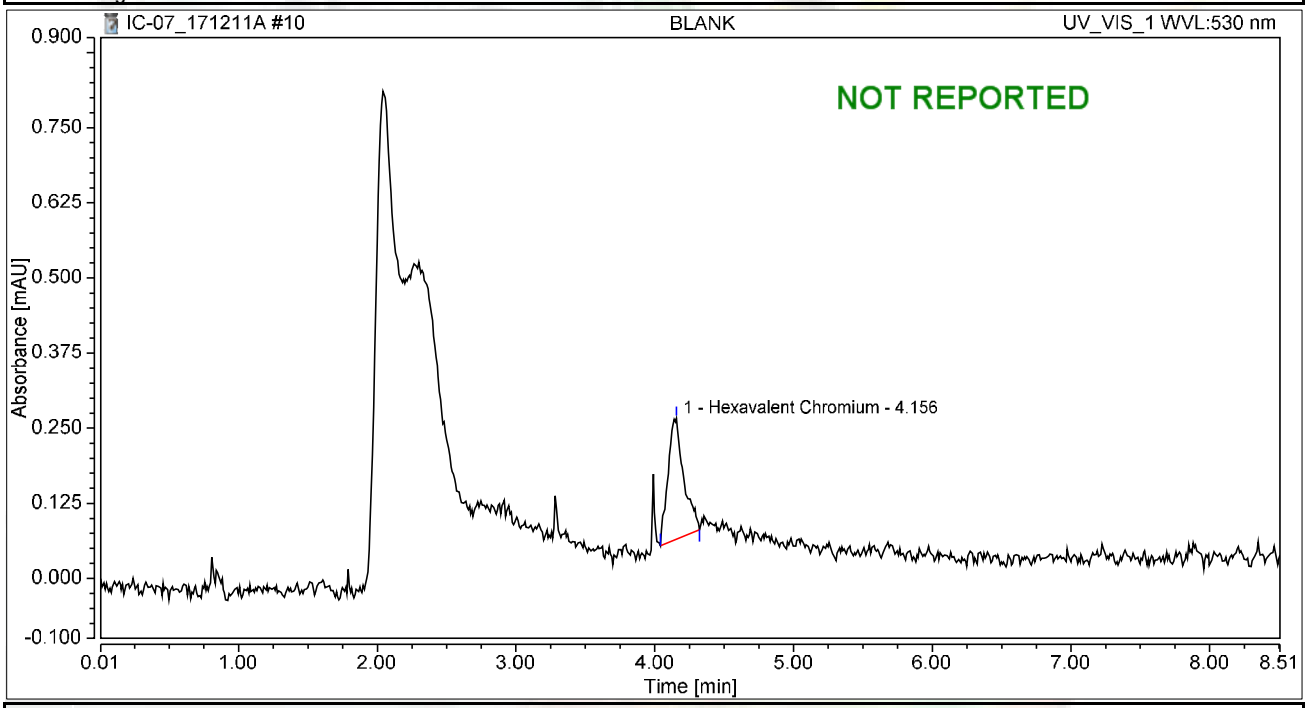
61	CCV-5,CCV,1,	45	1000	Unknown		12/11/2017 17:07	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	46	1000	Unknown		12/11/2017 17:16	Finished	CCB R171129A
63	N027430-015A,SAMF	47	1000	Unknown		12/11/2017 17:26	Finished	SAMP,2>10mL
64	N027430-015AMS,MS	48	1000	Unknown		12/11/2017 17:35	Finished	MS (1ppb), IWST-171002B,2>1
65	N027405-006ADUP,D	49	1000	Unknown		12/11/2017 17:44	Finished	DUP,2>10mL
66	N027430-020AMSD,M	50	1000	Unknown		12/11/2017 17:54	Finished	MSD (5ppb), IWST-171002B,0.
67	N027430-002A,SAMF	1	1000	Unknown		12/11/2017 18:05	Finished	MSD (5ppb), IWST-171002B,0.
68	N027430-002AMS,MS	2	1000	Unknown		12/11/2017 18:16	Finished	DUP,2>10mL
69	N027430-013A,SAMF	3	1000	Unknown		12/11/2017 18:25	Finished	SAMP,2>10mL
70	N027430-013AMS,MS	4	1000	Unknown		12/11/2017 18:35	Finished	MS (1ppb), IWST-171002B,2>1
71	N027430-014A,SAMF	5	1000	Unknown		12/11/2017 18:44	Finished	SAMP,10mL
72	N027430-014AMS,MS	6	1000	Unknown		12/11/2017 18:54	Finished	MS (1ppb), IWST-171002B,10
73	CCV-6,CCV1,1,	7	1000	Unknown		12/11/2017 19:03	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	8	1000	Unknown		12/11/2017 19:13	Finished	CCB R171129A
75	N027430-015A,SAMF	9	1000	Unknown		12/11/2017 19:22	Finished	LCS, IWST-171002B
76	N027430-015AMS,MS	10	1000	Unknown		12/11/2017 19:32	Finished	MB R171129A
77	N027430-012A,SAMF	11	1000	Unknown		12/11/2017 19:41	Finished	SAMP,2>10mL
78	N027430-012AMS,MS	12	1000	Unknown		12/11/2017 19:50	Finished	MS (1ppb), IWST-171002B,2>1
79	LCS-2,LCS,1	13	1000	Unknown		12/11/2017 20:00	Finished	LCS, IWST-171002B
80	MB-2,MBLK,1	14	1000	Unknown		12/11/2017 20:09	Finished	MB R171129A
81	N027431-006A,SAMF	15	1000	Unknown		12/11/2017 20:19	Finished	DUP,0.1>10mL
82	N027431-006AMS,MS	16	1000	Unknown		12/11/2017 20:28	Finished	SAMP,10mL
83	N027431-006AMSD,M	17	1000	Unknown		12/11/2017 20:38	Finished	SAMP,5>10mL
84	N027428-002A,SAMF	18	1000	Unknown		12/11/2017 20:47	Finished	SAMP,0.2>10mL
85	CCV-7,CCV,1,	19	1000	Unknown		12/11/2017 20:57	Finished	CCV @5ppb, IWST-171002A
86	CCB-7,CCB,1,	20	1000	Unknown		12/11/2017 21:06	Finished	CCB R171114C
87	N027428-002ADUP,D	21	1000	Unknown		12/11/2017 21:16	Finished	SAMP,0.2>10mL
88	N027428-002AMS,MS	22	1000	Unknown		12/11/2017 21:25	Finished	SAMP,1>10mL
89	N027428-001A,SAMF	23	1000	Unknown		12/11/2017 21:35	Finished	SAMP,0.5>10mL
90	N027428-001AMS,MS	24	1000	Unknown		12/11/2017 21:44	Finished	SAMP,5>10mL
91	N027430-016A,SAMF	25	1000	Unknown		12/11/2017 21:53	Finished	SAMP,10mL
92	N027430-016AMS,MS	26	1000	Unknown		12/11/2017 22:03	Finished	SAMP,2>10mL
93	N027430-017A,SAMF	27	1000	Unknown		12/11/2017 22:12	Finished	MS (5ppb), IWST-171002B,2>1
94	N027430-017AMS,MS	28	1000	Unknown		12/11/2017 22:22	Finished	MSD (5ppb), IWST-171002B,2
95	N027430-018A,SAMF	29	1000	Unknown		12/11/2017 22:31	Finished	SAMP,10mL
96	N027430-018AMS,MS	30	1000	Unknown		12/11/2017 22:41	Finished	MS (1ppb), IWST-171002B,10
97	CCV-8,CCV1,1,	31	1000	Unknown		12/11/2017 22:50	Finished	CCV @10ppb, IWST-171002A
98	CCB-8,CCB,1,	32	1000	Unknown		12/11/2017 23:00	Finished	CCB R171129A
99	N027431-002A,SAMF	33	1000	Unknown		12/11/2017 23:09	Finished	SAMP,10mL
100	N027431-002AMS,MS	34	1000	Unknown		12/11/2017 23:19	Finished	MS (1ppb), IWST-171002B,10
101	N027431-003A,SAMF	35	1000	Unknown		12/11/2017 23:28	Finished	SAMP,10mL
102	N027431-003AMS,MS	36	1000	Unknown		12/11/2017 23:38	Finished	MS (1ppb), IWST-171002B,10
103	N027431-004A,SAMF	37	1000	Unknown		12/11/2017 23:47	Finished	SAMP,10mL
104	N027431-004AMS,MS	38	1000	Unknown		12/11/2017 23:56	Finished	MS (1ppb), IWST-171002B,10
105	N027431-001A,SAMF	39	1000	Unknown		12/12/2017 00:06	Finished	SAMP,10mL
106	N027431-001AMS,MS	40	1000	Unknown		12/12/2017 00:15	Finished	MS (1ppb), IWST-171002B,10
107	N027431-005A,SAMF	41	1000	Unknown		12/12/2017 00:25	Finished	SAMP,10mL
108	N027431-005AMS,MS	42	1000	Unknown		12/12/2017 00:34	Finished	MS (1ppb), IWST-171002B,10
109	CCV-9,CCV,1,	43	1000	Unknown		12/12/2017 00:44	Finished	CCV @5ppb, IWST-171002A
110	CCB-9,CCB,1,	44	1000	Unknown		12/12/2017 00:53	Finished	CCB R171114C
111	SHUTDOWN	45	1000	Unknown		12/12/2017 01:03	Finished	
112	Eluent: R171211B	46	1000	Unknown		n.a.	Finished	Eluent
113	PCR: R171211C	47	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 08:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

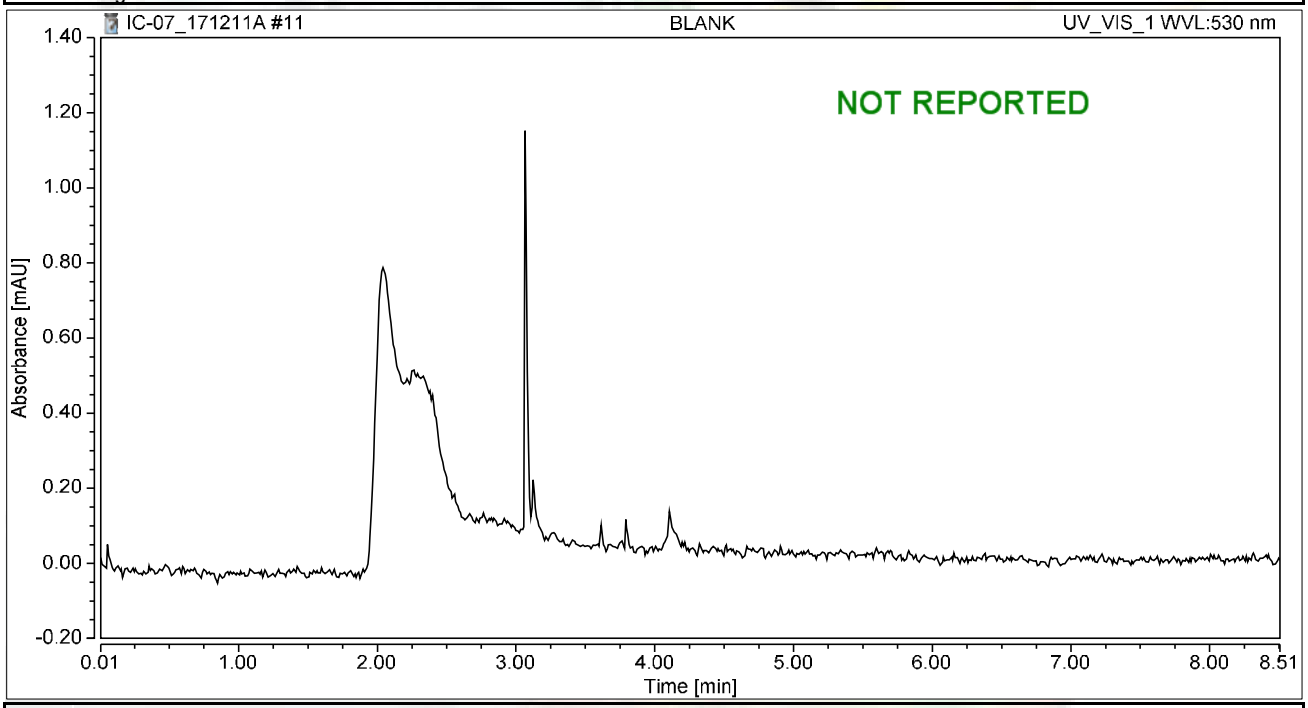
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.027	0.201	100.00	100.00	0.1065
Total:			**0.027**	**0.201**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

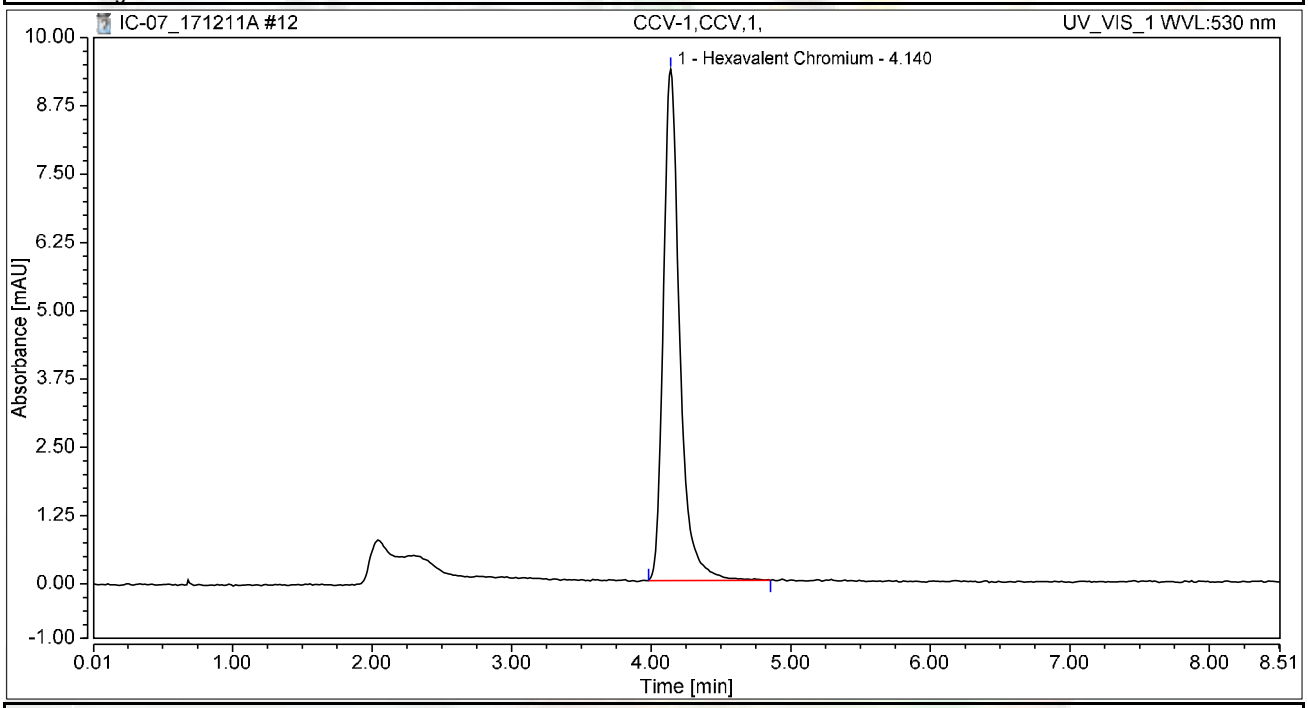
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

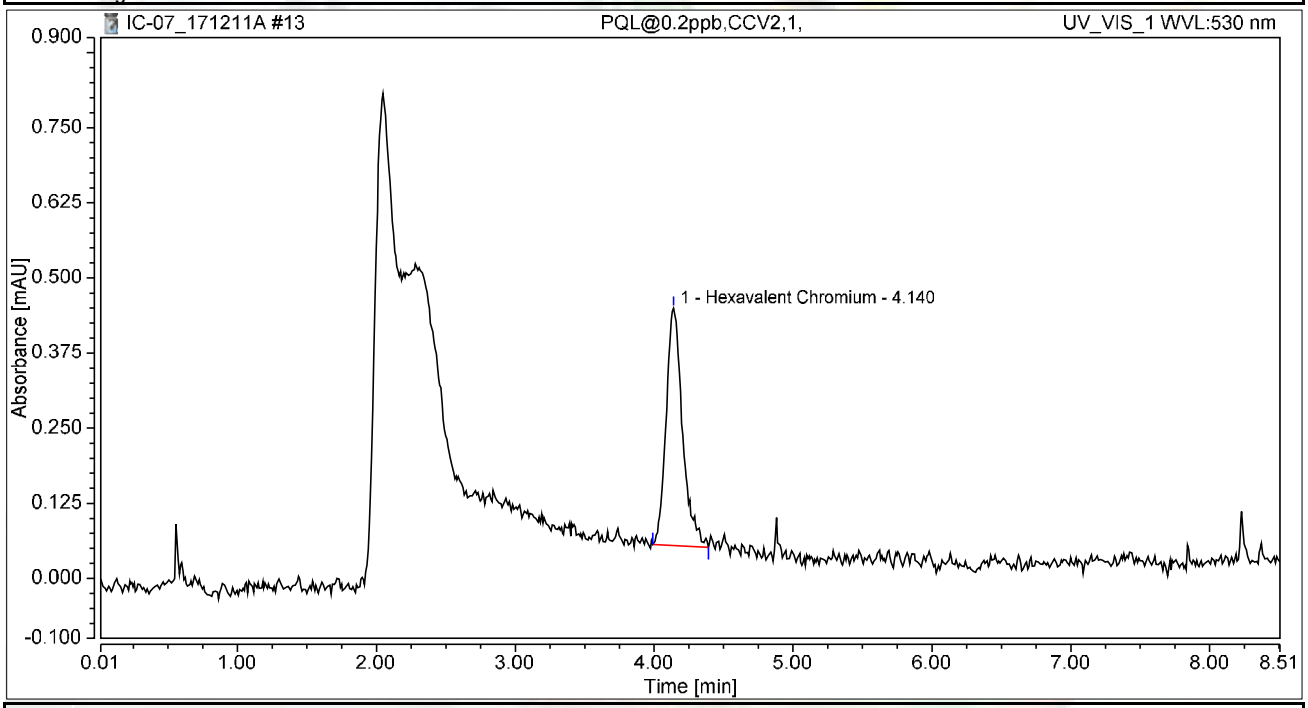
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.275	9.355	100.00	100.00	5.0770
Total:			**1.275**	**9.355**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

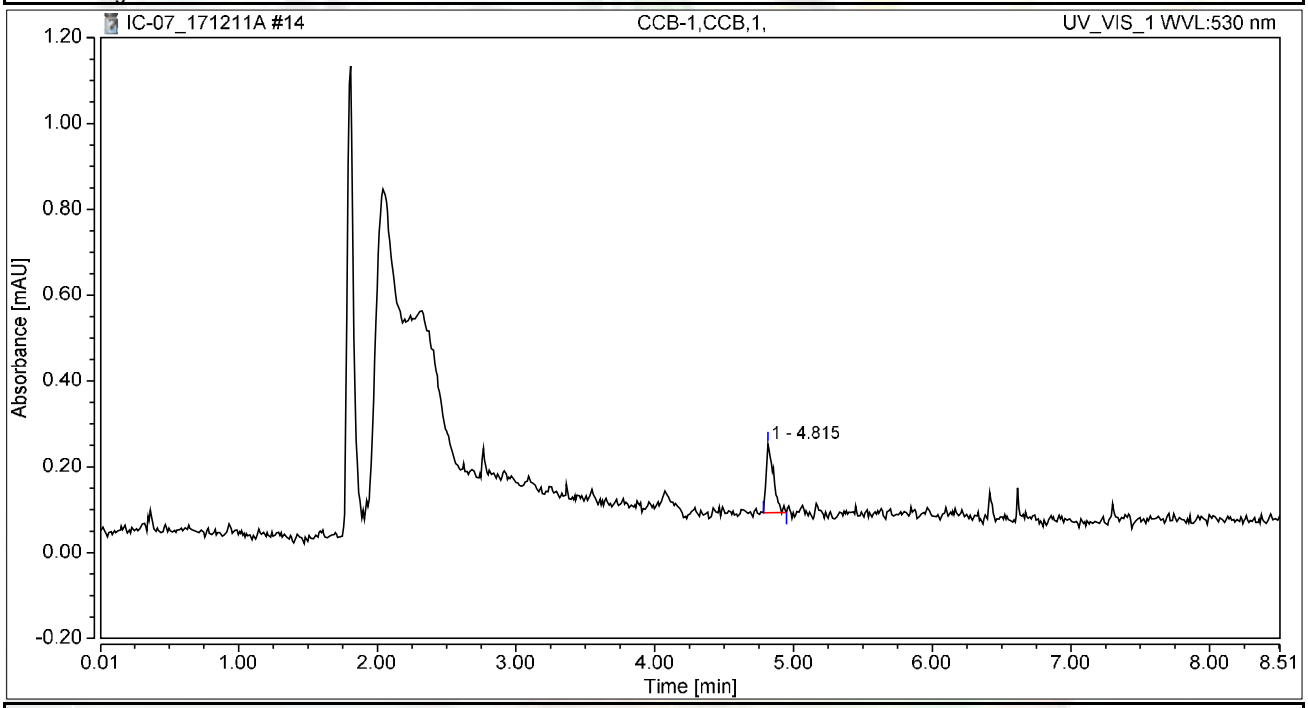
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.054	0.395	100.00	100.00	0.2151
Total:			**0.054**	**0.395**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

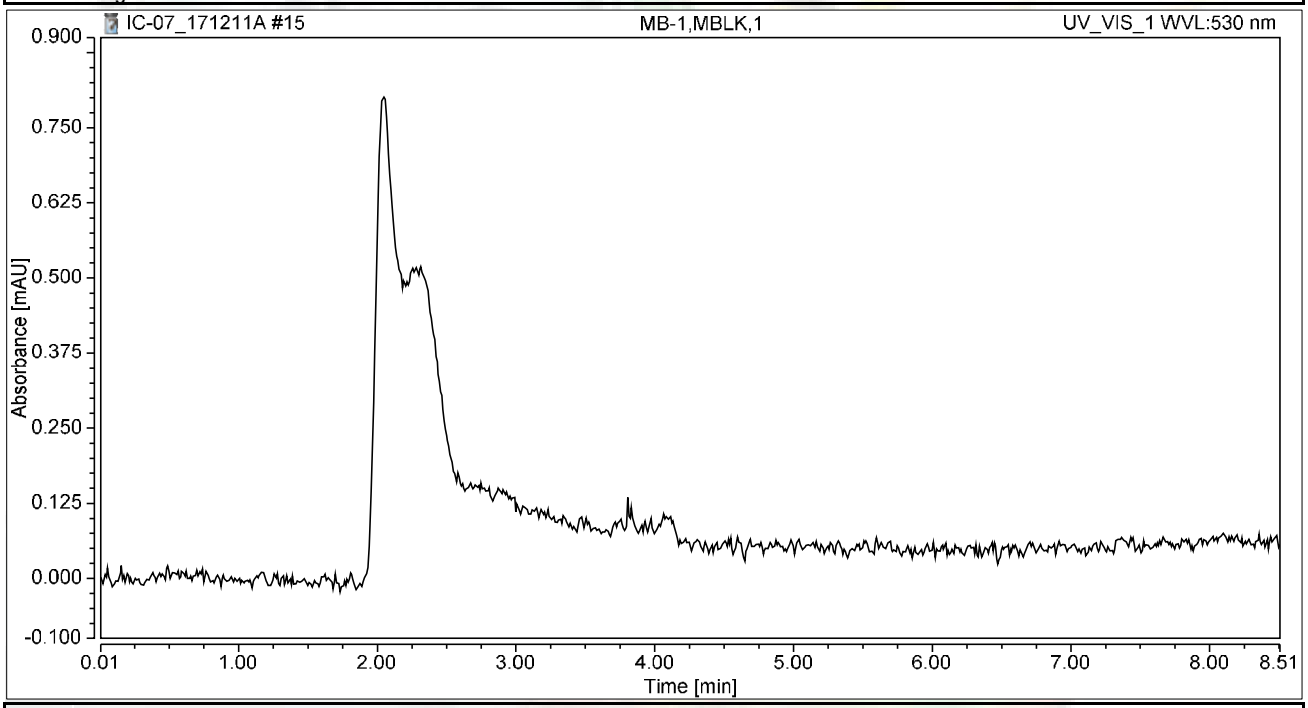
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		4.815	0.010	0.160	100.00	100.00	n.a.
Total:			**0.010**	**0.160**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-1,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

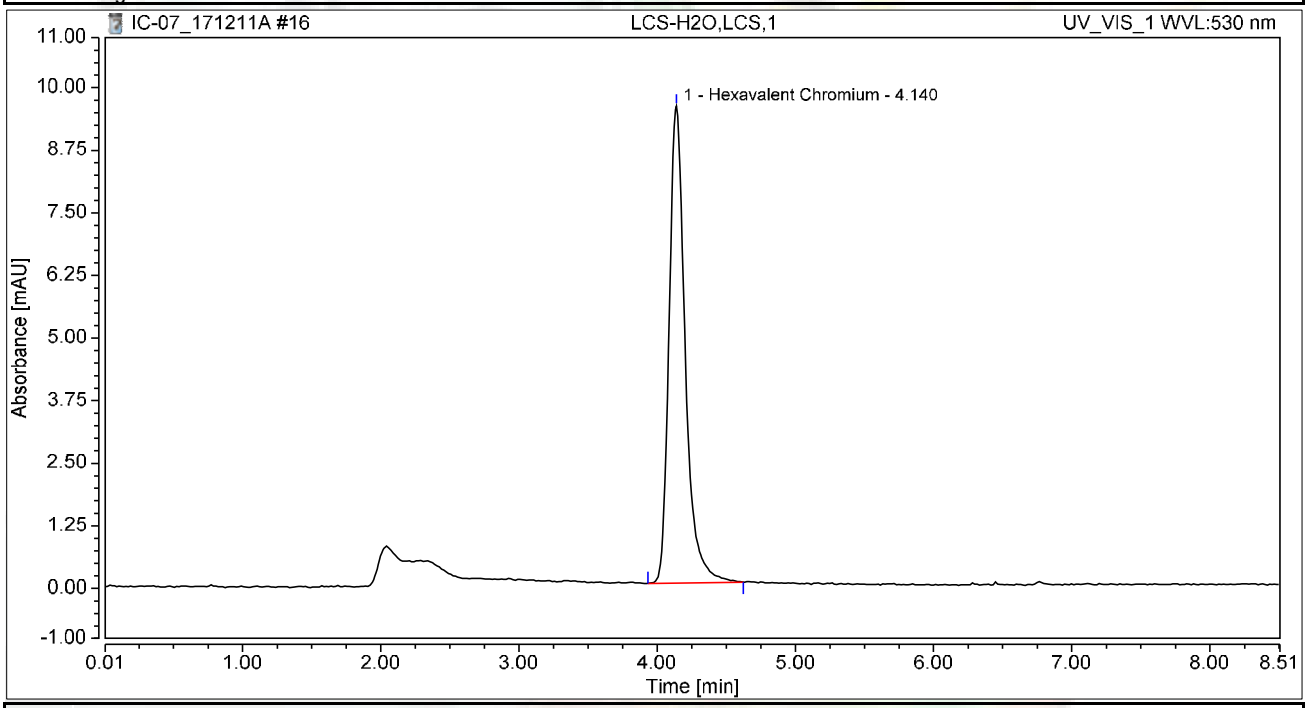
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

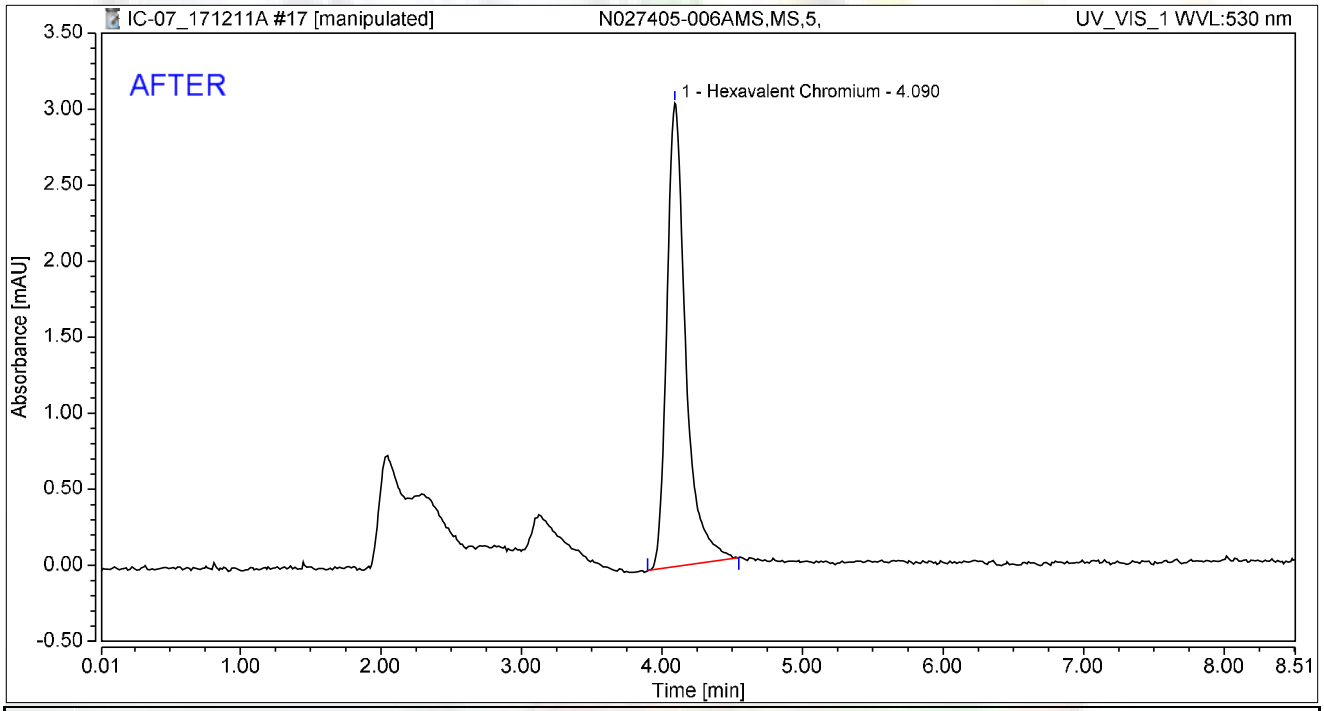
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.296	9.528	100.00	100.00	5.1607
Total:			**1.296**	**9.528**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-006AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.473	3.048	100.00	100.00	1.8848
Total:			**0.473**	**3.048**	**100.00**	**100.00**	

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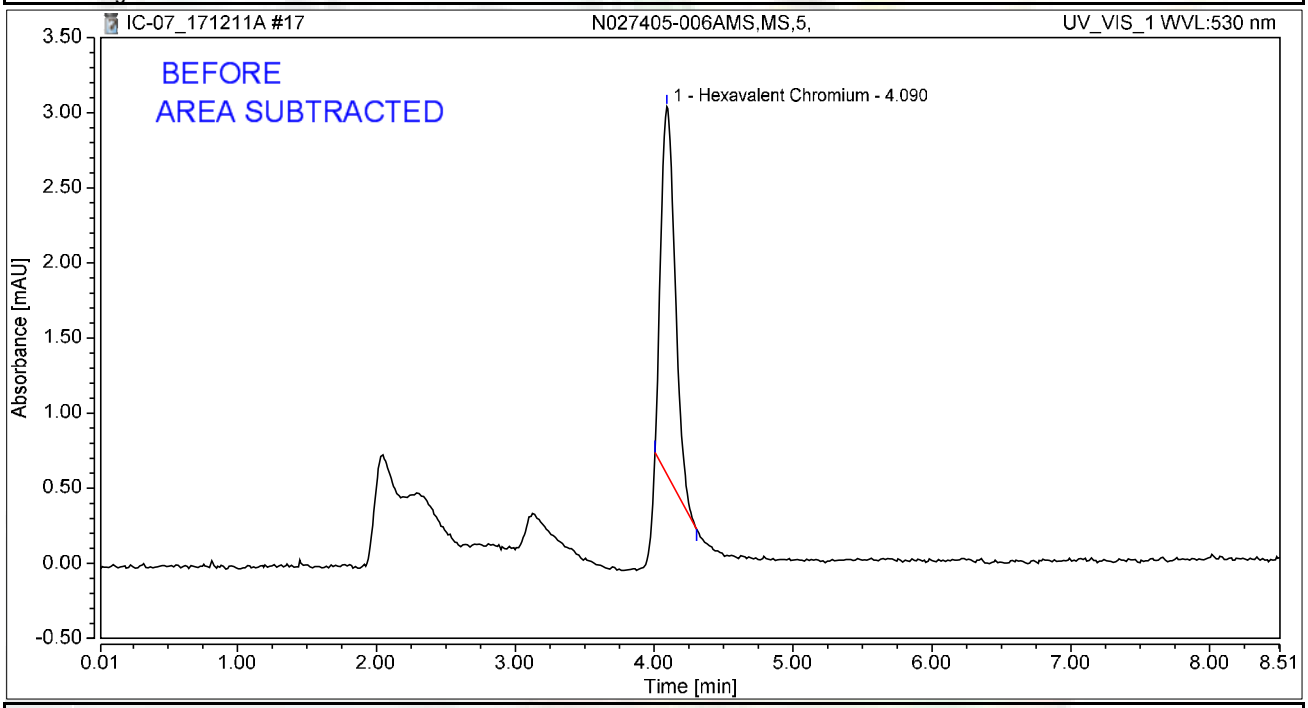
Chromatogram and Results

Injection Details

Injection Name:	**N027405-006AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.293	2.442	100.00	100.00	1.1666
Total:			**0.293**	**2.442**	**100.00**	**100.00**	

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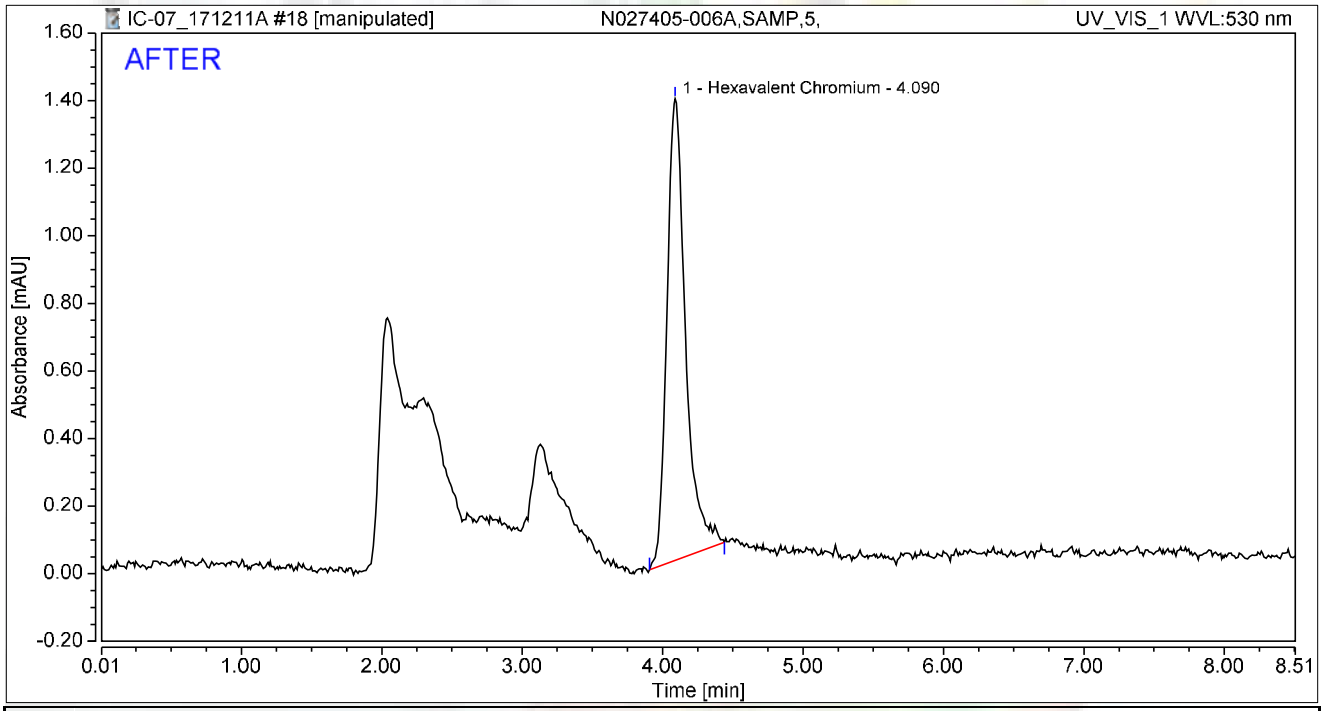
Chromatogram and Results

Injection Details

Injection Name:	**N027405-006A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.211	1.365	100.00	100.00	0.8406
Total:			**0.211**	**1.365**	**100.00**	**100.00**	

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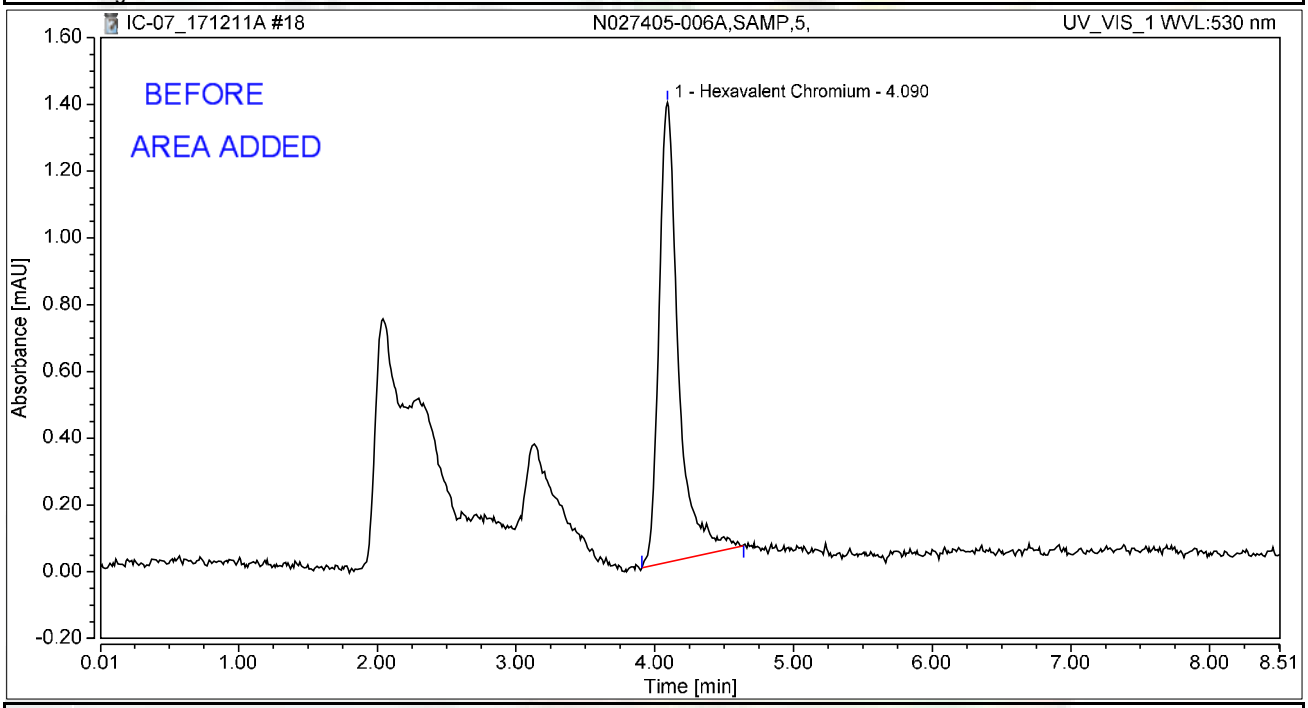
Chromatogram and Results

Injection Details

Injection Name:	**N027405-006A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.225	1.377	100.00	100.00	0.8948
Total:			**0.225**	**1.377**	**100.00**	**100.00**	

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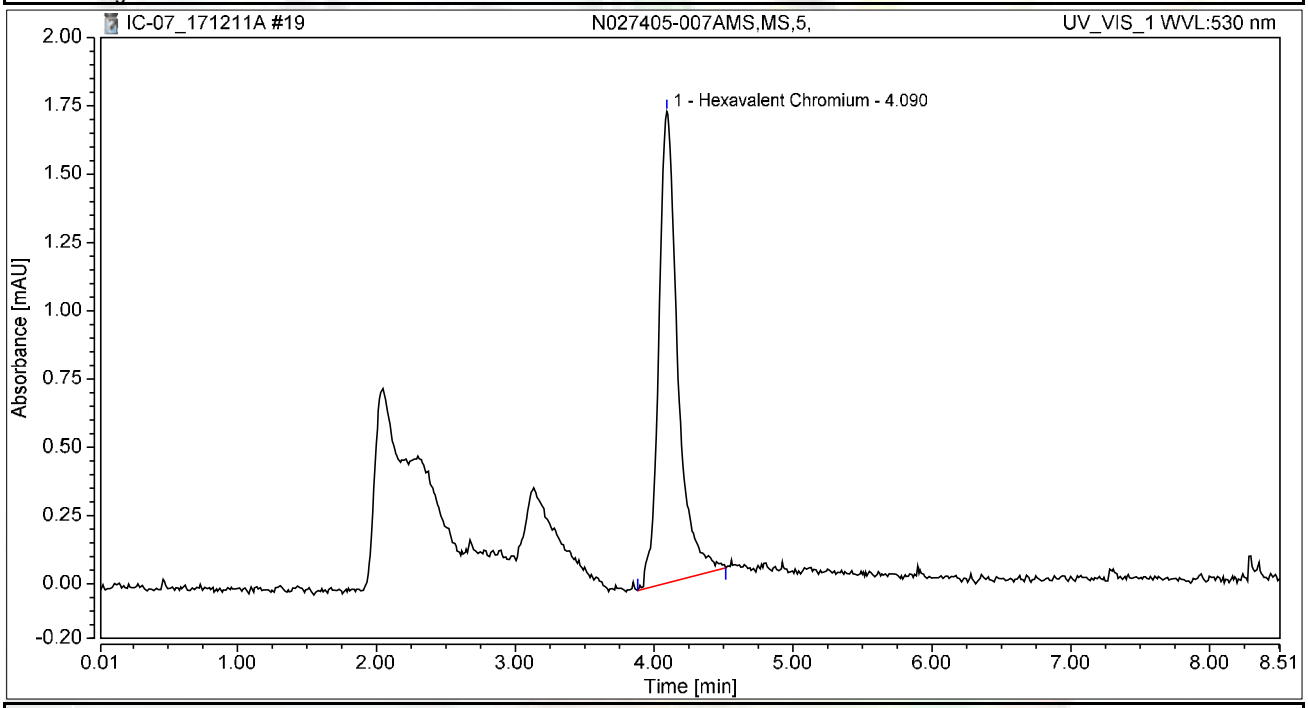
Chromatogram and Results

Injection Details

Injection Name:	**N027405-007AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

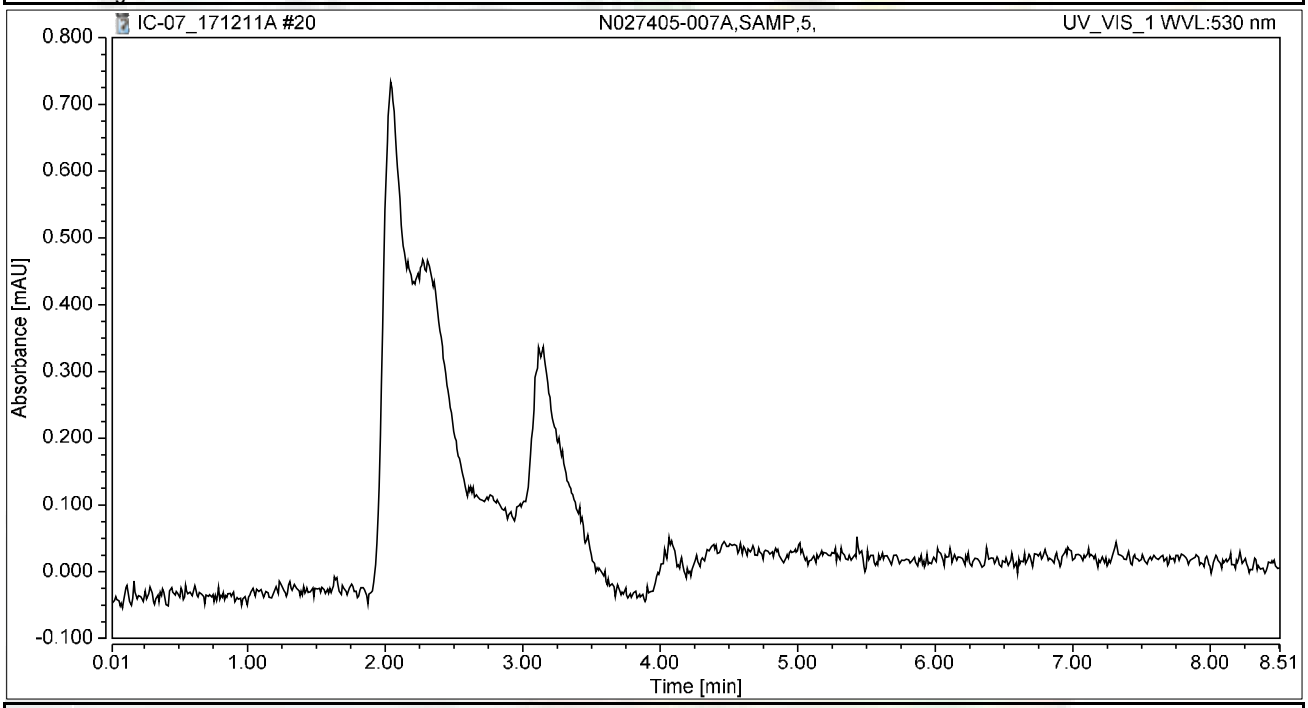
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.274	1.727	100.00	100.00	1.0903
Total:			**0.274**	**1.727**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-007A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

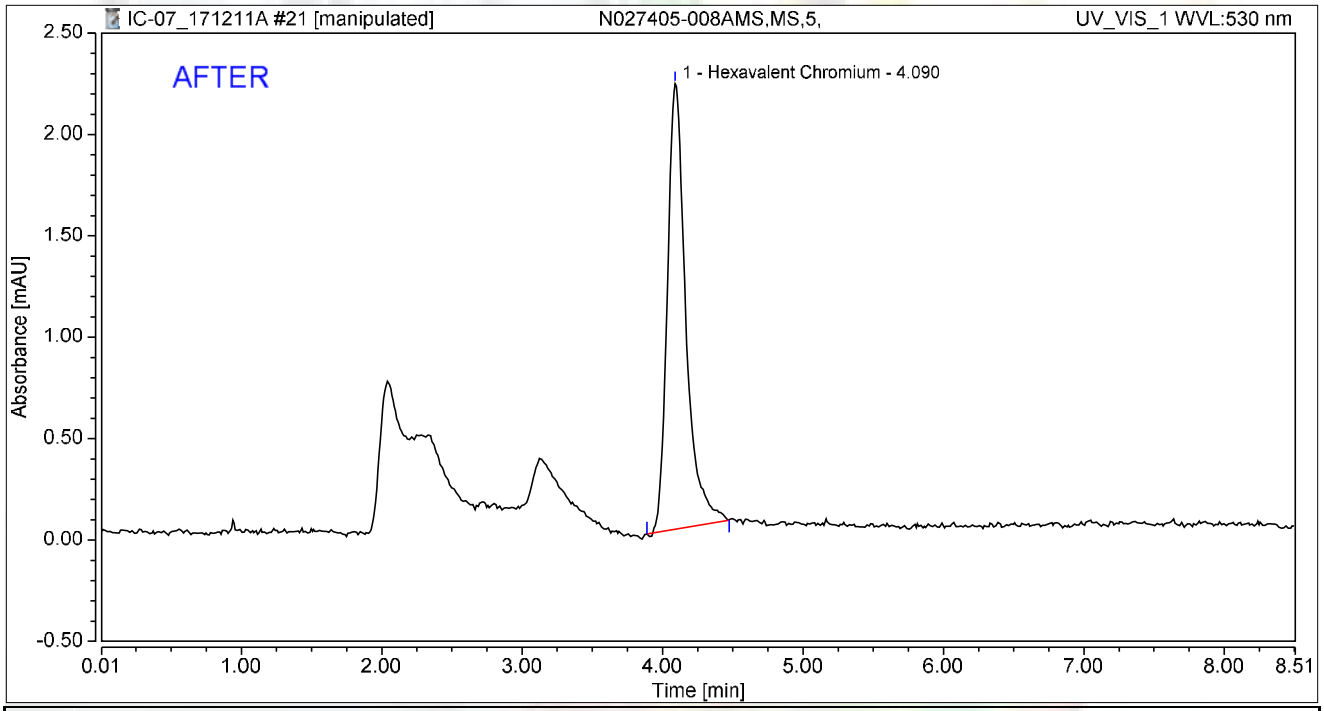
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-008AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.336	2.197	100.00	100.00	1.3384
Total:			**0.336**	**2.197**	**100.00**	**100.00**	

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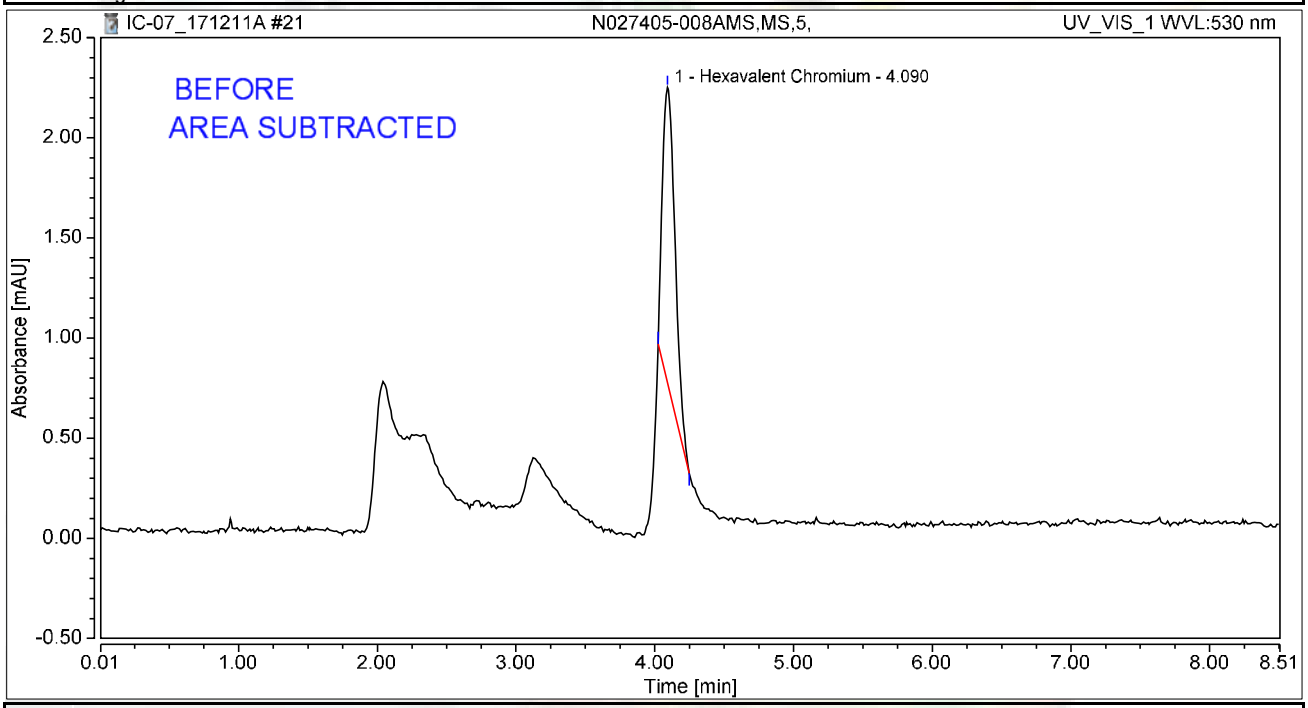
Chromatogram and Results

Injection Details

Injection Name:	**N027405-008AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.158	1.471	100.00	100.00	0.6275
Total:			**0.158**	**1.471**	**100.00**	**100.00**	

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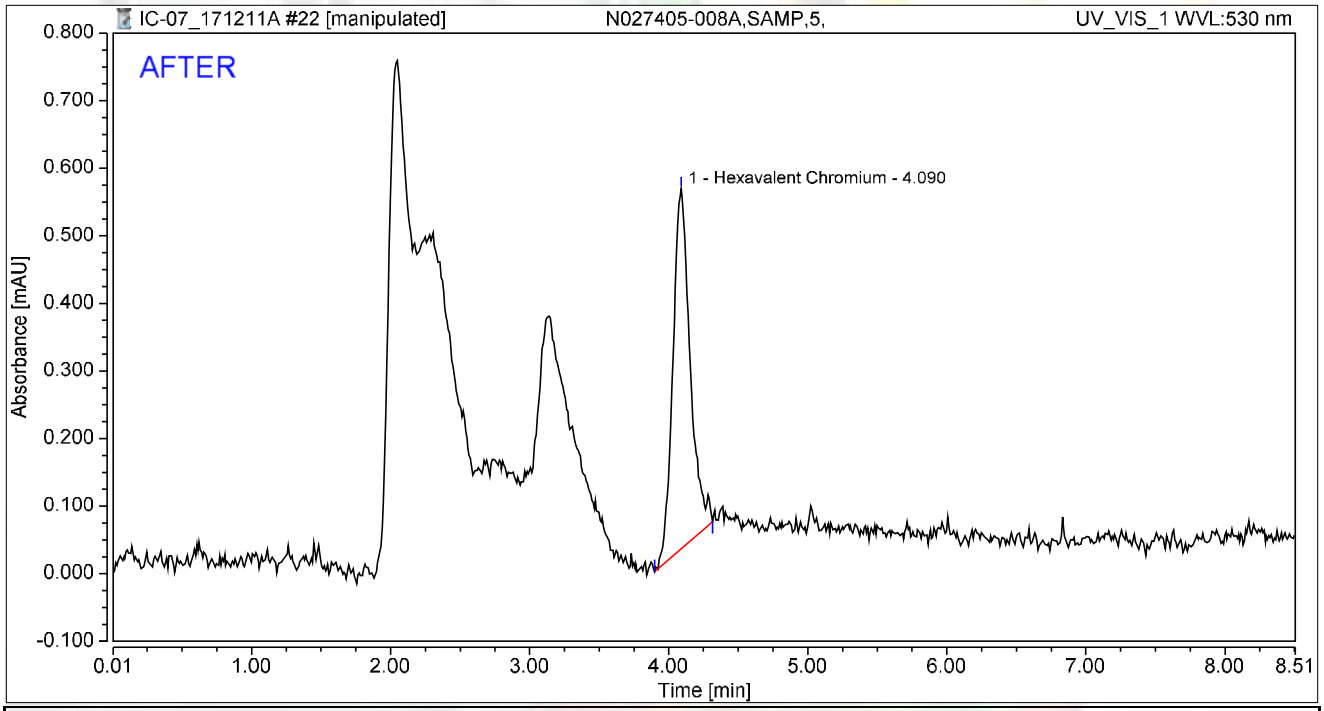
Chromatogram and Results

Injection Details

Injection Name:	**N027405-008A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.077	0.532	100.00	100.00	0.3057
Total:			**0.077**	**0.532**	**100.00**	**100.00**	

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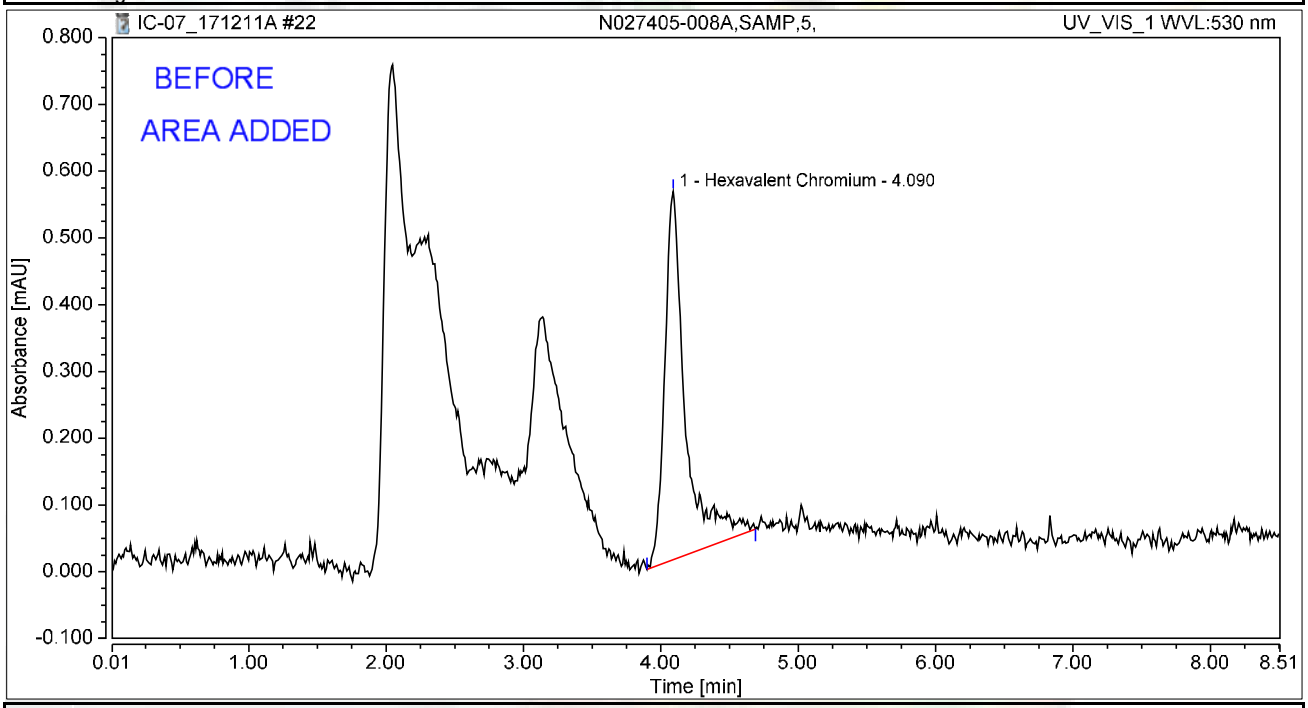
Chromatogram and Results

Injection Details

Injection Name:	**N027405-008A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.097	0.552	100.00	100.00	0.3848
Total:			**0.097**	**0.552**	**100.00**	**100.00**	

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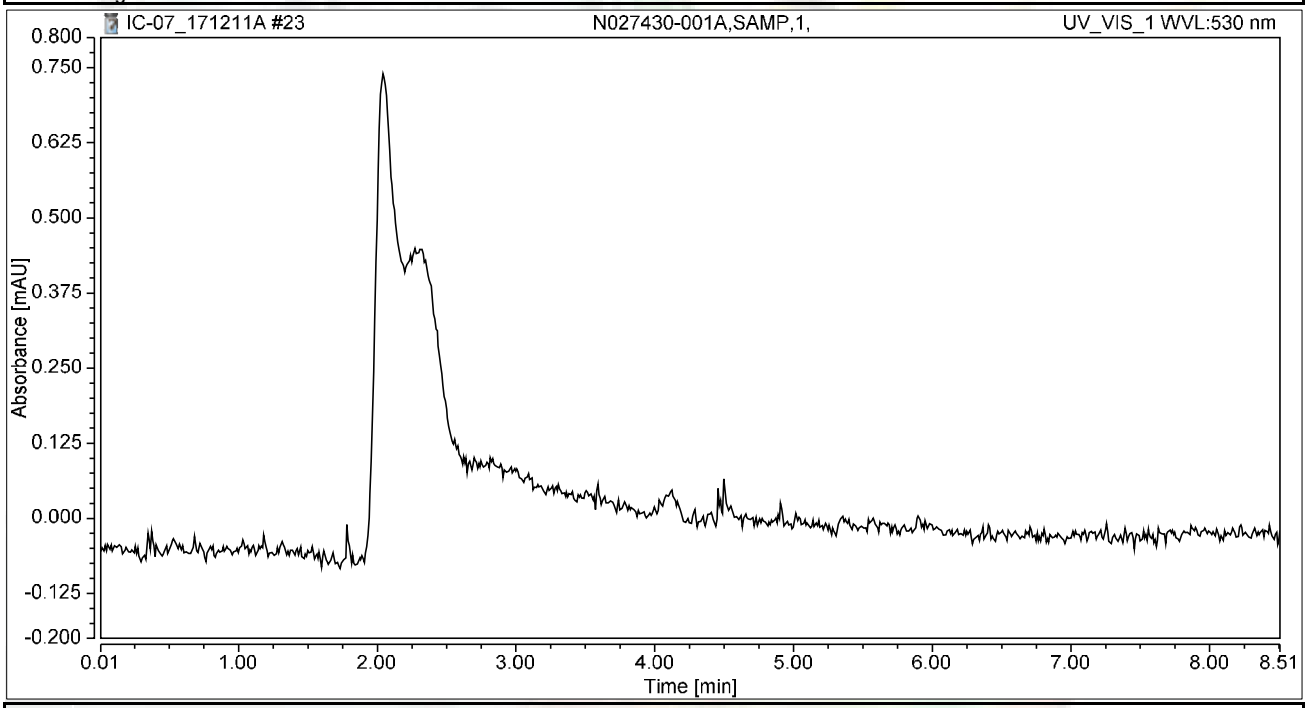
Chromatogram and Results

Injection Details

Injection Name:	**N027430-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

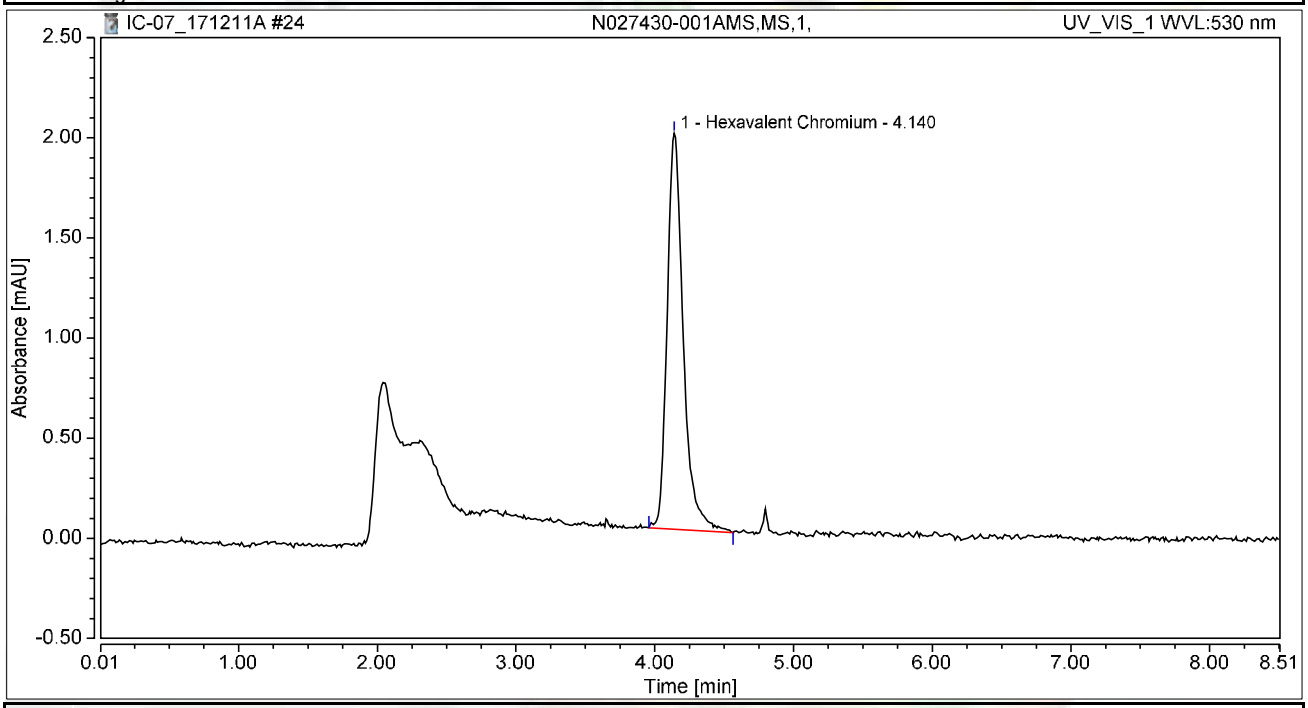
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

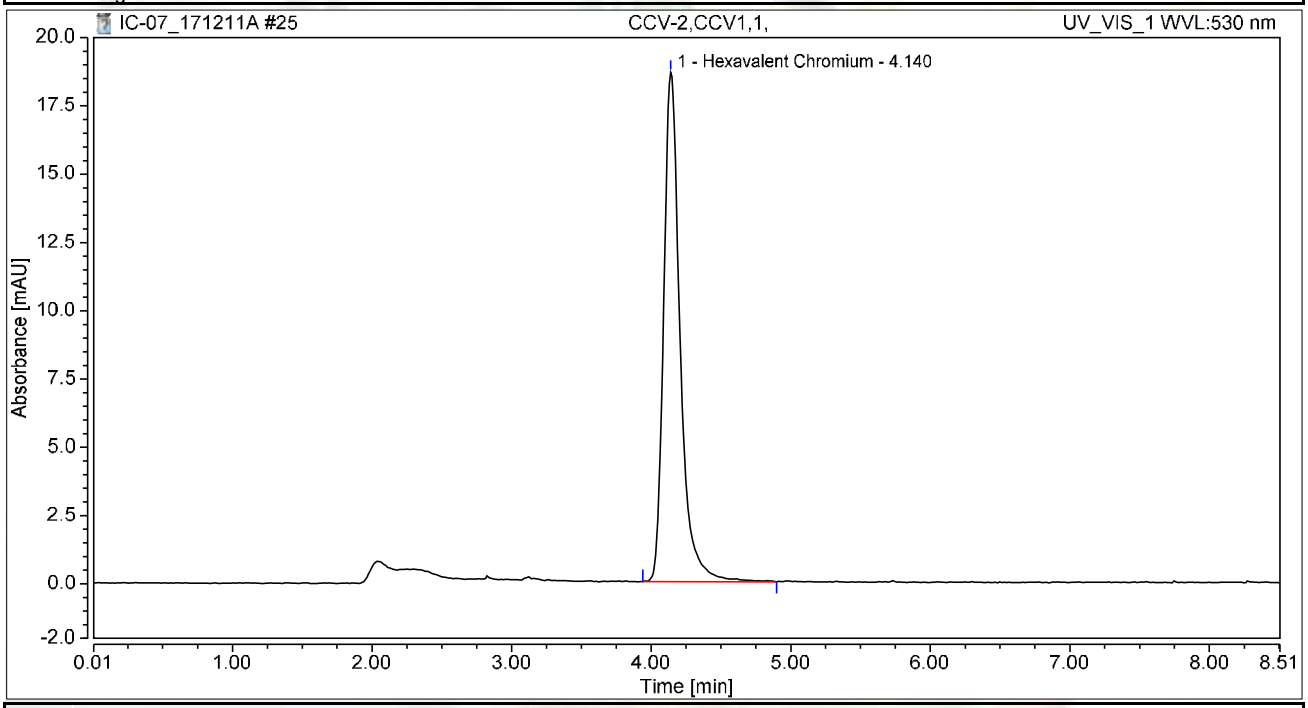
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.268	1.978	100.00	100.00	1.0677
Total:			**0.268**	**1.978**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

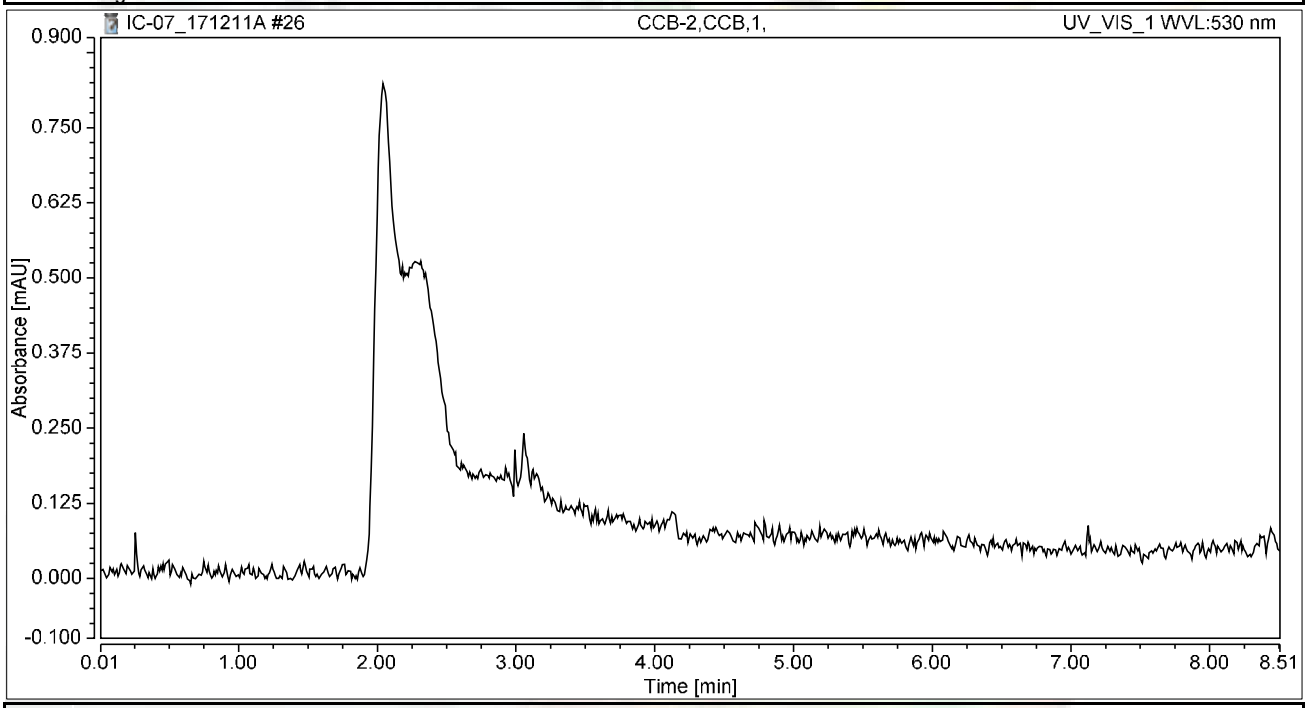
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.549	18.640	100.00	100.00	10.1518
Total:			**2.549**	**18.640**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

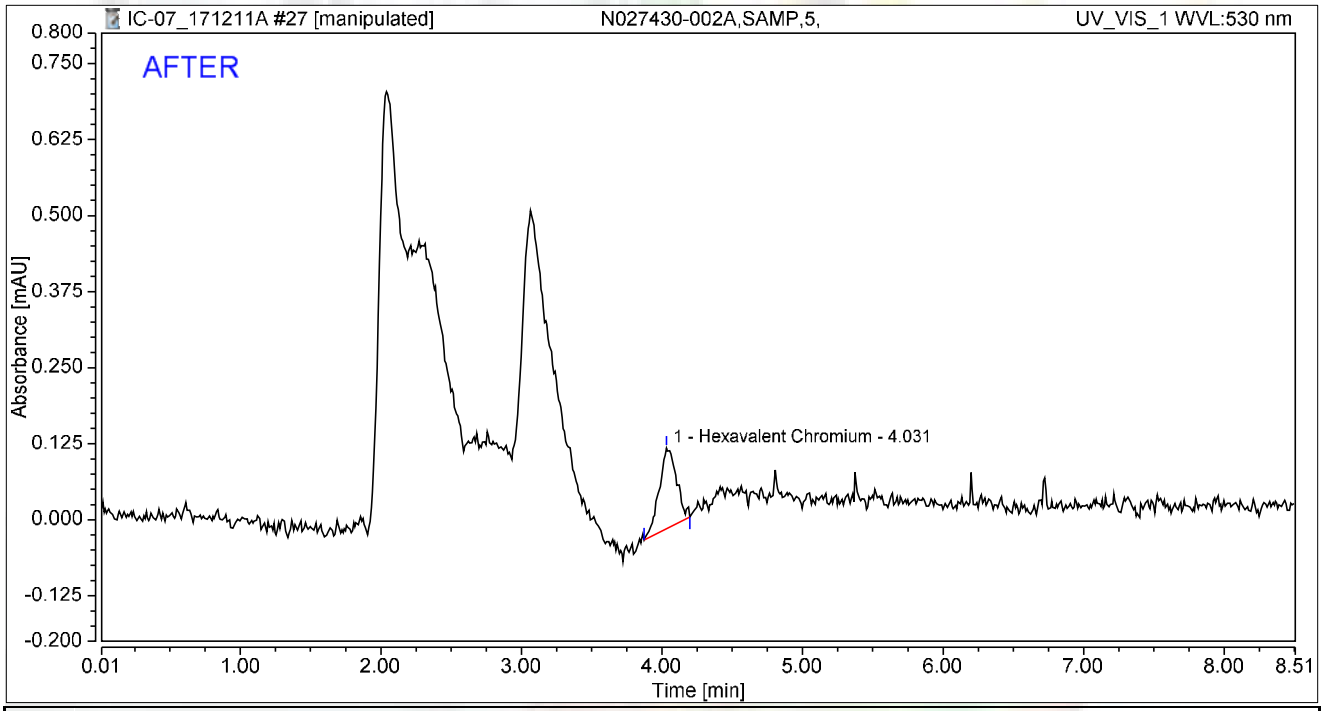
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-002A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.031	0.019	0.133	100.00	100.00	0.0743
Total:			**0.019**	**0.133**	**100.00**	**100.00**	

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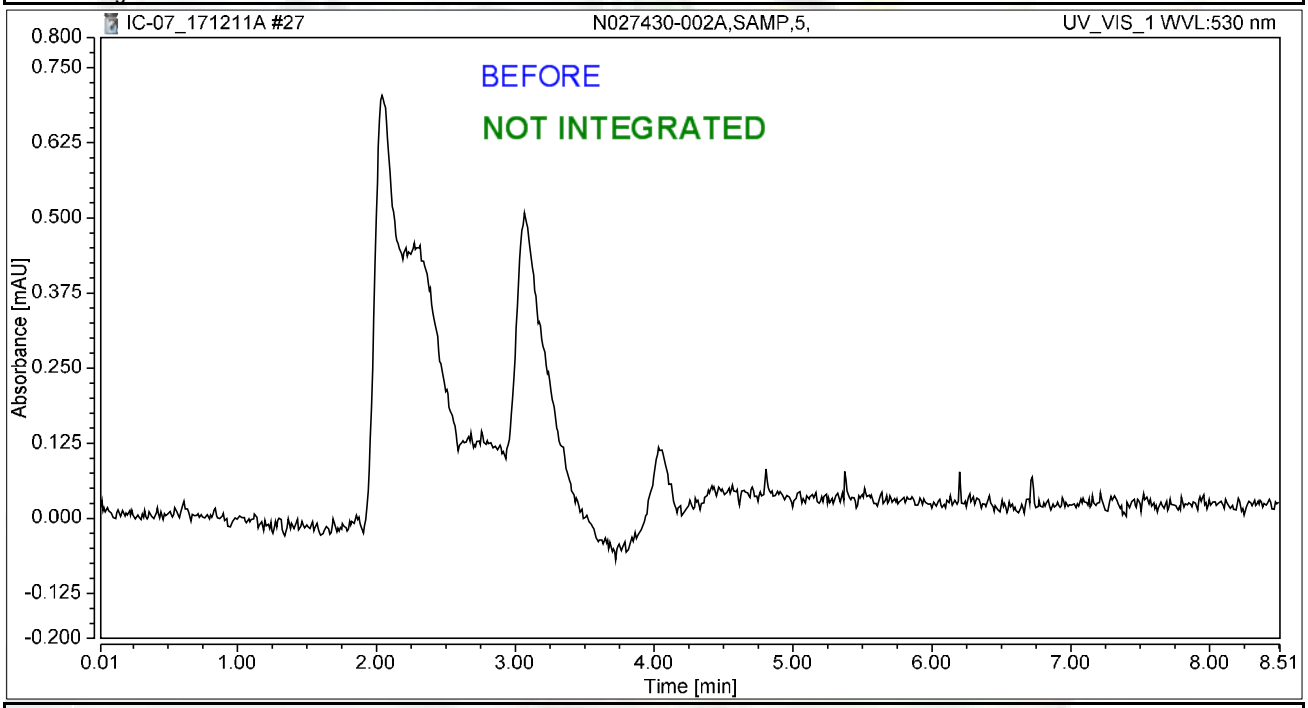
Chromatogram and Results

Injection Details

Injection Name:	**N027430-002A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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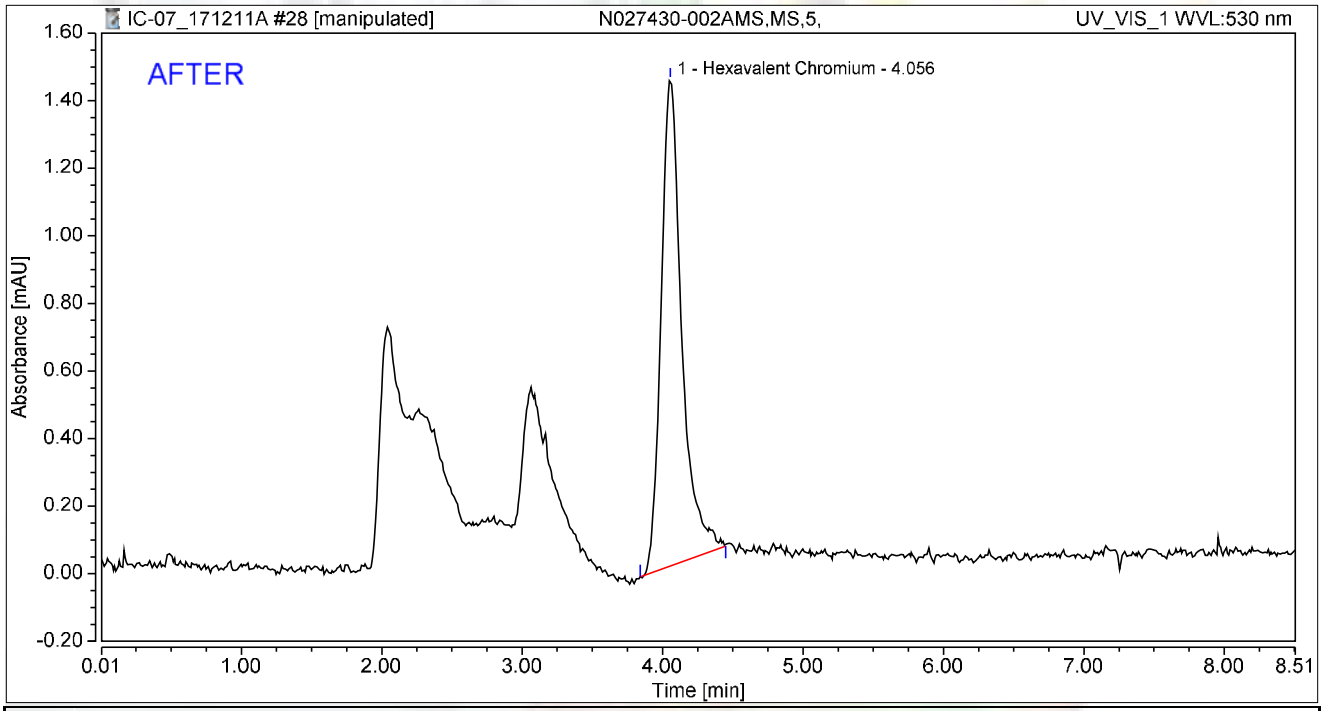
Chromatogram and Results

Injection Details

Injection Name:	**N027430-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.246	1.438	100.00	100.00	0.9810
Total:			**0.246**	**1.438**	**100.00**	**100.00**	

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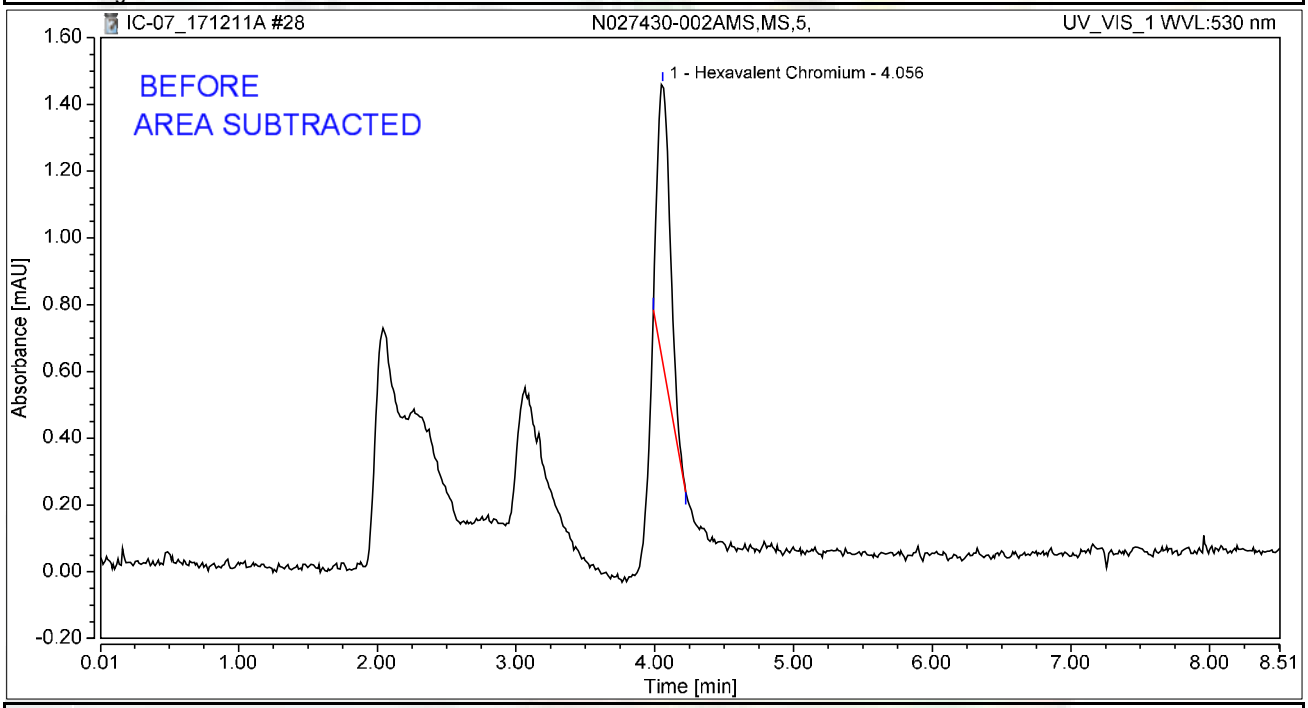
Chromatogram and Results

Injection Details

Injection Name:	**N027430-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.090	0.832	100.00	100.00	0.3580
Total:			**0.090**	**0.832**	**100.00**	**100.00**	

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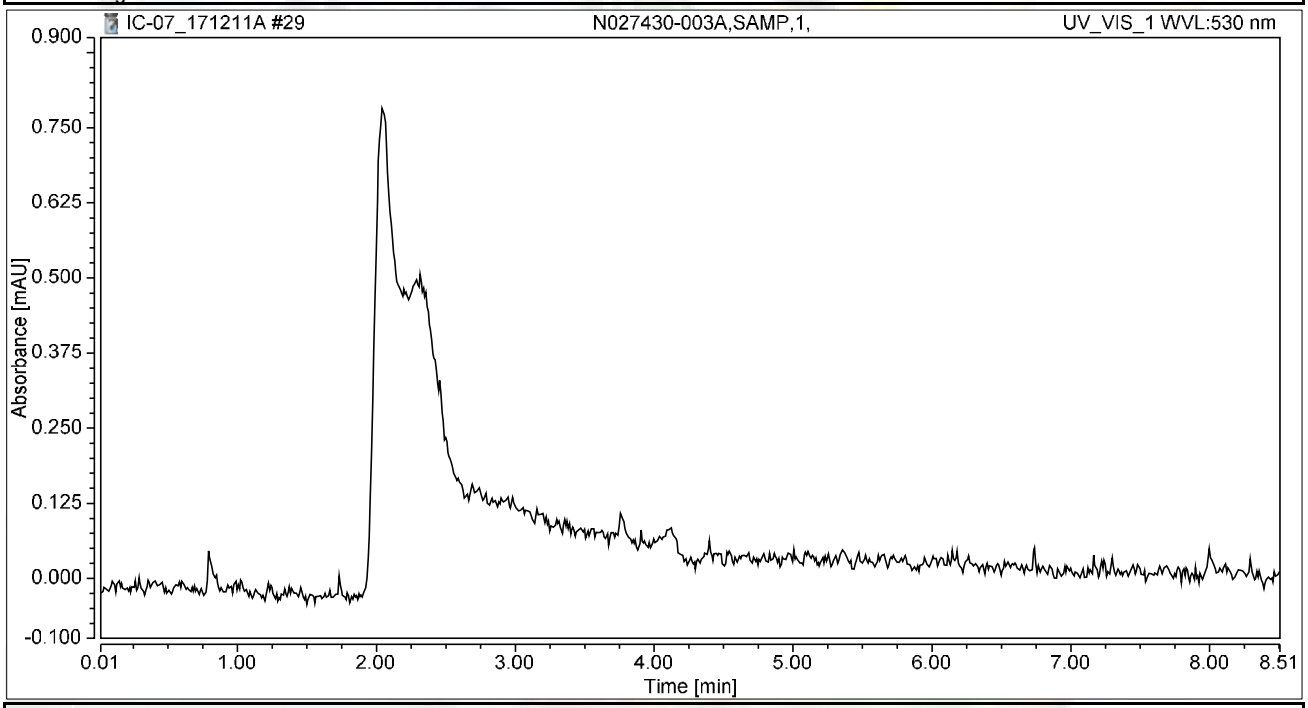
Chromatogram and Results

Injection Details

Injection Name:	**N027430-003A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 12:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

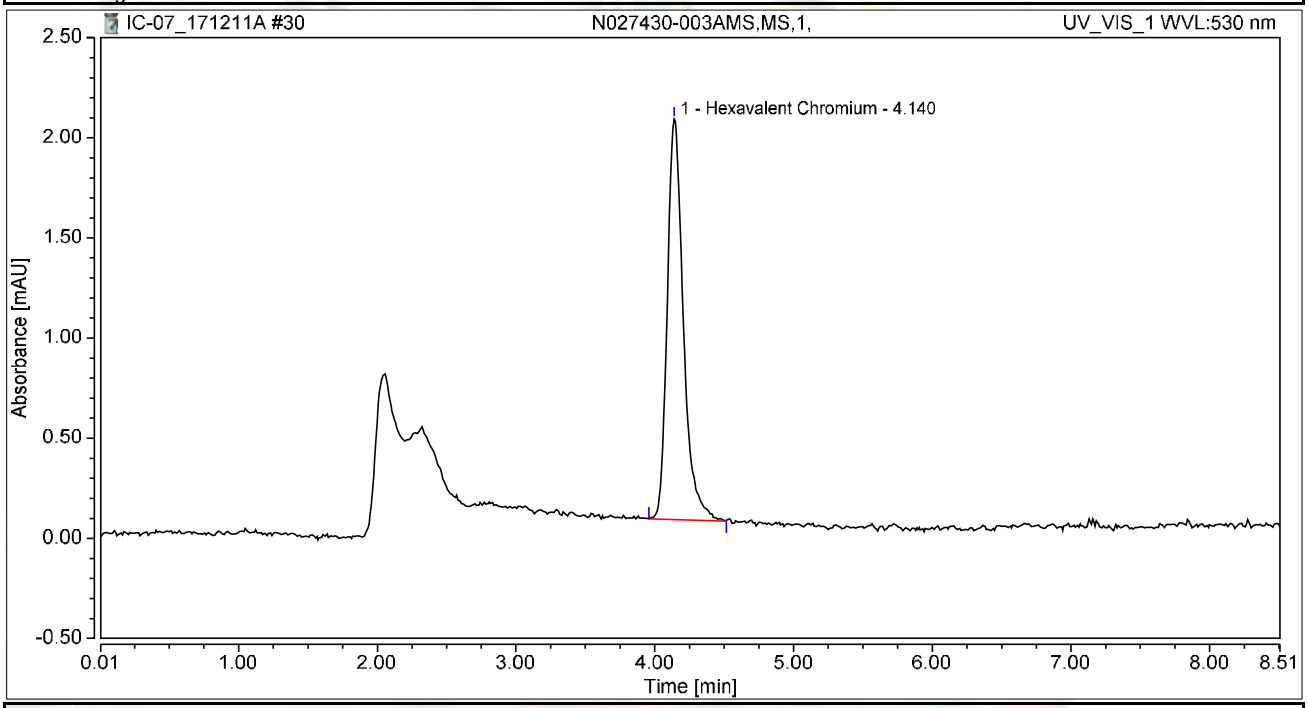
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

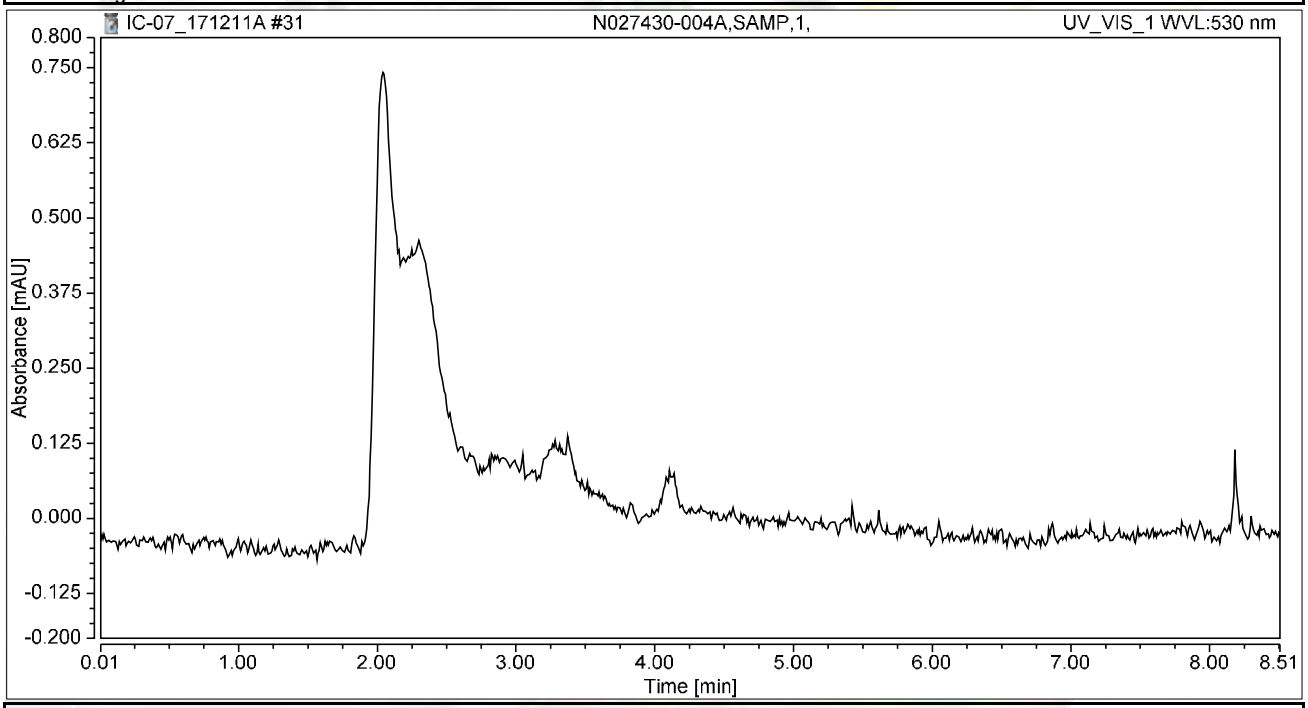
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.270	1.999	100.00	100.00	1.0741
Total:			**0.270**	**1.999**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 12:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

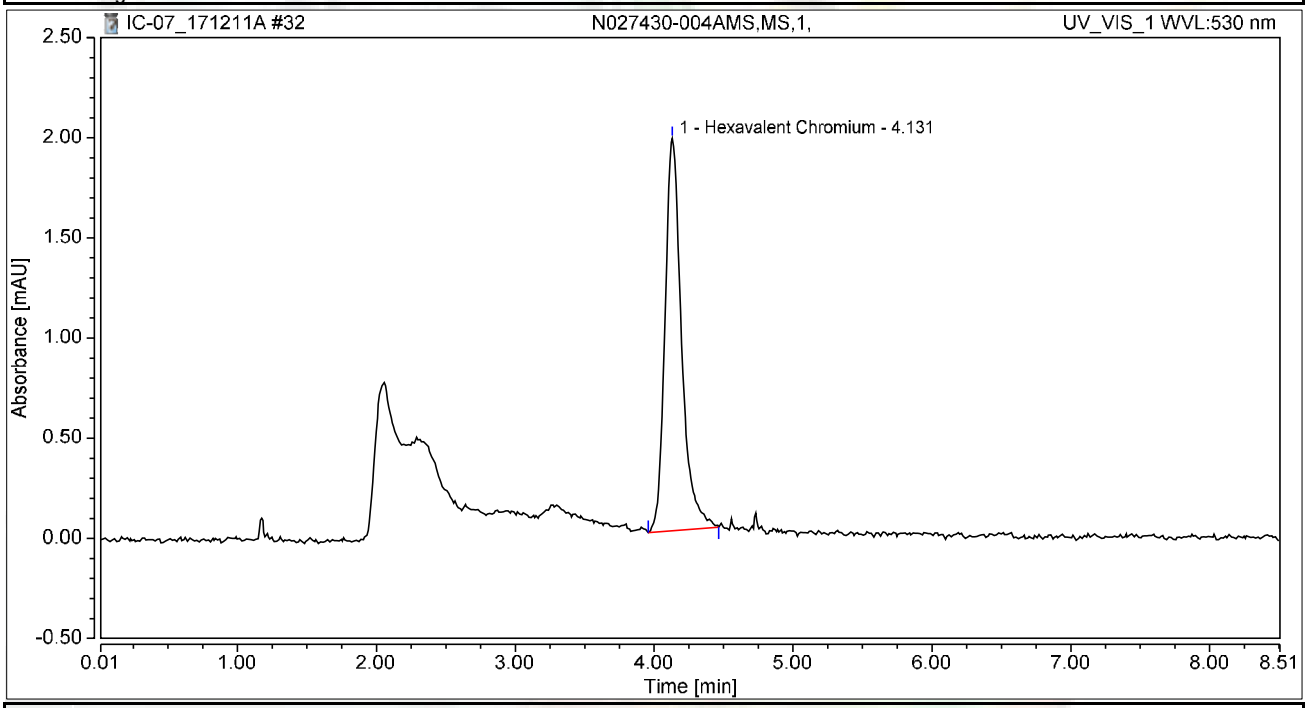
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-004AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 12:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

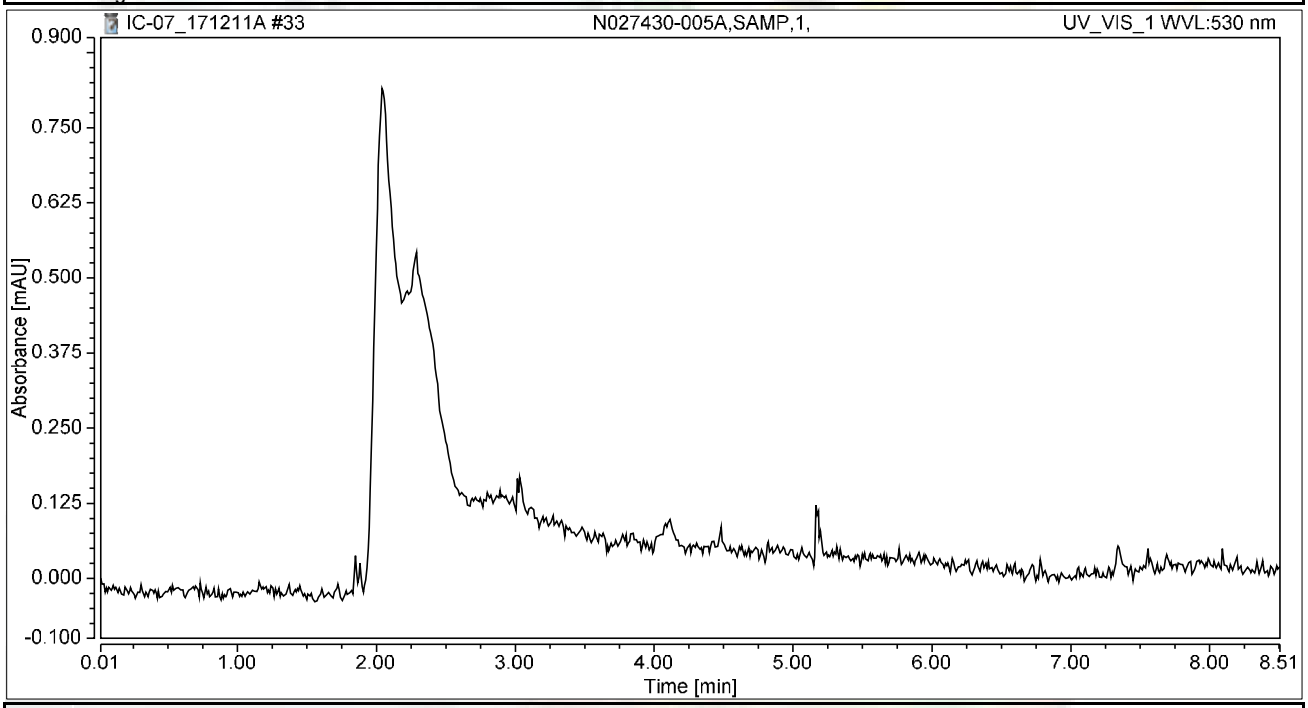
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.270	1.958	100.00	100.00	1.0766
Total:			**0.270**	**1.958**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-005A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 12:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

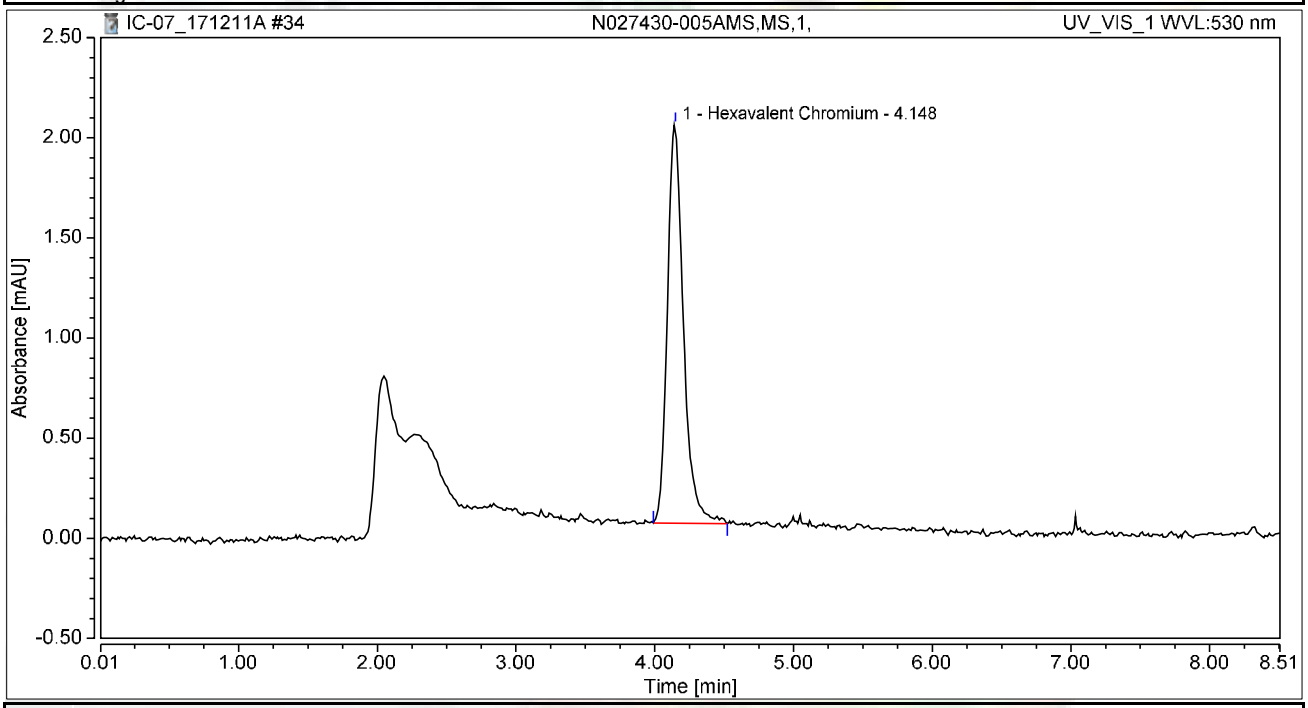
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-005AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 12:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

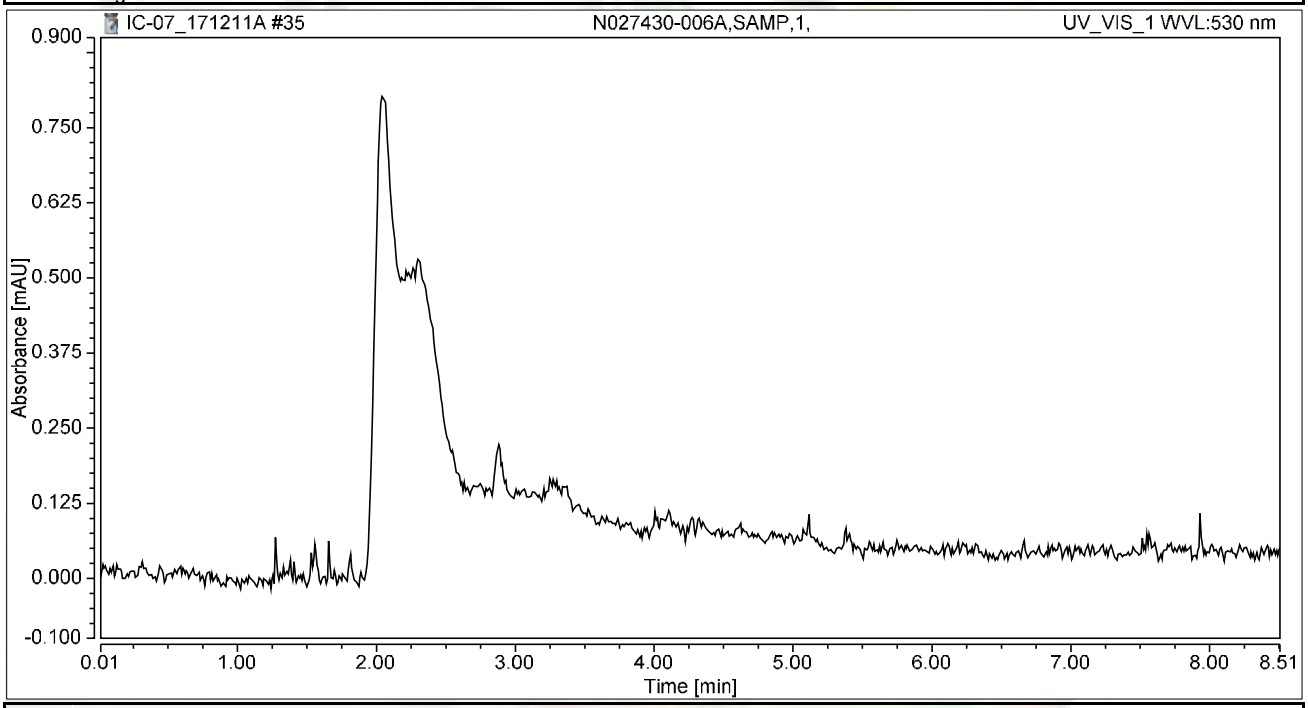
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.269	1.991	100.00	100.00	1.0694
Total:			**0.269**	**1.991**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-006A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

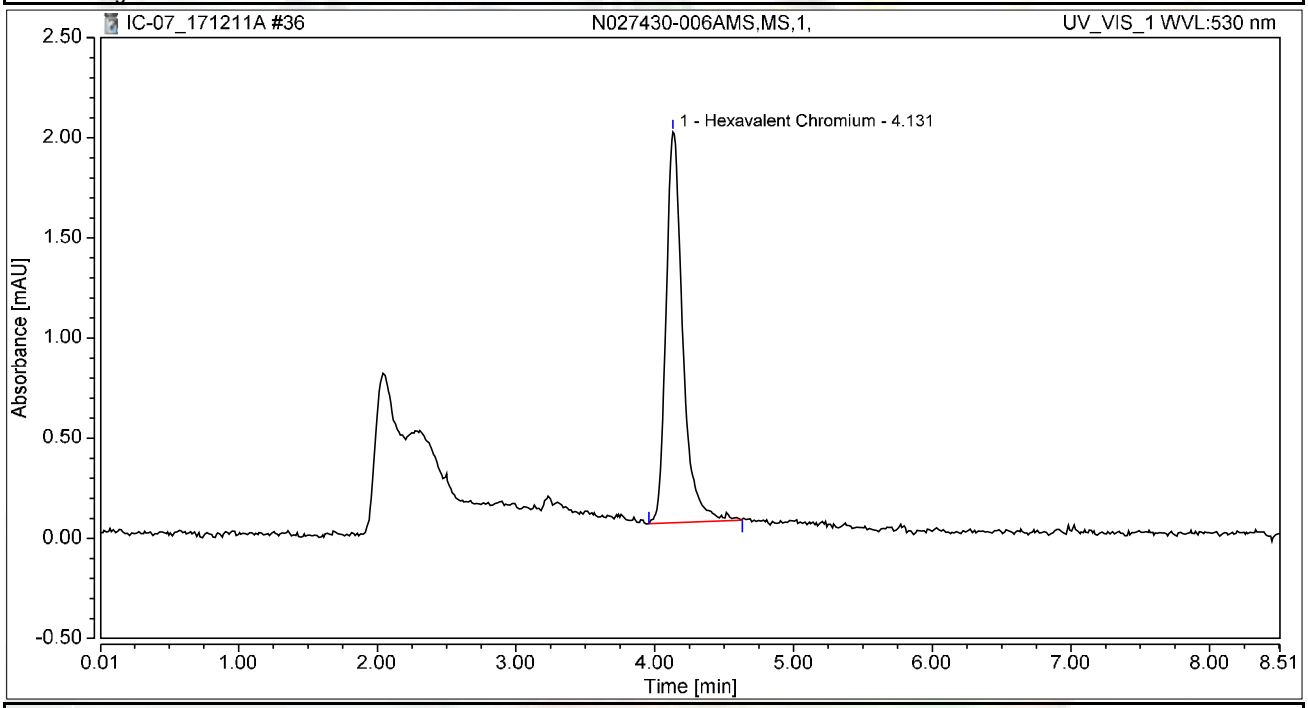
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

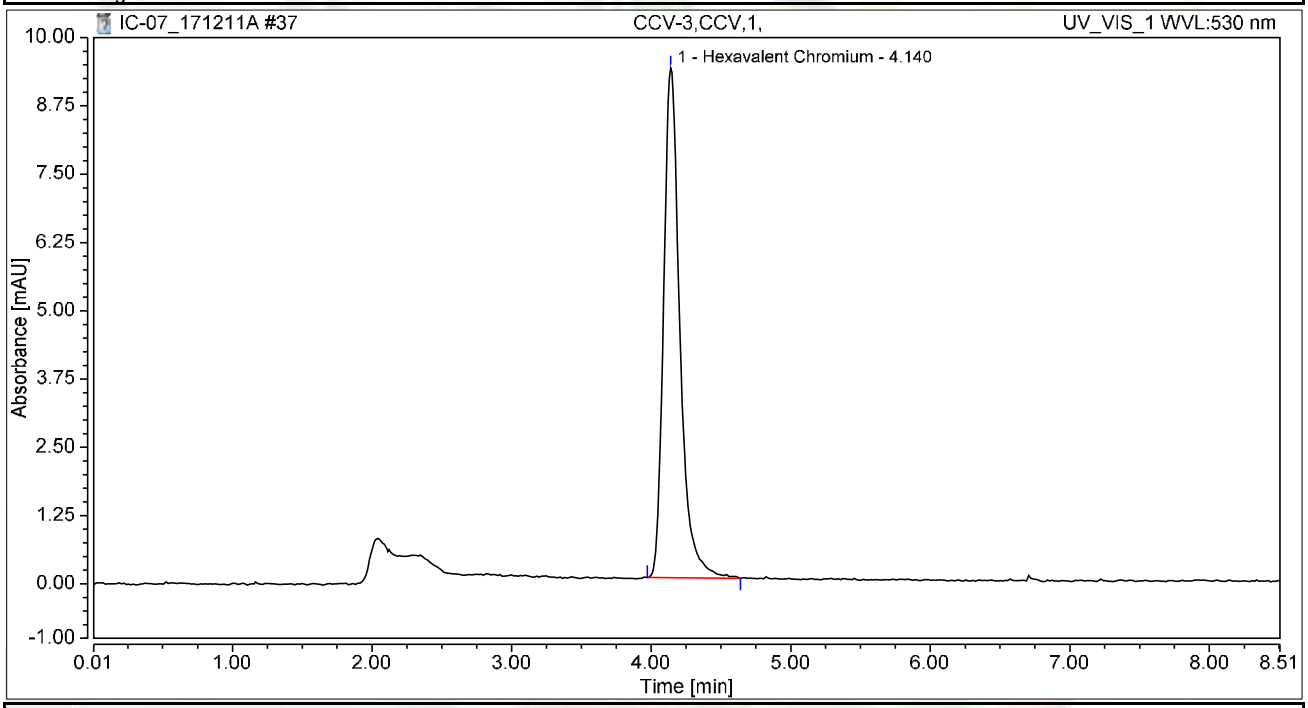
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.275	1.952	100.00	100.00	1.0966
Total:			**0.275**	**1.952**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

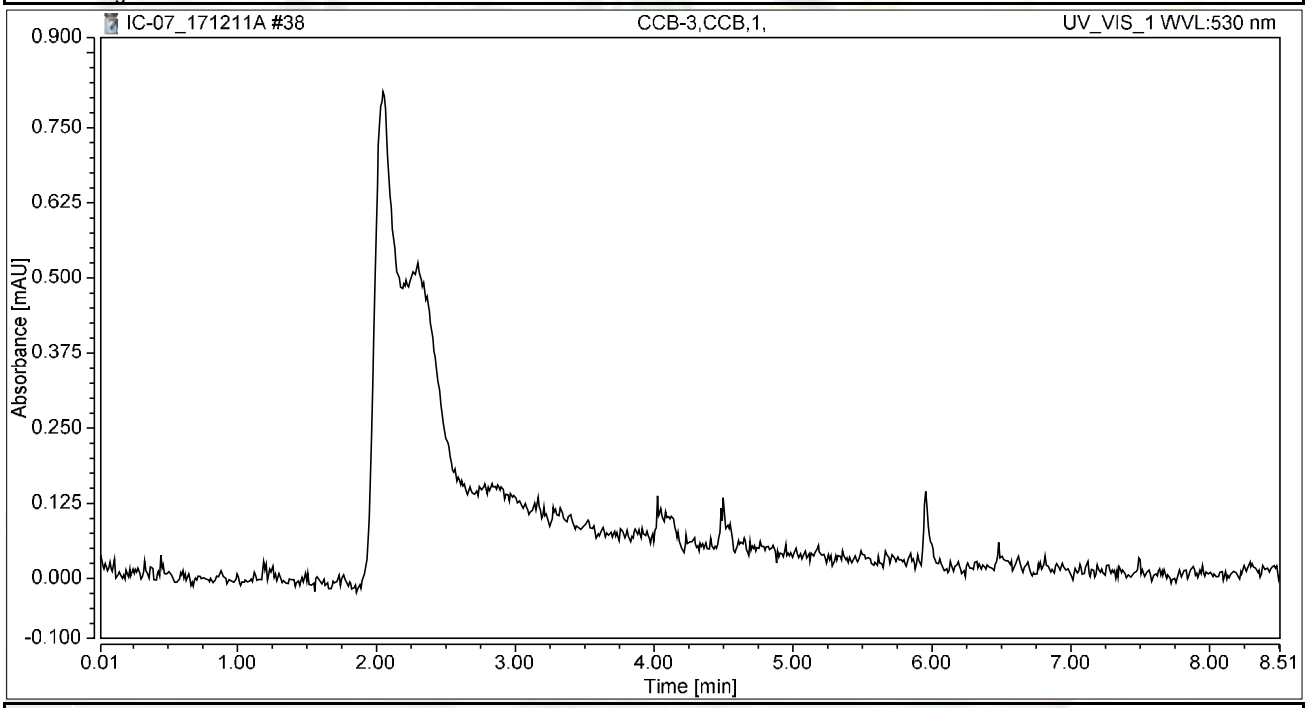
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.263	9.333	100.00	100.00	5.0296
Total:			**1.263**	**9.333**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

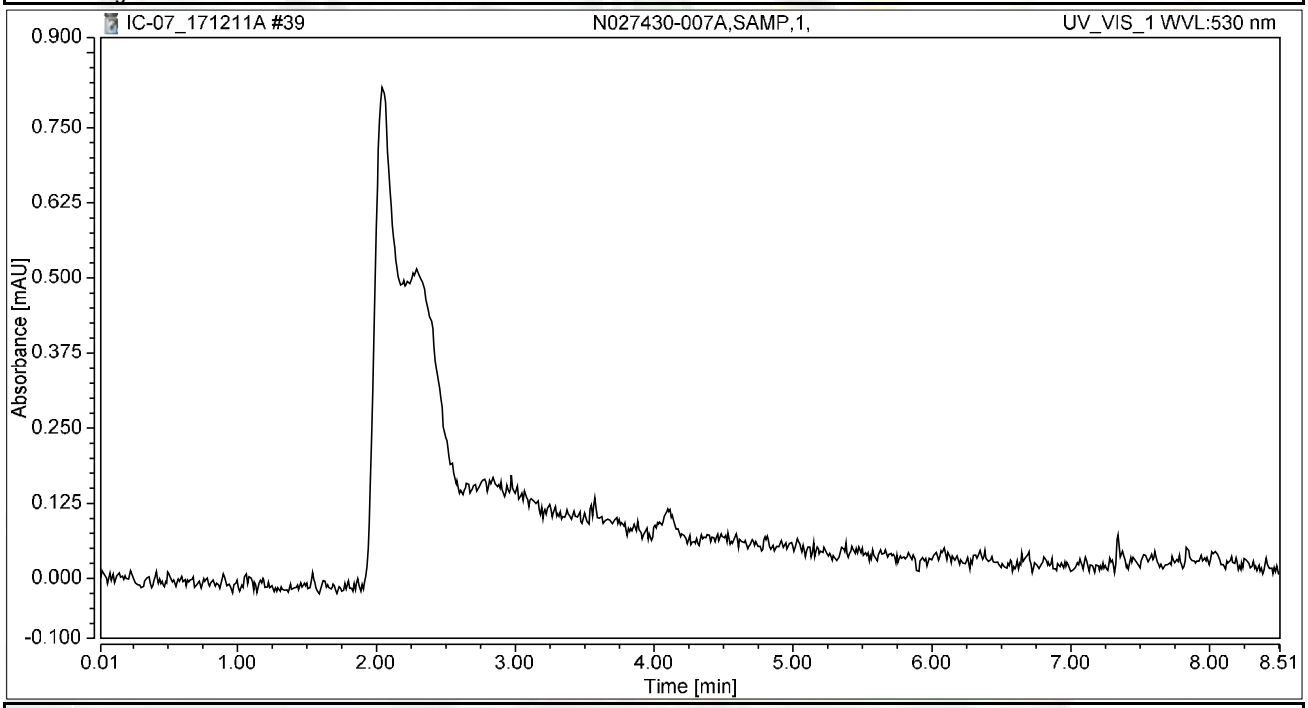
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-007A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

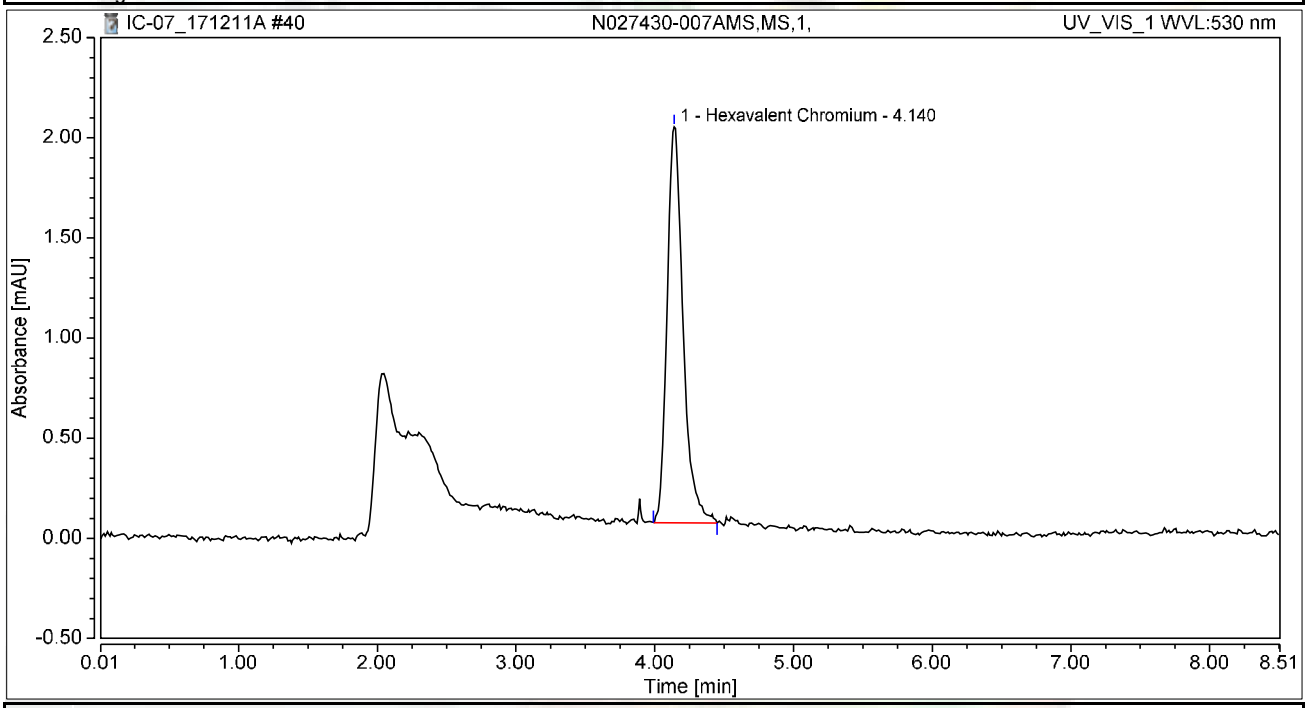
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

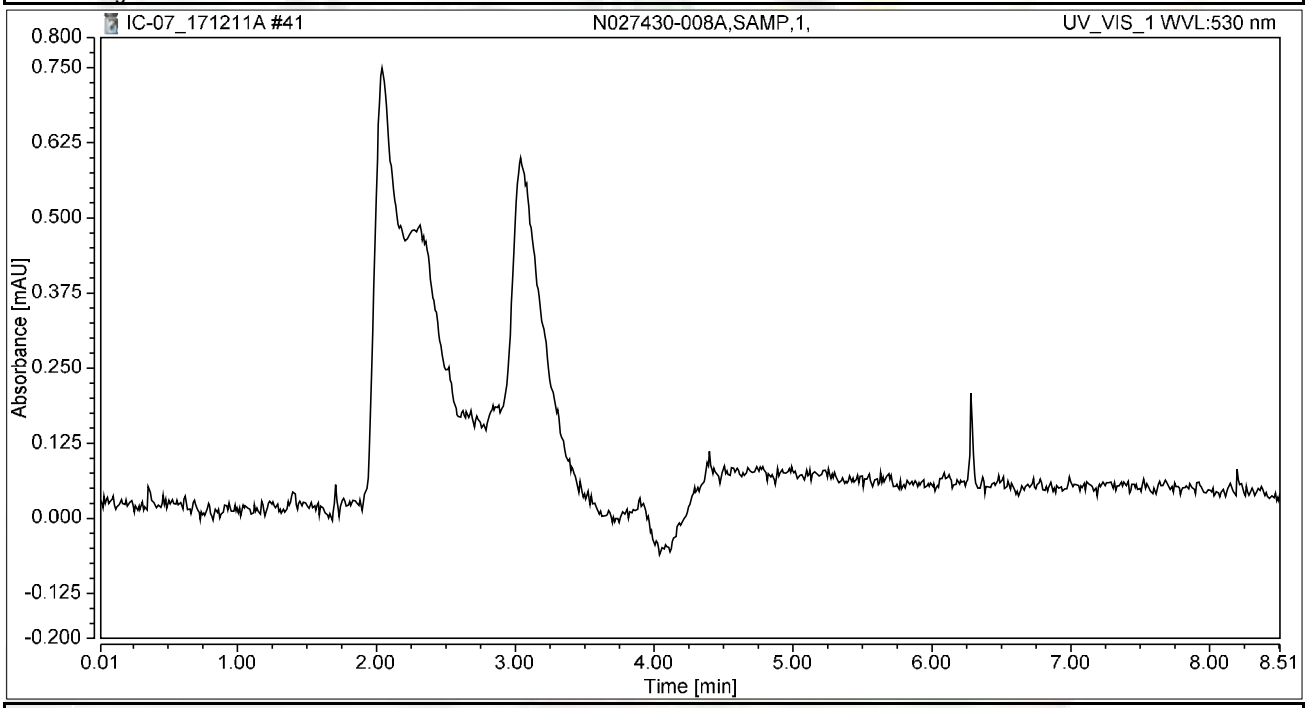
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.265	1.976	100.00	100.00	1.0563
Total:			**0.265**	**1.976**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-008A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

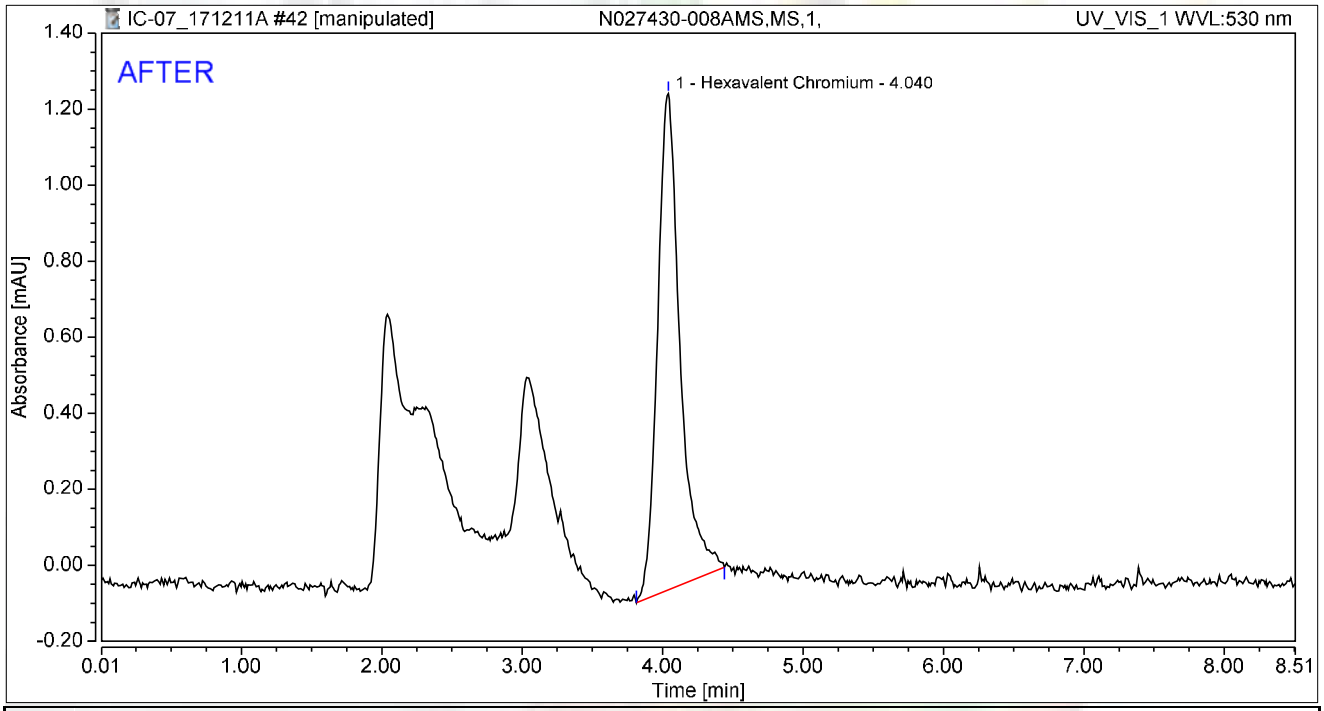
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.040	0.245	1.305	100.00	100.00	0.9757
Total:			**0.245**	**1.305**	**100.00**	**100.00**	

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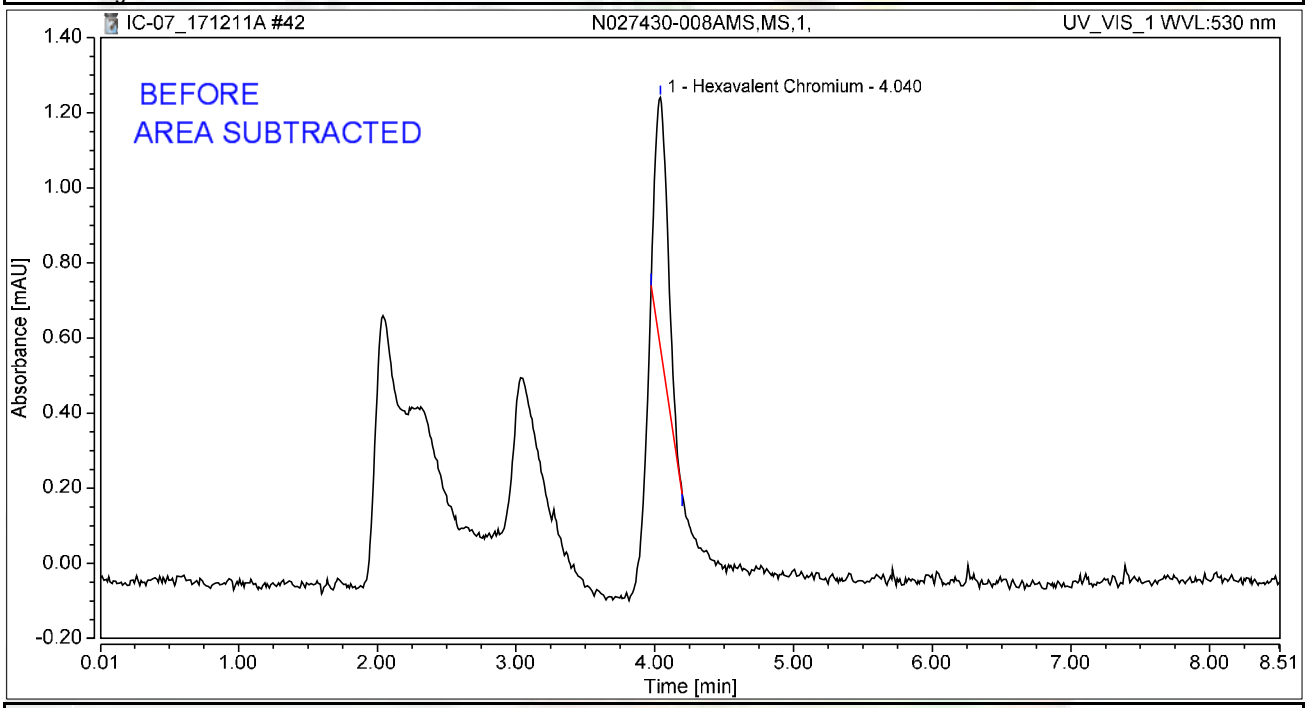
Chromatogram and Results

Injection Details

Injection Name:	**N027430-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.040	0.072	0.665	100.00	100.00	0.2850
Total:			**0.072**	**0.665**	**100.00**	**100.00**	

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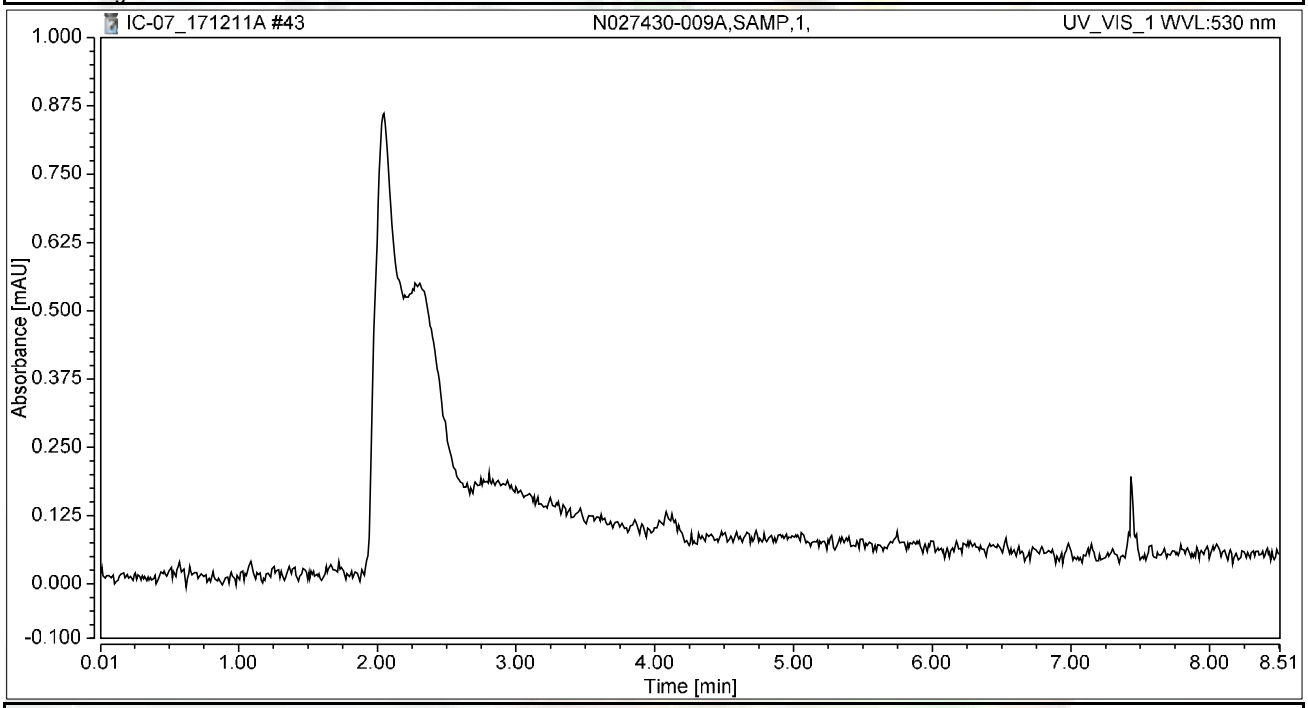
Chromatogram and Results

Injection Details

Injection Name:	**N027430-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

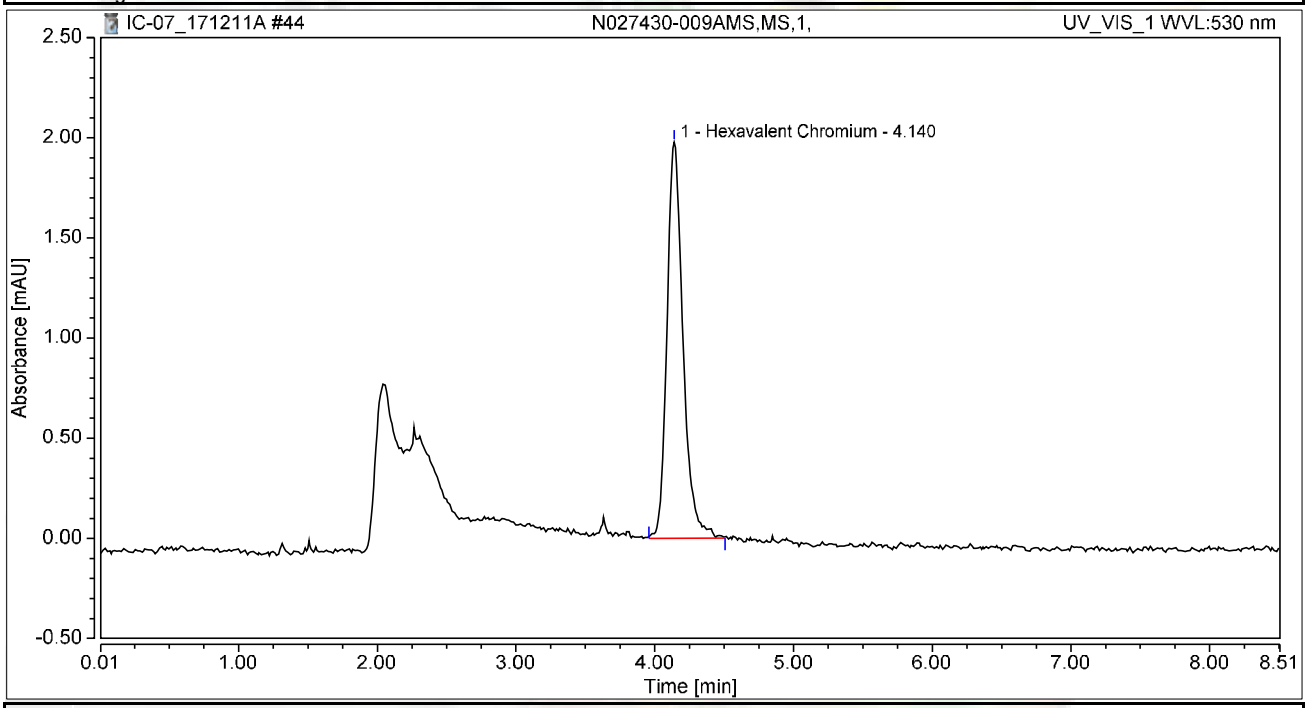
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

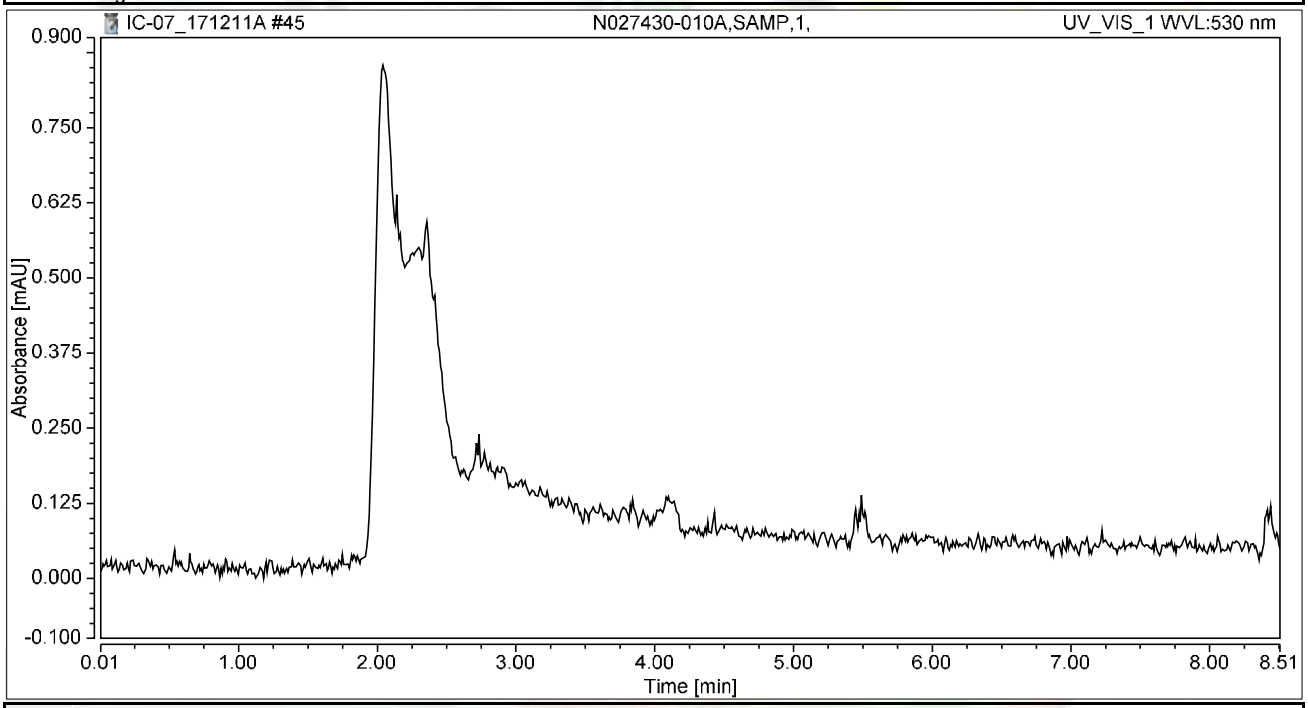
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.265	1.978	100.00	100.00	1.0572
Total:			**0.265**	**1.978**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

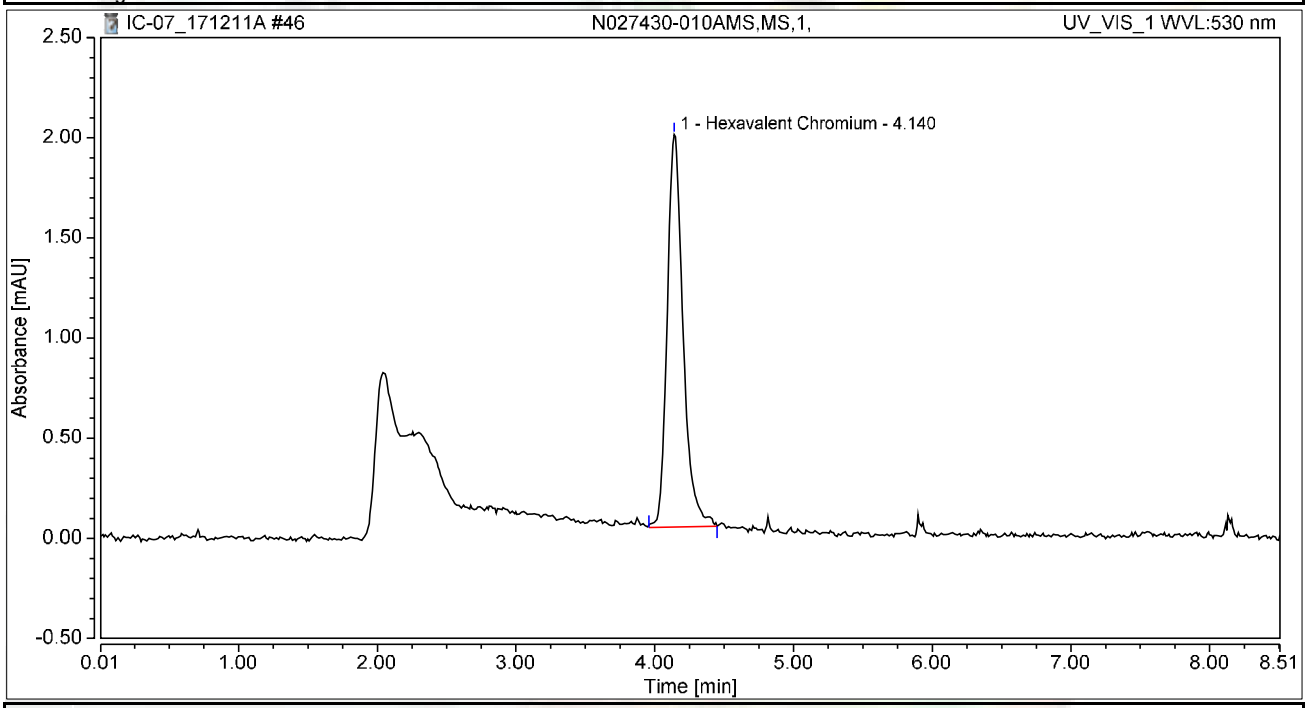
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-010AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

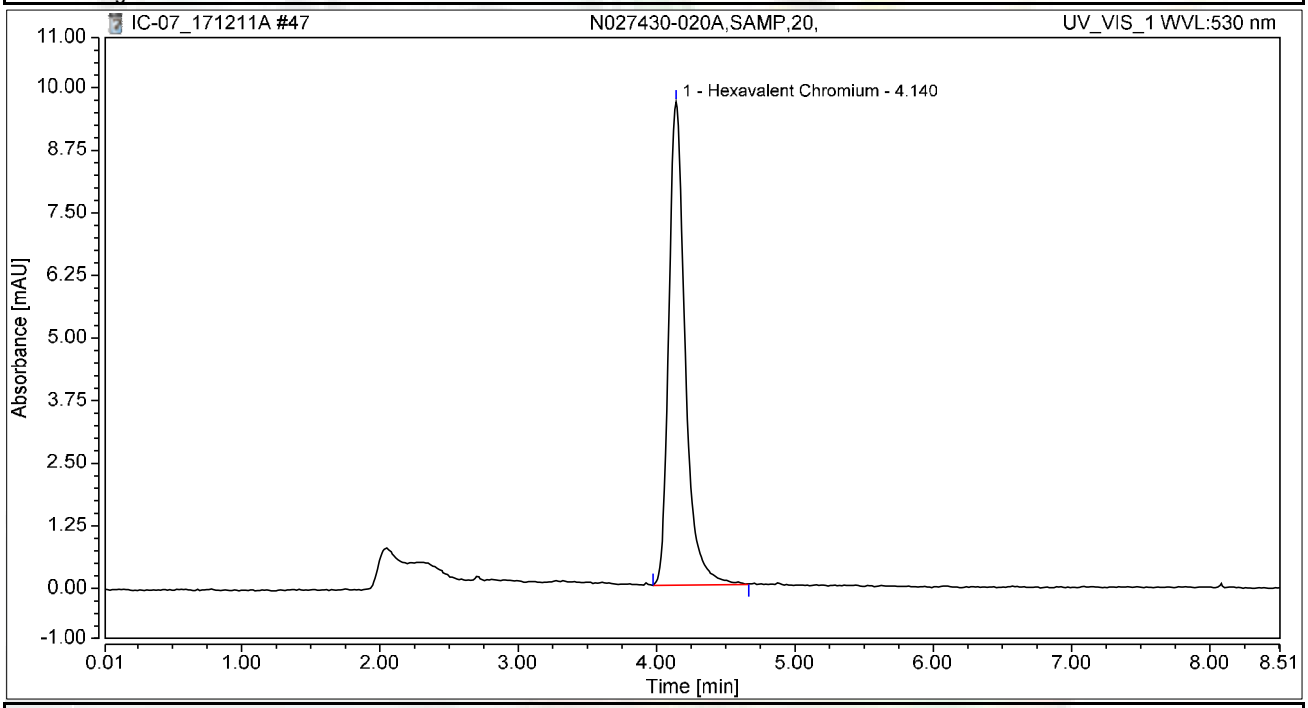
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.261	1.959	100.00	100.00	1.0401
Total:			**0.261**	**1.959**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-020A,SAMP,20,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

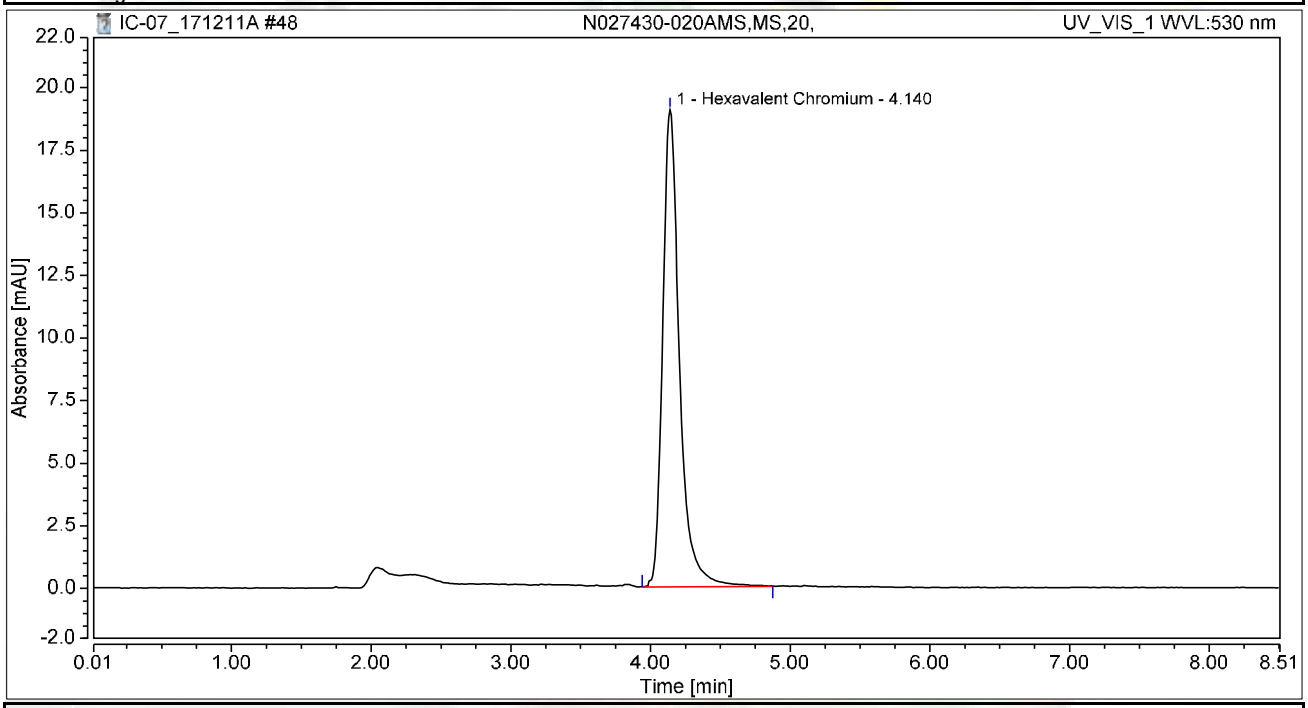
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.328	9.652	100.00	100.00	5.2893
Total:			**1.328**	**9.652**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-020AMS,MS,20,**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

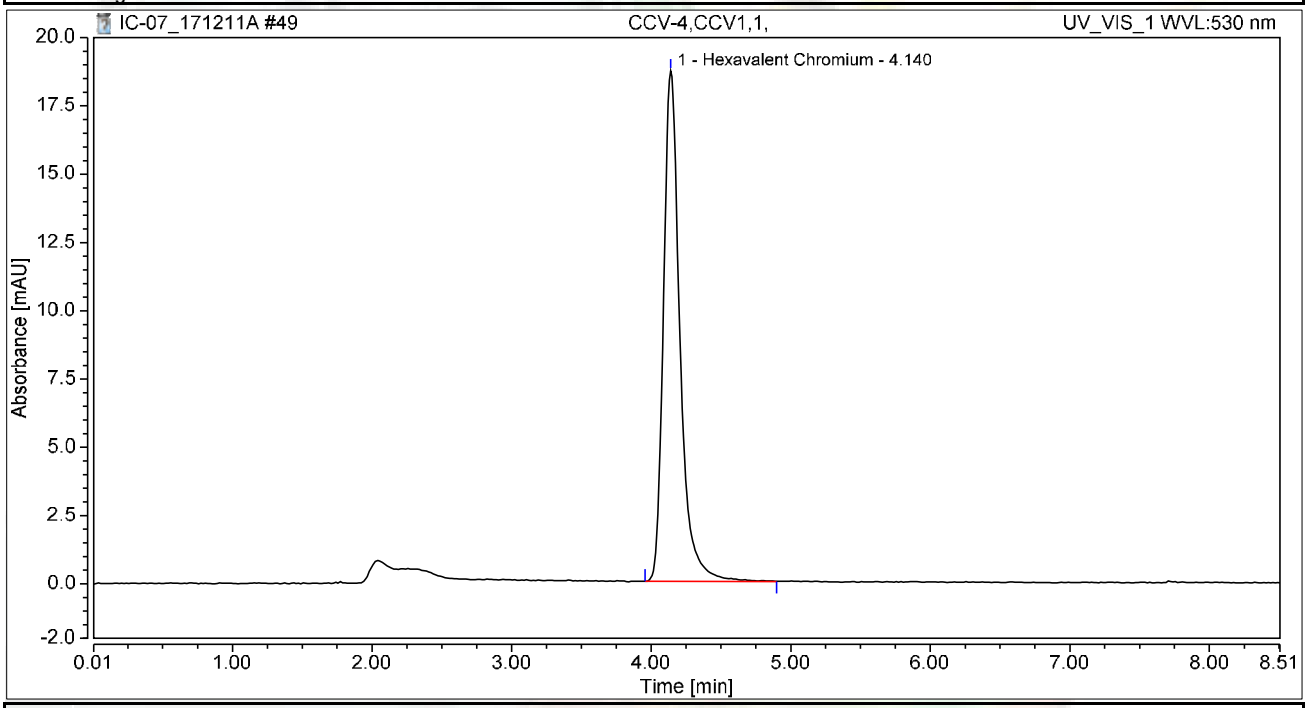
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.650	19.050	100.00	100.00	10.5546
Total:			**2.650**	**19.050**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

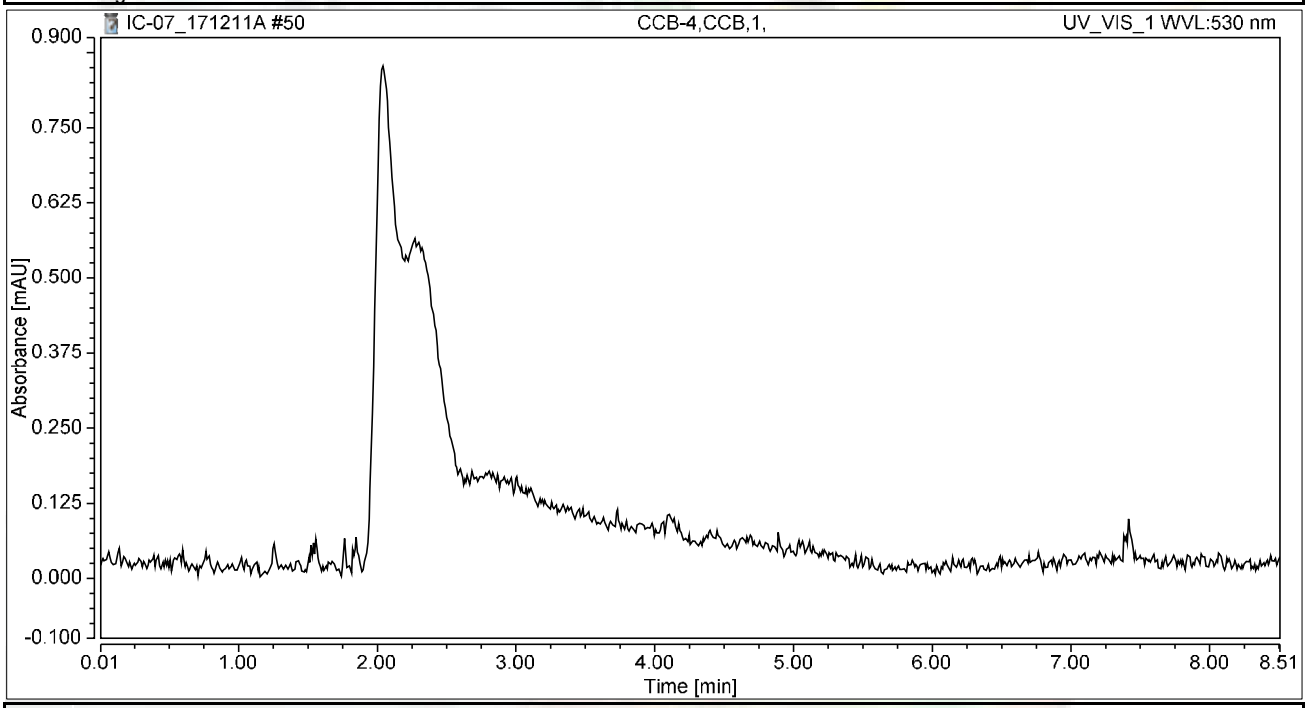
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.559	18.685	100.00	100.00	10.1931
Total:			**2.559**	**18.685**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

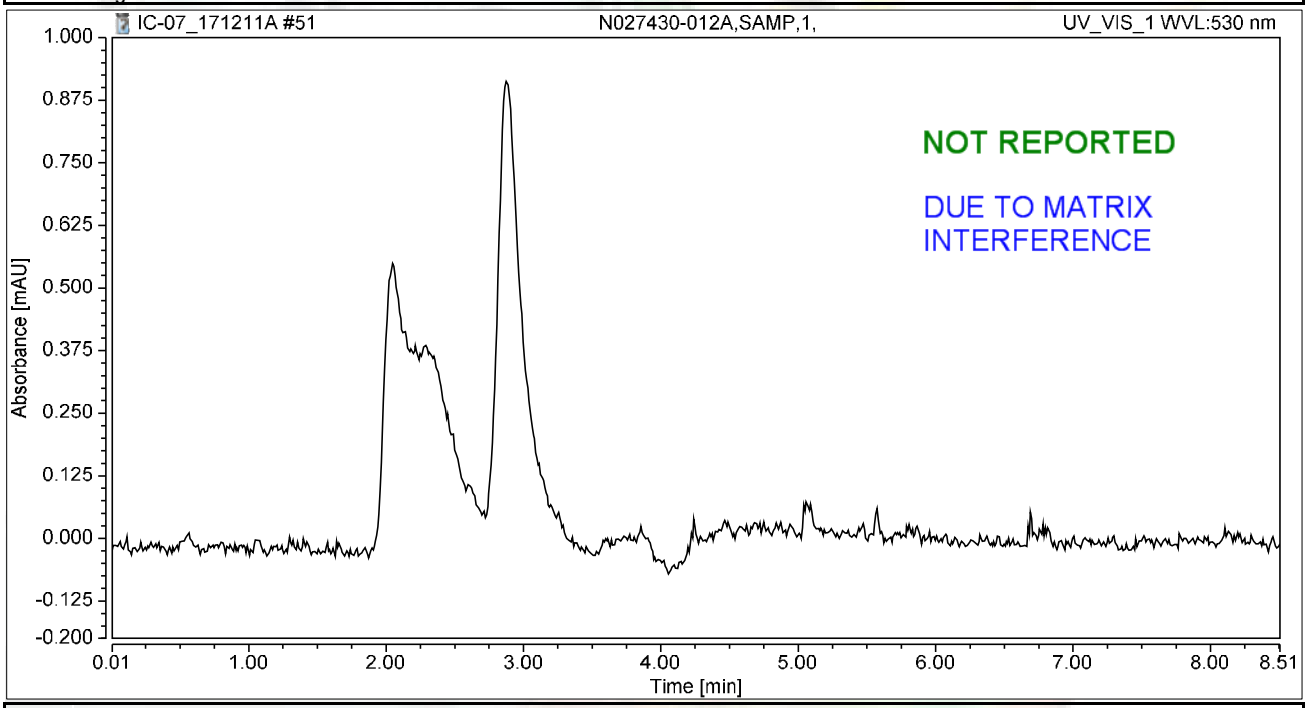
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-012A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

rba 12/16/2017

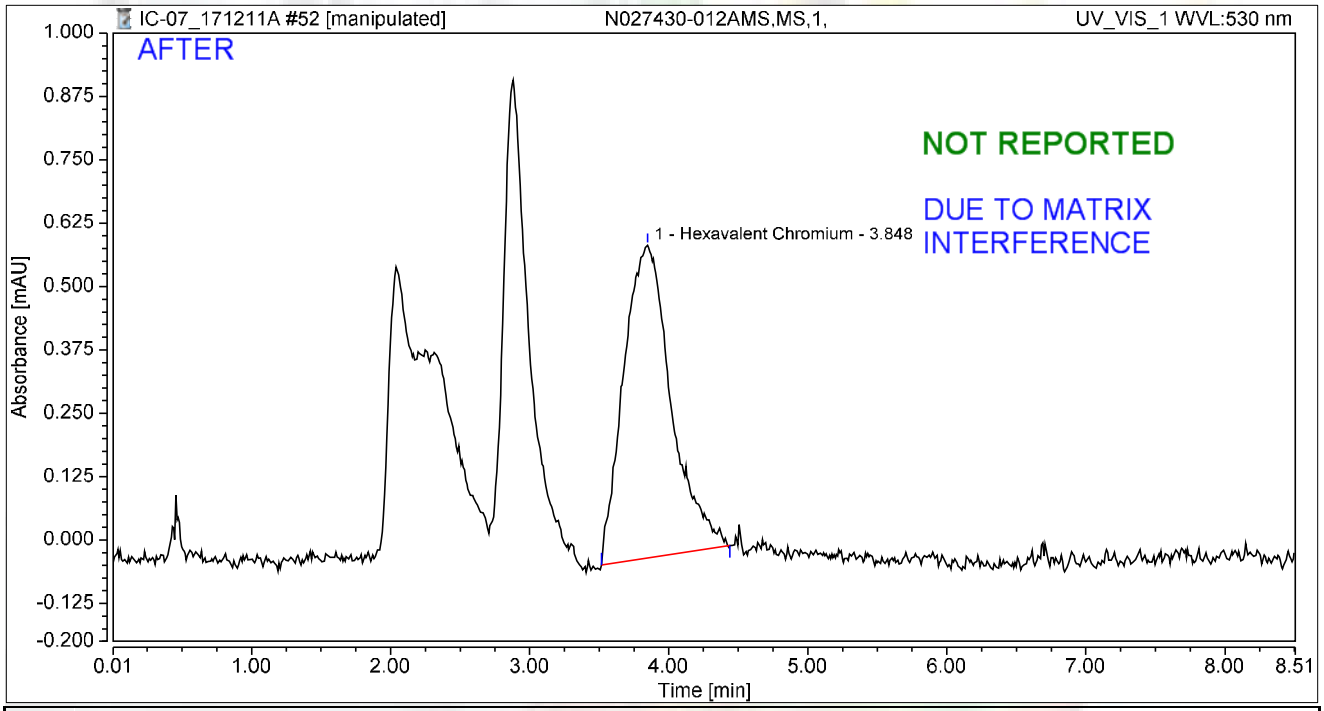
12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027430-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.848	0.243	0.616	100.00	100.00	0.9692
Total:			**0.243**	**0.616**	**100.00**	**100.00**	

rba 12/16/2017

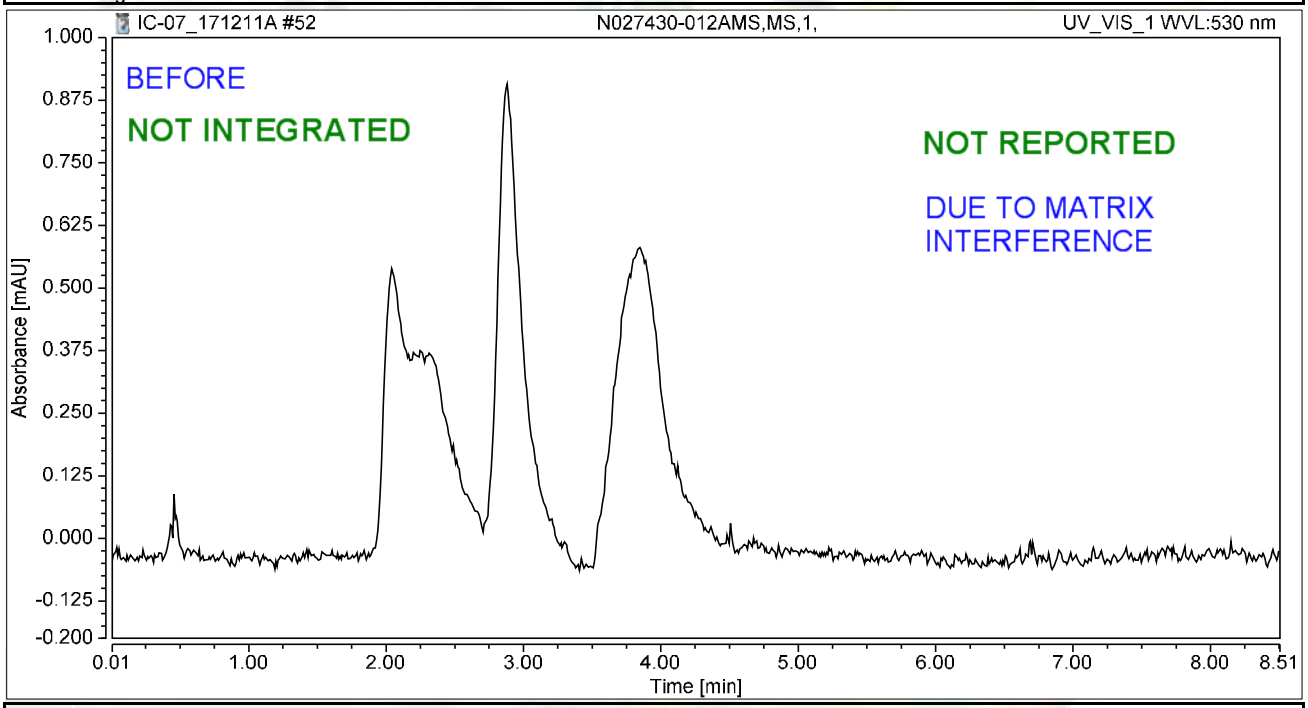
RLB 12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027430-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

rba 12/16/2017

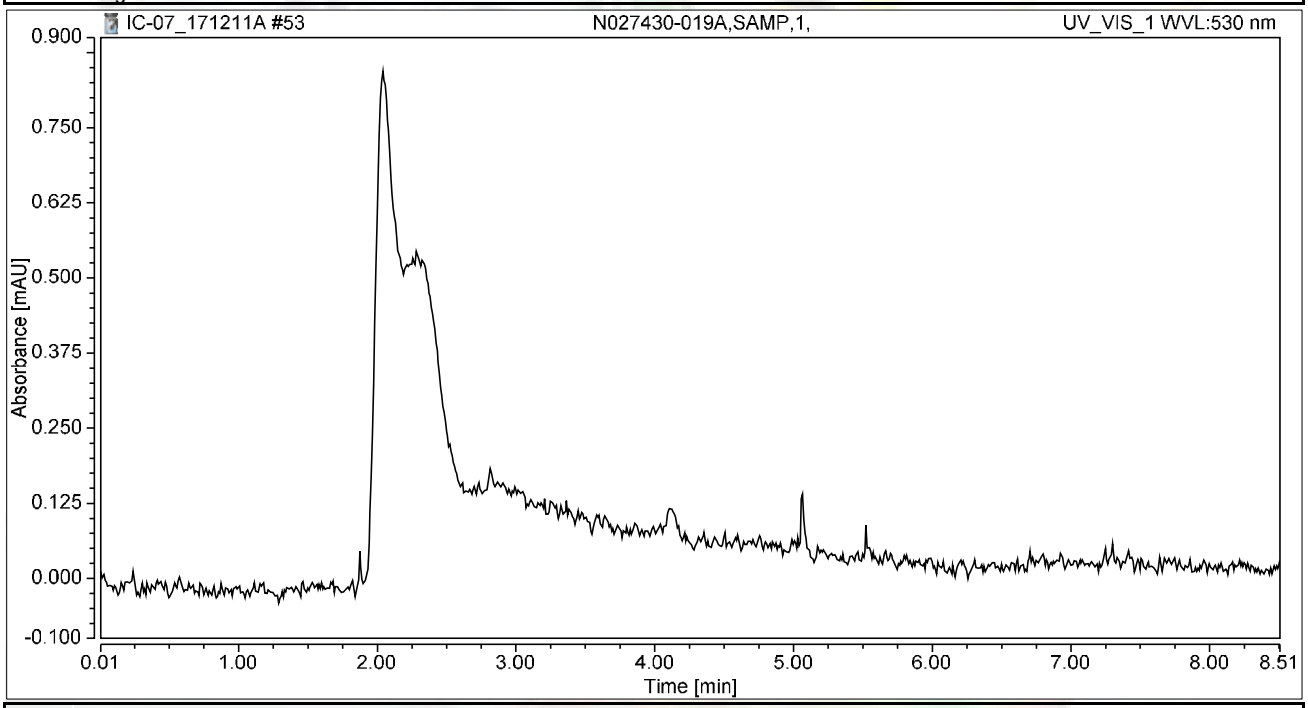
RB 12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027430-019A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

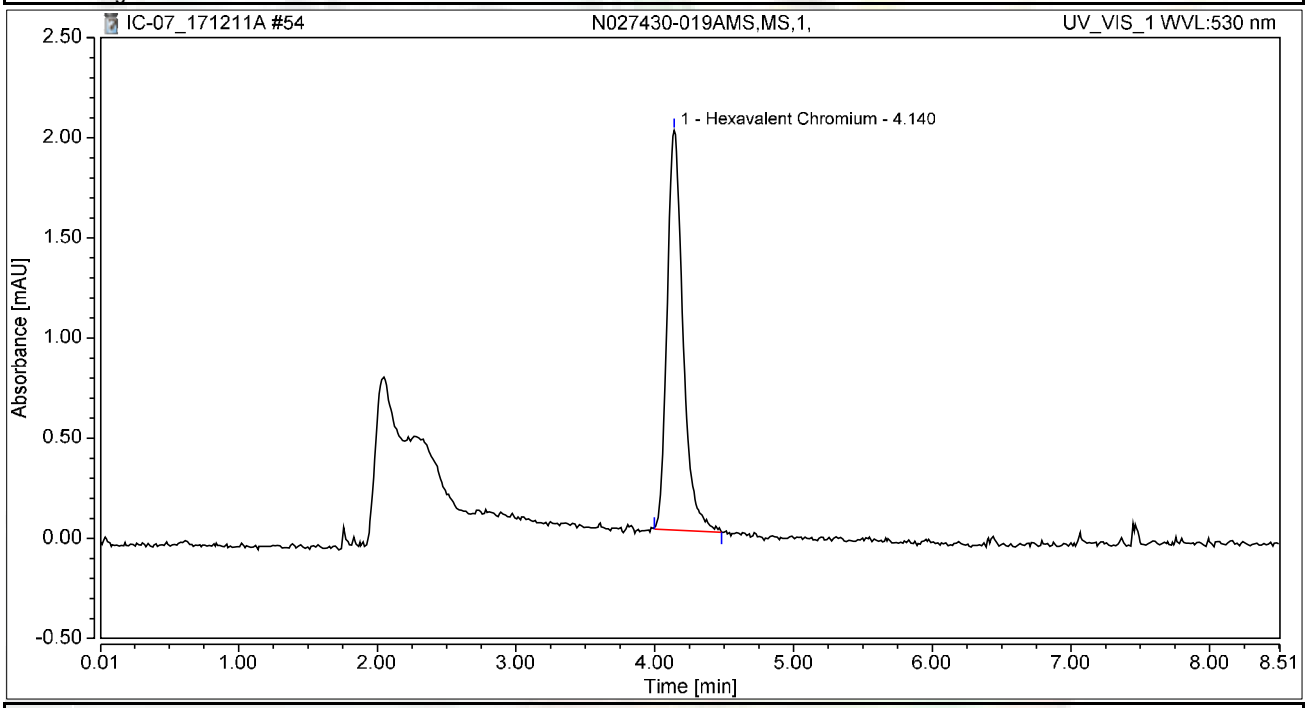
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-019AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

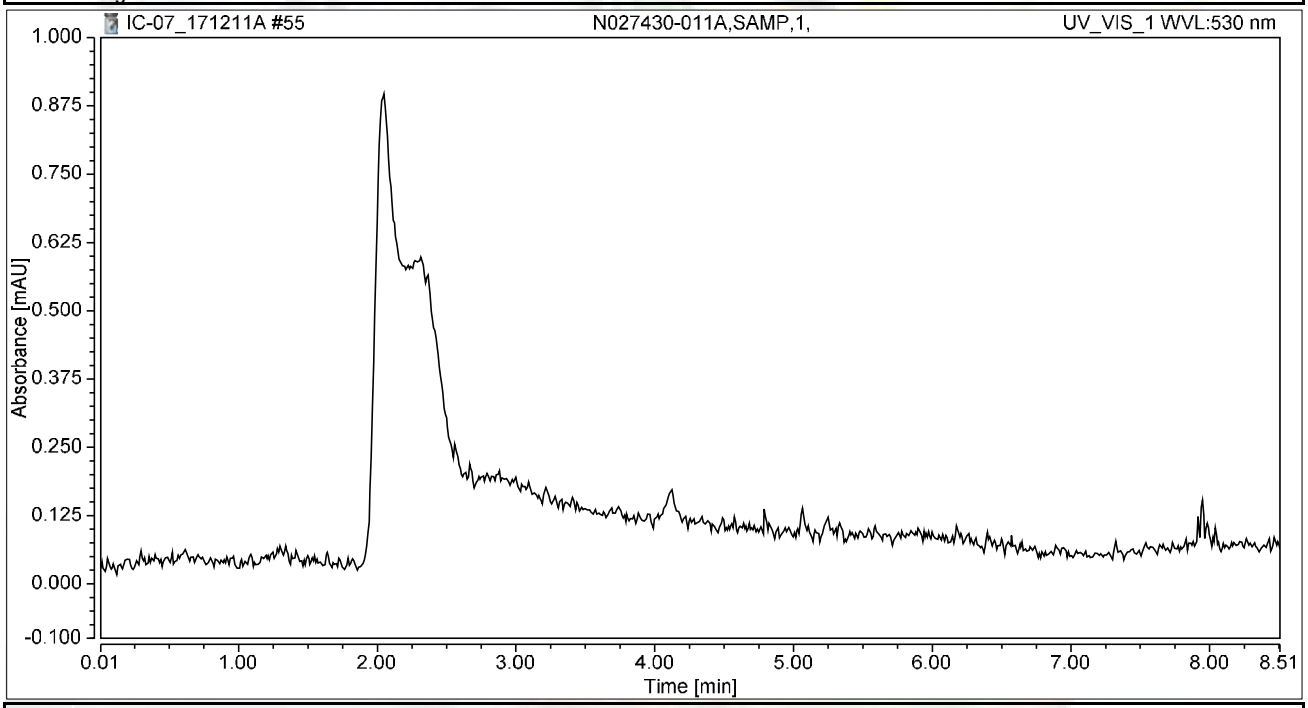
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.266	1.995	100.00	100.00	1.0592
Total:			**0.266**	**1.995**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

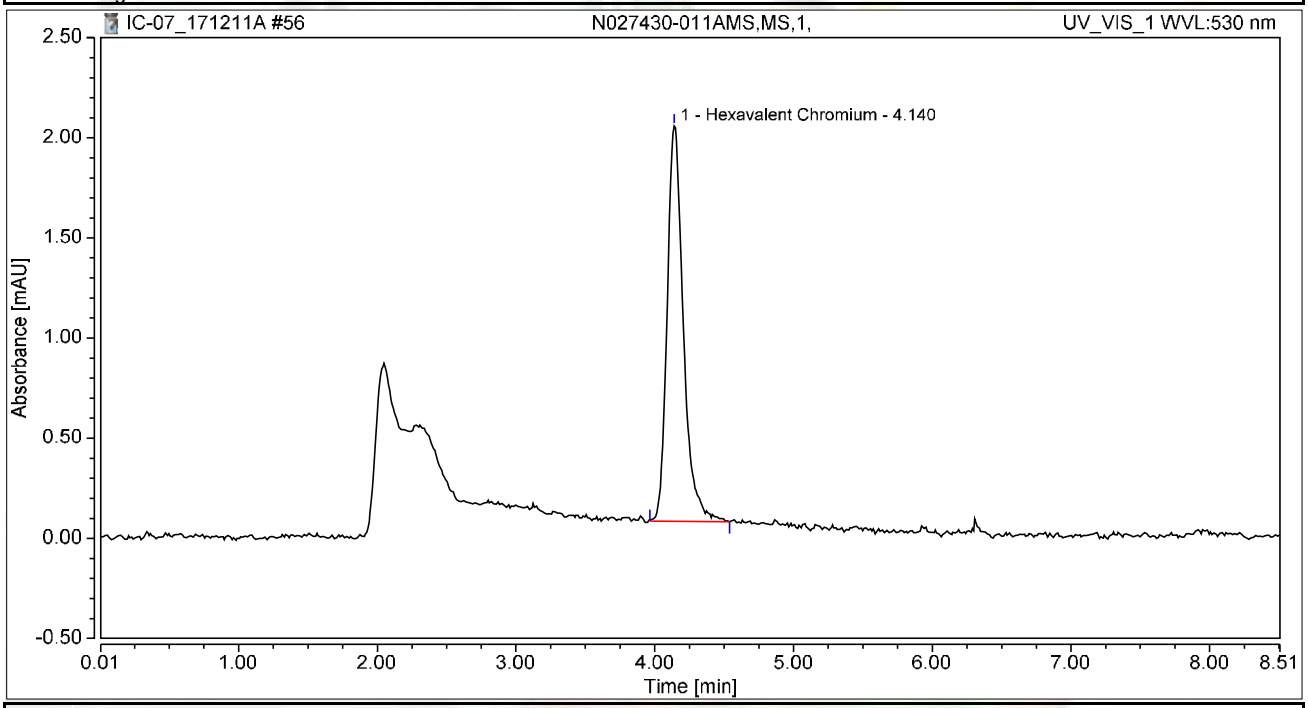
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

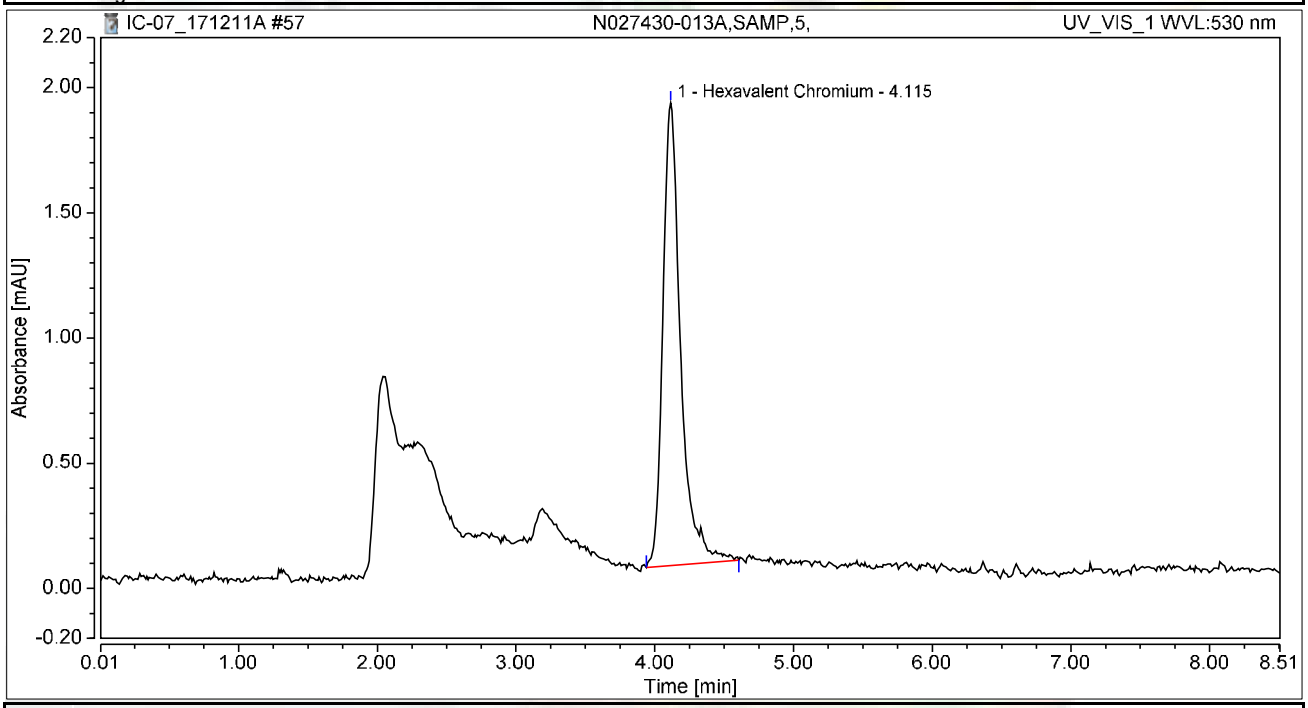
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.268	1.975	100.00	100.00	1.0679
Total:			**0.268**	**1.975**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-013A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

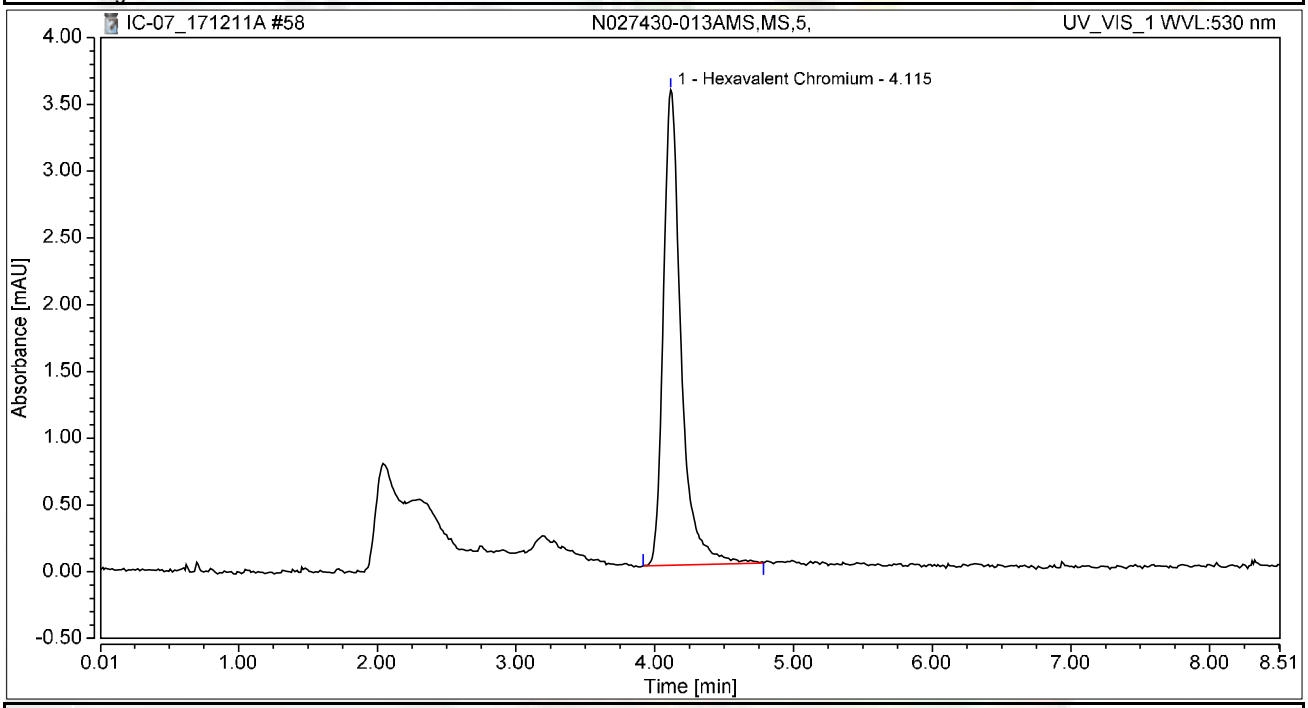
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.276	1.848	100.00	100.00	1.0980
Total:			**0.276**	**1.848**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-013AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

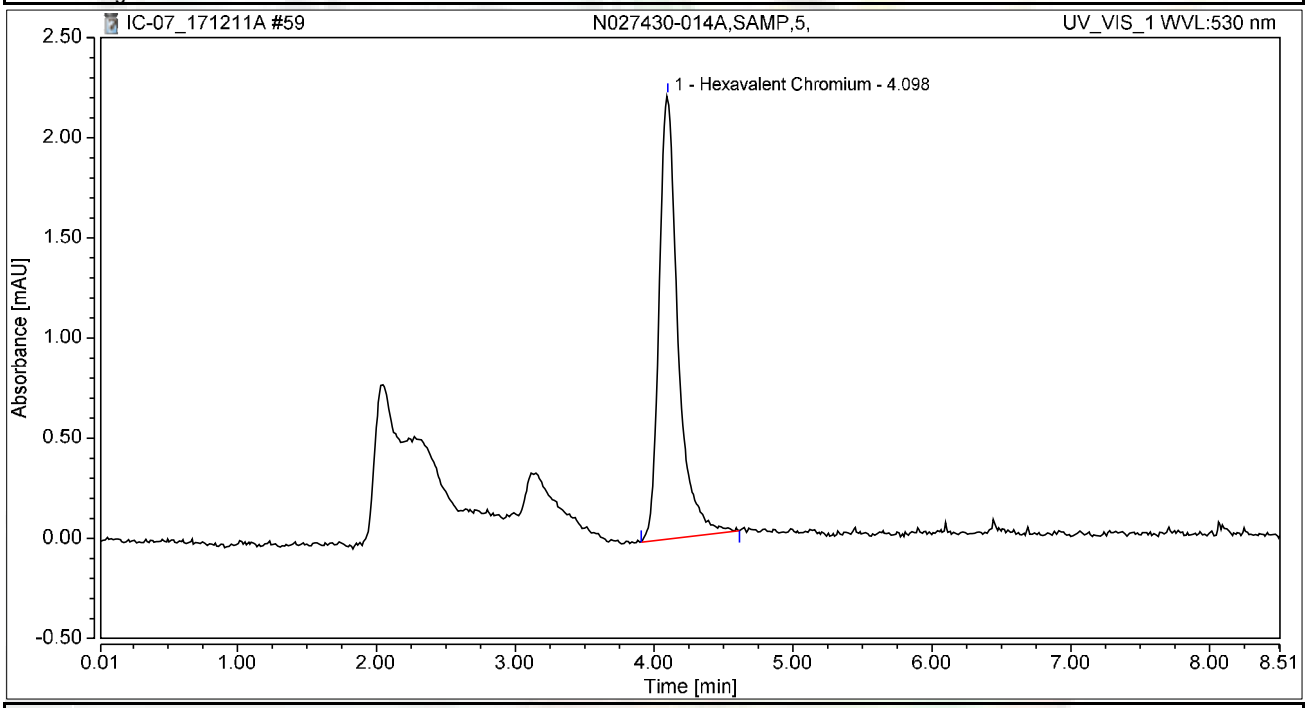
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.530	3.560	100.00	100.00	2.1108
Total:			**0.530**	**3.560**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-014A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

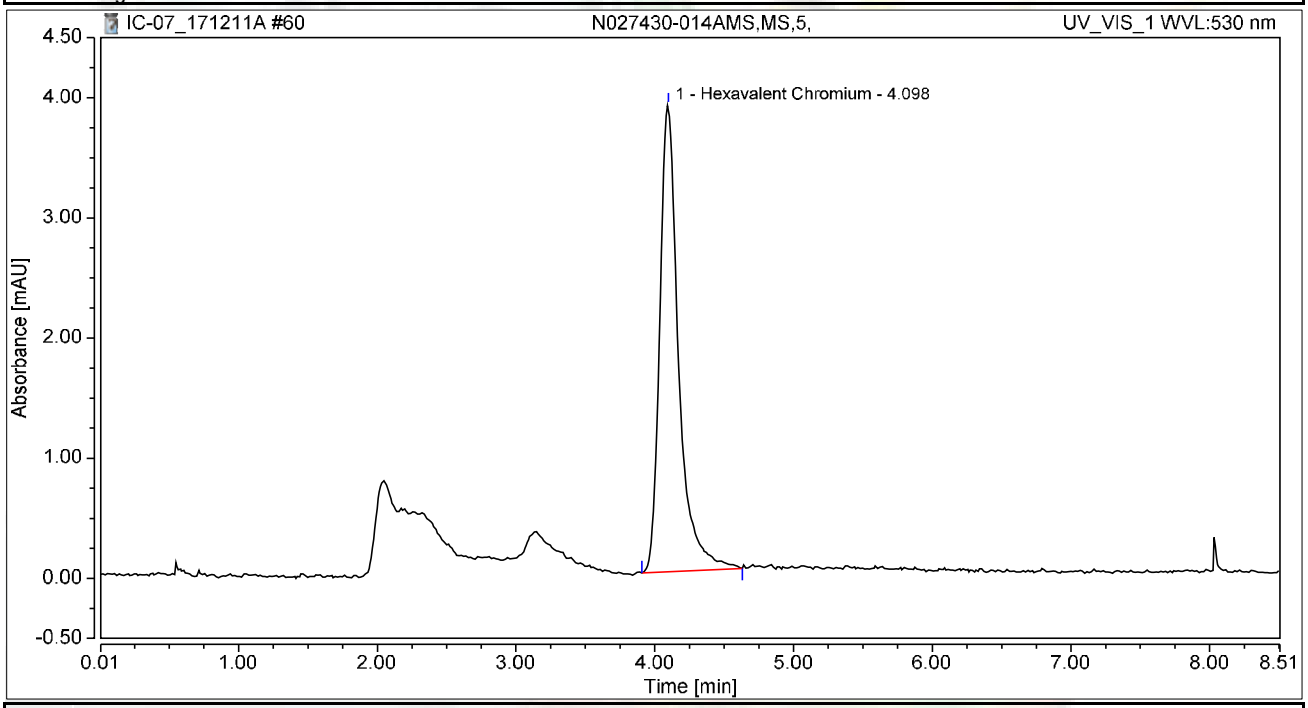
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.349	2.216	100.00	100.00	1.3910
Total:			**0.349**	**2.216**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-014AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

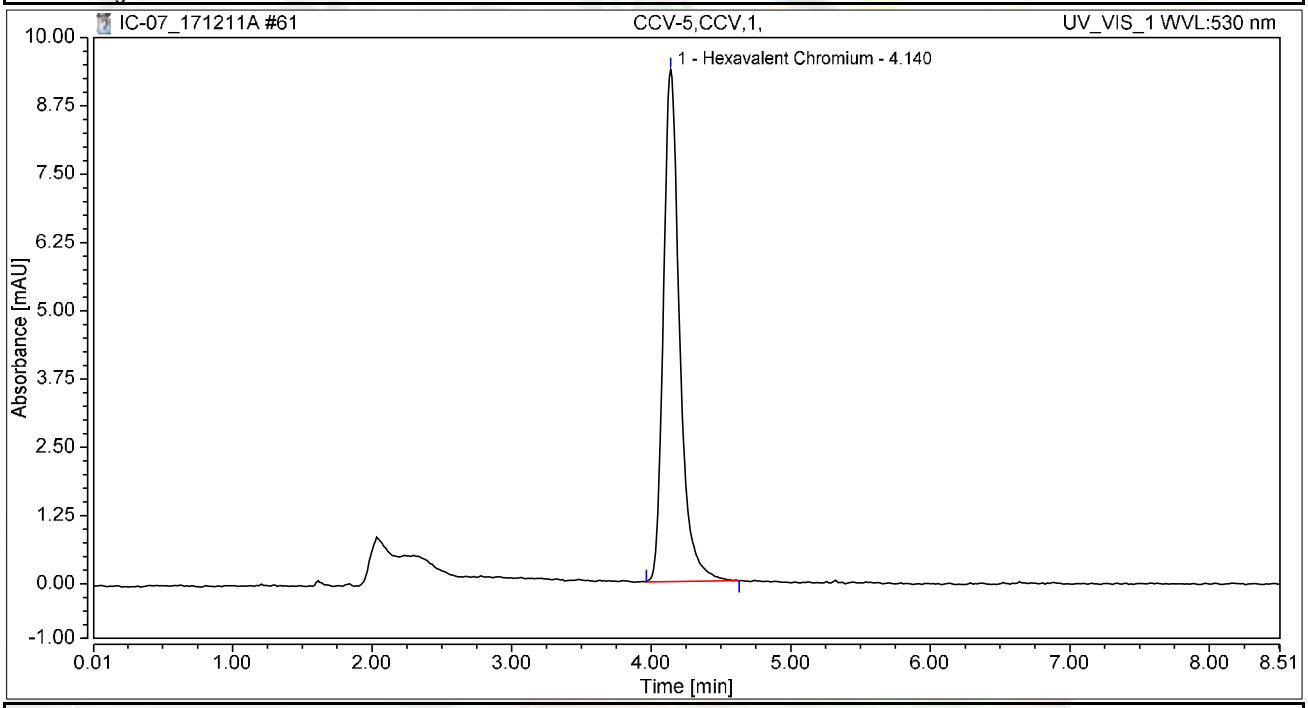
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.611	3.884	100.00	100.00	2.4341
Total:			**0.611**	**3.884**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

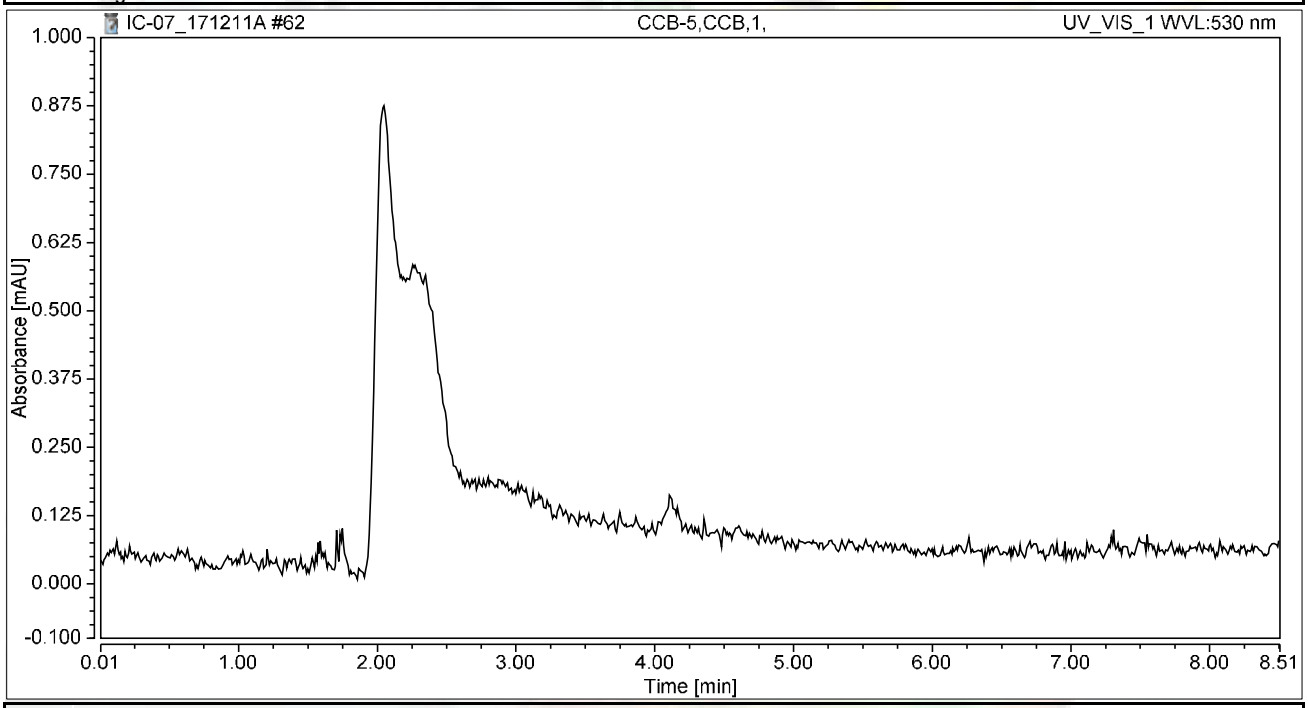
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.267	9.371	100.00	100.00	5.0451
Total:			**1.267**	**9.371**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

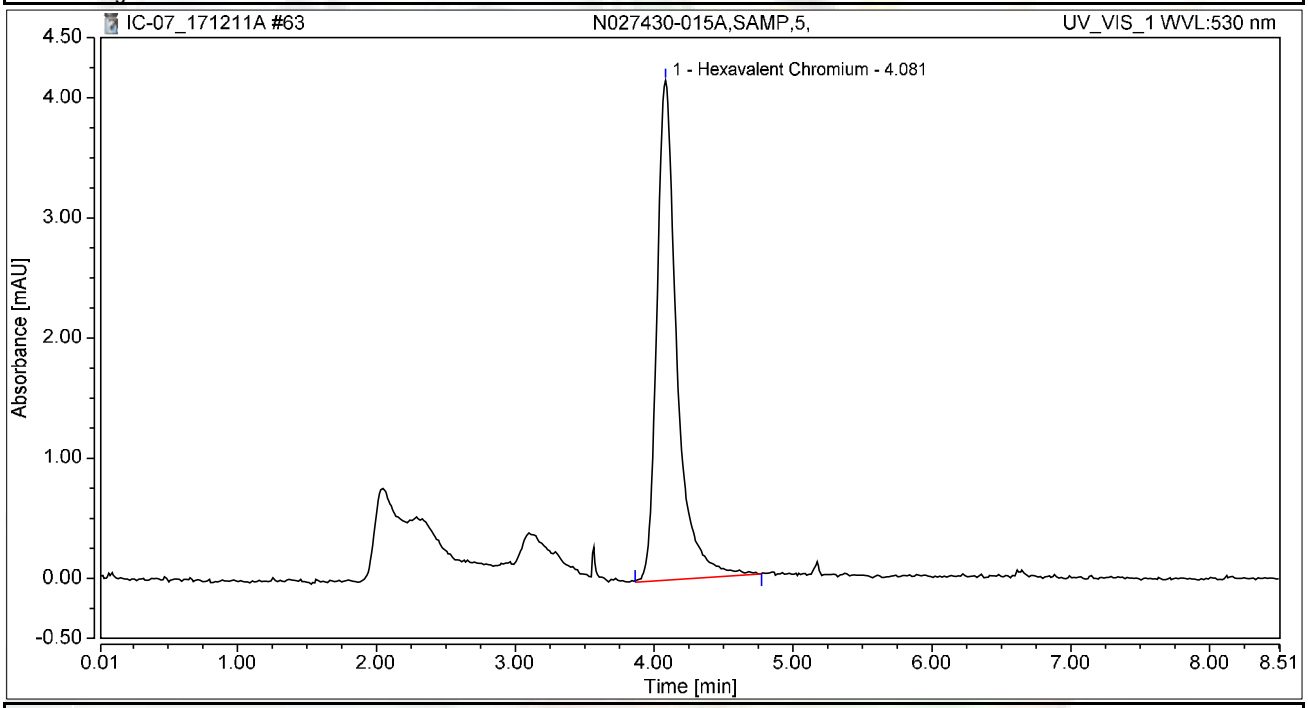
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-015A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

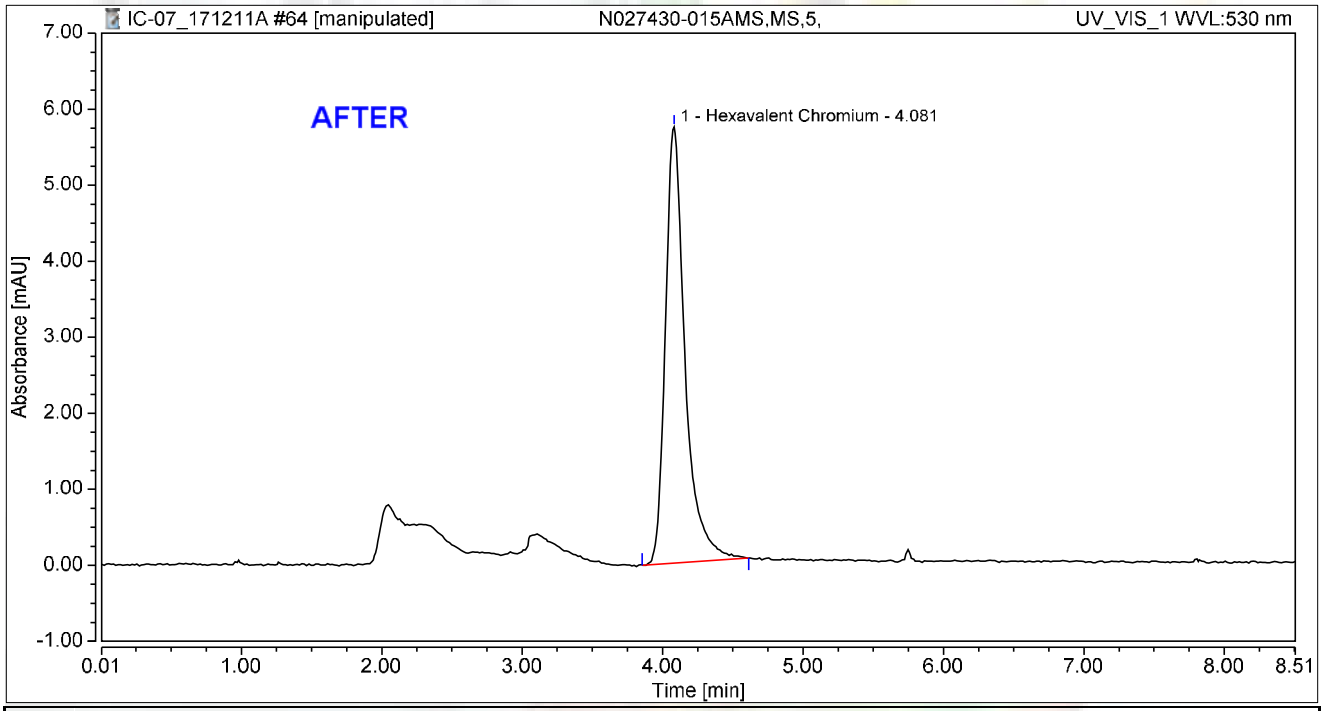
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.697	4.158	100.00	100.00	2.7763
Total:			**0.697**	**4.158**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-015AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.933	5.734	100.00	100.00	3.7159
Total:			**0.933**	**5.734**	**100.00**	**100.00**	

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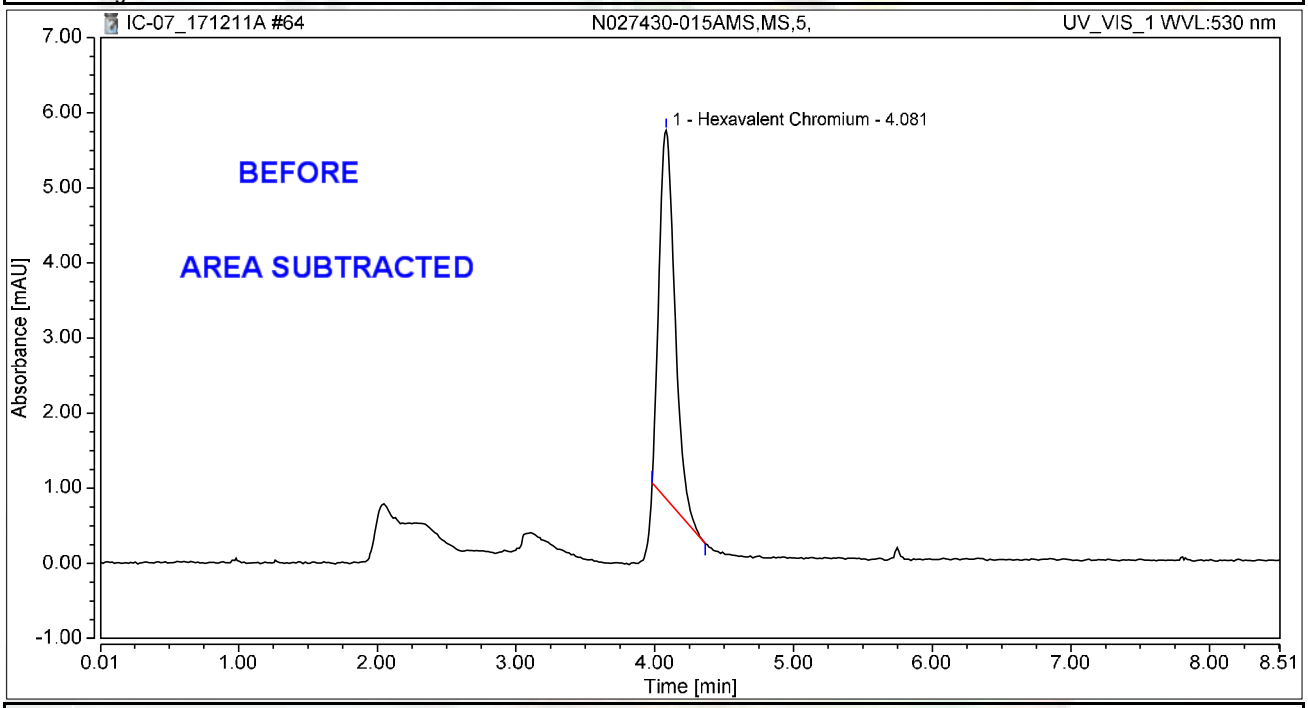
Chromatogram and Results

Injection Details

Injection Name:	**N027430-015AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.652	4.903	100.00	100.00	2.5956
Total:			**0.652**	**4.903**	**100.00**	**100.00**	

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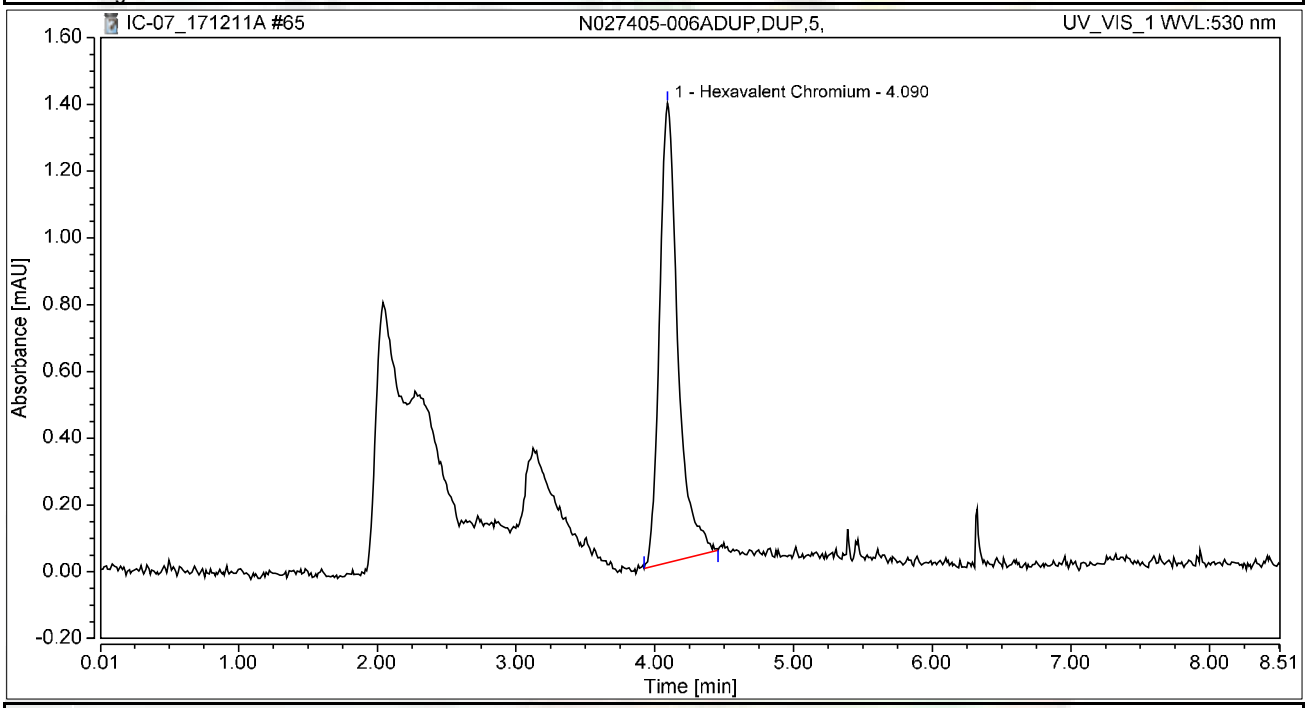
Chromatogram and Results

Injection Details

Injection Name:	**N027405-006ADUP,DUP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**49**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

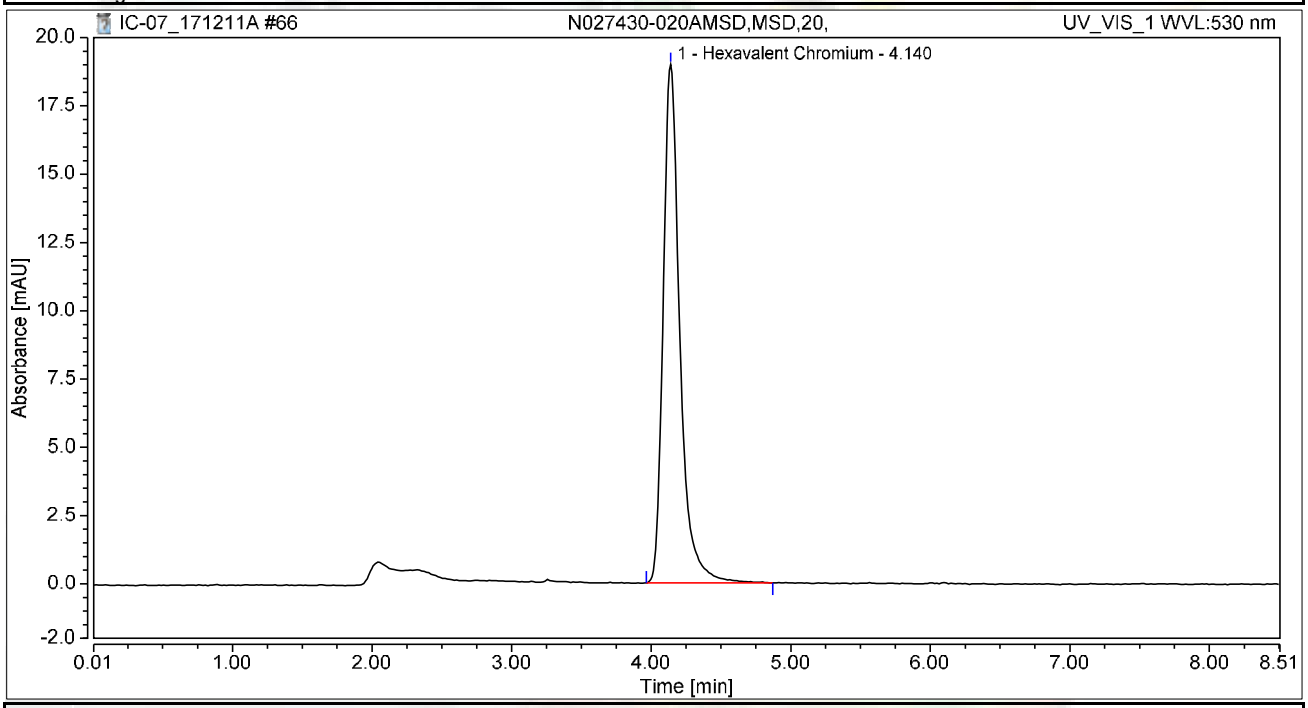
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.212	1.377	100.00	100.00	0.8429
Total:			**0.212**	**1.377**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-020AMSD,MSD,20,**	*Run Time (min):*	**8.50**
Vial Number:	**50**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

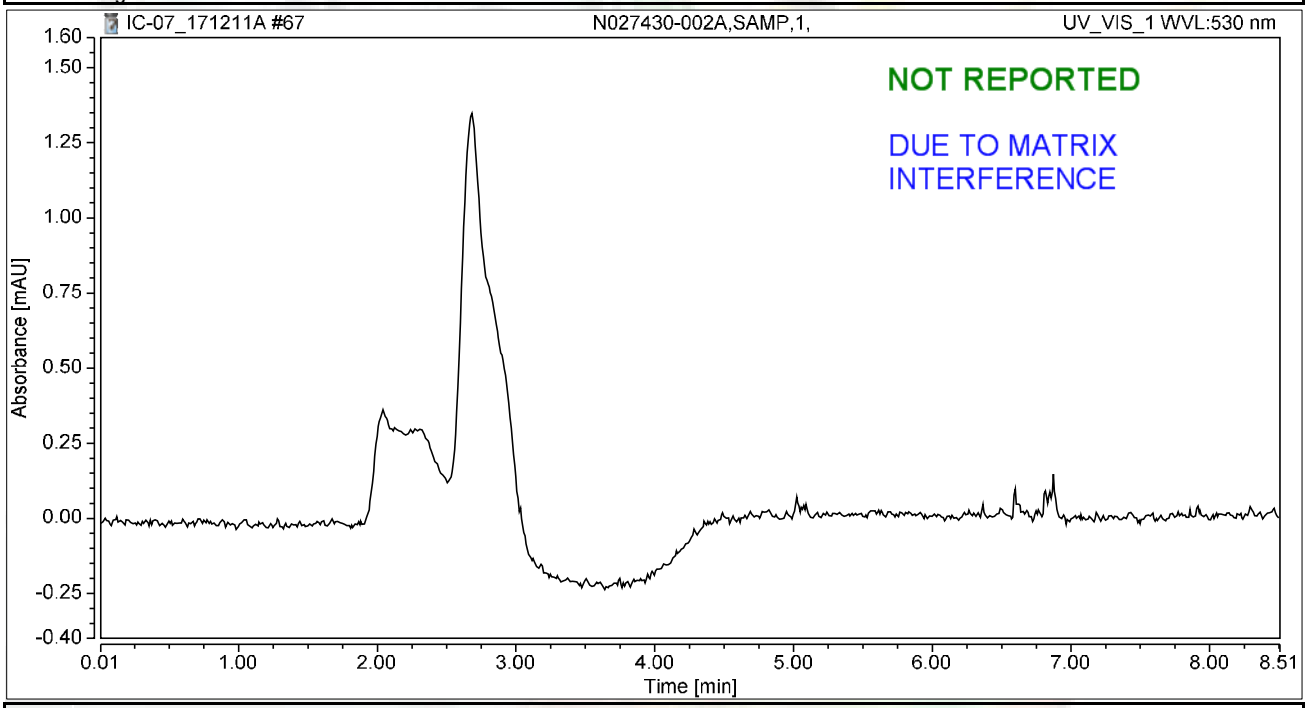
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.638	18.984	100.00	100.00	10.5055
Total:			**2.638**	**18.984**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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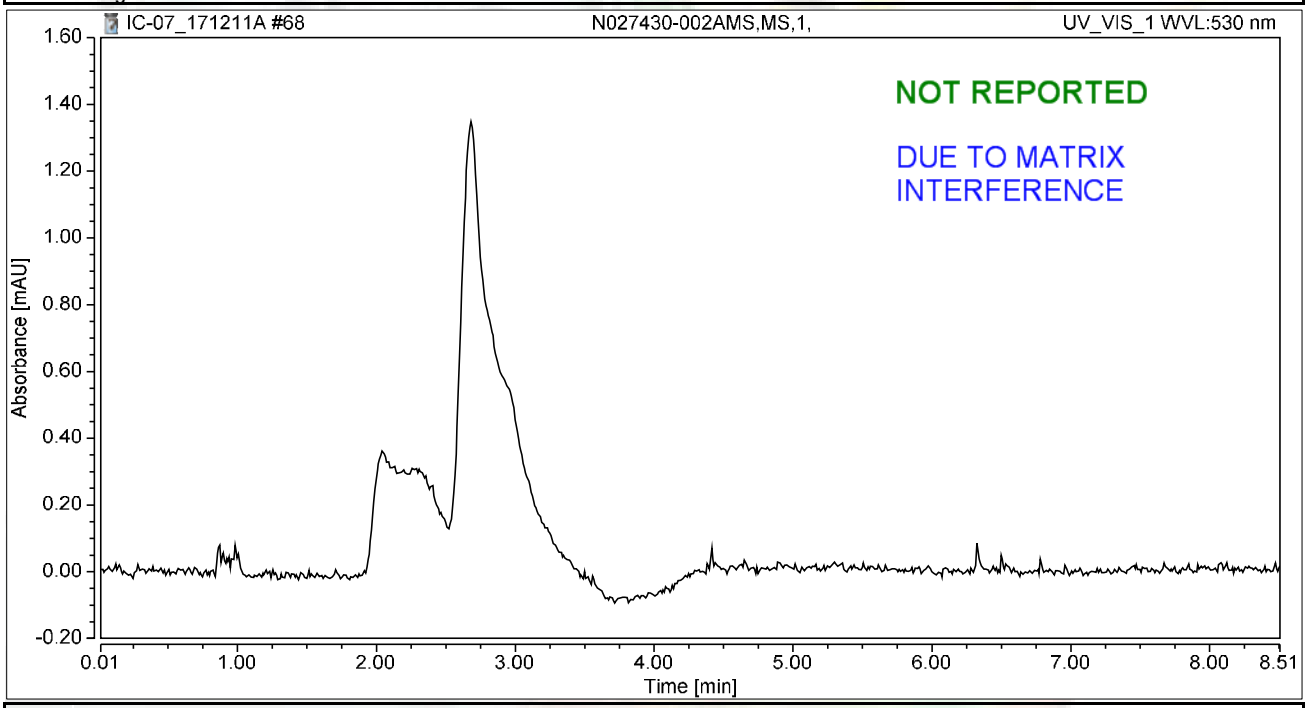
Chromatogram and Results

Injection Details

Injection Name:	**N027430-002AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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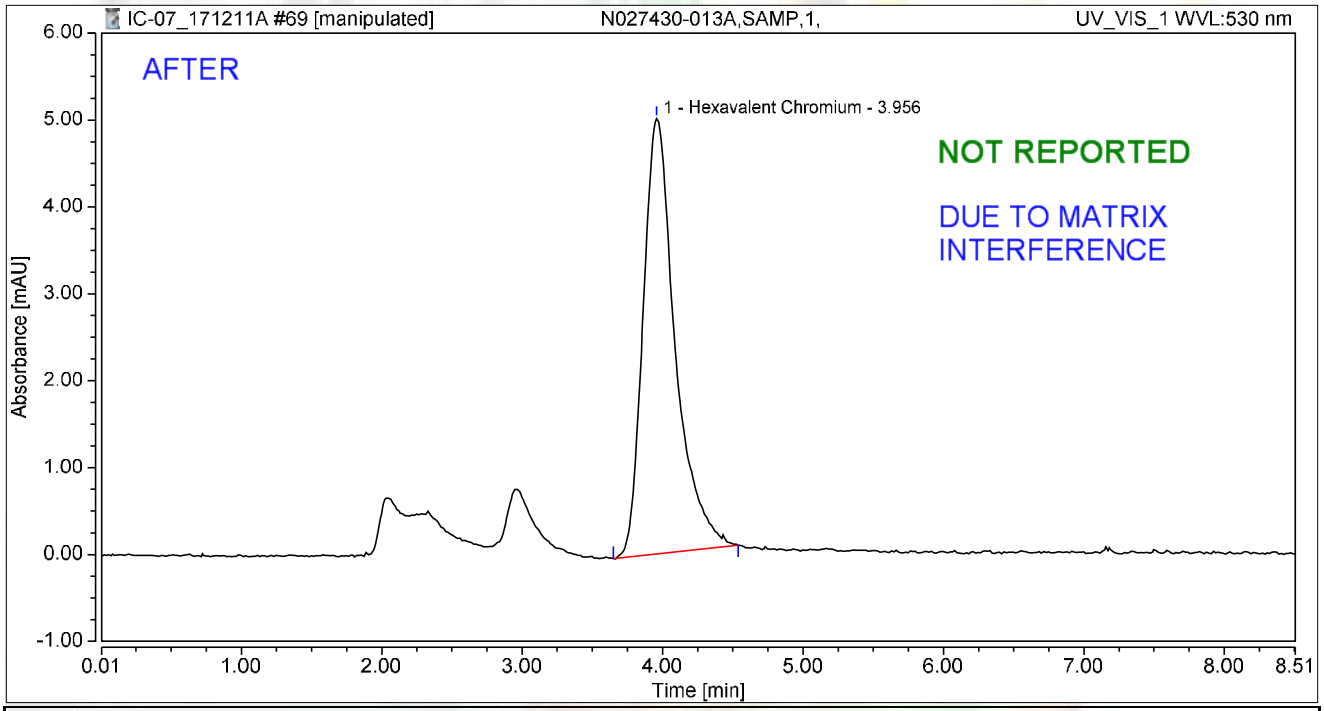
Chromatogram and Results

Injection Details

Injection Name:	**N027430-013A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.956	1.323	5.011	100.00	100.00	5.2695
Total:			**1.323**	**5.011**	**100.00**	**100.00**	

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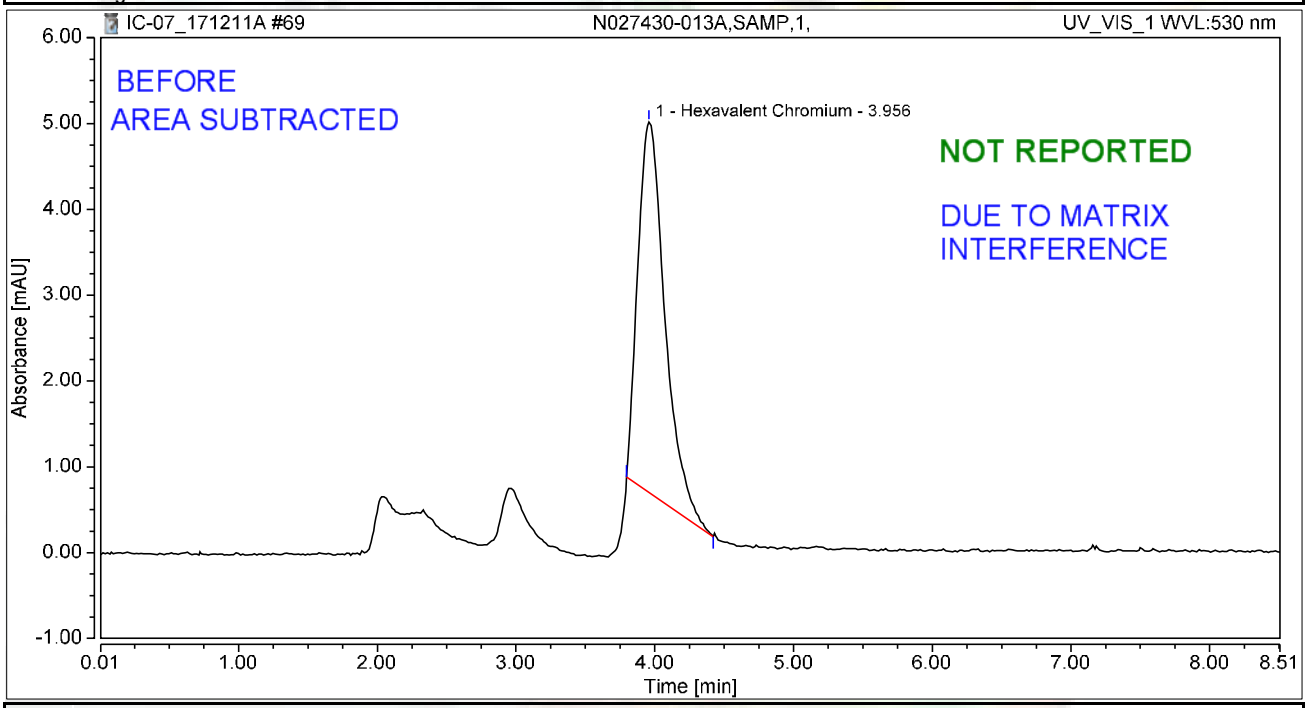
Chromatogram and Results

Injection Details

Injection Name:	**N027430-013A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.956	0.975	4.312	100.00	100.00	3.8839
Total:			**0.975**	**4.312**	**100.00**	**100.00**	

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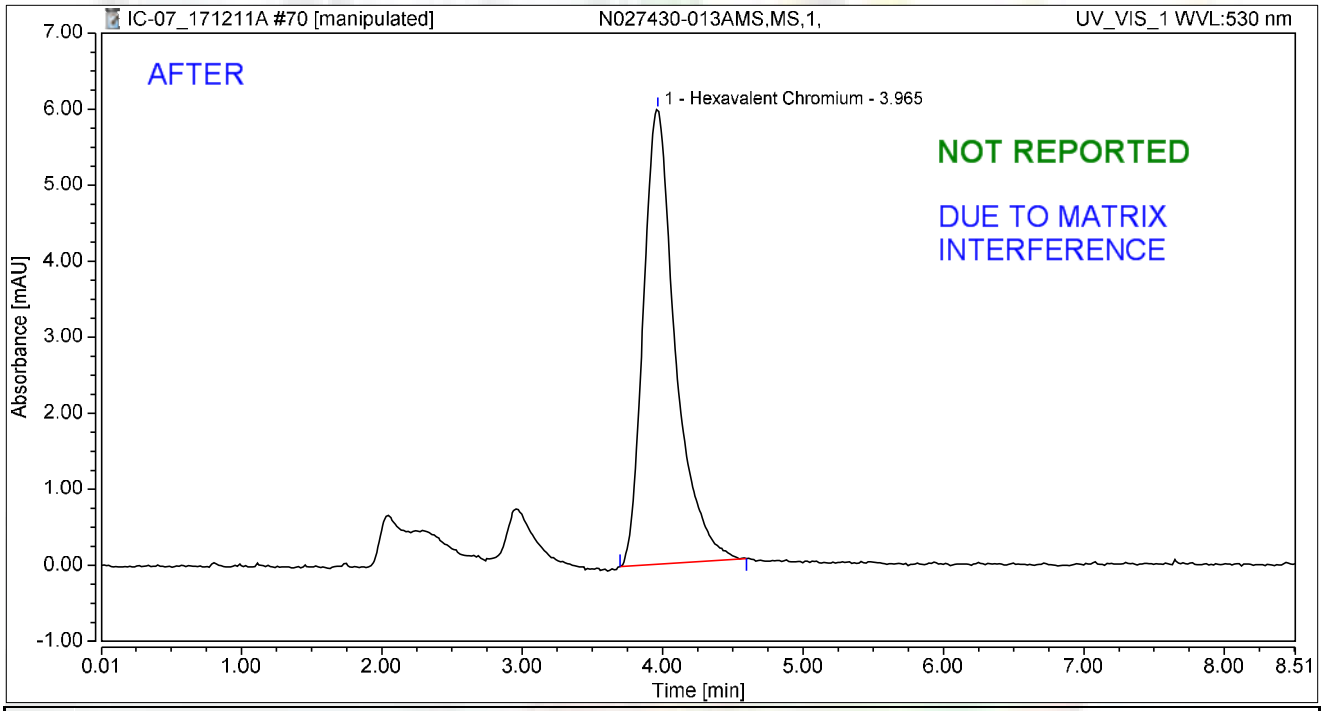
Chromatogram and Results

Injection Details

Injection Name:	**N027430-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.965	1.578	5.981	100.00	100.00	6.2829
Total:			**1.578**	**5.981**	**100.00**	**100.00**	

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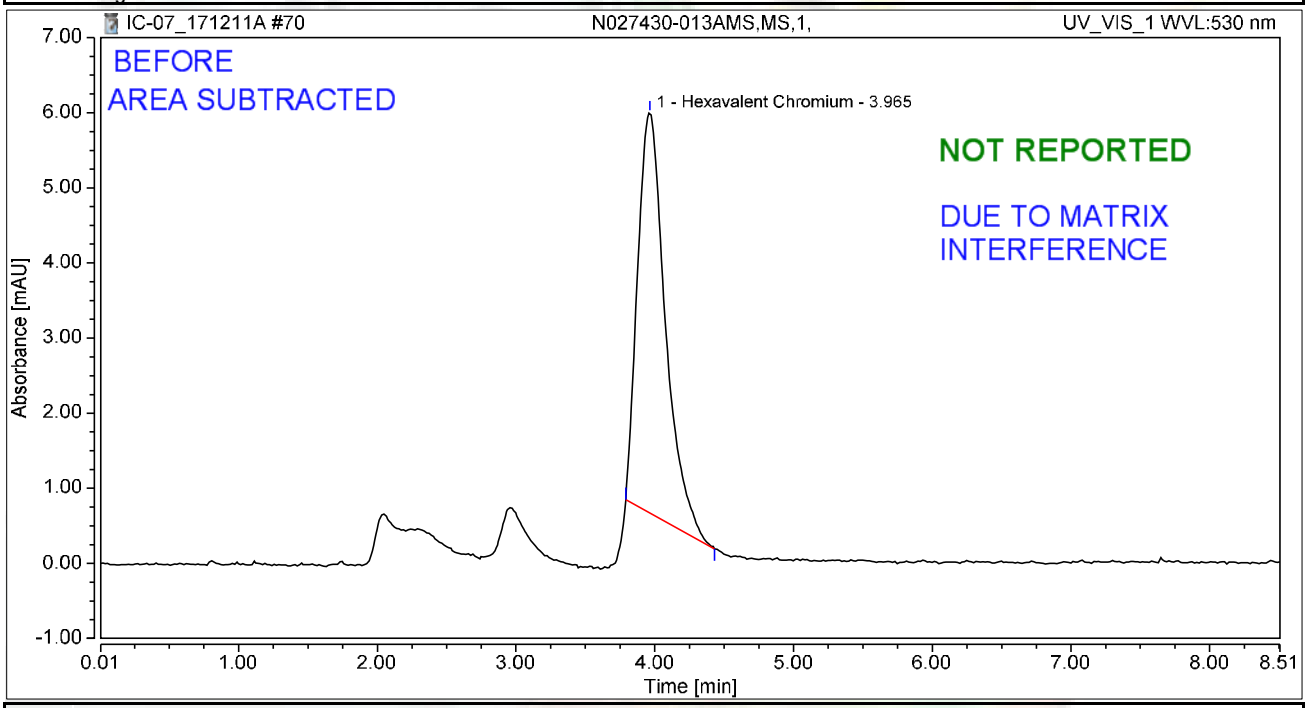
Chromatogram and Results

Injection Details

Injection Name:	**N027430-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.965	1.232	5.326	100.00	100.00	4.9056
Total:			**1.232**	**5.326**	**100.00**	**100.00**	

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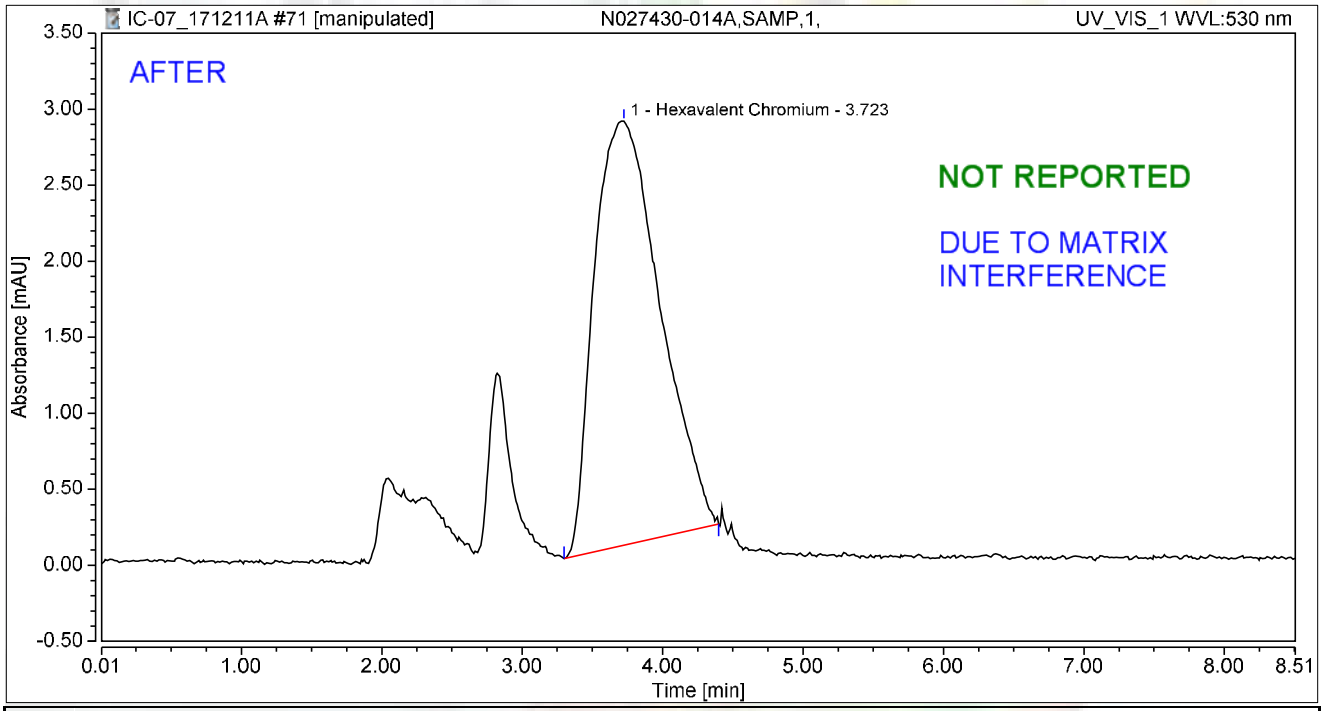
Chromatogram and Results

Injection Details

Injection Name:	**N027430-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	1.515	2.788	100.00	100.00	6.0348
Total:			**1.515**	**2.788**	**100.00**	**100.00**	

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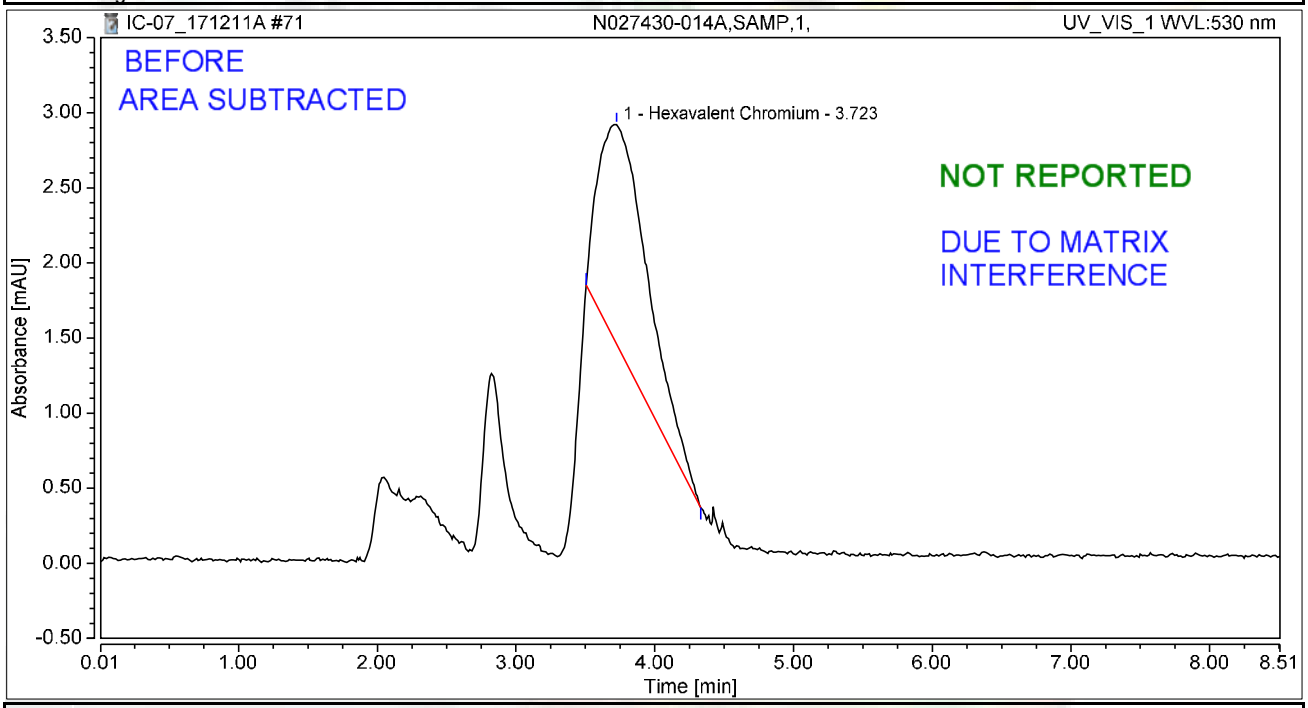
Chromatogram and Results

Injection Details

Injection Name:	**N027430-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	0.615	1.457	100.00	100.00	2.4504
Total:			**0.615**	**1.457**	**100.00**	**100.00**	

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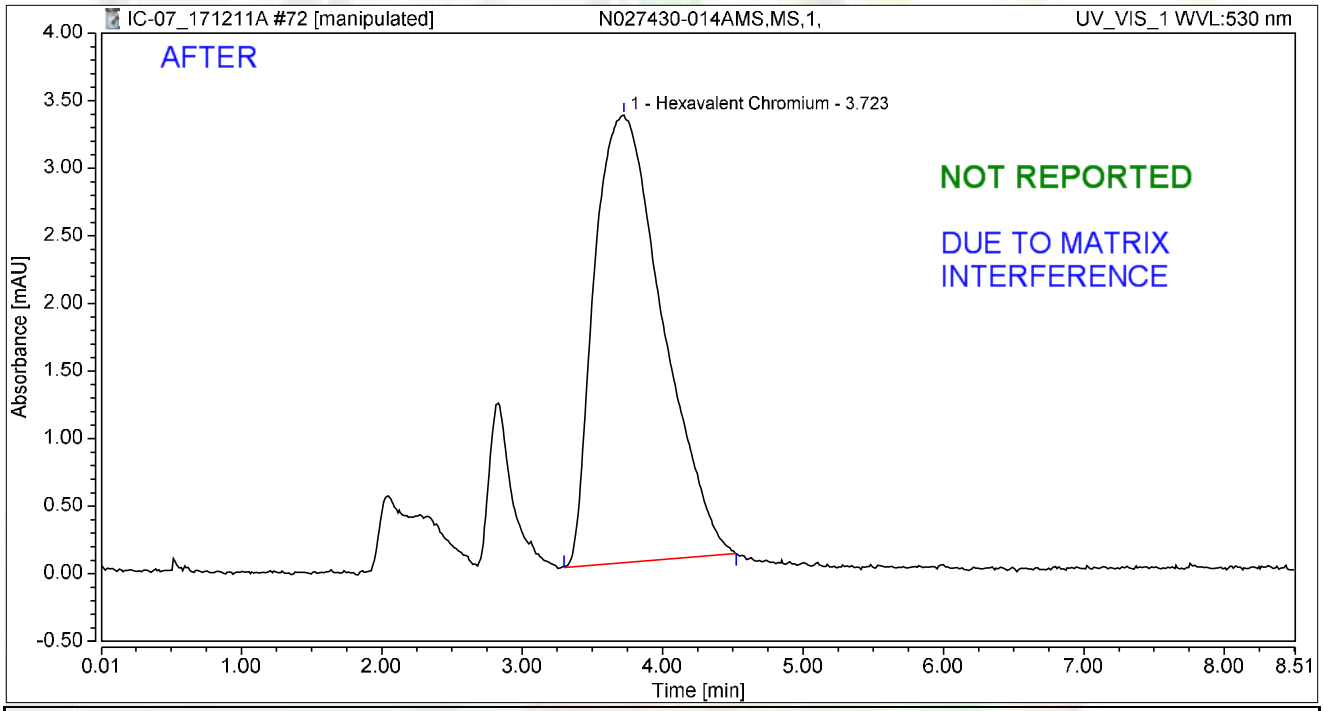
Chromatogram and Results

Injection Details

Injection Name:	**N027430-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	1.860	3.313	100.00	100.00	7.4083
Total:			**1.860**	**3.313**	**100.00**	**100.00**	

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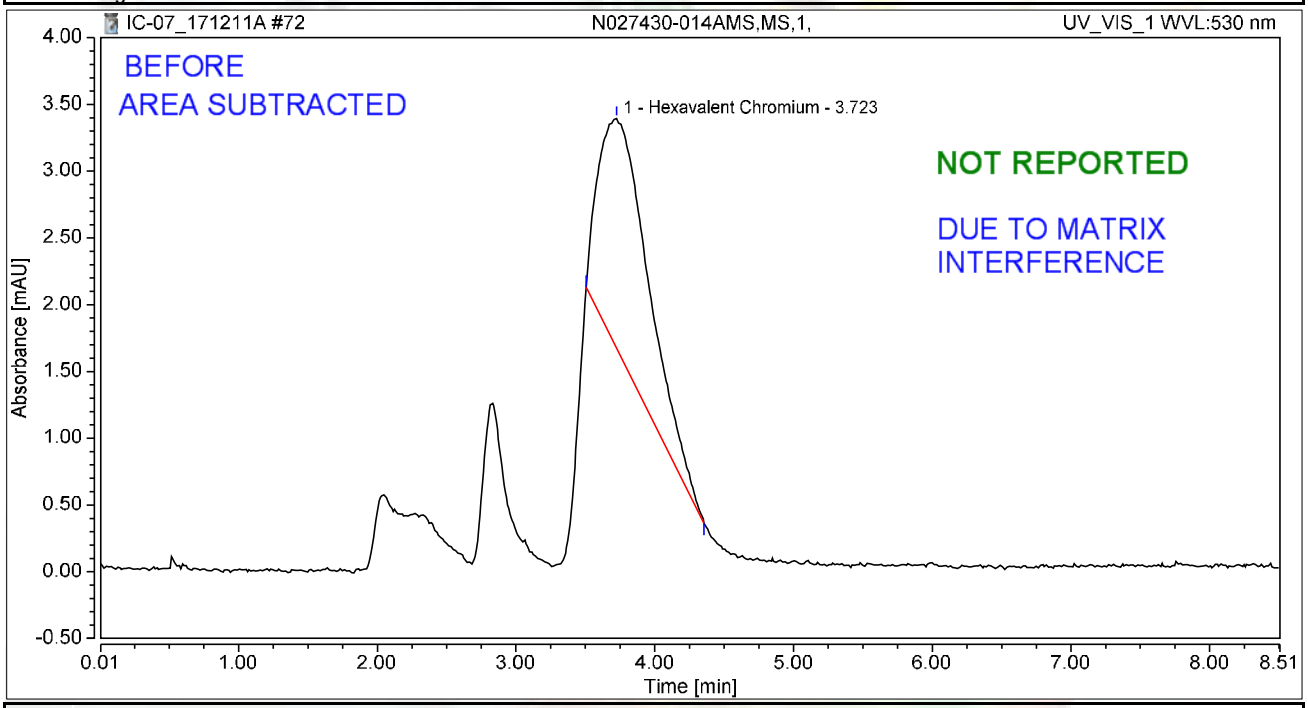
Chromatogram and Results

Injection Details

Injection Name:	**N027430-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	0.727	1.714	100.00	100.00	2.8964
Total:			**0.727**	**1.714**	**100.00**	**100.00**	

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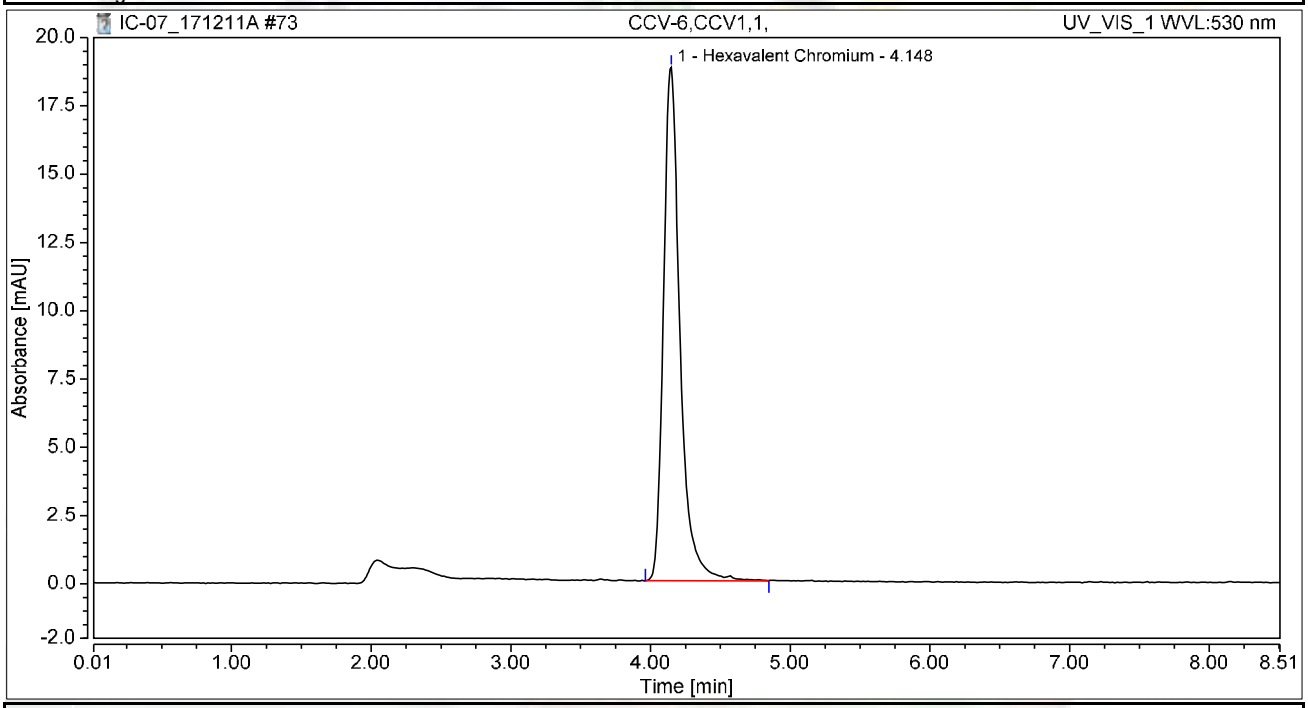
Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

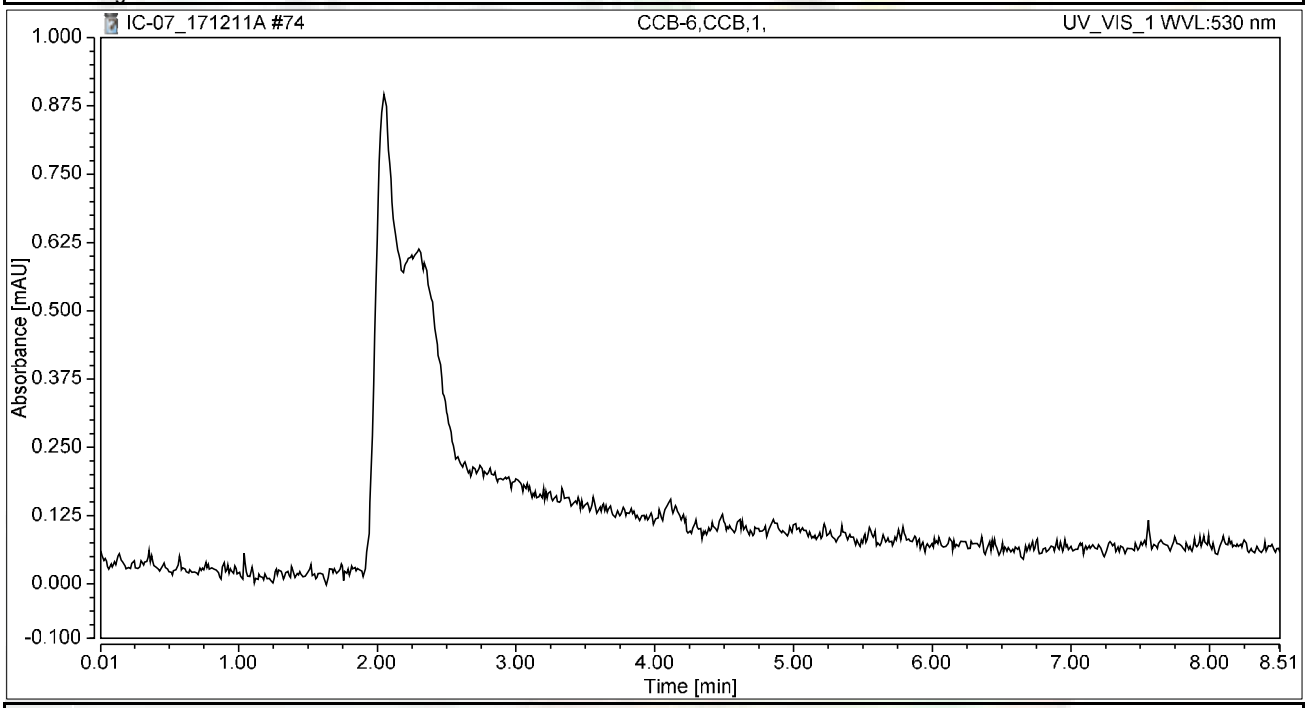
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.585	18.801	100.00	100.00	10.2939
Total:			**2.585**	**18.801**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

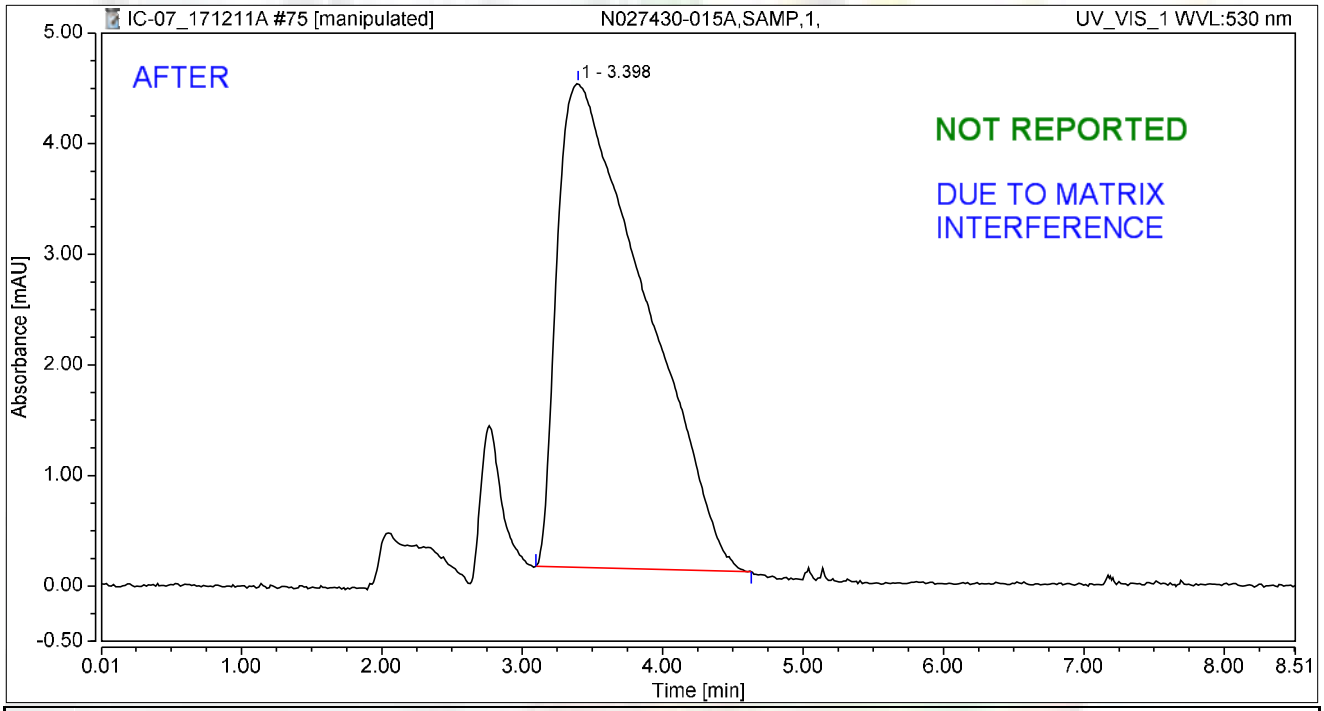
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.398	3.144	4.377	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**3.144**	**4.377**	**100.00**	**100.00**	

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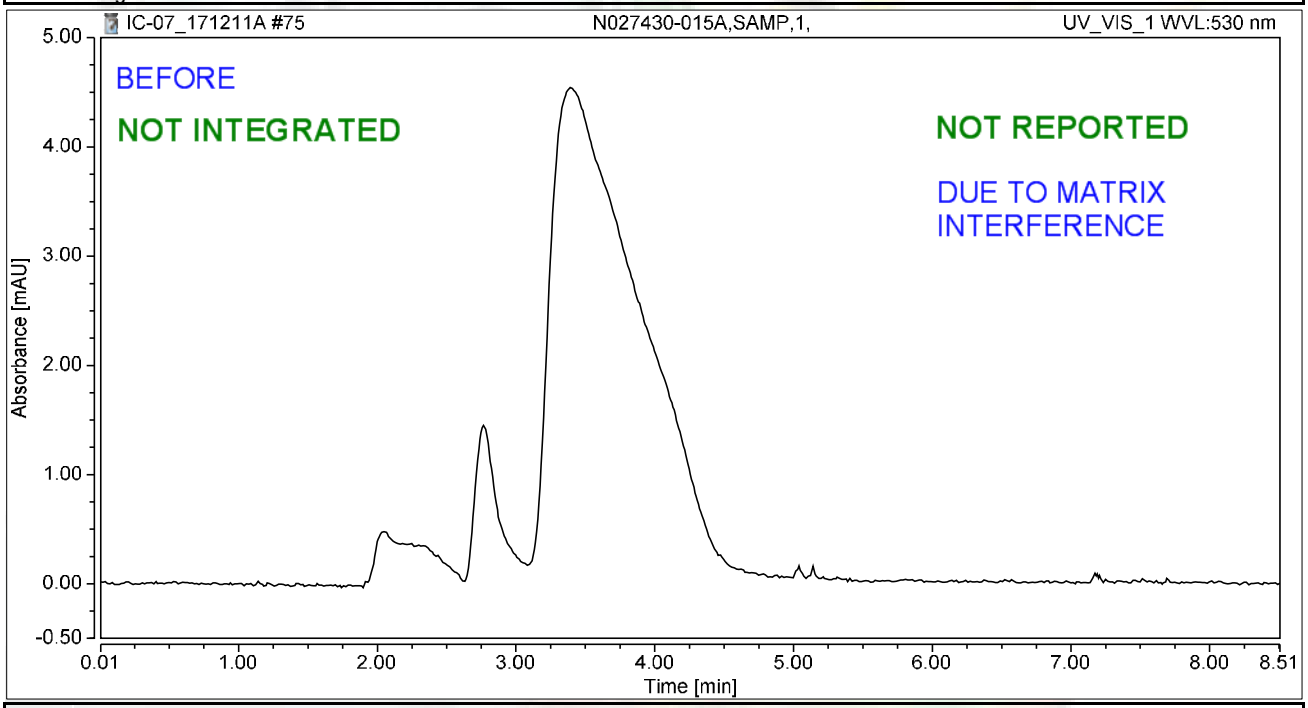
Chromatogram and Results

Injection Details

Injection Name:	**N027430-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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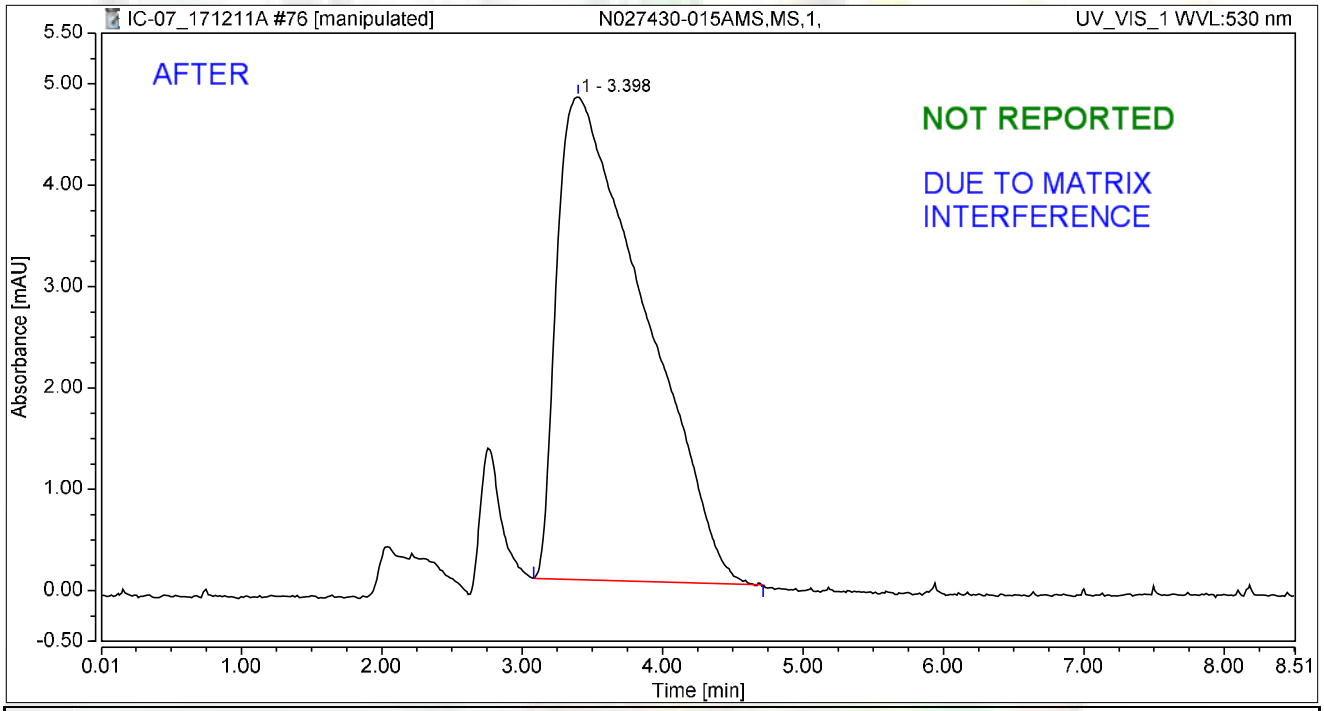
Chromatogram and Results

Injection Details

Injection Name:	**N027430-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.398	3.441	4.762	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**3.441**	**4.762**	**100.00**	**100.00**	

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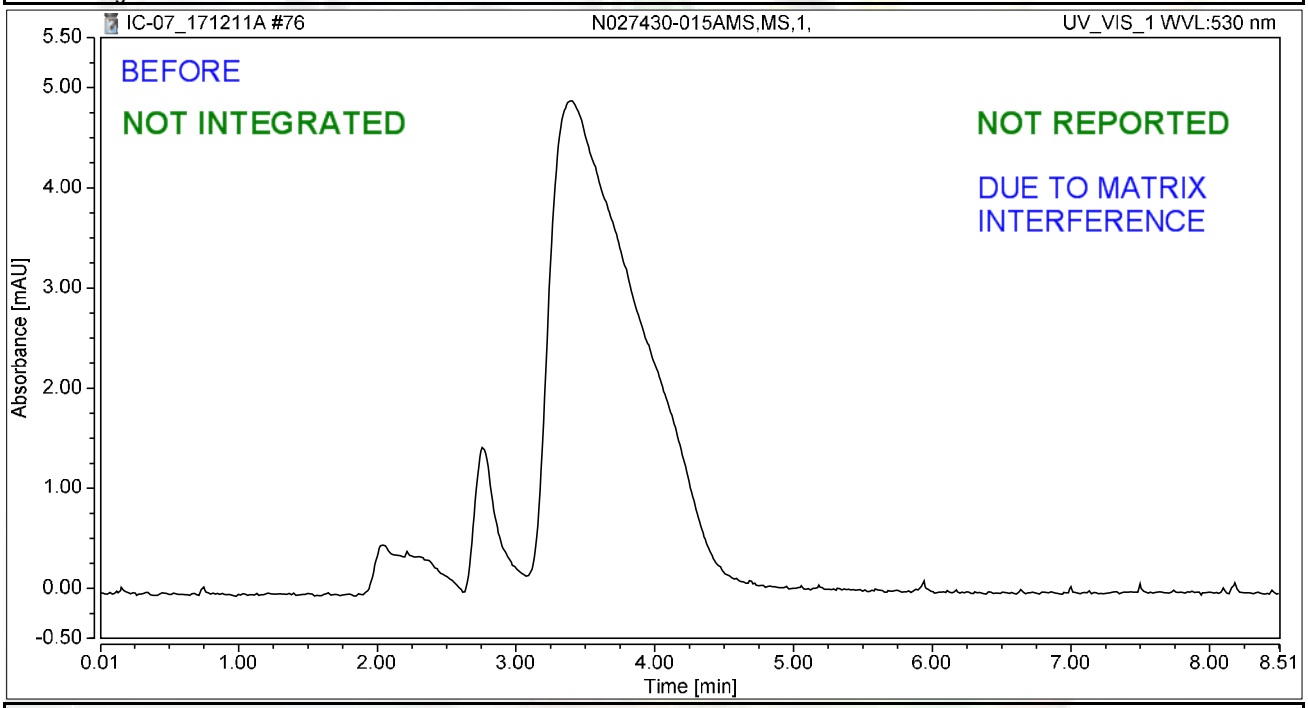
Chromatogram and Results

Injection Details

Injection Name:	**N027430-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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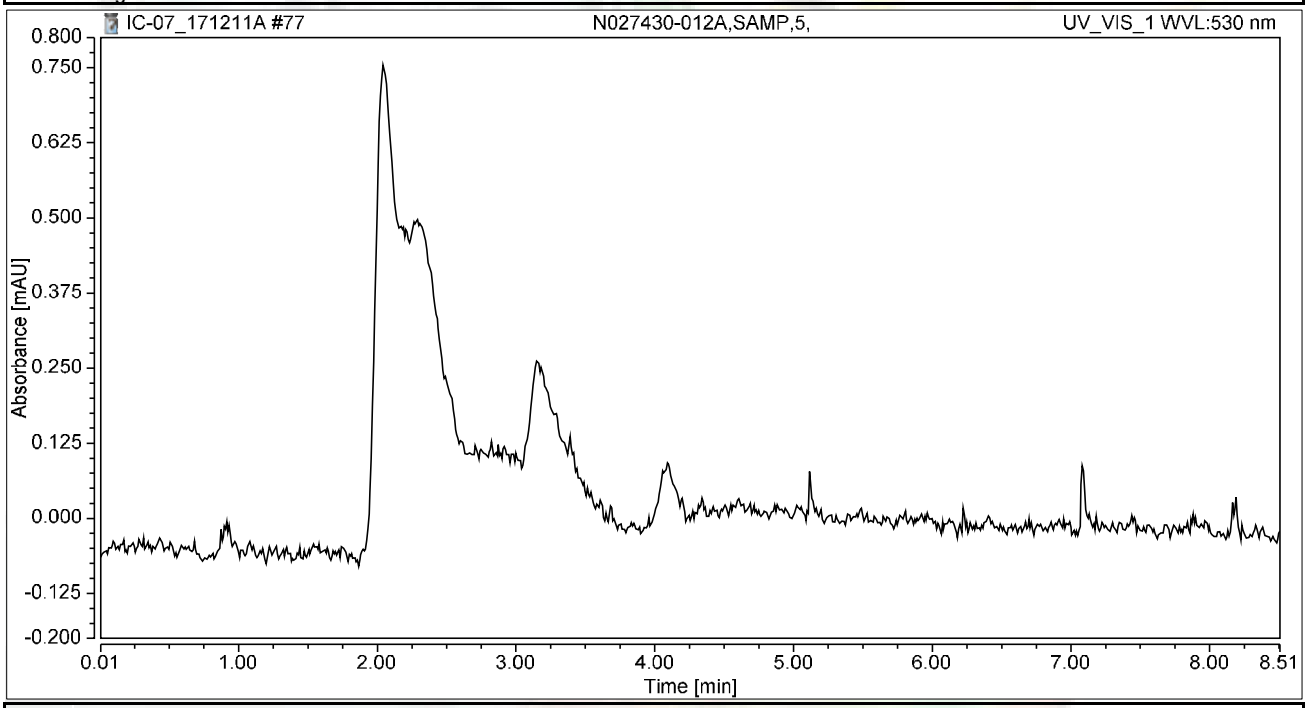
Chromatogram and Results

Injection Details

Injection Name:	**N027430-012A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

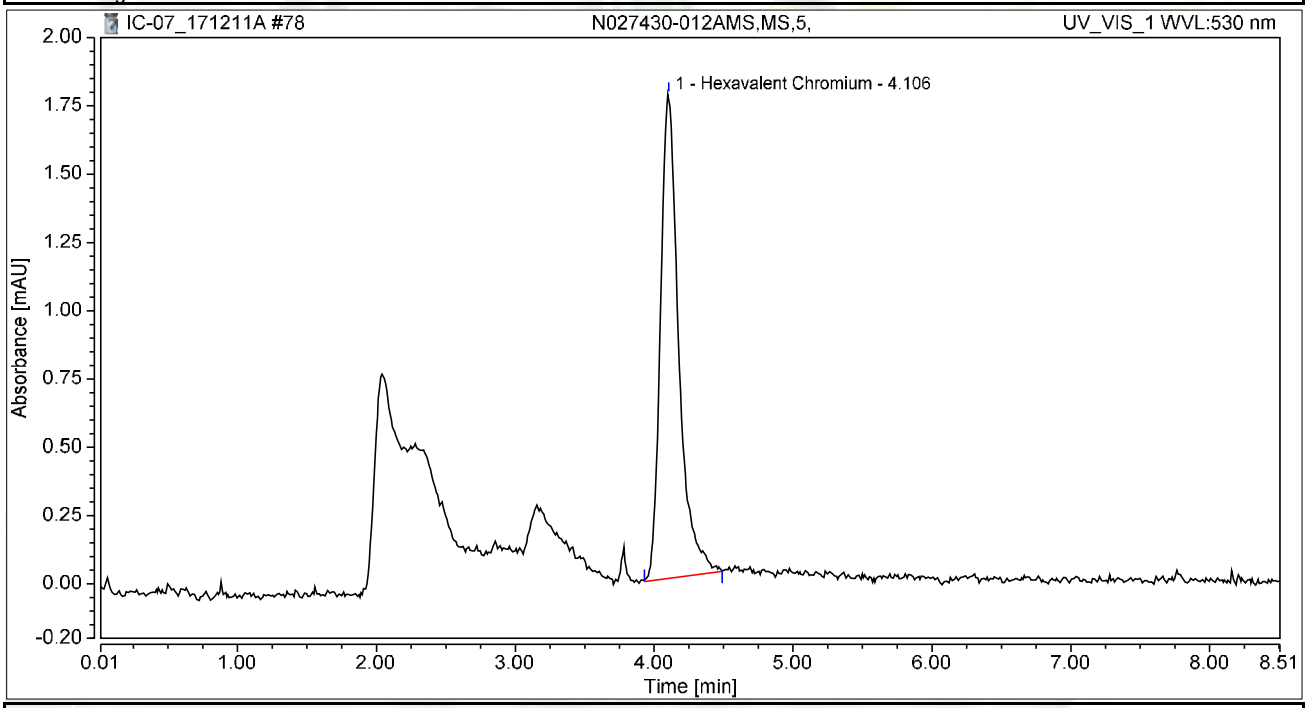
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-012AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

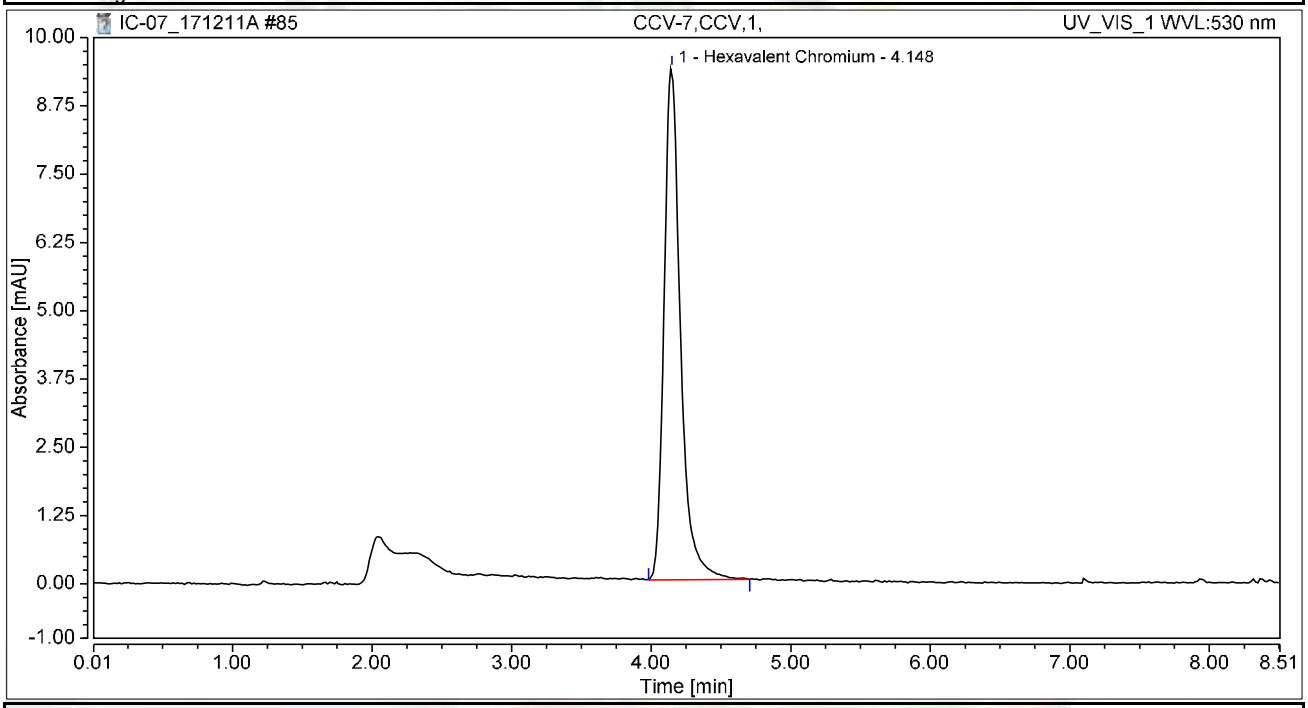
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.270	1.772	100.00	100.00	1.0741
Total:			**0.270**	**1.772**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

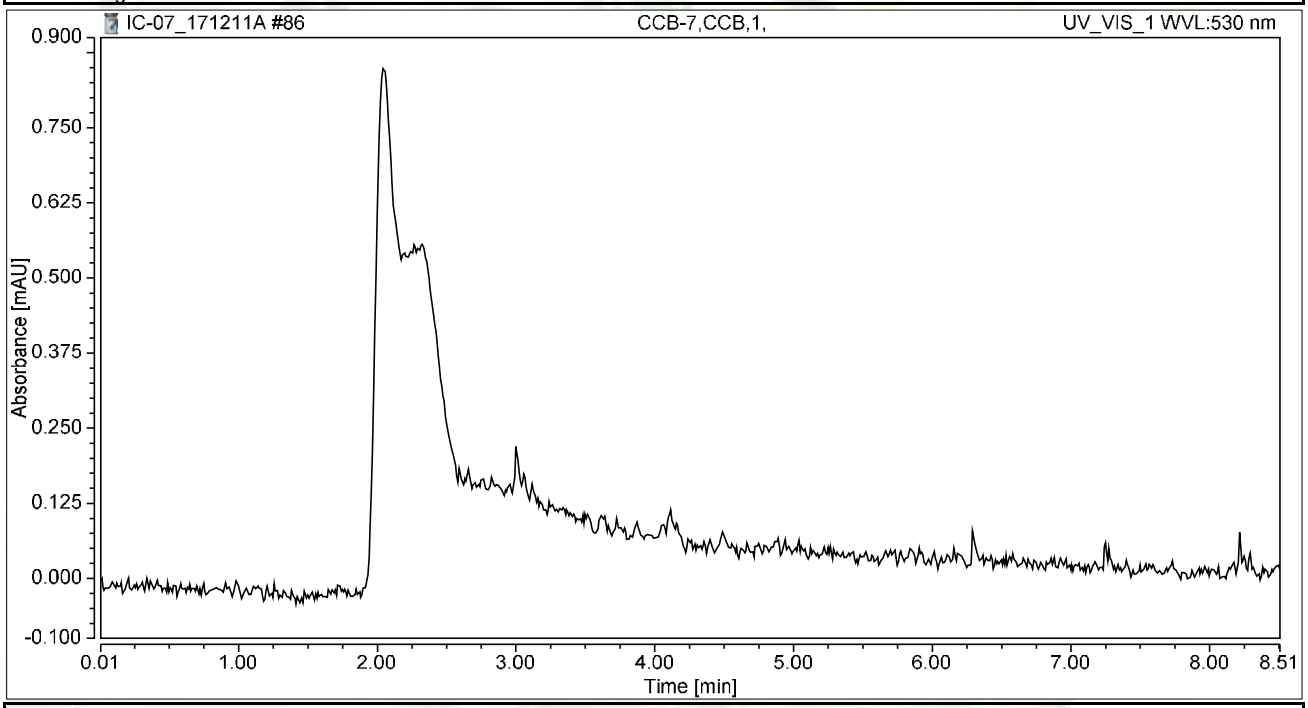
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.283	9.373	100.00	100.00	5.1094
Total:			**1.283**	**9.373**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120~~718~~717/785 **Analyst:** LSR

ASSET #: N027405 **Date Analyzed:** 12/11,12/13/17

Method: EPA 2320

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X			X		
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 12/20/2017

2nd Level Reviewer RLB 12/21/2017 Date:

SAMPLE CALCULATION

Sample ID: **N027405-001D @ pH 7.91**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (12.40 mL)

= **0.02016 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (13.0) (0.02016 N) (1) * 1000

= 262.0800 mg**/L**

Reporting results in two significant figures,

= **260 mg/L** as CaCO3

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C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02016 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (13.0 mL) (0.02016) (1) * 1000

= 262.0800 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 262.0800 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **260 mg/L**

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LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.65	50	0.00	0.050	MBLK
LCS-1	8.33	50	0.00	5.10	LCS
N027404-013D	7.92	50	0.00	8.10	SAMP
N027404-015D	7.70	50	0.00	14.10	SAMP
N027404-016D	7.67	50	0.00	8.40	SAMP
N027404-017D	7.54	50	0.00	2.20	SAMP
N027404-018C	7.91	50	0.00	10.80	SAMP
N027404-020C	7.22	50	0.00	37.80	SAMP
N027405-001D	7.91	50	0.00	13.00	SAMP
N027405-002E	7.58	50	0.00	12.40	SAMP
N027405-003E	7.63	50	0.00	12.30	SAMP
N027405-004C	7.95	50	0.00	8.00	SAMP
N027405-006D	8.09	50	0.00	1.10	SAMP
N027405-007D	7.69	50	0.00	1.20	SAMP
N027405-008D	7.95	50	0.00	1.10	SAMP
N027405-009D	7.58	50	0.00	5.90	SAMP
N027405-011D	7.45	50	0.00	3.50	SAMP
N027405-012D	7.44	50	0.00	2.50	SAMP
N027405-013D	7.60	50	0.00	4.20	SAMP
N027412-001B	7.45	50	0.00	6.00	SAMP
N027413-001B	6.02	50	0.00	27.80	SAMP
N027414-001B	7.49	50	0.00	7.85	SAMP
N027405-006DDUP	8.08	50	0.00	1.10	DUP
N027405-009DMS	8.08	50	0.00	11.10	MS
N027405-009DMSD	8.05	50	0.00	10.95	MSD

Standardization:

Spike amt:	**5**	ml
Titrant used:	**12.40**	ml
N H2SO4	**0.02016**	Normal
Date Analyzed:	**12/11/17**	
Time:	**8:00 AM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-161205A**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R171211A**	

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Date Analyzed:	12/11/17		Reagents:					Standardization:					P = 0
Time Started:	8:00 AM			Sodium Carbonate:		CINV-161205A			Spike amt:	5	mL		P < 1/2 T
Analyzed By:	LSR			Hydrochloric Acid:		0			Titrant used:	12.4	mL		P = 1/2 T
				Sulfuric Acid:		R171211A							P > 1/2 T
									N H2SO4	0.02016	N		P = T

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.65				0.02016	0.00	0.05	0.05	1	0.00	1.01	
LCS-1	50	8.33				0.02016	0.00	5.10	5.10	1	0.00	102.82	
N027404-013D	50	7.92				0.02016	0.00	8.10	8.10	1	0.00	163.31	
N027404-015D	50	7.7				0.02016	0.00	14.10	14.10	1	0.00	284.27	
N027404-016D	50	7.67				0.02016	0.00	8.40	8.40	1	0.00	169.35	
N027404-017D	50	7.54				0.02016	0.00	2.20	2.20	1	0.00	44.35	
N027404-018C	50	7.91				0.02016	0.00	10.80	10.80	1	0.00	217.74	
N027404-020C	50	7.22				0.02016	0.00	37.80	37.80	1	0.00	762.10	
N027405-001D	50	7.91				0.02016	0.00	13.00	13.00	1	0.00	262.10	
N027405-002E	50	7.58				0.02016	0.00	12.40	12.40	1	0.00	250.00	
N027405-003E	50	7.63				0.02016	0.00	12.30	12.30	1	0.00	247.98	
N027405-004C	50	7.95				0.02016	0.00	8.00	8.00	1	0.00	161.29	
N027405-006D	50	8.09				0.02016	0.00	1.10	1.10	1	0.00	22.18	
N027405-007D	50	7.69				0.02016	0.00	1.20	1.20	1	0.00	24.19	
N027405-008D	50	7.95				0.02016	0.00	1.10	1.10	1	0.00	22.18	
N027405-009D	50	7.58				0.02016	0.00	5.90	5.90	1	0.00	118.95	
N027405-011D	50	7.45				0.02016	0.00	3.50	3.50	1	0.00	70.56	
N027405-012D	50	7.44				0.02016	0.00	2.50	2.50	1	0.00	50.40	
N027405-013D	50	7.6				0.02016	0.00	4.20	4.20	1	0.00	84.68	
N027412-001B	50	7.45				0.02016	0.00	6.00	6.00	1	0.00	120.97	
N027413-001B	50	6.02				0.02016	0.00	27.80	27.80	1	0.00	560.48	
N027414-001B	50	7.49				0.02016	0.00	7.85	7.85	1	0.00	158.27	
N027405-006DDU	50	8.08				0.02016	0.00	1.10	1.10	1	0.00	22.18	
N027405-009DMS	50	8.08				0.02016	0.00	11.10	11.10	1	0.00	223.79	
N027405-009DMS	50	8.05				0.02016	0.00	10.95	10.95	1	0.00	220.77	

Julia Ramit 12/20/2017

RB 12/21/2017

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	12/11/17
Time:	8:00 AM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.01	1.01	1.01		P = 0
LCS-1	0.00	0.00	102.82	102.82	102.82		P = 0
N027404-013D	0.00	0.00	163.31	163.31	163.31		P = 0
N027404-015D	0.00	0.00	284.27	284.27	284.27		P = 0
N027404-016D	0.00	0.00	169.35	169.35	169.35		P = 0
N027404-017D	0.00	0.00	44.35	44.35	44.35		P = 0
N027404-018C	0.00	0.00	217.74	217.74	217.74		P = 0
N027404-020C	0.00	0.00	762.10	762.10	762.10		P = 0
N027405-001D	0.00	0.00	262.10	262.10	262.10		P = 0
N027405-002E	0.00	0.00	250.00	250.00	250.00		P = 0
N027405-003E	0.00	0.00	247.98	247.98	247.98		P = 0
N027405-004C	0.00	0.00	161.29	161.29	161.29		P = 0
N027405-006D	0.00	0.00	22.18	22.18	22.18		P = 0
N027405-007D	0.00	0.00	24.19	24.19	24.19		P = 0
N027405-008D	0.00	0.00	22.18	22.18	22.18		P = 0
N027405-009D	0.00	0.00	118.95	118.95	118.95		P = 0
N027405-011D	0.00	0.00	70.56	70.56	70.56		P = 0
N027405-012D	0.00	0.00	50.40	50.40	50.40		P = 0
N027405-013D	0.00	0.00	84.68	84.68	84.68		P = 0
N027412-001B	0.00	0.00	120.97	120.97	120.97		P = 0
N027413-001B	0.00	0.00	560.48	560.48	560.48		P = 0
N027414-001B	0.00	0.00	158.27	158.27	158.27		P = 0
N027405-006DDUP	0.00	0.00	22.18	22.18	22.18		P = 0
N027405-009DMS	0.00	0.00	223.79	223.79	223.79		P = 0
N027405-009DMSD	0.00	0.00	220.77	220.77	220.77		P = 0

Julia Ramit 12/20/2017

RLB 12/21/2017

Alkalinity Preparation and Runlog

Book #6

Matrix: H_2O

Date Extracted: 12/11/17
Time Extracted: 12/11/17
Extracted By: LSL

Date Analyzed: 12/11/17
Time Analyzed: 800
Analyzed By: LSL

Reagent Lot # / Reagent ID
Sodium Carbonate: CMW 161205A
Hydrochloric Acid:
Sulfuric Acid: R171211A
Sodium Bicarbonate: CMW 150601A

~~500~~ pH meter Calibration:
SLOPE: 97.5%
pH 7 - 6.99 CMW 170615F
4 - 4.00 170615E
10 - 10.01 170822B

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50 mL	10.69	1WST171211A	5 mL	0.05N	-	-	12.40	50/50	N H_2SO_4 = (2.65 g/L)(5 mL) / (53)(V titrant)	= 0.02016129
	#2		10.69				-		12.40			
1)	MBLK	50 mL	5.65	-	-	-	0.020/L	0	0.050	50/50		
2)	LCS		8.33	1WST171211B	1 mL	0.05N		0	5.10			
3)	N027404-13D		7.92					0	8.10			
4)	15D		7.70					0	14.10			
5)	16D		7.67					0	8.40			
6)	17D		7.54					0	2.20			
7)	18C		7.91					0	10.80			
8)	20C		7.22					0	37.80			
9)	N027405-1D		7.91					0	13.00			
10)	2E		7.58					0	12.40			
11)	3E		7.63					0	12.30		P = (V pH 8.3)(N H_2SO_4)(50,000) / Vsx	
12)	4C		7.95					0	8.00			
13)	6D		8.09					0	1.10			
14)	7D		7.69					0	1.20			
15)	8D		7.95					0	1.10		T = (V pH 4.5)(N H_2SO_4)(50,000) / Vsx	
16)	9D		7.58					0	5.90			
17)	11D		7.45					0	3.50			
18)	12D		7.44					0	2.50			
19)	13D		7.60					0	4.20			
20)	N027412-1B		7.45					0	6.00			
	MS N027413-1B		6.02					0	27.80			
	MSD N027414-1B		7.49					0	7.85			
	LCS N027405-6D DUP		8.08					0	1.10			
	9D MS		8.08	1WST171211B	1 mL	0.05N		0	11.10			
	9D MSD		8.05					0	10.95			

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SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.53	50	0.00	0.050	MBLK
LCS-1	8.51	50	0.05	4.95	LCS
N027405-014D	8.16	50	0.00	9.20	SAMP
N027422-001A	8.28	50	0.00	14.80	SAMP
N027422-002A	10.27	50	5.60	7.90	SAMP
N027422-003A	10.22	50	5.00	7.20	SAMP
N027428-001B	7.87	50	0.00	12.40	SAMP
N027428-002B	7.78	50	0.00	7.70	SAMP
N027429-005D	7.72	50	0.00	1.50	SAMP
N027429-006D	7.85	50	0.00	1.50	SAMP
N027429-007D	8.20	50	0.00	8.60	SAMP
N027429-008D	8.20	50	0.00	8.35	SAMP
N027429-009D	7.67	50	0.00	2.10	SAMP
N027429-010D	7.34	50	0.00	4.25	SAMP
N027429-012D	7.90	50	0.00	6.25	SAMP
N027429-013D	7.83	50	0.00	5.80	SAMP
N027429-014D	7.31	50	0.00	5.10	SAMP
N027429-015D	7.71	50	0.00	4.60	SAMP
N027429-016D	7.74	50	0.00	3.40	SAMP
N027429-017D	7.66	50	0.00	3.40	SAMP
N027429-018D	7.58	50	0.00	2.80	SAMP
N027429-020D	7.77	50	0.00	3.10	SAMP
N027429-005DDUP	7.69	50	0.00	1.50	DUP
N027429-014DMS	8.12	50	0.00	10.20	MS
N027429-014DMSD	8.14	50	0.00	10.10	MSD

Standardization:

Spike amt:	**5**	ml
Titrant used:	**12.45**	ml
N H2SO4	**0.02008**	Normal
Date Analyzed:	**12/13/17**	
Time:	**8:30 AM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-161205A**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R171211A**	

Silica Ramit 12/20/2017

RB 12/21/2017

Date Analyzed:	12/13/17		Reagents:					Standardization:					P = 0
Time Started:	8:30 AM			Sodium Carbonate:		CINV-161205A			Spike amt:	5	mL		P < 1/2 T
Analyzed By:	LSR			Hydrochloric Acid:		0			Titrant used:	12.45	mL		P = 1/2 T
				Sulfuric Acid:		R171211A							P > 1/2 T
									N H2SO4	0.02008	N		P = T

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.53				0.02008	0.00	0.05	0.05	1	0.00	1.00	
LCS-1	50	8.51				0.02008	0.05	4.90	4.95	1	1.00	99.40	
N027405-014D	50	8.16				0.02008	0.00	9.20	9.20	1	0.00	184.74	
N027422-001A	50	8.28				0.02008	0.00	14.80	14.80	1	0.00	297.19	
N027422-002A	50	10.27				0.02008	5.60	2.30	7.90	1	112.45	158.63	
N027422-003A	50	10.22				0.02008	5.00	2.20	7.20	1	100.40	144.58	
N027428-001B	50	7.87				0.02008	0.00	12.40	12.40	1	0.00	249.00	
N027428-002B	50	7.78				0.02008	0.00	7.70	7.70	1	0.00	154.62	
N027429-005D	50	7.72				0.02008	0.00	1.50	1.50	1	0.00	30.12	
N027429-006D	50	7.85				0.02008	0.00	1.50	1.50	1	0.00	30.12	
N027429-007D	50	8.2				0.02008	0.00	8.60	8.60	1	0.00	172.69	
N027429-008D	50	8.2				0.02008	0.00	8.35	8.35	1	0.00	167.67	
N027429-009D	50	7.67				0.02008	0.00	2.10	2.10	1	0.00	42.17	
N027429-010D	50	7.34				0.02008	0.00	4.25	4.25	1	0.00	85.34	
N027429-012D	50	7.9				0.02008	0.00	6.25	6.25	1	0.00	125.50	
N027429-013D	50	7.83				0.02008	0.00	5.80	5.80	1	0.00	116.47	
N027429-014D	50	7.31				0.02008	0.00	5.10	5.10	1	0.00	102.41	
N027429-015D	50	7.71				0.02008	0.00	4.60	4.60	1	0.00	92.37	
N027429-016D	50	7.74				0.02008	0.00	3.40	3.40	1	0.00	68.27	
N027429-017D	50	7.66				0.02008	0.00	3.40	3.40	1	0.00	68.27	
N027429-018D	50	7.58				0.02008	0.00	2.80	2.80	1	0.00	56.22	
N027429-020D	50	7.77				0.02008	0.00	3.10	3.10	1	0.00	62.25	
N027429-005DDU	50	7.69				0.02008	0.00	1.50	1.50	1	0.00	30.12	
N027429-014DMS	50	8.12				0.02008	0.00	10.20	10.20	1	0.00	204.82	
N027429-014DMS	50	8.14				0.02008	0.00	10.10	10.10	1	0.00	202.81	

Julia Ramit 12/20/2017

RB 12/21/2017

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	12/13/17
Time:	8:30 AM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.00	1.00	1.00		P = 0
LCS-1	0.00	2.01	97.39	99.40	99.40		P < 1/2 T
N027405-014D	0.00	0.00	184.74	184.74	184.74		P = 0
N027422-001A	0.00	0.00	297.19	297.19	297.19		P = 0
N027422-002A	66.27	92.37	0.00	158.63	158.63		P > 1/2 T
N027422-003A	56.22	88.35	0.00	144.58	144.58		P > 1/2 T
N027428-001B	0.00	0.00	249.00	249.00	249.00		P = 0
N027428-002B	0.00	0.00	154.62	154.62	154.62		P = 0
N027429-005D	0.00	0.00	30.12	30.12	30.12		P = 0
N027429-006D	0.00	0.00	30.12	30.12	30.12		P = 0
N027429-007D	0.00	0.00	172.69	172.69	172.69		P = 0
N027429-008D	0.00	0.00	167.67	167.67	167.67		P = 0
N027429-009D	0.00	0.00	42.17	42.17	42.17		P = 0
N027429-010D	0.00	0.00	85.34	85.34	85.34		P = 0
N027429-012D	0.00	0.00	125.50	125.50	125.50		P = 0
N027429-013D	0.00	0.00	116.47	116.47	116.47		P = 0
N027429-014D	0.00	0.00	102.41	102.41	102.41		P = 0
N027429-015D	0.00	0.00	92.37	92.37	92.37		P = 0
N027429-016D	0.00	0.00	68.27	68.27	68.27		P = 0
N027429-017D	0.00	0.00	68.27	68.27	68.27		P = 0
N027429-018D	0.00	0.00	56.22	56.22	56.22		P = 0
N027429-020D	0.00	0.00	62.25	62.25	62.25		P = 0
N027429-005DDUP	0.00	0.00	30.12	30.12	30.12		P = 0
N027429-014DMS	0.00	0.00	204.82	204.82	204.82		P = 0
N027429-014DMSD	0.00	0.00	202.81	202.81	202.81		P = 0

Silvia Ramit 12/20/2017

RLB 12/21/2017

Alkalinity Preparation and Runlog

Book #6

Matrix: H2O

Date Extracted: 12/13/17
Time Extracted: 12/13/17
Extracted By: LSR

Date Analyzed: 12/13/17
Time Analyzed: 830
Analyzed By: LSR

Reagent Lot # / Reagent ID
Sodium Carbonate: CMV161206A
Hydrochloric Acid:
Sulfuric Acid: D171211A
Sodium Bicarbonate: CMV150601A

pH meter Calibration:
SLOPE: 97.8%
pH 7 - 7.02 CMV170615F
4 - 4.00 170615E
10 - 10.02 170822B

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50mL	10.66	1WST171211A	5mL	0.05N	-	-	12.50	50/50	$N_{H_2SO_4} = \frac{(2.65 g/L)(5mL)}{(53)(V_{titrant})}$	- 0.0200000
	#2		10.67				-	-	12.40			= 0.02016129
1)	MBLK	50 mL	5.53	-	-	-	0.02008	0	0.050	50/50		Ave: 0.02008
2)	LCS		8.51	1WST171211B	1mL	0.05N		0.05	4.95			
3)	N027405-14D		8.16					0	9.20			
4)	N027422-1A		8.28					0	14.80			
5)	2A		10.27					5.60	7.90			
6)	3A		10.22					5.00	7.20			
7)	N027428-1B		7.87					0	12.40			
8)	2B		7.78					0	7.70			
9)	N027429-5D		7.72					0	1.50			
10)	6D		7.85					0	1.50		$P = \frac{(V_{pH\ 8.3})(N_{H_2SO_4})(50,000)}{V_{sx}}$	
11)	7D		8.20					0	8.60			
12)	8D		8.20					0	8.35			
13)	9D		7.67					0	2.10		$T = \frac{(V_{pH\ 4.5})(N_{H_2SO_4})(50,000)}{V_{sx}}$	
14)	10D		7.34					0	4.25			
15)	12D		7.90					0	6.25			
16)	13D		7.83					0	5.80			
17)	14D		7.31					0	5.10			
18)	15D		7.71					0	4.60			
19)	16D		7.74					0	3.40			
20)	17D		7.66					0	3.40			
MS	18D		7.58					0	2.80			
MSD	20D		7.77					0	3.10			
LCS	50DUP		7.69					0	1.50			
	14D MS		8.12	1WST171211B	1mL	0.05N		0	10.20			
	14D MSD		8.44					0	10.10			

Julia Ramit 12/20/2017
RB 12/21/2017

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120734
ASSET #: N027405

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/8/2017

Method:

[X] EPA 300.0
[ ] EPA 7199

[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.		X			X	
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments: N027405

%Rec of Bromide in ~~N027404~~-004CMS failed. However, LCS passed criteria.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/17/2017

2nd Level Reviewer: RLB 12/21/2017 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120764
ASSET #: N027405 / N027428

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/11/2017

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/17/2017

2nd Level Reviewer: RB 12/21/2017 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120770
ASSET #: N027429 / N027405

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/12/2017

Method:

[X] EPA 300.0
[ ] EPA 7199

[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.		X			X	
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

%Rec of Bromide in N027429-007DMS/MSD and N027429-012DMS failed. However, LCS passed criteria.
Several samples were diluted due to precipitate formed when mixed with eluent.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/17/2017

2nd Level Reviewer: RB 12/21/2017 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Chloride
Calculate the ~~Sulfate~~ concentration, in mg/L, in the orignal sample as follows:

Chloride
~~Sulfate~~, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N027405-001D** concentration in mg/L is calculated as follows:

Chloride
~~Sulfate~~, mg/L = 2.7844 * 500

= 1392.2

Reporting result in two significant values,

Chloride
~~Sulfate~~, mg/L = 1400

rba 12/20/2017

RLB 12/21/2017

ANALYSIS RUN LOG

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 25
Created: 11/29/2017 9:35:17 AM by IC-05
Last Update: 11/30/2017 12:33:04 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	ICV,ICV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	ICB,ICB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	N027210-002A,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027232-001A,SAMP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027210-002A,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027210-002ADUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027210-002AMS,MS,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027210-002AMSD,MSD,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027232-001AMS,MS,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027232-001AMSD,MSD,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	N027232-001ADUP,DUP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished



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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 25
Created: 11/29/2017 9:35:17 AM by IC-05
Last Update: 11/30/2017 12:33:04 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	ICV,ICV,1	11/29/2017 12:22:10 PM	ICV
10	ICB,ICB,1	11/29/2017 12:37:28 PM	ICB
11	MB-H2O,MBLK,1	11/29/2017 12:52:47 PM	METHOD BLANK
12	LCS-H2O,LCS,1	11/29/2017 1:08:05 PM	LCS
13	N027210-002A,SAMP,10	11/29/2017 1:23:23 PM	SAMP,1>10mL
14	N027232-001A,SAMP,2	11/29/2017 1:38:41 PM	SAMP,5>10mL
15	N027210-002A,SAMP,50	11/29/2017 2:44:14 PM	SAMP,0.2>10mL
16	N027210-002ADUP,DUP,50	11/29/2017 2:59:31 PM	DUP,0.2>10mL
17	N027210-002AMS,MS,10	11/29/2017 3:14:50 PM	MS,0.2>10mL
18	N027210-002AMSD,MSD,10	11/29/2017 3:30:07 PM	MSD,0.2>10mL
19	N027232-001AMS,MS,2	11/29/2017 3:45:25 PM	MS,5>10mL
20	N027232-001AMSD,MSD,2	11/29/2017 4:00:43 PM	MSD,5>10mL
21	CCV-1,CCV,1	11/29/2017 4:16:01 PM	CCV
22	CCB-1,CCB,1	11/29/2017 4:31:19 PM	CCB
23	N027232-001ADUP,DUP,2	11/29/2017 4:46:38 PM	DUP,5>10mL
24	CCV-2,CCV,1	11/29/2017 5:01:56 PM	CCV
25	CCB-2,CCB,1	11/29/2017 5:17:14 PM	CCB

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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/8/2017 8:18:58 AM by IC-05
Last Update: 12/8/2017 8:15:10 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027422-001A,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027422-001A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027422-001A,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027422-002A,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027422-002A,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027422-002A,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027422-002A,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	N027422-002A,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	N027422-003A,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	N027422-003A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
26	N027422-003A,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
27	N027422-003A,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
28	N027422-003A,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
29	N027422-001ADUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
30	N027422-001AMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
31	N027422-001AMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
32	N027422-001AMS,MS,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
33	N027422-001AMSD,MSD,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
34	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
35	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
36	N027422-001ADUP,DUP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
37	N027422-001AMS,MS,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
38	N027422-001AMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
39	N027422-001ADUP,DUP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
40	N027422-001AMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
41	N027422-001AMSD,MSD,20	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/8/2017 8:18:58 AM by IC-05
Last Update: 12/8/2017 8:15:10 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	BLANK,BLANK,1	12/8/2017 8:19:29 AM	BLANK
10	CCV-1,CCV,1	12/8/2017 8:34:47 AM	CCV
11	CCB-1,CCB,1	12/8/2017 8:50:05 AM	CCB
12	MB-H2O,MBLK,1	12/8/2017 9:05:23 AM	METHOD BLANK
13	LCS-H2O,LCS,1	12/8/2017 9:20:41 AM	LCS
14	N027422-001A,SAMP,1	12/8/2017 9:44:47 AM	SAMP,10mL
15	N027422-001A,SAMP,5	12/8/2017 10:00:06 AM	SAMP,2>10mL
16	N027422-001A,SAMP,20	12/8/2017 10:15:24 AM	SAMP,0.5>10mL
17	N027422-002A,SAMP,1	12/8/2017 10:30:42 AM	SAMP,10mL
18	N027422-002A,SAMP,10	12/8/2017 10:46:00 AM	SAMP,1>10mL
19	N027422-002A,SAMP,20	12/8/2017 11:01:18 AM	SAMP,0.5>10mL
20	N027422-002A,SAMP,50	12/8/2017 11:16:35 AM	SAMP,0.2>10mL
21	N027422-002A,SAMP,200	12/8/2017 11:31:53 AM	SAMP,0.05>10mL
22	CCV-2,CCV,1	12/8/2017 11:47:11 AM	CCV
23	CCB-2,CCB,1	12/8/2017 12:02:29 PM	CCB
24	N027422-003A,SAMP,1	12/8/2017 12:17:47 PM	SAMP,10mL
25	N027422-003A,SAMP,5	12/8/2017 12:33:05 PM	SAMP,2>10mL
26	N027422-003A,SAMP,20	12/8/2017 12:48:24 PM	SAMP,0.5>10mL
27	N027422-003A,SAMP,50	12/8/2017 1:03:42 PM	SAMP,0.2>10mL
28	N027422-003A,SAMP,200	12/8/2017 1:19:00 PM	SAMP,0.05>10mL
29	N027422-001ADUP,DUP,1	12/8/2017 1:34:18 PM	DUP,10mL
30	N027422-001AMS,MS,1	12/8/2017 1:49:36 PM	MS,10mL
31	N027422-001AMSD,MSD,1	12/8/2017 2:04:54 PM	MSD,10mL
32	N027422-001AMS,MS,2	12/8/2017 2:20:11 PM	MS,5>10mL
33	N027422-001AMSD,MSD,2	12/8/2017 2:35:30 PM	MSD,5>10mL
34	CCV-3,CCV,1	12/8/2017 2:50:48 PM	CCV
35	CCB-3,CCB,1	12/8/2017 3:06:06 PM	CCB
36	N027422-001ADUP,DUP,5	12/8/2017 3:21:23 PM	DUP,2>10mL
37	N027422-001AMS,MS,5	12/8/2017 3:36:41 PM	MS,2>10mL
38	N027422-001AMSD,MSD,5	12/8/2017 3:51:59 PM	MSD,2>10mL
39	N027422-001ADUP,DUP,20	12/8/2017 4:07:17 PM	DUP,0.5>10mL
40	N027422-001AMS,MS,20	12/8/2017 4:22:34 PM	MS,0.5>10mL
41	N027422-001AMSD,MSD,20	12/8/2017 4:37:53 PM	MSD,0.5>10mL

rba 12/17/2017

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/8/2017 8:18:58 AM by IC-05
Last Update: 12/8/2017 8:15:10 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027427-001C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
43	N027404-002C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
44	N027404-003D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
45	N027404-005D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
46	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
47	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
48	N027404-017D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
49	N027404-020C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
50	N027404-017DMS,MS,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
51	N027404-017DMSD,MSD,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
52	N027404-020CMS,MS,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
53	N027404-002CDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
54	N027404-006C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
55	N027404-007D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
56	N027404-009D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
57	N027404-010D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
58	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
59	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
60	N027404-011D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
61	N027404-013D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
62	N027404-015D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
63	N027404-016D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
64	N027404-018C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
65	N027404-002CDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
66	N027404-005D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
67	N027404-010DMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
68	N027404-010DMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
69	N027404-007DMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
70	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
71	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
72	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
73	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
74	N027405-004C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
75	N027405-004CMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
76	N027405-004CMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
77	N027405-014D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
78	N027405-014DMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
79	N027405-012D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
80	N027405-012DDUP,DUP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
81	N027405-002E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
82	CCV-7,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/8/2017 8:18:58 AM by IC-05
Last Update: 12/8/2017 8:15:10 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027427-001C,SAMP,5	12/8/2017 4:53:11 PM	SAMP,2>10mL
43	N027404-002C,SAMP,1	12/8/2017 5:08:29 PM	SAMP,10mL
44	N027404-003D,SAMP,1	12/8/2017 5:23:46 PM	SAMP,10mL
45	N027404-005D,SAMP,1	12/8/2017 5:39:05 PM	SAMP,10mL
46	CCV-4,CCV,1	12/8/2017 5:54:24 PM	CCV
47	CCB-4,CCB,1	12/8/2017 6:09:42 PM	CCB
48	N027404-017D,SAMP,10	12/8/2017 6:25:00 PM	SAMP,1>10mL
49	N027404-020C,SAMP,10	12/8/2017 6:40:19 PM	SAMP,1>10mL
50	N027404-017DMS,MS,10	12/8/2017 6:55:36 PM	MS,1>10mL
51	N027404-017DMSD,MSD,10	12/8/2017 7:10:55 PM	MSD,1>10mL
52	N027404-020CMS,MS,10	12/8/2017 7:26:14 PM	MS,1>10mL
53	N027404-002CDUP,DUP,1	12/8/2017 7:41:32 PM	DUP,1>10mL
54	N027404-006C,SAMP,1	12/8/2017 7:56:50 PM	SAMP,10mL
55	N027404-007D,SAMP,1	12/8/2017 8:12:08 PM	SAMP,10mL
56	N027404-009D,SAMP,5	12/8/2017 8:27:26 PM	SAMP,2>10mL
57	N027404-010D,SAMP,1	12/8/2017 8:42:44 PM	SAMP,10mL
58	CCV-5,CCV,1	12/8/2017 8:58:03 PM	CCV
59	CCB-5,CCB,1	12/8/2017 9:13:21 PM	CCB
60	N027404-011D,SAMP,1	12/8/2017 9:28:39 PM	SAMP,10mL
61	N027404-013D,SAMP,1	12/8/2017 9:43:57 PM	SAMP,10mL
62	N027404-015D,SAMP,5	12/8/2017 9:59:14 PM	SAMP,2>10mL
63	N027404-016D,SAMP,5	12/8/2017 10:14:32 PM	SAMP,2>10mL
64	N027404-018C,SAMP,1	12/8/2017 10:29:50 PM	SAMP,10mL
65	N027404-002CDUP,DUP,1	12/8/2017 10:45:08 PM	SAMP,10mL
66	N027404-005D,SAMP,5	12/8/2017 11:00:26 PM	SAMP,2>10mL
67	N027404-010DMS,MS,1	12/8/2017 11:15:44 PM	MS,10mL
68	N027404-010DMSD,MSD,1	12/8/2017 11:31:01 PM	MSD,10mL
69	N027404-007DMS,MS,1	12/8/2017 11:46:19 PM	MS,10mL
70	CCV-6,CCV,1	12/9/2017 12:01:38 AM	CCV
71	CCB-6,CCB,1	12/9/2017 12:16:55 AM	CCB
72	LCS-2,LCS,1	12/9/2017 12:32:13 AM	LCS
73	MB-2,MBLK,1	12/9/2017 12:47:31 AM	METHOD BLANK
74	N027405-004C,SAMP,1	12/9/2017 1:02:49 AM	SAMP,10mL
75	N027405-004CMS,MS,1	12/9/2017 1:18:07 AM	MS,10mL
76	N027405-004CMSD,MSD,1	12/9/2017 1:33:25 AM	MSD,10mL
77	N027405-014D,SAMP,1	12/9/2017 1:48:43 AM	SAMP,10mL
78	N027405-014DMS,MS,1	12/9/2017 2:04:01 AM	MS,10mL
79	N027405-012D,SAMP,10	12/9/2017 2:19:18 AM	SAMP,1>10mL
80	N027405-012DDUP,DUP,10	12/9/2017 2:34:36 AM	DUP,1>10mL
81	N027405-002E,SAMP,5	12/9/2017 2:49:54 AM	SAMP,2>10mL
82	CCV-7,CCV,1	12/9/2017 3:05:12 AM	CCV

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/8/2017 8:18:58 AM by IC-05
Last Update: 12/8/2017 8:15:10 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
83	CCB-7,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
84	N027405-003E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
85	N027405-006D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
86	N027405-007D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
87	N027405-008D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
88	N027405-009D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
89	N027405-011D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
90	N027405-013D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
91	CCV-8,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
92	CCB-8,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/8/2017 8:18:58 AM by IC-05
Last Update: 12/8/2017 8:15:10 PM by IC-05

No.	Name	Inj. Date/Time	Comment
83	CCB-7,CCB,1	12/9/2017 3:20:29 AM	CCB
84	N027405-003E,SAMP,5	12/9/2017 3:35:47 AM	SAMP,2>10mL
85	N027405-006D,SAMP,5	12/9/2017 3:51:05 AM	SAMP,2>10mL
86	N027405-007D,SAMP,5	12/9/2017 4:06:23 AM	SAMP,2>10mL
87	N027405-008D,SAMP,5	12/9/2017 4:21:41 AM	SAMP,2>10mL
88	N027405-009D,SAMP,5	12/9/2017 4:36:59 AM	SAMP,2>10mL
89	N027405-011D,SAMP,5	12/9/2017 4:52:17 AM	SAMP,2>10mL
90	N027405-013D,SAMP,5	12/9/2017 5:07:36 AM	SAMP,2>10mL
91	CCV-8,CCV,1	12/9/2017 5:22:53 AM	CCV
92	CCB-8,CCB,1	12/9/2017 5:38:12 AM	CCB

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 93
Created: 12/11/2017 8:29:57 AM by IC-05
Last Update: 12/11/2017 11:39:29 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027404-003D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027404-003D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027404-005D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027404-005D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027404-010D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027404-010DMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027404-007D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	N027404-007DDUP,DUP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	N027404-002C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	N027404-002CMS,MS,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
26	N027404-002CMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
27	N027404-006C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
28	N027404-009D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
29	N027404-011D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
30	N027404-013D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
31	N027404-015D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
32	N027404-015D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
33	N027404-016D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
34	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
35	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
36	N027404-016D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
37	N027404-017D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
38	N027404-017D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
39	N027404-018C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
40	N027404-020C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
41	N027404-020C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 93
Created: 12/11/2017 8:29:57 AM by IC-05
Last Update: 12/11/2017 11:39:29 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	BLANK,BLANK,1	12/11/2017 8:30:18 AM	BLANK
10	CCV-1,CCV,1	12/11/2017 8:45:36 AM	CCV
11	CCB-1,CCB,1	12/11/2017 9:00:54 AM	CCB
12	MB-H2O,MBLK,1	12/11/2017 9:16:12 AM	METHOD BLANK
13	LCS-H2O,LCS,1	12/11/2017 9:31:30 AM	LCS
14	N027404-003D,SAMP,1000	12/11/2017 9:55:32 AM	SAMP,0.01>10mL
15	N027404-003D,SAMP,200	12/11/2017 10:10:50 AM	SAMP,0.05>10mL
16	N027404-005D,SAMP,1000	12/11/2017 10:26:08 AM	SAMP,0.01>10mL
17	N027404-005D,SAMP,100	12/11/2017 10:41:26 AM	SAMP,0.1>10mL
18	N027404-010D,SAMP,20	12/11/2017 10:56:44 AM	SAMP,0.5>10mL
19	N027404-010DMS,MS,20	12/11/2017 11:12:01 AM	MS,0.5>10mL
20	N027404-007D,SAMP,20	12/11/2017 11:27:19 AM	SAMP,0.5>10mL
21	N027404-007DDUP,DUP,20	12/11/2017 11:42:37 AM	DUP,0.5>10mL
22	CCV-2,CCV,1	12/11/2017 11:57:55 AM	CCV
23	CCB-2,CCB,1	12/11/2017 12:13:13 PM	CCB
24	N027404-002C,SAMP,50	12/11/2017 12:28:30 PM	SAMP,0.2>10mL
25	N027404-002CMS,MS,50	12/11/2017 12:43:48 PM	MS,0.2>10mL
26	N027404-002CMSD,MSD,50	12/11/2017 12:59:06 PM	MSD,0.2>10mL
27	N027404-006C,SAMP,200	12/11/2017 1:14:24 PM	SAMP,0.05>10mL
28	N027404-009D,SAMP,500	12/11/2017 1:29:42 PM	SAMP,0.02>10mL
29	N027404-011D,SAMP,20	12/11/2017 1:45:00 PM	SAMP,0.5>10mL
30	N027404-013D,SAMP,20	12/11/2017 2:00:18 PM	SAMP,0.5>10mL
31	N027404-015D,SAMP,1000	12/11/2017 2:15:36 PM	SAMP,0.01>10mL
32	N027404-015D,SAMP,100	12/11/2017 2:30:54 PM	SAMP,0.1>10mL
33	N027404-016D,SAMP,1000	12/11/2017 2:46:12 PM	SAMP,0.01>10mL
34	CCV-3,CCV,1	12/11/2017 3:01:30 PM	CCV
35	CCB-3,CCB,1	12/11/2017 3:16:48 PM	CCB
36	N027404-016D,SAMP,100	12/11/2017 3:32:05 PM	SAMP,0.1>10mL
37	N027404-017D,SAMP,2000	12/11/2017 3:47:23 PM	SAMP,0.005>10mL
38	N027404-017D,SAMP,100	12/11/2017 4:02:41 PM	SAMP,0.1>10mL
39	N027404-018C,SAMP,20	12/11/2017 4:17:59 PM	SAMP,0.5>10mL
40	N027404-020C,SAMP,2000	12/11/2017 4:33:17 PM	SAMP,0.005>10mL
41	N027404-020C,SAMP,200	12/11/2017 4:48:34 PM	SAMP,0.05>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 93
Created: 12/11/2017 8:29:57 AM by IC-05
Last Update: 12/11/2017 11:39:29 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027405-001D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
43	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
44	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
45	N027405-004C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
46	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
47	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
48	N027405-004CDUP,DUP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
49	N027405-004CMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
50	N027405-004CMSD,MSD,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
51	N027405-002E,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
52	N027405-002EMS,MS,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
53	N027405-014D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
54	N027405-014DMS,MS,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
55	N027405-003E,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
56	N027405-003E,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
57	N027405-002E,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
58	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
59	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
60	N027405-006D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
61	N027405-006D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
62	N027405-007D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
63	N027405-007D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
64	N027405-008D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
65	N027405-008D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
66	N027405-009D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
67	N027405-009D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
68	N027405-011D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
69	N027405-011D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
70	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
71	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
72	N027405-012D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
73	N027405-012D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
74	N027405-013D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
75	N027405-013D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
76	N027405-014D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
77	N027428-001B,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
78	N027428-001B,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
79	N027428-002B,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
80	N027428-002B,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
81	N027405-001D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
82	CCV-7,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 93
Created: 12/11/2017 8:29:57 AM by IC-05
Last Update: 12/11/2017 11:39:29 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027405-001D,SAMP,1	12/11/2017 5:03:52 PM	SAMP,10mL
43	LCS-2,LCS,1	12/11/2017 5:19:10 PM	LCS
44	MB-2,MBLK,1	12/11/2017 5:34:28 PM	METHOD BLANK
45	N027405-004C,SAMP,20	12/11/2017 5:49:46 PM	SAMP,0.5>10mL
46	CCV-4,CCV,1	12/11/2017 6:05:04 PM	CCV
47	CCB-4,CCB,1	12/11/2017 6:20:22 PM	CCB
48	N027405-004CDUP,DUP,20	12/11/2017 6:35:41 PM	DUP,0.5>10mL
49	N027405-004CMS,MS,20	12/11/2017 6:50:59 PM	MS,0.5>10mL
50	N027405-004CMSD,MSD,20	12/11/2017 7:06:17 PM	MSD,0.5>10mL
51	N027405-002E,SAMP,500	12/11/2017 7:21:35 PM	SAMP,0.02>10mL
52	N027405-002EMS,MS,500	12/11/2017 7:36:53 PM	MS,0.02>10mL
53	N027405-014D,SAMP,10	12/11/2017 7:52:11 PM	SAMP,1>10mL
54	N027405-014DMS,MS,10	12/11/2017 8:07:30 PM	MS,1>10mL
55	N027405-003E,SAMP,500	12/11/2017 8:22:48 PM	SAMP,0.02>10mL
56	N027405-003E,SAMP,100	12/11/2017 8:38:05 PM	SAMP,0.1>10mL
57	N027405-002E,SAMP,100	12/11/2017 8:53:23 PM	SAMP,0.1>10mL
58	CCV-5,CCV,1	12/11/2017 9:08:41 PM	CCV
59	CCB-5,CCB,1	12/11/2017 9:23:59 PM	CCB
60	N027405-006D,SAMP,2000	12/11/2017 9:39:17 PM	SAMP,0.005>10mL
61	N027405-006D,SAMP,100	12/11/2017 9:54:35 PM	SAMP,0.1>10mL
62	N027405-007D,SAMP,2000	12/11/2017 10:09:53 PM	SAMP,0.005>10mL
63	N027405-007D,SAMP,100	12/11/2017 10:25:11 PM	SAMP,0.1>10mL
64	N027405-008D,SAMP,2000	12/11/2017 10:40:29 PM	SAMP,0.005>10mL
65	N027405-008D,SAMP,100	12/11/2017 10:55:46 PM	SAMP,0.1>10mL
66	N027405-009D,SAMP,500	12/11/2017 11:11:04 PM	SAMP,0.02>10mL
67	N027405-009D,SAMP,50	12/11/2017 11:26:22 PM	SAMP,0.2>10mL
68	N027405-011D,SAMP,1000	12/11/2017 11:41:40 PM	SAMP,0.01>10mL
69	N027405-011D,SAMP,50	12/11/2017 11:56:58 PM	SAMP,0.2>10mL
70	CCV-6,CCV,1	12/12/2017 12:12:16 AM	CCV
71	CCB-6,CCB,1	12/12/2017 12:27:34 AM	CCB
72	N027405-012D,SAMP,1000	12/12/2017 12:42:52 AM	SAMP,0.01>10mL
73	N027405-012D,SAMP,50	12/12/2017 12:58:11 AM	SAMP,0.2>10mL
74	N027405-013D,SAMP,1000	12/12/2017 1:13:28 AM	SAMP,0.01>10mL
75	N027405-013D,SAMP,50	12/12/2017 1:28:47 AM	SAMP,0.2>10mL
76	N027405-014D,SAMP,50	12/12/2017 1:44:05 AM	SAMP,0.2>10mL
77	N027428-001B,SAMP,200	12/12/2017 1:59:23 AM	SAMP,0.05>10mL
78	N027428-001B,SAMP,50	12/12/2017 2:14:41 AM	SAMP,0.2>10mL
79	N027428-002B,SAMP,500	12/12/2017 2:29:59 AM	SAMP,0.02>10mL
80	N027428-002B,SAMP,50	12/12/2017 2:45:16 AM	SAMP,0.2>10mL
81	N027405-001D,SAMP,500	12/12/2017 3:00:34 AM	SAMP,0.02>10mL
82	CCV-7,CCV,1	12/12/2017 3:15:52 AM	CCV

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 93
Created: 12/11/2017 8:29:57 AM by IC-05
Last Update: 12/11/2017 11:39:29 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
83	CCB-7,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
84	N027405-001D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
85	N027397-001A,SAMP,5	Unknown	1000.0	Anions Default2	Anions_171129	Finished
86	N027397-002A,SAMP,5	Unknown	1000.0	Anions Default2	Anions_171129	Finished
87	N027397-002AMS,MS,5	Unknown	1000.0	Anions Default2	Anions_171129	Finished
88	N027397-002AMSD,MSD,5	Unknown	1000.0	Anions Default2	Anions_171129	Finished
89	N027397-003A,SAMP,5	Unknown	1000.0	Anions Default2	Anions_171129	Finished
90	N027397-003ADUP,DUP,5	Unknown	1000.0	Anions Default2	Anions_171129	Finished
91	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
92	CCV-8,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
93	CCB-8,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 93
Created: 12/11/2017 8:29:57 AM by IC-05
Last Update: 12/11/2017 11:39:29 PM by IC-05

No.	Name	Inj. Date/Time	Comment
83	CCB-7,CCB,1	12/12/2017 3:31:10 AM	CCB
84	N027405-001D,SAMP,50	12/12/2017 3:46:27 AM	SAMP,0.2>10mL
85	N027397-001A,SAMP,5	12/12/2017 4:01:45 AM	SAMP,2>10mL
86	N027397-002A,SAMP,5	12/12/2017 4:24:03 AM	SAMP,2>10mL
87	N027397-002AMS,MS,5	12/12/2017 4:46:21 AM	MS,2>10mL
88	N027397-002AMSD,MSD,5	12/12/2017 5:08:40 AM	MSD,2>10mL
89	N027397-003A,SAMP,5	12/12/2017 5:30:58 AM	SAMP,2>10mL
90	N027397-003ADUP,DUP,5	12/12/2017 5:53:15 AM	DUP,2>10mL
91	BLANK,BLANK,1	12/12/2017 6:15:33 AM	BLANK
92	CCV-8,CCV,1	12/12/2017 6:30:51 AM	CCV
93	CCB-8,CCB,1	12/12/2017 6:46:09 AM	CCB

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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 80
Created: 12/12/2017 8:35:21 AM by IC-05
Last Update: 12/13/2017 1:26:07 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027482-001A,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027482-003A,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027482-002A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027482-004A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027482-001ADUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027482-003A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027482-004AMS,MS,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	N027482-004AMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	N027482-004A,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	N027482-004ADUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
26	N027482-004AMS,MS,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
27	N027482-004AMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
28	N027482-001A,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
29	N027482-002A,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
30	N027482-003A,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
31	N027482-002A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
32	N027482-004ADUP,DUP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
33	N027482-001A,SAMP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
34	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
35	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
36	N027405-001D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
37	N027429-007D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
38	N027429-012D,SAMP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
39	N027429-007DMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
40	N027429-007DMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
41	N027429-012DMS,MS,2	Unknown	1000.0	Anions Default	Anions_171129	Finished

rba 12/17/2017

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 80
Created: 12/12/2017 8:35:21 AM by IC-05
Last Update: 12/13/2017 1:26:07 AM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	BLANK,BLANK,1	12/12/2017 8:36:15 AM	BLANK
10	CCV-1,CCV,1	12/12/2017 8:51:34 AM	CCV
11	CCB-1,CCB,1	12/12/2017 9:06:51 AM	CCB
12	MB-H2O,MBLK,1	12/12/2017 9:22:09 AM	METHOD BLANK
13	LCS-H2O,LCS,1	12/12/2017 9:37:27 AM	LCS
14	N027482-001A,SAMP,1	12/12/2017 10:04:10 AM	SAMP,10mL
15	N027482-003A,SAMP,1	12/12/2017 10:19:28 AM	SAMP,10mL
16	N027482-002A,SAMP,5	12/12/2017 10:34:46 AM	SAMP,2>10mL
17	N027482-004A,SAMP,5	12/12/2017 10:50:04 AM	SAMP,2>10mL
18	N027482-001ADUP,DUP,1	12/12/2017 11:05:22 AM	DUP,10mL
19	N027482-003A,SAMP,5	12/12/2017 11:20:40 AM	SAMP,2>10mL
20	N027482-004AMS,MS,5	12/12/2017 11:35:58 AM	MS,2>10mL
21	N027482-004AMSD,MSD,5	12/12/2017 11:51:16 AM	MSD,2>10mL
22	CCV-2,CCV,1	12/12/2017 12:06:33 PM	CCV
23	CCB-2,CCB,1	12/12/2017 12:21:52 PM	CCB
24	N027482-004A,SAMP,50	12/12/2017 12:37:11 PM	SAMP,0.2>10mL
25	N027482-004ADUP,DUP,50	12/12/2017 12:52:29 PM	DUP,0.2>10mL
26	N027482-004AMS,MS,50	12/12/2017 1:07:47 PM	MS,0.2>10mL
27	N027482-004AMSD,MSD,50	12/12/2017 1:23:05 PM	MSD,0.2>10mL
28	N027482-001A,SAMP,50	12/12/2017 1:38:23 PM	SAMP,0.2>10mL
29	N027482-002A,SAMP,100	12/12/2017 2:06:39 PM	SAMP,0.5>10mL
30	N027482-003A,SAMP,100	12/12/2017 2:21:58 PM	SAMP,0.1>10mL
31	N027482-002A,SAMP,5	12/12/2017 2:37:15 PM	SAMP,2>10mL
32	N027482-004ADUP,DUP,5	12/12/2017 2:52:33 PM	DUP,2>10mL
33	N027482-001A,SAMP,2	12/12/2017 3:07:51 PM	SAMP,5>10mL
34	CCV-3,CCV,1	12/12/2017 3:23:10 PM	CCV
35	CCB-3,CCB,1	12/12/2017 3:38:27 PM	CCB
36	N027405-001D,SAMP,1	12/12/2017 3:53:45 PM	SAMP,10mL
37	N027429-007D,SAMP,1	12/12/2017 4:09:03 PM	SAMP,10mL
38	N027429-012D,SAMP,2	12/12/2017 4:24:21 PM	SAMP,5>10mL
39	N027429-007DMS,MS,1	12/12/2017 4:45:44 PM	SAMP,0.5>10mL
40	N027429-007DMSD,MSD,1	12/12/2017 5:01:02 PM	SAMP,0.005>10mL
41	N027429-012DMS,MS,2	12/12/2017 5:16:20 PM	SAMP,0.05>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 80
Created: 12/12/2017 8:35:21 AM by IC-05
Last Update: 12/13/2017 1:26:07 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027429-007DDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
43	N027429-008D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
44	N027429-005D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
45	N027429-006D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
46	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
47	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
48	N027429-009D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
49	N027429-010D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
50	N027429-013D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
51	N027429-014D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
52	N027429-015D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
53	N027429-016D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
54	N027429-017D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
55	N027429-018D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
56	N027429-020D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
57	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
58	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
59	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
60	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
61	N027430-006C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
62	N027430-006CDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
63	N027430-006CMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
64	N027430-006CMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
65	N027430-004C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
66	N027430-004CMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
67	N027430-012C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
68	N027430-002C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
69	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
70	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
71	N027430-008C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
72	N027430-013C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
73	N027430-014C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
74	N027430-016C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
75	N027430-017C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
76	N027430-015C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
77	N027430-018C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
78	N027430-020C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
79	CCV-7,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
80	CCB-7,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 80
Created: 12/12/2017 8:35:21 AM by IC-05
Last Update: 12/13/2017 1:26:07 AM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027429-007DDUP,DUP,1	12/12/2017 5:31:38 PM	DUP,10mL
43	N027429-008D,SAMP,1	12/12/2017 5:46:56 PM	SAMP,10mL
44	N027429-005D,SAMP,5	12/12/2017 6:02:14 PM	SAMP,2>10mL
45	N027429-006D,SAMP,5	12/12/2017 6:17:32 PM	SAMP,2>10mL
46	CCV-4,CCV,1	12/12/2017 6:32:50 PM	CCV
47	CCB-4,CCB,1	12/12/2017 6:48:08 PM	CCB
48	N027429-009D,SAMP,5	12/12/2017 7:03:25 PM	SAMP,2>10mL
49	N027429-010D,SAMP,10	12/12/2017 7:18:43 PM	SAMP,1>10mL
50	N027429-013D,SAMP,5	12/12/2017 7:34:01 PM	SAMP,2>10mL
51	N027429-014D,SAMP,5	12/12/2017 7:49:19 PM	SAMP,2>10mL
52	N027429-015D,SAMP,5	12/12/2017 8:04:37 PM	SAMP,2>10mL
53	N027429-016D,SAMP,5	12/12/2017 8:19:55 PM	SAMP,2>10mL
54	N027429-017D,SAMP,5	12/12/2017 8:35:12 PM	SAMP,2>10mL
55	N027429-018D,SAMP,5	12/12/2017 8:50:31 PM	SAMP,2>10mL
56	N027429-020D,SAMP,5	12/12/2017 9:05:49 PM	SAMP,2>10mL
57	CCV-5,CCV,1	12/12/2017 9:21:06 PM	CCV
58	CCB-5,CCB,1	12/12/2017 9:36:24 PM	CCB
59	LCS-2,LCS,1	12/12/2017 9:51:42 PM	LCS
60	MB-2,MBLK,1	12/12/2017 10:07:01 PM	METHOD BLANK
61	N027430-006C,SAMP,1	12/12/2017 10:22:19 PM	SAMP,10mL
62	N027430-006CDUP,DUP,1	12/12/2017 10:37:37 PM	DUP,10mL
63	N027430-006CMS,MS,1	12/12/2017 10:52:55 PM	MS,10mL
64	N027430-006CMSD,MSD,1	12/12/2017 11:08:12 PM	MSD,10mL
65	N027430-004C,SAMP,1	12/12/2017 11:23:31 PM	SAMP,10mL
66	N027430-004CMS,MS,1	12/12/2017 11:38:48 PM	MS,10mL
67	N027430-012C,SAMP,1	12/12/2017 11:54:06 PM	SAMP,10mL
68	N027430-002C,SAMP,5	12/13/2017 12:09:24 AM	SAMP,2>10mL
69	CCV-6,CCV,1	12/13/2017 12:24:42 AM	CCV
70	CCB-6,CCB,1	12/13/2017 12:40:00 AM	CCB
71	N027430-008C,SAMP,5	12/13/2017 12:55:18 AM	SAMP,2>10mL
72	N027430-013C,SAMP,5	12/13/2017 1:10:36 AM	SAMP,2>10mL
73	N027430-014C,SAMP,5	12/13/2017 1:25:54 AM	SAMP,2>10mL
74	N027430-016C,SAMP,1	12/13/2017 1:41:11 AM	SAMP,10mL
75	N027430-017C,SAMP,1	12/13/2017 1:56:29 AM	SAMP,10mL
76	N027430-015C,SAMP,5	12/13/2017 2:11:47 AM	SAMP,2>10mL
77	N027430-018C,SAMP,5	12/13/2017 2:27:05 AM	SAMP,2>10mL
78	N027430-020C,SAMP,5	12/13/2017 2:42:23 AM	SAMP,2>10mL
79	CCV-7,CCV,1	12/13/2017 2:57:41 AM	CCV
80	CCB-7,CCB,1	12/13/2017 3:12:58 AM	CCB

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INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0709	0.1410	0.2824	0.7275	1.5389	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.



12/21/2017

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Bromide	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.05	0.25	0.5	1.25	2.5	R^2
Area,mAU*min	0.0000	0.0033	0.0139	0.0287	0.0714	0.1448	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814D

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RLB 12/21/2017

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0532	0.2181	0.4423	1.1375	2.3683	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 12/21/2017

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120734**
Client ID: **ICV**	Batch ID: **R120734**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2860279**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.235	0.50	1.250	0	98.8	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120734**
Client ID: **CCV**	Batch ID: **R120734**	TestNo: **EPA 300.0**		Analysis Date: **12/9/2017**	SeqNo: **2860317**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.272	0.50	1.250	0	102	90	110				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120734**
Client ID: **CCV**	Batch ID: **R120734**	TestNo: **EPA 300.0**		Analysis Date: **12/9/2017**	SeqNo: **2860329**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.261	0.50	1.250	0	101	90	110				

Sample ID **CCV-8**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120734**
Client ID: **CCV**	Batch ID: **R120734**	TestNo: **EPA 300.0**		Analysis Date: **12/9/2017**	SeqNo: **2860338**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.257	0.50	1.250	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **ICV**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2862140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.235	0.50	1.250	0	98.8	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCV**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.276	0.50	1.250	0	102	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCV**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862146**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.272	0.50	1.250	0	102	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCV**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.274	0.50	1.250	0	102	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCV**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862160**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.267	0.50	1.250	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCV**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862171**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.263	0.50	1.250	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **ICV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2861491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.042	0.50	2.000	0	102	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.984	0.50	2.000	0	99.2	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.985	0.50	2.000	0	99.3	90	110				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.989	0.50	2.000	0	99.5	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861537**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.982	0.50	2.000	0	99.1	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861545**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.989	0.50	2.000	0	99.4	90	110				

Sample ID **CCV-8**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.991	0.50	2.000	0	99.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **ICV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2861555**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.936	0.50	4.000	0	98.4	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.857	0.50	4.000	0	96.4	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861586**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.884	0.50	4.000	0	97.1	90	110				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861595**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.855	0.50	4.000	0	96.4	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.922	0.50	4.000	0	98.1	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861608**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.852	0.50	4.000	0	96.3	90	110				

Sample ID **CCV-8**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.900	0.50	4.000	0	97.5	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	**ICB**	SampType:	**ICB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**120734**
Client ID:	**ICB**	Batch ID:	**R120734**	TestNo:	**EPA 300.0**			Analysis Date:	**11/29/2017**	SeqNo:	**2860280**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-6**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**120734**
Client ID:	**CCB**	Batch ID:	**R120734**	TestNo:	**EPA 300.0**			Analysis Date:	**12/9/2017**	SeqNo:	**2860318**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-7**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**120734**
Client ID:	**CCB**	Batch ID:	**R120734**	TestNo:	**EPA 300.0**			Analysis Date:	**12/9/2017**	SeqNo:	**2860330**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-8**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**120734**
Client ID:	**CCB**	Batch ID:	**R120734**	TestNo:	**EPA 300.0**			Analysis Date:	**12/9/2017**	SeqNo:	**2860339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **ICB**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2862141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCB**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCB**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862147**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCB**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCB**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCB**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862172**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **ICB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2861492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861531**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861538**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861546**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861554**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **ICB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2861556**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861578**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861587**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861596**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861603**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861609**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/8/2017

Sample Name	Retention Time		Evaluation
CCV-6	Bromide	4.890	
CCV-7	Bromide	4.894	
CCV-8	Bromide	4.890	
Average		4.891	
Applied RT Window		4.691 - 5.091	
LCS-R120734_BR	Bromide	4.890	PASS
MB-R120734_BR	Bromide	N.A.	N.A.
N027405-004C	Bromide	N.A.	N.A.
N027405-004CMS	Bromide	4.887	PASS
N027405-004CMSD	Bromide	4.890	PASS
N027405-014D	Bromide	4.867	PASS
N027405-014DMS	Bromide	4.887	PASS
N027405-012D	Bromide	N.A.	N.A.
N027405-012DDUP	Bromide	N.A.	N.A.
N027405-002E	Bromide	N.A.	N.A.
N027405-003E	Bromide	N.A.	N.A.
N027405-006D	Bromide	N.A.	N.A.
N027405-007D	Bromide	N.A.	N.A.
N027405-008D	Bromide	N.A.	N.A.
N027405-009D	Bromide	N.A.	N.A.
N027405-011D	Bromide	N.A.	N.A.
N027405-013D	Bromide	N.A.	N.A.

rba 12/20/2017

12/21/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/12/2017

Sample Name		Retention Time	Evaluation
CCV-1	Bromide	4.884	
CCV-2	Bromide	4.887	
CCV-3	Bromide	4.887	
CCV-4	Bromide	4.884	
CCV-5	Bromide	4.884	
	Average	4.885	
	Applied RT Window	4.685 - 5.085	
MB-R120770_BR	Bromide	N.A.	N.A.
LCS-R120770_BR	Bromide	4.884	PASS
N027405-001D	Bromide	N.A.	N.A.
N027429-007DMS	Bromide	4.880	PASS
N027429-007DMSD	Bromide	4.880	PASS
N027429-012DMS	Bromide	4.880	PASS
N027429-007DDUP	Bromide	N.A.	N.A.

rba 12/20/2017

12/21/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name		Retention Time	Evaluation
CCV-3	Chloride	3.794	
CCV-4	Chloride	3.790	
CCV-5	Chloride	3.790	
CCV-6	Chloride	3.787	
CCV-7	Chloride	3.773	
CCV-8	Chloride	3.790	
	Average	3.787	
	Applied RT Window	3.587 - 3.987	
LCS-RR120764_CL	Chloride	3.790	PASS
MB-R120764_CL	Chloride	N.A.	N.A.
N027405-004C	Chloride	3.790	PASS
N027405-004CDUP	Chloride	3.790	PASS
N027405-004CMS	Chloride	3.790	PASS
N027405-004CMSD	Chloride	3.794	PASS
N027405-002E	Chloride	3.790	PASS
N027405-002EMS	Chloride	3.794	PASS
N027405-003E	Chloride	3.793	PASS
N027405-006D	Chloride	3.790	PASS
N027405-007D	Chloride	3.790	PASS
N027405-008D	Chloride	3.790	PASS
N027405-009D	Chloride	3.793	PASS
N027405-011D	Chloride	3.790	PASS
N027405-012D	Chloride	3.787	PASS
N027405-013D	Chloride	3.774	PASS
N027405-014D	Chloride	3.774	PASS
N027405-001D	Chloride	3.773	PASS

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12/21/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name		Retention Time	Evaluation
CCV-3	Sulfate	7.577	
CCV-4	Sulfate	7.563	
CCV-5	Sulfate	7.564	
CCV-6	Sulfate	7.557	
CCV-7	Sulfate	7.520	
CCV-8	Sulfate	7.557	
	Average	7.556	
	Applied RT Window	7.356 - 7.756	
LCS-R120764_SO4	Sulfate	7.577	PASS
MB-R120764_SO4	Sulfate	N.A.	N.A.
N027405-004C	Sulfate	7.563	PASS
N027405-004CDUP	Sulfate	7.564	PASS
N027405-004CMS	Sulfate	7.563	PASS
N027405-004CMSD	Sulfate	7.567	PASS
N027405-014D	Sulfate	7.563	PASS
N027405-014DMS	Sulfate	7.570	PASS
N027405-003E	Sulfate	7.563	PASS
N027405-002E	Sulfate	7.563	PASS
N027405-006D	Sulfate	7.560	PASS
N027405-007D	Sulfate	7.560	PASS
N027405-008D	Sulfate	7.557	PASS
N027405-009D	Sulfate	7.557	PASS
N027405-011D	Sulfate	7.560	PASS
N027405-012D	Sulfate	7.547	PASS
N027405-013D	Sulfate	7.527	PASS
N027405-001D	Sulfate	7.524	PASS

rba 12/20/2017

12/21/2017

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 5/23/2017 ; 5/24/2017; 5/25/2017
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Datafile	170523A D36	170523A D37	170523A D38	170524A D17	170524A D18	170525A D45	170525A D46					
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**MDL**	**LOD**	**PQL**
Fluoride	0.020	0.022	0.021	0.020	0.023	0.026	0.024	0.020	0.0021	**0.0065**	0.020	0.10
Chloride	0.133	0.136	0.136	0.133	0.141	0.133	0.136	0.025	0.0029	**0.0091**	0.020	0.50
Nitrite	0.030	0.028	0.027	0.028	0.028	0.027	0.027	0.020	0.0010	**0.0030**	0.010	0.05
Bromide	0.037	0.042	0.043	0.038	0.040	0.032	0.025	0.040	0.0062	**0.0196**	0.040	0.20
Nitrate	0.035	0.034	0.033	0.033	0.033	0.031	0.030	0.020	0.0016	**0.0050**	0.010	0.05
Phosphate	0.047	0.051	0.049	0.046	0.052	0.047	0.059	0.040	0.0043	**0.0135**	0.030	0.10
Sulfate	0.213	0.199	0.208	0.216	0.199	0.201	0.198	0.050	0.0073	**0.0229**	0.050	0.50

MDL/LOD & PQL Verification 2017

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)** Matrix: **WATER**
Method Number: EPA Method 300.0 Unit: mg/L
Analysis Date(s): 5/26/2017
Analyst: Ria Abes

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0065**	0.020	0.024	0.10	0.0906	**91**
Chloride	**0.0091**	0.020	0.130	0.50	0.5635	**113**
Nitrite	**0.0030**	0.010	0.023	0.05	0.0581	**116**
Bromide	**0.0196**	0.040	0.048	0.20	0.194	**97**
Nitrate	**0.0050**	0.010	0.023	0.05	0.0599	**120**
Phosphate	**0.0135**	0.030	0.043	0.10	0.1111	**111**
Sulfate	**0.0229**	0.050	0.195	0.50	0.6178	**124**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120949 **Analyst:** QBM

ASSET #: N027405, N027428, N027429 **Date Analyzed:** 12/19/2017

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 12/21/2017

2nd Level Reviewer RLB 12/21/2017 Date:

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120963 **Analyst:** QBM

ASSET #: N027405, N027428, N027429 **Date Analyzed:** 12/20/2017

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented		X			X	
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

RPD of Nitrate/Nitrite as N in N027405-006CDUP @1x failed. possibly due to sample matrix.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 12/21/2017

2nd Level Reviewer RJB 12/21/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N027405-013C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.5454	*	5
	=	2.727	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N	**=**	**2.7**	**mg/L**

RLB 12/21/2017

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

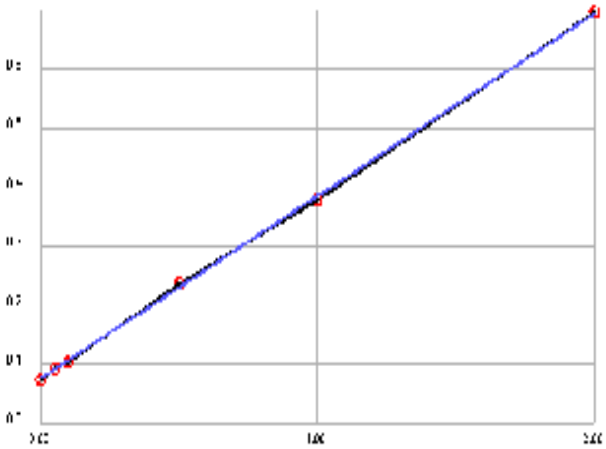
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.3095x + 0.0753
Correlation	.999797

Calibrant	Energy	Set	Conc
1	0.0745	0.0000	-0.0026
2	0.0927	0.0500	0.0562
3	0.1042	0.1000	0.0934
4	0.2365	0.5000	0.5208
5	0.3769	1.0000	0.9745
6	0.6967	2.0000	2.0077

Notes:

12/21/2017

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

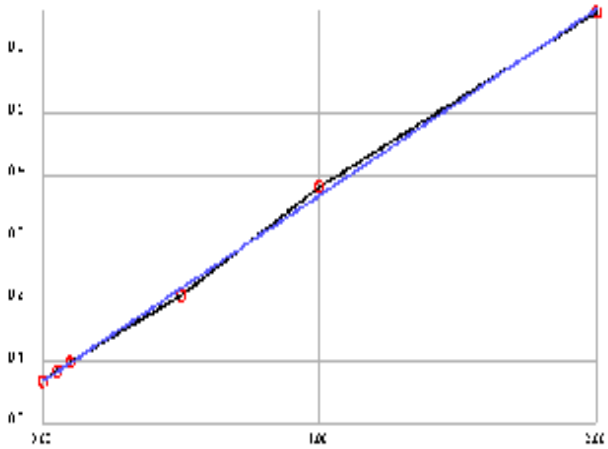
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2996x + 0.0679
Correlation	.999415

Calibrant	Energy	Set	Conc
1	0.0674	0.0000	-0.0018
2	0.0838	0.0500	0.0529
3	0.0988	0.1000	0.1030
4	0.2071	0.5000	0.4645
5	0.3812	1.0000	1.0456
6	0.6629	2.0000	1.9859

Notes:

12/21/2017

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **ICV**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.484	0.050	0.5000	0	96.8	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCV**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.461	0.050	0.5000	0	92.1	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCV**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.475	0.050	0.5000	0	95.1	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCV**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.471	0.050	0.5000	0	94.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **ICV**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873450**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.507	0.050	0.5000	0	101	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **CCV**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873461**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.493	0.050	0.5000	0	98.6	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **CCV**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.498	0.050	0.5000	0	99.5	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **CCV**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.511	0.050	0.5000	0	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **ICB**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCB**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873088**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCB**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCB**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **ICB**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **CCB**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **CCB**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

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702-307-2691
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Time start: 12-19-2017 16:35
Time end: 12-19-2017 19:38

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	18:55:00	0.0016		0.0758
2	<BLANK>	18:55:53	0.0035		0.0764
3	<CAL1>	18:56:55	-0.0026	[0]	0.0745
4	<CAL2>	18:57:50	0.0562	[0.05]	0.0927
5	<CAL3>	18:58:52	0.0934	[0.1]	0.1042
6	<CAL4>	18:59:46	0.5208	[0.5]	0.2365
7	<CAL5>	19:00:41	0.9745	[1]	0.3769
8	<CAL6>	19:01:37	2.0077	[2]	0.6967
9	,BLANK,BLANK,1, NOT REPORTED	19:02:37	0.0336		0.0857
10	,ICV,ICV,1,	19:03:32	0.4840		0.2251
11	,ICB,ICB,1,	19:04:34	0.0087		0.0780
12	,MB-H2O,MBLK,1,	19:05:29	-0.0007		0.0751
13	,LCS-H2O,LCS,1,	19:06:23	0.4911		0.2273
14	,N027405-009C,SAMP,10,	19:07:25	0.4488		0.2142
15	,N027405-009CMS,MS,10,	19:08:21	0.9451		0.3678
16	,N027405-009CMSD,MSD,10,	19:09:15	0.9018		0.3544
17	,N027405-012C,SAMP,5,	19:10:17	0.8045		0.3243
18	,N027405-012CDUP,DUP,5,	19:11:12	0.6940		0.2901
19	,N027405-011C,SAMP,1, NOT REPORTED	19:12:08	0.2588		0.1554
20	,N027405-013C,SAMP,5,	19:13:08	0.5454		0.2441
21	,BLANK, NOT REPORTED	19:14:04	0.0032		0.0763
22	,CCV-1,CCV,1,	19:14:59	0.4607		0.2179
23	,CCB-1,CCB,1,	19:15:59	-0.0029		0.0744
24	,N027405-002D,SAMP,1, NOT REPORTED	19:16:55	0.1451		0.1202
25	,N027405-003D,SAMP,1,	19:17:56	0.3764		0.1918
26	,N027405-006C,SAMP,1,	19:18:52	0.5486		0.2451

RB 12/21/2017

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N027405-007C,SAMP,1, NOT REPORTED	19:19:46	0.1980		0.1366
28	,N027405-008C,SAMP,1,	19:20:47	0.2594		0.1556
29	,N027405-014C,SAMP,1,	19:21:43	0.1066		0.1083
30	,N027429-001C,SAMP,1,	19:22:31	0.0333		0.0856
31	,N027429-002C,SAMP,1,	19:23:14	0.0281		0.0840
32	,N027428-002C,SAMP,5,	19:24:04	0.5615		0.2491
33	,CCV-2,CCV,1, NOT REPORTED	19:24:46	0.4543		0.2159
34	,CCV-2,CCV,1,	19:25:29	0.4753		0.2224
35	,CCB-2,CCB,1,	19:26:17	-0.0084		0.0727
36	,N027429-003C,SAMP,2, NOT REPORTED	19:27:00	0.8307		0.3324
37	,N027429-005C,SAMP,1,	19:27:48	0.0413		0.0881
38	,N027429-006C,SAMP,1,	19:28:32	0.0504		0.0909
39	,N027406-001A,SAMP,5,	19:29:14	0.5738		0.2529
40	,N027406-002A,SAMP,5,	19:30:03	0.7402		0.3044
41	,N027406-003A,SAMP,5,	19:30:47	0.6846		0.2872
42	,N027406-004A,SAMP,1,	19:31:29	0.0110		0.0787
43	,BLANK, NOT REPORTED	19:32:18	-0.0252		0.0675
44	,BLANK,	19:33:00	-0.0281		0.0666
45	,BLANK,	19:33:43	-0.0259		0.0673
46	,CCV-3,CCV,1,	19:34:31	0.4333		0.2094
47	,CCV-3,CCV,1,	19:35:15	0.4714		0.2212
48	,CCB-3,CCB,1,	19:35:58	-0.0133		0.0712

RLB 12/21/2017

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 12/19/2017
Time Analyzed:4:31 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171201B
Color reagent: R171201C
2% Copper Sulfate: R171201D
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027405-002D		8.40							
N027405-003D		8.48							
N027405-006C		8.49							
N027405-007C		8.65							
N027405-008C		8.42							
N027405-009C		8.15							
N027405-011C		8.09							
N027405-012C		8.33							
N027405-013C		8.16							
N027405-014C		6.64							
N027406-001A		7.59							
N027406-002A		8.68							
N027406-003A		8.40							
N027406-004A		7.92							
N027428-002C		8.38							
N027429-001C		6.91							
N027429-002C		8.13							
N027429-003C		6.9							
N027429-005C		8.33							
N027429-006C		8.17							

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RLB 12/21/2017

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Time start: 12-20-2017 15:49
Time end: 12-20-2017 17:58

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	17:30:12	-0.0045		0.0666
2	<BLANK>	17:31:07	0.0008		0.0682
3	<CAL1>	17:32:07	-0.0018	[0]	0.0674
4	<CAL2>	17:33:02	0.0529	[0.05]	0.0838
5	<CAL3>	17:34:03	0.1030	[0.1]	0.0988
6	<CAL4>	17:34:59	0.4645	[0.5]	0.2071
7	<CAL5>	17:35:53	1.0456	[1]	0.3812
8	<CAL6>	17:36:54	1.9859	[2]	0.6629
9	,BLANK,BLANK,1, NOT REPORTED	17:37:49	0.0436		0.0810
10	,ICV,ICV,1,	17:38:51	0.5065		0.2197
11	,ICB,ICB,1,	17:39:45	0.0085		0.0705
12	,MB-H2O,MBLK,1,	17:40:40	0.0062		0.0698
13	,LCS-H2O,LCS,1,	17:41:35	0.4815		0.2122
14	,N027429-003C,SAMP,2,	17:42:36	0.8283		0.3161
15	,N027429-003CMS,MS,2,	17:43:19	1.3186		0.4630
16	,N027429-003CMSD,MSD,2,	17:44:08	1.3323		0.4671
17	,N027405-006C,SAMP,1,	17:44:57	0.1567		0.1149
18	,N027405-006CDUP,DUP,1,	17:45:40	0.1240		0.1051
19	,N027405-002D,SAMP,1,	17:46:22	0.0242		0.0752
20	,N027405-003D,SAMP,1,	17:47:11	0.0175		0.0732
21	,BLANK, NOT REPORTED	17:47:53	0.0008		0.0682
22	,CCV-1,CCV,1,	17:48:36	0.4928		0.2156
23	,CCB-1,CCB,1,	17:49:25	0.0012		0.0683
24	,N027405-007C,SAMP,1,	17:50:07	0.0202		0.0740
25	,N027405-008C,SAMP,1,	17:50:51	0.0623		0.0866
26	,N027405-011C,SAMP,1,	17:51:38	0.0038		0.0691

RLB 12/21/2017

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N027405-014C,SAMP,1,	17:52:22	0.0422		0.0806
28	,N027428-001C,SAMP,1,	17:53:10	0.0062		0.0698
29	,BLANK, NOT REPORTED	17:53:53	-0.0092		0.0652
30	,BLANK, NOT REPORTED	17:54:35	-0.0148		0.0635
31	,CCV-2,CCV,1, NOT REPORTED	17:55:24	0.4975		0.2170
32	,CCV-2,CCV,1,	17:56:08	0.5105		0.2209
33	,CCB-2,CCB,1,	17:56:49	-0.0022		0.0673

12/21/2017

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 12/20/2017
Time Analyzed:3:45 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171220B
Color reagent: R171220C
2% Copper Sulfate: R171220A
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027405-002D		7.77							
N027405-003D		8.35							
N027405-006C		8.46							
N027405-007C		8.09							
N027405-008C		7.87							
N027405-011C		7.65							
N027405-014C		8.24							
N027428-001C		8.19							
N027429-003C		8.26							

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Book # 1

RB 12/21/2017

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65964
ASSET #: N027405

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/16/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.		X				
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.		X				
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

Ca in N027405-012B & 013B is over linear range. For dilution.
Dilution test failed for Ca & Mg.
%Rec of Ca in N027405-001C PS/MS/MSD failed. However LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/21/17
2nd Level Reviewer 12/21/2017 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65964
ASSET #: N027405

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/18/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Na run only.
%Rec of N027405-002C PS/MS failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/21/17

2nd Level Reviewer 12/21/2017 Date: _____

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65964
ASSET #: N027405

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/18/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .			X			
24. LCS compounds within control limits.			X			
25. MS/MSD, RPD's are within control limits			X			
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For dilution of Ca in N027405-012B & 013B only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/21/17

2nd Level Reviewer 12/21/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calcium

Calculate the ~~Boron~~ concentration, in ug/L , in the original sample as follows:

~~Boron~~ , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N027405-001C** , the concentration ir ug/L is calculated as follows:

~~Boron~~ , ug/L = 107.678 * 1 * (25/25) * 1000

~~Boron~~ , ug/L = 107678

Reporting results in two significant figures,

Calcium

~~Boron~~ , ug/L = 110000

12/21/2017

% RSD SUMMARY

RSD SUMMARY: 171216A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	B	0	0.27	15	PASS
Standard1	ICAL	1	B	0.1	0.88	15	PASS
Standard3	ICAL	1	B	1	0.78	15	PASS
Standard4	ICAL	1	B	2.5	0.7	15	PASS
Standard5	ICAL	1	B	3.75	1	15	PASS
Standard6	ICAL	1	B	5	0.62	15	PASS
Standard7	ICAL	1	B	10	0.2	15	PASS
ICV	ICV	1	B	4.99	0.61	15	PASS
ICB	ICB	1	B	0.022	10.017	15	PASS
LLICV	CCV1	1	B	0.087	1.16	20	PASS
LLICV	CCV1	1	B	0.085	0.48	20	PASS
ICSA1	ICSA	1	B	0.085	1.72	15	PASS
ICSAB1	ICSAB	1	B	1.15	0.35	15	PASS
MB-65964	MBLK	1	B	0.014	10.95	15	PASS
LCS1-65964	MBLK	1	B	4.73	0.55	15	PASS
N027405-001C	SAMP	1	B	0.73	0.2	15	PASS
CCV1	CCV	1	B	4.9	0.63	15	PASS
CCB1	CCB	1	B	0.025	11.8	15	PASS
N027405-001C	SAMP	5	B	0.17	0.68	15	PASS
N027405-001C-PS	PS	1	B	5.46	0.64	15	PASS
N027405-001C-MS1	MS	1	B	5.42	0.51	15	PASS
N027405-001C-MSD1	MSD	1	B	5.45	0.28	15	PASS
N027405-002C	SAMP	1	B	1.029	0.3	15	PASS
N027405-003C	SAMP	1	B	1.019	0.3	15	PASS
N027405-004B	SAMP	1	B	0.18	1.036	15	PASS
N027405-006B	SAMP	1	B	2.23	0.84	15	PASS
N027405-007B	SAMP	1	B	2.15	0.44	15	PASS
N027405-008B	SAMP	1	B	2.26	0.56	15	PASS
CCV2	CCV	1	B	4.73	0.53	15	PASS
CCB2	CCB	1	B	0.022	10.14	15	PASS
N027405-009B	SAMP	1	B	0.69	0.15	15	PASS
N027405-011B	SAMP	1	B	1.51	0.38	15	PASS
N027405-012B	SAMP	1	B	0.67	0.22	15	PASS
N027405-013B	SAMP	1	B	1.014	0.58	15	PASS
N027405-014B	SAMP	1	B	0.14	0.14	15	PASS
N027429-001B	SAMP	1	B	0.82	0.89	15	PASS
N027429-002B	SAMP	1	B	0.82	0.87	15	PASS
N027429-003B	SAMP	1	B	2.0095	0.38	15	PASS
N027429-005B	SAMP	1	B	1.94	0.5	15	PASS
N027429-006B	SAMP	1	B	1.99	0.47	15	PASS
CCV3	CCV	1	B	4.2	0.67	15	PASS
CCB3	CCB	1	B	-0.014	13.53	15	PASS

RSD SUMMARY: 171216A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027429-007B	SAMP	1	B	0.66	0.5	15	PASS
CCV3	CCV	1	B	4.88	0.066	15	PASS
CCB3	CCB	1	B	0.031	6.73	15	PASS
N027429-007B	SAMP	1	B	0.77	0.3	15	PASS
N027429-008B	SAMP	1	B	0.76	0.22	15	PASS
N027429-009B	SAMP	1	B	2.031	0.55	15	PASS
CCV4	CCV	1	B	4.66	0.4	15	PASS
CCB4	CCB	1	B	0.021	10.54	15	PASS
LLCCV1	CCV2	1	B	0.08	0.92	20	PASS
ICSA2	ICSA	1	B	0.079	1.44	15	PASS
ICSAB2	ICSAB	1	B	1.098	0.22	15	PASS
CalBlk	IBLK	1	Ca	0	6.1	15	PASS
Standard1	ICAL	1	Ca	0.2	8.39	15	PASS
Standard2	ICAL	1	Ca	1	1.79	15	PASS
Standard3	ICAL	1	Ca	2	1.72	15	PASS
Standard4	ICAL	1	Ca	5	0.54	15	PASS
Standard5	ICAL	1	Ca	7.5	0.5	15	PASS
Standard6	ICAL	1	Ca	10	0.088	15	PASS
Standard7	ICAL	1	Ca	20	0.62	15	PASS
ICV	ICV	1	Ca	10.12	0.32	15	PASS
ICB	ICB	1	Ca	-0.021	111.95	15	<PQL
LLICV	CCV1	1	Ca	0.16	13.69	20	PASS
LLICV	CCV1	1	Ca	0.17	7.28	20	PASS
ICSA1	ICSA	1	Ca	485.56	0.12	15	PASS
ICSAB1	ICSAB	1	Ca	543.03	0.15	15	PASS
MB-65964	MBLK	1	Ca	-0.019	28.16	15	<PQL
LCS1-65964	MBLK	1	Ca	9.71	0.25	15	PASS
N027405-001C	SAMP	1	Ca	107.68	0.22	15	PASS
CCV1	CCV	1	Ca	10.05	0.23	15	PASS
CCB1	CCB	1	Ca	0.029	25.71	15	<PQL
N027405-001C	SAMP	5	Ca	24.065	0.47	15	PASS
N027405-001C-PS	PS	1	Ca	115.25	0.4	15	PASS
N027405-001C-MS1	MS	1	Ca	121.41	0.13	15	PASS
N027405-001C-MSD1	MSD	1	Ca	121.65	0.22	15	PASS
N027405-002C	SAMP	1	Ca	160.17	0.1	15	PASS
N027405-003C	SAMP	1	Ca	160.39	0.23	15	PASS
N027405-004B	SAMP	1	Ca	77.97	0.37	15	PASS
N027405-006B	SAMP	1	Ca	271.98	0.32	15	PASS
N027405-007B	SAMP	1	Ca	289.43	0.21	15	PASS
N027405-008B	SAMP	1	Ca	281.88	0.068	15	PASS
CCV2	CCV	1	Ca	9.84	0.48	15	PASS
CCB2	CCB	1	Ca	0.019	61.8	15	<PQL

RSD SUMMARY: 171216A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027405-009B	SAMP	1	Ca	206.05	0.18	15	PASS
N027405-011B	SAMP	1	Ca	340.39	0.13	15	PASS
N027405-012B	SAMP	1	Ca	487.77	0.04	15	PASS
N027405-013B	SAMP	1	Ca	479.08	0.19	15	PASS
N027405-014B	SAMP	1	Ca	9.99	0.49	15	PASS
N027429-001B	SAMP	1	Ca	8.24	0.49	15	PASS
N027429-002B	SAMP	1	Ca	8.31	0.78	15	PASS
N027429-003B	SAMP	1	Ca	374.83	0.3	15	PASS
N027429-005B	SAMP	1	Ca	331.21	0.16	15	PASS
N027429-006B	SAMP	1	Ca	347.98	0.28	15	PASS
CCV3	CCV	1	Ca	8.92	0.55	15	PASS
CCB3	CCB	1	Ca	0.086	20.093	15	<PQL
N027429-007B	SAMP	1	Ca	22.62	0.33	15	PASS
CCV3	CCV	1	Ca	10.008	0.29	15	PASS
CCB3	CCB	1	Ca	0.021	76.48	15	<PQL
N027429-007B	SAMP	1	Ca	22.73	0.43	15	PASS
N027429-008B	SAMP	1	Ca	22.93	0.42	15	PASS
N027429-009B	SAMP	1	Ca	355.17	0.13	15	PASS
CCV4	CCV	1	Ca	9.75	0.17	15	PASS
CCB4	CCB	1	Ca	0.024	150.027	15	<PQL
LLCCV1	CCV2	1	Ca	0.14	18.87	20	PASS
ICSA2	ICSA	1	Ca	484.36	0.16	15	PASS
ICSAB2	ICSAB	1	Ca	540.94	0.16	15	PASS
CalBlk	IBLK	1	Fe	0	3.75	15	PASS
Standard1	ICAL	1	Fe	0.02	5.85	15	PASS
Standard2	ICAL	1	Fe	0.05	0.47	15	PASS
Standard3	ICAL	1	Fe	2	0.25	15	PASS
Standard4	ICAL	1	Fe	5	0.18	15	PASS
Standard5	ICAL	1	Fe	7.5	0.48	15	PASS
Standard6	ICAL	1	Fe	10	0.3	15	PASS
Standard7	ICAL	1	Fe	20	0.19	15	PASS
ICV	ICV	1	Fe	10.37	0.27	15	PASS
ICB	ICB	1	Fe	0.00088	26.7	15	<PQL
LLICV	CCV1	1	Fe	0.017	1.79	20	PASS
LLICV	CCV1	1	Fe	0.017	2.21	20	PASS
ICSA1	ICSA	1	Fe	167.44	0.67	15	PASS
ICSAB1	ICSAB	1	Fe	181.7	0.44	15	PASS
MB-65964	MBLK	1	Fe	0.00013	160.36	15	<PQL
LCS1-65964	MBLK	1	Fe	0.11	0.61	15	PASS
N027405-001C	SAMP	1	Fe	0.014	2.54	15	PASS
CCV1	CCV	1	Fe	10.26	0.32	15	PASS
CCB1	CCB	1	Fe	0.00075	63.032	15	<PQL

RSD SUMMARY: 171216A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027405-001C	SAMP	5	Fe	0.0021	37.3	15	<PQL
N027405-001C-PS	PS	1	Fe	0.13	0.65	15	PASS
N027405-001C-MS1	MS	1	Fe	0.11	0.88	15	PASS
N027405-001C-MSD1	MSD	1	Fe	0.11	0.76	15	PASS
N027405-002C	SAMP	1	Fe	0.14	0.056	15	PASS
N027405-003C	SAMP	1	Fe	0.14	0.37	15	PASS
N027405-004B	SAMP	1	Fe	0.024	1.67	15	PASS
N027405-006B	SAMP	1	Fe	0.012	2.022	15	PASS
N027405-007B	SAMP	1	Fe	0.039	0.79	15	PASS
N027405-008B	SAMP	1	Fe	0.034	1.33	15	PASS
CCV2	CCV	1	Fe	9.64	0.097	15	PASS
CCB2	CCB	1	Fe	0.0011	28.76	15	<PQL
N027405-009B	SAMP	1	Fe	0.017	3.0022	15	PASS
N027405-011B	SAMP	1	Fe	0.33	0.43	15	PASS
N027405-012B	SAMP	1	Fe	0.23	0.52	15	PASS
N027405-013B	SAMP	1	Fe	0.14	0.18	15	PASS
N027405-014B	SAMP	1	Fe	3.26	0.46	15	PASS
N027429-001B	SAMP	1	Fe	0.034	1.67	15	PASS
N027429-002B	SAMP	1	Fe	0.098	0.55	15	PASS
N027429-003B	SAMP	1	Fe	0.032	2.097	15	PASS
N027429-005B	SAMP	1	Fe	0.0082	0.34	15	PASS
N027429-006B	SAMP	1	Fe	0.013	4.93	15	PASS
CCV3	CCV	1	Fe	8.46	0.58	15	PASS
CCB3	CCB	1	Fe	0.0014	36.049	15	<PQL
N027429-007B	SAMP	1	Fe	0.015	3.57	15	PASS
CCV3	CCV	1	Fe	10.19	0.53	15	PASS
CCB3	CCB	1	Fe	0.0012	84.98	15	<PQL
N027429-007B	SAMP	1	Fe	0.015	2.92	15	PASS
N027429-008B	SAMP	1	Fe	0.011	1.032	15	PASS
N027429-009B	SAMP	1	Fe	0.017	2.23	15	PASS
CCV4	CCV	1	Fe	9.59	0.12	15	PASS
CCB4	CCB	1	Fe	0.00057	62.53	15	<PQL
LLCCV1	CCV2	1	Fe	0.017	3.28	20	PASS
ICSA2	ICSA	1	Fe	182.66	0.31	15	PASS
ICSAB2	ICSAB	1	Fe	179.86	0.21	15	PASS
CalBlk	IBLK	1	Mg	0	3.35	15	PASS
Standard1	ICAL	1	Mg	0.1	1.23	15	PASS
Standard2	ICAL	1	Mg	1	0.57	15	PASS
Standard3	ICAL	1	Mg	2	0.086	15	PASS
Standard4	ICAL	1	Mg	5	0.087	15	PASS
Standard5	ICAL	1	Mg	7.5	0.39	15	PASS
Standard6	ICAL	1	Mg	10	0.48	15	PASS

RSD SUMMARY: 171216A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard7	ICAL	1	Mg	20	0.32	15	PASS
ICV	ICV	1	Mg	10.34	0.26	15	PASS
ICB	ICB	1	Mg	0.00047	117.039	15	<PQL
LLICV	CCV1	1	Mg	0.081	1.13	20	PASS
LLICV	CCV1	1	Mg	0.081	0.6	20	PASS
ICSA1	ICSA	1	Mg	452.65	0.74	15	PASS
ICSAB1	ICSAB	1	Mg	508.46	0.5	15	PASS
MB-65964	MBLK	1	Mg	0.0037	15.81	15	<PQL
LCS1-65964	MBLK	1	Mg	9.64	0.13	15	PASS
N027405-001C	SAMP	1	Mg	18.85	0.25	15	PASS
CCV1	CCV	1	Mg	10.25	0.29	15	PASS
CCB1	CCB	1	Mg	0.00028	98.65	15	<PQL
N027405-001C	SAMP	5	Mg	4.34	0.41	15	PASS
N027405-001C-PS	PS	1	Mg	27.19	0.099	15	PASS
N027405-001C-MS1	MS	1	Mg	28.52	0.17	15	PASS
N027405-001C-MSD1	MSD	1	Mg	28.59	0.2	15	PASS
N027405-002C	SAMP	1	Mg	27.67	0.21	15	PASS
N027405-003C	SAMP	1	Mg	27.81	0.055	15	PASS
N027405-004B	SAMP	1	Mg	16.96	0.31	15	PASS
N027405-006B	SAMP	1	Mg	2.54	0.27	15	PASS
N027405-007B	SAMP	1	Mg	3.24	0.16	15	PASS
N027405-008B	SAMP	1	Mg	2.7	0.3	15	PASS
CCV2	CCV	1	Mg	9.55	0.13	15	PASS
CCB2	CCB	1	Mg	-0.00024	97.018	15	<PQL
N027405-009B	SAMP	1	Mg	24.13	0.24	15	PASS
N027405-011B	SAMP	1	Mg	14	0.048	15	PASS
N027405-012B	SAMP	1	Mg	21.37	0.054	15	PASS
N027405-013B	SAMP	1	Mg	27.58	0.24	15	PASS
N027405-014B	SAMP	1	Mg	1.37	0.53	15	PASS
N027429-001B	SAMP	1	Mg	0.71	0.63	15	PASS
N027429-002B	SAMP	1	Mg	0.73	0.18	15	PASS
N027429-003B	SAMP	1	Mg	6.16	0.23	15	PASS
N027429-005B	SAMP	1	Mg	4.37	0.11	15	PASS
N027429-006B	SAMP	1	Mg	4.32	0.14	15	PASS
CCV3	CCV	1	Mg	8.023	0.56	15	PASS
CCB3	CCB	1	Mg	-0.0058	1.6	15	PASS
N027429-007B	SAMP	1	Mg	3.77	0.23	15	PASS
CCV3	CCV	1	Mg	10.19	0.9	15	PASS
CCB3	CCB	1	Mg	-0.0013	30.34	15	<PQL
N027429-007B	SAMP	1	Mg	4.16	0.28	15	PASS
N027429-008B	SAMP	1	Mg	4.25	0.36	15	PASS
N027429-009B	SAMP	1	Mg	7.39	0.35	15	PASS

RSD SUMMARY: 171216A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV4	CCV	1	Mg	9.51	0.056	15	PASS
CCB4	CCB	1	Mg	-0.00048	52.69	15	<PQL
LLCCV1	CCV2	1	Mg	0.077	0.98	20	PASS
ICSA2	ICSA	1	Mg	438.27	0.17	15	PASS
ICSAB2	ICSAB	1	Mg	486.37	0.48	15	PASS

RSD SUMMARY: 171218B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	1.57	15	PASS
Standard1	ICAL	1	Na	0.1	0.58	15	PASS
Standard2	ICAL	1	Na	1	0.5	15	PASS
Standard3	ICAL	1	Na	5	0.24	15	PASS
Standard4	ICAL	1	Na	10	0.22	15	PASS
Standard5	ICAL	1	Na	20	0.21	15	PASS
Standard6	ICAL	1	Na	40	0.35	15	PASS
ICV	ICV	1	Na	9.97	0.14	15	PASS
ICB	ICB	1	Na	-0.021	27.4	15	<PQL
ICSA1	ICSA	1	Na	-0.024	16.045	15	<PQL
ICSAB1	ICSAB	1	Na	10.018	0.28	15	PASS
CCV1	CCV	1	Na	17.045	0.7	15	PASS
CCV1	CCV	1	Na	9.94	0.41	15	PASS
CCB1	CCB	1	Na	-0.075	7.87	15	PASS
CCV2	CCV	1	Na	9.94	0.24	15	PASS
CCB2	CCB	1	Na	-0.083	2.89	15	PASS
MB-65964	MBLK	1	Na	-0.092	4.34	15	PASS
LCS2-65964	LCS	1	Na	20.92	0.43	15	PASS
CCV3	CCV	1	Na	10.032	0.18	15	PASS
CCB3	CCB	1	Na	-0.096	2.13	15	PASS
N027405-001C	SAMP	10	Na	106.62	0.2	15	PASS
N027405-002C	SAMP	100	Na	15.54	0.21	15	PASS
N027405-002C	SAMP	500	Na	3.11	0.19	15	PASS
N027405-002C-PS	PS	100	Na	16.019	0.085	15	PASS
N027405-002C-MS2	MS	100	Na	16.045	0.19	15	PASS
N027405-002C-MSD2	MSD	100	Na	15.69	0.14	15	PASS
N027405-003C	SAMP	100	Na	15.58	0.098	15	PASS
N027405-004B	SAMP	10	Na	10.53	0.85	15	PASS
N027405-006B	SAMP	250	Na	13.38	0.25	15	PASS
N027405-007B	SAMP	250	Na	13.68	0.19	15	PASS
CCV4	CCV	1	Na	10.044	0.21	15	PASS
CCB4	CCB	1	Na	-0.12	2.76	15	PASS
ICSA2	ICSA	1	Na	-0.12	1.77	15	PASS
ICSAB2	ICSAB	1	Na	10.09	0.18	15	PASS
N027405-008B	SAMP	250	Na	13.9	0.28	15	PASS
N027405-009B	SAMP	100	Na	11.13	0.19	15	PASS
N027405-011B	SAMP	100	Na	25.61	0.097	15	PASS
N027405-012B	SAMP	100	Na	13.9	0.058	15	PASS
N027405-013B	SAMP	100	Na	20.78	0.062	15	PASS
N027405-014B	SAMP	10	Na	15.25	0.13	15	PASS
N027429-001B	SAMP	25	Na	13.41	0.031	15	PASS
N027429-002B	SAMP	25	Na	13.45	0.14	15	PASS

RSD SUMMARY: 171218B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027429-003B	SAMP	250	Na	17.069	0.15	15	PASS
N027429-005B	SAMP	250	Na	18.62	0.32	15	PASS
CCV5	CCV	1	Na	9.99	0.079	15	PASS
CCB5	CCB	1	Na	-0.12	3.12	15	PASS
N027429-006B	SAMP	250	Na	19.11	0.045	15	PASS
N027429-007B	SAMP	25	Na	12.3	0.07	15	PASS
N027429-008B	SAMP	25	Na	11.77	0.36	15	PASS
N027429-009B	SAMP	250	Na	13.76	0.13	15	PASS
N027405-001C	SAMP	100	Na	10.27	0.34	15	PASS
CCV6	CCV	1	Na	10.04	0.089	15	PASS
CCB6	CCB	1	Na	-0.12	2.26	15	PASS
CCV7	CCV	1	Na	10.033	0.38	15	PASS
CCB7	CCB	1	Na	-0.12	3.43	15	PASS
ICSA3	ICSA	1	Na	-0.13	3.52	15	PASS
ICSAB3	ICSAB	1	Na	10.067	0.18	15	PASS

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Ca	0	3.65	15	PASS
Standard1	ICAL	1	Ca	0.2	11.17	15	PASS
Standard2	ICAL	1	Ca	1	1.87	15	PASS
Standard3	ICAL	1	Ca	2	2.47	15	PASS
Standard4	ICAL	1	Ca	5	0.83	15	PASS
Standard5	ICAL	1	Ca	7.5	0.61	15	PASS
Standard6	ICAL	1	Ca	10	0.51	15	PASS
Standard7	ICAL	1	Ca	20	0.3	15	PASS
ICV	ICV	1	Ca	10.088	0.21	15	PASS
ICB	ICB	1	Ca	-0.0018	778.17	15	<PQL
LLICV	CCV1	1	Ca	0.34	5.65	20	PASS
LLICV	CCV1	1	Ca	0.2	11.79	20	PASS
ICSA1	ICSA	1	Ca	498.55	0.67	15	PASS
ICSAB1	ICSAB	1	Ca	536.96	0.1	15	PASS
CCV1	CCV	1	Ca	9.97	0.27	15	PASS
CCB1	CCB	1	Ca	0.016	132.15	15	<PQL
CCV2	CCV	1	Ca	9.91	0.43	15	PASS
CCB2	CCB	1	Ca	0.029	24.8	15	<PQL
CCV3	CCV	1	Ca	9.99	0.7	15	PASS
CCB3	CCB	1	Ca	-0.011	317.39	15	<PQL
CCV4	CCV	1	Ca	9.89	0.33	15	PASS
CCB4	CCB	1	Ca	-0.0036	655.17	15	<PQL
LLCCV1	CCV2	1	Ca	0.23	25.2	20	<PQL
ICSA2	ICSA	1	Ca	487.27	0.25	15	PASS
ICSAB2	ICSAB	1	Ca	537.05	0.61	15	PASS
CCV5	CCV	1	Ca	9.74	0.6	15	PASS
CCB5	CCB	1	Ca	0.015	48.034	15	<PQL
N027405-013B	SAMP	5	Ca	94.14	0.12	15	PASS
CCV6	CCV	1	Ca	9.73	0.54	15	PASS
CCB6	CCB	1	Ca	0.022	18.88	15	<PQL
LLCCV2	CCV2	1	Ca	0.24	14.45	20	PASS
ICSA3	ICSA	1	Ca	473.64	0.25	15	PASS
ICSAB3	ICSAB	1	Ca	525.29	0.57	15	PASS
N027405-012B	SAMP	5	Ca	101.47	0.1	15	PASS
CCV7	CCV	1	Ca	10.062	0.85	15	PASS
CCB7	CCB	1	Ca	0.013	111.0015	15	<PQL
LLCCV3	CCV2	1	Ca	0.22	7.62	20	PASS
ICSA4	ICSA	1	Ca	491.53	0.12	15	PASS
ICSAB4	ICSAB	1	Ca	539.93	0.17	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 171216A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201K/MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201K/-171030G/-171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/16/2017	10:44:44 AM
2	Standard1	ICAL	1	12/16/2017	10:49:33 AM
3	Standard2	ICAL	1	12/16/2017	10:54:52 AM
11	Standard3	ICAL	1	12/16/2017	11:00:13 AM
12	Standard4	ICAL	1	12/16/2017	11:05:42 AM
6	Standard5	ICAL	1	12/16/2017	11:14:04 AM
7	Standard6	ICAL	1	12/16/2017	11:22:24 AM
8	Standard7	ICAL	1	12/16/2017	11:30:45 AM
9	ICV	ICV	1	12/16/2017	11:38:40 AM
1	ICB	ICB	1	12/16/2017	11:47:04 AM
2	LLICV	CCV1	1	12/16/2017	11:52:06 AM
2	LLICV	CCV1	1	12/16/2017	11:56:24 AM
4	ICSA1	ICSA	1	12/16/2017	12:01:43 PM
5	ICSAB1	ICSAB	1	12/16/2017	12:10:36 PM
14	N027321-001B	SAMP	5	12/16/2017	12:19:10 PM
15	N027404-013B	SAMP	5	12/16/2017	12:27:00 PM
16	N027404-015B	SAMP	1	12/16/2017	12:32:19 PM
17	N027404-016B	SAMP	1	12/16/2017	12:40:09 PM
18	N027404-017B	SAMP	1	12/16/2017	12:47:59 PM
19	N027404-018B	SAMP	1	12/16/2017	12:55:49 PM
20	N027404-020B	SAMP	1	12/16/2017	01:01:09 PM
38	MB-65964	MBLK	1	12/16/2017	01:09:32 PM
39	LCS1-65964	MBLK	1	12/16/2017	01:14:21 PM
40	N027405-001C	SAMP	1	12/16/2017	01:22:44 PM
7	CCV1	CCV	1	12/16/2017	01:30:34 PM
1	CCB1	CCB	1	12/16/2017	01:38:57 PM
41	N027405-001C	SAMP	5	12/16/2017	01:43:46 PM
42	N027405-001C-PS	PS	1	12/16/2017	01:49:07 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
43	N027405-001C-MS1	MS	1	12/16/2017	01:57:29 PM
44	N027405-001C-MSD1	MSD	1	12/16/2017	02:05:22 PM
45	N027405-002C	SAMP	1	12/16/2017	02:13:37 PM
46	N027405-003C	SAMP	1	12/16/2017	02:21:28 PM
47	N027405-004B	SAMP	1	12/16/2017	02:29:21 PM
48	N027405-006B	SAMP	1	12/16/2017	02:34:43 PM
49	N027405-007B	SAMP	1	12/16/2017	02:42:34 PM
50	N027405-008B	SAMP	1	12/16/2017	02:50:27 PM
7	CCV2	CCV	1	12/16/2017	02:58:19 PM
1	CCB2	CCB	1	12/16/2017	03:06:10 PM
51	N027405-009B	SAMP	1	12/16/2017	03:10:59 PM
52	N027405-011B	SAMP	1	12/16/2017	03:18:50 PM
53	N027405-012B	SAMP	1	12/16/2017	03:26:42 PM
54	N027405-013B	SAMP	1	12/16/2017	03:34:34 PM
55	N027405-014B	SAMP	1	12/16/2017	03:42:26 PM
56	N027429-001B	SAMP	1	12/16/2017	03:47:47 PM
57	N027429-002B	SAMP	1	12/16/2017	03:53:08 PM
58	N027429-003B	SAMP	1	12/16/2017	03:58:29 PM
59	N027429-005B	SAMP	1	12/16/2017	04:06:22 PM
60	N027429-006B	SAMP	1	12/16/2017	04:14:14 PM
7	CCV3	CCV	1	12/16/2017	04:22:06 PM
1	CCB3	CCB	1	12/16/2017	04:30:28 PM
61	N027429-007B	SAMP	1	12/16/2017	04:35:16 PM
7	CCV3	CCV	1	12/16/2017	05:38:09 PM
1	CCB3	CCB	1	12/16/2017	05:46:31 PM
61	N027429-007B	SAMP	1	12/16/2017	05:51:20 PM
62	N027429-008B	SAMP	1	12/16/2017	05:56:12 PM
63	N027429-009B	SAMP	1	12/16/2017	06:01:33 PM
64	MB-65992	MBLK	1	12/16/2017	06:09:25 PM
65	LCS1-65992	LCS	1	12/16/2017	06:14:16 PM
66	N027429-010B	SAMP	1	12/16/2017	06:22:37 PM
67	N027429-012B	SAMP	1	12/16/2017	06:30:29 PM
68	N027429-013B	SAMP	1	12/16/2017	06:38:20 PM
69	N027429-014B	SAMP	1	12/16/2017	06:46:12 PM
70	N027429-015B	SAMP	1	12/16/2017	06:54:04 PM
7	CCV4	CCV	1	12/16/2017	07:01:56 PM
1	CCB4	CCB	1	12/16/2017	07:09:47 PM
2	LLCCV1	CCV2	1	12/16/2017	07:14:36 PM
4	ICSA2	ICSA	1	12/16/2017	07:19:55 PM
5	ICSAB2	ICSAB	1	12/16/2017	07:28:28 PM
71	N027429-016C	SAMP	1	12/16/2017	07:37:01 PM
72	N027429-017C	SAMP	1	12/16/2017	07:44:53 PM
73	N027429-018C	SAMP	1	12/16/2017	07:52:44 PM
74	N027429-020C	SAMP	1	12/16/2017	08:00:37 PM
75	N027437-001B	SAMP	1	12/16/2017	08:08:29 PM
76	N027437-002B	SAMP	1	12/16/2017	08:13:50 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
77	N027437-002B	SAMP	5	12/16/2017	08:21:41 PM
78	N027437-002B-PS	PS	1	12/16/2017	08:27:02 PM
79	N027437-002BMS1	MS	1	12/16/2017	08:35:24 PM
80	N027437-002BMSD1	MSD	1	12/16/2017	08:43:16 PM
7	CCV5	CCV	1	12/16/2017	08:51:08 PM
1	CCB5	CCB	1	12/16/2017	08:59:30 PM
81	N027437-003D	SAMP	1	12/16/2017	09:05:07 PM
82	N027437-004B	SAMP	1	12/16/2017	09:09:59 PM
83	N027437-005B	SAMP	1	12/16/2017	09:15:21 PM
84	MB-65993	MBLK	1	12/16/2017	09:20:41 PM
85	LCS1-65993	LCS	1	12/16/2017	09:25:31 PM
86	N027430-002B	SAMP	1	12/16/2017	09:33:54 PM
87	N027430-002B	SAMP	5	12/16/2017	09:41:46 PM
88	N027430-002B-PS	PS	1	12/16/2017	09:46:38 PM
89	N027430-002B-MS1	MS	1	12/16/2017	09:54:30 PM
90	N027430-002B-MSD1	MSD	1	12/16/2017	10:02:23 PM
7	CCV6	CCV	1	12/16/2017	10:10:16 PM
1	CCB6	CCB	1	12/16/2017	10:18:38 PM
91	N027430-004B	SAMP	1	12/16/2017	10:23:27 PM
92	N027430-006B	SAMP	1	12/16/2017	10:28:49 PM
93	N027430-008B	SAMP	1	12/16/2017	10:33:41 PM
94	N027430-012B	SAMP	1	12/16/2017	10:41:33 PM
95	N027430-013B	SAMP	1	12/16/2017	10:49:24 PM
96	N027430-014B	SAMP	1	12/16/2017	10:57:16 PM
97	N027430-015B	SAMP	1	12/16/2017	11:05:09 PM
98	N027430-016B	SAMP	1	12/16/2017	11:13:03 PM
99	N027430-017B	SAMP	1	12/16/2017	11:20:54 PM
100	N027430-018B	SAMP	1	12/16/2017	11:28:47 PM
7	CCV7	CCV	1	12/16/2017	11:36:40 PM
1	CCB7	CCB	1	12/16/2017	11:45:02 PM
101	N027430-020B	SAMP	1	12/16/2017	11:49:50 PM
102	N027431-001B	SAMP	1	12/16/2017	11:58:04 PM
103	N027431-002B	SAMP	1	12/17/2017	12:03:27 AM
104	N027431-003B	SAMP	1	12/17/2017	12:11:20 AM
105	N027431-004B	SAMP	1	12/17/2017	12:19:13 AM
106	N027431-005B	SAMP	1	12/17/2017	12:27:06 AM
107	N027431-006B	SAMP	1	12/17/2017	12:35:29 AM
108	MB-65991	MBLK	1	12/17/2017	12:43:22 AM
109	LCS1-65991	LCS	1	12/17/2017	12:48:13 AM
110	N027437-001A	SAMP	1	12/17/2017	12:56:37 AM
7	CCV8	CCV	1	12/17/2017	01:02:00 AM
1	CCB8	CCB	1	12/17/2017	01:10:22 AM
2	LLCCV2	CCV2	1	12/17/2017	01:15:10 AM
4	ICSA3	ICSA	1	12/17/2017	01:20:29 AM
5	ICSAB3	ICSAB	1	12/17/2017	01:29:02 AM
111	N027437-002A	SAMP	1	12/17/2017	01:37:30 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
112	N027437-002A	SAMP	5	12/17/2017	01:45:23 AM
113	N027437-002A-PS	PS	1	12/17/2017	01:50:44 AM
114	N027437-002AMS1	MS	1	12/17/2017	01:58:38 AM
115	N027437-002AMSD1	MSD	1	12/17/2017	02:07:01 AM
116	N027437-003C	SAMP	1	12/17/2017	02:15:26 AM
117	N027437-004A	SAMP	1	12/17/2017	02:20:51 AM
118	N027437-005A	SAMP	1	12/17/2017	02:26:14 AM
7	CCV9	CCV	1	12/17/2017	02:31:37 AM
1	CCB9	CCB	1	12/17/2017	02:40:00 AM
2	LLCCV3	CCV2	1	12/17/2017	02:44:48 AM
4	ICSA4	ICSA	1	12/17/2017	02:50:08 AM
5	ICSAB4	ICSAB	1	12/17/2017	02:58:41 AM

INJECTION LOG: 171218B

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-170601A,0.025<50mL
Standard2	MWST-170601A,0.25<50mL
Standard3	MWST-170601A,1.25<50mL
Standard4	MWST-170601A,2.5<50mL
Standard5	MWST-170601A,5<50mL
Standard6	MWST-170601A,10<50mL
ICV	MWST-171030L
CCV	MWST-170601A,2.5<50mL
ICSA/ICSAB	MWST-170601L/MWST-170601B
Int. Std. (Sc):	MSST-171009C/B
PS Spike	MSST-130329D/E

MWST-171201R

MWST-171201R
MWST-171201P/MWST-171201S

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/18/2017	03:00:21 PM
26	Standard1	ICAL	1	12/18/2017	03:04:09 PM
27	Standard2	ICAL	1	12/18/2017	03:11:31 PM
28	Standard3	ICAL	1	12/18/2017	03:15:20 PM
29	Standard4	ICAL	1	12/18/2017	03:19:11 PM
30	Standard5	ICAL	1	12/18/2017	03:23:05 PM
31	Standard6	ICAL	1	12/18/2017	03:27:09 PM
32	ICV	ICV	1	12/18/2017	03:31:30 PM
1	ICB	ICB	1	12/18/2017	03:35:25 PM
33	ICSA1	ICSA	1	12/18/2017	03:38:43 PM
34	ICSAB1	ICSAB	1	12/18/2017	03:42:33 PM
38	N027500-001A	SAMP	1	12/18/2017	03:46:29 PM
39	N027500-002A	SAMP	1	12/18/2017	03:50:18 PM
40	N027500-003A	SAMP	1	12/18/2017	03:54:07 PM
41	N027500-004A	SAMP	1	12/18/2017	03:57:57 PM
42	N027500-005A	SAMP	1	12/18/2017	04:01:46 PM
43	N027500-006A	SAMP	1	12/18/2017	04:05:35 PM
44	N027500-007A	SAMP	1	12/18/2017	04:09:24 PM
45	N027500-008A	SAMP	1	12/18/2017	04:13:13 PM
46	N027500-009A	SAMP	1	12/18/2017	04:17:02 PM
47	N027500-010A	SAMP	1	12/18/2017	04:20:23 PM
8	CCV1	CCV	1	12/18/2017	04:24:15 PM
29	CCV1	CCV	1	12/18/2017	04:27:52 PM
1	CCB1	CCB	1	12/18/2017	04:31:47 PM
48	N027500-011A	SAMP	1	12/18/2017	04:35:05 PM
49	N027500-012A	SAMP	1	12/18/2017	04:38:57 PM
50	N027500-013A	SAMP	1	12/18/2017	04:42:48 PM
51	N027500-014A	SAMP	1	12/18/2017	04:46:39 PM
52	N027500-015A	SAMP	1	12/18/2017	04:50:00 PM

12/21/2017

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
53	N027500-016A	SAMP	1	12/18/2017	04:53:51 PM
54	N027500-017A	SAMP	1	12/18/2017	04:57:12 PM
55	N027500-018A	SAMP	1	12/18/2017	05:01:02 PM
56	N027500-019A	SAMP	1	12/18/2017	05:04:51 PM
57	N027500-020A	SAMP	1	12/18/2017	05:08:12 PM
29	CCV2	CCV	1	12/18/2017	05:11:34 PM
1	CCB2	CCB	1	12/18/2017	05:15:30 PM
58	N027500-021A	SAMP	1	12/18/2017	05:19:17 PM
59	N027500-022A	SAMP	1	12/18/2017	05:22:58 PM
60	N027500-023A	SAMP	1	12/18/2017	05:26:50 PM
61	N027500-024A	SAMP	1	12/18/2017	05:30:42 PM
62	N027500-025A	SAMP	1	12/18/2017	05:34:03 PM
63	N027500-026A	SAMP	1	12/18/2017	05:37:24 PM
64	N027500-027A	SAMP	1	12/18/2017	05:40:44 PM
65	N027500-028A	SAMP	1	12/18/2017	05:44:04 PM
38	MB-65964	MBLK	1	12/18/2017	05:52:30 PM
39	LCS2-65964	LCS	1	12/18/2017	05:55:30 PM
29	CCV3	CCV	1	12/18/2017	05:59:34 PM
1	CCB3	CCB	1	12/18/2017	06:03:28 PM
40	N027405-001C	SAMP	10	12/18/2017	06:07:14 PM
41	N027405-002C	SAMP	100	12/18/2017	06:12:03 PM
42	N027405-002C	SAMP	500	12/18/2017	06:15:22 PM
43	N027405-002C-PS	PS	100	12/18/2017	06:18:41 PM
44	N027405-002C-MS2	MS	100	12/18/2017	06:22:01 PM
45	N027405-002C-MSD2	MSD	100	12/18/2017	06:25:09 PM
46	N027405-003C	SAMP	100	12/18/2017	06:28:29 PM
47	N027405-004B	SAMP	10	12/18/2017	06:31:48 PM
48	N027405-006B	SAMP	250	12/18/2017	06:35:39 PM
49	N027405-007B	SAMP	250	12/18/2017	06:38:59 PM
29	CCV4	CCV	1	12/18/2017	06:42:20 PM
1	CCB4	CCB	1	12/18/2017	06:46:15 PM
33	ICSA2	ICSA	1	12/18/2017	06:50:03 PM
34	ICSAB2	ICSAB	1	12/18/2017	06:53:52 PM
50	N027405-008B	SAMP	250	12/18/2017	06:57:49 PM
51	N027405-009B	SAMP	100	12/18/2017	07:01:07 PM
52	N027405-011B	SAMP	100	12/18/2017	07:04:28 PM
53	N027405-012B	SAMP	100	12/18/2017	07:07:46 PM
54	N027405-013B	SAMP	100	12/18/2017	07:11:05 PM
55	N027405-014B	SAMP	10	12/18/2017	07:14:25 PM
56	N027429-001B	SAMP	25	12/18/2017	07:17:45 PM
57	N027429-002B	SAMP	25	12/18/2017	07:21:04 PM
58	N027429-003B	SAMP	250	12/18/2017	07:24:24 PM
59	N027429-005B	SAMP	250	12/18/2017	07:27:44 PM
29	CCV5	CCV	1	12/18/2017	07:31:05 PM
1	CCB5	CCB	1	12/18/2017	07:34:59 PM
60	N027429-006B	SAMP	250	12/18/2017	07:38:47 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
61	N027429-007B	SAMP	25	12/18/2017	07:42:07 PM
62	N027429-008B	SAMP	25	12/18/2017	07:45:27 PM
63	N027429-009B	SAMP	250	12/18/2017	07:48:47 PM
64	N027405-001C	SAMP	100	12/18/2017	07:52:06 PM
65	MB-65992	MBLK	1	12/18/2017	07:55:26 PM
66	LCS2-65992	LCS	1	12/18/2017	07:59:16 PM
67	N027429-010B	SAMP	100	12/18/2017	08:03:23 PM
68	N027429-012B	SAMP	25	12/18/2017	08:06:43 PM
69	N027429-012B	SAMP	125	12/18/2017	08:10:03 PM
29	CCV6	CCV	1	12/18/2017	08:13:23 PM
1	CCB6	CCB	1	12/18/2017	08:17:17 PM
70	N027429-012B-PS	PS	25	12/18/2017	08:21:05 PM
71	N027429-012B-MS2	MS	25	12/18/2017	08:24:56 PM
72	N027429-012B-MSD2	MSD	25	12/18/2017	08:28:47 PM
73	N027429-013B	SAMP	25	12/18/2017	08:32:38 PM
74	N027429-014B	SAMP	25	12/18/2017	08:35:59 PM
75	N027429-015B	SAMP	25	12/18/2017	08:39:19 PM
76	N027429-016C	SAMP	25	12/18/2017	08:42:40 PM
77	N027429-017C	SAMP	25	12/18/2017	08:46:31 PM
78	N027429-018C	SAMP	100	12/18/2017	08:50:22 PM
79	N027429-020C	SAMP	100	12/18/2017	08:53:42 PM
29	CCV7	CCV	1	12/18/2017	08:57:02 PM
1	CCB7	CCB	1	12/18/2017	09:00:57 PM
33	ICSA3	ICSA	1	12/18/2017	09:04:46 PM
34	ICSAB3	ICSAB	1	12/18/2017	09:08:35 PM

INJECTION LOG: 171218C

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201K/MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201K/-171030G/-171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/18/2017	10:32:48 PM
2	Standard1	ICAL	1	12/18/2017	10:42:09 PM
3	Standard2	ICAL	1	12/18/2017	10:47:29 PM
11	Standard3	ICAL	1	12/18/2017	10:52:47 PM
12	Standard4	ICAL	1	12/18/2017	10:58:08 PM
6	Standard5	ICAL	1	12/18/2017	11:05:01 PM
7	Standard6	ICAL	1	12/18/2017	11:12:21 PM
8	Standard7	ICAL	1	12/18/2017	11:19:11 PM
9	ICV	ICV	1	12/18/2017	11:26:02 PM
1	ICB	ICB	1	12/18/2017	11:32:54 PM
2	LLICV	CCV1	1	12/18/2017	11:37:43 PM
2	LLICV	CCV1	1	12/18/2017	11:42:16 PM
4	ICSA1	ICSA	1	12/18/2017	11:47:34 PM
5	ICSAB1	ICSAB	1	12/18/2017	11:55:02 PM
64	MB-65992	MBLK	1	12/19/2017	12:02:34 AM
65	LCS1-65992	LCS	1	12/19/2017	12:07:25 AM
66	N027429-010B	SAMP	1	12/19/2017	12:14:46 AM
67	N027429-012B	SAMP	1	12/19/2017	12:21:46 AM
68	N027429-013B	SAMP	1	12/19/2017	12:28:38 AM
69	N027429-014B	SAMP	1	12/19/2017	12:35:29 AM
70	N027429-015B	SAMP	1	12/19/2017	12:42:20 AM
71	N027429-016C	SAMP	1	12/19/2017	12:49:12 AM
72	N027429-017C	SAMP	1	12/19/2017	12:56:03 AM
73	N027429-018C	SAMP	1	12/19/2017	01:02:55 AM
7	CCV1	CCV	1	12/19/2017	01:09:48 AM
1	CCB1	CCB	1	12/19/2017	01:16:38 AM
74	N027429-020C	SAMP	1	12/19/2017	01:21:27 AM
75	N027437-001B	SAMP	1	12/19/2017	01:28:19 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
76	N027437-002B	SAMP	1	12/19/2017	01:33:41 AM
77	N027437-002B	SAMP	5	12/19/2017	01:40:33 AM
78	N027437-002B-PS	PS	1	12/19/2017	01:45:55 AM
79	N027437-002BMS1	MS	1	12/19/2017	01:53:18 AM
80	N027437-002BMSD1	MSD	1	12/19/2017	02:00:10 AM
81	N027437-003D	SAMP	1	12/19/2017	02:07:02 AM
82	N027437-004B	SAMP	1	12/19/2017	02:11:55 AM
83	N027437-005B	SAMP	1	12/19/2017	02:17:17 AM
7	CCV2	CCV	1	12/19/2017	02:22:08 AM
1	CCB2	CCB	1	12/19/2017	02:28:59 AM
84	MB-65993	MBLK	1	12/19/2017	02:33:47 AM
85	LCS1-65993	LCS	1	12/19/2017	02:38:38 AM
86	N027430-002B	SAMP	1	12/19/2017	02:46:00 AM
87	N027430-002B	SAMP	5	12/19/2017	02:52:53 AM
88	N027430-002B-PS	PS	1	12/19/2017	02:57:45 AM
89	N027430-002B-MS1	MS	1	12/19/2017	03:04:37 AM
90	N027430-002B-MSD1	MSD	1	12/19/2017	03:11:30 AM
91	N027430-004B	SAMP	1	12/19/2017	03:18:23 AM
92	N027430-006B	SAMP	1	12/19/2017	03:23:16 AM
93	N027430-008B	SAMP	1	12/19/2017	03:28:09 AM
7	CCV3	CCV	1	12/19/2017	03:35:01 AM
1	CCB3	CCB	1	12/19/2017	03:41:52 AM
94	N027430-012B	SAMP	1	12/19/2017	03:46:40 AM
95	N027430-013B	SAMP	1	12/19/2017	03:53:31 AM
96	N027430-014B	SAMP	1	12/19/2017	04:00:23 AM
97	N027430-015B	SAMP	1	12/19/2017	04:07:15 AM
98	N027430-016B	SAMP	1	12/19/2017	04:14:08 AM
99	N027430-017B	SAMP	1	12/19/2017	04:20:59 AM
100	N027430-018B	SAMP	1	12/19/2017	04:27:52 AM
101	N027430-020B	SAMP	1	12/19/2017	04:34:45 AM
102	N027431-001B	SAMP	1	12/19/2017	04:41:38 AM
103	N027431-002B	SAMP	1	12/19/2017	04:46:31 AM
7	CCV4	CCV	1	12/19/2017	04:53:25 AM
1	CCB4	CCB	1	12/19/2017	05:00:16 AM
2	LLCCV1	CCV2	1	12/19/2017	05:05:04 AM
4	ICSA2	ICSA	1	12/19/2017	05:10:23 AM
5	ICSAB2	ICSAB	1	12/19/2017	05:17:50 AM
104	N027431-003B	SAMP	1	12/19/2017	05:25:19 AM
105	N027431-004B	SAMP	1	12/19/2017	05:32:11 AM
106	N027431-005B	SAMP	1	12/19/2017	05:39:05 AM
107	N027431-006B	SAMP	1	12/19/2017	05:45:58 AM
108	MB-65991	MBLK	1	12/19/2017	05:52:51 AM
109	LCS1-65991	LCS	1	12/19/2017	05:57:43 AM
110	N027437-001A	SAMP	1	12/19/2017	06:04:35 AM
111	N027437-002A	SAMP	1	12/19/2017	06:09:57 AM
112	N027437-002A	SAMP	5	12/19/2017	06:16:50 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
113	N027437-002A-PS	PS	1	12/19/2017	06:22:12 AM
7	CCV5	CCV	1	12/19/2017	06:29:05 AM
1	CCB5	CCB	1	12/19/2017	06:35:56 AM
114	N027437-002AMS1	MS	1	12/19/2017	06:41:14 AM
115	N027437-002AMSD1	MSD	1	12/19/2017	06:48:08 AM
116	N027437-003C	SAMP	1	12/19/2017	06:55:02 AM
117	N027437-004A	SAMP	1	12/19/2017	07:01:56 AM
118	N027437-005A	SAMP	1	12/19/2017	07:07:18 AM
119	N027405-013B	SAMP	5	12/19/2017	07:12:10 AM
120	N027429-010B	SAMP	5	12/19/2017	07:17:03 AM
7	CCV6	CCV	1	12/19/2017	07:23:56 AM
1	CCB6	CCB	1	12/19/2017	07:30:48 AM
2	LLCCV2	CCV2	1	12/19/2017	07:35:36 AM
4	ICSA3	ICSA	1	12/19/2017	07:40:54 AM
5	ICSAB3	ICSAB	1	12/19/2017	07:48:24 AM
121	N027405-012B	SAMP	5	12/19/2017	08:01:04 AM
38	MB-65994	MBLK	1	12/19/2017	08:07:56 AM
39	LCS1-65994	LCS	1	12/19/2017	08:12:45 AM
40	N027459-001C	SAMP	1	12/19/2017	08:20:04 AM
41	N027459-001C	SAMP	5	12/19/2017	08:26:54 AM
42	N027459-001C-PS	PS	1	12/19/2017	08:31:43 AM
43	N027459-001C-MS1	MS	1	12/19/2017	08:38:34 AM
44	N027459-001C-MSD1	MSD	1	12/19/2017	08:45:25 AM
45	N027459-002C	SAMP	1	12/19/2017	08:52:15 AM
46	N027459-003B	SAMP	1	12/19/2017	08:59:06 AM
7	CCV7	CCV	1	12/19/2017	09:07:07 AM
1	CCB7	CCB	1	12/19/2017	09:17:06 AM
2	LLCCV3	CCV2	1	12/19/2017	09:24:34 AM
4	ICSA4	ICSA	1	12/19/2017	09:34:26 AM
5	ICSAB4	ICSAB	1	12/19/2017	09:41:57 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/8/2017 1:00:00**
Prep End Date: **12/8/2017 5:00:00**
Prep Batch **65964** Prep Code: **3010_W_DISS**

Reviewed/ Date: 12/21/2017
Initials/ Date: FOR
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-44**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-65964	Aqueous		25	☐	0	0	25	1.000		
LCS2-65964	Aqueous		25	☐	0	0	25	1.000		
MB-65964	Aqueous		25	☐	0	0	25	1.000		
N027405-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-002C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-002C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-008B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9589	HYDROCHLORIC ACID
9601	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/8/2017 1:00:00**
Prep End Date: **12/8/2017 5:00:00**
Prep Batch **65964** Prep Code: **3010_W_DISS**

Reviewed/ Date: 12/21/2017
Initials/ Date: FOR
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-44**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027405-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-014B w/ sediments	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-009B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9589	HYDROCHLORIC ACID
9601	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 171216A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Boron								
CalBlk	12/16/2017	10:44:44 AM	B	249.677	5127	0.00	mg/L	
Standard1	12/16/2017	10:49:33 AM	B	249.677	3212	0.1000	mg/L	
Standard3	12/16/2017	11:00:13 AM	B	249.677	42900	1.000	mg/L	
Standard4	12/16/2017	11:05:42 AM	B	249.677	107954	2.500	mg/L	
Standard5	12/16/2017	11:14:04 AM	B	249.677	163997	3.750	mg/L	
Standard6	12/16/2017	11:22:24 AM	B	249.677	216128	5.000	mg/L	
Standard7	12/16/2017	11:30:45 AM	B	249.677	434350	10.000	mg/L	1.0000
Magnesium								
CalBlk	12/16/2017	10:44:44 AM	Mg	279.079	253	0.00	mg/L	
Standard1	12/16/2017	10:49:33 AM	Mg	279.079	1145	0.1000	mg/L	
Standard2	12/16/2017	10:54:52 AM	Mg	279.079	14200	1.000	mg/L	
Standard3	12/16/2017	11:00:13 AM	Mg	279.079	29234	2.000	mg/L	
Standard4	12/16/2017	11:05:42 AM	Mg	279.079	72373	5.000	mg/L	
Standard5	12/16/2017	11:14:04 AM	Mg	279.079	109238	7.500	mg/L	
Standard6	12/16/2017	11:22:24 AM	Mg	279.079	146675	10.000	mg/L	
Standard7	12/16/2017	11:30:45 AM	Mg	279.079	281870	20.000	mg/L	0.9999
Calcium								
CalBlk	12/16/2017	10:44:44 AM	Ca	227.546	-135	0.00	mg/L	
Standard1	12/16/2017	10:49:33 AM	Ca	227.546	58	0.2000	mg/L	
Standard2	12/16/2017	10:54:52 AM	Ca	227.546	367	1.000	mg/L	
Standard3	12/16/2017	11:00:13 AM	Ca	227.546	728	2.000	mg/L	
Standard4	12/16/2017	11:05:42 AM	Ca	227.546	1804	5.000	mg/L	
Standard5	12/16/2017	11:14:04 AM	Ca	227.546	2734	7.500	mg/L	
Standard6	12/16/2017	11:22:24 AM	Ca	227.546	3633	10.000	mg/L	
Standard7	12/16/2017	11:30:45 AM	Ca	227.546	7228	20.000	mg/L	1.0000
Iron								
CalBlk	12/16/2017	10:44:44 AM	Fe	273.953	-146	0.00	mg/L	
Standard1	12/16/2017	10:49:33 AM	Fe	273.953	401	0.0200	mg/L	
Standard2	12/16/2017	10:54:52 AM	Fe	273.953	1894	0.050	mg/L	
Standard3	12/16/2017	11:00:13 AM	Fe	273.953	49592	2.000	mg/L	
Standard4	12/16/2017	11:05:42 AM	Fe	273.953	122889	5.000	mg/L	
Standard5	12/16/2017	11:14:04 AM	Fe	273.953	185560	7.500	mg/L	
Standard6	12/16/2017	11:22:24 AM	Fe	273.953	248681	10.000	mg/L	
Standard7	12/16/2017	11:30:45 AM	Fe	273.953	476581	20.000	mg/L	0.9998

INITIAL CALIBRATION SUMMARY: 171218B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	12/18/2017	03:00:21 PM	Na	589.594	866	0.00	mg/L	
Standard1	12/18/2017	03:04:09 PM	Na	589.594	510	0.1000	mg/L	
Standard2	12/18/2017	03:11:31 PM	Na	589.594	4606	1.000	mg/L	
Standard3	12/18/2017	03:15:20 PM	Na	589.594	21822	5.000	mg/L	
Standard4	12/18/2017	03:19:11 PM	Na	589.594	43426	10.000	mg/L	
Standard5	12/18/2017	03:23:05 PM	Na	589.594	87460	20.000	mg/L	
Standard6	12/18/2017	03:27:09 PM	Na	589.594	174266	40.000	mg/L	1.0000

INITIAL CALIBRATION SUMMARY: 171218C

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Calcium								
CalBlk	12/18/2017	10:32:48 PM	Ca	227.546	-142	0.00	mg/L	
Standard1	12/18/2017	10:42:09 PM	Ca	227.546	97	0.2000	mg/L	
Standard2	12/18/2017	10:47:29 PM	Ca	227.546	304	1.000	mg/L	
Standard3	12/18/2017	10:52:47 PM	Ca	227.546	661	2.000	mg/L	
Standard4	12/18/2017	10:58:08 PM	Ca	227.546	1578	5.000	mg/L	
Standard5	12/18/2017	11:05:01 PM	Ca	227.546	2445	7.500	mg/L	
Standard6	12/18/2017	11:12:21 PM	Ca	227.546	3145	10.000	mg/L	
Standard7	12/18/2017	11:19:11 PM	Ca	227.546	6220	20.000	mg/L	0.9999

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ICV**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4990.055	100	5000	0	99.8	90	110				
Calcium	10117.848	500	10000	0	101	90	110				
Iron	10371.783	20	10000	0	104	90	110				
Magnesium	10338.902	100	10000	0	103	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ZZZZZZ**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	84.911	100	100.0	0	84.9	80	120				
Calcium	170.621	500	200.0	0	85.3	80	120				
Iron	17.461	20	20.00	0	87.3	80	120				
Magnesium	80.716	100	100.0	0	80.7	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **CCV**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870016**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4902.229	100	5000	0	98.0	90	110				
Calcium	10049.761	500	10000	0	100	90	110				
Iron	10259.141	20	10000	0	103	90	110				
Magnesium	10254.169	100	10000	0	103	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **CCV**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4726.029	100	5000	0	94.5	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120897**
Client ID: **CCV** Batch ID: **R120897** TestNo: **EPA 6010B** Analysis Date: **12/16/2017** SeqNo: **2870028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9841.162	500	10000	0	98.4	90	110				
Iron	9640.488	20	10000	0	96.4	90	110				
Magnesium	9546.182	100	10000	0	95.5	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120897**
Client ID: **CCV** Batch ID: **R120897** TestNo: **EPA 6010B** Analysis Date: **12/16/2017** SeqNo: **2870043**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4883.393	100	5000	0	97.7	90	110				
Calcium	10007.653	500	10000	0	100	90	110				
Iron	10184.824	20	10000	0	102	90	110				
Magnesium	10189.958	100	10000	0	102	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120897**
Client ID: **CCV** Batch ID: **R120897** TestNo: **EPA 6010B** Analysis Date: **12/16/2017** SeqNo: **2870055**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4661.374	100	5000	0	93.2	90	110				
Calcium	9745.370	500	10000	0	97.5	90	110				
Iron	9589.654	20	10000	0	95.9	90	110				
Magnesium	9513.808	100	10000	0	95.1	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120897**
Client ID: **ZZZZZZ** Batch ID: **R120897** TestNo: **EPA 6010B** Analysis Date: **12/16/2017** SeqNo: **2870057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	79.523	100	100.0	0	79.5	70	130				
Calcium	142.095	500	200.0	0	71.0	70	130				
Iron	17.170	20	20.00	0	85.8	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ZZZZZZ**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	77.394	100	100.0	0	77.4	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **ICV**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9974.058	500	10000	0	99.7	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCV**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871248**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9944.620	500	10000	0	99.4	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCV**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9935.725	500	10000	0	99.4	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCV**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871272**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10032.268	500	10000	0	100	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCV**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10044.167	500	10000	0	100	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCV**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871298**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9992.954	500	10000	0	99.9	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCV**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10040.282	500	10000	0	100	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCV**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10032.687	500	10000	0	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10088.062	500	10000	0	101	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	204.883	500	200.0	0	102	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871592**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9969.207	500	10000	0	99.7	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871604**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9908.640	500	10000	0	99.1	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9993.795	500	10000	0	99.9	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCV4	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	CCV	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871628

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9894.698	500	10000	0	98.9	90	110				

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	ZZZZZZ	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871630

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	231.543	500	200.0	0	116	70	130				

Sample ID	CCV5	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	CCV	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871643

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9735.929	500	10000	0	97.4	90	110				

Sample ID	CCV6	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	CCV	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871652

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9734.042	500	10000	0	97.3	90	110				

Sample ID	LLCCV2	SampType:	CCV2	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	ZZZZZZ	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871654

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	240.192	500	200.0	0	120	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871667**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10062.017	500	10000	0	101	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871669**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	222.727	500	200.0	0	111	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ICB**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	21.693	100									
Calcium	-20.785609	500									
Iron	0.877	20									
Magnesium	0.466	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **CCB**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	24.795	100									
Calcium	29.481	500									
Iron	0.753	20									
Magnesium	0.280	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **CCB**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	22.071	100									
Calcium	19.265	500									
Iron	1.089	20									
Magnesium	-0.236916	100									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **CCB**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870044**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	31.063	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCB3	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120897
Client ID:	CCB	Batch ID:	R120897	TestNo:	EPA 6010B			Analysis Date:	12/16/2017	SeqNo:	2870044

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	20.512	500									
Iron	1.246	20									
Magnesium	-1.32059	100									

Sample ID	CCB4	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120897
Client ID:	CCB	Batch ID:	R120897	TestNo:	EPA 6010B			Analysis Date:	12/16/2017	SeqNo:	2870056

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	20.643	100									
Calcium	23.810	500									
Iron	0.570	20									
Magnesium	-0.475308	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **ICB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-20.539383	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871249**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-75.40344	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-82.629939	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871273**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-95.927983	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-118.781508	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871299**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-118.634555	500									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871311**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-123.004033	500									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-121.733252	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-1.802075	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871593**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	16.292	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871605**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	29.130	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-10.673498	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-3.575705	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	15.024	500									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871653**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	21.639	500									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871668**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	13.349	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ICSA**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870004**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	84.704	100									
Calcium	485555.577	500	500000	0	97.1	80	120				
Iron	167440.577	20	200000	0	83.7	80	120				
Magnesium	452647.155	100	500000	0	90.5	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ICSAB**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870005**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1152.559	100	1000	0	115	80	120				
Calcium	543031.842	500	500000	0	109	80	120				
Iron	181701.449	20	200000	0	90.9	80	120				
Magnesium	508463.476	100	500000	0	102	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ICSA**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870058**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	79.102	100									
Calcium	484358.974	500	500000	0	96.9	80	120				
Iron	182658.522	20	200000	0	91.3	80	120				
Magnesium	438265.928	100	500000	0	87.7	80	120				

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ICSAB**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1097.821	100	1000	0	110	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ICSAB**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	540942.543	500	500000	0	108	80	120				
Iron	179860.260	20	200000	0	89.9	80	120				
Magnesium	486371.735	100	500000	0	97.3	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120915
Client ID:	ICSA	Batch ID:	R120915	TestNo:	EPA 6010B			Analysis Date:	12/18/2017	SeqNo:	2871235

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-23.803815	500									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120915
Client ID:	ICSAB	Batch ID:	R120915	TestNo:	EPA 6010B			Analysis Date:	12/18/2017	SeqNo:	2871236

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10018.397	500	10000	0	100	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120915
Client ID:	ICSA	Batch ID:	R120915	TestNo:	EPA 6010B			Analysis Date:	12/18/2017	SeqNo:	2871286

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-117.541975	500									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120915
Client ID:	ICSAB	Batch ID:	R120915	TestNo:	EPA 6010B			Analysis Date:	12/18/2017	SeqNo:	2871287

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10090.050	500	10000	0	101	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120915
Client ID:	ICSA	Batch ID:	R120915	TestNo:	EPA 6010B			Analysis Date:	12/18/2017	SeqNo:	2871324

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-128.118015	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **ICSAB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871325**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10066.635	500	10000	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **ICSA** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/18/2017** SeqNo: **2871580**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	499606.293	50	500000	0	99.9	80	120				
Calcium	498548.809	500	500000	0	99.7	80	120				
Iron	179892.137	20	200000	0	89.9	80	120				
Magnesium	485043.587	100	500000	0	97.0	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **ICSAB** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/18/2017** SeqNo: **2871581**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	549867.041	50	500000	0	110	80	120				
Calcium	536964.037	500	500000	0	107	80	120				
Iron	190028.308	20	200000	0	95.0	80	120				
Magnesium	511694.882	100	500000	0	102	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **ICSA** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2871631**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	484031.618	50	500000	0	96.8	80	120				
Calcium	487269.052	500	500000	0	97.5	80	120				
Iron	171216.397	20	200000	0	85.6	80	120				
Magnesium	463520.732	100	500000	0	92.7	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **ICSAB** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2871632**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	526793.741	50	500000	0	105	80	120				
Calcium	537053.293	500	500000	0	107	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICSAB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871632**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	177822.006	20	200000	0	88.9	80	120				
Magnesium	501435.284	100	500000	0	100	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICSA**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871655**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	484725.819	50	500000	0	96.9	80	120				
Calcium	473640.507	500	500000	0	94.7	80	120				
Iron	172781.452	20	200000	0	86.4	80	120				
Magnesium	451305.649	100	500000	0	90.3	80	120				

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICSAB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871656**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	525073.791	50	500000	0	105	80	120				
Calcium	525291.517	500	500000	0	105	80	120				
Iron	178260.199	20	200000	0	89.1	80	120				
Magnesium	504862.836	100	500000	0	101	80	120				

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICSA**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871670**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	508532.336	50	500000	0	102	80	120				
Calcium	491526.968	500	500000	0	98.3	80	120				
Iron	183120.178	20	200000	0	91.6	80	120				
Manganese	7.173	10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICSAB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871861**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	558516.003	50	500000	0	112	80	120				
Calcium	539927.247	500	500000	0	108	80	120				
Iron	193129.734	20	200000	0	96.6	80	120				
Manganese	994.233	10	1000	0	99.4	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 171216A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.98	97.61	65-125	PASS
Standard2	ICAL	1	1.064	106.42	65-125	PASS
Standard3	ICAL	1	0.97	96.73	65-125	PASS
Standard4	ICAL	1	0.96	96.046	65-125	PASS
Standard5	ICAL	1	0.96	95.5	65-125	PASS
Standard6	ICAL	1	0.95	94.74	65-125	PASS
Standard7	ICAL	1	0.93	92.61	65-125	PASS
ICV	ICV	1	0.95	94.97	65-125	PASS
ICB	ICB	1	0.97	97.01	65-125	PASS
LLICV	CCV1	1	0.97	96.75	65-125	PASS
LLICV	CCV1	1	0.97	96.95	65-125	PASS
ICSA1	ICSA	1	0.94	94	65-125	PASS
ICSAB1	ICSAB	1	0.8	79.53	65-125	PASS
MB-65964	MBLK	1	0.98	97.56	65-125	PASS
LCS1-65964	MBLK	1	0.88	88.15	65-125	PASS
N027405-001C	SAMP	1	0.85	85.43	65-125	PASS
CCV1	CCV	1	0.96	95.64	65-125	PASS
CCB1	CCB	1	0.99	98.62	65-125	PASS
N027405-001C	SAMP	5	0.9	89.64	65-125	PASS
N027405-001C-PS	PS	1	0.86	85.67	65-125	PASS
N027405-001C-MS1	MS	1	0.87	86.53	65-125	PASS
N027405-001C-MSD1	MSD	1	0.86	86.26	65-125	PASS
N027405-002C	SAMP	1	0.84	84.049	65-125	PASS
N027405-003C	SAMP	1	0.82	81.67	65-125	PASS
N027405-004B	SAMP	1	0.95	94.76	65-125	PASS
N027405-006B	SAMP	1	0.75	75.14	65-125	PASS
N027405-007B	SAMP	1	0.79	78.81	65-125	PASS
N027405-008B	SAMP	1	0.76	76.34	65-125	PASS
CCV2	CCV	1	0.96	96.15	65-125	PASS
CCB2	CCB	1	0.97	96.98	65-125	PASS
N027405-009B	SAMP	1	0.87	87.015	65-125	PASS
N027405-011B	SAMP	1	0.79	78.51	65-125	PASS
N027405-012B	SAMP	1	0.88	87.98	65-125	PASS
N027405-013B	SAMP	1	0.82	81.91	65-125	PASS
N027405-014B	SAMP	1	0.94	94.14	65-125	PASS
N027429-001B	SAMP	1	0.94	93.86	65-125	PASS
N027429-002B	SAMP	1	0.96	96.12	65-125	PASS
N027429-003B	SAMP	1	0.78	78.28	65-125	PASS
N027429-005B	SAMP	1	0.79	79.2	65-125	PASS
N027429-006B	SAMP	1	0.78	77.84	65-125	PASS

INTERNAL STANDARD: 171216A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCV3	CCV	1	0.98	98.19	65-125	PASS
CCB3	CCB	1	1.02	101.96	65-125	PASS
N027429-007B	SAMP	1	0.98	98.085	65-125	PASS
CCV3	CCV	1	0.92	91.95	65-125	PASS
CCB3	CCB	1	0.96	95.53	65-125	PASS
N027429-007B	SAMP	1	0.93	93.48	65-125	PASS
N027429-008B	SAMP	1	0.92	91.77	65-125	PASS
N027429-009B	SAMP	1	0.75	75.29	65-125	PASS
CCV4	CCV	1	0.96	95.88	65-125	PASS
CCB4	CCB	1	0.96	96.14	65-125	PASS
LLCCV1	CCV2	1	0.96	96.036	65-125	PASS
ICSA2	ICSA	1	0.93	92.83	65-125	PASS
ICSAB2	ICSAB	1	0.79	79.056	65-125	PASS

INTERNAL STANDARD: 171218B

Instrument ID: ICP-02

Scandium

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	99.45	65-125	PASS
Standard2	ICAL	1	0.98	97.9	65-125	PASS
Standard3	ICAL	1	0.99	99.44	65-125	PASS
Standard4	ICAL	1	0.98	97.54	65-125	PASS
Standard5	ICAL	1	0.96	96.056	65-125	PASS
Standard6	ICAL	1	0.96	95.73	65-125	PASS
ICV	ICV	1	0.97	97.42	65-125	PASS
ICB	ICB	1	1.012	101.18	65-125	PASS
ICSA1	ICSA	1	0.99	98.9	65-125	PASS
ICSAB1	ICSAB	1	0.97	96.97	65-125	PASS
CCV1	CCV	1	1.11	110.98	65-125	PASS
CCV1	CCV	1	0.97	97.26	65-125	PASS
CCB1	CCB	1	1.015	101.51	65-125	PASS
CCV2	CCV	1	0.98	98.12	65-125	PASS
CCB2	CCB	1	0.99	99.38	65-125	PASS
MB-65964	MBLK	1	1.019	101.88	65-125	PASS
LCS2-65964	LCS	1	1.026	102.57	65-125	PASS
CCV3	CCV	1	0.98	98.1	65-125	PASS
CCB3	CCB	1	1	99.7	65-125	PASS
N027405-001C	SAMP	10	0.97	97.071	65-125	PASS
N027405-002C	SAMP	100	0.99	98.52	65-125	PASS
N027405-002C	SAMP	500	1.0037	100.37	65-125	PASS
N027405-002C-PS	PS	100	0.99	99.36	65-125	PASS
N027405-002C-MS2	MS	100	0.99	99.42	65-125	PASS
N027405-002C-MSD2	MSD	100	1.0008	100.08	65-125	PASS
N027405-003C	SAMP	100	1	99.69	65-125	PASS
N027405-004B	SAMP	10	1.0058	100.58	65-125	PASS
N027405-006B	SAMP	250	0.99	99.2	65-125	PASS
N027405-007B	SAMP	250	0.99	99.088	65-125	PASS
CCV4	CCV	1	0.98	98.31	65-125	PASS
CCB4	CCB	1	1.0085	100.85	65-125	PASS
ICSA2	ICSA	1	1.0092	100.92	65-125	PASS
ICSAB2	ICSAB	1	0.98	98.44	65-125	PASS
N027405-008B	SAMP	250	1	99.86	65-125	PASS
N027405-009B	SAMP	100	1	99.9	65-125	PASS
N027405-011B	SAMP	100	1	99.75	65-125	PASS
N027405-012B	SAMP	100	0.99	99.25	65-125	PASS
N027405-013B	SAMP	100	1	99.82	65-125	PASS
N027405-014B	SAMP	10	1.0071	100.71	65-125	PASS
N027429-001B	SAMP	25	1.0059	100.59	65-125	PASS

INTERNAL STANDARD: 171218B

Instrument ID: ICP-02

Scandium

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N027429-002B	SAMP	25	1.01	101.01	65-125	PASS
N027429-003B	SAMP	250	1	99.97	65-125	PASS
N027429-005B	SAMP	250	1.002	100.2	65-125	PASS
CCV5	CCV	1	0.98	98.38	65-125	PASS
CCB5	CCB	1	1.0095	100.95	65-125	PASS
N027429-006B	SAMP	250	1.0029	100.29	65-125	PASS
N027429-007B	SAMP	25	1.0048	100.48	65-125	PASS
N027429-008B	SAMP	25	1.0077	100.77	65-125	PASS
N027429-009B	SAMP	250	1.0016	100.16	65-125	PASS
N027405-001C	SAMP	100	1.0068	100.68	65-125	PASS
CCV6	CCV	1	0.98	98.28	65-125	PASS
CCB6	CCB	1	1.014	101.35	65-125	PASS
CCV7	CCV	1	0.98	98.22	65-125	PASS
CCB7	CCB	1	1.0074	100.74	65-125	PASS
ICSA3	ICSA	1	1	99.78	65-125	PASS
ICSAB3	ICSAB	1	0.98	98.29	65-125	PASS

INTERNAL STANDARD: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.01	101.02	65-125	PASS
Standard2	ICAL	1	1.0028	100.28	65-125	PASS
Standard3	ICAL	1	1.048	104.75	65-125	PASS
Standard4	ICAL	1	1.088	108.84	65-125	PASS
Standard5	ICAL	1	1.19	118.58	65-125	PASS
Standard6	ICAL	1	0.96	96.25	65-125	PASS
Standard7	ICAL	1	0.95	94.86	65-125	PASS
ICV	ICV	1	0.97	96.72	65-125	PASS
ICB	ICB	1	1	99.76	65-125	PASS
LLICV	CCV1	1	1.0008	100.08	65-125	PASS
LLICV	CCV1	1	1	99.79	65-125	PASS
ICSA1	ICSA	1	0.87	86.92	65-125	PASS
ICSAB1	ICSAB	1	0.79	78.77	65-125	PASS
CCV1	CCV	1	0.97	96.66	65-125	PASS
CCB1	CCB	1	1.0021	100.21	65-125	PASS
CCV2	CCV	1	0.98	97.53	65-125	PASS
CCB2	CCB	1	1.0038	100.38	65-125	PASS
CCV3	CCV	1	0.97	96.71	65-125	PASS
CCB3	CCB	1	1	99.8	65-125	PASS
CCV4	CCV	1	0.98	97.87	65-125	PASS
CCB4	CCB	1	1	99.62	65-125	PASS
LLCCV1	CCV2	1	1.016	101.59	65-125	PASS
ICSA2	ICSA	1	0.87	86.98	65-125	PASS
ICSAB2	ICSAB	1	0.79	78.92	65-125	PASS
CCV5	CCV	1	0.98	97.84	65-125	PASS
CCB5	CCB	1	1.015	101.51	65-125	PASS
N027405-013B	SAMP	5	0.9	89.87	65-125	PASS
CCV6	CCV	1	0.98	98.036	65-125	PASS
CCB6	CCB	1	1.0083	100.83	65-125	PASS
LLCCV2	CCV2	1	1.018	101.82	65-125	PASS
ICSA3	ICSA	1	0.88	88.075	65-125	PASS
ICSAB3	ICSAB	1	0.8	79.74	65-125	PASS
N027405-012B	SAMP	5	0.91	90.9	65-125	PASS
CCV7	CCV	1	0.98	97.56	65-125	PASS
CCB7	CCB	1	0.99	99.13	65-125	PASS
LLCCV3	CCV2	1	1.0075	100.75	65-125	PASS
ICSA4	ICSA	1	0.87	87.1	65-125	PASS
ICSAB4	ICSAB	1	0.8	79.67	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N027405
Test Method: EPA 6010B
Analysis Date: 12/16/2017 & 12/18/2017

Matrix: Groundwater
Batch No.: 65964

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B & Fe. The calculated concentration is <25RL.
Dilution test failed for Ca & Mg.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027405-001C DT 5X	Boron	ug/L	847.0434	NA	726.1909	16.64%	10
N027405-001C DT 5X	Calcium	ug/L	120322.7	FAIL	107678.2	11.74%	10
N027405-001C DT 5X	Iron	ug/L	10.4753	NA	14.04272	25.40%	10
N027405-001C DT 5X	Magnesium	ug/L	21706.29	FAIL	18849.78	15.15%	10
N027405-002C DT 500X	Sodium	ug/L	1556504	PASS	1554016	0.16%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**N027405-001C-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID:	**ZZZZZZ**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5462.001	100	5000	726.2	94.7	80	120				
Calcium	115253.601	500	10000	107700	75.8	80	120				S
Iron	133.817	20	100.0	14.04	120	80	120				
Magnesium	27194.370	100	10000	18850	83.4	80	120				

Sample ID	**N027405-002C-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID:	**ZZZZZZ**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/18/2017**	SeqNo: **2871277**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1601864.762	50000	20000	1554000	239	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

LOD & PQL VERIFICATION

Analytical Method: EPA 6010B / 200.7
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analyst: MI

Matrix: Water
Units: mg/L

Compound	MDL	LOD		PQL		
		Spike	Recovered	Spike	Recovered	% Recovery
Sodium	0.02621	0.10	0.08408	0.5	0.52080	104.2
Potassium	0.03815	0.10	0.13587	0.5	0.48231	96.5
Strontium	0.00545	0.02	0.02459	0.05	0.06052	121.0

Method Detection Limit

Analytical Method: EPA 6010B / 200.7
Digestion Method: EPA 3010A
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: mg/L

Analyte	1	2	3	4	5	6	7	SD	Ave	AMT SPIKED	%RSD	MDL	PQL
Potassium	0.15443	0.16201	0.14301	0.16141	0.16124	0.12965	0.14652	0.01215	0.15118	0.1000	8.0	0.03815	0.5
Sodium	0.11445	0.11459	0.11678	0.11286	0.11394	0.09515	0.10066	0.00835	0.10978	0.1000	7.6	0.02621	0.5
Strontium	0.02939	0.03046	0.0307	0.02962	0.03209	0.02708	0.02772	0.00174	0.02958	0.0250	5.9	0.00545	0.05

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65979
ASSET #: N027405

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 12/16/2017

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.		X				
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X				
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

Mn in N027405-011B is over linear range. For further dilution.
As, Mo & Se in N027405-013B & As, Mn, Mo & Se in N027405-014B for rerun.
%RSD of Se in STD 2 failed > 15%. However %RSD of LLICV passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/21/17
2nd Level Reviewer 12/21/2017 Date: ____

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65979
ASSET #: N027405

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 12/19/2017

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .			X			
24. LCS compounds within control limits.			X			
25. MS/MSD, RPD's are within control limits			X			
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For dilution of Mn in N027405-011B only.
For As, Mo & Se in N027405-013B & As, Mn, Mo & Se in N027405-014B rerun only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/21/17

2nd Level Reviewer 12/21/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N027405-002C** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 14.1876 * 1 * (25/25)

Chromium , ug/L = 14.1876

Reporting results in two significant figures,

Chromium , ug/L = 14

% RSD SUMMARY

PERCENT RSD SUMMARY: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	7.74	15	PASS	0.16	9.46	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.54	3.89	15	PASS	0.58	6.038	15	PASS
Std3-5/50 ppb	ICAL	1	5.28	1.45	15	PASS	5.21	0.43	15	PASS
Std4-10/100 ppb	ICAL	1	10.44	1.011	15	PASS	10.38	0.31	15	PASS
Std5-20/200 ppb	ICAL	1	21.11	1.91	15	PASS	20.63	1.4	15	PASS
Std6-40/400 ppb	ICAL	1	41.17	2	15	PASS	40.77	2.27	15	PASS
Std7-100/1000 ppb	ICAL	1	101.81	1.4	15	PASS	99.51	1.38	15	PASS
Std8-200/2000 ppb	ICAL	1	198.72	0.74	15	PASS	195.54	0.72	15	PASS
ICV	ICV	1	10.34	1.82	15	PASS	99.26	1.61	15	PASS
ICB	ICB	1	0.017	5.097	15	PASS	0.031	20.71	15	<PQL
LLICV	CCV1	1	1.042	5.72	20	PASS	0.5	11.72	20	PASS
ICSA1	ICSA	1	0.091	17.0063	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.63	1.18	15	PASS	18.58	0.12	15	PASS
LLICV	CCV1	1	1.0078	1.94	20	PASS	0.51	7.6	20	PASS
MB-65979	MBLK	1	0.012	85.95	15	<PQL	<0.000	N/A	15	<PQL
LCS-65979	LCS	1	10.19	0.8	15	PASS	99.052	0.85	15	PASS
N027405-001C	SAMP	1	0.077	22.89	15	<PQL	126.37	1.36	15	PASS
N027405-001C	SAMP	5	0.018	86.34	15	<PQL	27.71	0.93	15	PASS
N027405-001C	SAMP	25	0.0028	239.24	15	<PQL	5.64	0.85	15	PASS
N027405-001C-PS	PS	1	9.86	3.31	15	PASS	218.0085	1.67	15	PASS
N027405-001C-PS	PS	5	2.044	2.83	15	PASS	45.98	1.26	15	PASS
N027405-001C-MS	MS	1	9.57	2.032	15	PASS	215.61	1.59	15	PASS
N027405-001C-MS	MS	5	2.044	2.17	15	PASS	46.89	1.6	15	PASS
N027405-001C-MSD	MSD	1	9.55	1.35	15	PASS	216.47	1.07	15	PASS
CCV1	CCV	1	20.47	0.91	15	PASS	20.29	1.78	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0081	69.21	15	<PQL
N027405-001C-MSD	MSD	5	2.091	0.79	15	PASS	47.45	0.85	15	PASS
N027405-002C	SAMP	1	14.19	1.48	15	PASS	291.21	1.2	15	PASS
N027405-002C	SAMP	5	2.98	3.64	15	PASS	62.49	1.83	15	PASS
N027405-003C	SAMP	1	14.96	2.66	15	PASS	306.65	1.84	15	PASS
N027405-003C	SAMP	5	3.18	1.74	15	PASS	66.74	0.3	15	PASS
N027405-004B	SAMP	1	0.039	31.22	15	<PQL	219.0069	0.22	15	PASS
N027405-004B	SAMP	5	0.002	330.7	15	<PQL	46.93	0.28	15	PASS
N027405-006B	SAMP	1	3.84	4.35	15	PASS	10.92	1.34	15	PASS
N027405-006B	SAMP	5	0.85	1.67	15	PASS	2.35	5.55	15	PASS
N027405-007B	SAMP	1	<0.000	N/A	15	<PQL	104.26	1.41	15	PASS
CCV2	CCV	1	20.76	1.52	15	PASS	20.65	2.74	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.03	27.98	15	<PQL
N027405-007B	SAMP	5	<0.000	N/A	15	<PQL	22.96	1.65	15	PASS
N027405-008B	SAMP	1	1.72	1.18	15	PASS	36.08	1.39	15	PASS

PERCENT RSD SUMMARY: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027405-008B	SAMP	5	0.38	2.47	15	PASS	7.83	1.11	15	PASS
N027405-009B	SAMP	1	497.52	0.85	15	PASS	2.038	5.53	15	PASS
N027405-009B	SAMP	5	99.85	0.79	15	PASS	0.64	4.052	15	PASS
N027405-011B	SAMP	1	<0.000	N/A	15	<PQL	899.33	0.51	15	PASS
N027405-011B	SAMP	5	<0.000	N/A	15	<PQL	192.62	2.032	15	PASS
N027405-012B	SAMP	1	677.75	0.75	15	PASS	11.43	1.7	15	PASS
N027405-012B	SAMP	5	145.82	0.57	15	PASS	2.99	2.63	15	PASS
N027405-013B	SAMP	1	28.55	2.12	15	PASS	33.94	3.42	15	PASS
CCV3	CCV	1	20.82	1.77	15	PASS	21.53	1.62	15	PASS
CCB3	CCB	1	0.14	16.3	15	<PQL	0.17	34.26	15	<PQL
N027405-013B	SAMP	5	6.4	1.2	15	PASS	7.61	2.22	15	PASS
N027405-014B	SAMP	1	5.35	0.53	15	PASS	42.6	2.069	15	PASS
N027405-014B	SAMP	5	1.22	3.36	15	PASS	9.8	2.32	15	PASS
N027431-001B	SAMP	1	242.77	0.3	15	PASS	<0.000	N/A	15	<PQL
N027431-001B	SAMP	5	51.62	1.87	15	PASS	0.06	29.19	15	<PQL
N027431-002B	SAMP	1	2.67	2.22	15	PASS	199.62	1.021	15	PASS
N027431-002B	SAMP	5	0.61	8.08	15	PASS	44.3	3.18	15	PASS
N027431-003B	SAMP	1	<0.000	N/A	15	<PQL	1008.57	1.29	15	PASS
N027431-003B	SAMP	5	<0.000	N/A	15	<PQL	215.15	0.77	15	PASS
N027431-004B	SAMP	1	<0.000	N/A	15	<PQL	982.41	2.068	15	PASS
CCV4	CCV	1	20.49	0.83	15	PASS	21.47	1.24	15	PASS
CCB4	CCB	1	0.019	50.14	15	<PQL	0.15	13.58	15	PASS
LLCCV1	CCV2	1	0.86	2.73	20	PASS	0.57	3.35	20	PASS
ICSA2	ICSA	1	0.093	9.2	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.53	0.89	15	PASS	18.64	1.37	15	PASS

PERCENT RSD SUMMARY: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.099	19.4	15	<PQL	0.15	53.73	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.53	10.27	15	PASS	0.52	38.51	15	NR!
Std3-5/50 ppb	ICAL	1	5.14	3.21	15	PASS	4.83	2.66	15	PASS
Std4-10/100 ppb	ICAL	1	10.3	2.43	15	PASS	9.72	3.36	15	PASS
Std5-20/200 ppb	ICAL	1	20.67	0.74	15	PASS	20.47	3.57	15	PASS
Std6-40/400 ppb	ICAL	1	40.69	0.46	15	PASS	40.8	1.42	15	PASS
Std7-100/1000 ppb	ICAL	1	100.94	0.66	15	PASS	100.66	2.66	15	PASS
Std8-200/2000 ppb	ICAL	1	199.3	1.53	15	PASS	199.48	1.067	15	PASS
ICV	ICV	1	10.088	3.013	15	PASS	10.5	3.66	15	PASS
ICB	ICB	1	0.013	170.09	15	<PQL	0.03	99.3	15	<PQL
LLICV	CCV1	1	0.12	14.55	20	PASS	0.55	2.53	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.03	69.37	15	<PQL
ICSAB1	ICSAB	1	20.36	1.09	15	PASS	18.45	3.49	15	PASS
LLICV	CCV1	1	0.13	9.48	20	PASS	0.51	6.93	20	PASS
MB-65979	MBLK	1	0.014	66.5	15	<PQL	0.016	100.7	15	<PQL
LCS-65979	LCS	1	10	0.9	15	PASS	9.78	3.77	15	PASS
N027405-001C	SAMP	1	4.63	3.027	15	PASS	0.15	42.59	15	<PQL
N027405-001C	SAMP	5	0.95	6.85	15	PASS	0.023	41.82	15	<PQL
N027405-001C	SAMP	25	0.21	2.32	15	PASS	0.016	0.9	15	PASS
N027405-001C-PS	PS	1	14.65	1.41	15	PASS	9.02	6.43	15	PASS
N027405-001C-PS	PS	5	3.062	2.48	15	PASS	2.21	14.056	15	PASS
N027405-001C-MS	MS	1	14.74	2.38	15	PASS	9.25	5.4	15	PASS
N027405-001C-MS	MS	5	3.12	2.13	15	PASS	2.074	8.46	15	PASS
N027405-001C-MSD	MSD	1	14.55	3.35	15	PASS	8.87	3.97	15	PASS
CCV1	CCV	1	20.64	1.32	15	PASS	19.58	0.49	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.025	124.63	15	<PQL
N027405-001C-MSD	MSD	5	3.027	3	15	PASS	2.17	18.59	15	NR!
N027405-002C	SAMP	1	4.34	1.56	15	PASS	0.081	49.97	15	<PQL
N027405-002C	SAMP	5	0.92	2.74	15	PASS	0.016	100.27	15	<PQL
N027405-003C	SAMP	1	4.46	1.22	15	PASS	0.031	125.45	15	<PQL
N027405-003C	SAMP	5	0.93	9.77	15	PASS	0.042	114.63	15	<PQL
N027405-004B	SAMP	1	2.25	0.54	15	PASS	0.065	74.065	15	<PQL
N027405-004B	SAMP	5	0.46	9.81	15	PASS	0.025	91.66	15	<PQL
N027405-006B	SAMP	1	14.72	2.97	15	PASS	0.31	19.48	15	<PQL
N027405-006B	SAMP	5	3.28	0.95	15	PASS	0.098	80.25	15	<PQL
N027405-007B	SAMP	1	11.42	2.71	15	PASS	0.047	98.91	15	<PQL
CCV2	CCV	1	20.44	1.38	15	PASS	20.88	3.6	15	PASS
CCB2	CCB	1	0.017	51.56	15	<PQL	0.071	48.55	15	<PQL
N027405-007B	SAMP	5	2.53	5.35	15	PASS	0.012	173.21	15	<PQL
N027405-008B	SAMP	1	13.39	0.81	15	PASS	0.24	18.94	15	<PQL

PERCENT RSD SUMMARY: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027405-008B	SAMP	5	2.9	5.49	15	PASS	0.054	88.45	15	<PQL
N027405-009B	SAMP	1	1.72	4.73	15	PASS	3.7	4.62	15	PASS
N027405-009B	SAMP	5	0.38	11.28	15	PASS	0.84	6.87	15	PASS
N027405-011B	SAMP	1	4.2	2.72	15	PASS	0.032	115.68	15	<PQL
N027405-011B	SAMP	5	0.91	18.8	15	NR!	0.019	99.096	15	<PQL
N027405-012B	SAMP	1	1.57	3.73	15	PASS	5.4	6.78	15	PASS
N027405-012B	SAMP	5	0.35	12.069	15	PASS	1.11	11.2	15	PASS
N027405-013B	SAMP	1	1.57	1.65	15	PASS	3.6	9.58	15	PASS
CCV3	CCV	1	20.34	2.69	15	PASS	21.56	4.85	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.012	173.21	15	<PQL
N027405-013B	SAMP	5	0.34	12.073	15	PASS	0.68	6.99	15	PASS
N027405-014B	SAMP	1	13.32	2.55	15	PASS	0.64	14.13	15	PASS
N027405-014B	SAMP	5	2.85	6.087	15	PASS	0.15	53.71	15	<PQL
N027431-001B	SAMP	1	2.064	0.83	15	PASS	3.25	3.76	15	PASS
N027431-001B	SAMP	5	0.45	7.36	15	PASS	0.53	13.46	15	PASS
N027431-002B	SAMP	1	19.58	0.99	15	PASS	0.24	12.18	15	PASS
N027431-002B	SAMP	5	4.2	3.59	15	PASS	0.071	91.45	15	<PQL
N027431-003B	SAMP	1	3.53	0.64	15	PASS	0.063	49.94	15	<PQL
N027431-003B	SAMP	5	0.7	7.35	15	PASS	0.024	99.86	15	<PQL
N027431-004B	SAMP	1	5.34	3.47	15	PASS	0.043	42.35	15	<PQL
CCV4	CCV	1	20.36	0.31	15	PASS	22.51	2.96	15	PASS
CCB4	CCB	1	0.0076	245.51	15	<PQL	0.014	86.61	15	<PQL
LLCCV1	CCV2	1	0.11	17.092	20	PASS	0.38	13.47	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.014	173.21	15	<PQL
ICSAB2	ICSAB	1	19.7	3.22	15	PASS	19.99	5.17	15	PASS

PERCENT RSD SUMMARY: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.09	8.2	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.48	6.35	15	PASS
Std3-5/50 ppb	ICAL	1	4.9	1.45	15	PASS
Std4-10/100 ppb	ICAL	1	9.81	1.43	15	PASS
Std5-20/200 ppb	ICAL	1	19.68	1.29	15	PASS
Std6-40/400 ppb	ICAL	1	39.4	0.57	15	PASS
Std7-100/1000 ppb	ICAL	1	99.34	1.12	15	PASS
Std8-200/2000 ppb	ICAL	1	200.49	0.98	15	PASS
ICV	ICV	1	10.28	2	15	PASS
ICB	ICB	1	0.13	5.88	15	PASS
LLICV	CCV1	1	0.55	1.38	20	PASS
ICSA1	ICSA	1	0.075	12.31	15	PASS
ICSAB1	ICSAB	1	22.13	0.12	15	PASS
LLICV	CCV1	1	0.57	3.3	20	PASS
MB-65979	MBLK	1	0.021	18.78	15	<PQL
LCS-65979	LCS	1	9.72	2.16	15	PASS
N027405-001C	SAMP	1	10.82	1.32	15	PASS
N027405-001C	SAMP	5	2.095	5.48	15	PASS
N027405-001C	SAMP	25	0.4	4.86	15	PASS
N027405-001C-PS	PS	1	22.6	0.69	15	PASS
N027405-001C-PS	PS	5	4.28	1.22	15	PASS
N027405-001C-MS	MS	1	22.78	1.12	15	PASS
N027405-001C-MS	MS	5	4.37	2.28	15	PASS
N027405-001C-MSD	MSD	1	22.86	0.68	15	PASS
CCV1	CCV	1	20.0058	0.49	15	PASS
CCB1	CCB	1	0.085	22.17	15	<PQL
N027405-001C-MSD	MSD	5	4.43	1.89	15	PASS
N027405-002C	SAMP	1	22.75	1.37	15	PASS
N027405-002C	SAMP	5	4.34	1.96	15	PASS
N027405-003C	SAMP	1	23.64	1.79	15	PASS
N027405-003C	SAMP	5	4.4	1.15	15	PASS
N027405-004B	SAMP	1	4.079	1.56	15	PASS
N027405-004B	SAMP	5	0.81	3.7	15	PASS
N027405-006B	SAMP	1	83.41	0.63	15	PASS
N027405-006B	SAMP	5	15.82	0.44	15	PASS
N027405-007B	SAMP	1	79.37	0.92	15	PASS
CCV2	CCV	1	19.82	0.68	15	PASS
CCB2	CCB	1	0.096	9.33	15	PASS
N027405-007B	SAMP	5	14.99	1.44	15	PASS
N027405-008B	SAMP	1	80.22	0.96	15	PASS

PERCENT RSD SUMMARY: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N027405-008B	SAMP	5	15.52	1.021	15	PASS
N027405-009B	SAMP	1	14.69	1.12	15	PASS
N027405-009B	SAMP	5	2.71	1.23	15	PASS
N027405-011B	SAMP	1	69.25	0.82	15	PASS
N027405-011B	SAMP	5	13.51	1.3	15	PASS
N027405-012B	SAMP	1	19.096	1.49	15	PASS
N027405-012B	SAMP	5	3.71	2.79	15	PASS
N027405-013B	SAMP	1	36.91	0.4	15	PASS
CCV3	CCV	1	19.56	1.42	15	PASS
CCB3	CCB	1	0.078	14.7	15	PASS
N027405-013B	SAMP	5	7.37	2.36	15	PASS
N027405-014B	SAMP	1	30.89	1.27	15	PASS
N027405-014B	SAMP	5	6.12	3.085	15	PASS
N027431-001B	SAMP	1	11.56	1.2	15	PASS
N027431-001B	SAMP	5	2.3	0.19	15	PASS
N027431-002B	SAMP	1	46.37	0.89	15	PASS
N027431-002B	SAMP	5	9.081	0.79	15	PASS
N027431-003B	SAMP	1	41.5	1.061	15	PASS
N027431-003B	SAMP	5	7.91	1.22	15	PASS
N027431-004B	SAMP	1	41.34	1.63	15	PASS
CCV4	CCV	1	19.96	0.47	15	PASS
CCB4	CCB	1	0.08	27.17	15	<PQL
LLCCV1	CCV2	1	0.4	7.33	20	PASS
ICSA2	ICSA	1	0.048	15.64	15	<PQL
ICSAB2	ICSAB	1	22.69	1.1	15	PASS

PERCENT RSD SUMMARY: 171219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.15	15.69	15	<PQL	0.1	16.043	15	NR!
Std2-0.5/5 ppb	ICAL	1	0.6	6.46	15	PASS	0.52	0.57	15	PASS
Std3-5/50 ppb	ICAL	1	5.14	1.22	15	PASS	5.11	4.47	15	PASS
Std4-10/100 ppb	ICAL	1	10.55	1.2	15	PASS	10.054	0.88	15	PASS
Std5-20/200 ppb	ICAL	1	20.86	1.38	15	PASS	20.29	1.45	15	PASS
Std6-40/400 ppb	ICAL	1	41.18	1.9	15	PASS	40.3	1.23	15	PASS
Std7-100/1000 ppb	ICAL	1	100.98	1.37	15	PASS	100.77	1.82	15	PASS
Std8-200/2000 ppb	ICAL	1	199.16	0.46	15	PASS	199.52	1.71	15	PASS
ICV	ICV	1	100.78	1.26	15	PASS	9.85	1.49	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.54	5.86	20	PASS	0.067	33.21	20	<PQL
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	18.25	0.32	15	PASS	19.81	2.55	15	PASS
LLICV	CCV1	1	0.55	12.57	20	PASS	0.08	11.57	20	PASS
N027405-011B	SAMP	10	100.3	1.27	15	PASS	0.42	14.12	15	PASS
N027405-013B	SAMP	5	7.68	2.6	15	PASS	0.29	12.17	15	PASS
N027405-014B	SAMP	1	43.26	1.11	15	PASS	13.39	2	15	PASS
N027431-001B	SAMP	1	<0.000	N/A	15	<PQL	2.014	6.85	15	PASS
N027431-002B	SAMP	5	43.72	2.12	15	PASS	4.085	2.71	15	PASS
N027431-003B	SAMP	5	215.82	0.38	15	PASS	0.67	6.31	15	PASS
N027431-003B	SAMP	25	46.64	1.83	15	PASS	0.13	10.037	15	PASS
N027431-004B	SAMP	5	212.61	1.54	15	PASS	1.096	7.72	15	PASS
N027431-004B	SAMP	25	46.33	0.78	15	PASS	0.23	5.0014	15	PASS
CCV1	CCV	1	20.68	2.24	15	PASS	20.014	1.69	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027431-005B	SAMP	1	<0.000	N/A	15	<PQL	2.53	2.65	15	PASS
N027431-005B	SAMP	5	<0.000	N/A	15	<PQL	0.51	8.51	15	PASS
N027431-005B	SAMP	25	<0.000	N/A	15	<PQL	0.071	42.96	15	<PQL
N027431-006B	SAMP	1	1.6	2.7	15	PASS	3.58	0.28	15	PASS
N027431-006B	SAMP	5	0.35	5.2	15	PASS	0.73	3.4	15	PASS
N027431-006B	SAMP	25	0.084	23.39	15	<PQL	0.12	24.59	15	NR!
N027431-004B	SAMP	1	957.28	0.8	15	PASS	5.25	1.51	15	PASS
N027431-003B	SAMP	1	997.72	0.12	15	PASS	3.39	3.84	15	PASS
N027431-002B	SAMP	1	205.54	1.16	15	PASS	19.57	1.25	15	PASS
CCV2	CCV	1	21.038	2.041	15	PASS	19.54	2.36	15	PASS
CCB2	CCB	1	0.031	134.71	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.56	3.51	20	PASS	0.091	6.59	20	PASS
ICSA2	ICSA	1	0.024	40.7	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	18.55	0.82	15	PASS	19.71	1.49	15	PASS

PERCENT RSD SUMMARY: 171219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.071	14.11	15	PASS	0.094	8.49	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.46	37.61	15	<PQL	0.5	13.39	15	PASS
Std3-5/50 ppb	ICAL	1	5.08	4.0044	15	PASS	4.91	1.51	15	PASS
Std4-10/100 ppb	ICAL	1	9.78	1.43	15	PASS	9.75	0.87	15	PASS
Std5-20/200 ppb	ICAL	1	19.58	1.34	15	PASS	19.86	0.69	15	PASS
Std6-40/400 ppb	ICAL	1	41.27	1.78	15	PASS	39.32	0.55	15	PASS
Std7-100/1000 ppb	ICAL	1	99.82	0.65	15	PASS	98.93	0.12	15	PASS
Std8-200/2000 ppb	ICAL	1	199.89	1.089	15	PASS	200.7	1.48	15	PASS
ICV	ICV	1	9.53	8.48	15	PASS	10.51	1.97	15	PASS
ICB	ICB	1	0.0046	382.72	15	<PQL	0.16	6.81	15	PASS
LLICV	CCV1	1	0.48	25.93	20	<PQL	0.57	2.78	20	PASS
ICSA1	ICSA	1	0.042	77.84	15	<PQL	0.071	24.21	15	<PQL
ICSAB1	ICSAB	1	18.53	1.86	15	PASS	22.43	1.21	15	PASS
LLICV	CCV1	1	0.48	30.96	20	<PQL	0.56	2.45	20	PASS
N027405-011B	SAMP	10	<0.000	N/A	15	<PQL	6.47	1.27	15	PASS
N027405-013B	SAMP	5	0.64	3.88	15	PASS	7.24	1.87	15	PASS
N027405-014B	SAMP	1	0.66	13.89	15	PASS	30.99	0.37	15	PASS
N027431-001B	SAMP	1	3.1	11.22	15	PASS	11.6	0.14	15	PASS
N027431-002B	SAMP	5	0.11	48.4	15	<PQL	9.12	0.63	15	PASS
N027431-003B	SAMP	5	0.015	118.083	15	<PQL	7.77	0.44	15	PASS
N027431-003B	SAMP	25	<0.000	N/A	15	<PQL	1.59	6.0012	15	PASS
N027431-004B	SAMP	5	0.0048	186.054	15	<PQL	7.99	3.043	15	PASS
N027431-004B	SAMP	25	<0.000	N/A	15	<PQL	1.65	1.33	15	PASS
CCV1	CCV	1	19.8	0.77	15	PASS	19.85	1.73	15	PASS
CCB1	CCB	1	0.014	121.8	15	<PQL	0.061	45.18	15	<PQL
N027431-005B	SAMP	1	5.032	8.5	15	PASS	36.43	1.086	15	PASS
N027431-005B	SAMP	5	1.11	13.3	15	PASS	7.08	1.59	15	PASS
N027431-005B	SAMP	25	0.22	29.18	15	<PQL	1.48	1.23	15	PASS
N027431-006B	SAMP	1	42.33	3.97	15	PASS	21.27	1.09	15	PASS
N027431-006B	SAMP	5	8.69	4.09	15	PASS	4.16	1.47	15	PASS
N027431-006B	SAMP	25	1.65	9.17	15	PASS	0.83	4.34	15	PASS
N027431-004B	SAMP	1	0.13	56.25	15	<PQL	42.29	1.27	15	PASS
N027431-003B	SAMP	1	0.11	18.94	15	<PQL	41.56	0.33	15	PASS
N027431-002B	SAMP	1	0.44	32.33	15	<PQL	46.022	1.79	15	PASS
CCV2	CCV	1	21.029	1.63	15	PASS	19.58	1.55	15	PASS
CCB2	CCB	1	0.017	151.98	15	<PQL	0.064	8.64	15	PASS
LLCCV1	CCV2	1	0.65	5.76	20	PASS	0.51	2.39	20	PASS
ICSA2	ICSA	1	0.018	227.7	15	<PQL	0.00015	2742.055	15	<PQL
ICSAB2	ICSAB	1	19.25	5.37	15	PASS	21.89	1.36	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 171216A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1216001.D	RINSE	RINSE	1	12/16/17 11:47 AM
A1216002.D	Cal Blank	IBLK	1	12/16/17 11:52 AM
A1216003.D	Std1-0.1/1 ppb	ICAL	1	12/16/17 11:58 AM
A1216004.D	Std2-0.5/5 ppb	ICAL	1	12/16/17 12:03 PM
A1216005.D	Std3-5/50 ppb	ICAL	1	12/16/17 12:09 PM
A1216006.D	Std4-10/100 ppb	ICAL	1	12/16/17 12:15 PM
A1216007.D	Std5-20/200 ppb	ICAL	1	12/16/17 12:20 PM
A1216008.D	Std6-40/400 ppb	ICAL	1	12/16/17 12:26 PM
A1216009.D	Std7-100/1000 ppb	ICAL	1	12/16/17 12:31 PM
A1216010.D	Std8-200/2000 ppb	ICAL	1	12/16/17 12:38 PM
A1216011.D	ICV	ICV	1	12/16/17 12:44 PM
A1216012.D	ICB	ICB	1	12/16/17 12:50 PM
A1216013.D	LLICV	CCV1	1	12/16/17 12:56 PM
A1216014.D	ICSA1	ICSA	1	12/16/17 1:01 PM
A1216015.D	ICSAB1	ICSAB	1	12/16/17 1:07 PM
A1216016.D	LLICV	CCV1	1	12/16/17 1:12 PM
A1216017.D	MB-65979	MBLK	1	12/16/17 1:18 PM
A1216018.D	LCS-65979	LCS	1	12/16/17 1:24 PM
A1216019.D	N027405-001C	SAMP	1	12/16/17 1:29 PM
A1216020.D	N027405-001C	SAMP	5	12/16/17 1:35 PM
A1216021.D	N027405-001C	SAMP	25	12/16/17 1:40 PM
A1216022.D	N027405-001C-PS	PS	1	12/16/17 1:46 PM
A1216023.D	N027405-001C-PS	PS	5	12/16/17 1:51 PM
A1216024.D	N027405-001C-MS	MS	1	12/16/17 1:57 PM
A1216025.D	N027405-001C-MS	MS	5	12/16/17 2:02 PM
A1216026.D	N027405-001C-MSD	MSD	1	12/16/17 2:08 PM
A1216027.D	CCV1	CCV	1	12/16/17 2:14 PM
A1216028.D	CCB1	CCB	1	12/16/17 2:19 PM
A1216029.D	N027405-001C-MSD	MSD	5	12/16/17 2:25 PM
A1216030.D	N027405-002C	SAMP	1	12/16/17 2:30 PM
A1216031.D	N027405-002C	SAMP	5	12/16/17 2:36 PM
A1216032.D	N027405-003C	SAMP	1	12/16/17 2:41 PM
A1216033.D	N027405-003C	SAMP	5	12/16/17 2:47 PM
A1216034.D	N027405-004B	SAMP	1	12/16/17 2:53 PM
A1216035.D	N027405-004B	SAMP	5	12/16/17 2:58 PM
A1216036.D	N027405-006B	SAMP	1	12/16/17 3:04 PM
A1216037.D	N027405-006B	SAMP	5	12/16/17 3:09 PM
A1216038.D	N027405-007B	SAMP	1	12/16/17 3:15 PM
A1216039.D	CCV2	CCV	1	12/16/17 3:21 PM
A1216040.D	CCB2	CCB	1	12/16/17 3:26 PM
A1216041.D	N027405-007B	SAMP	5	12/16/17 3:32 PM
A1216042.D	N027405-008B	SAMP	1	12/16/17 3:37 PM

INJECTION LOG: 171216A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1216043.D	N027405-008B	SAMP	5	12/16/17 3:43 PM
A1216044.D	N027405-009B	SAMP	1	12/16/17 3:48 PM
A1216045.D	N027405-009B	SAMP	5	12/16/17 3:54 PM
A1216046.D	N027405-011B	SAMP	1	12/16/17 4:00 PM
A1216047.D	N027405-011B	SAMP	5	12/16/17 4:05 PM
A1216048.D	N027405-012B	SAMP	1	12/16/17 4:11 PM
A1216049.D	N027405-012B	SAMP	5	12/16/17 4:16 PM
A1216050.D	N027405-013B	SAMP	1	12/16/17 4:22 PM
A1216051.D	CCV3	CCV	1	12/16/17 4:27 PM
A1216052.D	CCB3	CCB	1	12/16/17 4:33 PM
A1216053.D	N027405-013B	SAMP	5	12/16/17 4:39 PM
A1216054.D	N027405-014B	SAMP	1	12/16/17 4:44 PM
A1216055.D	N027405-014B	SAMP	5	12/16/17 4:50 PM
A1216056.D	N027431-001B	SAMP	1	12/16/17 4:55 PM
A1216057.D	N027431-001B	SAMP	5	12/16/17 5:01 PM
A1216058.D	N027431-002B	SAMP	1	12/16/17 5:06 PM
A1216059.D	N027431-002B	SAMP	5	12/16/17 5:12 PM
A1216060.D	N027431-003B	SAMP	1	12/16/17 5:17 PM
A1216061.D	N027431-003B	SAMP	5	12/16/17 5:23 PM
A1216062.D	N027431-004B	SAMP	1	12/16/17 5:29 PM
A1216063.D	CCV4	CCV	1	12/16/17 5:34 PM
A1216064.D	CCB4	CCB	1	12/16/17 5:40 PM
A1216065.D	LLCCV1	CCV2	1	12/16/17 5:46 PM
A1216066.D	ICSA2	ICSA	1	12/16/17 5:50 PM
A1216067.D	ICSAB2	ICSAB	1	12/16/17 5:56 PM

INJECTION LOG: 171219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1219001.D	RINSE	RINSE	1	12/19/17 11:37 AM
A1219002.D	Cal Blank	IBLK	1	12/19/17 11:42 AM
A1219003.D	Std1-0.1/1 ppb	ICAL	1	12/19/17 11:48 AM
A1219004.D	Std2-0.5/5 ppb	ICAL	1	12/19/17 11:53 AM
A1219005.D	Std3-5/50 ppb	ICAL	1	12/19/17 11:59 AM
A1219006.D	Std4-10/100 ppb	ICAL	1	12/19/17 12:05 PM
A1219007.D	Std5-20/200 ppb	ICAL	1	12/19/17 12:10 PM
A1219008.D	Std6-40/400 ppb	ICAL	1	12/19/17 12:16 PM
A1219009.D	Std7-100/1000 ppb	ICAL	1	12/19/17 12:21 PM
A1219010.D	Std8-200/2000 ppb	ICAL	1	12/19/17 12:27 PM
A1219011.D	ICV	ICV	1	12/19/17 12:33 PM
A1219012.D	ICB	ICB	1	12/19/17 12:38 PM
A1219013.D	LLICV	CCV1	1	12/19/17 12:44 PM
A1219014.D	ICSA1	ICSA	1	12/19/17 12:49 PM
A1219015.D	ICSAB1	ICSAB	1	12/19/17 12:54 PM
A1219016.D	LLICV	CCV1	1	12/19/17 1:00 PM
A1219017.D	N027406-004D	SAMP	25	12/19/17 1:06 PM
A1219018.D	N027405-011B	SAMP	10	12/19/17 1:11 PM
A1219019.D	N027405-013B	SAMP	5	12/19/17 1:17 PM
A1219020.D	N027405-014B	SAMP	1	12/19/17 1:18 PM
A1219021.D	N027431-001B	SAMP	1	12/19/17 1:25 PM
A1219022.D	N027431-002B	SAMP	5	12/19/17 1:30 PM
A1219023.D	N027431-003B	SAMP	5	12/19/17 1:36 PM
A1219024.D	N027431-003B	SAMP	25	12/19/17 1:41 PM
A1219025.D	N027431-004B	SAMP	5	12/19/17 1:47 PM
A1219026.D	N027431-004B	SAMP	25	12/19/17 1:53 PM
A1219027.D	CCV1	CCV	1	12/19/17 1:58 PM
A1219028.D	CCB1	CCB	1	12/19/17 2:04 PM
A1219029.D	N027431-005B	SAMP	1	12/19/17 2:09 PM
A1219030.D	N027431-005B	SAMP	5	12/19/17 2:15 PM
A1219031.D	N027431-005B	SAMP	25	12/19/17 2:21 PM
A1219032.D	N027431-006B	SAMP	1	12/19/17 2:26 PM
A1219033.D	N027431-006B	SAMP	5	12/19/17 2:32 PM
A1219034.D	N027431-006B	SAMP	25	12/19/17 2:37 PM
A1219035.D	N027431-004B	SAMP	1	12/19/17 2:43 PM
A1219036.D	N027431-003B	SAMP	1	12/19/17 2:48 PM
A1219037.D	N027431-002B	SAMP	1	12/19/17 2:54 PM
A1219038.D	CCV2	CCV	1	12/19/17 3:00 PM
A1219039.D	CCB2	CCB	1	12/19/17 3:06 PM
A1219040.D	LLCCV1	CCV2	1	12/19/17 3:12 PM
A1219041.D	ICSA2	ICSA	1	12/19/17 3:17 PM
A1219042.D	ICSAB2	ICSAB	1	12/19/17 3:23 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/8/2017 2:07:45**
Prep End Date: **12/8/2017 6:30:00**
Prep Batch **65979** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 12/21/2017
Initials/ Date: 12/21/2017
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**01-10**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-65979	Aqueous		25	☐	0	0	25	1.000		
MB-65979	Aqueous		25	☐	0	0	25	1.000		
N027405-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-012B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/8/2017 2:07:45**
Prep End Date: **12/8/2017 6:30:00**

Reviewed/ Date: 12/21/2017

Initials/ Date: 12/21/2017

Prep Batch **65979** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**01-10**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027405-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-006B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 16 Dec 2017 11:35:33 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	68698.00	0.00	
24 Mg	388178.00	0.00	
25 Mg	51186.10	0.00	
26 Mg	59257.10	0.00	
59 Co	420163.00	0.00	
115 In	841199.00	0.00	
206 Pb	242955.00	0.00	
207 Pb	211665.00	0.00	
208 Pb	520321.00	0.00	

RSD (%)

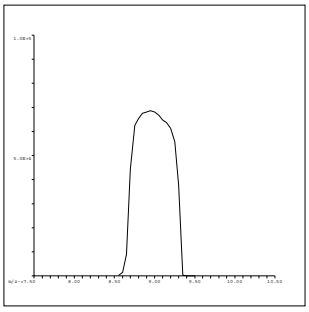
Element	Actual	Required	Flag
9 Be	0.87	5.00	
24 Mg	0.87	5.00	
25 Mg	1.46	5.00	
26 Mg	3.23	5.00	
59 Co	0.78	5.00	
115 In	0.70	5.00	
206 Pb	0.38	5.00	
207 Pb	0.95	5.00	
208 Pb	0.77	5.00	

Ion Ratio

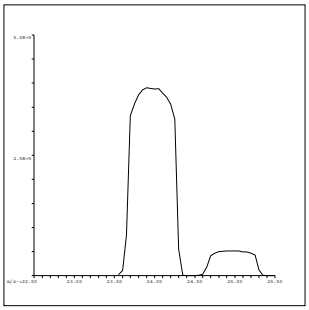
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

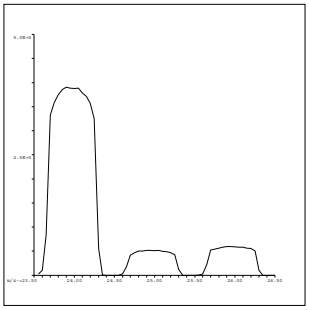
Element	Actual	Required	Flag



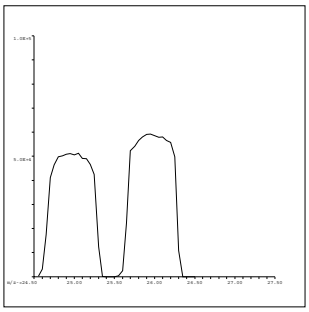
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



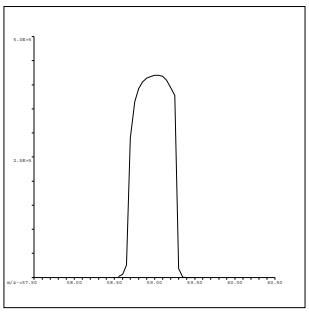
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



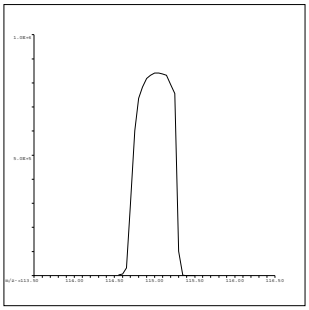
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



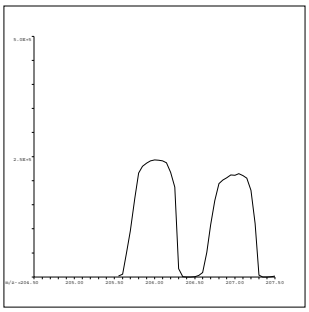
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



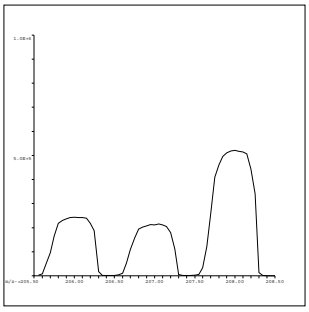
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



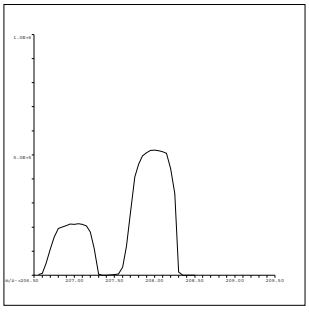
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.05
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 19 Dec 2017 11:23:55 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	92961.80	0.00	
24 Mg	265522.00	0.00	
25 Mg	35031.40	0.00	
26 Mg	41235.30	0.00	
59 Co	383642.00	0.00	
115 In	673609.00	0.00	
206 Pb	196601.00	0.00	
207 Pb	170749.00	0.00	
208 Pb	417665.00	0.00	

RSD (%)

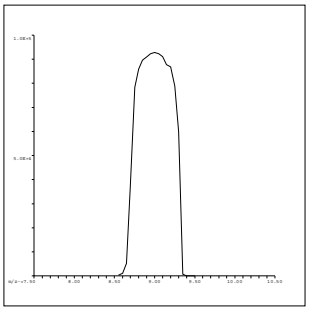
Element	Actual	Required	Flag
9 Be	1.37	5.00	
24 Mg	2.23	5.00	
25 Mg	1.65	5.00	
26 Mg	2.49	5.00	
59 Co	0.70	5.00	
115 In	0.16	5.00	
206 Pb	0.54	5.00	
207 Pb	0.50	5.00	
208 Pb	0.72	5.00	

Ion Ratio

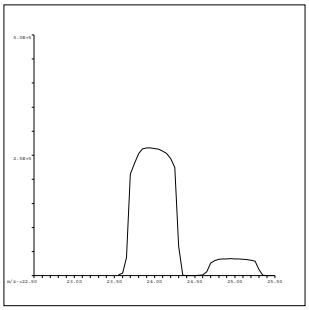
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

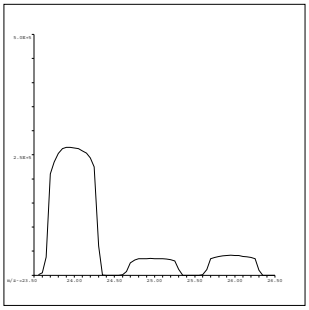
Element	Actual	Required	Flag



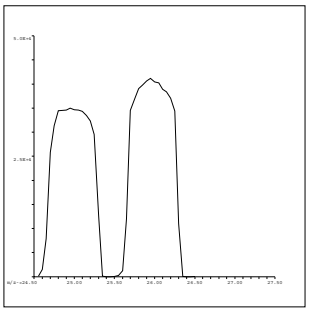
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



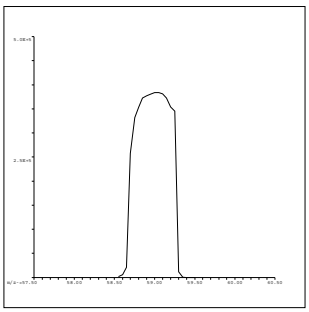
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



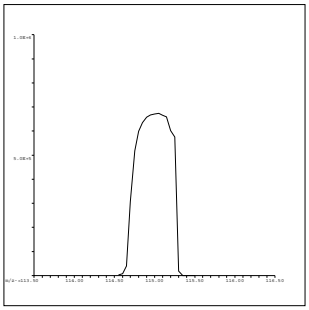
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



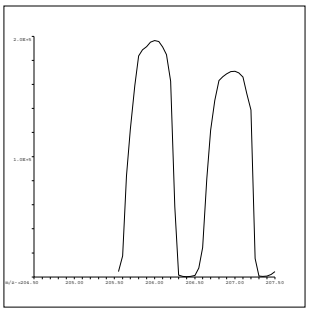
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



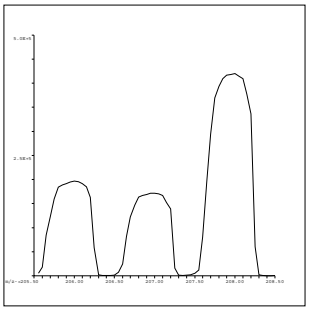
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



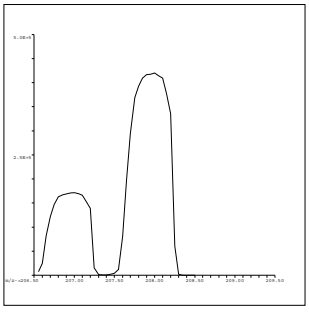
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 171216A

Instrument ID: ICPMS-02

Analyte	Data File	A1216002.D	A1216003.D	A1216004.D	A1216005.D	A1216006.D	A1216007.D	A1216008.D	A1216009.D	A1216010.D	
	Acq. Date-Time	12/16/2017 11:52 AM	12/16/2017 11:58 AM	12/16/2017 12:03 PM	12/16/2017 12:09 PM	12/16/2017 12:15 PM	12/16/2017 12:20 PM	12/16/2017 12:26 PM	12/16/2017 12:31 PM	12/16/2017 12:38 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	56760.6		61134.9	63363.4	63996.8	64339.3	66015.8	65952.3	67440.5	
55 Mn [2]	CPS	69.6		1520.5	13619.9	27345	54535.6	110487	269338.3	541129	0.9999
52 Cr [2]	CPS	165.4		2780.2	26441.5	52614.6	106702.6	213312.8	526818.2	1051424.9	0.9999
72 Ge (ISTD) [1]	CPS	46562.7		49459	50322.7	50976	49323	49929.3	49116	50092	
78 Se [1]	CPS	0		115.6	1090.1	2223.6	4533	9144.1	22190.2	44856.1	1.0000
72 Ge (ISTD) [2]	CPS	40150.2	43448.6	43385.2	44451.5	44957.1	44622.9	45726.9	45460.8	46062.5	
75 As [2]	CPS	11.6	63.1	283.6	2706.9	5474.7	10893.5	21959.7	54138.4	108292.5	1.0000
103 Rh (ISTD) [2]	CPS	1341995.8		1470745.7	1493548	1514129.1	1515157.9	1528551.2	1506260.5	1498170.5	
95 Mo [2]	CPS	53.3		1700.2	16937.3	34305.3	68773.2	138865	344936.2	692370.9	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 171219A

Instrument ID: ICPMS-02

Analyte	Data File	A1219002.D	A1219003.D	A1219004.D	A1219005.D	A1219006.D	A1219007.D	A1219008.D	A1219009.D	A1219010.D	
	Acq. Date-Time	12/19/2017 11:42 AM	12/19/2017 11:48 AM	12/19/2017 11:53 AM	12/19/2017 11:59 AM	12/19/2017 12:05 PM	12/19/2017 12:10 PM	12/19/2017 12:16 PM	12/19/2017 12:21 PM	12/19/2017 12:27 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	59462.6		59631.9	59907.7	59801.3	61105.3	60956.8	61988.3	62035.3	
55 Mn [2]	CPS	140.2		1570.3	12514.2	25483	51319.4	100936.6	251449.4	496246.9	1.0000
72 Ge (ISTD) [1]	CPS	50646.1		50406.2	51001.7	50596.8	50445.4	51376.1	51917.7	51124.1	
78 Se [1]	CPS	1.1		95.6	1049	2002.4	3996.2	8575.9	20959.7	41326.9	1.0000
72 Ge (ISTD) [2]	CPS	39877.4	39333.8	39715.8	39610.1	40161.4	40095.7	39731.4	40037.8	40097.8	
75 As [2]	CPS	25.8	74.2	278.7	2521.1	4997.7	10042.7	19741.3	49703.7	98525.4	1.0000
103 Rh (ISTD) [2]	CPS	1337447.5		1332810.8	1327343	1342310.9	1332371.2	1338883.9	1333989.1	1311763	
95 Mo [2]	CPS	82.2		1623.5	15195.5	30413	61392.7	122074.8	305948.8	610244.8	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.088	0.10	10.00	0	101	90	110				
Manganese	99.262	0.50	100.0	0	99.3	90	110				
Molybdenum	10.284	0.50	10.00	0	103	90	110				
Selenium	10.503	0.50	10.00	0	105	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ZZZZZZ**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870942**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.115	0.10	0.1000	0	115	80	120				
Manganese	0.501	0.50	0.5000	0	100	80	120				
Molybdenum	0.546	0.50	0.5000	0	109	80	120				
Selenium	0.547	0.50	0.5000	0	109	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.641	0.10	20.00	0	103	90	110				
Manganese	20.286	0.50	20.00	0	101	90	110				
Molybdenum	20.006	0.50	20.00	0	100	90	110				
Selenium	19.583	0.50	20.00	0	97.9	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.442	0.10	20.00	0	102	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.647	0.50	20.00	0	103	90	110				
Molybdenum	19.824	0.50	20.00	0	99.1	90	110				
Selenium	20.879	0.50	20.00	0	104	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870980**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.343	0.10	20.00	0	102	90	110				
Manganese	21.534	0.50	20.00	0	108	90	110				
Molybdenum	19.559	0.50	20.00	0	97.8	90	110				
Selenium	21.562	0.50	20.00	0	108	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ZZZZZZ**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870994**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.106	0.10	0.1000	0	106	70	130				
Manganese	0.566	0.50	0.5000	0	113	70	130				
Molybdenum	0.396	0.50	0.5000	0	79.3	70	130				
Selenium	0.378	0.50	0.5000	0	75.6	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICV**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.853	0.10	10.00	0	98.5	90	110				
Manganese	100.779	0.50	100.0	0	101	90	110				
Molybdenum	10.512	0.50	10.00	0	105	90	110				
Selenium	9.533	0.50	10.00	0	95.3	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ZZZZZZ**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872287**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.476	0.50	0.5000	0	95.2	80	120				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ZZZZZZ**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872290**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.080	0.10	0.1000	0	80.0	80	120				S
Manganese	0.548	0.50	0.5000	0	110	80	120				
Molybdenum	0.561	0.50	0.5000	0	112	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **CCV**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.014	0.10	20.00	0	100	90	110				
Manganese	20.685	0.50	20.00	0	103	90	110				
Molybdenum	19.851	0.50	20.00	0	99.3	90	110				
Selenium	19.801	0.50	20.00	0	99.0	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

12/21/2017

As on LLICV is biased low however, ICV and CCVs passed QC criteria. Arsenic on samples analyzed on this run is > than the LLICV concentration.

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **CCV**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872312**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.538	0.10	20.00	0	97.7	90	110				
Manganese	21.038	0.50	20.00	0	105	90	110				
Molybdenum	19.578	0.50	20.00	0	97.9	90	110				
Selenium	21.029	0.50	20.00	0	105	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ZZZZZZ**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.091	0.10	0.1000	0	90.7	70	130				
Manganese	0.560	0.50	0.5000	0	112	70	130				
Molybdenum	0.505	0.50	0.5000	0	101	70	130				
Selenium	0.648	0.50	0.5000	0	130	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870883**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.342	1.0	10.00	0	103	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ZZZZZZ**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870885**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.042	1.0	1.000	0	104	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870899**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.469	1.0	20.00	0	102	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.759	1.0	20.00	0	104	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.821	1.0	20.00	0	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.495	1.0	20.00	0	102	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ZZZZZZ**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870937**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.855	1.0	1.000	0	85.5	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870941**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.129	0.50									
Selenium	0.030	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.085	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.096	0.50									
Selenium	0.071	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.174	0.50									
Molybdenum	0.078	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICB**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872286**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.163	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **CCB**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.061	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **CCB**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.064	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870900**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0						0	0	0	

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.138	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870936**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.019	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICSA**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870943**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.075	0.50									
Selenium	0.030	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICSAB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870944**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.358	0.10	20.00	0	102	80	120				
Manganese	18.583	0.50	20.00	0	92.9	80	120				
Molybdenum	22.132	0.50	20.00	0	111	80	120				
Selenium	18.451	0.50	20.00	0	92.3	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICSA**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.048	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICSAB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870996**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.701	0.10	20.00	0	98.5	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICSAB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870996**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	18.644	0.50	20.00	0	93.2	80	120				
Molybdenum	22.689	0.50	20.00	0	113	80	120				
Selenium	19.988	0.50	20.00	0	99.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICSA**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872288**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.071	0.50									
Selenium	0.042	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICSAB**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872289**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.808	0.10	20.00	0	99.0	80	120				
Manganese	18.249	0.50	20.00	0	91.2	80	120				
Molybdenum	22.426	0.50	20.00	0	112	80	120				
Selenium	18.534	0.50	20.00	0	92.7	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICSA**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICSAB**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.712	0.10	20.00	0	98.6	80	120				
Manganese	18.549	0.50	20.00	0	92.7	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICSAB**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	21.889	0.50	20.00	0	109	80	120				
Selenium	19.253	0.50	20.00	0	96.3	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	120912
Client ID:	ICSA	Batch ID:	R120912	TestNo:	EPA 6020			Analysis Date:	12/16/2017	SeqNo:	2870886

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.091	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	120912
Client ID:	ICSAB	Batch ID:	R120912	TestNo:	EPA 6020			Analysis Date:	12/16/2017	SeqNo:	2870887

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.634	1.0	20.00	0	103	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	120912
Client ID:	ICSA	Batch ID:	R120912	TestNo:	EPA 6020			Analysis Date:	12/16/2017	SeqNo:	2870938

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.093	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	120912
Client ID:	ICSAB	Batch ID:	R120912	TestNo:	EPA 6020			Analysis Date:	12/16/2017	SeqNo:	2870939

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.534	1.0	20.00	0	97.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	56760.6	56760.6	100	PASS	70-125	40150.2	40150.2	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	61176.1	56760.6	107.78	PASS	70-125	43448.6	40150.2	108.22	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	61134.9	56760.6	107.71	PASS	70-125	43385.2	40150.2	108.06	PASS	70-125
Std3-5/50 ppb	ICAL	1	63363.4	56760.6	111.63	PASS	70-125	44451.5	40150.2	110.71	PASS	70-125
Std4-10/100 ppb	ICAL	1	63996.8	56760.6	112.75	PASS	70-125	44957.1	40150.2	111.97	PASS	70-125
Std5-20/200 ppb	ICAL	1	64339.3	56760.6	113.35	PASS	70-125	44622.9	40150.2	111.14	PASS	70-125
Std6-40/400 ppb	ICAL	1	66015.8	56760.6	116.31	PASS	70-125	45726.9	40150.2	113.89	PASS	70-125
Std7-100/1000 ppb	ICAL	1	65952.3	56760.6	116.19	PASS	70-125	45460.8	40150.2	113.23	PASS	70-125
Std8-200/2000 ppb	ICAL	1	67440.5	56760.6	118.82	PASS	70-125	46062.5	40150.2	114.73	PASS	70-125
ICV	ICV	1	66524.4	56760.6	117.2	PASS	70-125	47110.9	40150.2	117.34	PASS	70-125
ICB	ICB	1	64749.9	56760.6	114.08	PASS	70-125	45646.8	40150.2	113.69	PASS	70-125
LLICV	CCV1	1	67006.4	56760.6	118.05	PASS	70-125	47194.5	40150.2	117.54	PASS	70-125
ICSA1	ICSA	1	57972.6	56760.6	102.14	PASS	70-125	39203.4	40150.2	97.64	PASS	70-125
ICSAB1	ICSAB	1	66045.8	56760.6	116.36	PASS	70-125	44241.9	40150.2	110.19	PASS	70-125
LLICV	CCV1	1	68420.1	56760.6	120.54	PASS	70-125	47905.5	40150.2	119.32	PASS	70-125
MB-65979	MBLK	1	58629.2	56760.6	103.29	PASS	70-125	41665	40150.2	103.77	PASS	70-125
LCS-65979	LCS	1	63380.2	56760.6	111.66	PASS	70-125	44724.4	40150.2	111.39	PASS	70-125
N027405-001C	SAMP	1	48114.8	56760.6	84.77	PASS	70-125	31770.7	40150.2	79.13	PASS	70-125
N027405-001C	SAMP	5	54662.5	56760.6	96.3	PASS	70-125	38032.9	40150.2	94.73	PASS	70-125
N027405-001C	SAMP	25	57412.9	56760.6	101.15	PASS	70-125	40576.7	40150.2	101.06	PASS	70-125
N027405-001C-PS	PS	1	50124.1	56760.6	88.31	PASS	70-125	32941.8	40150.2	82.046	PASS	70-125
N027405-001C-PS	PS	5	58272.7	56760.6	102.66	PASS	70-125	39658.8	40150.2	98.78	PASS	70-125
N027405-001C-MS	MS	1	55117.5	56760.6	97.11	PASS	70-125	35332.4	40150.2	88.001	PASS	70-125
N027405-001C-MS	MS	5	60627.8	56760.6	106.81	PASS	70-125	40662.7	40150.2	101.28	PASS	70-125
N027405-001C-MSD	MSD	1	57647.1	56760.6	101.56	PASS	70-125	36920.5	40150.2	91.96	PASS	70-125
CCV1	CCV	1	70225	56760.6	123.72	PASS	70-125	47897.8	40150.2	119.3	PASS	70-125
CCB1	CCB	1	61090.7	56760.6	107.63	PASS	70-125	42434.7	40150.2	105.69	PASS	70-125
N027405-001C-MSD	MSD	5	58167.7	56760.6	102.48	PASS	70-125	39489.7	40150.2	98.35	PASS	70-125
N027405-002C	SAMP	1	54506.8	56760.6	96.029	PASS	70-125	33730.1	40150.2	84.01	PASS	70-125
N027405-002C	SAMP	5	63837.2	56760.6	112.47	PASS	70-125	41478	40150.2	103.31	PASS	70-125
N027405-003C	SAMP	1	58410.9	56760.6	102.91	PASS	70-125	36367.9	40150.2	90.58	PASS	70-125
N027405-003C	SAMP	5	64480	56760.6	113.6	PASS	70-125	42809.1	40150.2	106.62	PASS	70-125
N027405-004B	SAMP	1	67548.5	56760.6	119.01	PASS	70-125	45033.9	40150.2	112.16	PASS	70-125
N027405-004B	SAMP	5	64773	56760.6	114.12	PASS	70-125	44331.9	40150.2	110.42	PASS	70-125
N027405-006B	SAMP	1	50294.5	56760.6	88.61	PASS	70-125	30027.3	40150.2	74.79	PASS	70-125
N027405-006B	SAMP	5	60454.5	56760.6	106.51	PASS	70-125	38936.1	40150.2	96.98	PASS	70-125
N027405-007B	SAMP	1	50714.7	56760.6	89.35	PASS	70-125	29775.7	40150.2	74.16	PASS	70-125
CCV2	CCV	1	68215.5	56760.6	120.18	PASS	70-125	46921.4	40150.2	116.86	PASS	70-125
CCB2	CCB	1	61989.3	56760.6	109.21	PASS	70-125	43116.8	40150.2	107.39	PASS	70-125
N027405-007B	SAMP	5	57568.9	56760.6	101.42	PASS	70-125	37144.3	40150.2	92.51	PASS	70-125
N027405-008B	SAMP	1	50089.5	56760.6	88.25	PASS	70-125	29981.7	40150.2	74.67	PASS	70-125

INTERNAL STANDARD: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027405-008B	SAMP	5	58384.1	56760.6	102.86	PASS	70-125	37571.8	40150.2	93.58	PASS	70-125
N027405-009B	SAMP	1	54110.6	56760.6	95.33	PASS	70-125	34400.4	40150.2	85.68	PASS	70-125
N027405-009B	SAMP	5	58662.9	56760.6	103.35	PASS	70-125	38961.7	40150.2	97.04	PASS	70-125
N027405-011B	SAMP	1	48236.2	56760.6	84.98	PASS	70-125	28571.4	40150.2	71.16	PASS	70-125
N027405-011B	SAMP	5	53261.7	56760.6	93.84	PASS	70-125	34111.9	40150.2	84.96	PASS	70-125
N027405-012B	SAMP	1	48830.2	56760.6	86.028	PASS	70-125	29441.8	40150.2	73.33	PASS	70-125
N027405-012B	SAMP	5	48982.8	56760.6	86.3	PASS	70-125	32745.9	40150.2	81.56	PASS	70-125
N027405-013B	SAMP	1	43655.9	56760.6	76.91	PASS	70-125	25843.4	40150.2	64.37	NR!	70-125
CCV3	CCV	1	52290.4	56760.6	92.12	PASS	70-125	36773.3	40150.2	91.59	PASS	70-125
CCB3	CCB	1	49842.1	56760.6	87.81	PASS	70-125	34914.8	40150.2	86.96	PASS	70-125
N027405-013B	SAMP	5	47783.9	56760.6	84.18	PASS	70-125	31031.3	40150.2	77.29	PASS	70-125
N027405-014B	SAMP	1	52157.1	56760.6	91.89	PASS	70-125	34421.4	40150.2	85.73	PASS	70-125
N027405-014B	SAMP	5	52257.2	56760.6	92.066	PASS	70-125	36078.5	40150.2	89.86	PASS	70-125
N027431-001B	SAMP	1	49133.3	56760.6	86.56	PASS	70-125	31912	40150.2	79.48	PASS	70-125
N027431-001B	SAMP	5	51576.2	56760.6	90.87	PASS	70-125	35059.6	40150.2	87.32	PASS	70-125
N027431-002B	SAMP	1	43744	56760.6	77.068	PASS	70-125	27012	40150.2	67.28	NR!	70-125
N027431-002B	SAMP	5	47479.7	56760.6	83.65	PASS	70-125	31020.3	40150.2	77.26	PASS	70-125
N027431-003B	SAMP	1	37812.7	56760.6	66.62	NR!	70-125	22241.4	40150.2	55.4	NR!	70-125
N027431-003B	SAMP	5	42452.8	56760.6	74.79	PASS	70-125	27363.7	40150.2	68.15	NR!	70-125
N027431-004B	SAMP	1	36996.4	56760.6	65.18	NR!	70-125	21271.1	40150.2	52.98	NR!	70-125
CCV4	CCV	1	46254	56760.6	81.49	PASS	70-125	32231.5	40150.2	80.28	PASS	70-125
CCB4	CCB	1	42827.1	56760.6	75.45	PASS	70-125	30510.3	40150.2	75.99	PASS	70-125
LLCCV1	CCV2	1	59699.9	56760.6	105.18	PASS	70-125	40228.3	40150.2	100.19	PASS	70-125
ICSA2	ICSA	1	62827	56760.6	110.69	PASS	70-125	40977.7	40150.2	102.06	PASS	70-125
ICSAB2	ICSAB	1	45994.4	56760.6	81.032	PASS	70-125	29723.3	40150.2	74.03	PASS	70-125

INTERNAL STANDARD: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	46562.7	46562.7	100	PASS	70-125	1341995.8	1341995.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	50038.6	46562.7	107.46	PASS	70-125	1438897.6	1341995.8	107.22	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	49459	46562.7	106.22	PASS	70-125	1470745.7	1341995.8	109.59	PASS	70-125
Std3-5/50 ppb	ICAL	1	50322.7	46562.7	108.08	PASS	70-125	1493548	1341995.8	111.29	PASS	70-125
Std4-10/100 ppb	ICAL	1	50976	46562.7	109.48	PASS	70-125	1514129.1	1341995.8	112.83	PASS	70-125
Std5-20/200 ppb	ICAL	1	49323	46562.7	105.93	PASS	70-125	1515157.9	1341995.8	112.9	PASS	70-125
Std6-40/400 ppb	ICAL	1	49929.3	46562.7	107.23	PASS	70-125	1528551.2	1341995.8	113.9	PASS	70-125
Std7-100/1000 ppb	ICAL	1	49116	46562.7	105.48	PASS	70-125	1506260.5	1341995.8	112.24	PASS	70-125
Std8-200/2000 ppb	ICAL	1	50092	46562.7	107.58	PASS	70-125	1498170.5	1341995.8	111.64	PASS	70-125
ICV	ICV	1	50250.5	46562.7	107.92	PASS	70-125	1570216.3	1341995.8	117.01	PASS	70-125
ICB	ICB	1	49938.3	46562.7	107.25	PASS	70-125	1555141.5	1341995.8	115.88	PASS	70-125
LLICV	CCV1	1	50712.8	46562.7	108.91	PASS	70-125	1603761.4	1341995.8	119.51	PASS	70-125
ICSA1	ICSA	1	41790	46562.7	89.75	PASS	70-125	1250719	1341995.8	93.2	PASS	70-125
ICSAB1	ICSAB	1	47903.4	46562.7	102.88	PASS	70-125	1394623.4	1341995.8	103.92	PASS	70-125
LLICV	CCV1	1	52923.3	46562.7	113.66	PASS	70-125	1616916.2	1341995.8	120.49	PASS	70-125
MB-65979	MBLK	1	46676.6	46562.7	100.24	PASS	70-125	1412258.9	1341995.8	105.24	PASS	70-125
LCS-65979	LCS	1	49889.2	46562.7	107.14	PASS	70-125	1518023.1	1341995.8	113.12	PASS	70-125
N027405-001C	SAMP	1	36152	46562.7	77.64	PASS	70-125	955964.3	1341995.8	71.23	PASS	70-125
N027405-001C	SAMP	5	42526.1	46562.7	91.33	PASS	70-125	1187178	1341995.8	88.46	PASS	70-125
N027405-001C	SAMP	25	46255.3	46562.7	99.34	PASS	70-125	1312230.3	1341995.8	97.78	PASS	70-125
N027405-001C-PS	PS	1	36157.6	46562.7	77.65	PASS	70-125	979635.9	1341995.8	73	PASS	70-125
N027405-001C-PS	PS	5	44146.1	46562.7	94.81	PASS	70-125	1224258.4	1341995.8	91.23	PASS	70-125
N027405-001C-MS	MS	1	39381.7	46562.7	84.58	PASS	70-125	1033405.9	1341995.8	77.005	PASS	70-125
N027405-001C-MS	MS	5	45577.6	46562.7	97.88	PASS	70-125	1273632.2	1341995.8	94.91	PASS	70-125
N027405-001C-MSD	MSD	1	40478.6	46562.7	86.93	PASS	70-125	1067174.4	1341995.8	79.52	PASS	70-125
CCV1	CCV	1	54460.5	46562.7	116.96	PASS	70-125	1562877.7	1341995.8	116.46	PASS	70-125
CCB1	CCB	1	48152.8	46562.7	103.41	PASS	70-125	1419998.5	1341995.8	105.81	PASS	70-125
N027405-001C-MSD	MSD	5	43108.7	46562.7	92.58	PASS	70-125	1224436.2	1341995.8	91.24	PASS	70-125
N027405-002C	SAMP	1	36674.2	46562.7	78.76	PASS	70-125	982408.2	1341995.8	73.21	PASS	70-125
N027405-002C	SAMP	5	46107	46562.7	99.021	PASS	70-125	1287433.4	1341995.8	95.93	PASS	70-125
N027405-003C	SAMP	1	39375.1	46562.7	84.56	PASS	70-125	1033506.6	1341995.8	77.013	PASS	70-125
N027405-003C	SAMP	5	47681.6	46562.7	102.4	PASS	70-125	1301507.4	1341995.8	96.98	PASS	70-125
N027405-004B	SAMP	1	49642.9	46562.7	106.62	PASS	70-125	1364982.8	1341995.8	101.71	PASS	70-125
N027405-004B	SAMP	5	50063.1	46562.7	107.52	PASS	70-125	1410214.9	1341995.8	105.08	PASS	70-125
N027405-006B	SAMP	1	31953.4	46562.7	68.62	NR!	70-125	832715.7	1341995.8	62.051	NR!	70-125
N027405-006B	SAMP	5	43053.2	46562.7	92.46	PASS	70-125	1181974.6	1341995.8	88.076	PASS	70-125
N027405-007B	SAMP	1	31770.6	46562.7	68.23	NR!	70-125	829505.8	1341995.8	61.81	NR!	70-125
CCV2	CCV	1	52518.6	46562.7	112.79	PASS	70-125	1555707.3	1341995.8	115.92	PASS	70-125
CCB2	CCB	1	48855	46562.7	104.92	PASS	70-125	1435821.9	1341995.8	106.99	PASS	70-125
N027405-007B	SAMP	5	40939.9	46562.7	87.92	PASS	70-125	1100743.7	1341995.8	82.023	PASS	70-125
N027405-008B	SAMP	1	31608	46562.7	67.88	NR!	70-125	831807.8	1341995.8	61.98	NR!	70-125

INTERNAL STANDARD: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027405-008B	SAMP	5	41568.3	46562.7	89.27	PASS	70-125	1123239.4	1341995.8	83.7	PASS	70-125
N027405-009B	SAMP	1	37726.7	46562.7	81.023	PASS	70-125	997840.5	1341995.8	74.35	PASS	70-125
N027405-009B	SAMP	5	43443	46562.7	93.3	PASS	70-125	1212655.9	1341995.8	90.36	PASS	70-125
N027405-011B	SAMP	1	30936.8	46562.7	66.44	NR!	70-125	822765.7	1341995.8	61.31	NR!	70-125
N027405-011B	SAMP	5	38039.6	46562.7	81.7	PASS	70-125	1054323.4	1341995.8	78.56	PASS	70-125
N027405-012B	SAMP	1	33023.1	46562.7	70.92	PASS	70-125	871594.7	1341995.8	64.95	NR!	70-125
N027405-012B	SAMP	5	35987.1	46562.7	77.29	PASS	70-125	1008104.4	1341995.8	75.12	PASS	70-125
N027405-013B	SAMP	1	27794.4	46562.7	59.69	NR!	70-125	767447.1	1341995.8	57.19	NR!	70-125
CCV3	CCV	1	40717.1	46562.7	87.45	PASS	70-125	1258175.3	1341995.8	93.75	PASS	70-125
CCB3	CCB	1	38966.3	46562.7	83.69	PASS	70-125	1201878	1341995.8	89.56	PASS	70-125
N027405-013B	SAMP	5	34620.8	46562.7	74.35	PASS	70-125	957323.2	1341995.8	71.34	PASS	70-125
N027405-014B	SAMP	1	37388	46562.7	80.3	PASS	70-125	1075314.6	1341995.8	80.13	PASS	70-125
N027405-014B	SAMP	5	40221.4	46562.7	86.38	PASS	70-125	1187981.9	1341995.8	88.52	PASS	70-125
N027431-001B	SAMP	1	35914.8	46562.7	77.13	PASS	70-125	986601.2	1341995.8	73.52	PASS	70-125
N027431-001B	SAMP	5	39215.8	46562.7	84.22	PASS	70-125	1101973.6	1341995.8	82.11	PASS	70-125
N027431-002B	SAMP	1	29366.1	46562.7	63.068	NR!	70-125	802237.9	1341995.8	59.78	NR!	70-125
N027431-002B	SAMP	5	34972.7	46562.7	75.11	PASS	70-125	982179.2	1341995.8	73.19	PASS	70-125
N027431-003B	SAMP	1	23505.4	46562.7	50.48	NR!	70-125	645931.7	1341995.8	48.13	NR!	70-125
N027431-003B	SAMP	5	30885.5	46562.7	66.33	NR!	70-125	860292.4	1341995.8	64.11	NR!	70-125
N027431-004B	SAMP	1	22866.7	46562.7	49.11	NR!	70-125	640043.5	1341995.8	47.69	NR!	70-125
CCV4	CCV	1	35718.7	46562.7	76.71	PASS	70-125	1117603.5	1341995.8	83.28	PASS	70-125
CCB4	CCB	1	34839.1	46562.7	74.82	PASS	70-125	1041973.2	1341995.8	77.64	PASS	70-125
LLCCV1	CCV2	1	48381.4	46562.7	103.91	PASS	70-125	1302629	1341995.8	97.067	PASS	70-125
ICSA2	ICSA	1	51421.8	46562.7	110.44	PASS	70-125	1208457.8	1341995.8	90.049	PASS	70-125
ICSAB2	ICSAB	1	33660	46562.7	72.29	PASS	70-125	963971.6	1341995.8	71.83	PASS	70-125

INTERNAL STANDARD: 171219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	59462.6	59462.6	100	PASS	70-125	39877.4	39877.4	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	59538.2	59462.6	100.13	PASS	70-125	39333.8	39877.4	98.64	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	59631.9	59462.6	100.28	PASS	70-125	39715.8	39877.4	99.59	PASS	70-125
Std3-5/50 ppb	ICAL	1	59907.7	59462.6	100.75	PASS	70-125	39610.1	39877.4	99.33	PASS	70-125
Std4-10/100 ppb	ICAL	1	59801.3	59462.6	100.57	PASS	70-125	40161.4	39877.4	100.71	PASS	70-125
Std5-20/200 ppb	ICAL	1	61105.3	59462.6	102.76	PASS	70-125	40095.7	39877.4	100.55	PASS	70-125
Std6-40/400 ppb	ICAL	1	60956.8	59462.6	102.51	PASS	70-125	39731.4	39877.4	99.63	PASS	70-125
Std7-100/1000 ppb	ICAL	1	61988.3	59462.6	104.25	PASS	70-125	40037.8	39877.4	100.4	PASS	70-125
Std8-200/2000 ppb	ICAL	1	62035.3	59462.6	104.33	PASS	70-125	40097.8	39877.4	100.55	PASS	70-125
ICV	ICV	1	74138.7	59462.6	124.68	PASS	70-125	49226.1	39877.4	123.44	PASS	70-125
ICB	ICB	1	63007.7	59462.6	105.96	PASS	70-125	42029.4	39877.4	105.4	PASS	70-125
LLICV	CCV1	1	64905	59462.6	109.15	PASS	70-125	43650.3	39877.4	109.46	PASS	70-125
ICSA1	ICSA	1	72099.7	59462.6	121.25	PASS	70-125	45899.8	39877.4	115.1	PASS	70-125
ICSAB1	ICSAB	1	67656	59462.6	113.78	PASS	70-125	43731.6	39877.4	109.67	PASS	70-125
LLICV	CCV1	1	72115.5	59462.6	121.28	PASS	70-125	48508.5	39877.4	121.64	PASS	70-125
N027405-011B	SAMP	10	66222.1	59462.6	111.37	PASS	70-125	43028.7	39877.4	107.9	PASS	70-125
N027405-013B	SAMP	5	69385.1	59462.6	116.69	PASS	70-125	44408.1	39877.4	111.36	PASS	70-125
N027405-014B	SAMP	1	62358.7	59462.6	104.87	PASS	70-125	40872.1	39877.4	102.49	PASS	70-125
N027431-001B	SAMP	1	60612	59462.6	101.93	PASS	70-125	39859.6	39877.4	99.96	PASS	70-125
N027431-002B	SAMP	5	68850.6	59462.6	115.79	PASS	70-125	44945	39877.4	112.71	PASS	70-125
N027431-003B	SAMP	5	65602.2	59462.6	110.33	PASS	70-125	42368.1	39877.4	106.25	PASS	70-125
N027431-003B	SAMP	25	68206.9	59462.6	114.71	PASS	70-125	45657.8	39877.4	114.5	PASS	70-125
N027431-004B	SAMP	5	66176.6	59462.6	111.29	PASS	70-125	42492.9	39877.4	106.56	PASS	70-125
N027431-004B	SAMP	25	69423.2	59462.6	116.75	PASS	70-125	45507.6	39877.4	114.12	PASS	70-125
CCV1	CCV	1	68605	59462.6	115.38	PASS	70-125	45982.1	39877.4	115.31	PASS	70-125
CCB1	CCB	1	64893.6	59462.6	109.13	PASS	70-125	45325	39877.4	113.66	PASS	70-125
N027431-005B	SAMP	1	64355.9	59462.6	108.23	PASS	70-125	42493.9	39877.4	106.56	PASS	70-125
N027431-005B	SAMP	5	70996.1	59462.6	119.4	PASS	70-125	47846.3	39877.4	119.98	PASS	70-125
N027431-005B	SAMP	25	66345.1	59462.6	111.57	PASS	70-125	46423.5	39877.4	116.42	PASS	70-125
N027431-006B	SAMP	1	62635.1	59462.6	105.34	PASS	70-125	38515	39877.4	96.58	PASS	70-125
N027431-006B	SAMP	5	72986	59462.6	122.74	PASS	70-125	47497.7	39877.4	119.11	PASS	70-125
N027431-006B	SAMP	25	72820.7	59462.6	122.46	PASS	70-125	48267.8	39877.4	121.04	PASS	70-125
N027431-004B	SAMP	1	68125.5	59462.6	114.57	PASS	70-125	38874.9	39877.4	97.49	PASS	70-125
N027431-003B	SAMP	1	71322.1	59462.6	119.94	PASS	70-125	40799.4	39877.4	102.31	PASS	70-125
N027431-002B	SAMP	1	56715.4	59462.6	95.38	PASS	70-125	34973.9	39877.4	87.7	PASS	70-125
CCV2	CCV	1	66920.8	59462.6	112.54	PASS	70-125	45963.3	39877.4	115.26	PASS	70-125
CCB2	CCB	1	59914.4	59462.6	100.76	PASS	70-125	40731.6	39877.4	102.14	PASS	70-125
LLCCV1	CCV2	1	60256.5	59462.6	101.34	PASS	70-125	42365.8	39877.4	106.24	PASS	70-125
ICSA2	ICSA	1	57422	59462.6	96.57	PASS	70-125	39060.9	39877.4	97.95	PASS	70-125
ICSAB2	ICSAB	1	71420.3	59462.6	120.11	PASS	70-125	47148.8	39877.4	118.23	PASS	70-125

INTERNAL STANDARD: 171219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	50646.1	50646.1	100	PASS	70-125	1337447.5	1337447.5	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	50096.7	50646.1	98.92	PASS	70-125	1337148.9	1337447.5	99.98	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	50406.2	50646.1	99.53	PASS	70-125	1332810.8	1337447.5	99.65	PASS	70-125
Std3-5/50 ppb	ICAL	1	51001.7	50646.1	100.7	PASS	70-125	1327343	1337447.5	99.24	PASS	70-125
Std4-10/100 ppb	ICAL	1	50596.8	50646.1	99.9	PASS	70-125	1342310.9	1337447.5	100.36	PASS	70-125
Std5-20/200 ppb	ICAL	1	50445.4	50646.1	99.6	PASS	70-125	1332371.2	1337447.5	99.62	PASS	70-125
Std6-40/400 ppb	ICAL	1	51376.1	50646.1	101.44	PASS	70-125	1338883.9	1337447.5	100.11	PASS	70-125
Std7-100/1000 ppb	ICAL	1	51917.7	50646.1	102.51	PASS	70-125	1333989.1	1337447.5	99.74	PASS	70-125
Std8-200/2000 ppb	ICAL	1	51124.1	50646.1	100.94	PASS	70-125	1311763	1337447.5	98.08	PASS	70-125
ICV	ICV	1	62693.5	50646.1	123.79	PASS	70-125	1631263.7	1337447.5	121.97	PASS	70-125
ICB	ICB	1	54274.5	50646.1	107.16	PASS	70-125	1403011.3	1337447.5	104.9	PASS	70-125
LLICV	CCV1	1	56021.2	50646.1	110.61	PASS	70-125	1454004	1337447.5	108.71	PASS	70-125
ICSA1	ICSA	1	57642.6	50646.1	113.81	PASS	70-125	1388533.5	1337447.5	103.82	PASS	70-125
ICSAB1	ICSAB	1	53311.2	50646.1	105.26	PASS	70-125	1321126.6	1337447.5	98.78	PASS	70-125
LLICV	CCV1	1	63884.4	50646.1	126.14	NR!	70-125	1533848.6	1337447.5	114.68	PASS	70-125
N027405-011B	SAMP	10	53797.1	50646.1	106.22	PASS	70-125	1299585.3	1337447.5	97.17	PASS	70-125
N027405-013B	SAMP	5	57472.8	50646.1	113.48	PASS	70-125	1324110.6	1337447.5	99.003	PASS	70-125
N027405-014B	SAMP	1	49900.6	50646.1	98.53	PASS	70-125	1238929.7	1337447.5	92.63	PASS	70-125
N027431-001B	SAMP	1	48634.4	50646.1	96.028	PASS	70-125	1178494.8	1337447.5	88.12	PASS	70-125
N027431-002B	SAMP	5	57626.7	50646.1	113.78	PASS	70-125	1299520.5	1337447.5	97.16	PASS	70-125
N027431-003B	SAMP	5	53301.1	50646.1	105.24	PASS	70-125	1223625.6	1337447.5	91.49	PASS	70-125
N027431-003B	SAMP	25	57451.9	50646.1	113.44	PASS	70-125	1357299.4	1337447.5	101.48	PASS	70-125
N027431-004B	SAMP	5	53084.7	50646.1	104.81	PASS	70-125	1236099.7	1337447.5	92.42	PASS	70-125
N027431-004B	SAMP	25	57526.8	50646.1	113.59	PASS	70-125	1373039.9	1337447.5	102.66	PASS	70-125
CCV1	CCV	1	58603.8	50646.1	115.71	PASS	70-125	1475194.2	1337447.5	110.3	PASS	70-125
CCB1	CCB	1	57336	50646.1	113.21	PASS	70-125	1438095.6	1337447.5	107.53	PASS	70-125
N027431-005B	SAMP	1	53888.7	50646.1	106.4	PASS	70-125	1240752.6	1337447.5	92.77	PASS	70-125
N027431-005B	SAMP	5	61189.7	50646.1	120.82	PASS	70-125	1448384	1337447.5	108.29	PASS	70-125
N027431-005B	SAMP	25	58492.1	50646.1	115.49	PASS	70-125	1427883.7	1337447.5	106.76	PASS	70-125
N027431-006B	SAMP	1	45818.4	50646.1	90.47	PASS	70-125	1102538.3	1337447.5	82.44	PASS	70-125
N027431-006B	SAMP	5	58634.8	50646.1	115.77	PASS	70-125	1404611.6	1337447.5	105.02	PASS	70-125
N027431-006B	SAMP	25	58987.5	50646.1	116.47	PASS	70-125	1489414.9	1337447.5	111.36	PASS	70-125
N027431-004B	SAMP	1	40898.7	50646.1	80.75	PASS	70-125	1036029.9	1337447.5	77.46	PASS	70-125
N027431-003B	SAMP	1	44047.9	50646.1	86.97	PASS	70-125	1102066.5	1337447.5	82.4	PASS	70-125
N027431-002B	SAMP	1	37374.7	50646.1	73.8	PASS	70-125	992930.9	1337447.5	74.24	PASS	70-125
CCV2	CCV	1	51858.7	50646.1	102.39	PASS	70-125	1445185.3	1337447.5	108.06	PASS	70-125
CCB2	CCB	1	48892.9	50646.1	96.54	PASS	70-125	1314668.4	1337447.5	98.3	PASS	70-125
LLCCV1	CCV2	1	50008.6	50646.1	98.74	PASS	70-125	1315798.9	1337447.5	98.38	PASS	70-125
ICSA2	ICSA	1	47387.4	50646.1	93.57	PASS	70-125	1260976.2	1337447.5	94.28	PASS	70-125
ICSAB2	ICSAB	1	52946.6	50646.1	104.54	PASS	70-125	1427813.7	1337447.5	106.76	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N027405
Test Method: EPA 6020
Analysis Date: 12/16/2017

Matrix: Groundwater
Batch No.: 65979

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to severala analytes. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027405-001C DT 5X	Arsenic	ug/L	4.73769	PASS	4.629015	2.35%	10
N027405-001C DT 5X	Chromium	ug/L	0	NA	0.076638	100.00%	10
N027405-001C DT 5X	Manganese	ug/L	140.9829	PASS	138.534	1.77%	10
N027405-001C DT 5X	Molybdenum	ug/L	10.47355	NA	10.82288	3.23%	10
N027405-001C DT 5X	Selenium	ug/L	0	NA	0.151013	100.00%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027405-001C-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	120912
Client ID:	ZZZZZZ	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870951

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.649	0.10	10.00	4.629	100	80	120				
Molybdenum	22.604	0.50	10.00	10.82	118	80	120				
Selenium	9.020	0.50	10.00	0.1510	88.7	80	120				

Sample ID	N027405-001C-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	120912
Client ID:	ZZZZZZ	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870952

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	229.920	2.5	100.0	138.5	91.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N027405-001C-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	120912
Client ID:	ZZZZZZ	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870894

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.860	1.0	10.00	0.07664	97.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

ARCADIS

Project: PG&E Topock - GMP

Project No.: RC000753.801B

ASSET Laboratories Work Order:

N027405_Amended

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

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December 28, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027405

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 06, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Litucas for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027405

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Subcontracted Analyses:

Oxygen/Deuterium was subcontracted to Zymax- Pittsburg,PA.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N027405-006, -007, -008 and -011 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 300.0:

Dilution was necessary for some samples due to precipitation upon the addition of eluent.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Bromide in QC samples N027405-004CMS, N027429-007DMS, N027429-007DMSD and N027429-012DMS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for SM 4500-NO3F:

RPD for Sample Duplicate(DUP) is outside criteria ; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N027405-001C-MS1 and N027405-001C-MSD1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) is outside recovery criteria for Sodium in QC sample N027405-002C-MS2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N027405-006, -007, -008, -011, -012 and-013 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

ASSET Laboratories

Date: *21-Dec-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027405
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027405-001A	MW-36-090-Q417	Groundwater	12/6/2017 1:11:00 PM	12/6/2017	12/21/2017
N027405-001B	MW-36-090-Q417	Groundwater	12/6/2017 1:11:00 PM	12/6/2017	12/21/2017
N027405-001C	MW-36-090-Q417	Groundwater	12/6/2017 1:11:00 PM	12/6/2017	12/21/2017
N027405-001D	MW-36-090-Q417	Groundwater	12/6/2017 1:11:00 PM	12/6/2017	12/21/2017
N027405-002A	MW-36-100-Q417	Groundwater	12/6/2017 11:51:00 AM	12/6/2017	12/21/2017
N027405-002B	MW-36-100-Q417	Groundwater	12/6/2017 11:51:00 AM	12/6/2017	12/21/2017
N027405-002C	MW-36-100-Q417	Groundwater	12/6/2017 11:51:00 AM	12/6/2017	12/21/2017
N027405-002D	MW-36-100-Q417	Groundwater	12/6/2017 11:51:00 AM	12/6/2017	12/21/2017
N027405-002E	MW-36-100-Q417	Groundwater	12/6/2017 11:51:00 AM	12/6/2017	12/21/2017
N027405-003A	MW-910-Q417	Groundwater	12/6/2017 12:01:00 PM	12/6/2017	12/21/2017
N027405-003B	MW-910-Q417	Groundwater	12/6/2017 12:01:00 PM	12/6/2017	12/21/2017
N027405-003C	MW-910-Q417	Groundwater	12/6/2017 12:01:00 PM	12/6/2017	12/21/2017
N027405-003D	MW-910-Q417	Groundwater	12/6/2017 12:01:00 PM	12/6/2017	12/21/2017
N027405-003E	MW-910-Q417	Groundwater	12/6/2017 12:01:00 PM	12/6/2017	12/21/2017
N027405-004A	MW-36-070-Q417	Groundwater	12/6/2017 11:44:00 AM	12/6/2017	12/21/2017
N027405-004B	MW-36-070-Q417	Groundwater	12/6/2017 11:44:00 AM	12/6/2017	12/21/2017
N027405-004C	MW-36-070-Q417	Groundwater	12/6/2017 11:44:00 AM	12/6/2017	12/21/2017
N027405-005A	MW-720-Q417	Groundwater	12/6/2017 3:30:00 PM	12/6/2017	12/21/2017
N027405-006A	MW-72BR-200-3V-Q417	Groundwater	12/6/2017 2:54:00 PM	12/6/2017	12/21/2017
N027405-006B	MW-72BR-200-3V-Q417	Groundwater	12/6/2017 2:54:00 PM	12/6/2017	12/21/2017
N027405-006C	MW-72BR-200-3V-Q417	Groundwater	12/6/2017 2:54:00 PM	12/6/2017	12/21/2017
N027405-006D	MW-72BR-200-3V-Q417	Groundwater	12/6/2017 2:54:00 PM	12/6/2017	12/21/2017
N027405-007A	MW-72BR-200-LF_D-Q417	Groundwater	12/6/2017 10:17:00 AM	12/6/2017	12/21/2017
N027405-007B	MW-72BR-200-LF_D-Q417	Groundwater	12/6/2017 10:17:00 AM	12/6/2017	12/21/2017
N027405-007C	MW-72BR-200-LF_D-Q417	Groundwater	12/6/2017 10:17:00 AM	12/6/2017	12/21/2017
N027405-007D	MW-72BR-200-LF_D-Q417	Groundwater	12/6/2017 10:17:00 AM	12/6/2017	12/21/2017
N027405-008A	MW-72BR-200-LF_S-Q417	Groundwater	12/6/2017 9:35:00 AM	12/6/2017	12/21/2017
N027405-008B	MW-72BR-200-LF_S-Q417	Groundwater	12/6/2017 9:35:00 AM	12/6/2017	12/21/2017
N027405-008C	MW-72BR-200-LF_S-Q417	Groundwater	12/6/2017 9:35:00 AM	12/6/2017	12/21/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027405
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027405-008D	MW-72BR-200-LF_S-Q417	Groundwater	12/6/2017 9:35:00 AM	12/6/2017	12/21/2017
N027405-009A	MW-62-065-Q417	Groundwater	12/6/2017 3:45:00 PM	12/6/2017	12/21/2017
N027405-009B	MW-62-065-Q417	Groundwater	12/6/2017 3:45:00 PM	12/6/2017	12/21/2017
N027405-009C	MW-62-065-Q417	Groundwater	12/6/2017 3:45:00 PM	12/6/2017	12/21/2017
N027405-009D	MW-62-065-Q417	Groundwater	12/6/2017 3:45:00 PM	12/6/2017	12/21/2017
N027405-010A	MW-718-Q417	Groundwater	12/6/2017 3:10:00 PM	12/6/2017	12/21/2017
N027405-011A	MW-64BR-Q417	Groundwater	12/6/2017 11:50:00 AM	12/6/2017	12/21/2017
N027405-011B	MW-64BR-Q417	Groundwater	12/6/2017 11:50:00 AM	12/6/2017	12/21/2017
N027405-011C	MW-64BR-Q417	Groundwater	12/6/2017 11:50:00 AM	12/6/2017	12/21/2017
N027405-011D	MW-64BR-Q417	Groundwater	12/6/2017 11:50:00 AM	12/6/2017	12/21/2017
N027405-012A	MW-60-125-Q417	Groundwater	12/6/2017 1:20:00 PM	12/6/2017	12/21/2017
N027405-012B	MW-60-125-Q417	Groundwater	12/6/2017 1:20:00 PM	12/6/2017	12/21/2017
N027405-012C	MW-60-125-Q417	Groundwater	12/6/2017 1:20:00 PM	12/6/2017	12/21/2017
N027405-012D	MW-60-125-Q417	Groundwater	12/6/2017 1:20:00 PM	12/6/2017	12/21/2017
N027405-013A	MW-73-080-Q417	Groundwater	12/6/2017 2:40:00 PM	12/6/2017	12/21/2017
N027405-013B	MW-73-080-Q417	Groundwater	12/6/2017 2:40:00 PM	12/6/2017	12/21/2017
N027405-013C	MW-73-080-Q417	Groundwater	12/6/2017 2:40:00 PM	12/6/2017	12/21/2017
N027405-013D	MW-73-080-Q417	Groundwater	12/6/2017 2:40:00 PM	12/6/2017	12/21/2017
N027405-014A	MW-74-240-Q417	Groundwater	12/6/2017 10:00:00 AM	12/6/2017	12/21/2017
N027405-014B	MW-74-240-Q417	Groundwater	12/6/2017 10:00:00 AM	12/6/2017	12/21/2017
N027405-014C	MW-74-240-Q417	Groundwater	12/6/2017 10:00:00 AM	12/6/2017	12/21/2017
N027405-014D	MW-74-240-Q417	Groundwater	12/6/2017 10:00:00 AM	12/6/2017	12/21/2017
N027405-015A	MW-719-Q417	Groundwater	12/6/2017 3:30:00 PM	12/6/2017	12/21/2017

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-090-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 1:11:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171207B**	QC Batch: **R120656**			PrepDate			Analyst: **LR**
Specific Conductance	5100	0.10	0.10		umhos/cm	1	12/7/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-100-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171207B**	QC Batch: **R120656**			PrepDate			Analyst: **LR**
Specific Conductance	7200	0.10	0.10		umhos/cm	1	12/7/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171207B**	QC Batch: **R120656**			PrepDate			Analyst: **LR**
Specific Conductance	7200	0.10	0.10		umhos/cm	1	12/7/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-004

Client Sample ID: MW-36-070-Q417
Collection Date: 12/6/2017 11:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171207B**	QC Batch: **R120656**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	12/7/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-006

Client Sample ID: MW-72BR-200-3V-Q417
Collection Date: 12/6/2017 2:54:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171207B**	QC Batch: **R120656**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	12/7/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-007

Client Sample ID: MW-72BR-200-LF_D-Q417
Collection Date: 12/6/2017 10:17:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171207B**	QC Batch: **R120656**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	12/7/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_S-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 9:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171207C**	QC Batch: **R120657**			PrepDate			Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	12/7/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171207C**	QC Batch: **R120657**			PrepDate			Analyst: **LR**
Specific Conductance	5800	0.10	0.10		umhos/cm	1	12/7/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171207C**	QC Batch: **R120657**			PrepDate			Analyst: **LR**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	12/7/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60-125-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 1:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171207C**	QC Batch: **R120657**			PrepDate			Analyst: **LR**
Specific Conductance	8800	0.10	0.10		umhos/cm	1	12/7/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-013

Client Sample ID: MW-73-080-Q417
Collection Date: 12/6/2017 2:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171207C**	QC Batch: **R120657**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	12/7/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-014

Client Sample ID: MW-74-240-Q417
Collection Date: 12/6/2017 10:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171207C**	QC Batch: **R120657**			PrepDate			Analyst: **LR**
Specific Conductance	860	0.10	0.10		umhos/cm	1	12/7/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N027404-009DDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **120656**
Client ID: **ZZZZZZ**	Batch ID: **R120656**	TestNo: **EPA 120.1**		Analysis Date: **12/7/2017**	SeqNo: **2856454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	12070.000	0.10						12060	0.0829	10	

Sample ID **N027404-020CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **120656**
Client ID: **ZZZZZZ**	Batch ID: **R120656**	TestNo: **EPA 120.1**		Analysis Date: **12/7/2017**	SeqNo: **2856474**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	21700.000	0.10						22100	1.83	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N027405-008DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120657
Client ID:	ZZZZZZ	Batch ID:	R120657	TestNo:	EPA 120.1			Analysis Date:	12/7/2017	SeqNo:	2856482

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	14420.000	0.10						14380	0.278	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-090-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 1:11:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171208C**	QC Batch: **65973**			PrepDate	**12/8/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2900	50	50		mg/L	1	12/8/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-100-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171208C**	QC Batch: **65973**			PrepDate	**12/8/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4200	50	50		mg/L	1	12/8/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171208C**	QC Batch: **65973**				PrepDate	**12/8/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4300	50	50		mg/L	1	12/8/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-070-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171211D**	QC Batch: **66002**				PrepDate	**12/11/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	670	10	10		mg/L	1	12/11/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-3V-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 2:54:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171211D**	QC Batch: **66002**				PrepDate	**12/11/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	8500	100	100		mg/L	1	12/11/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_D-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 10:17:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171211D**	QC Batch: **66002**				PrepDate	**12/11/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	8600	100	100		mg/L	1	12/11/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_S-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 9:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171211D**	QC Batch: **66002**				PrepDate	**12/11/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	9000	100	100		mg/L	1	12/11/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171211D**	QC Batch: **66002**			PrepDate	**12/11/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3500	50	50		mg/L	1	12/11/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171211D**	QC Batch: **66002**				PrepDate	**12/11/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	7300	100	100		mg/L	1	12/11/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60-125-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 1:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171211D**	QC Batch: **66002**			PrepDate	**12/11/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	5800	50	50		mg/L	1	12/11/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171211E**	QC Batch: **66003**				PrepDate	**12/11/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	6300	100	100		mg/L	1	12/11/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-74-240-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 10:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171211E**	QC Batch: **66003**				PrepDate	**12/11/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	520	10	10		mg/L	1	12/11/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-65973	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/8/2017	RunNo:	120715
Client ID:	LCSW	Batch ID:	65973	TestNo:	SM2540C			Analysis Date:	12/8/2017	SeqNo:	2859417

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	924.000	10	1000	0	92.4	80	120				

Sample ID	MB-65973	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/8/2017	RunNo:	120715
Client ID:	PBW	Batch ID:	65973	TestNo:	SM2540C			Analysis Date:	12/8/2017	SeqNo:	2859418

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N027417-001BDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/8/2017	RunNo:	120715
Client ID:	ZZZZZZ	Batch ID:	65973	TestNo:	SM2540C			Analysis Date:	12/8/2017	SeqNo:	2859429

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	177600.000	1000						170100	4.31	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66002**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/11/2017**	RunNo: **120758**
Client ID: **LCSW**	Batch ID: **66002**	TestNo: **SM2540C**		Analysis Date: **12/11/2017**	SeqNo: **2861041**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	936.000	10	1000	0	93.6	80	120				

Sample ID **MB-66002**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/11/2017**	RunNo: **120758**
Client ID: **PBW**	Batch ID: **66002**	TestNo: **SM2540C**		Analysis Date: **12/11/2017**	SeqNo: **2861042**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N027404-020CDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/11/2017**	RunNo: **120758**
Client ID: **ZZZZZZ**	Batch ID: **66002**	TestNo: **SM2540C**		Analysis Date: **12/11/2017**	SeqNo: **2861046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	16980.000	200						16880	0.591	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-66003	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/11/2017	RunNo:	120759
Client ID:	LCSW	Batch ID:	66003	TestNo:	SM2540C			Analysis Date:	12/11/2017	SeqNo:	2861054

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	959.000	10	1000	0	95.9	80	120				

Sample ID	MB-66003	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/11/2017	RunNo:	120759
Client ID:	PBW	Batch ID:	66003	TestNo:	SM2540C			Analysis Date:	12/11/2017	SeqNo:	2861055

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N027429-005DDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/11/2017	RunNo:	120759
Client ID:	ZZZZZZ	Batch ID:	66003	TestNo:	SM2540C			Analysis Date:	12/11/2017	SeqNo:	2861066

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	12040.000	100						12550	4.15	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-001

Client Sample ID: MW-36-090-Q417
Collection Date: 12/6/2017 1:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171208B** QC Batch: **R120683**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/8/2017 08:40 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_171216A** QC Batch: **65979**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/16/2017 01:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-100-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171208B** QC Batch: **R120683**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	12	0.17	1.0		µg/L	5	12/8/2017 07:52 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A** QC Batch: **65979**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	14	0.019	1.0		µg/L	1	12/16/2017 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171208B** QC Batch: **R120683**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	12	0.17	1.0		µg/L	5	12/8/2017 08:58 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_171216A** QC Batch: **65979**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	15	0.019	1.0		µg/L	1	12/16/2017 02:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-070-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_171208B** QC Batch: **R120683**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/8/2017 09:17 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A** QC Batch: **65979**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/16/2017 02:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-720-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171208B**	QC Batch: **R120683**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/8/2017 09:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-3V-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 2:54:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	4.2	0.17	1.0		µg/L	5	12/11/2017 10:20 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	3.8	0.019	1.0		µg/L	1	12/16/2017 03:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_D-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 10:17:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_171211A** QC Batch: **R120833**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/11/2017 10:39 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A** QC Batch: **65979**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/16/2017 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_S-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 9:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A** QC Batch: **R120833**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	1.5	0.17	1.0		µg/L	5	12/11/2017 10:58 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_171216A** QC Batch: **65979**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	1.7	0.019	1.0		µg/L	1	12/16/2017 03:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171208B**	QC Batch: **R120683**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	510	3.3	20		µg/L	100	12/8/2017 09:55 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	500	0.096	5.0		µg/L	5	12/16/2017 03:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-718-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 3:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171208B**	QC Batch: **R120683**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/8/2017 10:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-011

Client Sample ID: MW-64BR-Q417
Collection Date: 12/6/2017 11:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171208B** QC Batch: **R120683**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/8/2017 11:11 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_171216A** QC Batch: **65979**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/16/2017 04:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60-125-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 1:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171208B**	QC Batch: **R120683**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	770	3.3	20		µg/L	100	12/8/2017 07:05 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	730	0.096	5.0		µg/L	5	12/16/2017 04:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171208B** QC Batch: **R120683**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	28	0.17	1.0		µg/L	5	12/8/2017 07:33 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_171216A** QC Batch: **65979**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	29	0.019	1.0		µg/L	1	12/16/2017 04:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-74-240-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 10:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_171208B** QC Batch: **R120683**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/8/2017 11:30 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A** QC Batch: **65979**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	5.3	0.019	1.0		µg/L	1	12/16/2017 04:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-719-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171208B**	QC Batch: **R120683**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/8/2017 11:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R120683**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **LCSW**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857607**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.063	0.20	5.000	0	101	90	110				

Sample ID **MB-R120683**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **PBW**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857608**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **N027405-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857610**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1261.340	20	500.0	771.7	97.9	90	110				

Sample ID **N027405-012AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1269.840	20	500.0	771.7	99.6	90	110	1261	0.672	20	

Sample ID **N027405-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857613**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	52.979	1.0	25.00	28.20	99.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027405-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857615**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	37.356	1.0	25.00	11.52	103	90	110				

Sample ID **N027405-002ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.442	1.0						11.52	0.649	20	

Sample ID **N027405-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857620**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.969	0.20	1.000	0	96.9	90	110				

Sample ID **N027405-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	36.524	1.0	25.00	12.02	98.0	90	110				

Sample ID **N027405-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857624**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.992	0.20	1.000	0	99.2	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027405-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120683**
Client ID: **ZZZZZZ** Batch ID: **R120683** TestNo: **EPA 218.6** Analysis Date: **12/8/2017** SeqNo: **2857626**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.033	0.20	1.000	0	103	90	110				

Sample ID **N027405-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120683**
Client ID: **ZZZZZZ** Batch ID: **R120683** TestNo: **EPA 218.6** Analysis Date: **12/8/2017** SeqNo: **2857628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1006.930	20	500.0	508.5	99.7	90	110				

Sample ID **N027405-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120683**
Client ID: **ZZZZZZ** Batch ID: **R120683** TestNo: **EPA 218.6** Analysis Date: **12/8/2017** SeqNo: **2857632**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.087	0.20	1.000	0	109	90	110				

Sample ID **N027405-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120683**
Client ID: **ZZZZZZ** Batch ID: **R120683** TestNo: **EPA 218.6** Analysis Date: **12/8/2017** SeqNo: **2857634**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.024	1.0	5.000	0	100	90	110				

Sample ID **N027405-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120683**
Client ID: **ZZZZZZ** Batch ID: **R120683** TestNo: **EPA 218.6** Analysis Date: **12/8/2017** SeqNo: **2857636**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.086	0.20	1.000	0	109	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027405-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120683
Client ID:	ZZZZZZ	Batch ID:	R120683	TestNo:	EPA 218.6			Analysis Date:	12/8/2017	SeqNo:	2857638

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R120833	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833	
Client ID:	PBW	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866006	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		ND	0.20									

Sample ID	LCS-R120833	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833	
Client ID:	LCSW	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866007	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		5.161	0.20	5.000	0	103	90	110				

Sample ID	N027405-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833	
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866008	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		9.424	1.0	5.000	4.203	104	90	110				

Sample ID	N027405-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833	
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866010	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		5.452	1.0	5.000	0	109	90	110				

Sample ID	N027405-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833	
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866012	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		6.692	1.0	5.000	1.529	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027430-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120833**
Client ID: **ZZZZZZ** Batch ID: **R120833** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.068	0.20	1.000	0	107	90	110				

Sample ID **N027430-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120833**
Client ID: **ZZZZZZ** Batch ID: **R120833** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.905	1.0	5.000	0.3715	90.7	90	110				

Sample ID **N027430-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120833**
Client ID: **ZZZZZZ** Batch ID: **R120833** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.074	0.20	1.000	0	107	90	110				

Sample ID **N027430-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120833**
Client ID: **ZZZZZZ** Batch ID: **R120833** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Sample ID **N027430-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120833**
Client ID: **ZZZZZZ** Batch ID: **R120833** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866025**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027430-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866027**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.097	0.20	1.000	0	110	90	110				

Sample ID **N027430-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866031**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.056	0.20	1.000	0	106	90	110				

Sample ID **N027430-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866033**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.976	0.20	1.000	0	97.6	90	110				

Sample ID **N027430-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.057	0.20	1.000	0	106	90	110				

Sample ID **N027430-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866037**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.040	0.20	1.000	0	104	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027430-020AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866039**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	211.092	4.0	100.0	105.8	105	90	110				

Sample ID **N027430-019AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866043**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Sample ID **N027430-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866045**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.068	0.20	1.000	0	107	90	110				

Sample ID **N027430-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866047**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.554	1.0	5.000	5.490	101	90	110				

Sample ID **N027430-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866049**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.171	1.0	5.000	6.955	104	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027430-015AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:			RunNo: **120833**			
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**			SeqNo: **2866053**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	18.580	1.0	5.000	13.88	94.0	90	110				

Sample ID **N027405-006ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:			RunNo: **120833**			
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**			SeqNo: **2866054**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.215	1.0						4.203	0.273	20	

Sample ID **N027430-020AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:			RunNo: **120833**			
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**			SeqNo: **2866055**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	210.110	4.0	100.0	105.8	104	90	110	211.1	0.466	20	

Sample ID **N027430-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:			RunNo: **120833**			
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**			SeqNo: **2866059**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.371	1.0	5.000	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-65979**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120912**
Client ID: **PBW**	Batch ID: **65979**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870889**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-65979**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120912**
Client ID: **LCSW**	Batch ID: **65979**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870890**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.188	1.0	10.00	0	102	85	115				

Sample ID **N027405-001C-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120912**
Client ID: **ZZZZZZ**	Batch ID: **65979**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.569	1.0	10.00	0.07664	94.9	75	125				

Sample ID **N027405-001C-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120912**
Client ID: **ZZZZZZ**	Batch ID: **65979**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.547	1.0	10.00	0.07664	94.7	75	125	9.569	0.235	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-090-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 1:11:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171211A**	QC Batch: **R120717**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	260	1.2	5.0		mg/L	1	12/11/2017 08:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-100-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171211A**	QC Batch: **R120717**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	250	1.2	5.0		mg/L	1	12/11/2017 08:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171211A**	QC Batch: **R120717**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	250	1.2	5.0		mg/L	1	12/11/2017 08:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-070-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171211A**	QC Batch: **R120717**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	160	1.2	5.0		mg/L	1	12/11/2017 08:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-3V-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 2:54:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171211A**	QC Batch: **R120717**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	22	1.2	5.0		mg/L	1	12/11/2017 08:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-007

Client Sample ID: MW-72BR-200-LF_D-Q417
Collection Date: 12/6/2017 10:17:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171211A**	QC Batch: **R120717**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	24	1.2	5.0		mg/L	1	12/11/2017 08:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-008

Client Sample ID: MW-72BR-200-LF_S-Q417
Collection Date: 12/6/2017 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171211A**	QC Batch: **R120717**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	22	1.2	5.0		mg/L	1	12/11/2017 08:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171211A**	QC Batch: **R120717**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	120	1.2	5.0		mg/L	1	12/11/2017 08:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171211A**	QC Batch: **R120717**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	71	1.2	5.0		mg/L	1	12/11/2017 08:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60-125-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 1:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171211A**	QC Batch: **R120717**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	50	1.2	5.0		mg/L	1	12/11/2017 08:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171211A**	QC Batch: **R120717**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	85	1.2	5.0		mg/L	1	12/11/2017 08:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-74-240-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 10:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	180	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID	LCS-R120717	SampType:	LCS	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120717
Client ID:	LCSW	Batch ID:	R120717	TestNo:	SM 2320 B			Analysis Date:	12/11/2017	SeqNo:	2859434

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	102.823	5.0	100.0	0	103	85	115				

Sample ID	MB-R120717	SampType:	MBLK	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120717
Client ID:	PBW	Batch ID:	R120717	TestNo:	SM 2320 B			Analysis Date:	12/11/2017	SeqNo:	2859435

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID	N027405-006DDUP	SampType:	DUP	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120717
Client ID:	ZZZZZZ	Batch ID:	R120717	TestNo:	SM 2320 B			Analysis Date:	12/11/2017	SeqNo:	2859447

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	22.177	5.0						22.18	0	30	

Sample ID	N027405-009DMS	SampType:	MS	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120717
Client ID:	ZZZZZZ	Batch ID:	R120717	TestNo:	SM 2320 B			Analysis Date:	12/11/2017	SeqNo:	2859451

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	223.790	5.0	100.0	119.0	105	75	125				

Sample ID	N027405-009DMSD	SampType:	MSD	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120717
Client ID:	ZZZZZZ	Batch ID:	R120717	TestNo:	SM 2320 B			Analysis Date:	12/11/2017	SeqNo:	2859452

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	220.766	5.0	100.0	119.0	102	75	125	223.8	1.36	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID	LCS-R120785	SampType:	LCS	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120785		
Client ID:	LCSW	Batch ID:	R120785	TestNo:	SM 2320 B			Analysis Date:	12/13/2017	SeqNo:	2863164		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Alkalinity, Total (As CaCO3)	99.398	5.0	100.0	0	99.4	85	115						

Sample ID	MB-R120785	SampType:	MBLK	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120785		
Client ID:	PBW	Batch ID:	R120785	TestNo:	SM 2320 B			Analysis Date:	12/13/2017	SeqNo:	2863165		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Alkalinity, Total (As CaCO3)	ND	5.0											

Sample ID	N027429-005DDUP	SampType:	DUP	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120785		
Client ID:	ZZZZZZ	Batch ID:	R120785	TestNo:	SM 2320 B			Analysis Date:	12/13/2017	SeqNo:	2863173		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Alkalinity, Total (As CaCO3)	30.120	5.0						30.12	0	30			

Sample ID	N027429-014DMS	SampType:	MS	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120785		
Client ID:	ZZZZZZ	Batch ID:	R120785	TestNo:	SM 2320 B			Analysis Date:	12/13/2017	SeqNo:	2863182		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Alkalinity, Total (As CaCO3)	204.819	5.0	100.0	102.4	102	75	125						

Sample ID	N027429-014DMSD	SampType:	MSD	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120785		
Client ID:	ZZZZZZ	Batch ID:	R120785	TestNo:	SM 2320 B			Analysis Date:	12/13/2017	SeqNo:	2863183		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Alkalinity, Total (As CaCO3)	202.811	5.0	100.0	102.4	100	75	125	204.8	0.985	20			

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-001

Client Sample ID: MW-36-090-Q417
Collection Date: 12/6/2017 1:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/12/2017 03:53 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	1400	4.6	250		mg/L	500	12/12/2017 03:00 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	470	1.1	25		mg/L	50	12/12/2017 03:46 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-002

Client Sample ID: MW-36-100-Q417
Collection Date: 12/6/2017 11:51:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/9/2017 02:49 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	2200	4.6	250		mg/L	500	12/11/2017 07:21 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	630	2.3	50		mg/L	100	12/11/2017 08:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-003

Client Sample ID: MW-910-Q417
Collection Date: 12/6/2017 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/9/2017 03:35 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**			PrepDate				Analyst: **RAB**
Chloride	2200	4.6	250		mg/L	500	12/11/2017 08:22 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**			PrepDate				Analyst: **RAB**
Sulfate	630	2.3	50		mg/L	100	12/11/2017 08:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-004

Client Sample ID: MW-36-070-Q417
Collection Date: 12/6/2017 11:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/9/2017 01:02 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	96	0.18	10		mg/L	20	12/11/2017 05:49 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	240	0.46	10		mg/L	20	12/11/2017 05:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-006

Client Sample ID: MW-72BR-200-3V-Q417
Collection Date: 12/6/2017 2:54:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/9/2017 03:51 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	5300	18	1000		mg/L	2000	12/11/2017 09:39 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	700	2.3	50		mg/L	100	12/11/2017 09:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-007

Client Sample ID: MW-72BR-200-LF_D-Q417
Collection Date: 12/6/2017 10:17:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/9/2017 04:06 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	5300	18	1000		mg/L	2000	12/11/2017 10:09 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	700	2.3	50		mg/L	100	12/11/2017 10:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-008

Client Sample ID: MW-72BR-200-LF_S-Q417
Collection Date: 12/6/2017 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/9/2017 04:21 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	5400	18	1000		mg/L	2000	12/11/2017 10:40 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	700	2.3	50		mg/L	100	12/11/2017 10:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-009

Client Sample ID: MW-62-065-Q417
Collection Date: 12/6/2017 3:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/9/2017 04:36 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	1800	4.6	250		mg/L	500	12/11/2017 11:11 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	420	1.1	25		mg/L	50	12/11/2017 11:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-011

Client Sample ID: MW-64BR-Q417
Collection Date: 12/6/2017 11:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/9/2017 04:52 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	4600	9.1	500		mg/L	1000	12/11/2017 11:41 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	590	1.1	25		mg/L	50	12/11/2017 11:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-012

Client Sample ID: MW-60-125-Q417
Collection Date: 12/6/2017 1:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.20	5.0		mg/L	10	12/9/2017 02:19 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	3200	9.1	500		mg/L	1000	12/12/2017 12:42 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	490	1.1	25		mg/L	50	12/12/2017 12:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-013

Client Sample ID: MW-73-080-Q417
Collection Date: 12/6/2017 2:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/9/2017 05:07 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	3900	9.1	500		mg/L	1000	12/12/2017 01:13 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	460	1.1	25		mg/L	50	12/12/2017 01:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-014

Client Sample ID: MW-74-240-Q417
Collection Date: 12/6/2017 10:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/9/2017 01:48 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	120	0.46	25		mg/L	50	12/12/2017 01:44 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	74	0.23	5.0		mg/L	10	12/11/2017 07:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	LCS-R120734_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120734		
Client ID:	LCSW	Batch ID:	R120734	TestNo:	EPA 300.0			Analysis Date:	12/9/2017	SeqNo:	2860319		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide	1.258	0.50	1.250	0	101	90	110						

Sample ID	MB-R120734_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120734		
Client ID:	PBW	Batch ID:	R120734	TestNo:	EPA 300.0			Analysis Date:	12/9/2017	SeqNo:	2860320		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide	ND	0.50											

Sample ID	N027405-004CMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120734		
Client ID:	ZZZZZZ	Batch ID:	R120734	TestNo:	EPA 300.0			Analysis Date:	12/9/2017	SeqNo:	2860322		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide	0.978	0.50	1.250	0	78.2	80	120				S		

Sample ID	N027405-004CMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120734		
Client ID:	ZZZZZZ	Batch ID:	R120734	TestNo:	EPA 300.0			Analysis Date:	12/9/2017	SeqNo:	2860323		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide	1.067	0.50	1.250	0	85.4	80	120	0.9781	8.69	20			

Sample ID	N027405-014DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120734		
Client ID:	ZZZZZZ	Batch ID:	R120734	TestNo:	EPA 300.0			Analysis Date:	12/9/2017	SeqNo:	2860325		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide	1.249	0.50	1.250	0.08030	93.5	80	120						

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	N027405-012DDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120734
Client ID:	ZZZZZZ	Batch ID:	R120734	TestNo:	EPA 300.0			Analysis Date:	12/9/2017	SeqNo:	2860327

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	5.0						0	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	MB-R120770_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770
Client ID:	PBW	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862144

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	LCS-R120770_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770
Client ID:	LCSW	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862145

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.272	0.50	1.250	0	102	90	110				

Sample ID	N027429-007DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770
Client ID:	ZZZZZZ	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862153

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.920	0.50	1.250	0	73.6	80	120				S

Sample ID	N027429-007DMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770
Client ID:	ZZZZZZ	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862154

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.990	0.50	1.250	0	79.2	80	120	0.9202	7.33	20	S

Sample ID	N027429-012DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770
Client ID:	ZZZZZZ	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862155

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.273	1.0	2.500	0	50.9	80	120				S

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	N027429-007DDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770
Client ID:	ZZZZZZ	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862156

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50						0	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	LCS-RR120764_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	LCSW	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861519

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.108	0.50	2.000	0	105	90	110				

Sample ID	MB-R120764_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	PBW	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861520

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	N027405-004CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861524

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	95.556	10						95.61	0.0607	20	

Sample ID	N027405-004CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861525

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	138.172	10	40.00	95.61	106	80	120				

Sample ID	N027405-004CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861526

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	139.498	10	40.00	95.61	110	80	120	138.2	0.955	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N027405-002EMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861528

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3295.850	250	1000	2224	107	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **LCS-R120764_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120764**
Client ID: **LCSW** Batch ID: **R120764** TestNo: **EPA 300.0** Analysis Date: **12/11/2017** SeqNo: **2861583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.012	0.50	4.000	0	100	90	110				

Sample ID **MB-R120764_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120764**
Client ID: **PBW** Batch ID: **R120764** TestNo: **EPA 300.0** Analysis Date: **12/11/2017** SeqNo: **2861584**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **N027405-004CDUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120764**
Client ID: **ZZZZZZ** Batch ID: **R120764** TestNo: **EPA 300.0** Analysis Date: **12/11/2017** SeqNo: **2861588**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	234.750	10						236.2	0.616	20	

Sample ID **N027405-004CMS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120764**
Client ID: **ZZZZZZ** Batch ID: **R120764** TestNo: **EPA 300.0** Analysis Date: **12/11/2017** SeqNo: **2861589**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	317.202	10	80.00	236.2	101	80	120				

Sample ID **N027405-004CMSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120764**
Client ID: **ZZZZZZ** Batch ID: **R120764** TestNo: **EPA 300.0** Analysis Date: **12/11/2017** SeqNo: **2861590**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	316.116	10	80.00	236.2	99.9	80	120	317.2	0.343	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N027405-014DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861592

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	113.326	5.0	40.00	73.75	99.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-100-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171220C**	QC Batch: **R120963**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/20/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171220C**	QC Batch: **R120963**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/20/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-3V-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 2:54:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171220C**	QC Batch: **R120963**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.16	0.022	0.050		mg/L	1	12/20/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_D-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 10:17:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171220C**	QC Batch: **R120963**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/20/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_S-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 9:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171220C**	QC Batch: **R120963**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.062	0.022	0.050		mg/L	1	12/20/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171219B**	QC Batch: **R120949**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	4.5	0.22	0.50		mg/L	10	12/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171220C**	QC Batch: **R120963**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/20/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-012

Client Sample ID: MW-60-125-Q417
Collection Date: 12/6/2017 1:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171219B**	QC Batch: **R120949**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	4.0	0.11	0.25		mg/L	5	12/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171219B**	QC Batch: **R120949**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	2.7	0.11	0.25		mg/L	5	12/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-74-240-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 10:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171220C**	QC Batch: **R120963**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/20/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R120949**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **PBW**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873078**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R120949**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **LCSW**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.491	0.050	0.5000	0	98.2	85	115				

Sample ID **N027405-009CMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **ZZZZZZ**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873081**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.451	0.50	5.000	4.488	99.3	75	125				

Sample ID **N027405-009CMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **ZZZZZZ**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873082**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.018	0.50	5.000	4.488	90.6	75	125	9.451	4.69	20	

Sample ID **N027405-012CDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **ZZZZZZ**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.470	0.25						4.022	14.7	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R120963**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **PBW**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R120963**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **LCSW**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.482	0.050	0.5000	0	96.3	85	115				

Sample ID **N027429-003CMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **ZZZZZZ**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.637	0.10	1.000	1.657	98.1	75	125				

Sample ID **N027429-003CMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **ZZZZZZ**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873456**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.665	0.10	1.000	1.657	101	75	125	2.637	1.03	20	

Sample ID **N027405-006CDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **ZZZZZZ**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873458**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.124	0.050						0.1567	23.3	20	R

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-001

Client Sample ID: MW-36-090-Q417
Collection Date: 12/6/2017 1:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Boron	730	38	100		ug/L	1	12/16/2017 01:22 PM
Calcium	110000	28	500		ug/L	1	12/16/2017 01:22 PM
Iron	ND	1.8	20		ug/L	1	12/16/2017 01:22 PM
Magnesium	19000	4.4	100		ug/L	1	12/16/2017 01:22 PM
Sodium	1000000	2600	50000		ug/L	100	12/18/2017 07:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-002

Client Sample ID: MW-36-100-Q417
Collection Date: 12/6/2017 11:51:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**		Analyst: **CEI**
Boron	1000	38	100		ug/L	1	12/16/2017 02:13 PM
Calcium	160000	28	500		ug/L	1	12/16/2017 02:13 PM
Iron	140	1.8	20		ug/L	1	12/16/2017 02:13 PM
Magnesium	28000	4.4	100		ug/L	1	12/16/2017 02:13 PM
Sodium	1600000	2600	50000		ug/L	100	12/18/2017 06:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-003

Client Sample ID: MW-910-Q417
Collection Date: 12/6/2017 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Boron	1000	38	100		ug/L	1	12/16/2017 02:21 PM
Calcium	160000	28	500		ug/L	1	12/16/2017 02:21 PM
Iron	140	1.8	20		ug/L	1	12/16/2017 02:21 PM
Magnesium	28000	4.4	100		ug/L	1	12/16/2017 02:21 PM
Sodium	1600000	2600	50000		ug/L	100	12/18/2017 06:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-004

Client Sample ID: MW-36-070-Q417
Collection Date: 12/6/2017 11:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**		Analyst: **CEI**
Boron	180	38	100		ug/L	1	12/16/2017 02:29 PM
Calcium	78000	28	500		ug/L	1	12/16/2017 02:29 PM
Iron	24	1.8	20		ug/L	1	12/16/2017 02:29 PM
Magnesium	17000	4.4	100		ug/L	1	12/16/2017 02:29 PM
Sodium	110000	260	5000		ug/L	10	12/18/2017 06:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-006

Client Sample ID: MW-72BR-200-3V-Q417
Collection Date: 12/6/2017 2:54:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**		Analyst: **CEI**
Boron	2200	38	100		ug/L	1	12/16/2017 02:34 PM
Calcium	270000	28	500		ug/L	1	12/16/2017 02:34 PM
Iron	ND	1.8	20		ug/L	1	12/16/2017 02:34 PM
Magnesium	2500	4.4	100		ug/L	1	12/16/2017 02:34 PM
Sodium	3300000	6600	120000		ug/L	250	12/18/2017 06:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-007

Client Sample ID: MW-72BR-200-LF_D-Q417
Collection Date: 12/6/2017 10:17:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**		Analyst: **CEI**
Boron	2100	38	100		ug/L	1	12/16/2017 02:42 PM
Calcium	290000	28	500		ug/L	1	12/16/2017 02:42 PM
Iron	39	1.8	20		ug/L	1	12/16/2017 02:42 PM
Magnesium	3200	4.4	100		ug/L	1	12/16/2017 02:42 PM
Sodium	3400000	6600	120000		ug/L	250	12/18/2017 06:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-008

Client Sample ID: MW-72BR-200-LF_S-Q417
Collection Date: 12/6/2017 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**		Analyst: **CEI**
Boron	2300	38	100		ug/L	1	12/16/2017 02:50 PM
Calcium	280000	28	500		ug/L	1	12/16/2017 02:50 PM
Iron	34	1.8	20		ug/L	1	12/16/2017 02:50 PM
Magnesium	2700	4.4	100		ug/L	1	12/16/2017 02:50 PM
Sodium	3500000	6600	120000		ug/L	250	12/18/2017 06:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-009

Client Sample ID: MW-62-065-Q417
Collection Date: 12/6/2017 3:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Boron	690	38	100		ug/L	1	12/16/2017 03:10 PM
Calcium	210000	28	500		ug/L	1	12/16/2017 03:10 PM
Iron	ND	1.8	20		ug/L	1	12/16/2017 03:10 PM
Magnesium	24000	4.4	100		ug/L	1	12/16/2017 03:10 PM
Sodium	1100000	2600	50000		ug/L	100	12/18/2017 07:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-011

Client Sample ID: MW-64BR-Q417
Collection Date: 12/6/2017 11:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**		Analyst: **CEI**
Boron	1500	38	100		ug/L	1	12/16/2017 03:18 PM
Calcium	340000	28	500		ug/L	1	12/16/2017 03:18 PM
Iron	330	1.8	20		ug/L	1	12/16/2017 03:18 PM
Magnesium	14000	4.4	100		ug/L	1	12/16/2017 03:18 PM
Sodium	2600000	2600	50000		ug/L	100	12/18/2017 07:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-012

Client Sample ID: MW-60-125-Q417
Collection Date: 12/6/2017 1:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**		Analyst: **CEI**
Boron	670	38	100		ug/L	1	12/16/2017 03:26 PM
Calcium	510000	140	2500		ug/L	5	12/19/2017 08:01 AM
Iron	230	1.8	20		ug/L	1	12/16/2017 03:26 PM
Magnesium	21000	4.4	100		ug/L	1	12/16/2017 03:26 PM
Sodium	1400000	2600	50000		ug/L	100	12/18/2017 07:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-013

Client Sample ID: MW-73-080-Q417
Collection Date: 12/6/2017 2:40:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_171216G** QC Batch: **65964** PrepDate **12/8/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	1000	38	100		ug/L	1	12/16/2017 03:34 PM
Calcium	470000	140	2500		ug/L	5	12/19/2017 07:12 AM
Iron	140	1.8	20		ug/L	1	12/16/2017 03:34 PM
Magnesium	28000	4.4	100		ug/L	1	12/16/2017 03:34 PM
Sodium	2100000	2600	50000		ug/L	100	12/18/2017 07:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-014

Client Sample ID: MW-74-240-Q417
Collection Date: 12/6/2017 10:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**		Analyst: **CEI**
Boron	140	38	100		ug/L	1	12/16/2017 03:42 PM
Calcium	10000	28	500		ug/L	1	12/16/2017 03:42 PM
Iron	3300	1.8	20		ug/L	1	12/16/2017 03:42 PM
Magnesium	1400	4.4	100		ug/L	1	12/16/2017 03:42 PM
Sodium	150000	260	5000		ug/L	10	12/18/2017 07:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

Date: *28-Dec-17*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-65964**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120897**
Client ID: **PBW**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-65964**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120897**
Client ID: **LCSW**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4730.665	100	5000	0	94.6	85	115				
Calcium	9706.269	500	10000	0	97.1	85	115				
Iron	109.838	20	100.0	0	110	85	115				
Magnesium	9640.945	100	10000	0	96.4	85	115				

Sample ID **N027405-001C-MS1**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120897**
Client ID: **ZZZZZZ**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870020**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5424.089	100	5000	726.2	94.0	75	125				
Calcium	121412.864	500	10000	107700	137	75	125				S
Iron	110.283	20	100.0	14.04	96.2	75	125				
Magnesium	28521.567	100	10000	18850	96.7	75	125				

Sample ID **N027405-001C-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120897**
Client ID: **ZZZZZZ**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5448.513	100	5000	726.2	94.4	75	125	5424	0.449	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N027405-001C-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120897**
Client ID: **ZZZZZZ**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	121647.419	500	10000	107700	140	75	125	121400	0.193	20	S
Iron	109.351	20	100.0	14.04	95.3	75	125	110.3	0.849	20	
Magnesium	28589.254	100	10000	18850	97.4	75	125	28520	0.237	20	

Sample ID **MB-65964**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120915**
Client ID: **PBW**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/18/2017**	SeqNo: **2871270**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID **LCS2-65964**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120915**
Client ID: **LCSW**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/18/2017**	SeqNo: **2871271**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20922.885	500	20000	0	105	85	115				

Sample ID **N027405-002C-MS2**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120915**
Client ID: **ZZZZZZ**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/18/2017**	SeqNo: **2871278**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1604471.596	50000	20000	1554000	252	75	125				S

Sample ID **N027405-002C-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120915**
Client ID: **ZZZZZZ**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/18/2017**	SeqNo: **2871279**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1569386.145	50000	20000	1554000	76.9	75	125	1604000	2.21	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-001

Client Sample ID: MW-36-090-Q417
Collection Date: 12/6/2017 1:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	4.6	0.025	0.10		µg/L	1	12/16/2017 01:29 PM
Manganese	140	0.28	2.5		µg/L	5	12/16/2017 01:35 PM
Molybdenum	11	0.039	0.50		µg/L	1	12/16/2017 01:29 PM
Selenium	ND	0.028	0.50		µg/L	1	12/16/2017 01:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-002

Client Sample ID: MW-36-100-Q417
Collection Date: 12/6/2017 11:51:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	4.3	0.025	0.10		µg/L	1	12/16/2017 02:30 PM
Manganese	310	0.28	2.5		µg/L	5	12/16/2017 02:36 PM
Molybdenum	23	0.039	0.50		µg/L	1	12/16/2017 02:30 PM
Selenium	ND	0.028	0.50		µg/L	1	12/16/2017 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-003

Client Sample ID: MW-910-Q417
Collection Date: 12/6/2017 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	4.5	0.025	0.10		µg/L	1	12/16/2017 02:41 PM
Manganese	330	0.28	2.5		µg/L	5	12/16/2017 02:47 PM
Molybdenum	24	0.039	0.50		µg/L	1	12/16/2017 02:41 PM
Selenium	ND	0.028	0.50		µg/L	1	12/16/2017 02:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-004

Client Sample ID: MW-36-070-Q417
Collection Date: 12/6/2017 11:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	12/16/2017 02:53 PM
Manganese	230	0.28	2.5		µg/L	5	12/16/2017 02:58 PM
Molybdenum	4.1	0.039	0.50		µg/L	1	12/16/2017 02:53 PM
Selenium	ND	0.028	0.50		µg/L	1	12/16/2017 02:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-006

Client Sample ID: MW-72BR-200-3V-Q417
Collection Date: 12/6/2017 2:54:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Arsenic	15	0.025	0.10		µg/L	1	12/16/2017 03:04 PM
Manganese	11	0.056	0.50		µg/L	1	12/16/2017 03:04 PM
Molybdenum	79	0.19	2.5		µg/L	5	12/16/2017 03:09 PM
Selenium	ND	0.14	2.5		µg/L	5	12/16/2017 03:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-007

Client Sample ID: MW-72BR-200-LF_D-Q417
Collection Date: 12/6/2017 10:17:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Arsenic	11	0.025	0.10		µg/L	1	12/16/2017 03:15 PM
Manganese	100	0.056	0.50		µg/L	1	12/16/2017 03:15 PM
Molybdenum	75	0.19	2.5		µg/L	5	12/16/2017 03:32 PM
Selenium	ND	0.14	2.5		µg/L	5	12/16/2017 03:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-008

Client Sample ID: MW-72BR-200-LF_S-Q417
Collection Date: 12/6/2017 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Arsenic	13	0.025	0.10		µg/L	1	12/16/2017 03:37 PM
Manganese	36	0.056	0.50		µg/L	1	12/16/2017 03:37 PM
Molybdenum	78	0.19	2.5		µg/L	5	12/16/2017 03:43 PM
Selenium	ND	0.14	2.5		µg/L	5	12/16/2017 03:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-009

Client Sample ID: MW-62-065-Q417
Collection Date: 12/6/2017 3:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	1.7	0.025	0.10		µg/L	1	12/16/2017 03:48 PM
Manganese	2.0	0.056	0.50		µg/L	1	12/16/2017 03:48 PM
Molybdenum	15	0.039	0.50		µg/L	1	12/16/2017 03:48 PM
Selenium	3.7	0.028	0.50		µg/L	1	12/16/2017 03:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-011

Client Sample ID: MW-64BR-Q417
Collection Date: 12/6/2017 11:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	4.2	0.025	0.10		µg/L	1	12/16/2017 04:00 PM
Manganese	1000	0.56	5.0		µg/L	10	12/19/2017 01:11 PM
Molybdenum	68	0.19	2.5		µg/L	5	12/16/2017 04:05 PM
Selenium	ND	0.14	2.5		µg/L	5	12/16/2017 04:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-012

Client Sample ID: MW-60-125-Q417
Collection Date: 12/6/2017 1:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Arsenic	1.6	0.025	0.10		µg/L	1	12/16/2017 04:11 PM
Manganese	11	0.056	0.50		µg/L	1	12/16/2017 04:11 PM
Molybdenum	19	0.19	2.5		µg/L	5	12/16/2017 04:16 PM
Selenium	5.4	0.028	0.50		µg/L	1	12/16/2017 04:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-013

Client Sample ID: MW-73-080-Q417
Collection Date: 12/6/2017 2:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	1.4	0.12	0.50		µg/L	5	12/19/2017 01:17 PM
Manganese	34	0.056	0.50		µg/L	1	12/16/2017 04:22 PM
Molybdenum	36	0.19	2.5		µg/L	5	12/19/2017 01:17 PM
Selenium	3.2	0.14	2.5		µg/L	5	12/19/2017 01:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-014

Client Sample ID: MW-74-240-Q417
Collection Date: 12/6/2017 10:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	13	0.025	0.10		µg/L	1	12/19/2017 01:18 PM
Manganese	43	0.056	0.50		µg/L	1	12/19/2017 01:18 PM
Molybdenum	31	0.039	0.50		µg/L	1	12/19/2017 01:18 PM
Selenium	0.66	0.028	0.50		µg/L	1	12/19/2017 01:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-65979**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120912**
Client ID: **PBW**	Batch ID: **65979**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-65979**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120912**
Client ID: **LCSW**	Batch ID: **65979**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.997	0.10	10.00	0	100	85	115				
Manganese	99.052	0.50	100.0	0	99.1	85	115				
Molybdenum	9.723	0.50	10.00	0	97.2	85	115				
Selenium	9.777	0.50	10.00	0	97.8	85	115				

Sample ID **N027405-001C-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120912**
Client ID: **ZZZZZZ**	Batch ID: **65979**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.743	0.10	10.00	4.629	101	75	125				
Molybdenum	22.777	0.50	10.00	10.82	120	75	125				
Selenium	9.247	0.50	10.00	0.1510	91.0	75	125				

Sample ID **N027405-001C-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120912**
Client ID: **ZZZZZZ**	Batch ID: **65979**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	234.439	2.5	100.0	138.5	95.9	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027405-001C-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120912
Client ID:	ZZZZZZ	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870955

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.547	0.10	10.00	4.629	99.2	75	125	14.74	1.34	20	
Molybdenum	22.863	0.50	10.00	10.82	120	75	125	22.78	0.376	20	
Selenium	8.866	0.50	10.00	0.1510	87.1	75	125	9.247	4.21	20	

Sample ID	N027405-001C-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120912
Client ID:	ZZZZZZ	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870958

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	237.256	2.5	100.0	138.5	98.7	75	125	234.4	1.19	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200	Fax:
Title: Geologist II	Phone: 916-786-3302 Fax:		
Signature: Date: 12/6/2017	Sampled By: Gantt Jeffers		
Project Name: PG&E Topock - GMP	Signature: Date: 12/6/2017		
Project Number: RC000753.801B			

I hereby authorize ASSET Labs to perform the tests indicated below.

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Matrix			
Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
Global ID:		Regulatory	
		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled		
2. Headspace		
3. Container Intact	✓	
4. Seal Present		
5. IR number 2		
6. Method of Cooling: Ice		
Sample Temp: 3.3, 3.1, 3.4, 4.1, 2.7		
Courier: ASSET		
Tracking No.:		

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM 250 mL poly	Metals Dissolved (SW6020A FF) (As, Cr, Mg, Mn, Mo, Se); HNO3 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3 500 mL poly	Metals Dissolved (SW6020A FF) (As, Cr, Mn,); HNO3 500 mL poly	Metals Dissolved (SW6020A FF) (Cr, Mg, Mn, Mo, Se); HNO3 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) 1 liter poly	Specific Conductance (EPA 120.1) 1 liter poly	Total Dissolved Solids (SM2540C) 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) 1 liter poly	Floride (EPA 300.0) 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027405 -01	MW-36-090-Q417	12/6/2017	13:11		X		X	X		X				X	X	X	X		E	4	P	BN	
2	-02	MW-36-100-Q417	12/6/2017	11:51		X		X	X		X			X	X	X	X	X		E	5	P	BNS	
3	-03	MW-910-Q417	12/6/2017	12:01		X		X	X		X			X	X	X	X	X		E	5	P	BNS	
4	-04	MW-36-070-Q417	12/6/2017	11:44		X			X		X				X	X	X	X		E	3	P	BN	
5	-05	MW-720-Q417	12/6/2017	15:30		X														E	1	P	B	
6	-06	MW-72BR-200-3V-Q417	12/6/2017	14:54		X			X		X			X	X	X	X	X		E	4	P	BNS	
7	-07	MW-72BR-200-LF_D-Q417	12/6/2017	10:17		X			X		X			X	X	X	X	X		E	4	P	BNS	
8	-08	MW-72BR-200-LF_S-Q417	12/6/2017	9:35		X			X		X			X	X	X	X	X		E	4	P	BNS	
9	-09	MW-62-065-Q417	12/6/2017	15:45		X			X		X			X	X	X	X	X		E	4	P	BNS	
10	-10	MW-718-Q417	12/6/2017	15:10		X														E	1	P	B	

Relinquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
Gantt Jeffers	12.6.17 16:30		12/6/17@1630
	12/6/17 20:00		12/6/17@2000

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B = (NH4)2SO4/NH4OH		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis.
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

White=Laboratory Copy

Yellow=Customer's Copy

ASSET LABORATORIES
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California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Global ID:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	
Title: Geologist II	Phone: 916-786-3302 Fax:		
Signature: Date: 12/6/2017	Sampled By: Gantt Jeffers		
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*		
Project Name: PG&E Topock - GMP	Signature: Date: 12/6/2017		
Project Number: RC000753.801B			

Matrix: Ground x; Potable; NPDES; Surface; Sediment; Soil; Other Solid

Sample Receipt Condition: Y / N

1. Chilled ✓
2. Headspace
3. Container Intact ✓
4. Seal Present
5. IR number 2
6. Method of Cooling: ICE

Sample Temp: 3.1, 3.1, 3.4, 4.1, 2.7

Courier: ASSET

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM 250 mL poly	Metals Dissolved (SW6020A FF) (As, Cr, Mg, Mn, Mo, Se); HNO3 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3 500 mL poly	Metals Dissolved (SW6020A FF) (As, Cr, Mn,); HNO3 500 mL poly	Metals Dissolved (SW6020A FF) (Cr, Mg, Mn, Mo, Se); HNO3 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) 1 liter poly	Specific Conductance (EPA 120.1) 1 liter poly	Total Dissolved Solids (SM2540C) 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) 1 liter poly	Floride (EPA 300.0) 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027405 -11	MW-64BR-Q417	12/6/2017	11:50		X			X		X			X	X	X	X	X		E	4	P	BNS	
2	-12	MW-60-125-Q417	12/6/2017	13:20		X			X		X			X	X	X	X	X		E	4	P	BNS	
3	-13	MW-73-080-Q417	12/6/2017	14:40		X			X		X			X	X	X	X	X		E	4	P	BNS	
4	-14	MW-74-240-Q417	12/6/2017	10:00		X			X		X			X	X	X	X	X		E	4	P	BNS	
5	-15	MW-719-Q417	12/6/2017	15:30		X														E	1	P	B	
6																								
7																								
8																								
9																								
10																								

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
G. Jeffers	12.6.17 1630		12/6/17 @ 1650
	12/6/17 @ 2050		12/6/17 @ 2050

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B = (NH4)2SO4/NH4OH		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis.
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/6/2017	Workorder:	N027405
Rep sample Temp (Deg C):	3.3,3.1,3.4,4.1,2.7	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: N/A Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Sample 14 (MW-74-240-Q417): Sediment observed in the bottle for Diss Metals.

For:

Checklist Completed By: MBC 12/18/2017 Reviewed By: 12/19/2017

nancy@assetlaboratories.com

From: nancy@assetlaboratories.com
Sent: Friday, December 22, 2017 2:20 PM
To: 'Tina Rice'; 'Jennifer.Singer@arcadis.com'; 'Dan.Bush@arcadis.com'
Cc: 'Daniel Moore'; 'Laura.Madsen@arcadis.com'; 'Sean.Maurel@arcadis.com'; 'Kalib Sumter'; 'marlon@assetlaboratories.com'; 'Serna, Erica'
Subject: RE: Data uploaded to EQUIS 12/22/17 Topock

Hi Tina,

Noted for the following:

N027404- we will update the IDs

N027405- we are checking the error on the edd as of this moment

MW-44-125-EB-Q417- we will have to check with the sample control why it was not included

Thanks,
Nancy

From: Tina Rice [mailto:Tina.Rice@critigen.com]
Sent: Friday, December 22, 2017 12:07 PM
To: 'nancy@assetlaboratories.com'; Jennifer.Singer@arcadis.com; Dan.Bush@arcadis.com
Cc: Daniel Moore; Laura.Madsen@arcadis.com; Sean.Maurel@arcadis.com; Kalib Sumter; marlon@assetlaboratories.com; Serna, Erica
Subject: RE: Data uploaded to EQUIS 12/22/17 Topock

Hey Nancy,

Looks like N027405 and N027404 did not load successfully.

N027405 – lab issue

For N027404, the reason the load failed is because duplicate sample ID's were used again. Would you please update as follows:

ClientSampID	NewClientSampID
MW-44-115-Q417	MW-44-115-1217
MW-34-100-Q417	MW-34-100-1217

Also, MW-44-125-EB-Q417 was not included in the lab log-in status report so that sample didn't get uploaded to the database. Do you know why it wasn't included? I went ahead and added it so that won't cause a problem now.

Thanks,
Tina

From: nancy@assetlaboratories.com [mailto:nancy@assetlaboratories.com]
Sent: Friday, December 22, 2017 11:39 AM
To: Jennifer.Singer@arcadis.com; Dan.Bush@arcadis.com
Cc: Daniel Moore <Daniel.Moore@critigen.com>; Tina Rice <Tina.Rice@critigen.com>; Laura.Madsen@arcadis.com; Sean.Maurel@arcadis.com; Kalib Sumter <Kalib.Sumter@critigen.com>; marlon@assetlaboratories.com; Serna, Erica <Erica.Serna@arcadis.com>
Subject: Data uploaded to EQUIS 12/22/17 Topock

N027404–PDF and EDD uploaded.

N027405–PDF and EDD uploaded.

Thanks,

Nancy Sibucao
Project Manager
Nevada: 3151 W. Post Road, Las Vegas, NV 89118 | P: 702.307.2659 Ext. 412 | F: 702.307.2691
California: 11060 Artesia Blvd., Ste. C, Cerritos, CA 90703 | P: 562.219.7435 | F: 562.219.7436
www.assetlaboratories.com



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nancy@assetlaboratories.com

From: Quennie Manimtim [quennie@assetlaboratories.com]
Sent: Friday, December 08, 2017 10:01 AM
To: 'Daniel Moore'; 'Madsen, Laura'; 'Marlon B. Cartin'
Cc: 'Kalib Sumter'; 'Bush, Dan'; 'Kellogg, Lisa'; nancy@assetlaboratories.com; 'Sample Control'; 'Bloes, Marty'
Subject: RE: Magnesium

Thanks Dan!

From: Daniel Moore [mailto:Daniel.Moore@critigen.com]
Sent: Friday, December 08, 2017 9:54 AM
To: 'Quennie Manimtim'; 'Madsen, Laura'; 'Marlon B. Cartin'
Cc: Kalib Sumter; 'Bush, Dan'; 'Kellogg, Lisa'; nancy@assetlaboratories.com; 'Sample Control'; 'Bloes, Marty'
Subject: RE: Magnesium

You bet. Thanks for letting us know.

From: Quennie Manimtim [mailto:quennie@assetlaboratories.com]
Sent: Friday, December 08, 2017 10:31 AM
To: Daniel Moore <Daniel.Moore@critigen.com>; 'Madsen, Laura' <Laura.Madsen@arcadis.com>; 'Marlon B. Cartin' <marlon@assetlaboratories.com>
Cc: Kalib Sumter <Kalib.Sumter@critigen.com>; 'Bush, Dan' <Dan.Bush@arcadis.com>; 'Kellogg, Lisa' <Lisa.Kellogg@arcadis.com>; nancy@assetlaboratories.com; 'Sample Control' <samplecontrol.lv@assetlaboratories.com>; 'Bloes, Marty' <mbloes@pivox.com>
Subject: RE: Magnesium

Hi Dan,

Thank you for your response on this matter. We will change the method for magnesium to 6010 instead of 6020. We also noticed some samples being requested for Cu and Ni by 6010 and the rest of the other metals (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn) by 6020. Historically the Cu and Ni was analyzed by 6020, can we change the method from 6010 to 6020?

Thanks,
Quennie

From: Daniel Moore [mailto:Daniel.Moore@critigen.com]
Sent: Friday, December 08, 2017 9:09 AM
To: 'Madsen, Laura'; Marlon B. Cartin
Cc: Kalib Sumter; Bush, Dan; Kellogg, Lisa; nancy@assetlaboratories.com; 'Quennie Manimtim'; 'Sample Control'; Bloes, Marty
Subject: RE: Magnesium

Hi Laura/Marlon –

The methods that are included in the COC should be coming from our sampling planning efforts. The methods on the CoC should be what we are expecting to receive from the laboratory. However, as we discussed there would be times that the laboratory would request such method/analyte changes. The QAPP allows for the use of either 6010 or 6020 for the analysis of magnesium. Changing this to 6010 is not an issue from a quality standpoint.

My vote is Asset can change the method for these samples and we will update the database to reflect the change during the login review process.

Dan

From: Madsen, Laura [mailto:Laura.Madsen@arcadis.com]
Sent: Friday, December 08, 2017 9:57 AM
To: Marlon B. Cartin <marlon@assetlaboratories.com>; Daniel Moore <Daniel.Moore@critigen.com>
Cc: Kalib Sumter <Kalib.Sumter@critigen.com>; Bush, Dan <Dan.Bush@arcadis.com>; Kellogg, Lisa <Lisa.Kellogg@arcadis.com>; nancy@assetlaboratories.com; 'Quennie Manimtim' <quennie@assetlaboratories.com>; 'Sample Control' <samplecontrol.lv@assetlaboratories.com>; Bloes, Marty <mbloes@pivox.com>
Subject: RE: Magnesium

Hi,
Dan I had thought some time ago you and Kalib had said you had worked through all the sample analyte methods with Marlon and verified which ones we needed. That is what I was referring to when I spoke to Marlon yesterday. Can you confirm which method should be used for magnesium?

Thanks,
Laura

From: Marlon B. Cartin [mailto:marlon@assetlaboratories.com]
Sent: Friday, December 8, 2017 10:53 AM
To: Dan Moore <Daniel.Moore@critigen.com>
Cc: Kalib Sumter <Kalib.Sumter@critigen.com>; Bush, Dan <Dan.Bush@arcadis.com>; Madsen, Laura <Laura.Madsen@arcadis.com>; Kellogg, Lisa <Lisa.Kellogg@arcadis.com>; nancy@assetlaboratories.com; 'Quennie Manimtim' <quennie@assetlaboratories.com>; 'Sample Control' <samplecontrol.lv@assetlaboratories.com>; Bloes, Marty <mbloes@pivox.com>
Subject: Magnesium

Hi Dan,

We've been receiving COC's recently from Topock for the annual sampling event where Magnesium was being requested for EPA 6020-ICP-MS. Magnesium detection is generally high on Topock samples, if we run by ICP-MS, we will have a high DF due to low detection limit. Also, Mg was historically being done by EPA 6010-ICP. I called Laura about this and she advised me to consult this to you.
Please confirm which method to use so we can start working on the samples. Attached is an example of COC.

Thanks,

Marlon Cartin
Project Manager
California: 11110 Artesia Blvd., Ste. B, Cerritos, CA 90703 | P: 562.219.7435 | F: 562.219.7436
Nevada: 3151 W. Post Road, Las Vegas, NV 89118 | P: 702.307.2659 Ext. 410 | F: 702.307.2691 | M: 702.439.0421
www.assetlaboratories.com

ASSET Laboratories

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-001A	MW-36-090-Q417	12/6/2017 1:11:00 PM	12/20/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-001B			12/20/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027405-001C			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-001D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-002A	MW-36-100-Q417	12/6/2017 11:51:00 AM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-002B			12/20/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027405-002C			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-002D	MW-36-100-Q417	12/6/2017 11:51:00 AM	12/20/2017	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-002E			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-003A	MW-910-Q417	12/6/2017 12:01:00 PM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-003B			12/20/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027405-003C			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-003D			12/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-003E			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-003E	MW-910-Q417	12/6/2017 12:01:00 PM	12/20/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-004A	MW-36-070-Q417	12/6/2017 11:44:00 AM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-004B			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-004C			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-005A	MW-720-Q417	12/6/2017 3:30:00 PM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-006A	MW-72BR-200-3V-Q417	12/6/2017 2:54:00 PM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-006B			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-006B	MW-72BR-200-3V-Q417	12/6/2017 2:54:00 PM	12/20/2017	Groundwater	EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-006C			12/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-006D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-007A	MW-72BR-200-LF_D-Q417	12/6/2017 10:17:00 AM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-007B			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-007C			12/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-007D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-007D	MW-72BR-200-LF_D-Q417	12/6/2017 10:17:00 AM	12/20/2017	Groundwater		Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-008A	MW-72BR-200-LF_S-Q417	12/6/2017 9:35:00 AM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-008B			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-008C			12/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-008D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-009A	MW-62-065-Q417	12/6/2017 3:45:00 PM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-009B	MW-62-065-Q417	12/6/2017 3:45:00 PM	12/20/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-009C			12/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-009D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-010A	MW-718-Q417	12/6/2017 3:10:00 PM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-011A	MW-64BR-Q417	12/6/2017 11:50:00 AM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-011B			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-011C	MW-64BR-Q417	12/6/2017 11:50:00 AM	12/20/2017	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-011D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-012A	MW-60-125-Q417	12/6/2017 1:20:00 PM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-012B			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-012C			12/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-012D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-012D	MW-60-125-Q417	12/6/2017 1:20:00 PM	12/20/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-013A	MW-73-080-Q417	12/6/2017 2:40:00 PM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-013B			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-013C			12/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-013D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-014A	MW-74-240-Q417	12/6/2017 10:00:00 AM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-014B			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-014B	MW-74-240-Q417	12/6/2017 10:00:00 AM	12/20/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-014C			12/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-014D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-015A	MW-719-Q417	12/6/2017 3:30:00 PM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-016A	FOLDER	12/20/2017	12/20/2017		EDD	RWQCB	☐	☐	☐	LAB
			12/20/2017		Folder	Folder	☐	☐	☐	LAB
			12/20/2017		Folder	Folder	☐	☐	☐	LAB

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CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (760) 781 3338
FAX: (805) 544-8226
Acct #:

Field Sampler: SIGNED Gantt Jeffers

07-Dec-17

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**OXY_DEUT**		
N027405-001B / MW-36-090-Q417	Groundwater	12/6/2017 1:11:00 PM	16OZP	1		
N027405-002B / MW-36-100-Q417	Groundwater	12/6/2017 11:51:00 AM	16OZP	1		
N027405-003B / MW-910-Q417	Groundwater	12/6/2017 12:01:00 PM	16OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N27405A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Oxygen and Deuterium Stable isotopes SFIRM. EDD requirement Labspec7 edata.

Fedex #: 770935832848

	Date/Time		Date/Time
Relinquished by:	12/07/2017 16:00	**Received by:**	
Relinquished by:		**Received by:**	

List of Analysts

ASSET Laboratories Work Order: N027405

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6010B_Dissolved, EPA 6020_Dissolved
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	EPA 120.1, SM 2540C, SM 2320 B

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120656/R120657 **Analyst:** LSR

ASSET #: N027405 **Date Analyzed:** 12/7/2017

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 12/20/2017

2nd Level Reviewer RLB 12/21/2017 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 12/7/17 1100

Analyst: LSR COND

Standard	Std ID	Reading	Comments
9.42 mS/cm	CINV – 171018A	9.65 @ 19.5°C	% Rec: (90-110%)
1410	170822C	1427 @ 19.5°C	
9982	171018B	10120 @ 19.5°C	
99672	170822E	99600 @ 19.1°C	

	Sample ID	Matrix	Reading	Comments
1	N027404-016D	H2O	10730 @ 19.3°C	
2	17D		15030 @ 19.1°C	
3	18C		971 @ 19.2°C	1413 = CINV 170615G
4	20C		22100 @ 19.1°C	= 1463 @ 19.2°C
5	20CDUP		21700 @ 18.8°C	10000 - CINV 170822F
6	N027405-001D		9980 @ 18.9°C	= 10180 @ 19.6°C
7	2E		7150 @ 19.2°C	99672 - CINV 170831B
8	3E		7180 @ 18.9°C	= 96900 @ 19.4°C
9	4C		969 @ 19.2°C	
10	6D		14690 @ 18.9°C	
Dup	7D		14750 @ 18.9°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: 12/7/17

Analyst:

Julia Ramit 12/20/2017

RB 12/21/2017

Standard	Std ID	Reading	Comments
	COND		% Rec: (90-110%)

	Sample ID	Matrix	Reading	Comments
1	N027405-008D	H2O	14380 @ 18.9°C	
2	8D DUP		14430 @ 18.6°C	
3	9D		5760 @ 18.8°C	
4	11D		12460 @ 19.0°C	
5	12D		8760 @ 18.7°C	
6	13D		10520 @ 19.2°C	
7	14D		865 @ 19.1°C	
8				
9	1413 mS/cm	CINV – 170615G	1471 @ 18.9°C	
10	10000	170822F	10110 @ 19.3°C	
Dup	99672	170831B	97400 @ 19.3°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

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ELAP Cert 2676 | NV Cert NV00122

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65973/66002/66003 **Analyst:** LSR

ASSET #: N027405 **Date Analyzed:** 12/8,12/11/17

Method: EPA 160.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 12/20/2017

2nd Level Reviewer RLB 12/21/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N027405-001D,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(60.5212 - 60.4624)*1000000}{20}$$

= 2940 mg/L

Reporting result in two significant figures,

TDS = 2900 mg/L

Lilia Ramit 12/20/2017

12/21/2017

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/8/2017 1:13:16 P**
Prep End Date:

Reviewed/ Date: RB 12/21/2017
Initials/ Date: Lilia Ramit 12/20/2017

Prep Batch **65973** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units
mL / mL

Sample ID	Matrix	~~pH~~ Ignd	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-65973	Water	1WST171129A	100	☐	0	0	100	1.000		
MB-65973	Water		100	☐	0	0	100	1.000		
N027405-001D	Grouridwater	5080	100 /20	☐	0	0	100	1.000		
N027405-002E	Groundwater	7150	100 /20	☐	0	0	100	1.000		
N027405-003E	Groundwater	7180	100 /20	☐	0	0	100	1.000		
N027411-001C	Water	1358	100	☐	0	0	100	1.000		
N027411-002C	Water	1587	100 /75	☐	0	0	100	1.000		
N027412-001B	Leachate	60800	100 /2	☐	0	0	100	1.000		
N027413-001B	Leachate	88700	100 /2	☐	0	0	100	1.000		
N027414-001B	Leachate	3860	100 /40	☐	0	0	100	1.000		
N027416-001B	Leachate	93100	100 /1	☐	0	0	100	1.000		
N027417-001B	Leachate	97600	100 /1	☐	0	0	100	1.000		
N027417-001B-DU	Leachate	1	100 /1	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9469 -

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/8/2017 1:13:16 P**
Prep End Date: **12/9/2017 12:00:00**
Reviewed/ Date: RLB 12/21/2017
Initials/ Date: Lilia Ramit 12/20/2017
Prep Batch **65973** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**
Prep Factor Units: **mL / mL** Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-65973	Water		100	☐	0	0	100	1.000		
MB-65973	Water		100	☐	0	0	100	1.000		
N027405-001D	Groundwater		20	☐	0	0	100	5.000		
N027405-002E	Groundwater		20	☐	0	0	100	5.000		
N027405-003E	Groundwater		20	☐	0	0	100	5.000		
N027411-001C	Water		100	☐	0	0	100	1.000		
N027411-002C	Water		75	☐	0	0	100	1.333		
N027412-001B	Leachate		2	☐	0	0	100	50.000		
N027413-001B	Leachate		2	☐	0	0	100	50.000		
N027414-001B	Leachate		40	☐	0	0	100	2.500		
N027416-001B	Leachate		1	☐	0	0	100	100.000		
N027417-001B	Leachate		1	☐	0	0	100	100.000		
N027417-001B-DU	Leachate		1	☐	0	0	100	100.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9469	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171129A	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/11/2017 1:06:31**
Prep End Date:

Reviewed/ Date: RB 12/21/2017
Initials/ Date: Lilia Ramit 12/20/2017

Prep Batch **66002** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units
mL / mL

Sample ID	Matrix	Cond ~~pH~~	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66002	Water	WS1271211C	100	☐	0	0	100	1.000		
MB-66002	Water		100	☐	0	0	100	1.000		
N027404-017D	Groundwater	15030	100 /10	☐	0	0	100	1.000		
N027404-018C	Groundwater	971	100	☐	0	0	100	1.000		
N027404-020C	Groundwater	22100	100 /5	☐	0	0	100	1.000		
N027404-020C-DU	Groundwater	↓	100 /5	☐	0	0	100	1.000		
N027405-004C	Groundwater	969	100	☐	0	0	100	1.000		
N027405-006D	Groundwater	14690	100 /10	☐	0	0	100	1.000		
N027405-007D	Groundwater	14750	100 /10	☐	0	0	100	1.000		
N027405-008D	Groundwater	14380	100 /10	☐	0	0	100	1.000		
N027405-009D	Groundwater	5760	100 /20	☐	0	0	100	1.000		
N027405-011D	Groundwater	12460	100 /10	☐	0	0	100	1.000		
N027405-012D	Groundwater	8760	100 /20	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9469

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/11/2017 1:06:31**
Prep End Date: **12/12/2017 11:30:0**

Reviewed/ Date: RLB 12/21/2017
Initials/ Date: Lilia Ramit 12/20/2017

Prep Batch **66002** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66002	Water		100	☐	0	0	100	1.000		
MB-66002	Water		100	☐	0	0	100	1.000		
N027404-017D	Groundwater		10	☐	0	0	100	10.000		
N027404-018C	Groundwater		100	☐	0	0	100	1.000		
N027404-020C	Groundwater		5	☐	0	0	100	20.000		
N027404-020C-DU	Groundwater		5	☐	0	0	100	20.000		
N027405-004C	Groundwater		100	☐	0	0	100	1.000		
N027405-006D	Groundwater		10	☐	0	0	100	10.000		
N027405-007D	Groundwater		10	☐	0	0	100	10.000		
N027405-008D	Groundwater		10	☐	0	0	100	10.000		
N027405-009D	Groundwater		20	☐	0	0	100	5.000		
N027405-011D	Groundwater		10	☐	0	0	100	10.000		
N027405-012D	Groundwater		20	☐	0	0	100	5.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9469	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171211C	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/11/2017 1:06:33**
Prep End Date:

Reviewed/ Date: RB 12/21/2017
Initials/ Date: Lilia Ramit 12/20/2017

Prep Batch **66003** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units
mL / mL

Sample ID	Matrix	Cond ~~pH~~	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66003	Water	[illegible]	100	☐	0	0	100	1.000		
MB-66003	Water		100	☐	0	0	100	1.000		
N027405-013D	Groundwater	10520	100 /10	☐	0	0	100	1.000		
N027405-014D	Groundwater	865	100	☐	0	0	100	1.000		
N027422-001A	Surface Water	742	100	☐	0	0	100	1.000		
N027422-002A	Surface Water	3450	100 /40	☐	0	0	100	1.000		
N027422-003A	Surface Water	3450	100 /40	☐	0	0	100	1.000		
N027427-001C	Groundwater	1198	100	☐	0	0	100	1.000		
N027428-001B	Groundwater	3710	100 /40	☐	0	0	100	1.000		
N027428-002B	Groundwater	6060	100 /20	☐	0	0	100	1.000		
N027429-005D	Groundwater	15870	100 /10	☐	0	0	100	1.000		
N027429-005D-DU	Groundwater	1	100 /10	☐	0	0	100	1.000		
~~N027429-006D~~	~~Groundwater~~	~~15720~~	~~100 /10~~	☐	0	0	100	1.000		
N027416-1B		92500	1							

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9469
9664

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/11/2017 1:06:33**
Prep End Date: **12/12/2017 11:30:0**

Reviewed/ Date: RLB 12/21/2017
Initials/ Date: Julia Ramit 12/20/2017

Prep Batch **66003** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66003	Water		100	☐	0	0	100	1.000		
MB-66003	Water		100	☐	0	0	100	1.000		
N027405-013D	Groundwater		10	☐	0	0	100	10.000		
N027405-014D	Groundwater		100	☐	0	0	100	1.000		
N027416-001B	Leachate		1	☐	0	0	100	100.000		
N027422-001A	Surface Water		100	☐	0	0	100	1.000		
N027422-002A	Surface Water		40	☐	0	0	100	2.500		
N027422-003A	Surface Water		40	☐	0	0	100	2.500		
N027427-001C	Groundwater		100	☐	0	0	100	1.000		
N027428-001B	Groundwater		40	☐	0	0	100	2.500		
N027428-002B	Groundwater		20	☐	0	0	100	5.000		
N027429-005D	Groundwater		10	☐	0	0	100	10.000		
N027429-005D-DU	Groundwater		10	☐	0	0	100	10.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9469	Glass Fiber Filter, 47mm
9666	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171211C	1000 ppm NaCl	LCS	100

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/8/17 1313 DD	MB 65973	100	71.6238 71.6235	71.6233 71.6232	
KG	NO27405-001D	20	60.4621 60.4624	60.5211 60.5212	
—	2E	20	60.5865 60.5862	60.6715 60.6710	
3I	3E	20	63.3167 63.3164	63.3954 63.3959	
IX	NO27411-001C	100	76.5922 76.5919	76.6862 76.6865	
A	2C	75	59.1330 59.1330	59.2232 ~~59.2237~~ 2 59.2228	
C	NO27413-001B	2	50.3710 50.3707	50.4916 50.4912	
IS	NO27413-001B	2	61.5391 61.5389	61.7157 61.7160	
IY	NO27414-001B	40	55.5921 55.5924	55.7098 55.7102	
S	NO27416-001B	1	45.7316 45.7316	45.9010 45.9006	

Julia Ramit 12/20/2017

RB 12/21/2017

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3151 W. Post Rd., Las Vegas, NV 89118

SOLIDS RAW DATA

TEST :TSS/TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/8/17 1F	N027417 001B	1	60.6301 60.6305	60.8006 60.8006	
1L	1B DUP	1	60.2917 60.2916	~~60.49~~ 60.4697 60.4692	
1S	LCS 68973	100	76.5774 76.5774	76.6699 76.6698	

Julia Ramit 12/20/2017

ASSET Laboratories Logbook#8

RB 12/21/2017

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
12/9/2017									
MB-65973	100	71.6235	71.6232	-3	1	-3			MBLK
LCS-65973	100	76.5774	76.6698	924	1	924			LCS
N027405-001D	20	60.4624	60.5212	588	5	2940	5080	0.579	SAMP
N027405-002E	20	60.5862	60.671	848	5	4240	7150	0.593	SAMP
N027405-003E	20	63.3104	63.3959	855	5	4275	7180	0.595	SAMP
N027411-001C	100	76.5919	76.6865	946	1	946	1358	0.697	SAMP
N027411-002C	75	59.133	59.2228	898	1.33333333	1197.33333	1507	0.795	SAMP
N027412-001B	2	50.3707	50.4912	1205	50	60250	60800	0.991	SAMP
N027413-001B	2	61.5389	61.716	1771	50	88550	88700	0.998	SAMP
N027414-001B	40	55.5924	55.7102	1178	2.5	2945	3860	0.763	SAMP
N027416-001B	1	45.7316	45.9006	1690	100	169000	93100	1.815	SAMP
N027417-001B	1	60.6305	60.8006	1701	100	170100	97600	1.743	SAMP
N027417-001BDUP	1	60.2916	60.4692	1776	100	177600	97600	1.820	DUP

Silica Ramit 12/20/2017

RB 12/21/2017

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/11/17 1306 CC	MB 66002	100	70.0784 70.0780	70.0778 70.0781	
K	LCS 66002	100	76-5697 76.5701	76.6634 76.6637	
IJ	NO27404-017D	10	61.5309 61.5313	61.6241 61.6246	
H	18C	100	74-5125 74.5130	74-5783 74.5787	
IF	20C	5	60.6223 60.6226	60.7067 60.7070	
A	20C DUP	5	59.1373 59.1377	59.2222 59.2226	
FF	NO27405-004C	100	68-3654 68.3658	68.4325 68.4329	
IG	6D	10	60.4506 60.4503	60.5358 60.5352	
T	7D	10	46.0434 46.0436	46.1293 46.1295	
C	8D	10	50.3704 50.3703	50.4597 50.4601	

Julia Ramit 12/20/2017

ASSET Laboratories

Logbook#8

12/21/2017

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/11/17 S	NO27405-009D	20	45.7290 45.7295	45.7996 45.7999	
M	11D	10	49.0609 49.0613	49.1337 49.1341	
1C	12D	20	49.3591 49.3594	49.4746 49.4748	
Julia Ramit		12/20/2017			

RLB 12/21/2017

ASSET LABORATORIES
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV
ELAP Cert 2676 | NV Cert NV00922

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
12/12/2017									
MB-66002	100	70.078	70.0781	1	1	1			MBLK
LCS-66002	100	76.5701	76.6637	936	1	936			LCS
N027404-017D	10	61.5313	61.6246	933	10	9330	15030	0.621	SAMP
N027404-018C	100	74.513	74.5787	657	1	657	971	0.677	SAMP
N027404-020C	5	60.6226	60.707	844	20	16880	22100	0.764	SAMP
N027404-020CDUP	5	59.1377	59.2226	849	20	16980	22100	0.768	DUP
N027405-004C	100	68.3658	68.4329	671	1	671	969	0.692	SAMP
N027405-006D	10	60.4503	60.5356	853	10	8530	14690	0.581	SAMP
N027405-007D	10	46.0436	46.1295	859	10	8590	14750	0.582	SAMP
N027405-008D	10	50.3703	50.4601	898	10	8980	14380	0.624	SAMP
N027405-009D	20	45.7295	45.7999	704	5	3520	5760	0.611	SAMP
N027405-011D	10	49.0613	49.1341	728	10	7280	12460	0.584	SAMP
N027405-012D	20	49.3594	49.4748	1154	5	5770	8760	0.659	SAMP

Julia Ramit 12/20/2017

RLB 12/21/2017

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/11/17 1204 JT	MB 66003	100	67.0939 67.0942	67.0943 67.0945	
IX	LCS 66003	100	76.5929 76.5928	76.6887 76.6887	
RR	NO27405-013D	10	62.3285 62.3281	62.3905 62.3908	
KK	140	100	70.7456 70.7453	70.7964 70.7968	
EE	NO27427-001A	100	68.2223 68.2219	68.2759 68.2763	
IW	7A	40	64.0224 64.0228	64.1494 64.1498	
—	3A	40	60.5857 60.5857	60.7148 60.7152	
21	NO27427-001C	100	63.3072 63.3075	63.4058 63.4061	
10	NO27428-001A	40	71.6147 71.6146	71.7183 71.7187	
8	2B	20	53.7003 53.7007	53.7860 53.7864	

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NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118

12/21/2017

SOLIDS RAW DATA

TEST : TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/11/17 XX	N027429-005D	10	~~53.6893~~ 49.6347 49.6350 LW 12/11	49.7601 49.7605	
	5D DUP	10	48.8877 48.8877	49.0078 49.0081	
12	~~6D~~	~~10~~	~~53.6893 53.6898~~	53.8131 53.8132 LW 12/12/17	
1K	N027416-001B	1	62.4570 62.4570	62.6393 62.6393	
	Julia Ramit 12/20/2017 RB 12/21/2017				

closing wt: 49.9997 12/12/17 @ 1130

ASSET Laboratories

Logbook#8

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
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PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
12/12/2017									
MB-66003	100	67.0942	67.0945	3	1	3			MBLK
LCS-66003	100	76.5928	76.6887	959	1	959			LCS
N027405-013D	10	62.3281	62.3908	627	10	6270	10520	0.596	SAMP
N027405-014D	100	70.7453	70.7968	515	1	515	865	0.595	SAMP
N027422-001A	100	68.2219	68.2763	544	1	544	742	0.733	SAMP
N027422-002A	40	64.0228	64.1498	1270	2.5	3175	3450	0.920	SAMP
N027422-003A	40	60.5857	60.7152	1295	2.5	3237.5	3450	0.938	SAMP
N027427-001C	100	63.3075	63.4061	986	1	986	1198	0.823	SAMP
N027428-001B	40	71.6146	71.7187	1041	2.5	2602.5	3710	0.701	SAMP
N027428-002B	20	53.7007	53.7864	857	5	4285	6060	0.707	SAMP
N027429-005D	10	49.635	49.7605	1255	10	12550	15870	0.791	SAMP
N027429-005DDUP	10	48.8877	49.0081	1204	10	12040	15870	0.759	DUP
N027416-001B	1	62.457	62.6393	1823	100	182300	92500	1.971	SAMP

Sivia Ramit 12/20/2017

RB 12/21/2017

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120683
ASSET #: N027405

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 12/8/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:
Dilution was necessary for N027405-011A due to matrix interference.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 12/19/2017

2nd Level Reviewer RLB 12/21/2017 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120833
ASSET #: N027405

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 12/11/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments: Dilution was necessary for N027405-006A to -008A due to matrix interference.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/19/2017

2nd Level Reviewer: RLB 12/21/2017 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N027405-002A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 2.3032 * 5$$

$$Cr^{+6}, \mu g/L = 11.52$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 12}$$

rba 12/19/2017

12/21/2017

ANALYSIS RUN LOG

INJECTION LOG: 171128A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/28/17 10:57 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/28/17 11:08 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/28/17 11:17 AM	Reported
13	MB-R120468	MBLK	1	Hexavalent Chromium	11/28/17 11:27 AM	Reported
14	LCS-R120468	LCS	1	Hexavalent Chromium	11/28/17 11:36 AM	Reported
15	N027215-001A	SAMP	1	Hexavalent Chromium	11/28/17 11:47 AM	Reported
16	N027215-002A	SAMP	1	Hexavalent Chromium	11/28/17 11:59 AM	Reported
17	N027215-003A	SAMP	1	Hexavalent Chromium	11/28/17 12:08 PM	Reported
18	N027215-004A	SAMP	1	Hexavalent Chromium	11/28/17 12:18 PM	Reported
19	N027215-005A	SAMP	1	Hexavalent Chromium	11/28/17 12:27 PM	Reported
20	N027215-002ADUP	DUP	1	Hexavalent Chromium	11/28/17 12:37 PM	Reported
21	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 12:46 PM	Not Reported
22	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 12:56 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	11/28/17 1:05 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/28/17 1:14 PM	Reported
25	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:04 PM	Not Reported
26	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:16 PM	Not Reported
27	N027215-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:29 PM	Reported
28	N027215-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:41 PM	Reported
29	CCV-2	CCV	1	Hexavalent Chromium	11/28/17 2:50 PM	Reported
30	CCB-2	CCB	1	Hexavalent Chromium	11/28/17 3:00 PM	Reported



Injection Log Summary

Sequence Details

Name:	**IC-07_171128A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**28/Nov/17 15:47:35**
No. of Injections:	**33**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		11/28/2017 10:57	Finished	ICV @5ppb, IWST-171002A
11	PQL@0.2ppb,CCV2,	12	1000	Unknown		11/28/2017 11:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		11/28/2017 11:17	Finished	ICB R171114C
13	MB-H2O,MBLK,1	14	1000	Unknown		11/28/2017 11:27	Finished	MB R171114C
14	LCS-H2O,LCS,1	15	1000	Unknown		11/28/2017 11:36	Finished	LCS, IWST-171002B
15	N027215-001A,SAMP	17	1000	Unknown		11/28/2017 11:47	Finished	SAMP,10mL
16	N027215-002A,SAMP	18	1000	Unknown		11/28/2017 11:59	Finished	SAMP,10mL
17	N027215-003A,SAMP	19	1000	Unknown		11/28/2017 12:08	Finished	SAMP,10mL
18	N027215-004A,SAMP	20	1000	Unknown		11/28/2017 12:18	Finished	SAMP,10mL
19	N027215-005A,SAMP	21	1000	Unknown		11/28/2017 12:27	Finished	SAMP,10mL
20	N027215-002ADUP,D	22	1000	Unknown		11/28/2017 12:37	Finished	DUP,10mL
21	N027157-001AMS,MS	23	1000	Unknown		11/28/2017 12:46	Finished	MS (5ppb), IWST-171002B,10
22	N027157-001AMSD,M	24	1000	Unknown		11/28/2017 12:56	Finished	MSD (5ppb), IWST-171002B,1
23	CCV-1,CCV1,1,	25	1000	Unknown		11/28/2017 13:05	Finished	CCV @10ppb, IWST-171002A
24	CCB-1,CCB,1,	26	1000	Unknown		11/28/2017 13:14	Finished	CCB R171031A
25	N027157-001AMS,MS	28	1000	Unknown		11/28/2017 14:04	Finished	MS (5ppb), IWST-171002B,10
26	N027157-001AMSD,M	29	1000	Unknown		11/28/2017 14:16	Finished	MSD (5ppb), IWST-171002B,1
27	N027215-001AMS,MS	31	1000	Unknown		11/28/2017 14:29	Finished	MS (5ppb), IWST-171002B,10
28	N027215-001AMSD,M	32	1000	Unknown		11/28/2017 14:41	Finished	MSD (5ppb), IWST-171002B,1
29	CCV-2,CCV,1,	33	1000	Unknown		11/28/2017 14:50	Finished	CCV @5ppb, IWST-171002A
30	CCB-2,CCB,1,	34	1000	Unknown		11/28/2017 15:00	Finished	CCB R171031A
31	SHUTDOWN	35	1000	Unknown		11/28/2017 15:09	Finished	
32	Eluent: R171128A	36	1000	Unknown		n.a.	Finished	Eluent
33	PCR: R171128B	37	1000	Unknown		n.a.	Finished	Post-Column Reagent

rba 11/29/2017

INJECTION LOG: 171208A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/08/17 8:12 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/08/17 8:22 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/08/17 8:35 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/08/17 8:46 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/08/17 8:56 AM	Reported
15	MB-R120682	MBLK	1	Hexavalent Chromium	12/08/17 9:05 AM	Reported
16	LCS-R120682	LCS	1	Hexavalent Chromium	12/08/17 9:14 AM	Reported
17	N027404-001A	SAMP	1	Hexavalent Chromium	12/08/17 9:25 AM	Reported
18	N027404-001AMS	MS	1	Hexavalent Chromium	12/08/17 9:36 AM	Reported
19	N027404-002A	SAMP	1	Hexavalent Chromium	12/08/17 9:45 AM	Reported
20	N027404-002AMS	MS	1	Hexavalent Chromium	12/08/17 9:55 AM	Reported
21	N027404-003A	SAMP	5	Hexavalent Chromium	12/08/17 10:04 AM	Reported
22	N027404-003AMS	MS	5	Hexavalent Chromium	12/08/17 10:14 AM	Reported
23	N027404-004A	SAMP	1	Hexavalent Chromium	12/08/17 10:23 AM	Reported
24	N027404-004AMS	MS	1	Hexavalent Chromium	12/08/17 10:33 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/08/17 10:42 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/08/17 10:52 AM	Reported
27	N027404-005A	SAMP	1	Hexavalent Chromium	12/08/17 11:01 AM	Not Reported
28	N027404-005AMS	MS	1	Hexavalent Chromium	12/08/17 11:11 AM	Not Reported
29	N027404-006A	SAMP	1	Hexavalent Chromium	12/08/17 11:20 AM	Reported
30	N027404-006AMS	MS	1	Hexavalent Chromium	12/08/17 11:30 AM	Reported
31	N027404-007A	SAMP	1	Hexavalent Chromium	12/08/17 11:39 AM	Reported
32	N027404-007AMS	MS	1	Hexavalent Chromium	12/08/17 11:48 AM	Reported
33	N027404-008A	SAMP	1	Hexavalent Chromium	12/08/17 11:58 AM	Reported
34	N027404-008AMS	MS	1	Hexavalent Chromium	12/08/17 12:07 PM	Reported
35	N027404-009A	SAMP	5	Hexavalent Chromium	12/08/17 12:17 PM	Reported
36	N027404-009AMS	MS	5	Hexavalent Chromium	12/08/17 12:26 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/08/17 12:36 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/08/17 12:45 PM	Reported
39	N027404-010A	SAMP	1	Hexavalent Chromium	12/08/17 12:55 PM	Reported
40	N027404-010AMS	MS	1	Hexavalent Chromium	12/08/17 1:04 PM	Reported
41	N027404-011A	SAMP	1	Hexavalent Chromium	12/08/17 1:14 PM	Reported
42	N027404-011AMS	MS	1	Hexavalent Chromium	12/08/17 1:23 PM	Reported

INJECTION LOG: 171208A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027404-012A	SAMP	1	Hexavalent Chromium	12/08/17 1:33 PM	Reported
44	N027404-012AMS	MS	1	Hexavalent Chromium	12/08/17 1:42 PM	Reported
45	N027404-013A	SAMP	1	Hexavalent Chromium	12/08/17 1:51 PM	Reported
46	N027404-013AMS	MS	1	Hexavalent Chromium	12/08/17 2:01 PM	Reported
47	N027404-014A	SAMP	1	Hexavalent Chromium	12/08/17 2:10 PM	Reported
48	N027404-014AMS	MS	1	Hexavalent Chromium	12/08/17 2:20 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/08/17 2:29 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/08/17 2:39 PM	Reported
51	N027404-015A	SAMP	1	Hexavalent Chromium	12/08/17 2:48 PM	Reported
52	N027404-015AMS	MS	1	Hexavalent Chromium	12/08/17 2:58 PM	Reported
53	N027404-016A	SAMP	5	Hexavalent Chromium	12/08/17 3:07 PM	Reported
54	N027404-016AMS	MS	5	Hexavalent Chromium	12/08/17 3:17 PM	Reported
55	N027404-016A	SAMP	1	Hexavalent Chromium	12/08/17 3:26 PM	Not Reported
56	N027404-016AMS	MS	1	Hexavalent Chromium	12/08/17 3:36 PM	Not Reported
57	N027404-018A	SAMP	1	Hexavalent Chromium	12/08/17 3:45 PM	Reported
58	N027404-018AMS	MS	1	Hexavalent Chromium	12/08/17 3:54 PM	Reported
59	N027404-019A	SAMP	1	Hexavalent Chromium	12/08/17 4:04 PM	Reported
60	N027404-019AMS	MS	1	Hexavalent Chromium	12/08/17 4:13 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/08/17 4:23 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/08/17 4:32 PM	Reported
63	N027404-020A	SAMP	5	Hexavalent Chromium	12/08/17 4:42 PM	Reported
64	N027404-020AMS	MS	5	Hexavalent Chromium	12/08/17 4:51 PM	Reported
65	N027404-017A	SAMP	100	Hexavalent Chromium	12/08/17 5:01 PM	Reported
66	N027404-017AMS	MS	100	Hexavalent Chromium	12/08/17 5:10 PM	Reported
67	N027404-017AMSD	MSD	100	Hexavalent Chromium	12/08/17 5:23 PM	Reported
68	N027404-003ADUP	DUP	5	Hexavalent Chromium	12/08/17 5:34 PM	Reported
69	N027404-005A	SAMP	5	Hexavalent Chromium	12/08/17 5:44 PM	Reported
70	N027404-005AMS	MS	5	Hexavalent Chromium	12/08/17 5:53 PM	Reported
71	N027404-020A	SAMP	1	Hexavalent Chromium	12/08/17 6:02 PM	Not Reported
72	N027404-020AMS	MS	1	Hexavalent Chromium	12/08/17 6:12 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	12/08/17 6:21 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	12/08/17 6:31 PM	Reported
75	LCS-R120683	LCS	1	Hexavalent Chromium	12/08/17 6:45 PM	Reported
76	MB-R120683	MBLK	1	Hexavalent Chromium	12/08/17 6:55 PM	Reported
77	N027405-012A	SAMP	100	Hexavalent Chromium	12/08/17 7:05 PM	Reported
78	N027405-012AMS	MS	100	Hexavalent Chromium	12/08/17 7:14 PM	Reported
79	N027405-012AMSD	MSD	100	Hexavalent Chromium	12/08/17 7:24 PM	Reported
80	N027405-013A	SAMP	5	Hexavalent Chromium	12/08/17 7:33 PM	Reported
81	N027405-013AMS	MS	5	Hexavalent Chromium	12/08/17 7:43 PM	Reported
82	N027405-002A	SAMP	5	Hexavalent Chromium	12/08/17 7:52 PM	Reported
83	N027405-002AMS	MS	5	Hexavalent Chromium	12/08/17 8:02 PM	Reported
84	N027405-002ADUP	DUP	5	Hexavalent Chromium	12/08/17 8:11 PM	Reported

INJECTION LOG: 171208A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	12/08/17 8:21 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	12/08/17 8:30 PM	Reported
87	N027405-001A	SAMP	1	Hexavalent Chromium	12/08/17 8:40 PM	Reported
88	N027405-001AMS	MS	1	Hexavalent Chromium	12/08/17 8:49 PM	Reported
89	N027405-003A	SAMP	5	Hexavalent Chromium	12/08/17 8:58 PM	Reported
90	N027405-003AMS	MS	5	Hexavalent Chromium	12/08/17 9:08 PM	Reported
91	N027405-004A	SAMP	1	Hexavalent Chromium	12/08/17 9:17 PM	Reported
92	N027405-004AMS	MS	1	Hexavalent Chromium	12/08/17 9:27 PM	Reported
93	N027405-005A	SAMP	1	Hexavalent Chromium	12/08/17 9:36 PM	Reported
94	N027405-005AMS	MS	1	Hexavalent Chromium	12/08/17 9:46 PM	Reported
95	N027405-009A	SAMP	100	Hexavalent Chromium	12/08/17 9:55 PM	Reported
96	N027405-009AMS	MS	100	Hexavalent Chromium	12/08/17 10:05 PM	Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	12/08/17 10:14 PM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	12/08/17 10:24 PM	Reported
99	N027405-010A	SAMP	1	Hexavalent Chromium	12/08/17 10:33 PM	Reported
100	N027405-010AMS	MS	1	Hexavalent Chromium	12/08/17 10:43 PM	Reported
101	N027405-011A	SAMP	1	Hexavalent Chromium	12/08/17 10:52 PM	Not Reported
102	N027405-011AMS	MS	1	Hexavalent Chromium	12/08/17 11:01 PM	Not Reported
103	N027405-011A	SAMP	5	Hexavalent Chromium	12/08/17 11:11 PM	Reported
104	N027405-011AMS	MS	5	Hexavalent Chromium	12/08/17 11:20 PM	Reported
105	N027405-014A	SAMP	1	Hexavalent Chromium	12/08/17 11:30 PM	Reported
106	N027405-014AMS	MS	1	Hexavalent Chromium	12/08/17 11:39 PM	Reported
107	N027405-015A	SAMP	1	Hexavalent Chromium	12/08/17 11:49 PM	Reported
108	N027405-015AMS	MS	1	Hexavalent Chromium	12/08/17 11:58 PM	Reported
109	CCV-9	CCV	1	Hexavalent Chromium	12/09/17 12:08 AM	Reported
110	CCB-9	CCB	1	Hexavalent Chromium	12/09/17 12:17 AM	Reported
111	N027405-006A	SAMP	1	Hexavalent Chromium	12/09/17 12:27 AM	Not Reported
112	N027405-006AMS	MS	1	Hexavalent Chromium	12/09/17 12:36 AM	Not Reported
113	N027405-007A	SAMP	1	Hexavalent Chromium	12/09/17 12:46 AM	Not Reported
114	N027405-007AMS	MS	1	Hexavalent Chromium	12/09/17 12:55 AM	Not Reported
115	N027405-008A	SAMP	1	Hexavalent Chromium	12/09/17 1:04 AM	Not Reported
116	N027405-008AMS	MS	1	Hexavalent Chromium	12/09/17 1:14 AM	Not Reported
117	CCV-10	CCV1	1	Hexavalent Chromium	12/09/17 1:23 AM	Reported
118	CCB-10	CCB	1	Hexavalent Chromium	12/09/17 1:33 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171208A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**09/Dec/17 02:03:42**
No. of Injections:	**121**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/08/2017 08:12	Finished	BLANK
11	BLANK	2	1000	Unknown		12/08/2017 08:22	Finished	BLANK
12	CCV-1,CCV,1,	4	1000	Unknown		12/08/2017 08:35	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	5	1000	Unknown		12/08/2017 08:46	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	6	1000	Unknown		12/08/2017 08:56	Finished	CCB R171129A
15	MB-1,MBLK,1	7	1000	Unknown		12/08/2017 09:05	Finished	MB R171129A
16	LCS-1,LCS,1	8	1000	Unknown		12/08/2017 09:14	Finished	LCS, IWST-171002B
17	N027404-001A,SAMP	1	1000	Unknown		12/08/2017 09:25	Finished	SAMP,10mL
18	N027404-001AMS,MS	2	1000	Unknown		12/08/2017 09:36	Finished	MS (1ppb), IWST-171002B,10
19	N027404-002A,SAMP	3	1000	Unknown		12/08/2017 09:45	Finished	SAMP,10mL
20	N027404-002AMS,MS	4	1000	Unknown		12/08/2017 09:55	Finished	MS (1ppb), IWST-171002B,10
21	N027404-003A,SAMP	5	1000	Unknown		12/08/2017 10:04	Finished	SAMP,2>10mL
22	N027404-003AMS,MS	6	1000	Unknown		12/08/2017 10:14	Finished	MS (1ppb), IWST-171002B,2>1
23	N027404-004A,SAMP	7	1000	Unknown		12/08/2017 10:23	Finished	SAMP,10mL
24	N027404-004AMS,MS	8	1000	Unknown		12/08/2017 10:33	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	9	1000	Unknown		12/08/2017 10:42	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	10	1000	Unknown		12/08/2017 10:52	Finished	CCB R171129A
27	N027404-005A,SAMP	11	1000	Unknown		12/08/2017 11:01	Finished	SAMP,10mL
28	N027404-005AMS,MS	12	1000	Unknown		12/08/2017 11:11	Finished	MS (1ppb), IWST-171002B,10
29	N027404-006A,SAMP	13	1000	Unknown		12/08/2017 11:20	Finished	SAMP,10mL
30	N027404-006AMS,MS	14	1000	Unknown		12/08/2017 11:30	Finished	MS (1ppb), IWST-171002B,10
31	N027404-007A,SAMP	15	1000	Unknown		12/08/2017 11:39	Finished	SAMP,10mL
32	N027404-007AMS,MS	16	1000	Unknown		12/08/2017 11:48	Finished	MS (1ppb), IWST-171002B,10
33	N027404-008A,SAMP	17	1000	Unknown		12/08/2017 11:58	Finished	SAMP,10mL
34	N027404-008AMS,MS	18	1000	Unknown		12/08/2017 12:07	Finished	MS (1ppb), IWST-171002B,10
35	N027404-009A,SAMP	19	1000	Unknown		12/08/2017 12:17	Finished	SAMP,2>10mL
36	N027404-009AMS,MS	20	1000	Unknown		12/08/2017 12:26	Finished	MS (1ppb), IWST-171002B,2>1
37	CCV-3,CCV,1,	21	1000	Unknown		12/08/2017 12:36	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	22	1000	Unknown		12/08/2017 12:45	Finished	CCB R171129A
39	N027404-010A,SAMP	23	1000	Unknown		12/08/2017 12:55	Finished	SAMP,10mL
40	N027404-010AMS,MS	24	1000	Unknown		12/08/2017 13:04	Finished	MS (1ppb), IWST-171002B,10
41	N027404-011A,SAMP	25	1000	Unknown		12/08/2017 13:14	Finished	SAMP,10mL
42	N027404-011AMS,MS	26	1000	Unknown		12/08/2017 13:23	Finished	MS (1ppb), IWST-171002B,10
43	N027404-012A,SAMP	27	1000	Unknown		12/08/2017 13:33	Finished	SAMP,10mL
44	N027404-012AMS,MS	28	1000	Unknown		12/08/2017 13:42	Finished	MS (1ppb), IWST-171002B,10
45	N027404-013A,SAMP	29	1000	Unknown		12/08/2017 13:51	Finished	SAMP,10mL
46	N027404-013AMS,MS	30	1000	Unknown		12/08/2017 14:01	Finished	MS (1ppb), IWST-171002B,10
47	N027404-014A,SAMP	31	1000	Unknown		12/08/2017 14:10	Finished	SAMP,10mL
48	N027404-014AMS,MS	32	1000	Unknown		12/08/2017 14:20	Finished	MS (1ppb), IWST-171002B,10
49	CCV-4,CCV1,1,	33	1000	Unknown		12/08/2017 14:29	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	34	1000	Unknown		12/08/2017 14:39	Finished	CCB R171129A
51	N027404-015A,SAMP	35	1000	Unknown		12/08/2017 14:48	Finished	SAMP,10mL
52	N027404-015AMS,MS	36	1000	Unknown		12/08/2017 14:58	Finished	MS (1ppb), IWST-171002B,10
53	N027404-016A,SAMP	37	1000	Unknown		12/08/2017 15:07	Finished	SAMP,2>10mL
54	N027404-016AMS,MS	38	1000	Unknown		12/08/2017 15:17	Finished	MS (1ppb), IWST-171002B,2>1
55	N027404-016A,SAMP	39	1000	Unknown		12/08/2017 15:26	Finished	SAMP,10mL
56	N027404-016AMS,MS	40	1000	Unknown		12/08/2017 15:36	Finished	MS (1ppb), IWST-171002B,10
57	N027404-018A,SAMP	41	1000	Unknown		12/08/2017 15:45	Finished	SAMP,10mL
58	N027404-018AMS,MS	42	1000	Unknown		12/08/2017 15:54	Finished	MS (1ppb), IWST-171002B,10
59	N027404-019A,SAMP	43	1000	Unknown		12/08/2017 16:04	Finished	SAMP,10mL
60	N027404-019AMS,MS	44	1000	Unknown		12/08/2017 16:13	Finished	MS (1ppb), IWST-171002B,10

61	CCV-5,CCV,1,	45	1000	Unknown		12/08/2017 16:23	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	46	1000	Unknown		12/08/2017 16:32	Finished	CCB R171129A
63	N027404-020A,SAMF	47	1000	Unknown		12/08/2017 16:42	Finished	SAMP,2>10mL
64	N027404-020AMS,MS	48	1000	Unknown		12/08/2017 16:51	Finished	MS (1ppb), IWST-171002B,2>1
65	N027404-017A,SAMF	49	1000	Unknown		12/08/2017 17:01	Finished	SAMP,0.1>10mL
66	N027404-017AMS,MS	50	1000	Unknown		12/08/2017 17:10	Finished	MS (5ppb), IWST-171002B,0.1
67	N027404-017AMSD,M	1	1000	Unknown		12/08/2017 17:23	Finished	MSD (5ppb), IWST-171002B,0.
68	N027404-003ADUP,D	2	1000	Unknown		12/08/2017 17:34	Finished	DUP,2>10mL
69	N027404-005A,SAMF	3	1000	Unknown		12/08/2017 17:44	Finished	SAMP,2>10mL
70	N027404-005AMS,MS	4	1000	Unknown		12/08/2017 17:53	Finished	MS (1ppb), IWST-171002B,2>1
71	N027404-020A,SAMF	5	1000	Unknown		12/08/2017 18:02	Finished	SAMP,10mL
72	N027404-020AMS,MS	6	1000	Unknown		12/08/2017 18:12	Finished	MS (1ppb), IWST-171002B,10
73	CCV-6,CCV1,1,	7	1000	Unknown		12/08/2017 18:21	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	8	1000	Unknown		12/08/2017 18:31	Finished	CCB R171129A
75	LCS-2,LCS,1	1	1000	Unknown		12/08/2017 18:45	Finished	LCS, IWST-171002B
76	MB-2,MBLK,1	2	1000	Unknown		12/08/2017 18:55	Finished	MB R171129A
77	N027405-012A,SAMF	3	1000	Unknown		12/08/2017 19:05	Finished	SAMP,0.1>10mL
78	N027405-012AMS,MS	4	1000	Unknown		12/08/2017 19:14	Finished	MS (5ppb), IWST-171002B,0.1
79	N027405-012AMSD,M	5	1000	Unknown		12/08/2017 19:24	Finished	MSD (5ppb), IWST-171002B,0.
80	N027405-013A,SAMF	6	1000	Unknown		12/08/2017 19:33	Finished	SAMP,0.1>10mL
81	N027405-013AMS,MS	7	1000	Unknown		12/08/2017 19:43	Finished	DUP,0.1>10mL
82	N027405-002A,SAMF	8	1000	Unknown		12/08/2017 19:52	Finished	SAMP,10mL
83	N027405-002AMS,MS	9	1000	Unknown		12/08/2017 20:02	Finished	SAMP,5>10mL
84	N027405-002ADUP,D	10	1000	Unknown		12/08/2017 20:11	Finished	SAMP,0.2>10mL
85	CCV-7,CCV,1,	11	1000	Unknown		12/08/2017 20:21	Finished	CCV @5ppb, IWST-171002A
86	CCB-7,CCB,1,	12	1000	Unknown		12/08/2017 20:30	Finished	CCB R171114C
87	N027405-001A,SAMF	13	1000	Unknown		12/08/2017 20:40	Finished	SAMP,0.2>10mL
88	N027405-001AMS,MS	14	1000	Unknown		12/08/2017 20:49	Finished	SAMP,1>10mL
89	N027405-003A,SAMF	15	1000	Unknown		12/08/2017 20:58	Finished	SAMP,0.5>10mL
90	N027405-003AMS,MS	16	1000	Unknown		12/08/2017 21:08	Finished	SAMP,5>10mL
91	N027405-004A,SAMF	17	1000	Unknown		12/08/2017 21:17	Finished	SAMP,10mL
92	N027405-004AMS,MS	18	1000	Unknown		12/08/2017 21:27	Finished	SAMP,2>10mL
93	N027405-005A,SAMF	19	1000	Unknown		12/08/2017 21:36	Finished	MS (5ppb), IWST-171002B,2>1
94	N027405-005AMS,MS	20	1000	Unknown		12/08/2017 21:46	Finished	MSD (5ppb), IWST-171002B,2>
95	N027405-009A,SAMF	21	1000	Unknown		12/08/2017 21:55	Finished	SAMP,10mL
96	N027405-009AMS,MS	22	1000	Unknown		12/08/2017 22:05	Finished	MS (1ppb), IWST-171002B,10
97	CCV-8,CCV1,1,	23	1000	Unknown		12/08/2017 22:14	Finished	CCV @10ppb, IWST-171002A
98	CCB-8,CCB,1,	24	1000	Unknown		12/08/2017 22:24	Finished	CCB R171129A
99	N027405-010A,SAMF	25	1000	Unknown		12/08/2017 22:33	Finished	SAMP,10mL
100	N027405-010AMS,MS	26	1000	Unknown		12/08/2017 22:43	Finished	MS (1ppb), IWST-171002B,10
101	N027405-011A,SAMF	27	1000	Unknown		12/08/2017 22:52	Finished	SAMP,10mL
102	N027405-011AMS,MS	28	1000	Unknown		12/08/2017 23:01	Finished	MS (1ppb), IWST-171002B,10
103	N027405-011A,SAMF	29	1000	Unknown		12/08/2017 23:11	Finished	SAMP,10mL
104	N027405-011AMS,MS	30	1000	Unknown		12/08/2017 23:20	Finished	MS (1ppb), IWST-171002B,10
105	N027405-014A,SAMF	31	1000	Unknown		12/08/2017 23:30	Finished	SAMP,10mL
106	N027405-014AMS,MS	32	1000	Unknown		12/08/2017 23:39	Finished	MS (1ppb), IWST-171002B,10
107	N027405-015A,SAMF	33	1000	Unknown		12/08/2017 23:49	Finished	SAMP,10mL
108	N027405-015AMS,MS	34	1000	Unknown		12/08/2017 23:58	Finished	MS (1ppb), IWST-171002B,10
109	CCV-9,CCV,1,	35	1000	Unknown		12/09/2017 00:08	Finished	CCV @5ppb, IWST-171002A
110	CCB-9,CCB,1,	36	1000	Unknown		12/09/2017 00:17	Finished	CCB R171114C
111	N027405-006A,SAMF	37	1000	Unknown		12/09/2017 00:27	Finished	SAMP,10mL
112	N027405-006AMS,MS	38	1000	Unknown		12/09/2017 00:36	Finished	MS (1ppb), IWST-171002B,10
113	N027405-007A,SAMF	39	1000	Unknown		12/09/2017 00:46	Finished	MS (1ppb), IWST-171002B,10
114	N027405-007AMS,MS	40	1000	Unknown		12/09/2017 00:55	Finished	MS (1ppb), IWST-171002B,10
115	N027405-008A,SAMF	41	1000	Unknown		12/09/2017 01:04	Finished	MS (1ppb), IWST-171002B,10
116	N027405-008AMS,MS	42	1000	Unknown		12/09/2017 01:14	Finished	MS (1ppb), IWST-171002B,10
117	CCV-10,CCV1,1,	43	1000	Unknown		12/09/2017 01:23	Finished	CCV @10ppb, IWST-171002A
118	CCB-10,CCB,1,	44	1000	Unknown		12/09/2017 01:33	Finished	CCB R171129A
119	SHUTDOWN	45	1000	Unknown		12/09/2017 01:42	Finished	
120	Eluent: R171208A	46	1000	Unknown		n.a.	Finished	Eluent
121	PCR: R171206A	47	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 8:57 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 9:08 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/11/17 9:18 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/11/17 9:27 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/11/17 9:37 AM	Reported
15	MB-R120833	MBLK	1	Hexavalent Chromium	12/11/17 9:46 AM	Reported
16	LCS-R120833	LCS	1	Hexavalent Chromium	12/11/17 9:56 AM	Reported
17	N027405-006AMS	MS	5	Hexavalent Chromium	12/11/17 10:09 AM	Reported
18	N027405-006A	SAMP	5	Hexavalent Chromium	12/11/17 10:20 AM	Reported
19	N027405-007AMS	MS	5	Hexavalent Chromium	12/11/17 10:29 AM	Reported
20	N027405-007A	SAMP	5	Hexavalent Chromium	12/11/17 10:39 AM	Reported
21	N027405-008AMS	MS	5	Hexavalent Chromium	12/11/17 10:48 AM	Reported
22	N027405-008A	SAMP	5	Hexavalent Chromium	12/11/17 10:58 AM	Reported
23	N027430-001A	SAMP	1	Hexavalent Chromium	12/11/17 11:07 AM	Reported
24	N027430-001AMS	MS	1	Hexavalent Chromium	12/11/17 11:17 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/11/17 11:26 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/11/17 11:36 AM	Reported
27	N027430-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:45 AM	Reported
28	N027430-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:54 AM	Reported
29	N027430-003A	SAMP	1	Hexavalent Chromium	12/11/17 12:04 PM	Reported
30	N027430-003AMS	MS	1	Hexavalent Chromium	12/11/17 12:13 PM	Reported
31	N027430-004A	SAMP	1	Hexavalent Chromium	12/11/17 12:23 PM	Reported
32	N027430-004AMS	MS	1	Hexavalent Chromium	12/11/17 12:32 PM	Reported
33	N027430-005A	SAMP	1	Hexavalent Chromium	12/11/17 12:42 PM	Reported
34	N027430-005AMS	MS	1	Hexavalent Chromium	12/11/17 12:51 PM	Reported
35	N027430-006A	SAMP	1	Hexavalent Chromium	12/11/17 1:01 PM	Reported
36	N027430-006AMS	MS	1	Hexavalent Chromium	12/11/17 1:10 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/11/17 1:20 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/11/17 1:29 PM	Reported
39	N027430-007A	SAMP	1	Hexavalent Chromium	12/11/17 1:38 PM	Reported
40	N027430-007AMS	MS	1	Hexavalent Chromium	12/11/17 1:48 PM	Reported
41	N027430-008A	SAMP	1	Hexavalent Chromium	12/11/17 1:57 PM	Reported
42	N027430-008AMS	MS	1	Hexavalent Chromium	12/11/17 2:07 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027430-009A	SAMP	1	Hexavalent Chromium	12/11/17 2:16 PM	Reported
44	N027430-009AMS	MS	1	Hexavalent Chromium	12/11/17 2:26 PM	Reported
45	N027430-010A	SAMP	1	Hexavalent Chromium	12/11/17 2:35 PM	Reported
46	N027430-010AMS	MS	1	Hexavalent Chromium	12/11/17 2:45 PM	Reported
47	N027430-020A	SAMP	20	Hexavalent Chromium	12/11/17 2:54 PM	Reported
48	N027430-020AMS	MS	20	Hexavalent Chromium	12/11/17 3:04 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/11/17 3:13 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/11/17 3:23 PM	Reported
51	N027430-012A	SAMP	1	Hexavalent Chromium	12/11/17 3:32 PM	Not Reported
52	N027430-012AMS	MS	1	Hexavalent Chromium	12/11/17 3:41 PM	Not Reported
53	N027430-019A	SAMP	1	Hexavalent Chromium	12/11/17 3:51 PM	Reported
54	N027430-019AMS	MS	1	Hexavalent Chromium	12/11/17 4:00 PM	Reported
55	N027430-011A	SAMP	1	Hexavalent Chromium	12/11/17 4:10 PM	Reported
56	N027430-011AMS	MS	1	Hexavalent Chromium	12/11/17 4:19 PM	Reported
57	N027430-013A	SAMP	5	Hexavalent Chromium	12/11/17 4:29 PM	Reported
58	N027430-013AMS	MS	5	Hexavalent Chromium	12/11/17 4:38 PM	Reported
59	N027430-014A	SAMP	5	Hexavalent Chromium	12/11/17 4:48 PM	Reported
60	N027430-014AMS	MS	5	Hexavalent Chromium	12/11/17 4:57 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/11/17 5:07 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/11/17 5:16 PM	Reported
63	N027430-015A	SAMP	5	Hexavalent Chromium	12/11/17 5:26 PM	Reported
64	N027430-015AMS	MS	5	Hexavalent Chromium	12/11/17 5:35 PM	Reported
65	N027405-006ADUP	DUP	5	Hexavalent Chromium	12/11/17 5:44 PM	Reported
66	N027430-020AMSD	MSD	20	Hexavalent Chromium	12/11/17 5:54 PM	Reported
67	N027430-002A	SAMP	1	Hexavalent Chromium	12/11/17 6:05 PM	Not Reported
68	N027430-002AMS	MS	1	Hexavalent Chromium	12/11/17 6:16 PM	Not Reported
69	N027430-013A	SAMP	1	Hexavalent Chromium	12/11/17 6:25 PM	Not Reported
70	N027430-013AMS	MS	1	Hexavalent Chromium	12/11/17 6:35 PM	Not Reported
71	N027430-014A	SAMP	1	Hexavalent Chromium	12/11/17 6:44 PM	Not Reported
72	N027430-014AMS	MS	1	Hexavalent Chromium	12/11/17 6:54 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	12/11/17 7:03 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	12/11/17 7:13 PM	Reported
75	N027430-015A	SAMP	1	Hexavalent Chromium	12/11/17 7:22 PM	Not Reported
76	N027430-015AMS	MS	1	Hexavalent Chromium	12/11/17 7:32 PM	Not Reported
77	N027430-012A	SAMP	5	Hexavalent Chromium	12/11/17 7:41 PM	Reported
78	N027430-012AMS	MS	5	Hexavalent Chromium	12/11/17 7:50 PM	Reported
79	LCS-R120834	LCS	1	Hexavalent Chromium	12/11/17 8:00 PM	Reported
80	MB-R120834	MBLK	1	Hexavalent Chromium	12/11/17 8:09 PM	Reported
81	N027431-006A	SAMP	1000	Hexavalent Chromium	12/11/17 8:19 PM	Reported
82	N027431-006AMS	MS	1000	Hexavalent Chromium	12/11/17 8:28 PM	Reported
83	N027431-006AMSD	MSD	1000	Hexavalent Chromium	12/11/17 8:38 PM	Reported
84	N027428-002A	SAMP	100	Hexavalent Chromium	12/11/17 8:47 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	12/11/17 8:57 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	12/11/17 9:06 PM	Reported
87	N027428-002ADUP	DUP	100	Hexavalent Chromium	12/11/17 9:16 PM	Reported
88	N027428-002AMS	MS	100	Hexavalent Chromium	12/11/17 9:25 PM	Reported
89	N027428-001A	SAMP	1	Hexavalent Chromium	12/11/17 9:35 PM	Reported
90	N027428-001AMS	MS	1	Hexavalent Chromium	12/11/17 9:44 PM	Reported
91	N027430-016A	SAMP	5	Hexavalent Chromium	12/11/17 9:53 PM	Reported
92	N027430-016AMS	MS	5	Hexavalent Chromium	12/11/17 10:03 PM	Reported
93	N027430-017A	SAMP	5	Hexavalent Chromium	12/11/17 10:12 PM	Reported
94	N027430-017AMS	MS	5	Hexavalent Chromium	12/11/17 10:22 PM	Reported
95	N027430-018A	SAMP	5	Hexavalent Chromium	12/11/17 10:31 PM	Reported
96	N027430-018AMS	MS	5	Hexavalent Chromium	12/11/17 10:41 PM	Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	12/11/17 10:50 PM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	12/11/17 11:00 PM	Reported
99	N027431-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:09 PM	Reported
100	N027431-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:19 PM	Reported
101	N027431-003A	SAMP	5	Hexavalent Chromium	12/11/17 11:28 PM	Reported
102	N027431-003AMS	MS	5	Hexavalent Chromium	12/11/17 11:38 PM	Reported
103	N027431-004A	SAMP	5	Hexavalent Chromium	12/11/17 11:47 PM	Reported
104	N027431-004AMS	MS	5	Hexavalent Chromium	12/11/17 11:56 PM	Reported
105	N027431-001A	SAMP	10	Hexavalent Chromium	12/12/17 12:06 AM	Not Reported
106	N027431-001AMS	MS	10	Hexavalent Chromium	12/12/17 12:15 AM	Not Reported
107	N027431-005A	SAMP	200	Hexavalent Chromium	12/12/17 12:25 AM	Reported
108	N027431-005AMS	MS	200	Hexavalent Chromium	12/12/17 12:34 AM	Reported
109	CCV-9	CCV	1	Hexavalent Chromium	12/12/17 12:44 AM	Reported
110	CCB-9	CCB	1	Hexavalent Chromium	12/12/17 12:53 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171211A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**12/Dec/17 01:24:03**
No. of Injections:	**113**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/11/2017 08:57	Finished	BLANK
11	BLANK	2	1000	Unknown		12/11/2017 09:08	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/11/2017 09:18	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/11/2017 09:27	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/11/2017 09:37	Finished	CCB R171129A
15	MB-1,MBLK,1	6	1000	Unknown		12/11/2017 09:46	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/11/2017 09:56	Finished	LCS, IWST-171002B
17	N027405-006AMS,MS	1	1000	Unknown		12/11/2017 10:09	Finished	MS (1ppb), IWST-171002B,2>1
18	N027405-006A,SAMP	2	1000	Unknown		12/11/2017 10:20	Finished	SAMP,2>10mL
19	N027405-007AMS,MS	3	1000	Unknown		12/11/2017 10:29	Finished	MS (1ppb), IWST-171002B,2>1
20	N027405-007A,SAMP	4	1000	Unknown		12/11/2017 10:39	Finished	SAMP,2>10mL
21	N027405-008AMS,MS	5	1000	Unknown		12/11/2017 10:48	Finished	SAMP,2>10mL
22	N027405-008A,SAMP	6	1000	Unknown		12/11/2017 10:58	Finished	MS (1ppb), IWST-171002B,2>1
23	N027430-001A,SAMP	7	1000	Unknown		12/11/2017 11:07	Finished	SAMP,10mL
24	N027430-001AMS,MS	8	1000	Unknown		12/11/2017 11:17	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	9	1000	Unknown		12/11/2017 11:26	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	10	1000	Unknown		12/11/2017 11:36	Finished	CCB R171129A
27	N027430-002A,SAMP	11	1000	Unknown		12/11/2017 11:45	Finished	SAMP,2>10mL
28	N027430-002AMS,MS	12	1000	Unknown		12/11/2017 11:54	Finished	MS (1ppb), IWST-171002B,2>1
29	N027430-003A,SAMP	13	1000	Unknown		12/11/2017 12:04	Finished	SAMP,10mL
30	N027430-003AMS,MS	14	1000	Unknown		12/11/2017 12:13	Finished	MS (1ppb), IWST-171002B,10
31	N027430-004A,SAMP	15	1000	Unknown		12/11/2017 12:23	Finished	SAMP,10mL
32	N027430-004AMS,MS	16	1000	Unknown		12/11/2017 12:32	Finished	MS (1ppb), IWST-171002B,10
33	N027430-005A,SAMP	17	1000	Unknown		12/11/2017 12:42	Finished	SAMP,10mL
34	N027430-005AMS,MS	18	1000	Unknown		12/11/2017 12:51	Finished	MS (1ppb), IWST-171002B,10
35	N027430-006A,SAMP	19	1000	Unknown		12/11/2017 13:01	Finished	SAMP,10mL
36	N027430-006AMS,MS	20	1000	Unknown		12/11/2017 13:10	Finished	MS (1ppb), IWST-171002B,10
37	CCV-3,CCV,1,	21	1000	Unknown		12/11/2017 13:20	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	22	1000	Unknown		12/11/2017 13:29	Finished	CCB R171129A
39	N027430-007A,SAMP	23	1000	Unknown		12/11/2017 13:38	Finished	SAMP,10mL
40	N027430-007AMS,MS	24	1000	Unknown		12/11/2017 13:48	Finished	MS (1ppb), IWST-171002B,10
41	N027430-008A,SAMP	25	1000	Unknown		12/11/2017 13:57	Finished	SAMP,10mL
42	N027430-008AMS,MS	26	1000	Unknown		12/11/2017 14:07	Finished	MS (1ppb), IWST-171002B,10
43	N027430-009A,SAMP	27	1000	Unknown		12/11/2017 14:16	Finished	SAMP,10mL
44	N027430-009AMS,MS	28	1000	Unknown		12/11/2017 14:26	Finished	MS (1ppb), IWST-171002B,10
45	N027430-010A,SAMP	29	1000	Unknown		12/11/2017 14:35	Finished	SAMP,10mL
46	N027430-010AMS,MS	30	1000	Unknown		12/11/2017 14:45	Finished	MS (1ppb), IWST-171002B,10
47	N027430-020A,SAMP	31	1000	Unknown		12/11/2017 14:54	Finished	SAMP,0.5>10mL
48	N027430-020AMS,MS	32	1000	Unknown		12/11/2017 15:04	Finished	MS (5ppb), IWST-171002B,0.5
49	CCV-4,CCV1,1,	33	1000	Unknown		12/11/2017 15:13	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	34	1000	Unknown		12/11/2017 15:23	Finished	CCB R171129A
51	N027430-012A,SAMP	35	1000	Unknown		12/11/2017 15:32	Finished	SAMP,10mL
52	N027430-012AMS,MS	36	1000	Unknown		12/11/2017 15:41	Finished	MS (1ppb), IWST-171002B,10
53	N027430-019A,SAMP	37	1000	Unknown		12/11/2017 15:51	Finished	SAMP,10mL
54	N027430-019AMS,MS	38	1000	Unknown		12/11/2017 16:00	Finished	MS (1ppb), IWST-171002B,10
55	N027430-011A,SAMP	39	1000	Unknown		12/11/2017 16:10	Finished	SAMP,10mL
56	N027430-011AMS,MS	40	1000	Unknown		12/11/2017 16:19	Finished	MS (1ppb), IWST-171002B,10
57	N027430-013A,SAMP	41	1000	Unknown		12/11/2017 16:29	Finished	SAMP,2>10mL
58	N027430-013AMS,MS	42	1000	Unknown		12/11/2017 16:38	Finished	MS (1ppb), IWST-171002B,2>1
59	N027430-014A,SAMP	43	1000	Unknown		12/11/2017 16:48	Finished	SAMP,2>10mL
60	N027430-014AMS,MS	44	1000	Unknown		12/11/2017 16:57	Finished	MS (1ppb), IWST-171002B,2>1

61	CCV-5,CCV,1,	45	1000	Unknown		12/11/2017 17:07	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	46	1000	Unknown		12/11/2017 17:16	Finished	CCB R171129A
63	N027430-015A,SAMP	47	1000	Unknown		12/11/2017 17:26	Finished	SAMP,2>10mL
64	N027430-015AMS,MS	48	1000	Unknown		12/11/2017 17:35	Finished	MS (1ppb), IWST-171002B,2>1
65	N027405-006ADUP,D	49	1000	Unknown		12/11/2017 17:44	Finished	DUP,2>10mL
66	N027430-020AMSD,M	50	1000	Unknown		12/11/2017 17:54	Finished	MSD (5ppb), IWST-171002B,0.
67	N027430-002A,SAMP	1	1000	Unknown		12/11/2017 18:05	Finished	MSD (5ppb), IWST-171002B,0.
68	N027430-002AMS,MS	2	1000	Unknown		12/11/2017 18:16	Finished	DUP,2>10mL
69	N027430-013A,SAMP	3	1000	Unknown		12/11/2017 18:25	Finished	SAMP,2>10mL
70	N027430-013AMS,MS	4	1000	Unknown		12/11/2017 18:35	Finished	MS (1ppb), IWST-171002B,2>1
71	N027430-014A,SAMP	5	1000	Unknown		12/11/2017 18:44	Finished	SAMP,10mL
72	N027430-014AMS,MS	6	1000	Unknown		12/11/2017 18:54	Finished	MS (1ppb), IWST-171002B,10
73	CCV-6,CCV1,1,	7	1000	Unknown		12/11/2017 19:03	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	8	1000	Unknown		12/11/2017 19:13	Finished	CCB R171129A
75	N027430-015A,SAMP	9	1000	Unknown		12/11/2017 19:22	Finished	LCS, IWST-171002B
76	N027430-015AMS,MS	10	1000	Unknown		12/11/2017 19:32	Finished	MB R171129A
77	N027430-012A,SAMP	11	1000	Unknown		12/11/2017 19:41	Finished	SAMP,2>10mL
78	N027430-012AMS,MS	12	1000	Unknown		12/11/2017 19:50	Finished	MS (1ppb), IWST-171002B,2>1
79	LCS-2,LCS,1	13	1000	Unknown		12/11/2017 20:00	Finished	LCS, IWST-171002B
80	MB-2,MBLK,1	14	1000	Unknown		12/11/2017 20:09	Finished	MB R171129A
81	N027431-006A,SAMP	15	1000	Unknown		12/11/2017 20:19	Finished	DUP,0.1>10mL
82	N027431-006AMS,MS	16	1000	Unknown		12/11/2017 20:28	Finished	SAMP,10mL
83	N027431-006AMSD,M	17	1000	Unknown		12/11/2017 20:38	Finished	SAMP,5>10mL
84	N027428-002A,SAMP	18	1000	Unknown		12/11/2017 20:47	Finished	SAMP,0.2>10mL
85	CCV-7,CCV,1,	19	1000	Unknown		12/11/2017 20:57	Finished	CCV @5ppb, IWST-171002A
86	CCB-7,CCB,1,	20	1000	Unknown		12/11/2017 21:06	Finished	CCB R171114C
87	N027428-002ADUP,D	21	1000	Unknown		12/11/2017 21:16	Finished	SAMP,0.2>10mL
88	N027428-002AMS,MS	22	1000	Unknown		12/11/2017 21:25	Finished	SAMP,1>10mL
89	N027428-001A,SAMP	23	1000	Unknown		12/11/2017 21:35	Finished	SAMP,0.5>10mL
90	N027428-001AMS,MS	24	1000	Unknown		12/11/2017 21:44	Finished	SAMP,5>10mL
91	N027430-016A,SAMP	25	1000	Unknown		12/11/2017 21:53	Finished	SAMP,10mL
92	N027430-016AMS,MS	26	1000	Unknown		12/11/2017 22:03	Finished	SAMP,2>10mL
93	N027430-017A,SAMP	27	1000	Unknown		12/11/2017 22:12	Finished	MS (5ppb), IWST-171002B,2>1
94	N027430-017AMS,MS	28	1000	Unknown		12/11/2017 22:22	Finished	MSD (5ppb), IWST-171002B,2
95	N027430-018A,SAMP	29	1000	Unknown		12/11/2017 22:31	Finished	SAMP,10mL
96	N027430-018AMS,MS	30	1000	Unknown		12/11/2017 22:41	Finished	MS (1ppb), IWST-171002B,10
97	CCV-8,CCV1,1,	31	1000	Unknown		12/11/2017 22:50	Finished	CCV @10ppb, IWST-171002A
98	CCB-8,CCB,1,	32	1000	Unknown		12/11/2017 23:00	Finished	CCB R171129A
99	N027431-002A,SAMP	33	1000	Unknown		12/11/2017 23:09	Finished	SAMP,10mL
100	N027431-002AMS,MS	34	1000	Unknown		12/11/2017 23:19	Finished	MS (1ppb), IWST-171002B,10
101	N027431-003A,SAMP	35	1000	Unknown		12/11/2017 23:28	Finished	SAMP,10mL
102	N027431-003AMS,MS	36	1000	Unknown		12/11/2017 23:38	Finished	MS (1ppb), IWST-171002B,10
103	N027431-004A,SAMP	37	1000	Unknown		12/11/2017 23:47	Finished	SAMP,10mL
104	N027431-004AMS,MS	38	1000	Unknown		12/11/2017 23:56	Finished	MS (1ppb), IWST-171002B,10
105	N027431-001A,SAMP	39	1000	Unknown		12/12/2017 00:06	Finished	SAMP,10mL
106	N027431-001AMS,MS	40	1000	Unknown		12/12/2017 00:15	Finished	MS (1ppb), IWST-171002B,10
107	N027431-005A,SAMP	41	1000	Unknown		12/12/2017 00:25	Finished	SAMP,10mL
108	N027431-005AMS,MS	42	1000	Unknown		12/12/2017 00:34	Finished	MS (1ppb), IWST-171002B,10
109	CCV-9,CCV,1,	43	1000	Unknown		12/12/2017 00:44	Finished	CCV @5ppb, IWST-171002A
110	CCB-9,CCB,1,	44	1000	Unknown		12/12/2017 00:53	Finished	CCB R171114C
111	SHUTDOWN	45	1000	Unknown		12/12/2017 01:03	Finished	
112	Eluent: R171211B	46	1000	Unknown		n.a.	Finished	Eluent
113	PCR: R171211C	47	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 12/7/17
Time Prepared: 2:50
Prepared By: MC

Reagent ID:
Sulfuric Acid: 9465
Diphenylcarbazide: CINV - 171116A
NH4OH + NH4SO4 eluent: M71208A
NH4OH + NH4SO4 buffer: M71129A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N027404 - 4A	9.59	—	250 mL	250 mL		M71129A
2)	5A	9.51	—				1/2
3)	5A	9.52	—				2/2
4)	6A	9.22	9.32			2 drops	
5)	7A	9.47	—				
6)	8A	9.51	—				
7)	9A	9.12	9.30			5 drops	1/2
8)	9A	9.07	9.32			7 drops	2/2
9)	10A	9.37	—				
10)	11A	9.35	—				
11)	12A	9.52	—				
12)	N027405 - 1A	9.26	9.35			1 drop	
13)	2A	9.05	9.31			3 drops	
14)	3A	9.11	9.32			3 drops	
15)	4A	9.39	—				
	5A	9.55	—				

Sample Preparation

Date Prepared: 12/7/17
Time Prepared: 2:50
Prepared By: MC

Reagent ID:
Sulfuric Acid: 9465
Diphenylcarbazide: CINV - 171116A
NH4OH + NH4SO4 eluent: M71208A
NH4OH + NH4SO4 buffer: M71129A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N027405 - 6A	9.54	—	250 mL	250 mL		M71129A
2)	7A	9.50	—				
3)	8A	9.52	—				
4)	9A	9.30	—				
5)	10A	9.58	—				
6)	11A	9.43	—				
7)	12A	9.42	—				
8)	13A	9.40	—				
9)	14A	9.53	—				
10)	15A	9.54	—				
11)							
12)							
13)							
14)							
15)							

Logbook No. 13

rba 12/19/2017

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
12/21/2017
79 of 100
CALIFORNIA | P:562.219.7435 F:562.219.7436
11119 Artesia Blvd., Ste B. Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046
199

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 11/28/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0529	0.2484	1.2584	2.5328	3.7596	5.0155	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-171002A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 12/21/2017

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ICV**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2857601**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.092	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2857602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.185	0.20	0.2000	0	92.6	80	120				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857604**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.186	0.20	0.2000	0	93.1	80	120				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857605**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.022	0.20	10.00	0	100	95	105				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **CCV**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.065	0.20	5.000	0	101	95	105				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-8**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.027	0.20	10.00	0	100	95	105				

Sample ID **CCV-9**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **CCV**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2017**	SeqNo: **2857639**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.029	0.20	5.000	0	101	95	105				

Sample ID **CCV-10**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2017**	SeqNo: **2857641**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.940	0.20	10.00	0	99.4	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ICV**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.092	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.185	0.20	0.2000	0	92.6	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCV**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.077	0.20	5.000	0	102	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866004**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.215	0.20	0.2000	0	108	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866016**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.152	0.20	10.00	0	102	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCV**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.030	0.20	5.000	0	101	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866040**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.193	0.20	10.00	0	102	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCV**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.045	0.20	5.000	0	101	95	105				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866056**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.294	0.20	10.00	0	103	95	105				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCV**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866060**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.109	0.20	5.000	0	102	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ICB**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2857603**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **CCB**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **CCB**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857618**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **CCB**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857630**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-9**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **CCB**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2017**	SeqNo: **2857640**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-10**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **CCB**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/9/2017**	SeqNo: **2857642**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ICB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866005**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866041**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866051**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866061**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/8/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.140	
CCV-7	4.140	
CCV-8	4.140	
CCV-9	4.140	
CCV-10	4.140	
Average	4.140	
Actual RT Window	4.060 - 4.220	
Applied RT Window	3.940 - 4.340	
MB-R120682	N.A.	N.A.
LCS-R120682	4.140	PASS
N027404-001A	N.A.	N.A.
N027404-001AMS	4.140	PASS
N027404-002A	N.A.	N.A.
N027404-002AMS	4.123	PASS
N027404-003A	4.106	PASS
N027404-003AMS	4.106	PASS
N027404-004A	N.A.	N.A.
N027404-004AMS	4.140	PASS
N027404-005A	3.848	FAIL
N027404-005AMS	3.823	FAIL
N027404-006A	N.A.	N.A.
N027404-006AMS	4.090	PASS
N027404-007A	4.140	PASS
N027404-007AMS	4.131	PASS
N027404-008A	N.A.	N.A.
N027404-008AMS	4.140	PASS
N027404-009A	4.106	PASS



12/21/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/8/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.140	
CCV-7	4.140	
CCV-8	4.140	
CCV-9	4.140	
CCV-10	4.140	
Average	4.140	
Actual RT Window	4.060 - 4.220	
Applied RT Window	3.940 - 4.340	
N027404-009AMS	4.115	PASS
N027404-010A	N.A.	N.A.
N027404-010AMS	4.131	PASS
N027404-011A	N.A.	N.A.
N027404-011AMS	4.131	PASS
N027404-012A	N.A.	N.A.
N027404-012AMS	4.140	PASS
N027404-013A	N.A.	N.A.
N027404-013AMS	4.131	PASS
N027404-014A	N.A.	N.A.
N027404-014AMS	4.140	PASS
N027404-015A	N.A.	N.A.
N027404-015AMS	4.015	PASS
N027404-016A	N.A.	N.A.
N027404-016AMS	4.106	PASS
N027404-016A	N.A.	N.A.
N027404-016AMS	3.890	FAIL
N027404-018A	N.A.	N.A.
N027404-018AMS	4.131	PASS

RLB 12/21/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/8/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.140	
CCV-7	4.140	
CCV-8	4.140	
CCV-9	4.140	
CCV-10	4.140	
Average	4.140	
Actual RT Window	4.060 - 4.220	
Applied RT Window	3.940 - 4.340	
N027404-019A	N.A.	N.A.
N027404-019AMS	4.140	PASS
N027404-020A	N.A.	N.A.
N027404-020AMS	4.048	PASS
N027404-017A	4.140	PASS
N027404-017AMS	4.140	PASS
N027404-017AMSD	4.140	PASS
N027404-003ADUP	4.106	PASS
N027404-005A	4.098	PASS
N027404-005AMS	4.098	PASS
N027404-020A	N.A.	N.A.
N027404-020AMS	N.A.	N.A.
LCS-R120683	4.140	PASS
MB-R120683	N.A.	N.A.
N027405-012A	4.140	PASS
N027405-012AMS	4.140	PASS
N027405-012AMSD	4.140	PASS
N027405-013A	4.106	PASS
N027405-013AMS	4.106	PASS



12/21/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/8/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.140	
CCV-7	4.140	
CCV-8	4.140	
CCV-9	4.140	
CCV-10	4.140	
Average	4.140	
Actual RT Window	4.060 - 4.220	
Applied RT Window	3.940 - 4.340	
N027405-002A	4.123	PASS
N027405-002AMS	4.115	PASS
N027405-002ADUP	4.123	PASS
N027405-001A	N.A.	N.A.
N027405-001AMS	4.056	PASS
N027405-003A	4.123	PASS
N027405-003AMS	4.123	PASS
N027405-004A	N.A.	N.A.
N027405-004AMS	4.140	PASS
N027405-005A	N.A.	N.A.
N027405-005AMS	4.140	PASS
N027405-009A	4.140	PASS
N027405-009AMS	4.140	PASS
N027405-010A	N.A.	N.A.
N027405-010AMS	4.123	PASS
N027405-011A	N.A.	N.A.
N027405-011AMS	3.831	FAIL
N027405-011A	N.A.	N.A.
N027405-011AMS	4.106	PASS



12/21/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/8/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.140	
CCV-7	4.140	
CCV-8	4.140	
CCV-9	4.140	
CCV-10	4.140	
Average	4.140	
Actual RT Window	4.060 - 4.220	
Applied RT Window	3.940 - 4.340	
N027405-014A	N.A.	N.A.
N027405-014AMS	4.131	PASS
N027405-015A	N.A.	N.A.
N027405-015AMS	4.140	PASS
N027405-006A	3.723	FAIL
N027405-006AMS	3.723	FAIL
N027405-007A	N.A.	N.A.
N027405-007AMS	3.748	FAIL
N027405-008A	N.A.	N.A.
N027405-008AMS	3.731	FAIL



12/21/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.148	
CCV-7	4.148	
CCV-8	4.140	
CCV-9	4.148	
Average	4.143	
Actual RT Window	4.063 - 4.223	
Applied RT Window	3.943 - 4.343	
MB-R120833	N.A.	N.A.
LCS-R120833	4.140	PASS
N027405-006AMS	4.090	PASS
N027405-006A	4.090	PASS
N027405-007AMS	4.090	PASS
N027405-007A	N.A.	N.A.
N027405-008AMS	4.090	PASS
N027405-008A	4.090	PASS
N027430-001A	N.A.	N.A.
N027430-001AMS	4.140	PASS
N027430-002A	4.031	PASS
N027430-002AMS	4.056	PASS
N027430-003A	N.A.	N.A.
N027430-003AMS	4.140	PASS
N027430-004A	N.A.	N.A.
N027430-004AMS	4.131	PASS
N027430-005A	N.A.	N.A.
N027430-005AMS	4.148	PASS
N027430-006A	N.A.	N.A.
N027430-006AMS	4.131	PASS



12/21/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.148	
CCV-7	4.148	
CCV-8	4.140	
CCV-9	4.148	
Average	4.143	
Actual RT Window	4.063 - 4.223	
Applied RT Window	3.943 - 4.343	
N027430-007A	N.A.	N.A.
N027430-007AMS	4.140	PASS
N027430-008A	N.A.	N.A.
N027430-008AMS	4.040	PASS
N027430-009A	N.A.	N.A.
N027430-009AMS	4.140	PASS
N027430-010A	N.A.	N.A.
N027430-010AMS	4.140	PASS
N027430-020A	4.140	PASS
N027430-020AMS	4.140	PASS
N027430-012A	N.A.	N.A.
N027430-012AMS	3.848	FAIL
N027430-019A	N.A.	N.A.
N027430-019AMS	4.140	PASS
N027430-011A	N.A.	N.A.
N027430-011AMS	4.140	PASS
N027430-013A	4.115	PASS
N027430-013AMS	4.115	PASS
N027430-014A	4.098	PASS
N027430-014AMS	4.098	PASS



12/21/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.148	
CCV-7	4.148	
CCV-8	4.140	
CCV-9	4.148	
Average	4.143	
Actual RT Window	4.063 - 4.223	
Applied RT Window	3.943 - 4.343	
N027430-015A	4.081	PASS
N027430-015AMS	4.081	PASS
N027405-006ADUP	4.090	PASS
N027430-020AMSD	4.140	PASS
N027430-002A	N.A.	N.A.
N027430-002AMS	N.A.	N.A.
N027430-013A	3.956	PASS
N027430-013AMS	3.965	PASS
N027430-014A	3.723	FAIL
N027430-014AMS	3.723	FAIL
N027430-015A	N.A.	N.A.
N027430-015AMS	N.A.	N.A.
N027430-012A	N.A.	N.A.
N027430-012AMS	4.106	PASS
LCS-R120834	4.148	PASS
MB-R120834	N.A.	N.A.
N027431-006A	4.140	PASS
N027431-006AMS	4.140	PASS
N027431-006AMSD	4.140	PASS
N027428-002A	4.140	PASS



12/21/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.148	
CCV-7	4.148	
CCV-8	4.140	
CCV-9	4.148	
Average	4.143	
Actual RT Window	4.063 - 4.223	
Applied RT Window	3.943 - 4.343	
N027428-002ADUP	4.140	PASS
N027428-002AMS	4.140	PASS
N027428-001A	N.A.	N.A.
N027428-001AMS	4.131	PASS
N027430-016A	4.081	PASS
N027430-016AMS	4.081	PASS
N027430-017A	4.056	PASS
N027430-017AMS	4.073	PASS
N027430-018A	N.A.	N.A.
N027430-018AMS	3.998	PASS
N027431-002A	4.115	PASS
N027431-002AMS	4.115	PASS
N027431-003A	4.090	PASS
N027431-003AMS	4.081	PASS
N027431-004A	4.081	PASS
N027431-004AMS	4.090	PASS
N027431-001A	4.140	PASS
N027431-001AMS	4.140	PASS
N027431-005A	4.140	PASS
N027431-005AMS	4.140	PASS

RB 12/21/2017

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 Unit: ug/L
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

MDL/LOD & PQL Verification 2017

Method Name: **Hexavalent Chromium by IC**
Method Number: EPA Method 218.6
Analysis Date(s): 5/31/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: µg/L

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.103

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.194	**97**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 171128A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/28/17 10:57 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/28/17 11:08 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/28/17 11:17 AM	Reported
13	MB-R120468	MBLK	1	Hexavalent Chromium	11/28/17 11:27 AM	Reported
14	LCS-R120468	LCS	1	Hexavalent Chromium	11/28/17 11:36 AM	Reported
15	N027215-001A	SAMP	1	Hexavalent Chromium	11/28/17 11:47 AM	Reported
16	N027215-002A	SAMP	1	Hexavalent Chromium	11/28/17 11:59 AM	Reported
17	N027215-003A	SAMP	1	Hexavalent Chromium	11/28/17 12:08 PM	Reported
18	N027215-004A	SAMP	1	Hexavalent Chromium	11/28/17 12:18 PM	Reported
19	N027215-005A	SAMP	1	Hexavalent Chromium	11/28/17 12:27 PM	Reported
20	N027215-002ADUP	DUP	1	Hexavalent Chromium	11/28/17 12:37 PM	Reported
21	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 12:46 PM	Not Reported
22	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 12:56 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	11/28/17 1:05 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/28/17 1:14 PM	Reported
25	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:04 PM	Not Reported
26	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:16 PM	Not Reported
27	N027215-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:29 PM	Reported
28	N027215-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:41 PM	Reported
29	CCV-2	CCV	1	Hexavalent Chromium	11/28/17 2:50 PM	Reported
30	CCB-2	CCB	1	Hexavalent Chromium	11/28/17 3:00 PM	Reported

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Injection Log Summary

Sequence Details

Name:	**IC-07_171128A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**28/Nov/17 15:47:35**
No. of Injections:	**33**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		11/28/2017 10:57	Finished	ICV @5ppb, IWST-171002A
11	PQL@0.2ppb,CCV2,	12	1000	Unknown		11/28/2017 11:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		11/28/2017 11:17	Finished	ICB R171114C
13	MB-H2O,MBLK,1	14	1000	Unknown		11/28/2017 11:27	Finished	MB R171114C
14	LCS-H2O,LCS,1	15	1000	Unknown		11/28/2017 11:36	Finished	LCS, IWST-171002B
15	N027215-001A,SAMP	17	1000	Unknown		11/28/2017 11:47	Finished	SAMP,10mL
16	N027215-002A,SAMP	18	1000	Unknown		11/28/2017 11:59	Finished	SAMP,10mL
17	N027215-003A,SAMP	19	1000	Unknown		11/28/2017 12:08	Finished	SAMP,10mL
18	N027215-004A,SAMP	20	1000	Unknown		11/28/2017 12:18	Finished	SAMP,10mL
19	N027215-005A,SAMP	21	1000	Unknown		11/28/2017 12:27	Finished	SAMP,10mL
20	N027215-002ADUP,D	22	1000	Unknown		11/28/2017 12:37	Finished	DUP,10mL
21	N027157-001AMS,MS	23	1000	Unknown		11/28/2017 12:46	Finished	MS (5ppb), IWST-171002B,10
22	N027157-001AMSD,M	24	1000	Unknown		11/28/2017 12:56	Finished	MSD (5ppb), IWST-171002B,1
23	CCV-1,CCV1,1,	25	1000	Unknown		11/28/2017 13:05	Finished	CCV @10ppb, IWST-171002A
24	CCB-1,CCB,1,	26	1000	Unknown		11/28/2017 13:14	Finished	CCB R171031A
25	N027157-001AMS,MS	28	1000	Unknown		11/28/2017 14:04	Finished	MS (5ppb), IWST-171002B,10
26	N027157-001AMSD,M	29	1000	Unknown		11/28/2017 14:16	Finished	MSD (5ppb), IWST-171002B,1
27	N027215-001AMS,MS	31	1000	Unknown		11/28/2017 14:29	Finished	MS (5ppb), IWST-171002B,10
28	N027215-001AMSD,M	32	1000	Unknown		11/28/2017 14:41	Finished	MSD (5ppb), IWST-171002B,1
29	CCV-2,CCV,1,	33	1000	Unknown		11/28/2017 14:50	Finished	CCV @5ppb, IWST-171002A
30	CCB-2,CCB,1,	34	1000	Unknown		11/28/2017 15:00	Finished	CCB R171031A
31	SHUTDOWN	35	1000	Unknown		11/28/2017 15:09	Finished	
32	Eluent: R171128A	36	1000	Unknown		n.a.	Finished	Eluent
33	PCR: R171128B	37	1000	Unknown		n.a.	Finished	Post-Column Reagent

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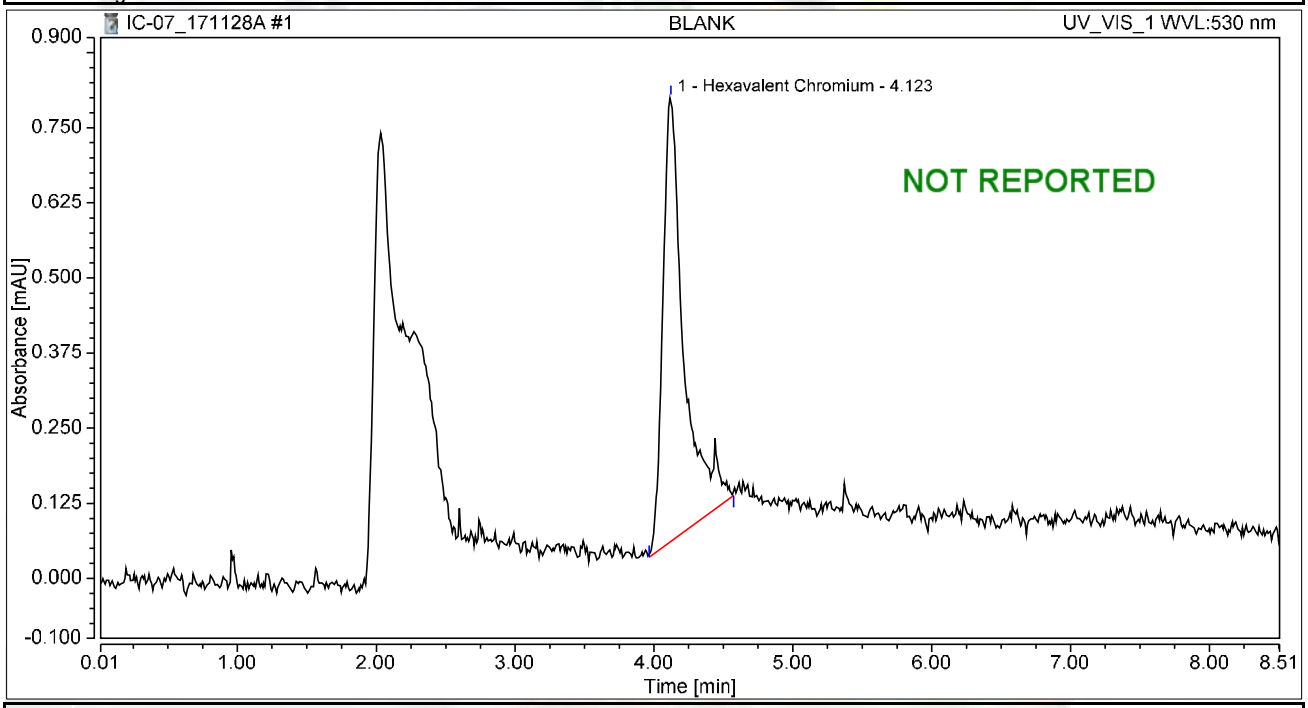
Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

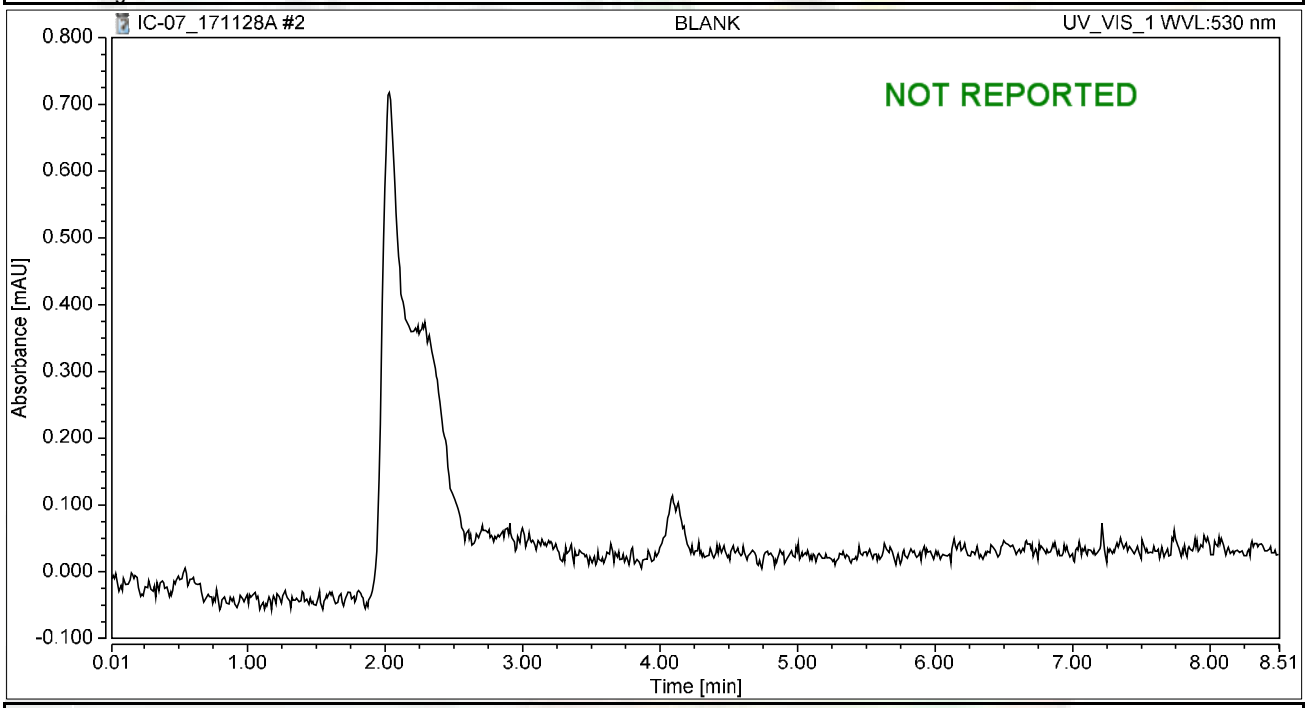
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.130	0.738	100.00	100.00	0.5193
Total:			**0.130**	**0.738**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

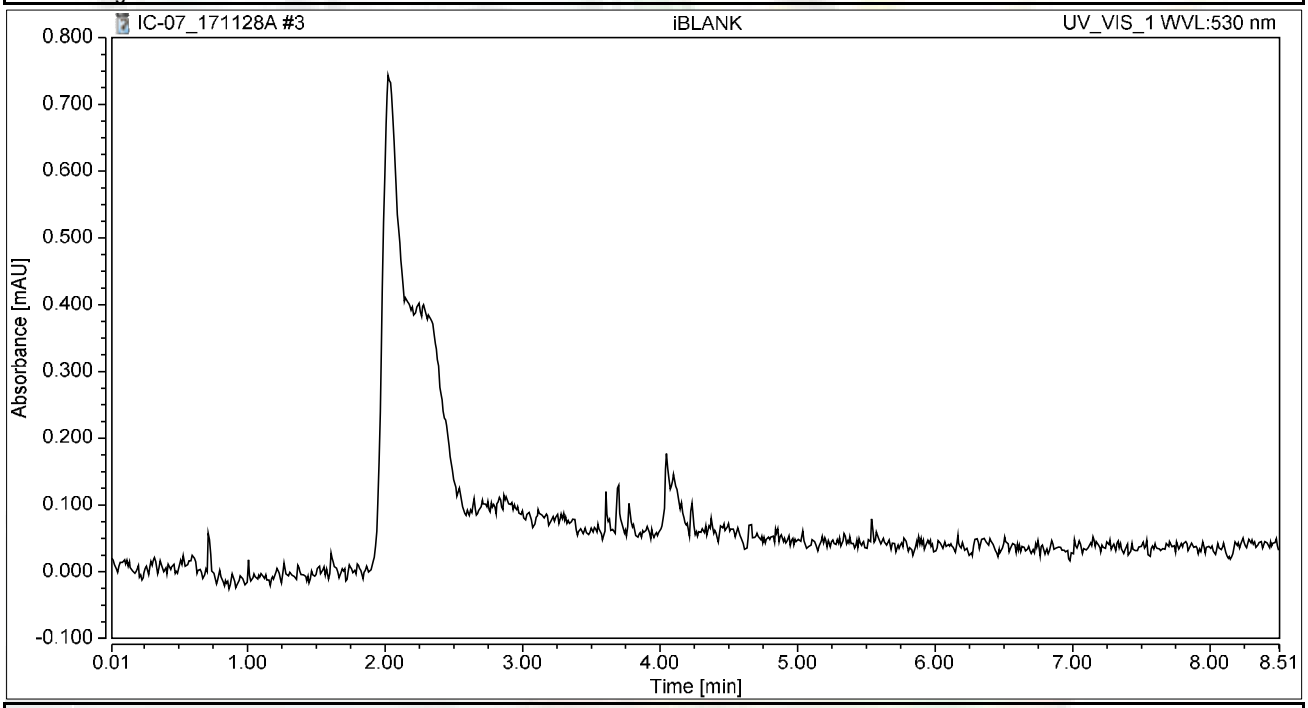
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

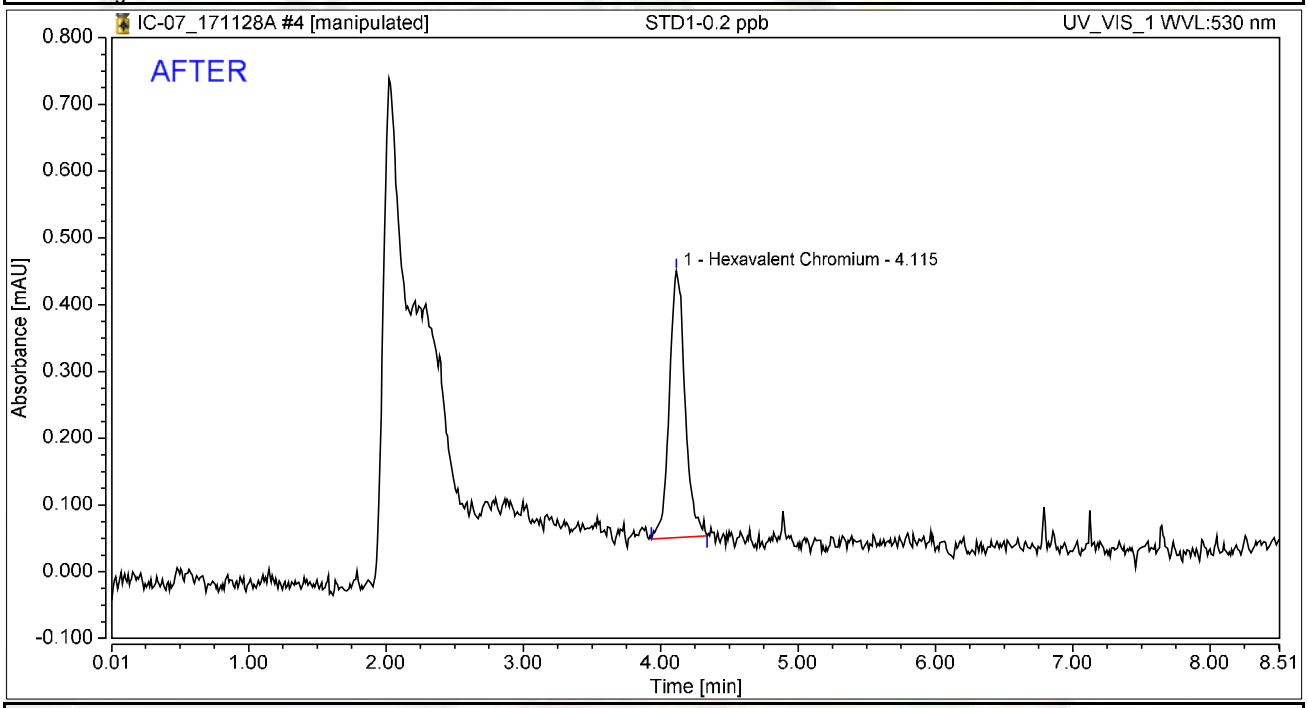
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.053	0.400	100.00	100.00	0.2108
Total:			**0.053**	**0.400**	**100.00**	**100.00**	

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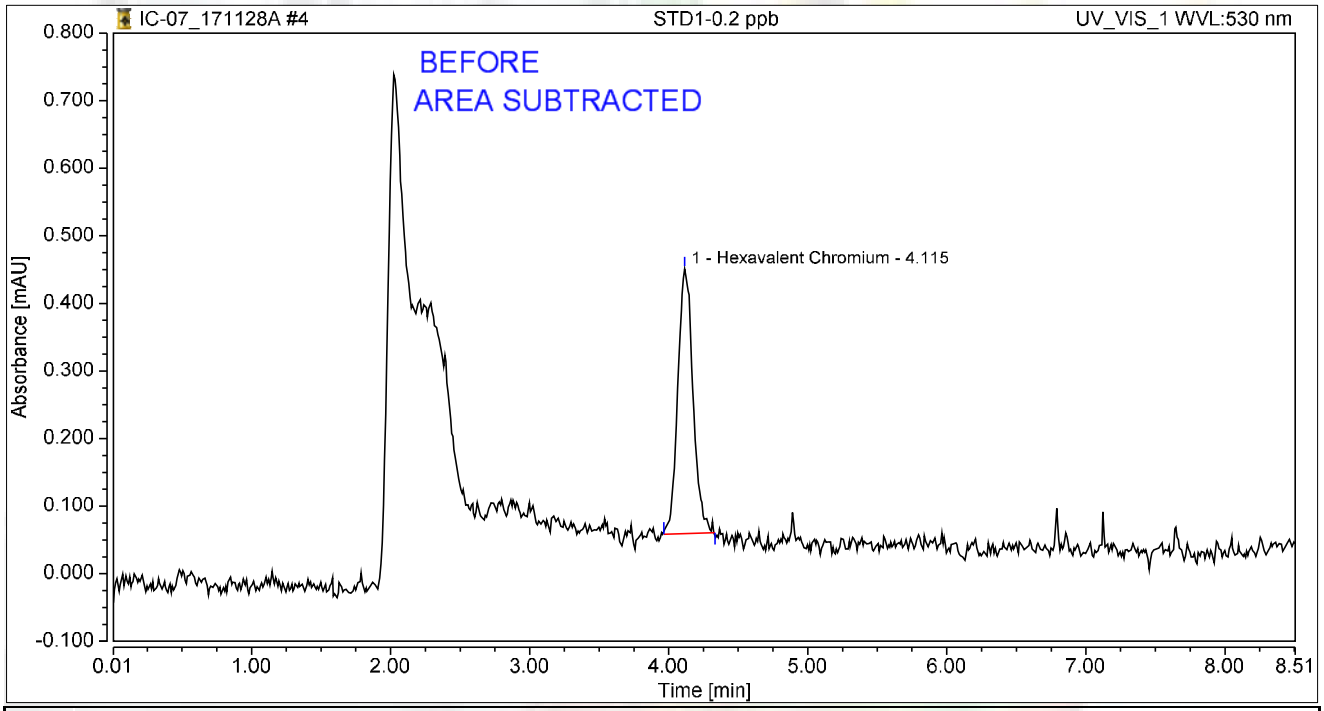
Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.050	0.391	100.00	100.00	0.1957
Total:			**0.050**	**0.391**	**100.00**	**100.00**	

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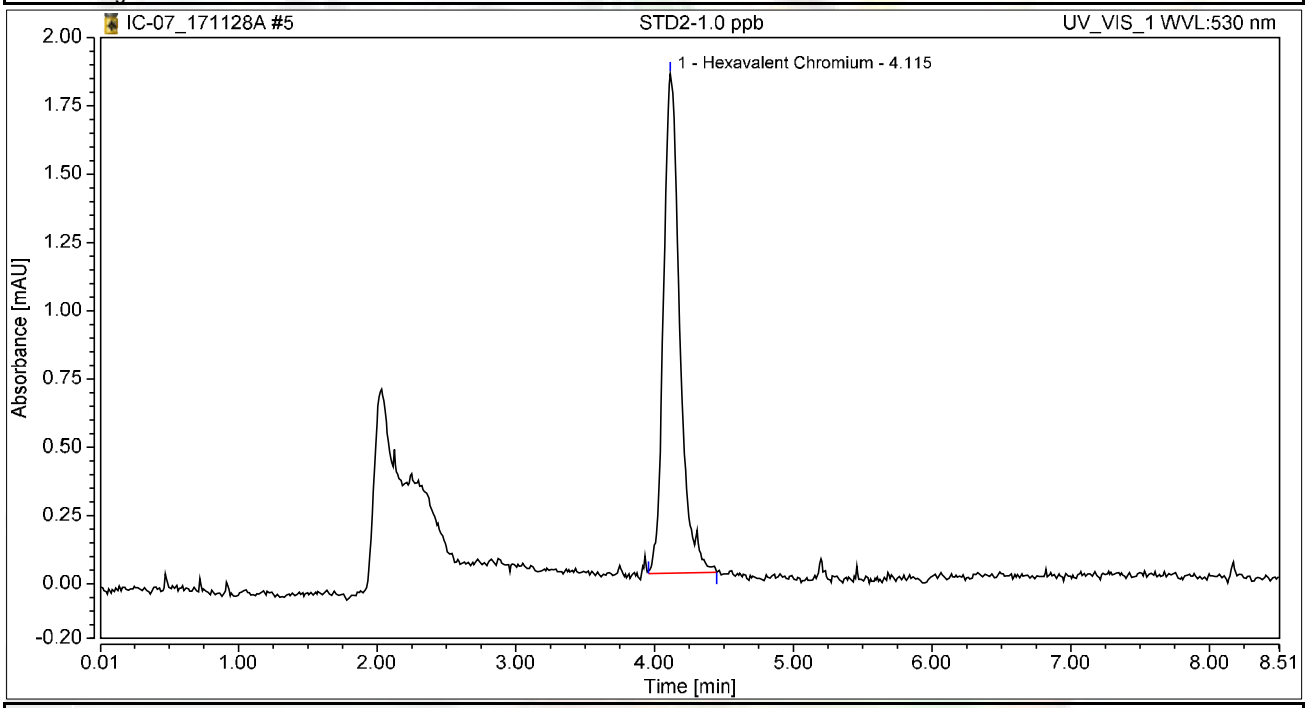
Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

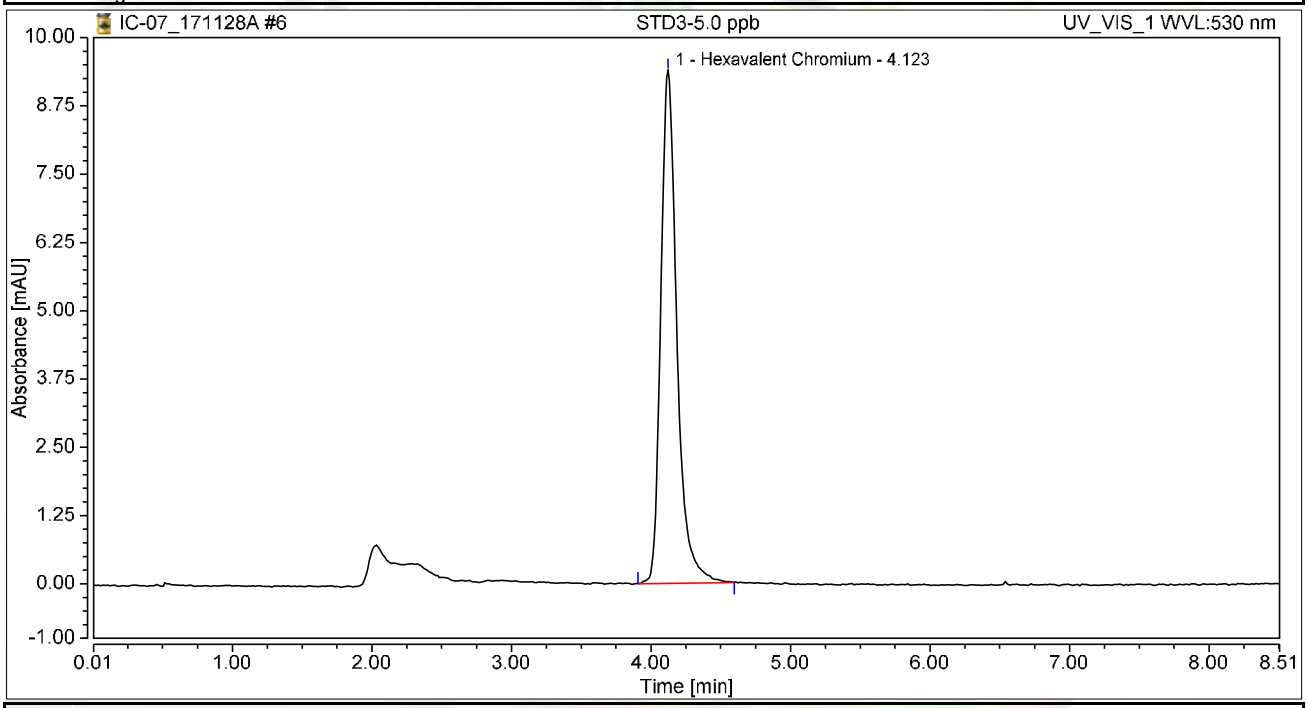
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.248	1.827	100.00	100.00	0.9892
Total:			**0.248**	**1.827**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

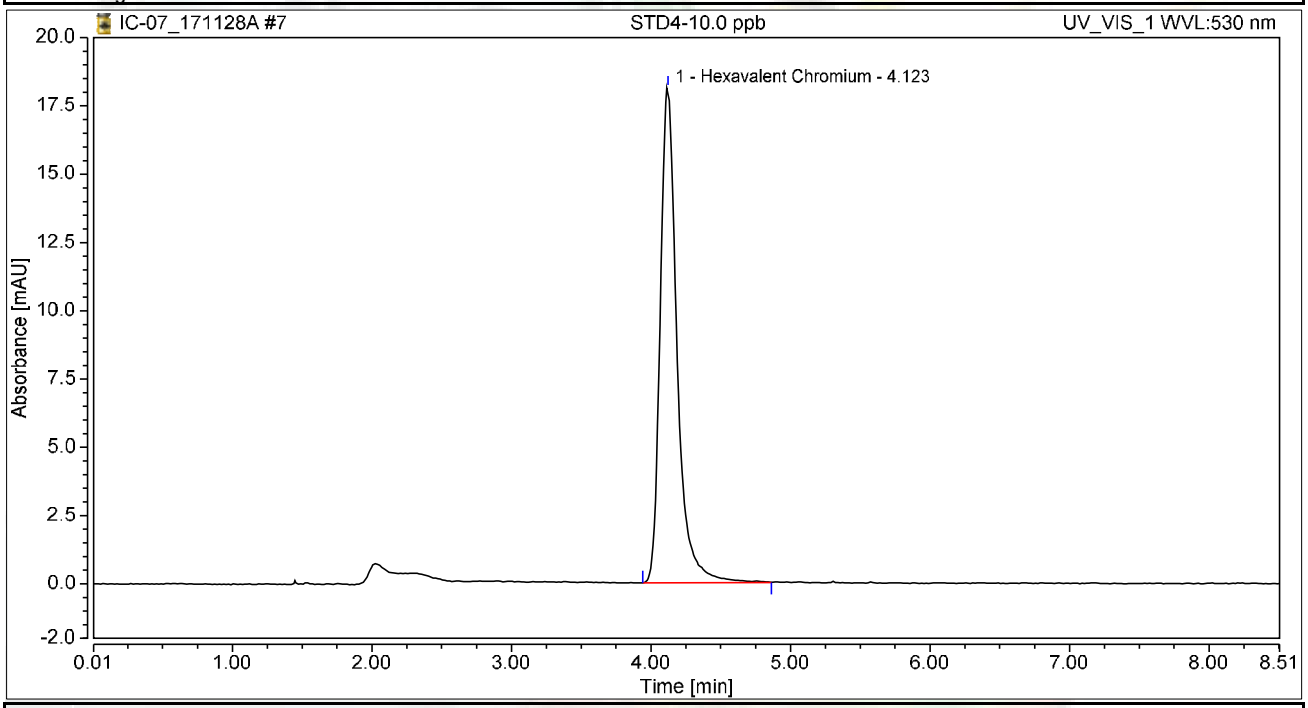
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.258	9.388	100.00	100.00	5.0118
Total:			**1.258**	**9.388**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

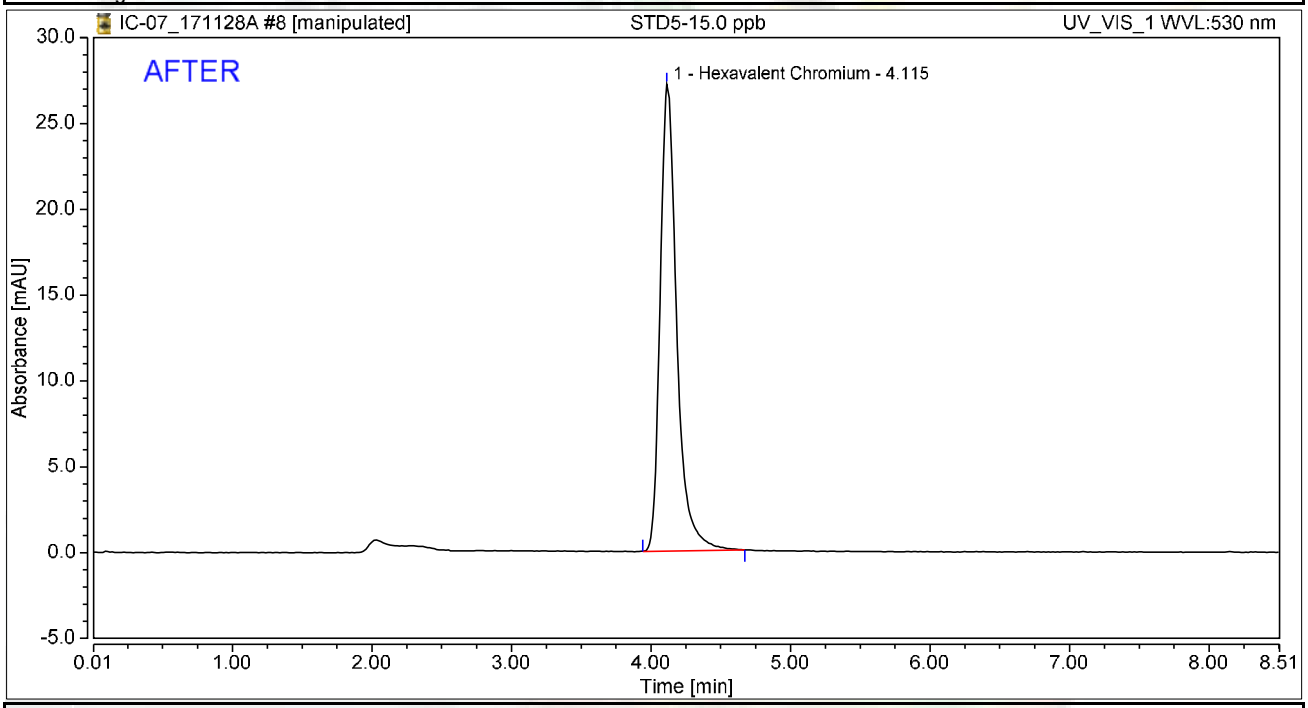
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	2.533	18.115	100.00	100.00	10.0869
Total:			**2.533**	**18.115**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	3.760	27.183	100.00	100.00	14.9728
Total:			**3.760**	**27.183**	**100.00**	**100.00**	

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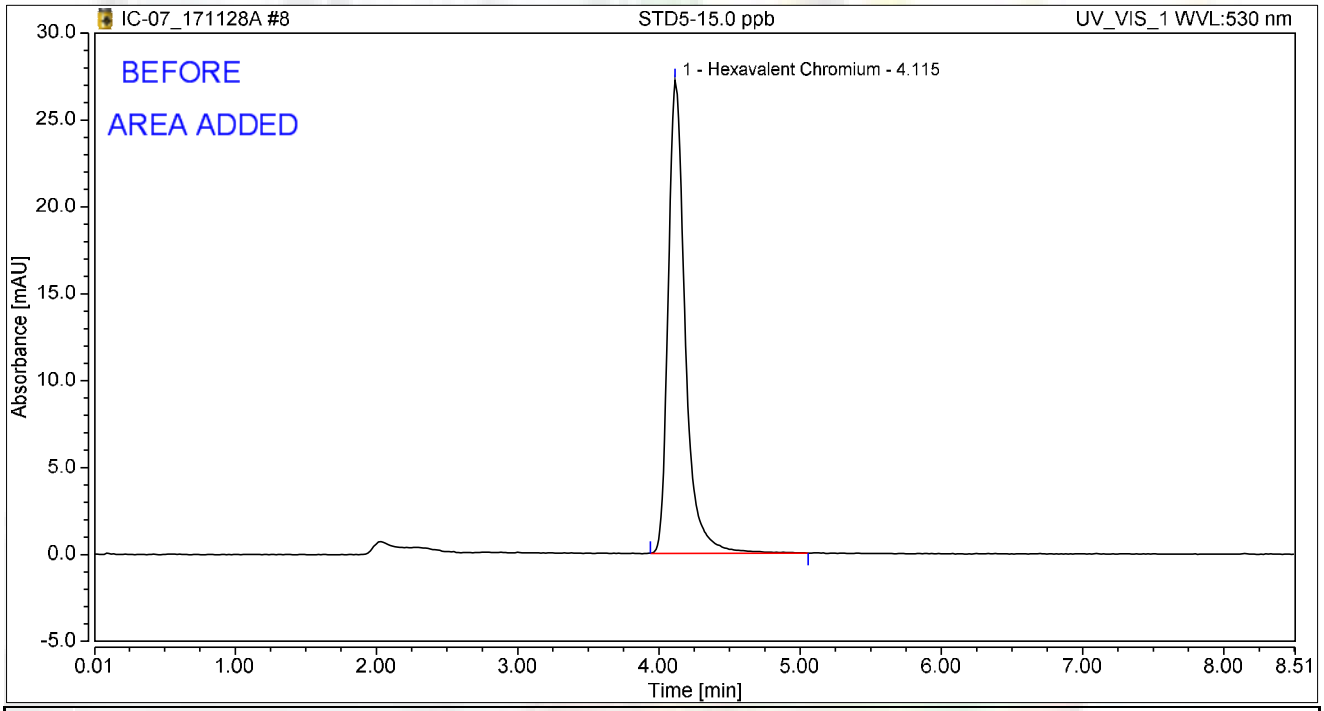
Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	3.807	27.204	100.00	100.00	14.9839
Total:			**3.807**	**27.204**	**100.00**	**100.00**	

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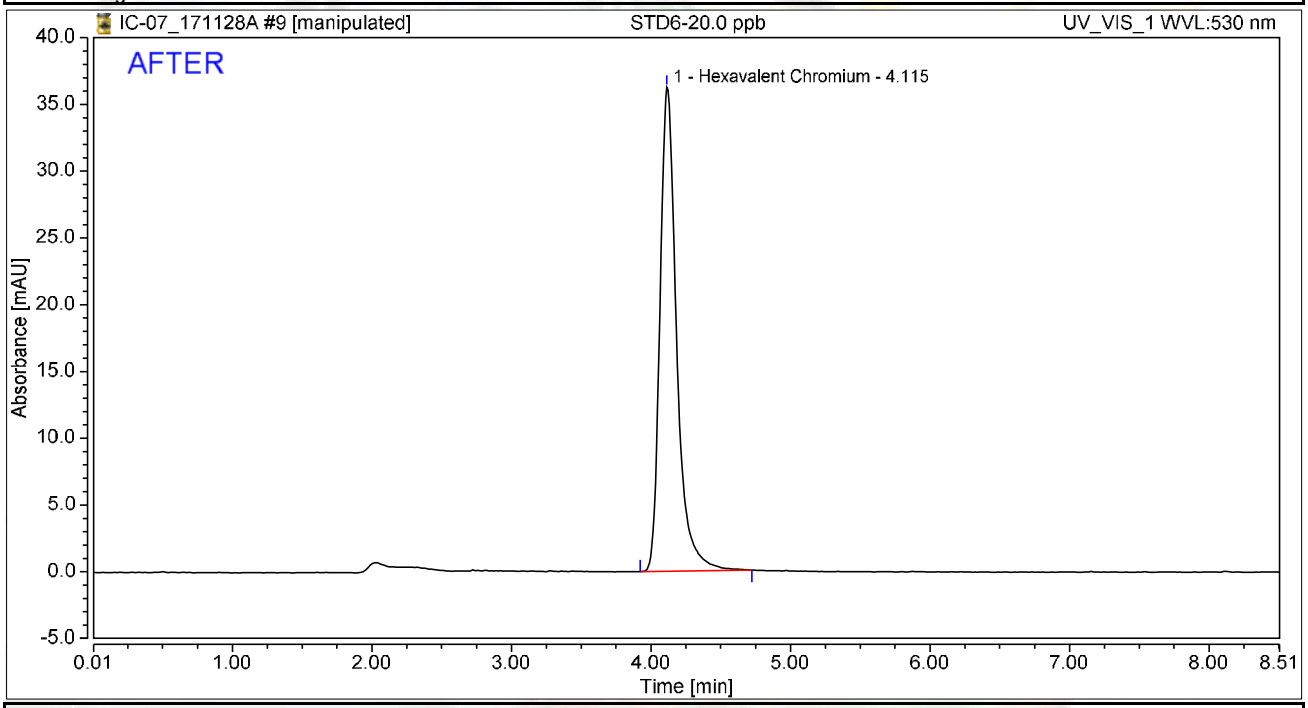
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	5.015	36.251	100.00	100.00	19.9744
Total:			**5.015**	**36.251**	**100.00**	**100.00**	

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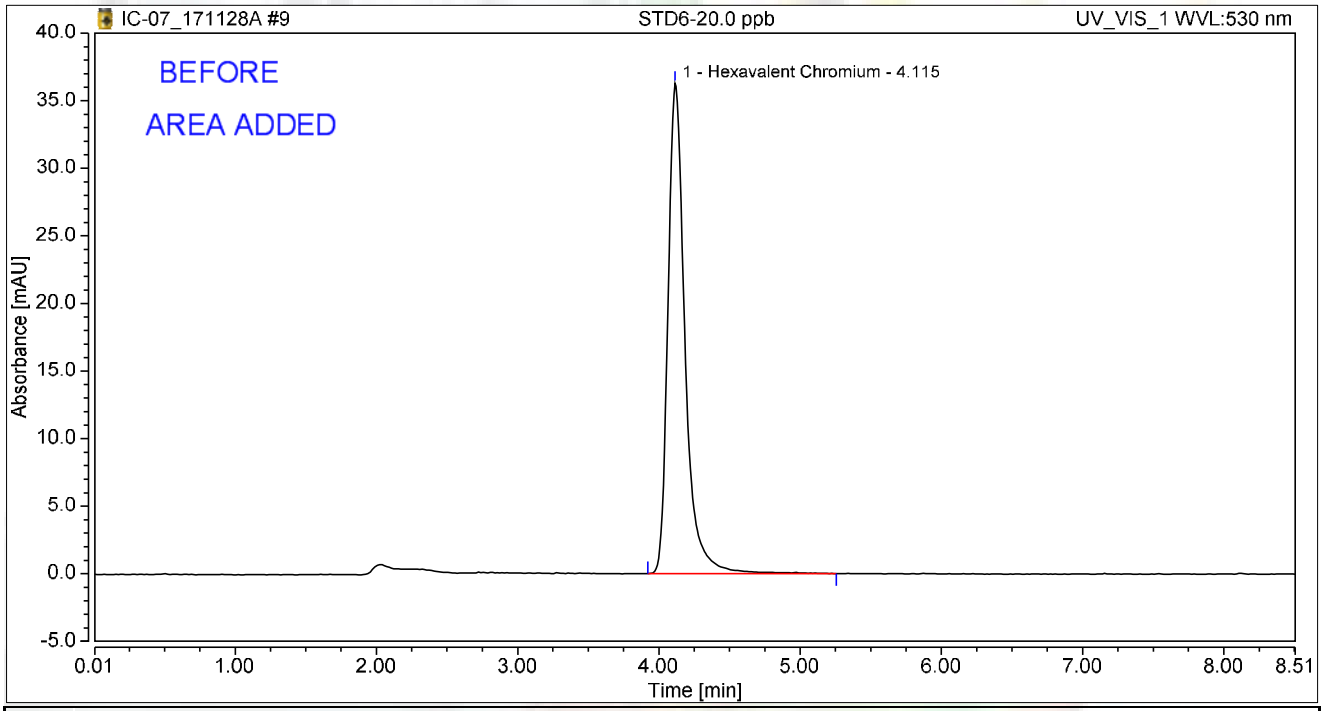
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	5.092	36.279	100.00	100.00	20.0407
Total:			**5.092**	**36.279**	**100.00**	**100.00**	

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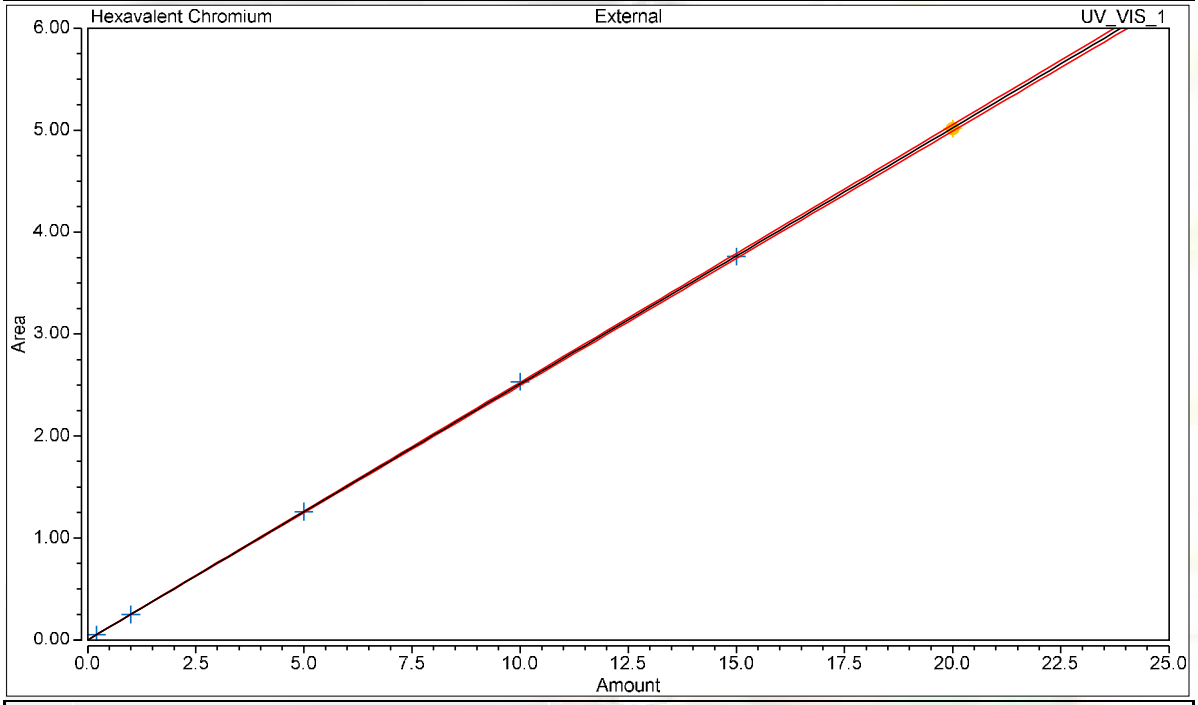
Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2511
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99997

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

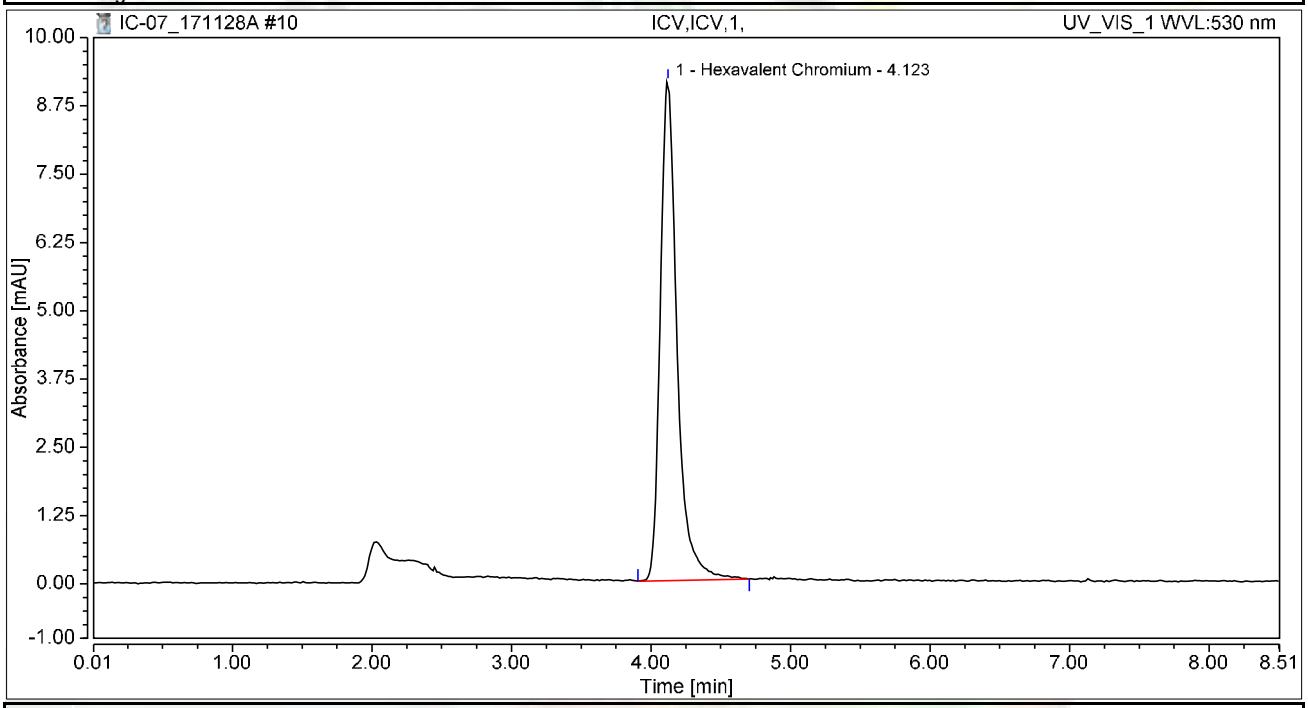
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0529	0.053	0.400
5	STD2-1.0 ppb	02	1.0000	0.2484	0.248	1.827
6	STD3-5.0 ppb	03	5.0000	1.2584	1.258	9.388
7	STD4-10.0 ppb	04	10.0000	2.5328	2.533	18.115
8	STD5-15.0 ppb	05	15.0000	3.7596	3.760	27.183
9	STD6-20.0 ppb	06	20.0000	5.0155	5.015	36.251

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

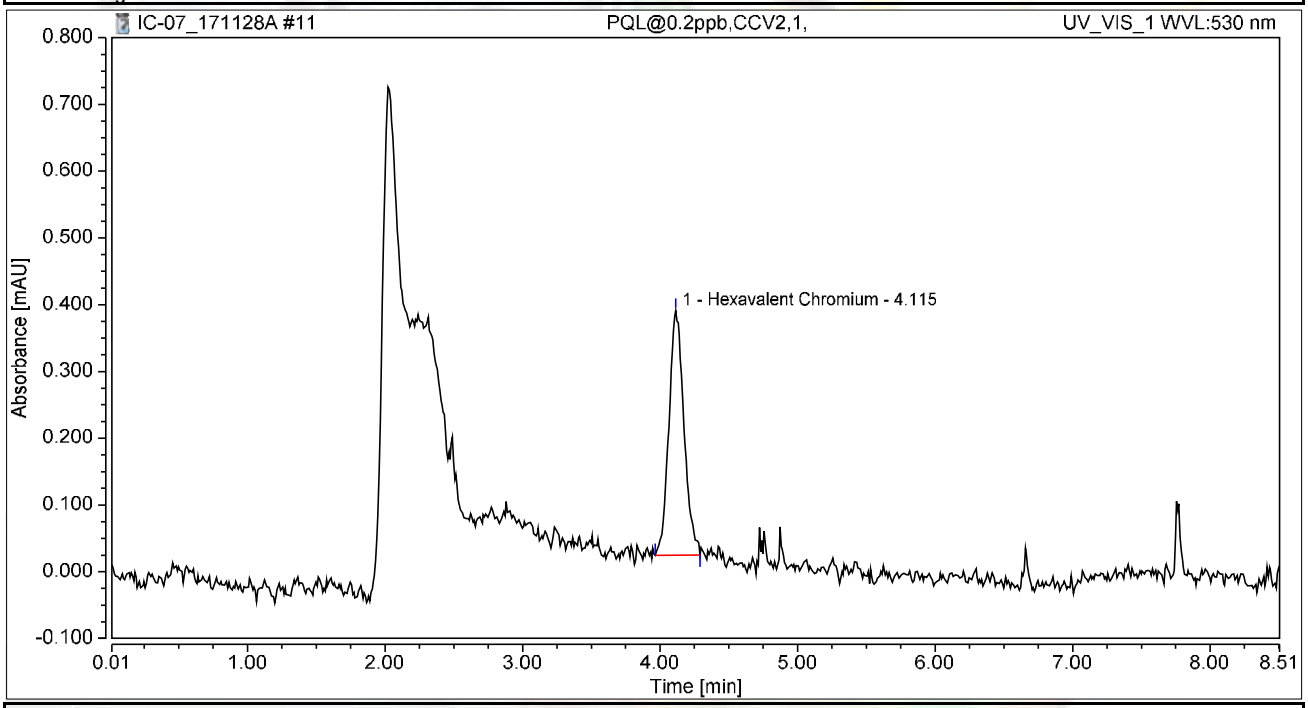
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.279	9.143	100.00	100.00	5.0922
Total:			**1.279**	**9.143**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

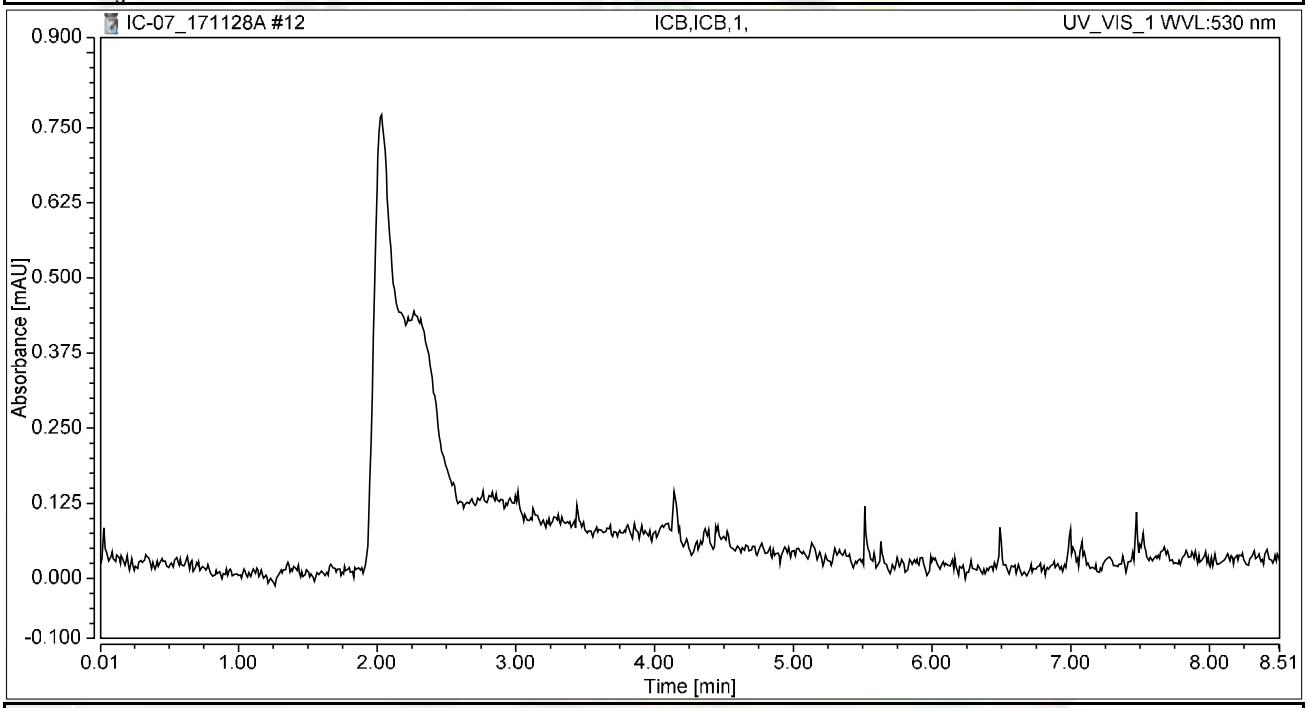
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.046	0.367	100.00	100.00	0.1851
Total:			**0.046**	**0.367**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 171208A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/08/17 8:12 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/08/17 8:22 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/08/17 8:35 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/08/17 8:46 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/08/17 8:56 AM	Reported
15	MB-R120682	MBLK	1	Hexavalent Chromium	12/08/17 9:05 AM	Reported
16	LCS-R120682	LCS	1	Hexavalent Chromium	12/08/17 9:14 AM	Reported
17	N027404-001A	SAMP	1	Hexavalent Chromium	12/08/17 9:25 AM	Reported
18	N027404-001AMS	MS	1	Hexavalent Chromium	12/08/17 9:36 AM	Reported
19	N027404-002A	SAMP	1	Hexavalent Chromium	12/08/17 9:45 AM	Reported
20	N027404-002AMS	MS	1	Hexavalent Chromium	12/08/17 9:55 AM	Reported
21	N027404-003A	SAMP	5	Hexavalent Chromium	12/08/17 10:04 AM	Reported
22	N027404-003AMS	MS	5	Hexavalent Chromium	12/08/17 10:14 AM	Reported
23	N027404-004A	SAMP	1	Hexavalent Chromium	12/08/17 10:23 AM	Reported
24	N027404-004AMS	MS	1	Hexavalent Chromium	12/08/17 10:33 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/08/17 10:42 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/08/17 10:52 AM	Reported
27	N027404-005A	SAMP	1	Hexavalent Chromium	12/08/17 11:01 AM	Not Reported
28	N027404-005AMS	MS	1	Hexavalent Chromium	12/08/17 11:11 AM	Not Reported
29	N027404-006A	SAMP	1	Hexavalent Chromium	12/08/17 11:20 AM	Reported
30	N027404-006AMS	MS	1	Hexavalent Chromium	12/08/17 11:30 AM	Reported
31	N027404-007A	SAMP	1	Hexavalent Chromium	12/08/17 11:39 AM	Reported
32	N027404-007AMS	MS	1	Hexavalent Chromium	12/08/17 11:48 AM	Reported
33	N027404-008A	SAMP	1	Hexavalent Chromium	12/08/17 11:58 AM	Reported
34	N027404-008AMS	MS	1	Hexavalent Chromium	12/08/17 12:07 PM	Reported
35	N027404-009A	SAMP	5	Hexavalent Chromium	12/08/17 12:17 PM	Reported
36	N027404-009AMS	MS	5	Hexavalent Chromium	12/08/17 12:26 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/08/17 12:36 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/08/17 12:45 PM	Reported
39	N027404-010A	SAMP	1	Hexavalent Chromium	12/08/17 12:55 PM	Reported
40	N027404-010AMS	MS	1	Hexavalent Chromium	12/08/17 1:04 PM	Reported
41	N027404-011A	SAMP	1	Hexavalent Chromium	12/08/17 1:14 PM	Reported
42	N027404-011AMS	MS	1	Hexavalent Chromium	12/08/17 1:23 PM	Reported

INJECTION LOG: 171208A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027404-012A	SAMP	1	Hexavalent Chromium	12/08/17 1:33 PM	Reported
44	N027404-012AMS	MS	1	Hexavalent Chromium	12/08/17 1:42 PM	Reported
45	N027404-013A	SAMP	1	Hexavalent Chromium	12/08/17 1:51 PM	Reported
46	N027404-013AMS	MS	1	Hexavalent Chromium	12/08/17 2:01 PM	Reported
47	N027404-014A	SAMP	1	Hexavalent Chromium	12/08/17 2:10 PM	Reported
48	N027404-014AMS	MS	1	Hexavalent Chromium	12/08/17 2:20 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/08/17 2:29 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/08/17 2:39 PM	Reported
51	N027404-015A	SAMP	1	Hexavalent Chromium	12/08/17 2:48 PM	Reported
52	N027404-015AMS	MS	1	Hexavalent Chromium	12/08/17 2:58 PM	Reported
53	N027404-016A	SAMP	5	Hexavalent Chromium	12/08/17 3:07 PM	Reported
54	N027404-016AMS	MS	5	Hexavalent Chromium	12/08/17 3:17 PM	Reported
55	N027404-016A	SAMP	1	Hexavalent Chromium	12/08/17 3:26 PM	Not Reported
56	N027404-016AMS	MS	1	Hexavalent Chromium	12/08/17 3:36 PM	Not Reported
57	N027404-018A	SAMP	1	Hexavalent Chromium	12/08/17 3:45 PM	Reported
58	N027404-018AMS	MS	1	Hexavalent Chromium	12/08/17 3:54 PM	Reported
59	N027404-019A	SAMP	1	Hexavalent Chromium	12/08/17 4:04 PM	Reported
60	N027404-019AMS	MS	1	Hexavalent Chromium	12/08/17 4:13 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/08/17 4:23 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/08/17 4:32 PM	Reported
63	N027404-020A	SAMP	5	Hexavalent Chromium	12/08/17 4:42 PM	Reported
64	N027404-020AMS	MS	5	Hexavalent Chromium	12/08/17 4:51 PM	Reported
65	N027404-017A	SAMP	100	Hexavalent Chromium	12/08/17 5:01 PM	Reported
66	N027404-017AMS	MS	100	Hexavalent Chromium	12/08/17 5:10 PM	Reported
67	N027404-017AMSD	MSD	100	Hexavalent Chromium	12/08/17 5:23 PM	Reported
68	N027404-003ADUP	DUP	5	Hexavalent Chromium	12/08/17 5:34 PM	Reported
69	N027404-005A	SAMP	5	Hexavalent Chromium	12/08/17 5:44 PM	Reported
70	N027404-005AMS	MS	5	Hexavalent Chromium	12/08/17 5:53 PM	Reported
71	N027404-020A	SAMP	1	Hexavalent Chromium	12/08/17 6:02 PM	Not Reported
72	N027404-020AMS	MS	1	Hexavalent Chromium	12/08/17 6:12 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	12/08/17 6:21 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	12/08/17 6:31 PM	Reported
75	LCS-R120683	LCS	1	Hexavalent Chromium	12/08/17 6:45 PM	Reported
76	MB-R120683	MBLK	1	Hexavalent Chromium	12/08/17 6:55 PM	Reported
77	N027405-012A	SAMP	100	Hexavalent Chromium	12/08/17 7:05 PM	Reported
78	N027405-012AMS	MS	100	Hexavalent Chromium	12/08/17 7:14 PM	Reported
79	N027405-012AMSD	MSD	100	Hexavalent Chromium	12/08/17 7:24 PM	Reported
80	N027405-013A	SAMP	5	Hexavalent Chromium	12/08/17 7:33 PM	Reported
81	N027405-013AMS	MS	5	Hexavalent Chromium	12/08/17 7:43 PM	Reported
82	N027405-002A	SAMP	5	Hexavalent Chromium	12/08/17 7:52 PM	Reported
83	N027405-002AMS	MS	5	Hexavalent Chromium	12/08/17 8:02 PM	Reported
84	N027405-002ADUP	DUP	5	Hexavalent Chromium	12/08/17 8:11 PM	Reported

INJECTION LOG: 171208A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	12/08/17 8:21 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	12/08/17 8:30 PM	Reported
87	N027405-001A	SAMP	1	Hexavalent Chromium	12/08/17 8:40 PM	Reported
88	N027405-001AMS	MS	1	Hexavalent Chromium	12/08/17 8:49 PM	Reported
89	N027405-003A	SAMP	5	Hexavalent Chromium	12/08/17 8:58 PM	Reported
90	N027405-003AMS	MS	5	Hexavalent Chromium	12/08/17 9:08 PM	Reported
91	N027405-004A	SAMP	1	Hexavalent Chromium	12/08/17 9:17 PM	Reported
92	N027405-004AMS	MS	1	Hexavalent Chromium	12/08/17 9:27 PM	Reported
93	N027405-005A	SAMP	1	Hexavalent Chromium	12/08/17 9:36 PM	Reported
94	N027405-005AMS	MS	1	Hexavalent Chromium	12/08/17 9:46 PM	Reported
95	N027405-009A	SAMP	100	Hexavalent Chromium	12/08/17 9:55 PM	Reported
96	N027405-009AMS	MS	100	Hexavalent Chromium	12/08/17 10:05 PM	Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	12/08/17 10:14 PM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	12/08/17 10:24 PM	Reported
99	N027405-010A	SAMP	1	Hexavalent Chromium	12/08/17 10:33 PM	Reported
100	N027405-010AMS	MS	1	Hexavalent Chromium	12/08/17 10:43 PM	Reported
101	N027405-011A	SAMP	1	Hexavalent Chromium	12/08/17 10:52 PM	Not Reported
102	N027405-011AMS	MS	1	Hexavalent Chromium	12/08/17 11:01 PM	Not Reported
103	N027405-011A	SAMP	5	Hexavalent Chromium	12/08/17 11:11 PM	Reported
104	N027405-011AMS	MS	5	Hexavalent Chromium	12/08/17 11:20 PM	Reported
105	N027405-014A	SAMP	1	Hexavalent Chromium	12/08/17 11:30 PM	Reported
106	N027405-014AMS	MS	1	Hexavalent Chromium	12/08/17 11:39 PM	Reported
107	N027405-015A	SAMP	1	Hexavalent Chromium	12/08/17 11:49 PM	Reported
108	N027405-015AMS	MS	1	Hexavalent Chromium	12/08/17 11:58 PM	Reported
109	CCV-9	CCV	1	Hexavalent Chromium	12/09/17 12:08 AM	Reported
110	CCB-9	CCB	1	Hexavalent Chromium	12/09/17 12:17 AM	Reported
111	N027405-006A	SAMP	1	Hexavalent Chromium	12/09/17 12:27 AM	Not Reported
112	N027405-006AMS	MS	1	Hexavalent Chromium	12/09/17 12:36 AM	Not Reported
113	N027405-007A	SAMP	1	Hexavalent Chromium	12/09/17 12:46 AM	Not Reported
114	N027405-007AMS	MS	1	Hexavalent Chromium	12/09/17 12:55 AM	Not Reported
115	N027405-008A	SAMP	1	Hexavalent Chromium	12/09/17 1:04 AM	Not Reported
116	N027405-008AMS	MS	1	Hexavalent Chromium	12/09/17 1:14 AM	Not Reported
117	CCV-10	CCV1	1	Hexavalent Chromium	12/09/17 1:23 AM	Reported
118	CCB-10	CCB	1	Hexavalent Chromium	12/09/17 1:33 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171208A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**09/Dec/17 02:03:42**
No. of Injections:	**121**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/08/2017 08:12	Finished	BLANK
11	BLANK	2	1000	Unknown		12/08/2017 08:22	Finished	BLANK
12	CCV-1,CCV,1,	4	1000	Unknown		12/08/2017 08:35	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	5	1000	Unknown		12/08/2017 08:46	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	6	1000	Unknown		12/08/2017 08:56	Finished	CCB R171129A
15	MB-1,MBLK,1	7	1000	Unknown		12/08/2017 09:05	Finished	MB R171129A
16	LCS-1,LCS,1	8	1000	Unknown		12/08/2017 09:14	Finished	LCS, IWST-171002B
17	N027404-001A,SAMF	1	1000	Unknown		12/08/2017 09:25	Finished	SAMP,10mL
18	N027404-001AMS,MS	2	1000	Unknown		12/08/2017 09:36	Finished	MS (1ppb), IWST-171002B,10
19	N027404-002A,SAMF	3	1000	Unknown		12/08/2017 09:45	Finished	SAMP,10mL
20	N027404-002AMS,MS	4	1000	Unknown		12/08/2017 09:55	Finished	MS (1ppb), IWST-171002B,10
21	N027404-003A,SAMF	5	1000	Unknown		12/08/2017 10:04	Finished	SAMP,2>10mL
22	N027404-003AMS,MS	6	1000	Unknown		12/08/2017 10:14	Finished	MS (1ppb), IWST-171002B,2>1
23	N027404-004A,SAMF	7	1000	Unknown		12/08/2017 10:23	Finished	SAMP,10mL
24	N027404-004AMS,MS	8	1000	Unknown		12/08/2017 10:33	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	9	1000	Unknown		12/08/2017 10:42	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	10	1000	Unknown		12/08/2017 10:52	Finished	CCB R171129A
27	N027404-005A,SAMF	11	1000	Unknown		12/08/2017 11:01	Finished	SAMP,10mL
28	N027404-005AMS,MS	12	1000	Unknown		12/08/2017 11:11	Finished	MS (1ppb), IWST-171002B,10
29	N027404-006A,SAMF	13	1000	Unknown		12/08/2017 11:20	Finished	SAMP,10mL
30	N027404-006AMS,MS	14	1000	Unknown		12/08/2017 11:30	Finished	MS (1ppb), IWST-171002B,10
31	N027404-007A,SAMF	15	1000	Unknown		12/08/2017 11:39	Finished	SAMP,10mL
32	N027404-007AMS,MS	16	1000	Unknown		12/08/2017 11:48	Finished	MS (1ppb), IWST-171002B,10
33	N027404-008A,SAMF	17	1000	Unknown		12/08/2017 11:58	Finished	SAMP,10mL
34	N027404-008AMS,MS	18	1000	Unknown		12/08/2017 12:07	Finished	MS (1ppb), IWST-171002B,10
35	N027404-009A,SAMF	19	1000	Unknown		12/08/2017 12:17	Finished	SAMP,2>10mL
36	N027404-009AMS,MS	20	1000	Unknown		12/08/2017 12:26	Finished	MS (1ppb), IWST-171002B,2>1
37	CCV-3,CCV,1,	21	1000	Unknown		12/08/2017 12:36	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	22	1000	Unknown		12/08/2017 12:45	Finished	CCB R171129A
39	N027404-010A,SAMF	23	1000	Unknown		12/08/2017 12:55	Finished	SAMP,10mL
40	N027404-010AMS,MS	24	1000	Unknown		12/08/2017 13:04	Finished	MS (1ppb), IWST-171002B,10
41	N027404-011A,SAMF	25	1000	Unknown		12/08/2017 13:14	Finished	SAMP,10mL
42	N027404-011AMS,MS	26	1000	Unknown		12/08/2017 13:23	Finished	MS (1ppb), IWST-171002B,10
43	N027404-012A,SAMF	27	1000	Unknown		12/08/2017 13:33	Finished	SAMP,10mL
44	N027404-012AMS,MS	28	1000	Unknown		12/08/2017 13:42	Finished	MS (1ppb), IWST-171002B,10
45	N027404-013A,SAMF	29	1000	Unknown		12/08/2017 13:51	Finished	SAMP,10mL
46	N027404-013AMS,MS	30	1000	Unknown		12/08/2017 14:01	Finished	MS (1ppb), IWST-171002B,10
47	N027404-014A,SAMF	31	1000	Unknown		12/08/2017 14:10	Finished	SAMP,10mL
48	N027404-014AMS,MS	32	1000	Unknown		12/08/2017 14:20	Finished	MS (1ppb), IWST-171002B,10
49	CCV-4,CCV1,1,	33	1000	Unknown		12/08/2017 14:29	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	34	1000	Unknown		12/08/2017 14:39	Finished	CCB R171129A
51	N027404-015A,SAMF	35	1000	Unknown		12/08/2017 14:48	Finished	SAMP,10mL
52	N027404-015AMS,MS	36	1000	Unknown		12/08/2017 14:58	Finished	MS (1ppb), IWST-171002B,10
53	N027404-016A,SAMF	37	1000	Unknown		12/08/2017 15:07	Finished	SAMP,2>10mL
54	N027404-016AMS,MS	38	1000	Unknown		12/08/2017 15:17	Finished	MS (1ppb), IWST-171002B,2>1
55	N027404-016A,SAMF	39	1000	Unknown		12/08/2017 15:26	Finished	SAMP,10mL
56	N027404-016AMS,MS	40	1000	Unknown		12/08/2017 15:36	Finished	MS (1ppb), IWST-171002B,10
57	N027404-018A,SAMF	41	1000	Unknown		12/08/2017 15:45	Finished	SAMP,10mL
58	N027404-018AMS,MS	42	1000	Unknown		12/08/2017 15:54	Finished	MS (1ppb), IWST-171002B,10
59	N027404-019A,SAMF	43	1000	Unknown		12/08/2017 16:04	Finished	SAMP,10mL
60	N027404-019AMS,MS	44	1000	Unknown		12/08/2017 16:13	Finished	MS (1ppb), IWST-171002B,10

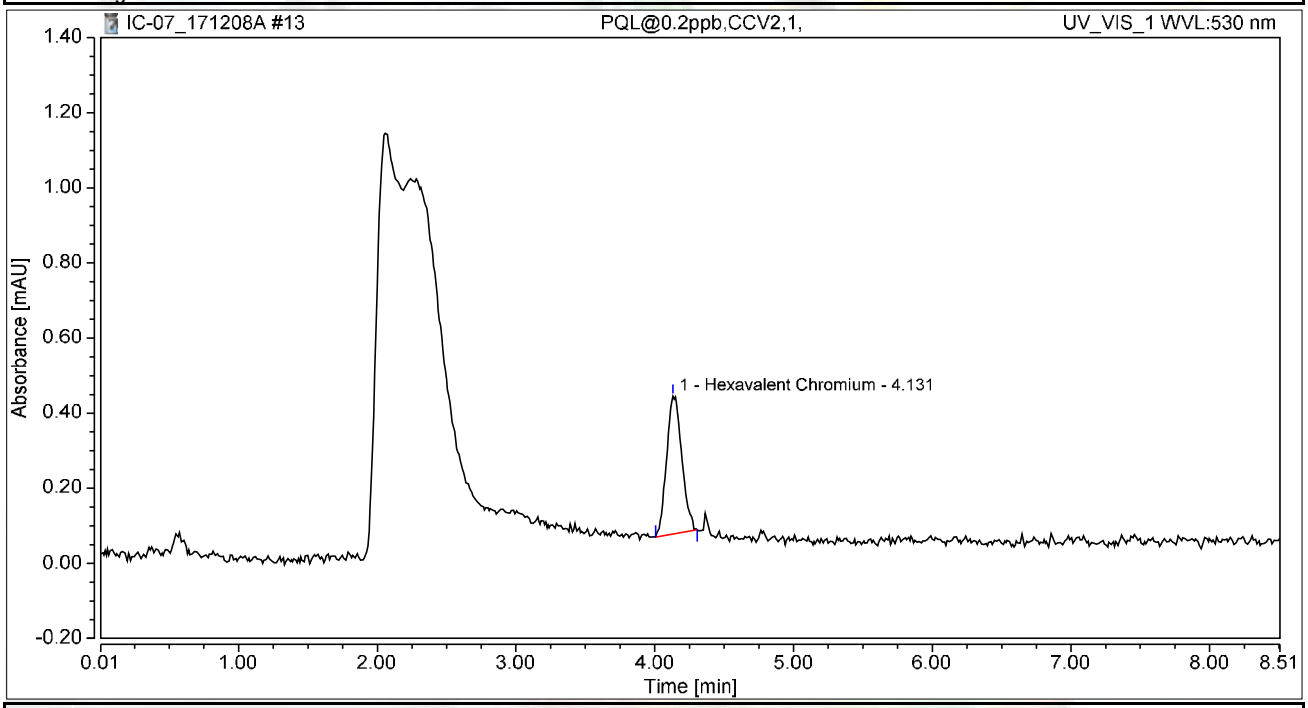
61	CCV-5,CCV,1,	45	1000	Unknown		12/08/2017 16:23	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	46	1000	Unknown		12/08/2017 16:32	Finished	CCB R171129A
63	N027404-020A,SAMF	47	1000	Unknown		12/08/2017 16:42	Finished	SAMP,2>10mL
64	N027404-020AMS,MS	48	1000	Unknown		12/08/2017 16:51	Finished	MS (1ppb), IWST-171002B,2>1
65	N027404-017A,SAMF	49	1000	Unknown		12/08/2017 17:01	Finished	SAMP,0.1>10mL
66	N027404-017AMS,MS	50	1000	Unknown		12/08/2017 17:10	Finished	MS (5ppb), IWST-171002B,0.1
67	N027404-017AMSD,M	1	1000	Unknown		12/08/2017 17:23	Finished	MSD (5ppb), IWST-171002B,0.
68	N027404-003ADUP,D	2	1000	Unknown		12/08/2017 17:34	Finished	DUP,2>10mL
69	N027404-005A,SAMF	3	1000	Unknown		12/08/2017 17:44	Finished	SAMP,2>10mL
70	N027404-005AMS,MS	4	1000	Unknown		12/08/2017 17:53	Finished	MS (1ppb), IWST-171002B,2>1
71	N027404-020A,SAMF	5	1000	Unknown		12/08/2017 18:02	Finished	SAMP,10mL
72	N027404-020AMS,MS	6	1000	Unknown		12/08/2017 18:12	Finished	MS (1ppb), IWST-171002B,10
73	CCV-6,CCV1,1,	7	1000	Unknown		12/08/2017 18:21	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	8	1000	Unknown		12/08/2017 18:31	Finished	CCB R171129A
75	LCS-2,LCS,1	1	1000	Unknown		12/08/2017 18:45	Finished	LCS, IWST-171002B
76	MB-2,MBLK,1	2	1000	Unknown		12/08/2017 18:55	Finished	MB R171129A
77	N027405-012A,SAMF	3	1000	Unknown		12/08/2017 19:05	Finished	SAMP,0.1>10mL
78	N027405-012AMS,MS	4	1000	Unknown		12/08/2017 19:14	Finished	MS (5ppb), IWST-171002B,0.1
79	N027405-012AMSD,M	5	1000	Unknown		12/08/2017 19:24	Finished	MSD (5ppb), IWST-171002B,0.
80	N027405-013A,SAMF	6	1000	Unknown		12/08/2017 19:33	Finished	SAMP,0.1>10mL
81	N027405-013AMS,MS	7	1000	Unknown		12/08/2017 19:43	Finished	DUP,0.1>10mL
82	N027405-002A,SAMF	8	1000	Unknown		12/08/2017 19:52	Finished	SAMP,10mL
83	N027405-002AMS,MS	9	1000	Unknown		12/08/2017 20:02	Finished	SAMP,5>10mL
84	N027405-002ADUP,D	10	1000	Unknown		12/08/2017 20:11	Finished	SAMP,0.2>10mL
85	CCV-7,CCV,1,	11	1000	Unknown		12/08/2017 20:21	Finished	CCV @5ppb, IWST-171002A
86	CCB-7,CCB,1,	12	1000	Unknown		12/08/2017 20:30	Finished	CCB R171114C
87	N027405-001A,SAMF	13	1000	Unknown		12/08/2017 20:40	Finished	SAMP,0.2>10mL
88	N027405-001AMS,MS	14	1000	Unknown		12/08/2017 20:49	Finished	SAMP,1>10mL
89	N027405-003A,SAMF	15	1000	Unknown		12/08/2017 20:58	Finished	SAMP,0.5>10mL
90	N027405-003AMS,MS	16	1000	Unknown		12/08/2017 21:08	Finished	SAMP,5>10mL
91	N027405-004A,SAMF	17	1000	Unknown		12/08/2017 21:17	Finished	SAMP,10mL
92	N027405-004AMS,MS	18	1000	Unknown		12/08/2017 21:27	Finished	SAMP,2>10mL
93	N027405-005A,SAMF	19	1000	Unknown		12/08/2017 21:36	Finished	MS (5ppb), IWST-171002B,2>1
94	N027405-005AMS,MS	20	1000	Unknown		12/08/2017 21:46	Finished	MSD (5ppb), IWST-171002B,2>
95	N027405-009A,SAMF	21	1000	Unknown		12/08/2017 21:55	Finished	SAMP,10mL
96	N027405-009AMS,MS	22	1000	Unknown		12/08/2017 22:05	Finished	MS (1ppb), IWST-171002B,10
97	CCV-8,CCV1,1,	23	1000	Unknown		12/08/2017 22:14	Finished	CCV @10ppb, IWST-171002A
98	CCB-8,CCB,1,	24	1000	Unknown		12/08/2017 22:24	Finished	CCB R171129A
99	N027405-010A,SAMF	25	1000	Unknown		12/08/2017 22:33	Finished	SAMP,10mL
100	N027405-010AMS,MS	26	1000	Unknown		12/08/2017 22:43	Finished	MS (1ppb), IWST-171002B,10
101	N027405-011A,SAMF	27	1000	Unknown		12/08/2017 22:52	Finished	SAMP,10mL
102	N027405-011AMS,MS	28	1000	Unknown		12/08/2017 23:01	Finished	MS (1ppb), IWST-171002B,10
103	N027405-011A,SAMF	29	1000	Unknown		12/08/2017 23:11	Finished	SAMP,10mL
104	N027405-011AMS,MS	30	1000	Unknown		12/08/2017 23:20	Finished	MS (1ppb), IWST-171002B,10
105	N027405-014A,SAMF	31	1000	Unknown		12/08/2017 23:30	Finished	SAMP,10mL
106	N027405-014AMS,MS	32	1000	Unknown		12/08/2017 23:39	Finished	MS (1ppb), IWST-171002B,10
107	N027405-015A,SAMF	33	1000	Unknown		12/08/2017 23:49	Finished	SAMP,10mL
108	N027405-015AMS,MS	34	1000	Unknown		12/08/2017 23:58	Finished	MS (1ppb), IWST-171002B,10
109	CCV-9,CCV,1,	35	1000	Unknown		12/09/2017 00:08	Finished	CCV @5ppb, IWST-171002A
110	CCB-9,CCB,1,	36	1000	Unknown		12/09/2017 00:17	Finished	CCB R171114C
111	N027405-006A,SAMF	37	1000	Unknown		12/09/2017 00:27	Finished	SAMP,10mL
112	N027405-006AMS,MS	38	1000	Unknown		12/09/2017 00:36	Finished	MS (1ppb), IWST-171002B,10
113	N027405-007A,SAMF	39	1000	Unknown		12/09/2017 00:46	Finished	MS (1ppb), IWST-171002B,10
114	N027405-007AMS,MS	40	1000	Unknown		12/09/2017 00:55	Finished	MS (1ppb), IWST-171002B,10
115	N027405-008A,SAMF	41	1000	Unknown		12/09/2017 01:04	Finished	MS (1ppb), IWST-171002B,10
116	N027405-008AMS,MS	42	1000	Unknown		12/09/2017 01:14	Finished	MS (1ppb), IWST-171002B,10
117	CCV-10,CCV1,1,	43	1000	Unknown		12/09/2017 01:23	Finished	CCV @10ppb, IWST-171002A
118	CCB-10,CCB,1,	44	1000	Unknown		12/09/2017 01:33	Finished	CCB R171129A
119	SHUTDOWN	45	1000	Unknown		12/09/2017 01:42	Finished	
120	Eluent: R171208A	46	1000	Unknown		n.a.	Finished	Eluent
121	PCR: R171206A	47	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 08:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

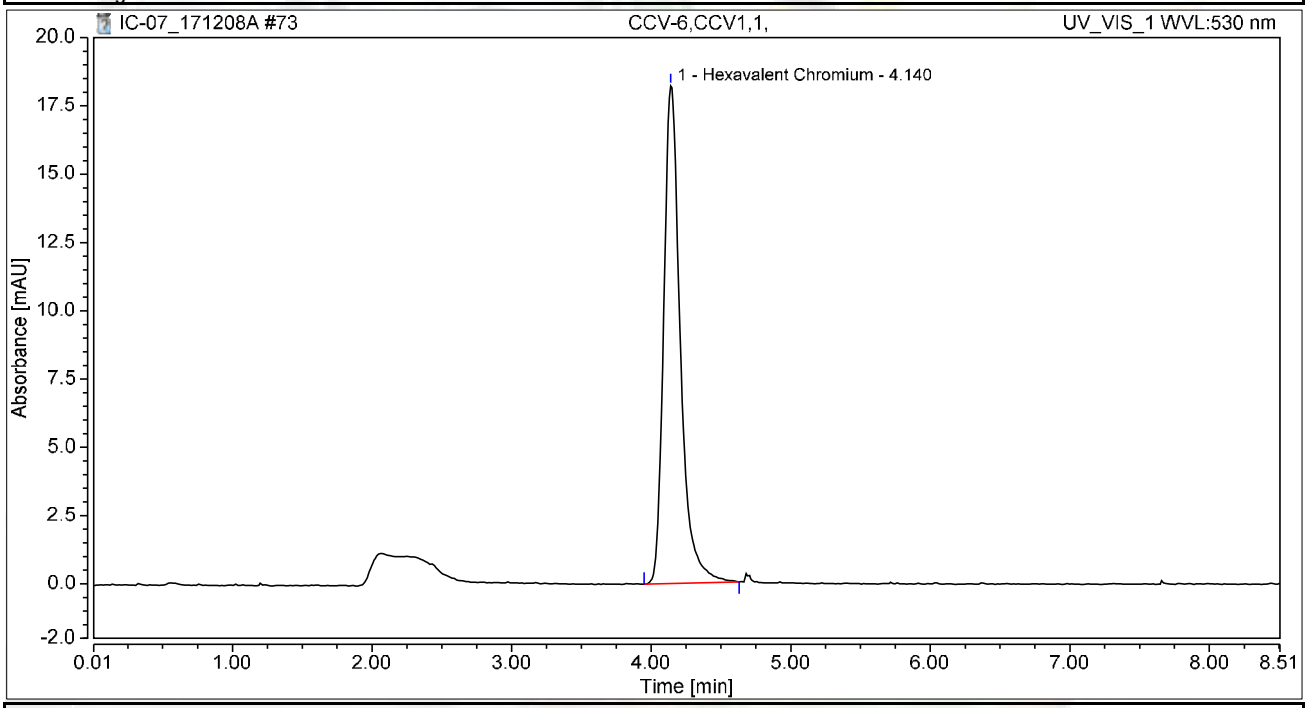
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.047	0.367	100.00	100.00	0.1862
Total:			**0.047**	**0.367**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 18:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

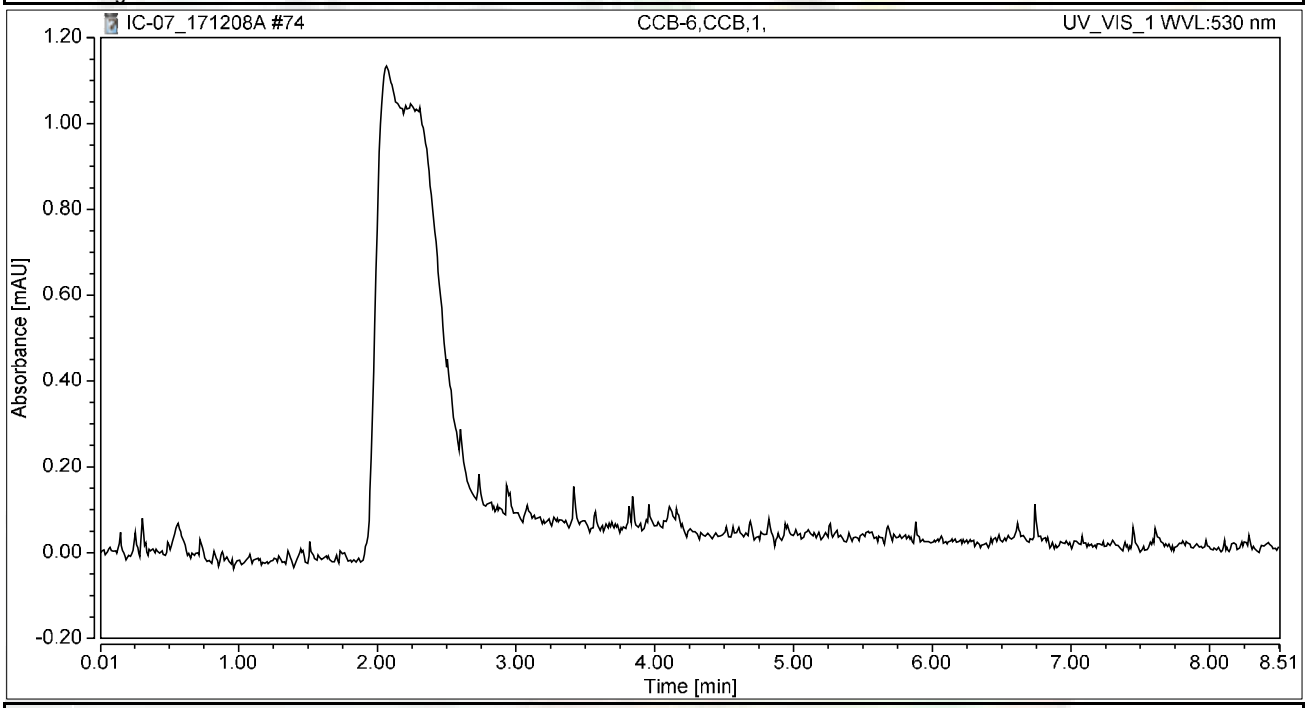
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.516	18.224	100.00	100.00	10.0218
Total:			**2.516**	**18.224**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 18:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

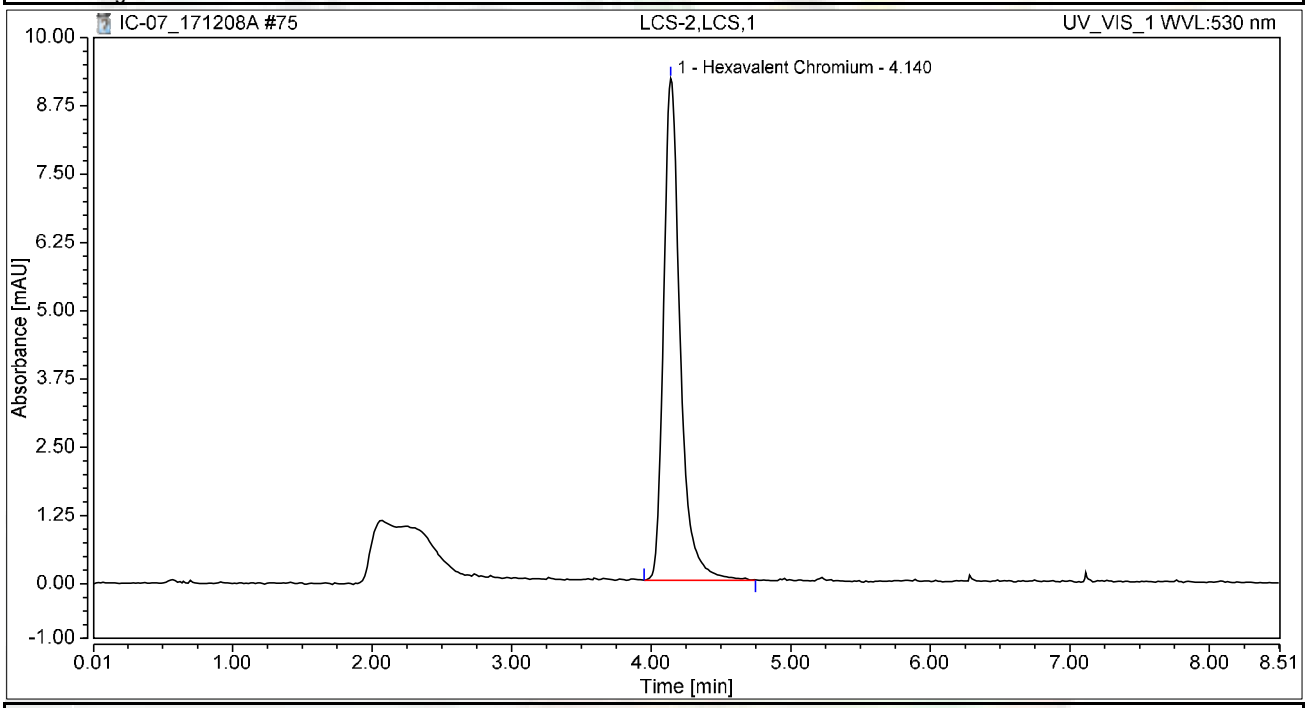
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-2,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 18:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

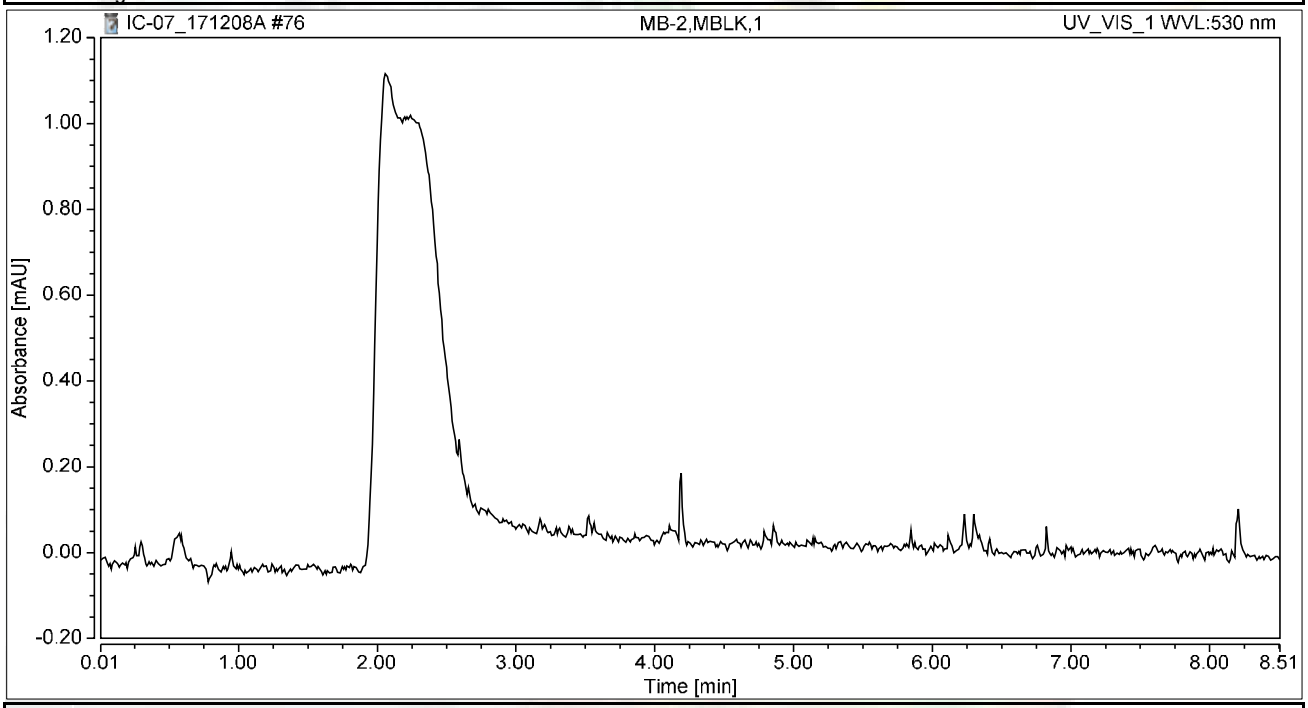
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.271	9.186	100.00	100.00	5.0634
Total:			**1.271**	**9.186**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-2,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 18:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

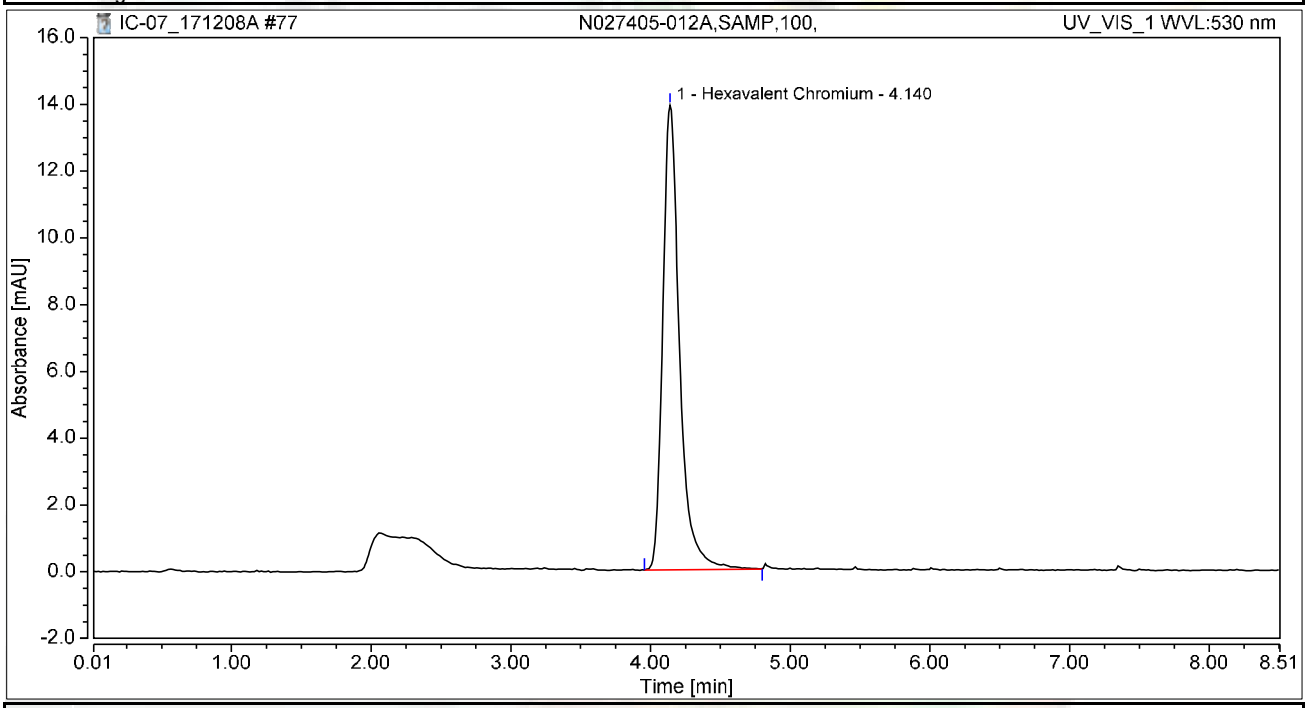
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-012A,SAMP,100,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 19:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

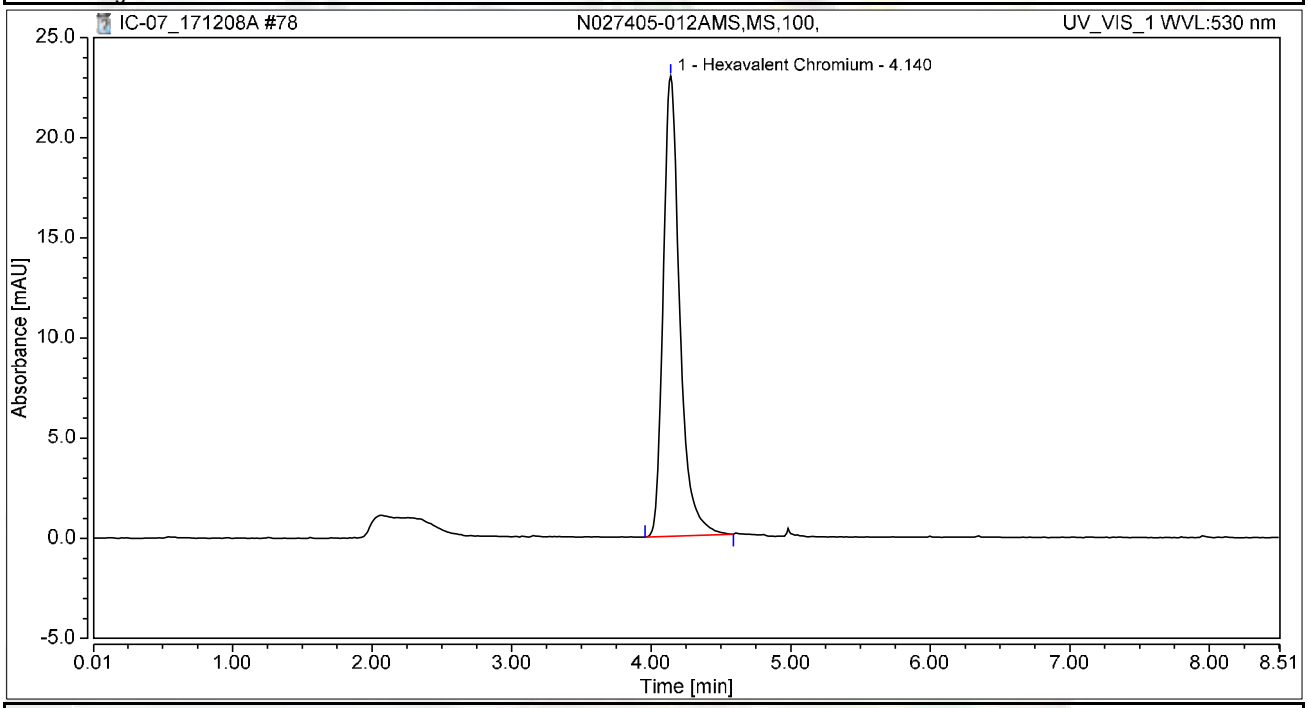
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.938	13.919	100.00	100.00	7.7167
Total:			**1.938**	**13.919**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-012AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 19:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

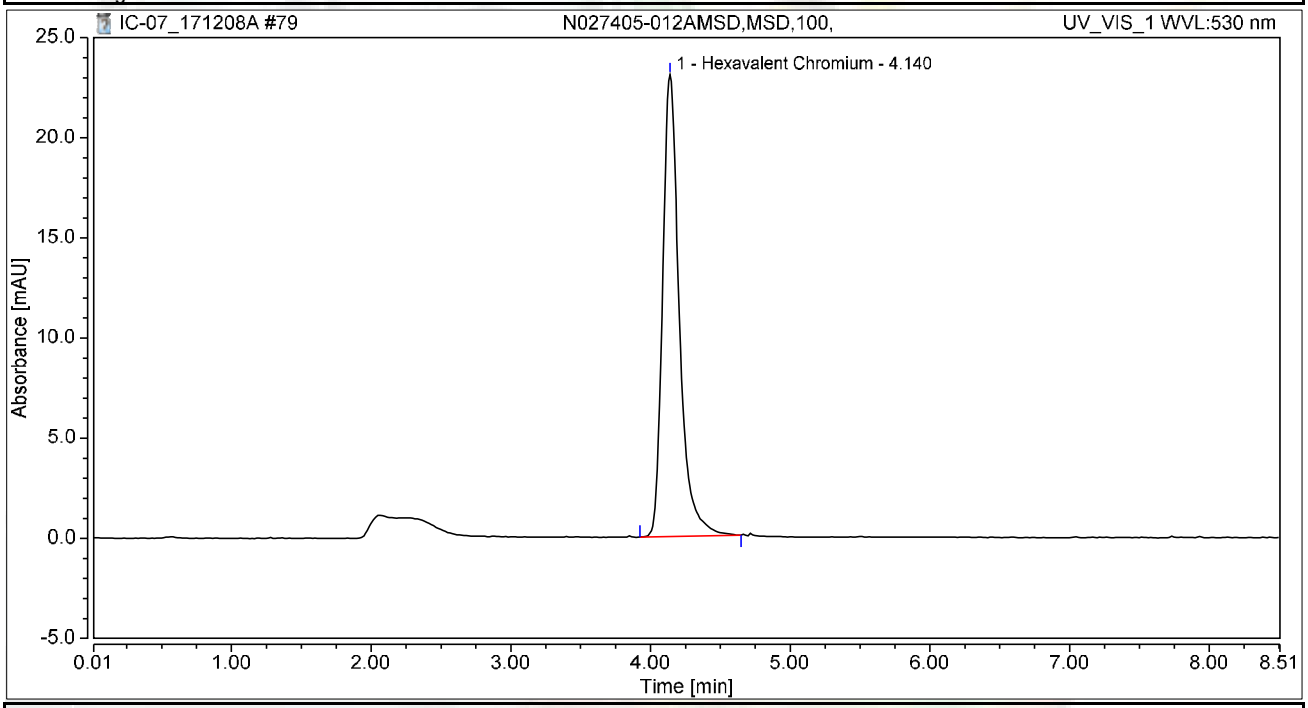
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	3.167	22.980	100.00	100.00	12.6134
Total:			**3.167**	**22.980**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-012AMSD,MSD,100,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 19:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

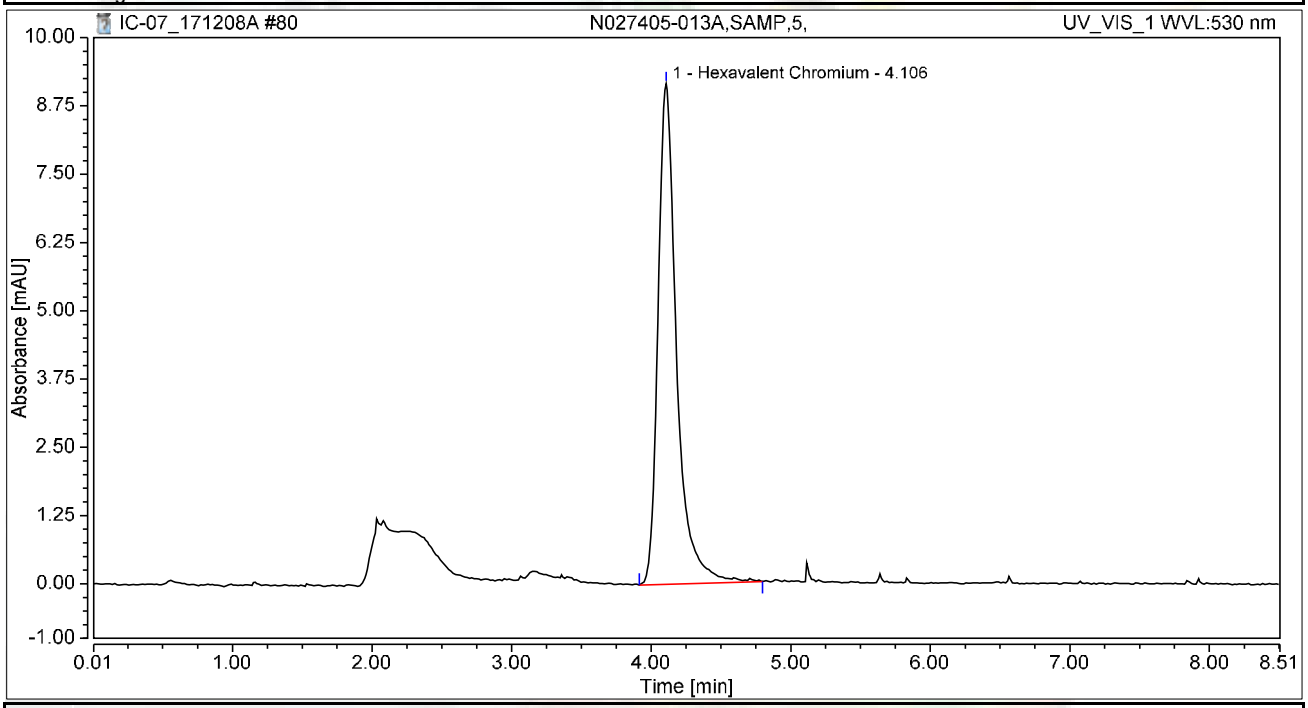
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	3.189	23.057	100.00	100.00	12.6984
Total:			**3.189**	**23.057**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-013A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 19:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

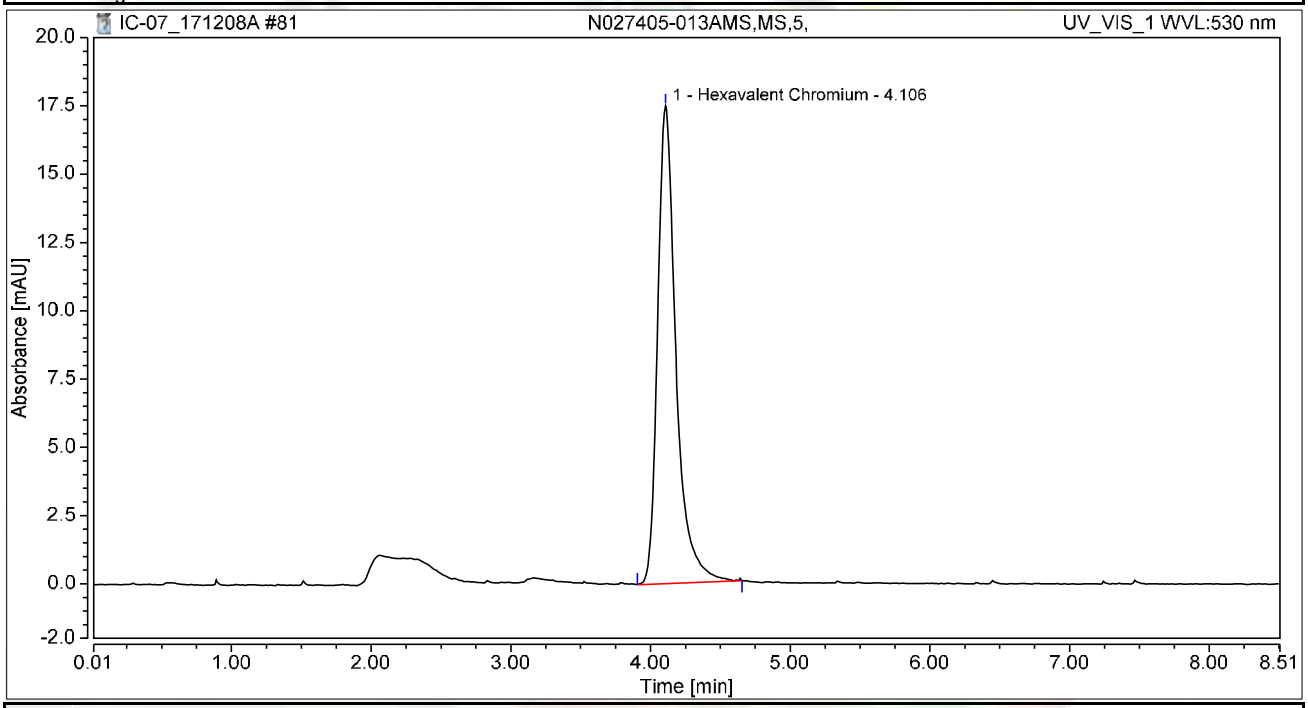
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	1.416	9.163	100.00	100.00	5.6403
Total:			**1.416**	**9.163**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-013AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 19:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

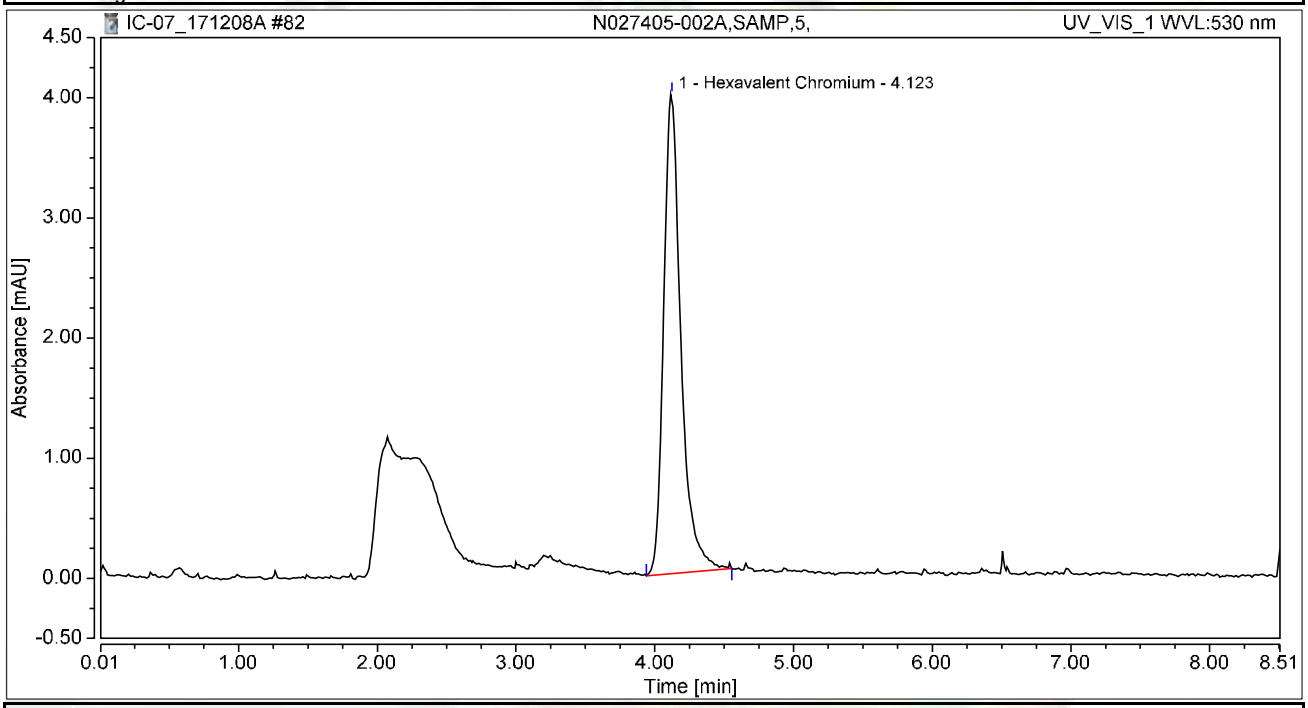
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	2.661	17.492	100.00	100.00	10.5957
Total:			**2.661**	**17.492**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 19:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

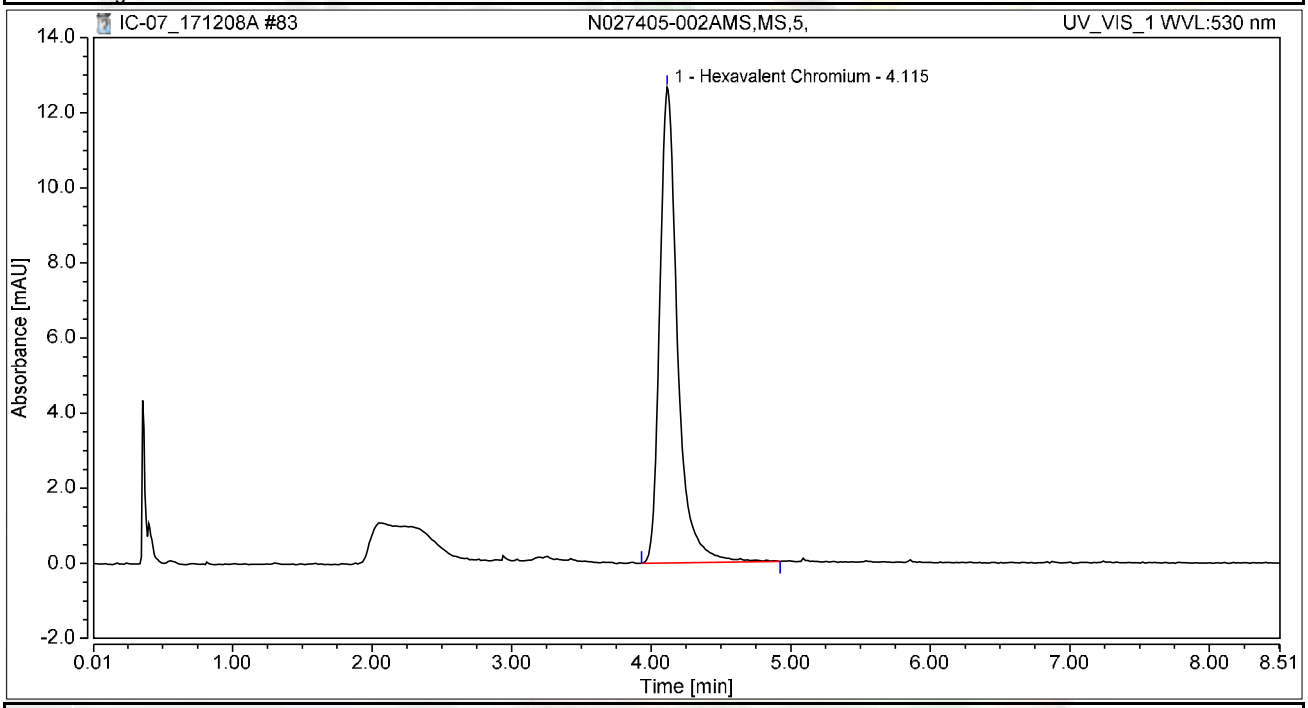
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.578	3.990	100.00	100.00	2.3032
Total:			**0.578**	**3.990**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 20:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

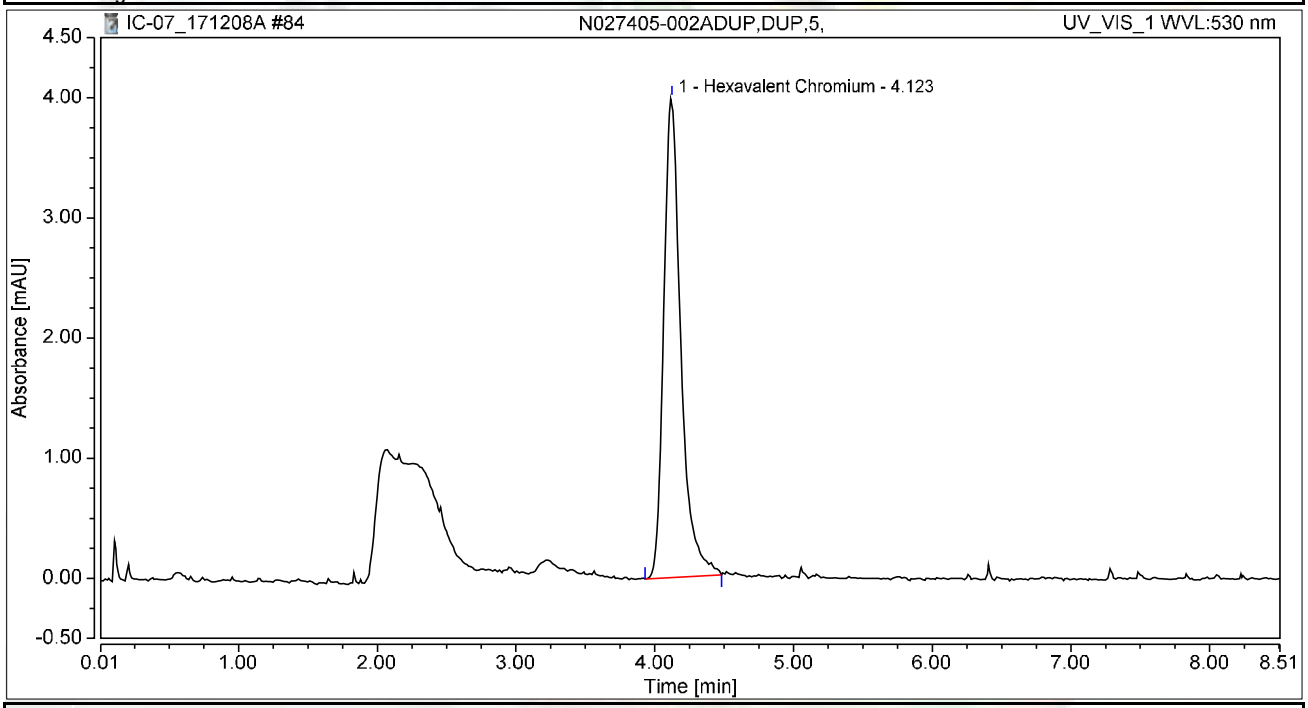
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	1.876	12.669	100.00	100.00	7.4712
Total:			**1.876**	**12.669**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-002ADUP,DUP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 20:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

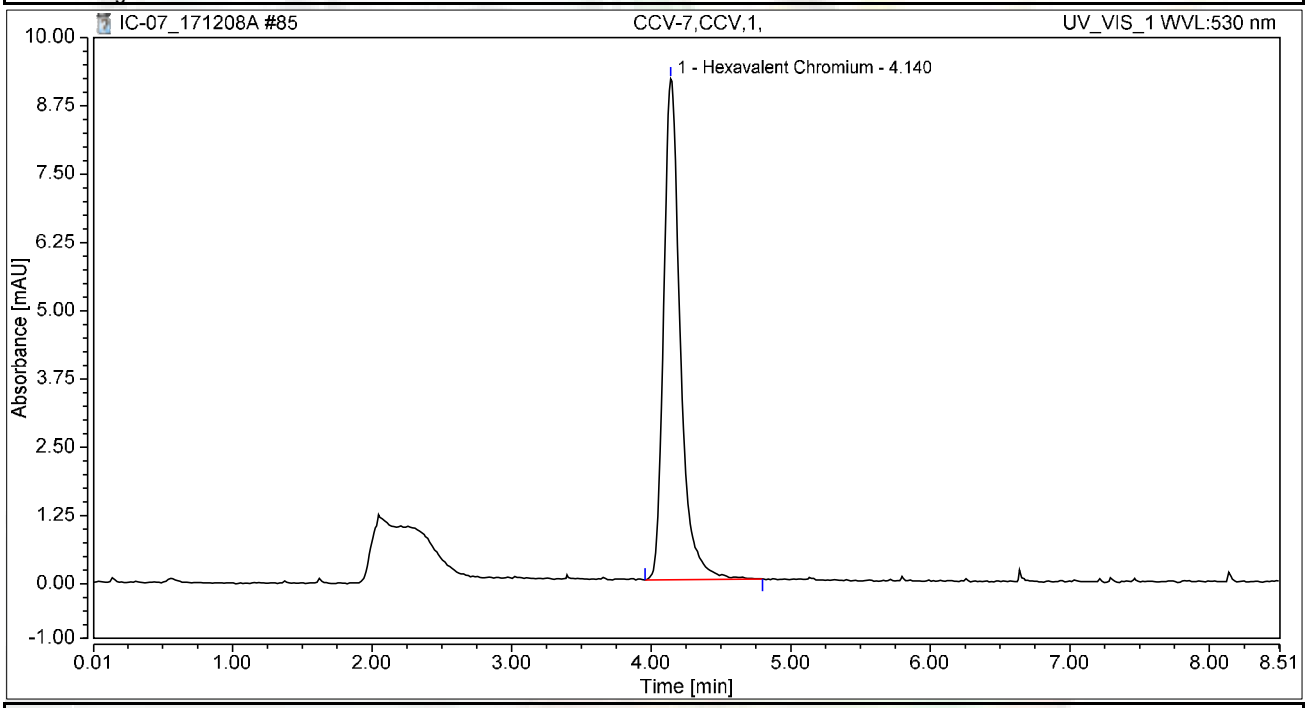
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.575	3.994	100.00	100.00	2.2883
Total:			**0.575**	**3.994**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 20:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

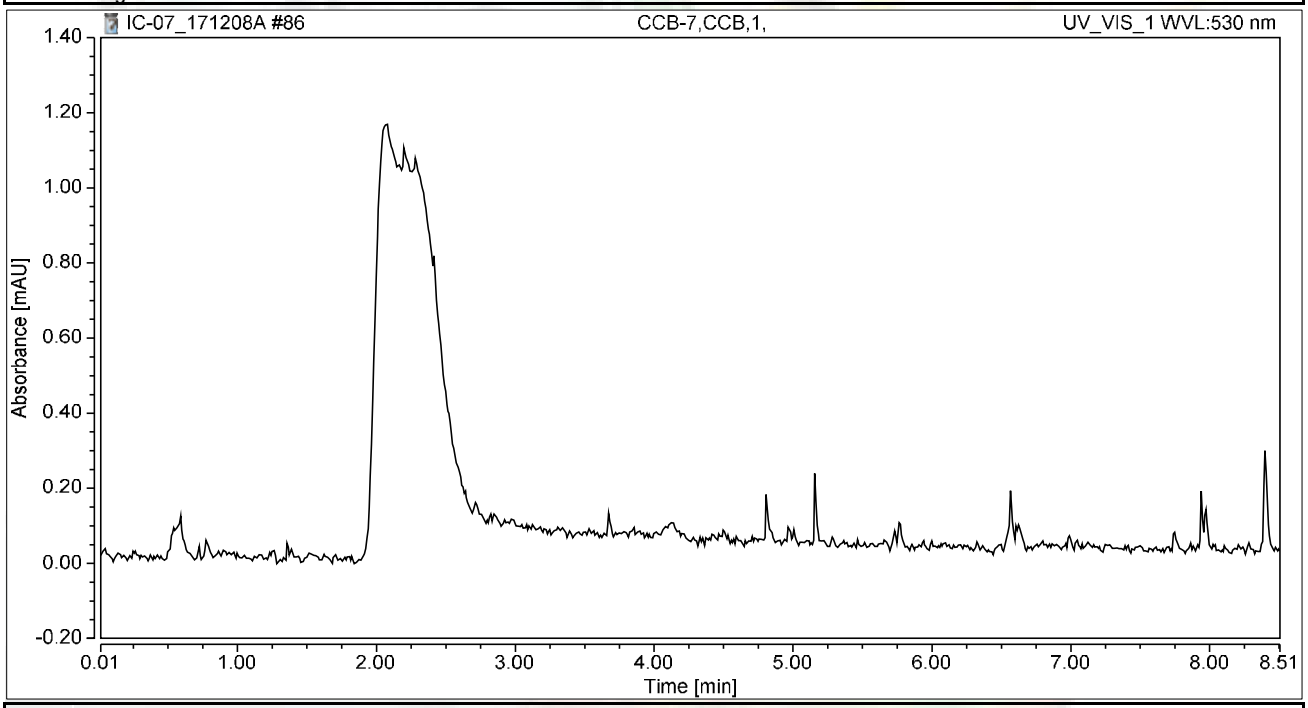
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.272	9.170	100.00	100.00	5.0646
Total:			**1.272**	**9.170**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 20:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

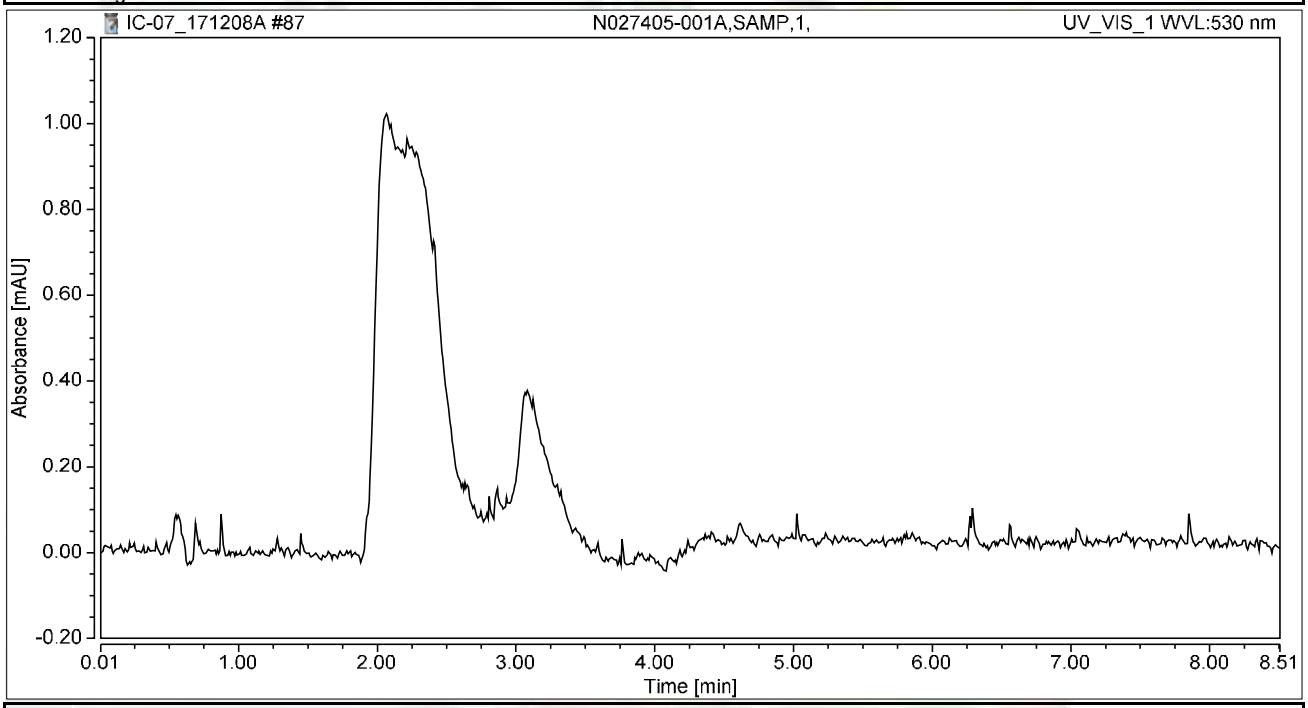
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 20:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

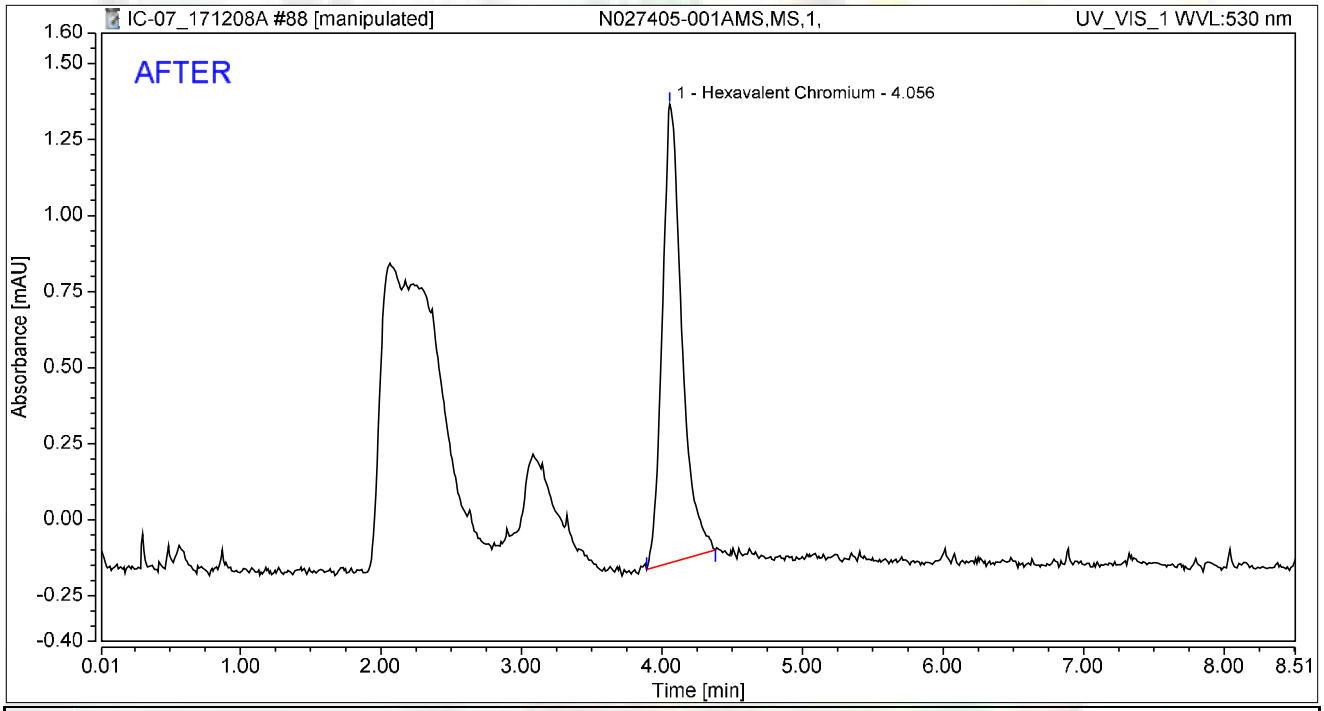
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-001AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 20:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.243	1.508	100.00	100.00	0.9693
Total:			**0.243**	**1.508**	**100.00**	**100.00**	

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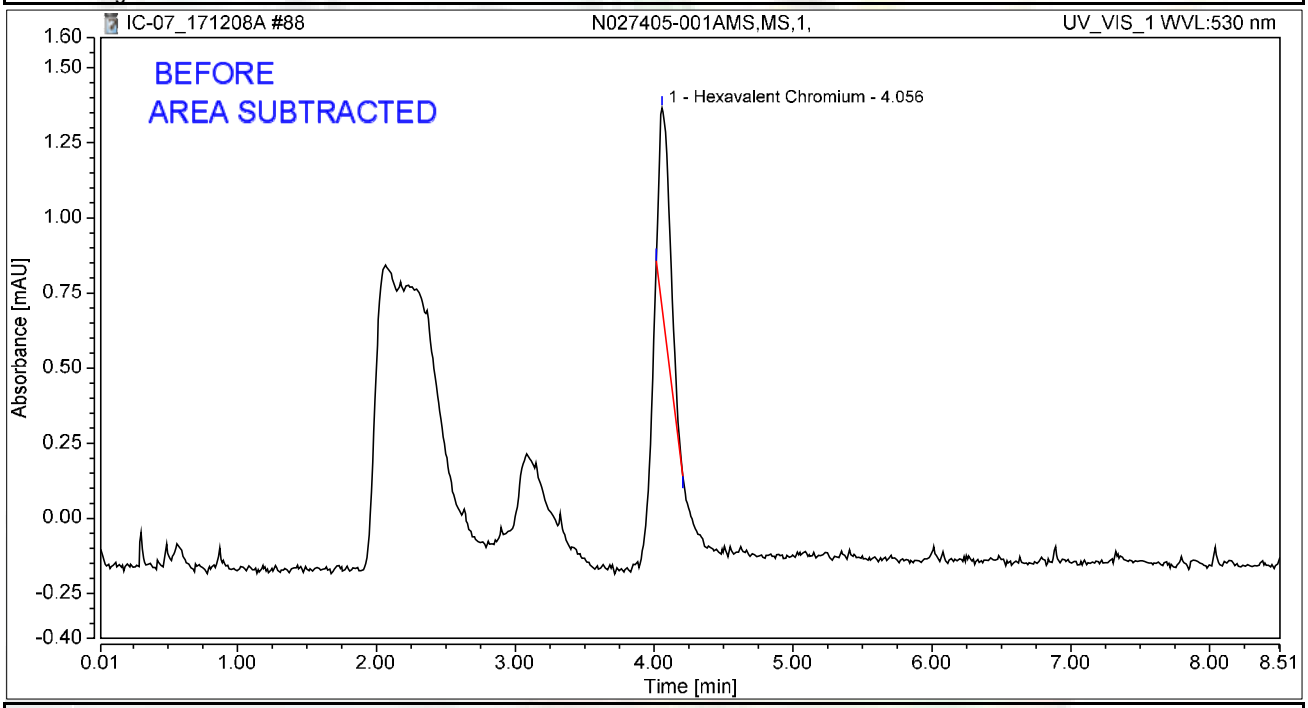
Chromatogram and Results

Injection Details

Injection Name:	**N027405-001AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 20:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.065	0.664	100.00	100.00	0.2594
Total:			**0.065**	**0.664**	**100.00**	**100.00**	

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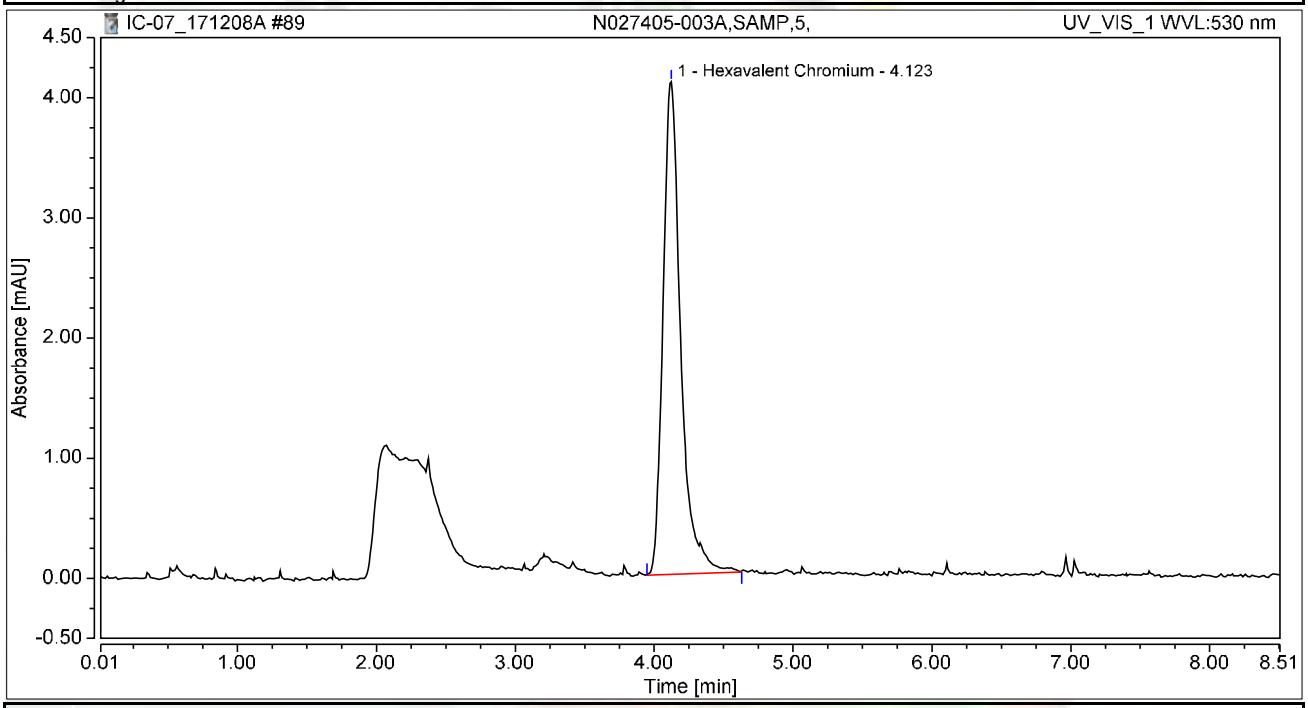
Chromatogram and Results

Injection Details

Injection Name:	**N027405-003A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 20:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

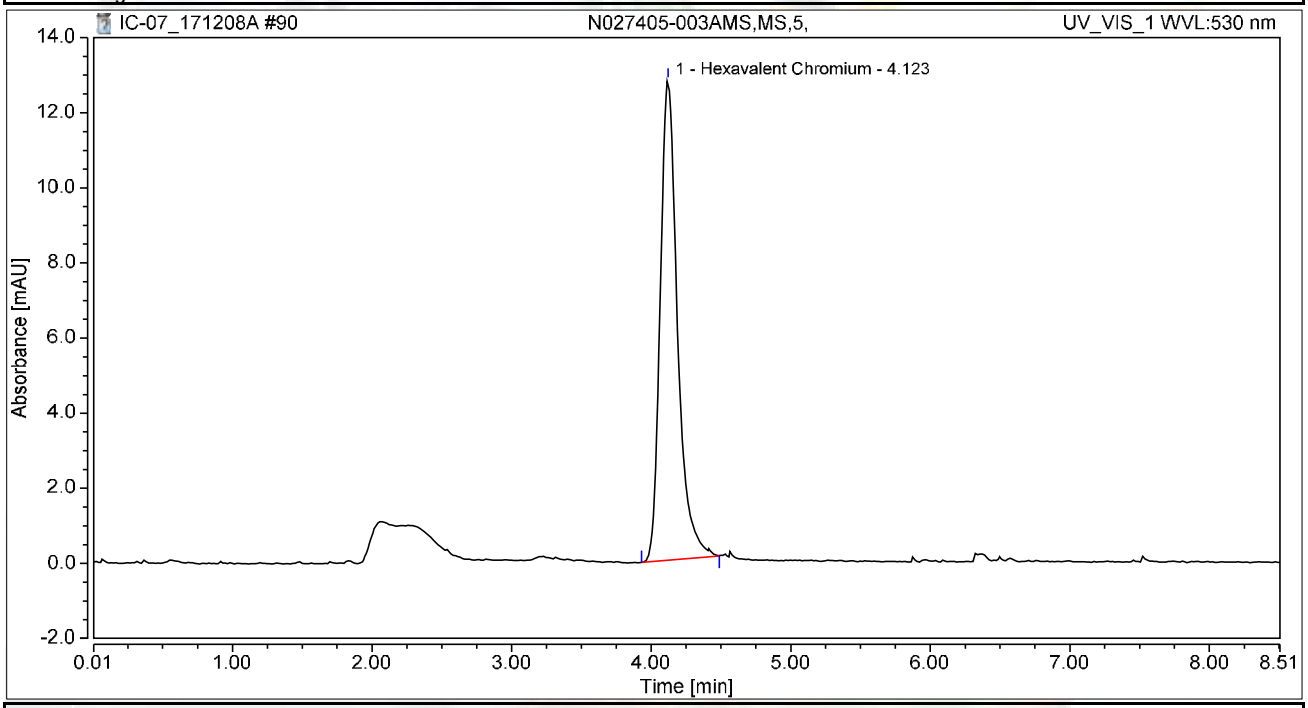
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.603	4.099	100.00	100.00	2.4034
Total:			**0.603**	**4.099**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-003AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 21:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

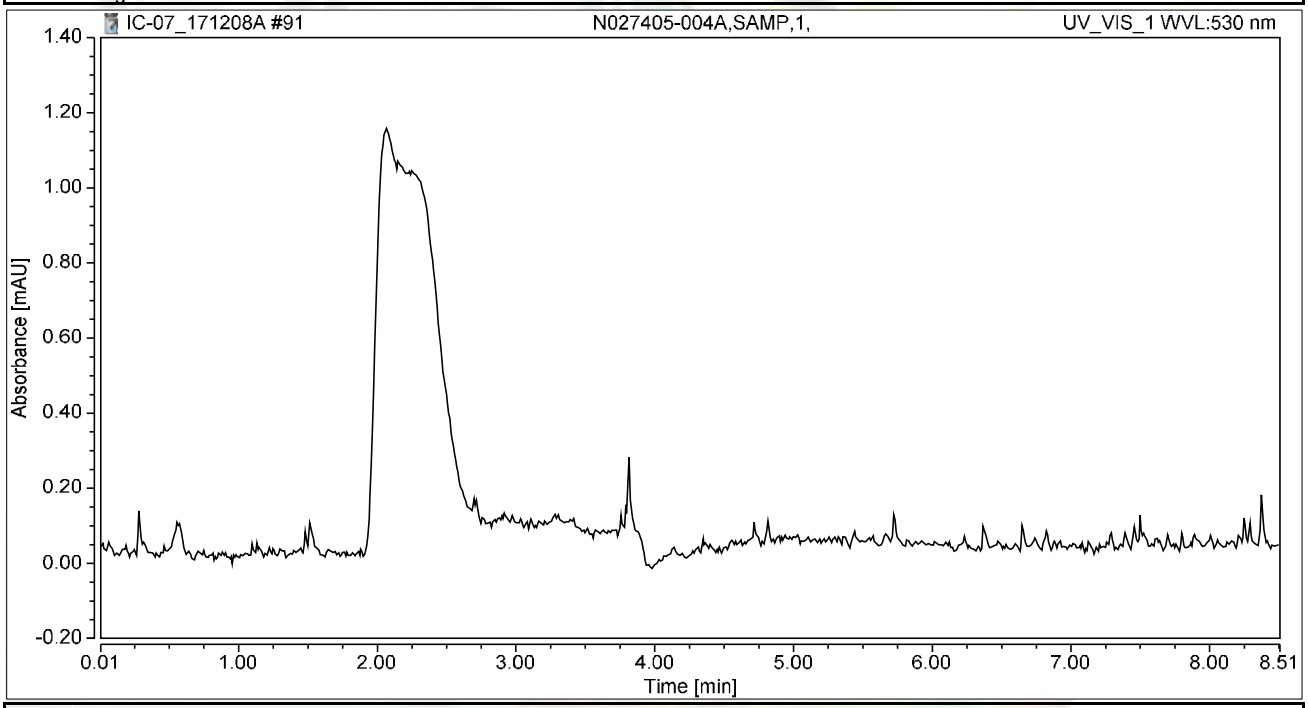
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.834	12.788	100.00	100.00	7.3047
Total:			**1.834**	**12.788**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 21:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

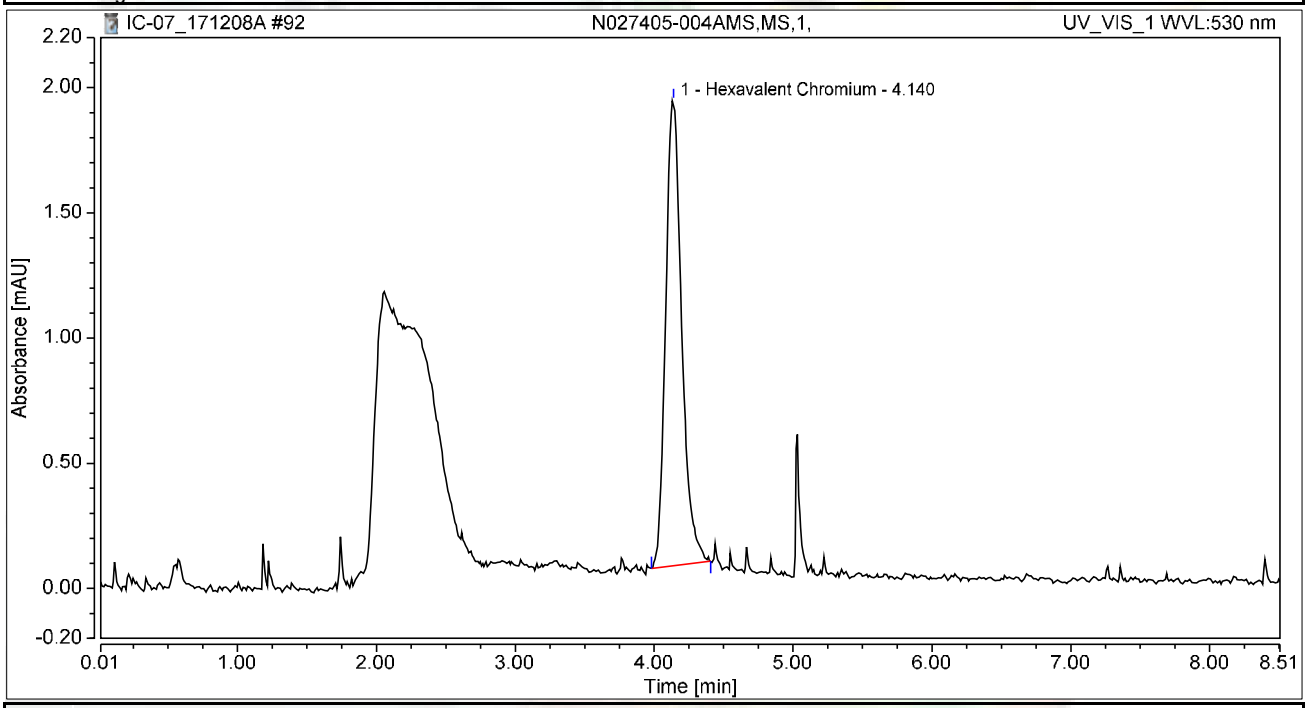
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-004AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 21:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

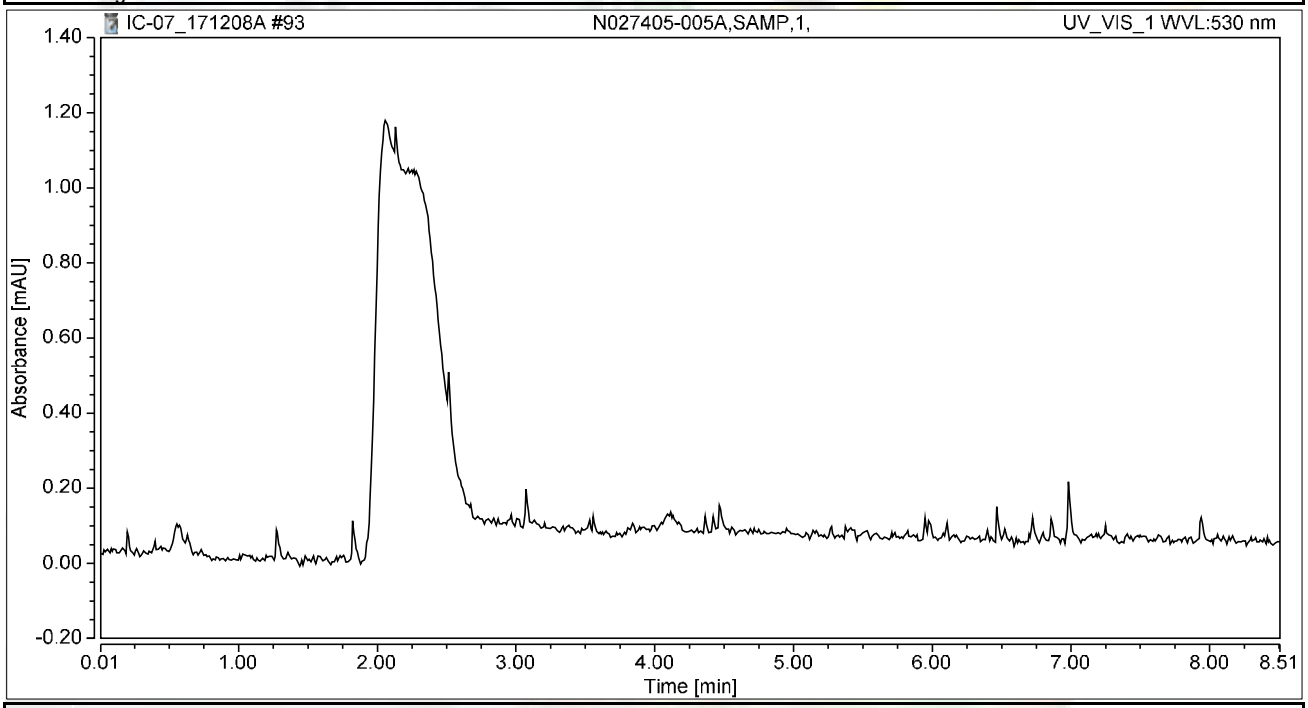
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.249	1.858	100.00	100.00	0.9921
Total:			**0.249**	**1.858**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 21:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

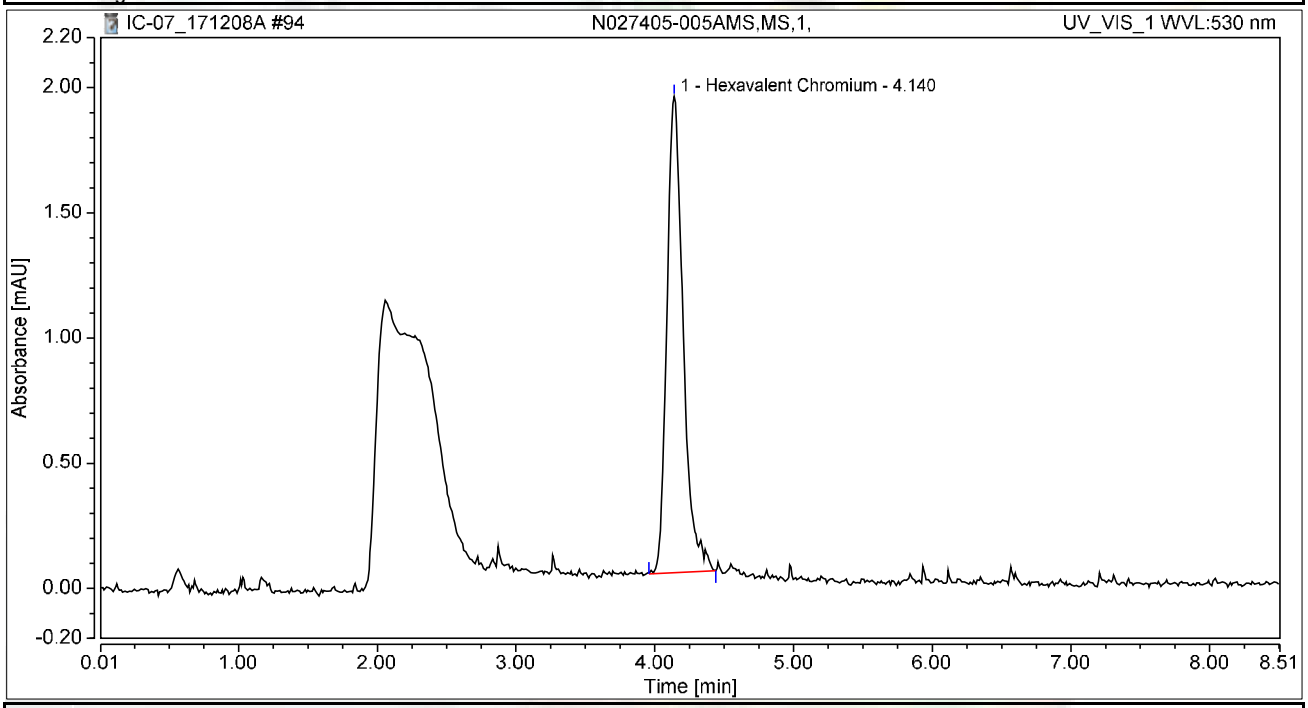
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-005AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 21:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

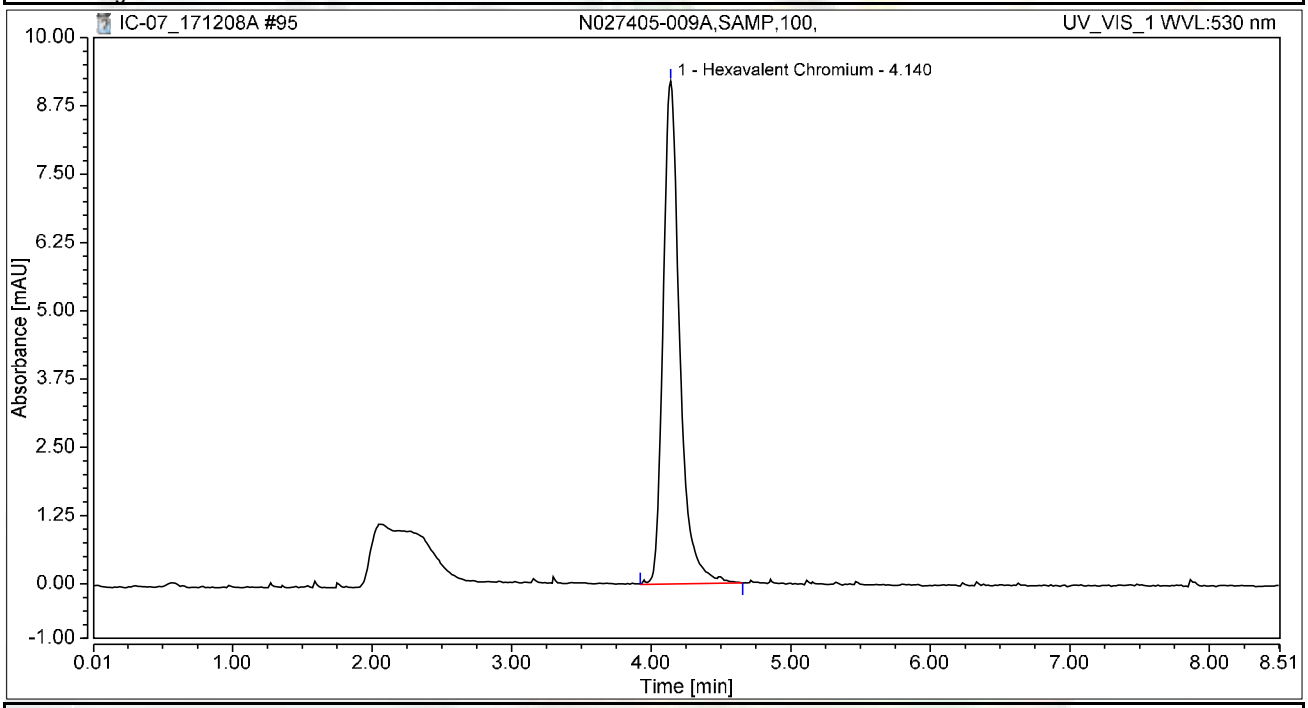
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.259	1.902	100.00	100.00	1.0328
Total:			**0.259**	**1.902**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-009A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 21:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

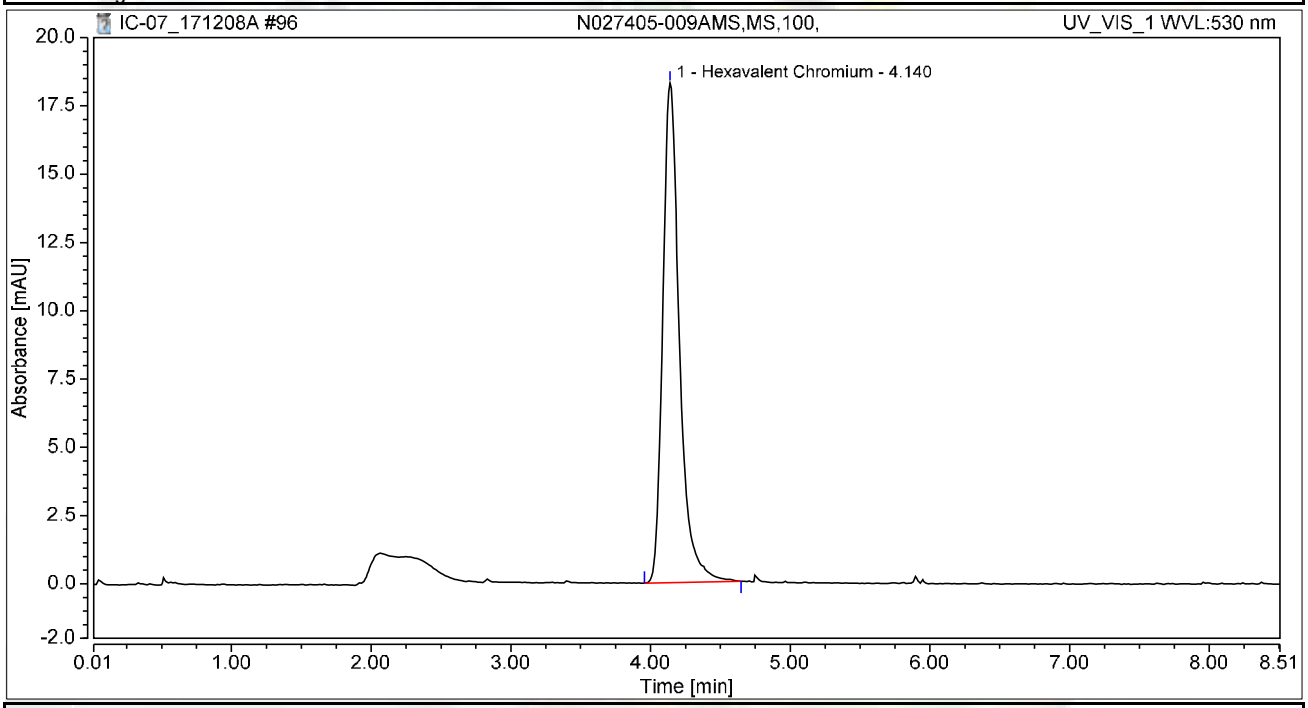
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.277	9.212	100.00	100.00	5.0850
Total:			**1.277**	**9.212**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-009AMS,MS,100,**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 22:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

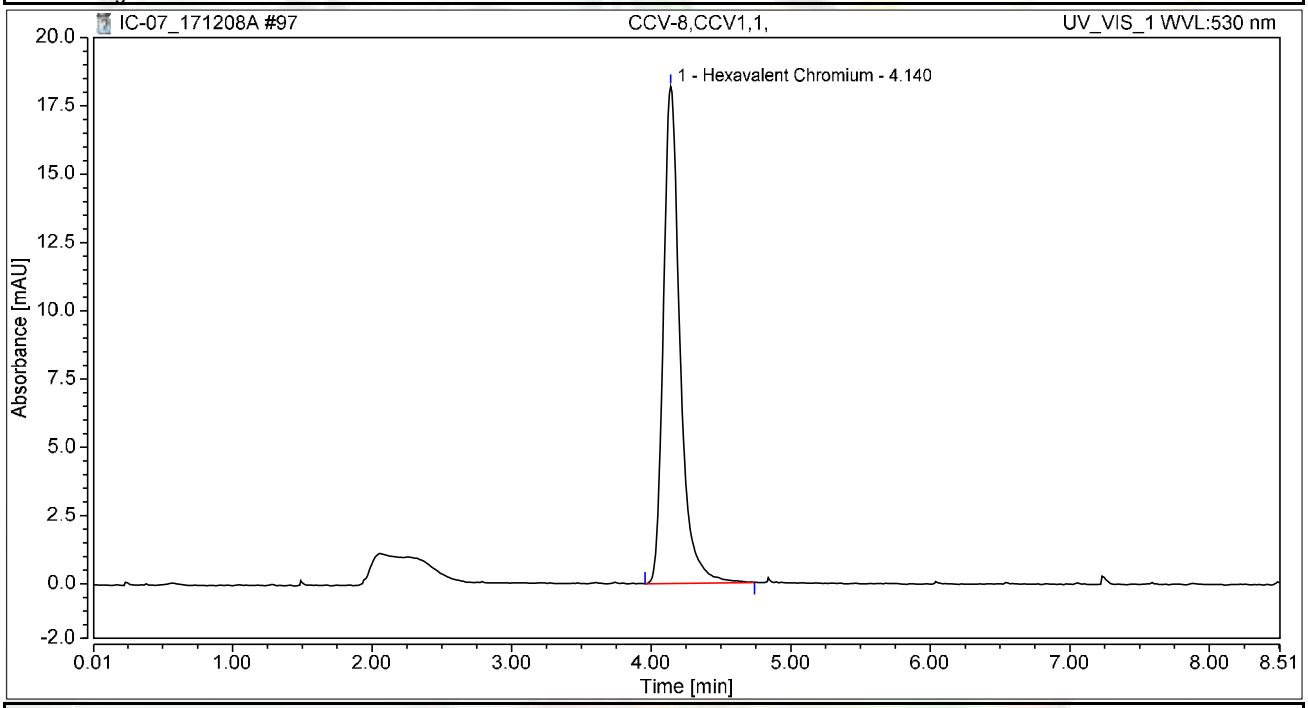
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.528	18.290	100.00	100.00	10.0693
Total:			**2.528**	**18.290**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-8,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 22:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

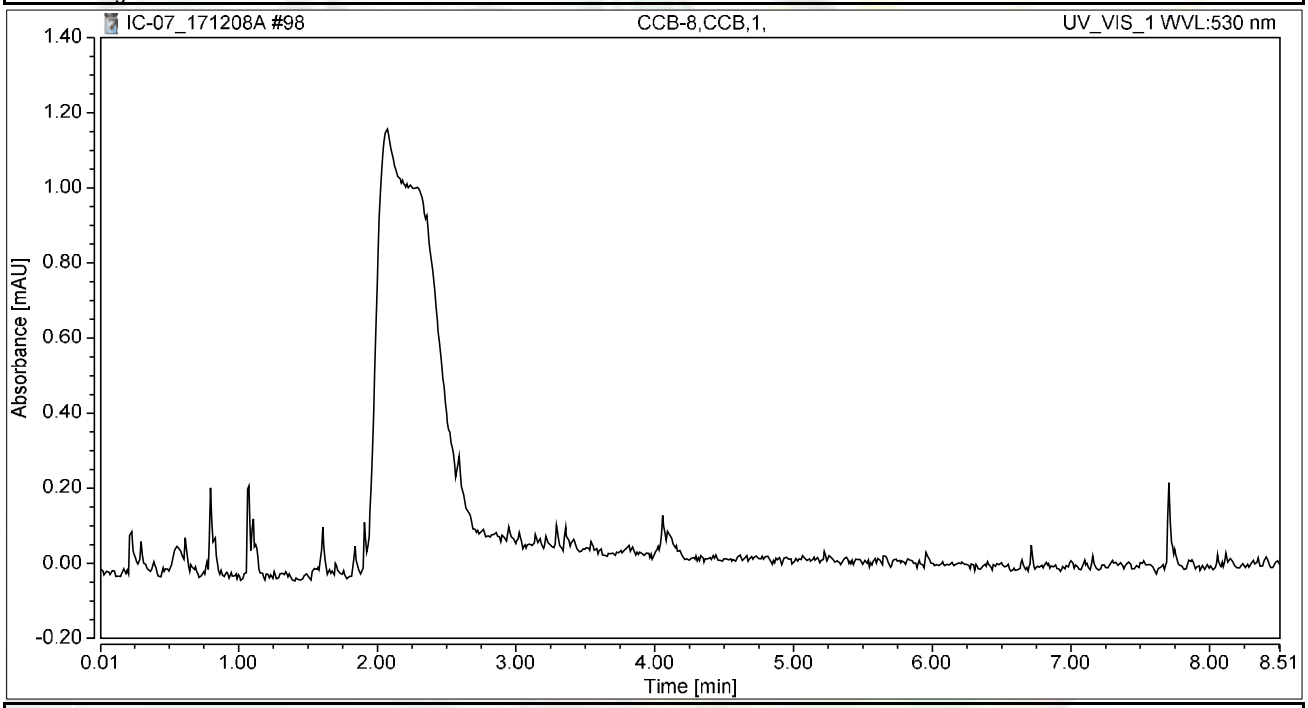
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.518	18.205	100.00	100.00	10.0272
Total:			**2.518**	**18.205**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-8,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 22:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

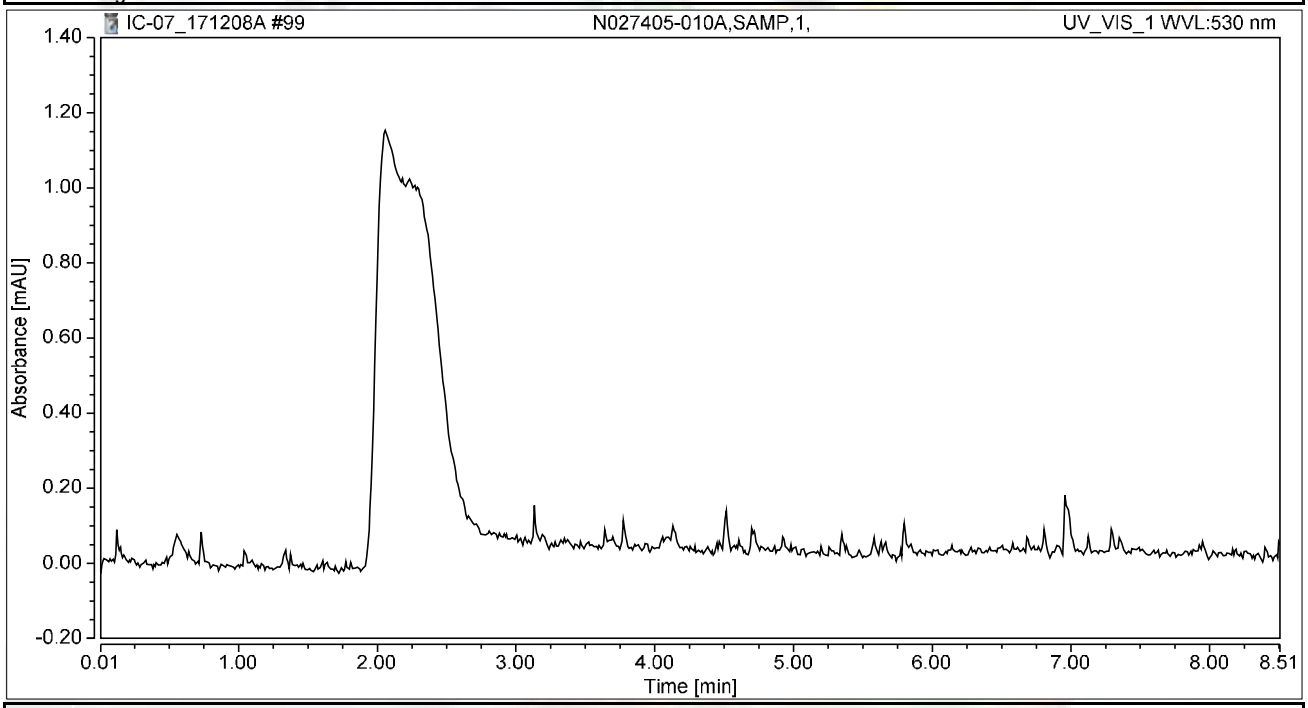
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 22:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

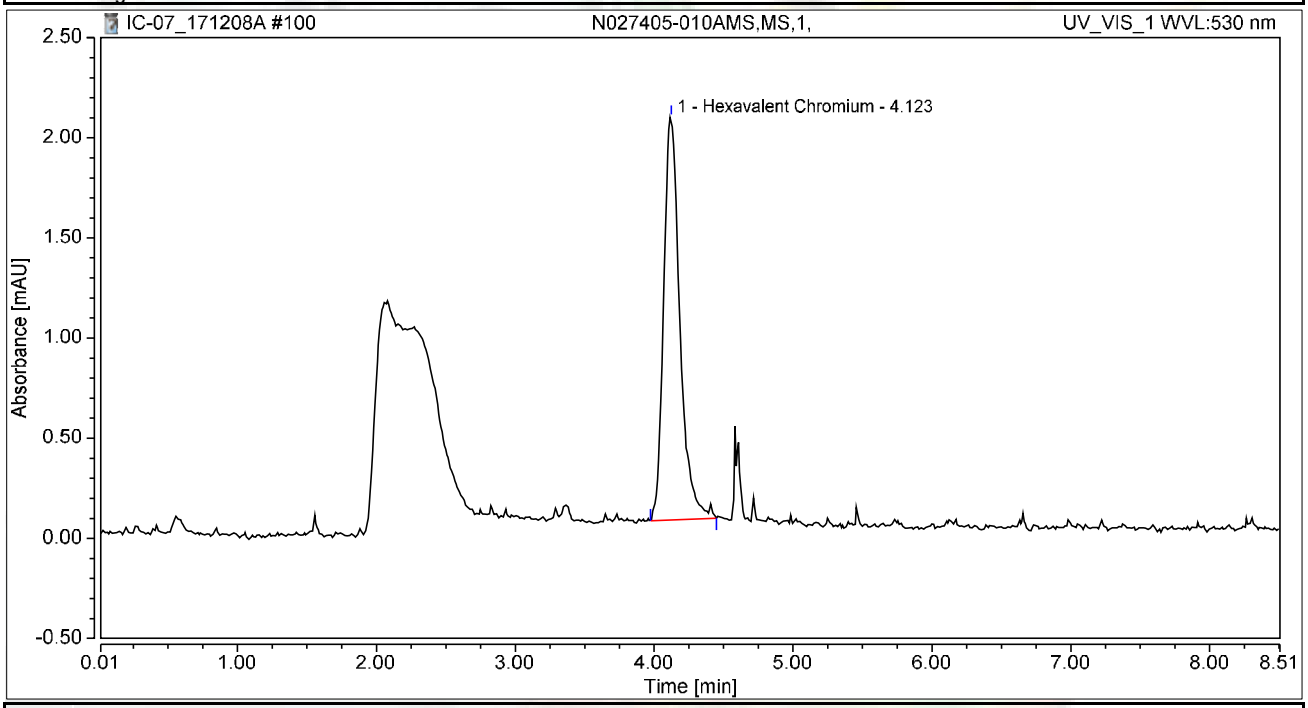
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-010AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 22:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

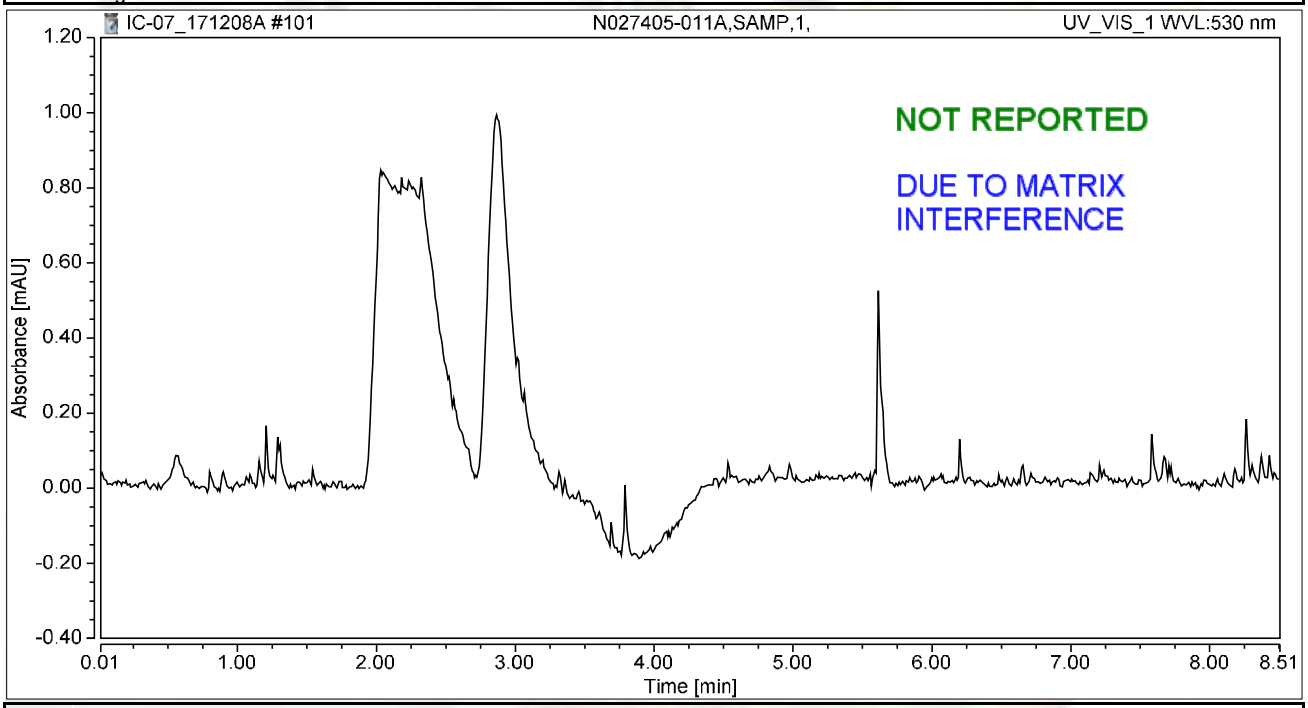
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.273	2.010	100.00	100.00	1.0865
Total:			**0.273**	**2.010**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-011A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 22:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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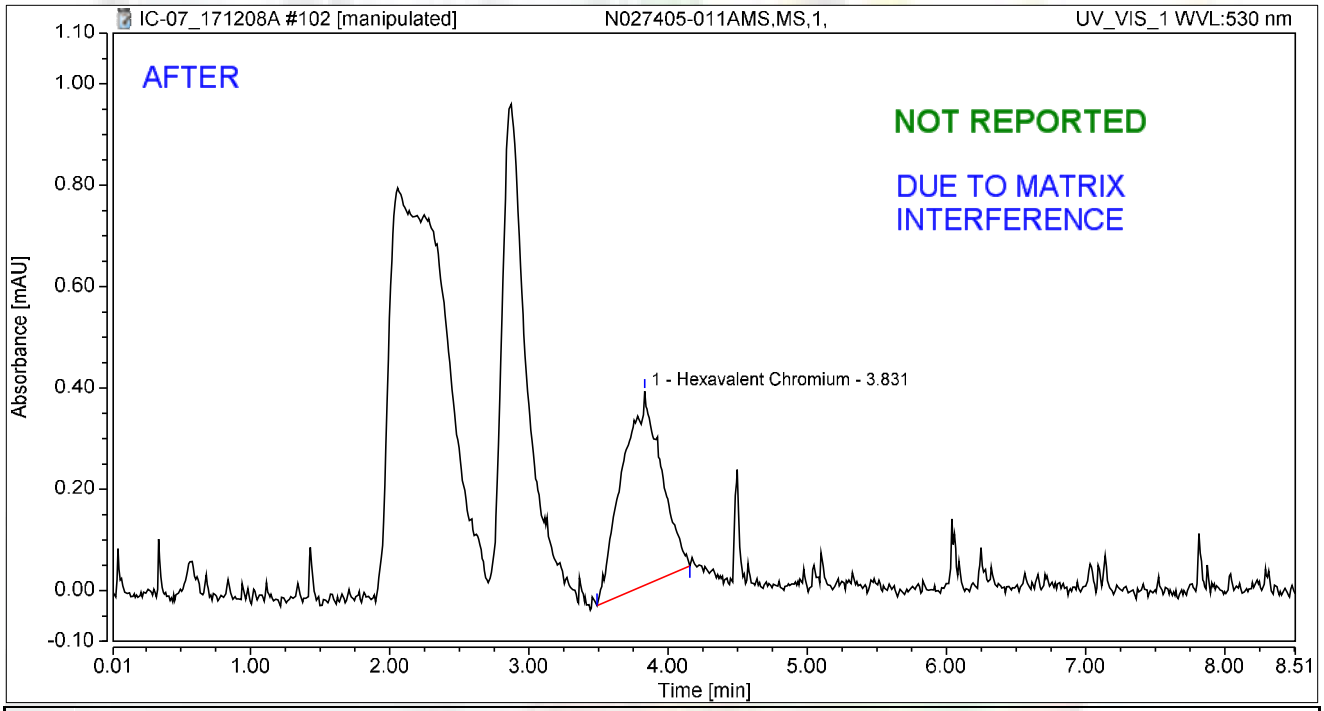
Chromatogram and Results

Injection Details

Injection Name:	**N027405-011AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 23:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.831	0.125	0.383	100.00	100.00	0.4988
Total:			**0.125**	**0.383**	**100.00**	**100.00**	

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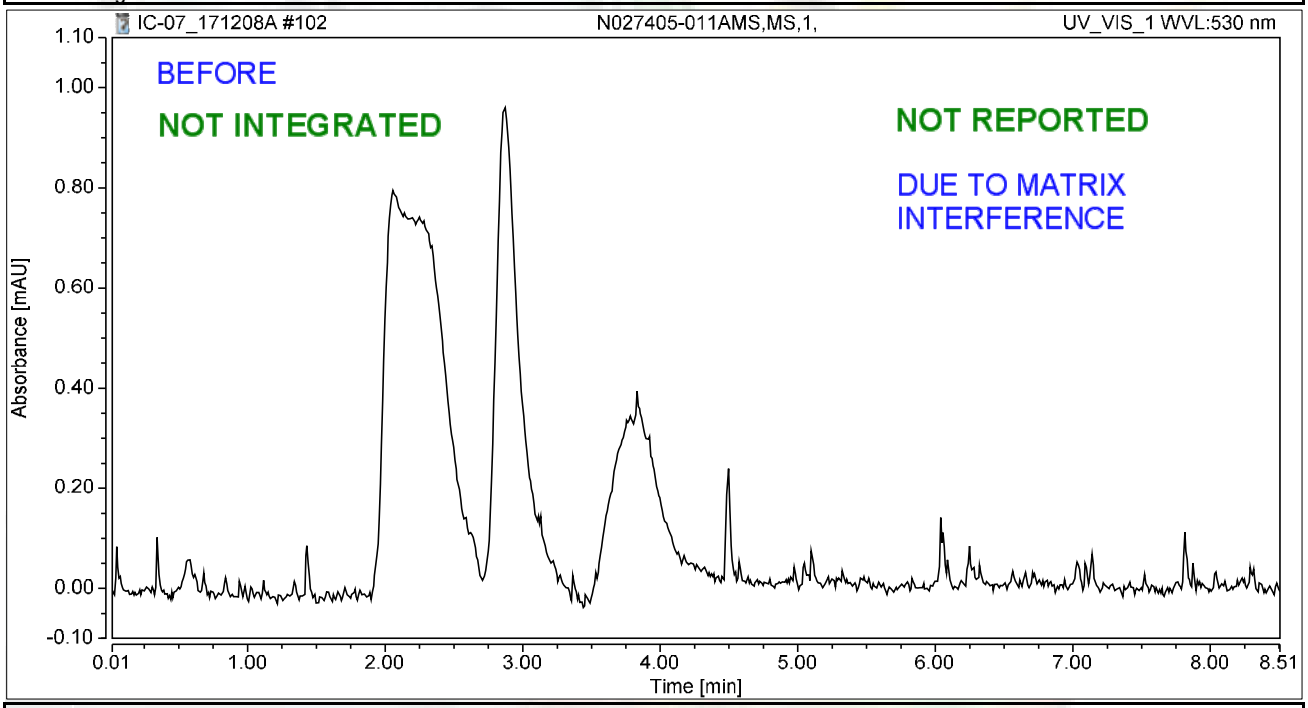
Chromatogram and Results

Injection Details

Injection Name:	**N027405-011AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 23:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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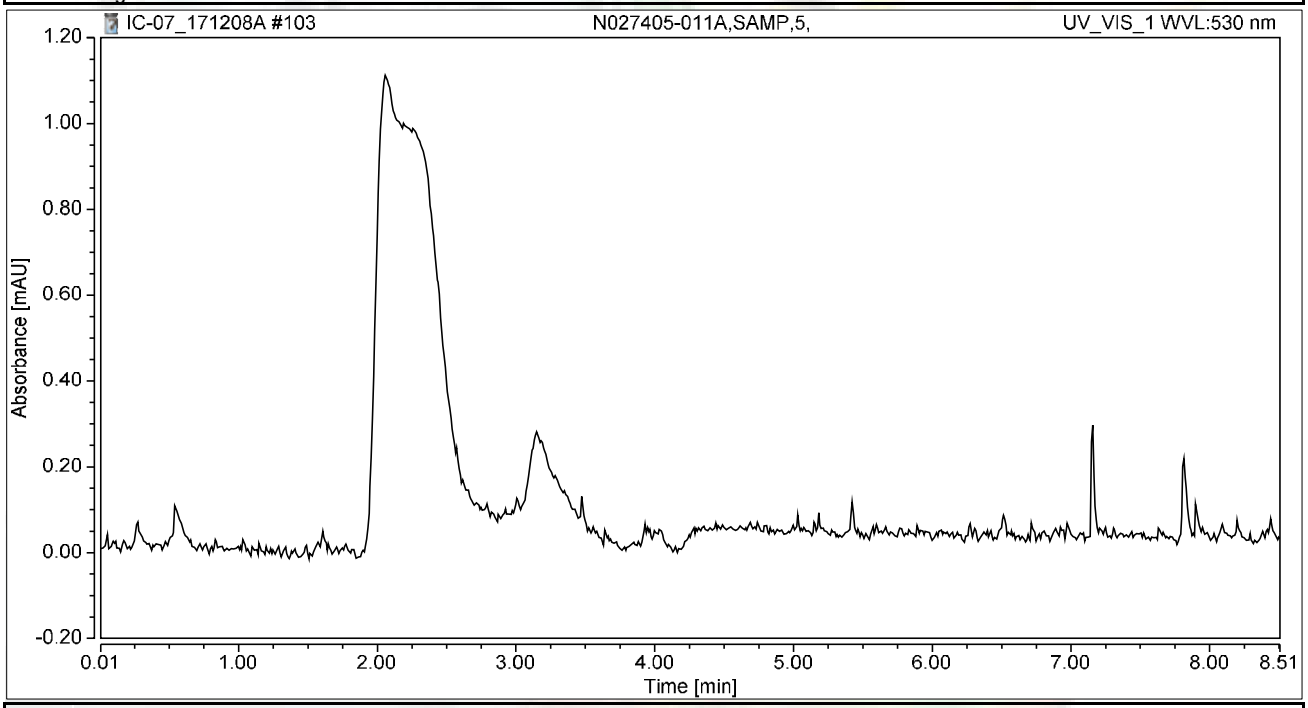
Chromatogram and Results

Injection Details

Injection Name:	**N027405-011A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 23:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

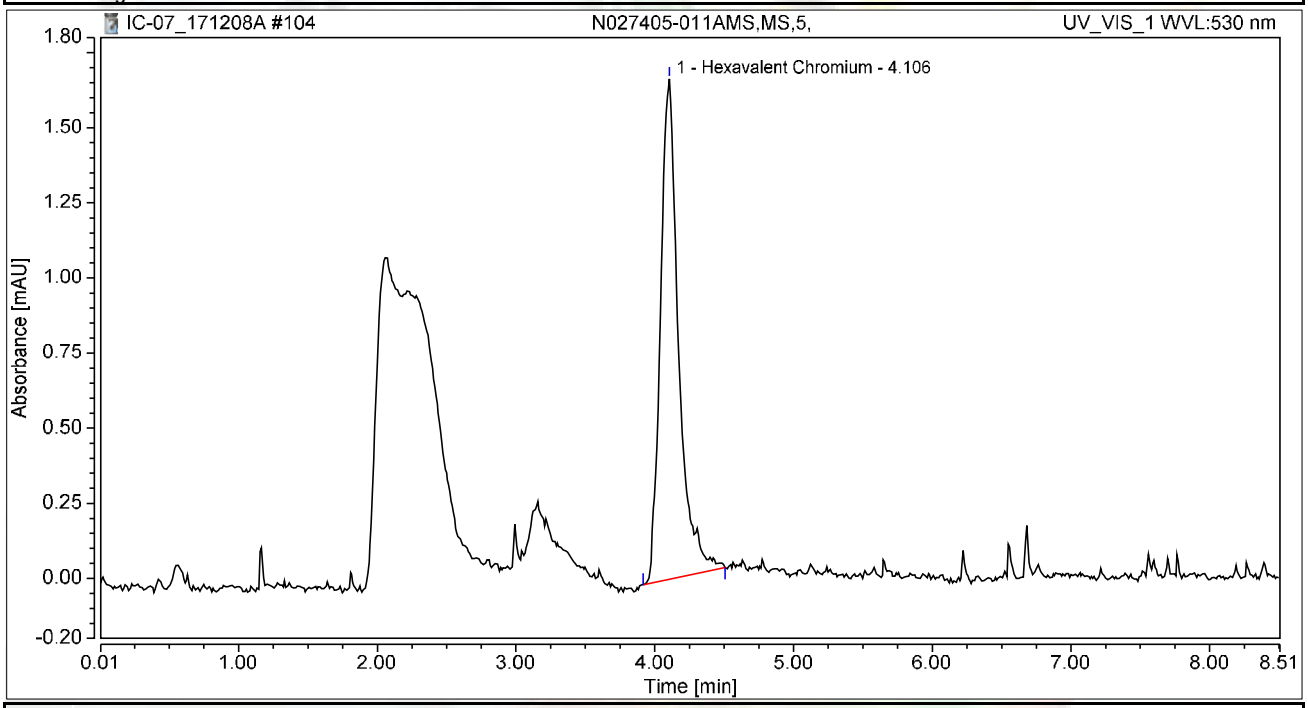
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-011AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 23:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

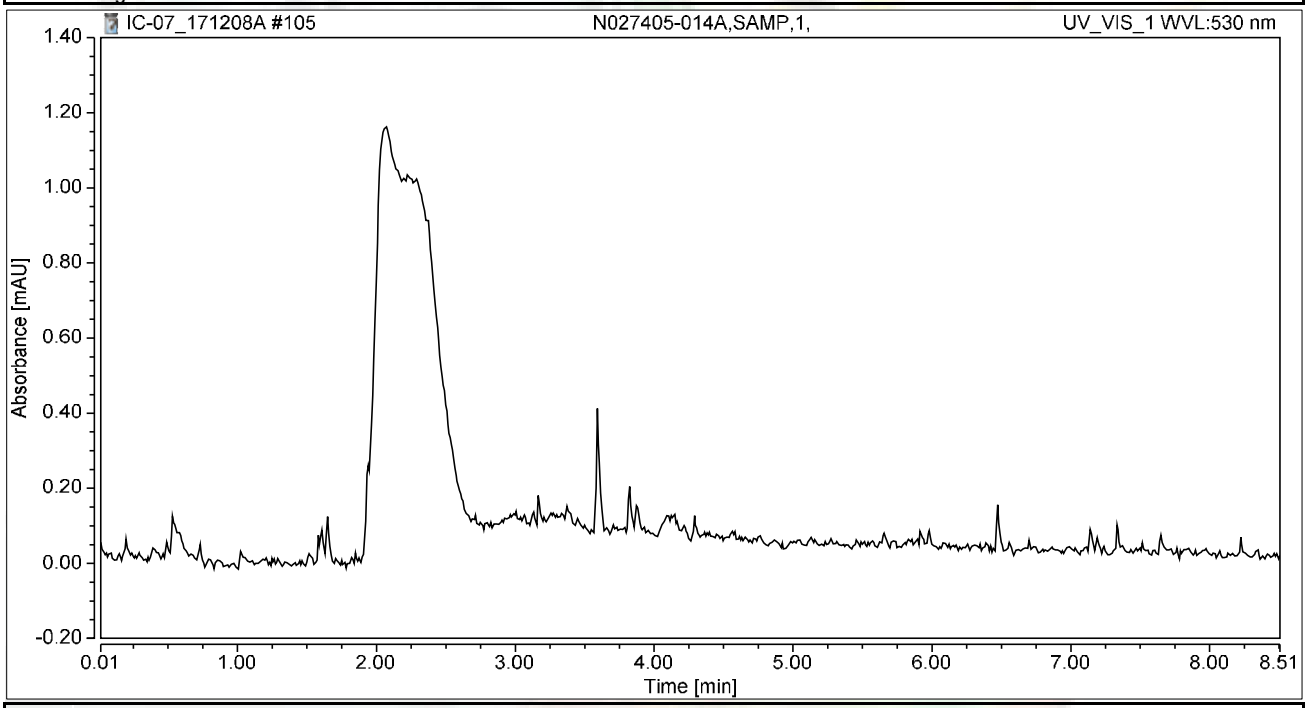
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.252	1.666	100.00	100.00	1.0048
Total:			**0.252**	**1.666**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-014A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 23:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

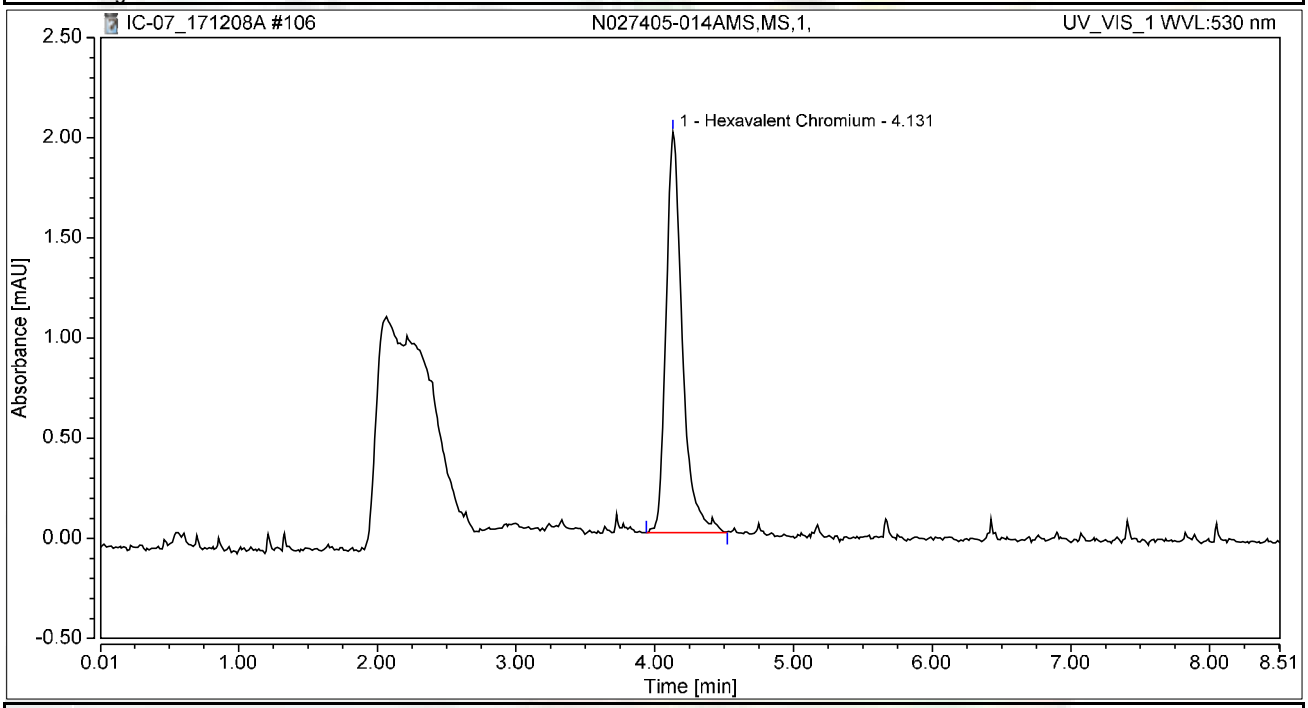
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 23:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

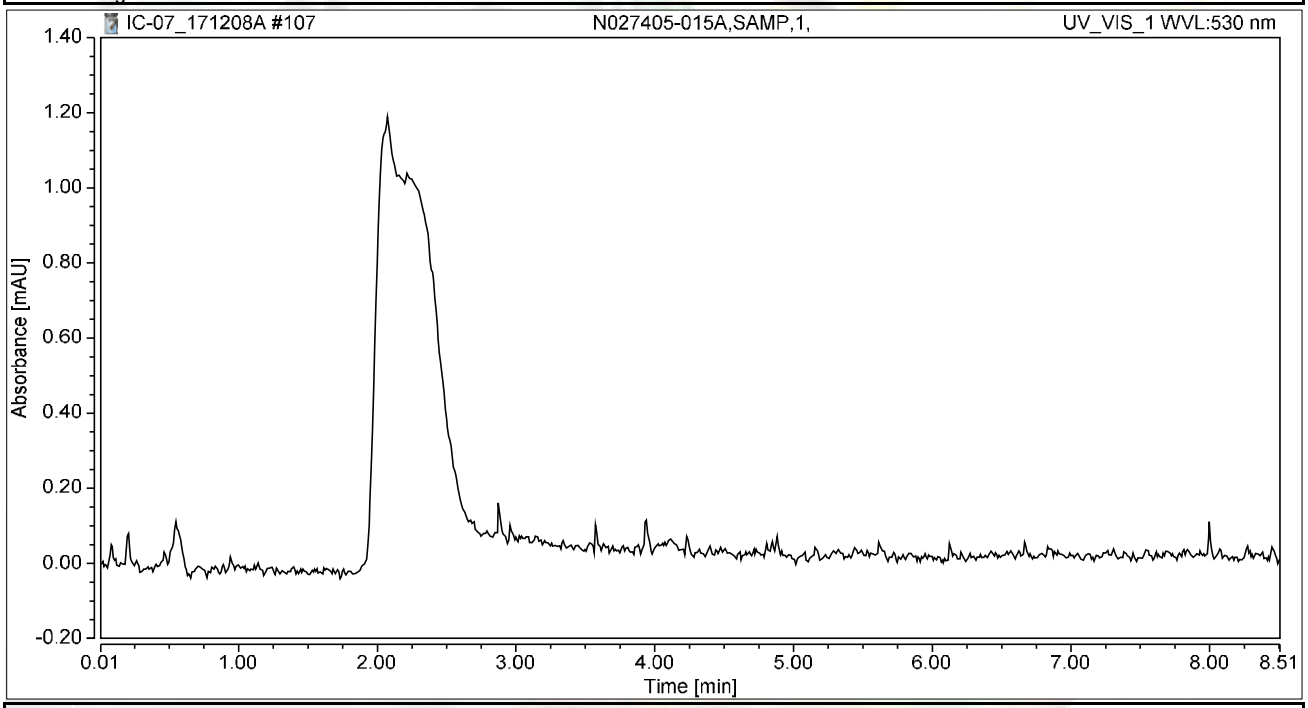
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.273	2.000	100.00	100.00	1.0859
Total:			**0.273**	**2.000**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 23:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

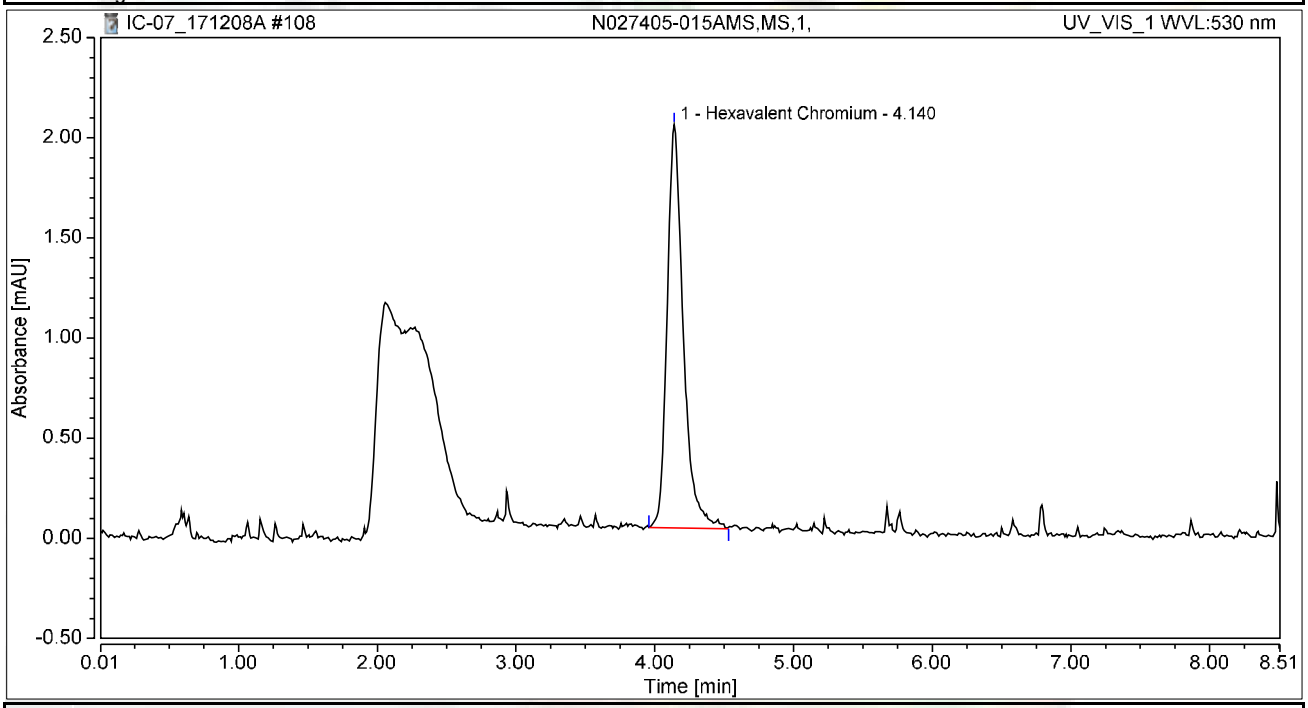
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Dec/17 23:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

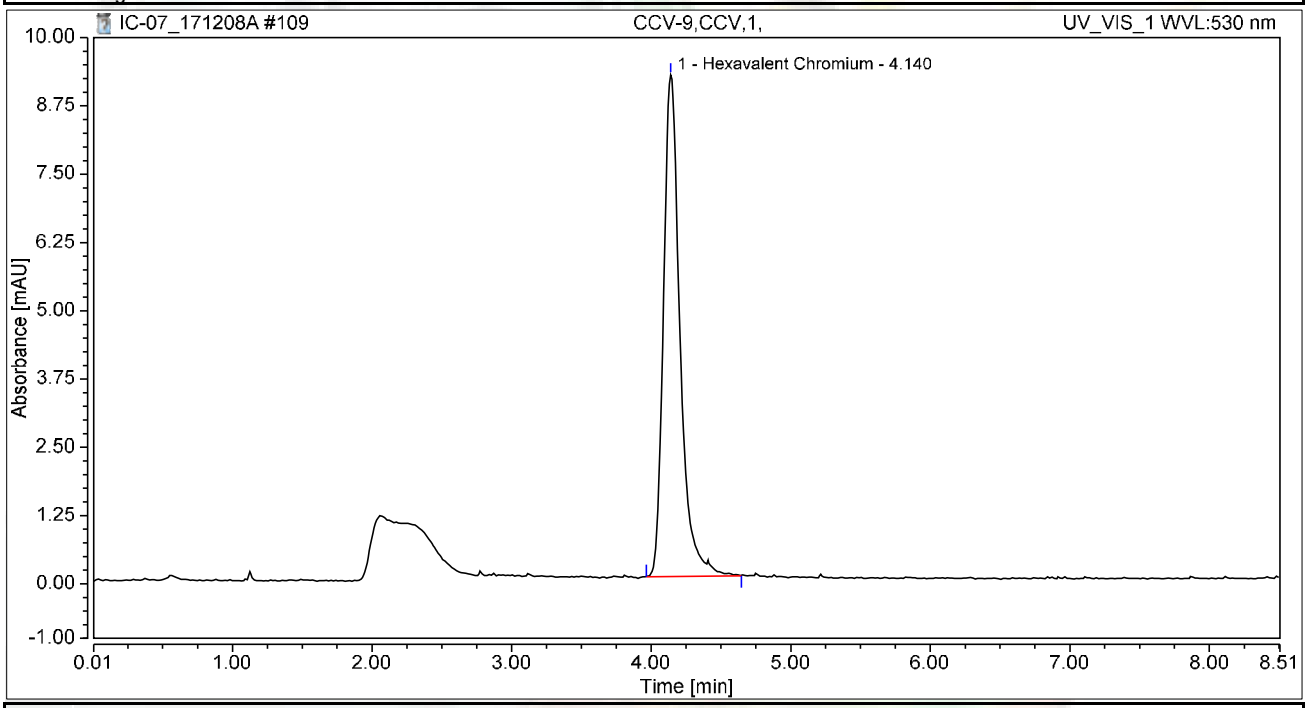
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.273	2.013	100.00	100.00	1.0853
Total:			**0.273**	**2.013**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-9,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 00:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

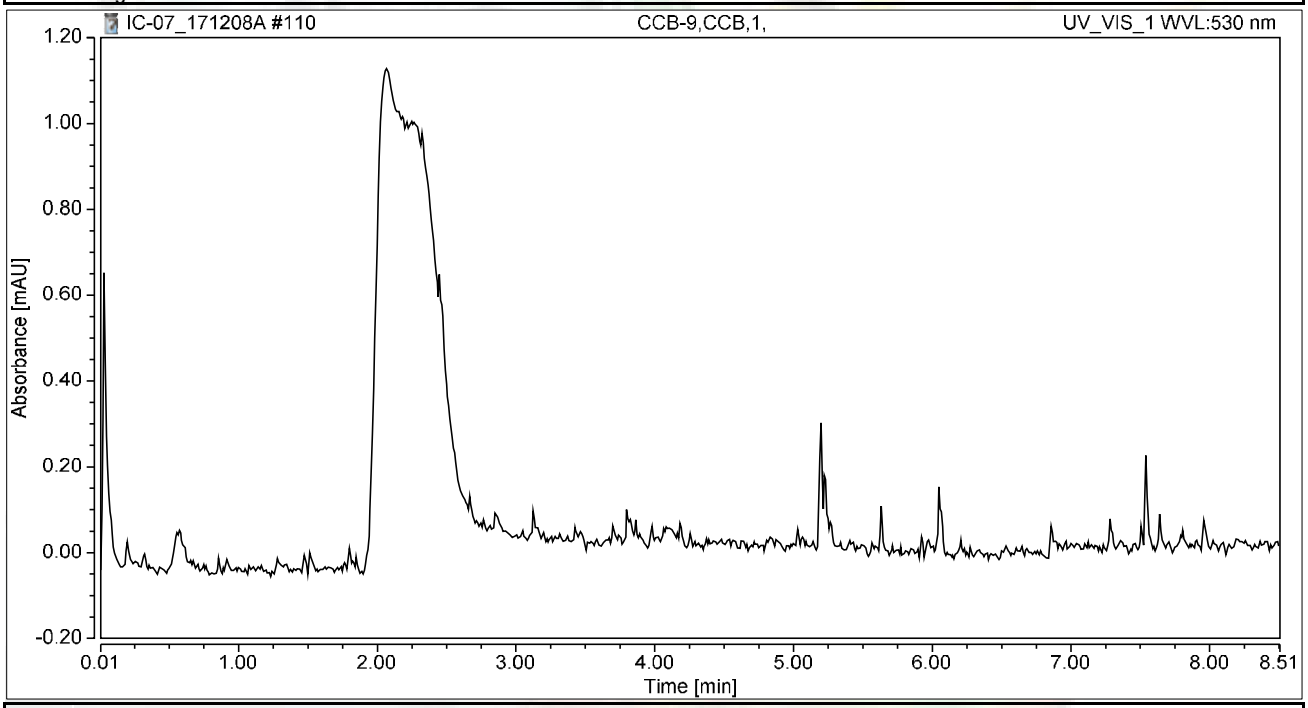
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.263	9.178	100.00	100.00	5.0286
Total:			**1.263**	**9.178**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-9,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 00:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

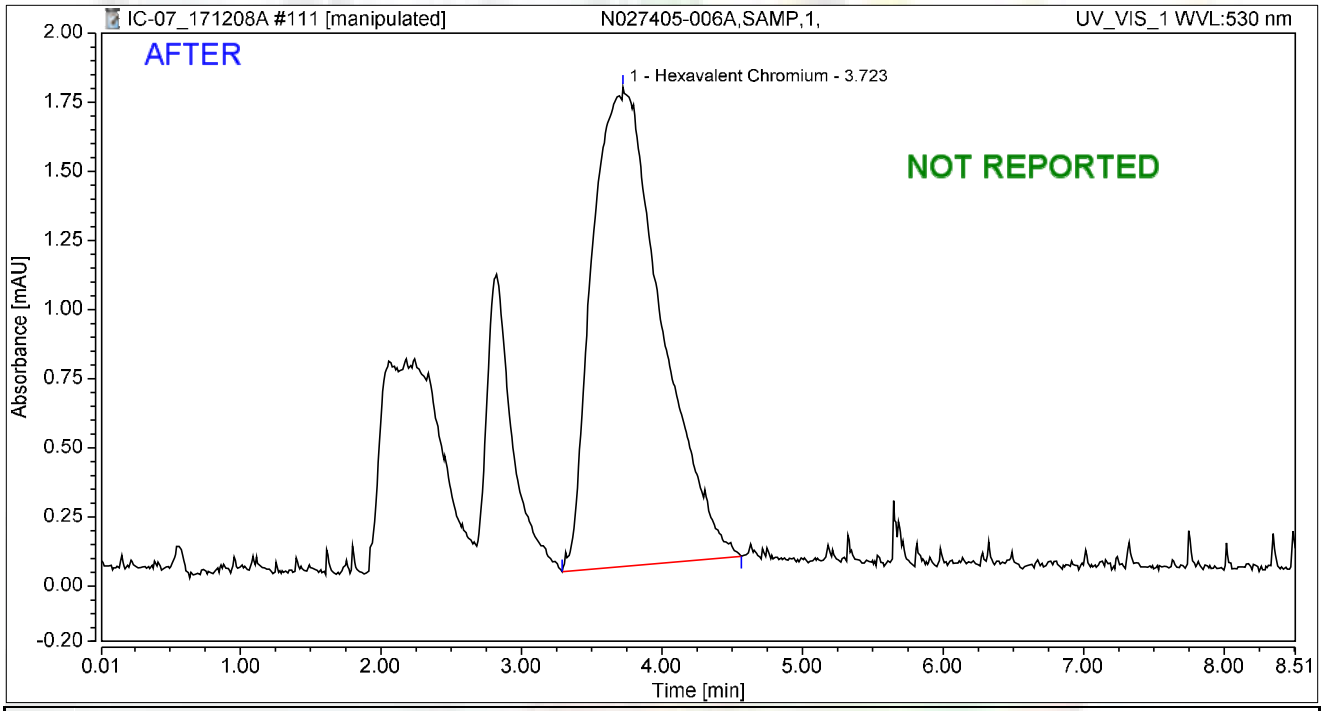
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-006A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 00:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	0.983	1.734	100.00	100.00	3.9133
Total:			**0.983**	**1.734**	**100.00**	**100.00**	

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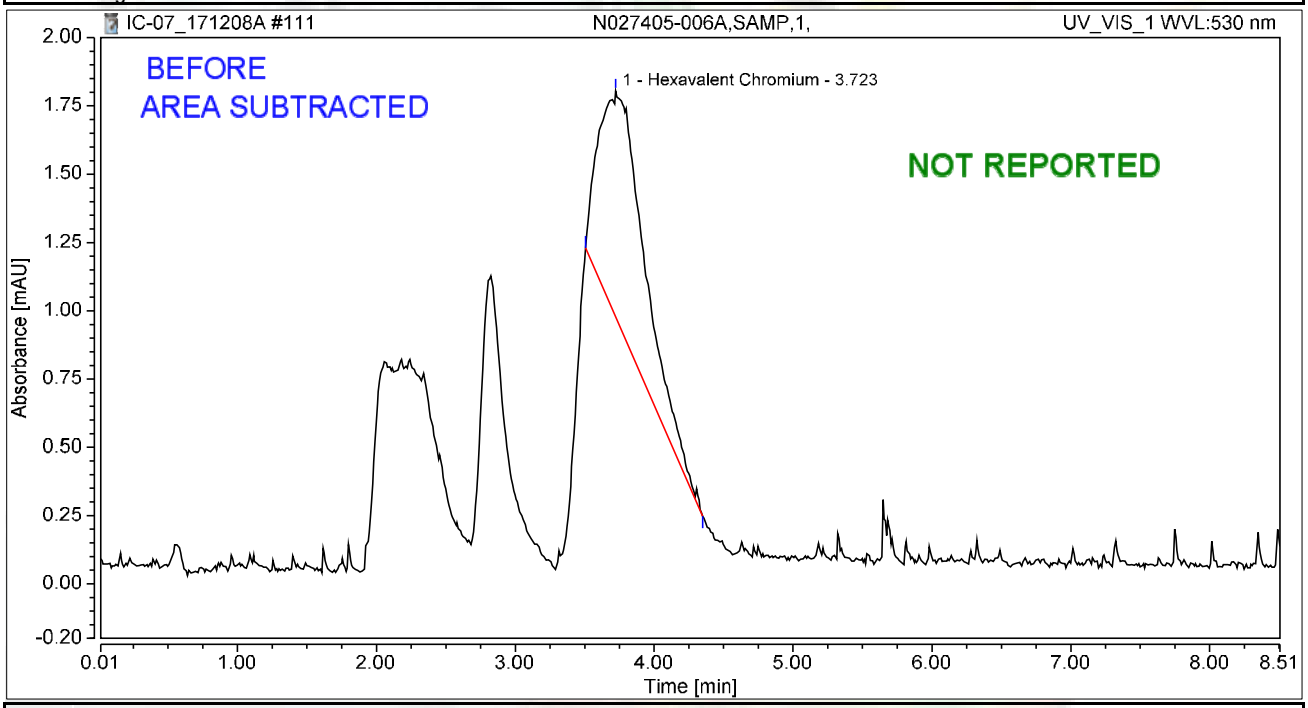
Chromatogram and Results

Injection Details

Injection Name:	**N027405-006A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 00:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	0.322	0.828	100.00	100.00	1.2825
Total:			**0.322**	**0.828**	**100.00**	**100.00**	

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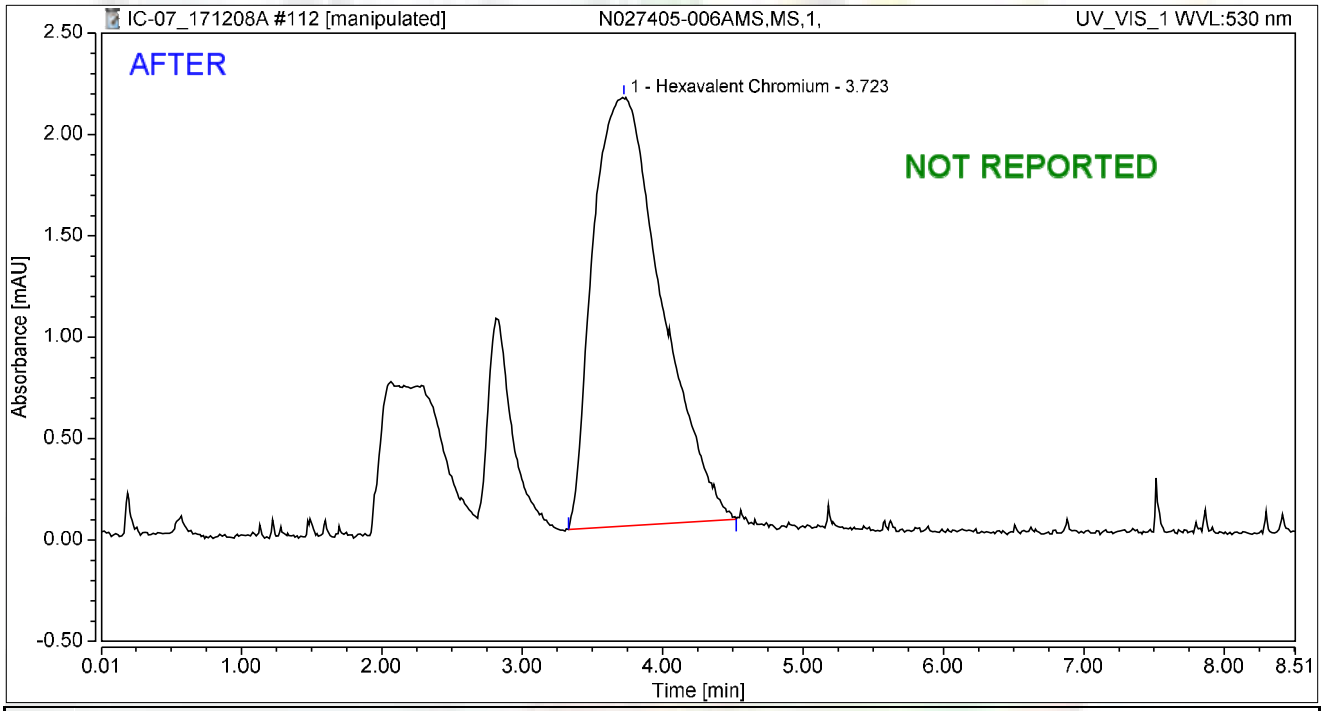
Chromatogram and Results

Injection Details

Injection Name:	**N027405-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 00:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	1.199	2.114	100.00	100.00	4.7736
Total:			**1.199**	**2.114**	**100.00**	**100.00**	

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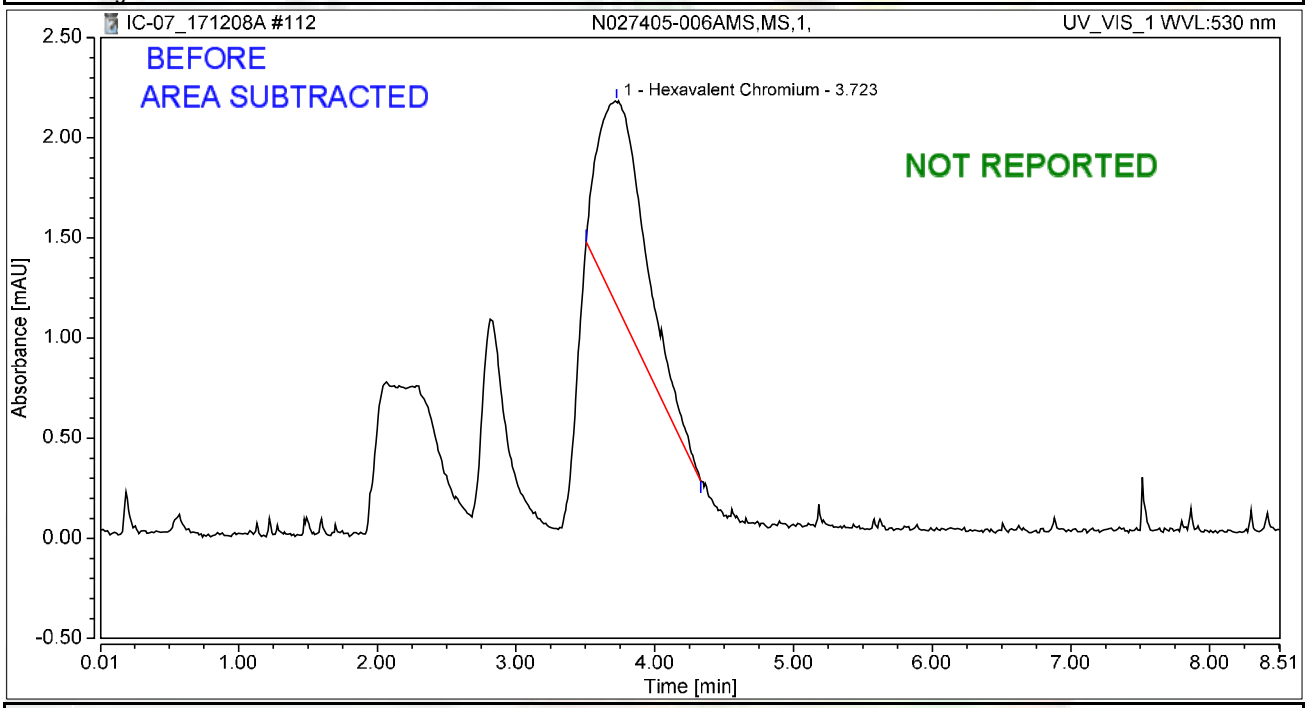
Chromatogram and Results

Injection Details

Injection Name:	**N027405-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 00:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	0.413	1.016	100.00	100.00	1.6443
Total:			**0.413**	**1.016**	**100.00**	**100.00**	

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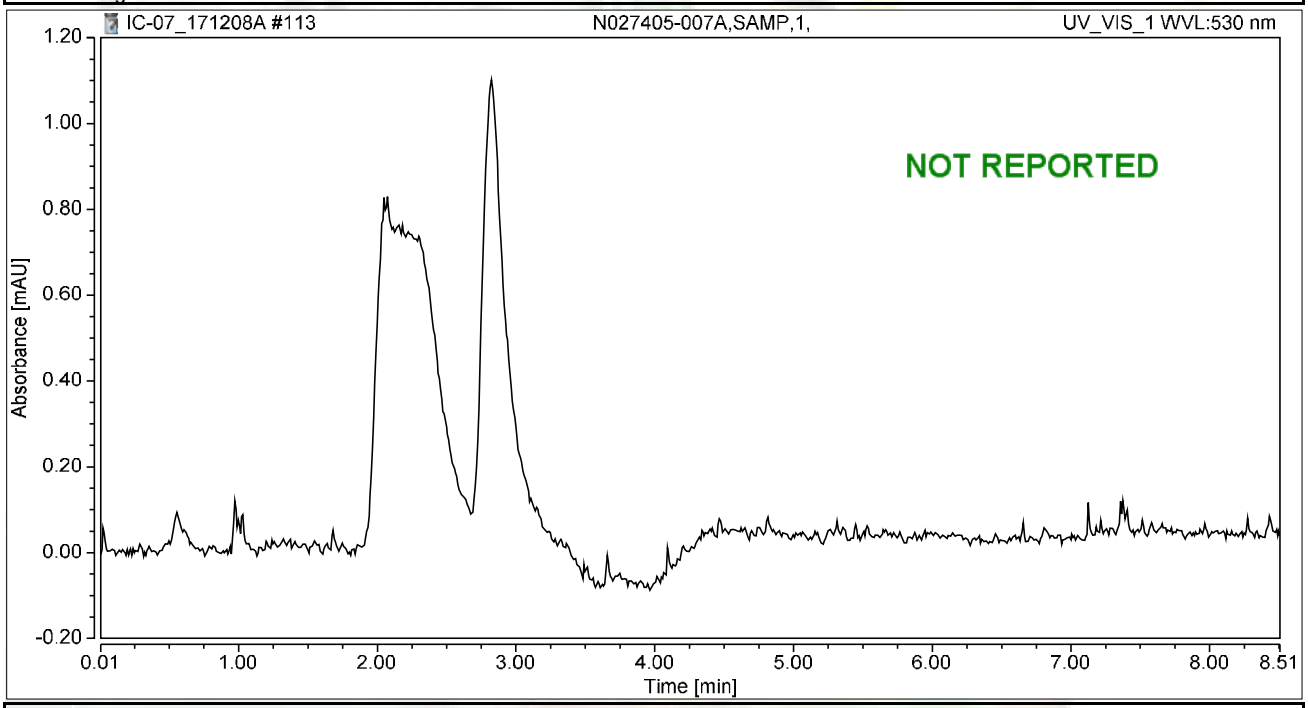
Chromatogram and Results

Injection Details

Injection Name:	**N027405-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 00:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

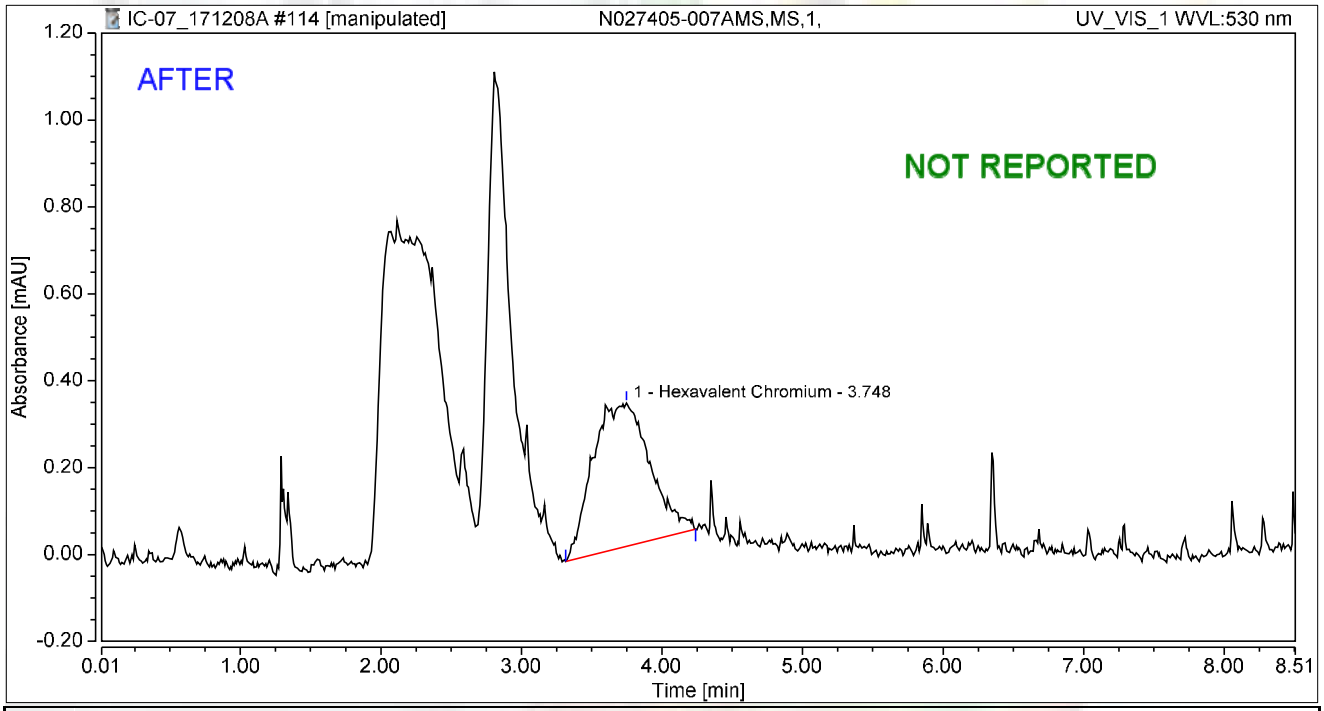
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-007AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 00:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.748	0.157	0.329	100.00	100.00	0.6255
Total:			**0.157**	**0.329**	**100.00**	**100.00**	

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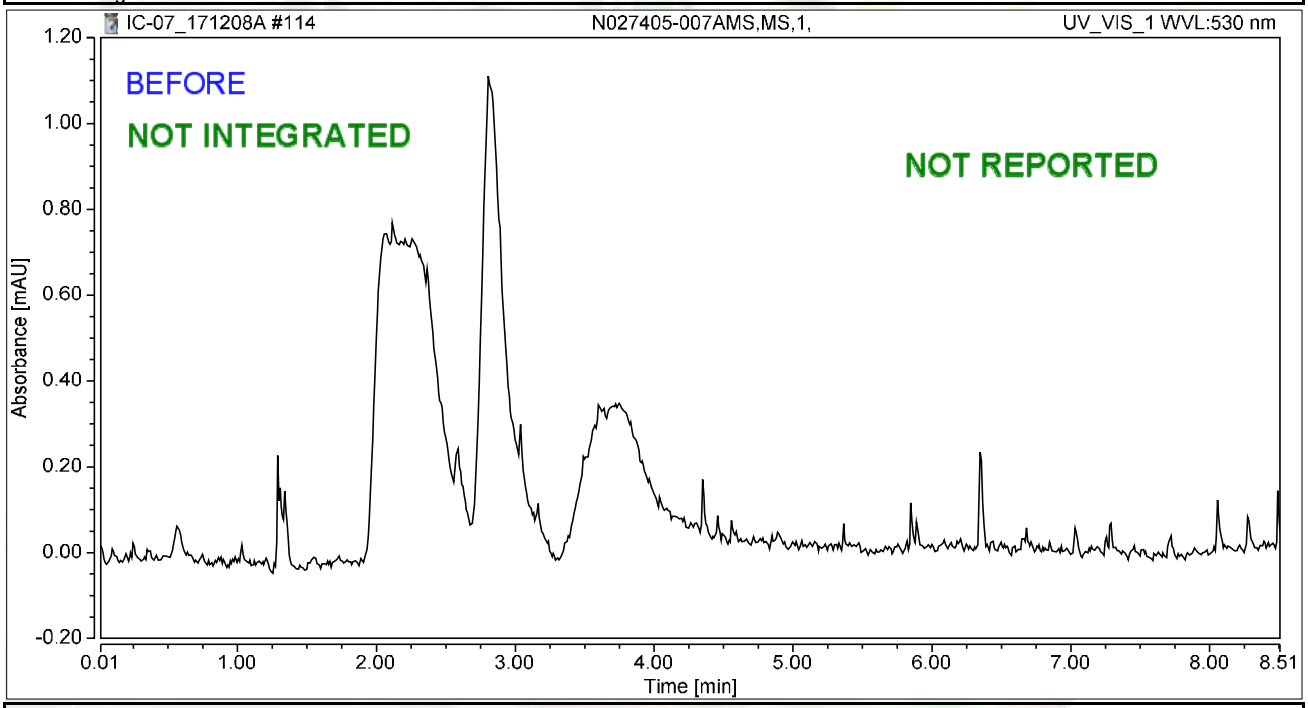
Chromatogram and Results

Injection Details

Injection Name:	**N027405-007AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 00:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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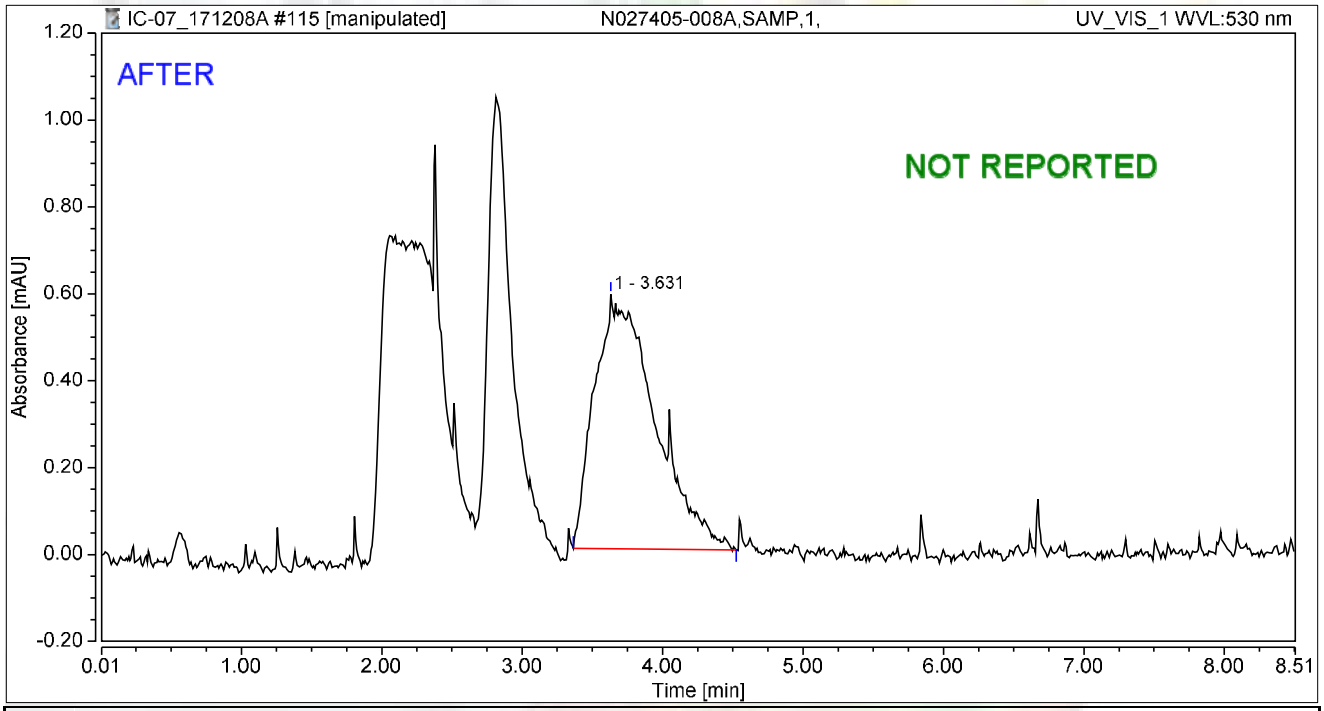
Chromatogram and Results

Injection Details

Injection Name:	**N027405-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 01:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.631	0.292	0.585	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.292**	**0.585**	**100.00**	**100.00**	

rba 12/16/2017

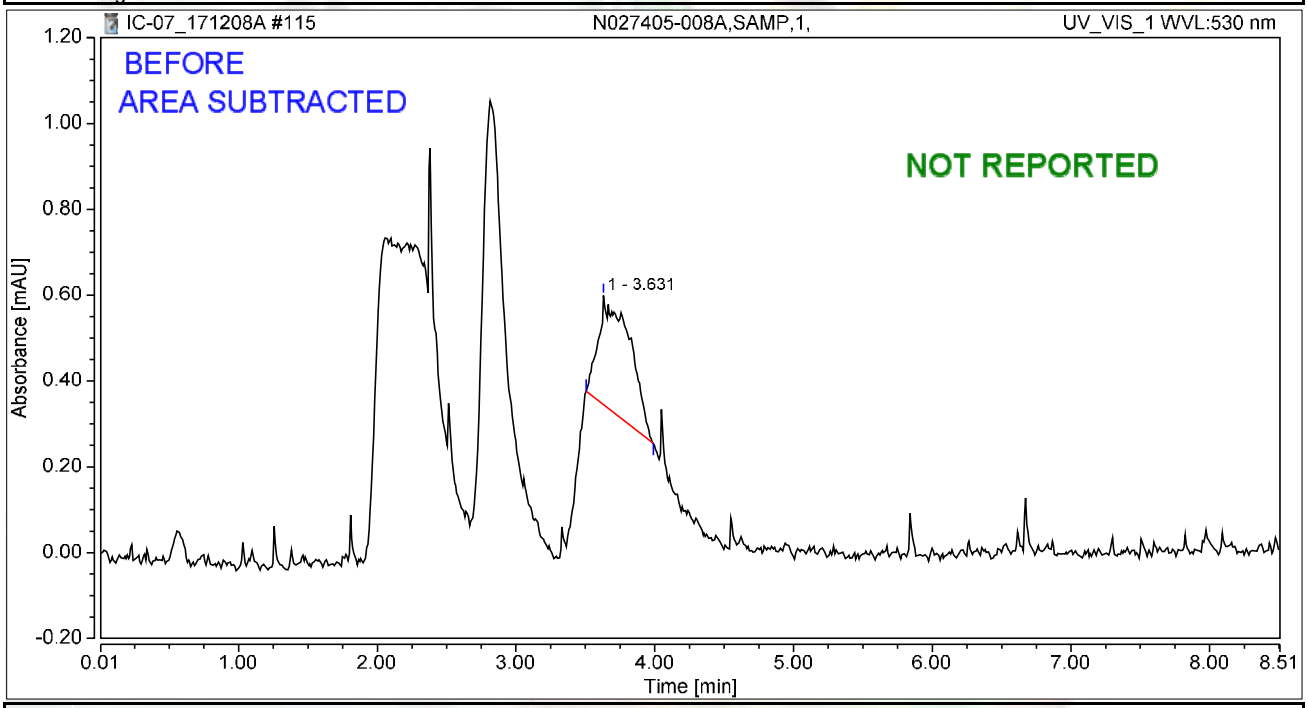
12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027405-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 01:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.631	0.071	0.254	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.071**	**0.254**	**100.00**	**100.00**	

rba 12/16/2017

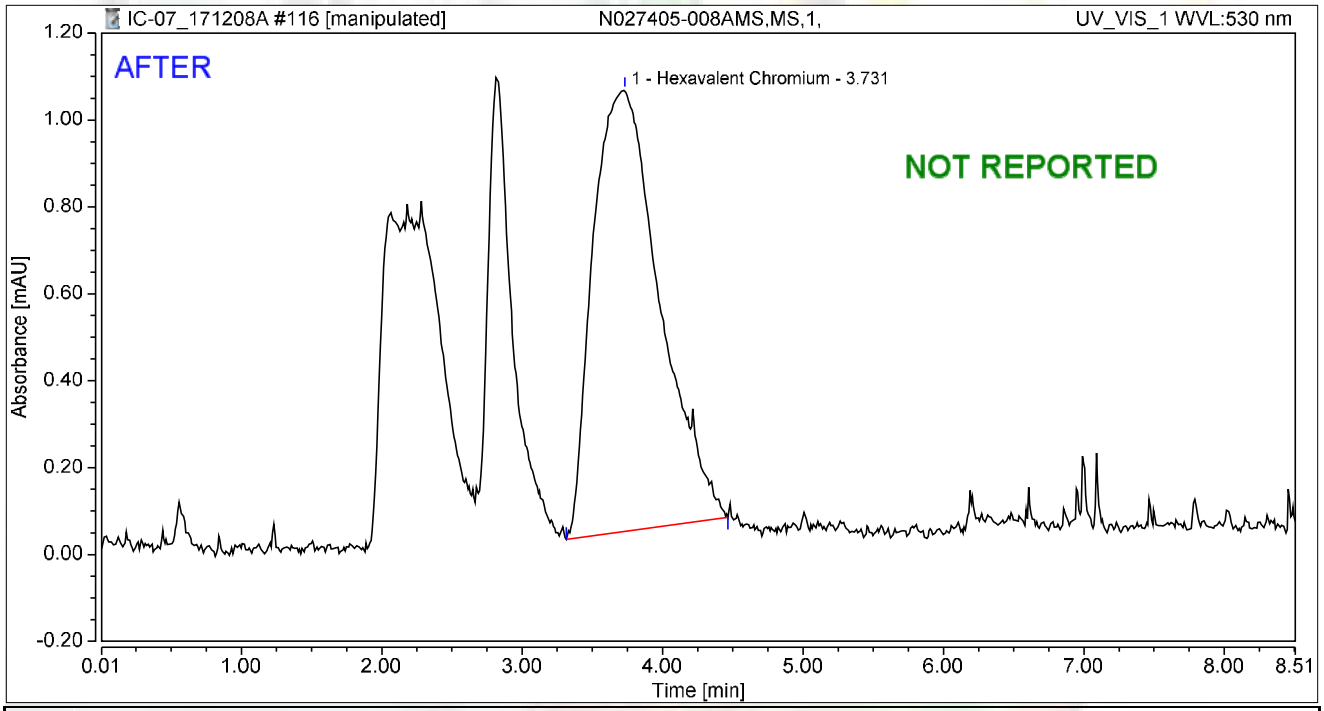
12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027405-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 01:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.731	0.559	1.017	100.00	100.00	2.2260
Total:			**0.559**	**1.017**	**100.00**	**100.00**	

rba 12/16/2017

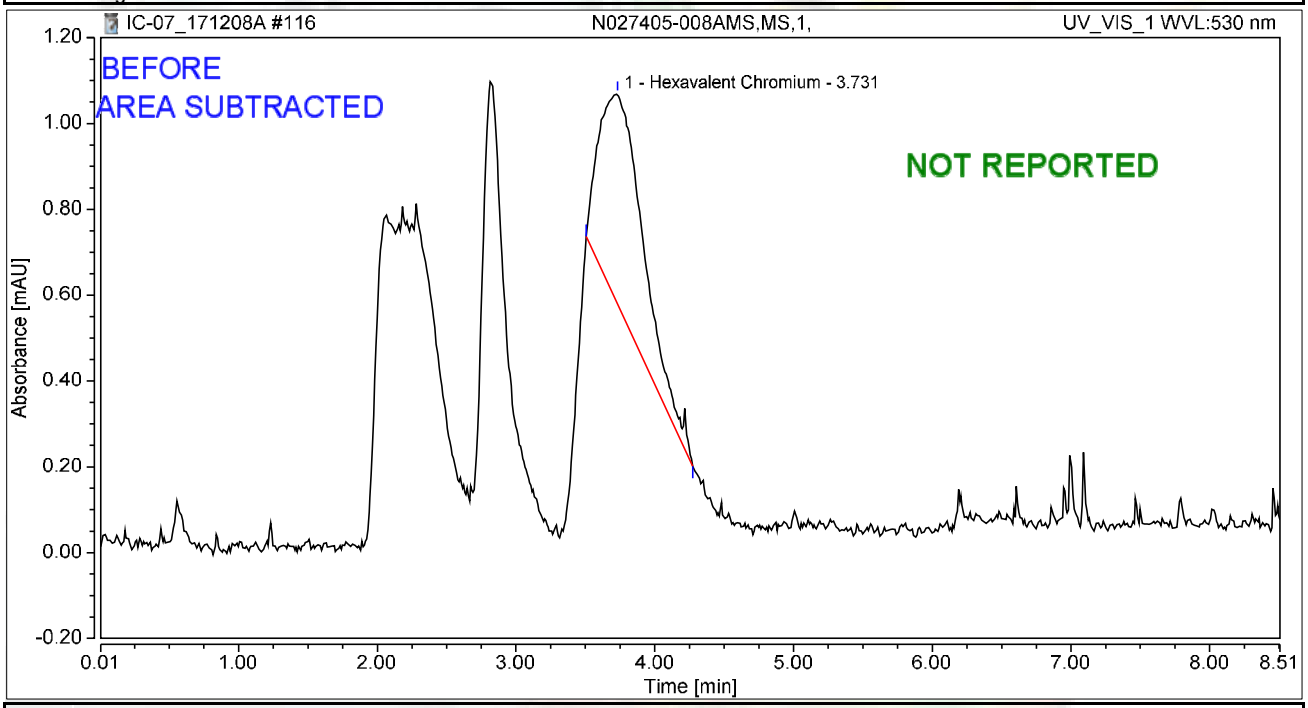
12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027405-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 01:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.731	0.182	0.491	100.00	100.00	0.7248
Total:			**0.182**	**0.491**	**100.00**	**100.00**	

rba 12/16/2017

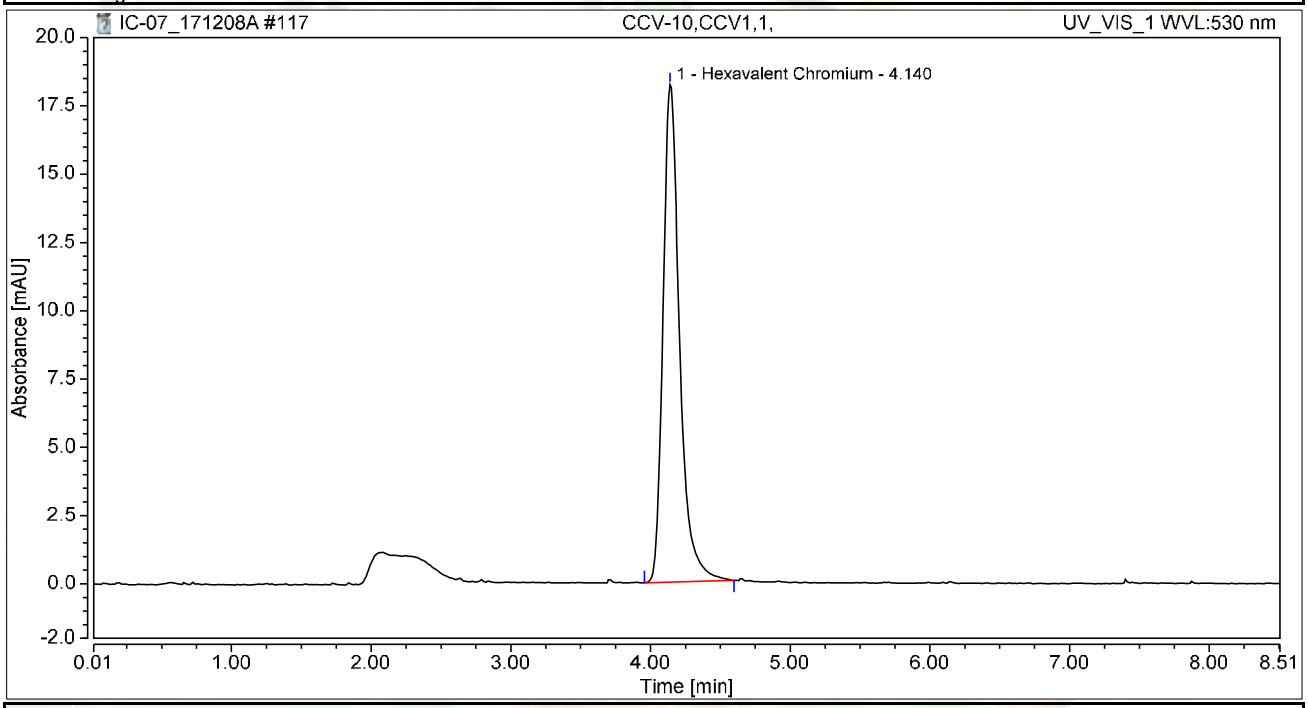
12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-10,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 01:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

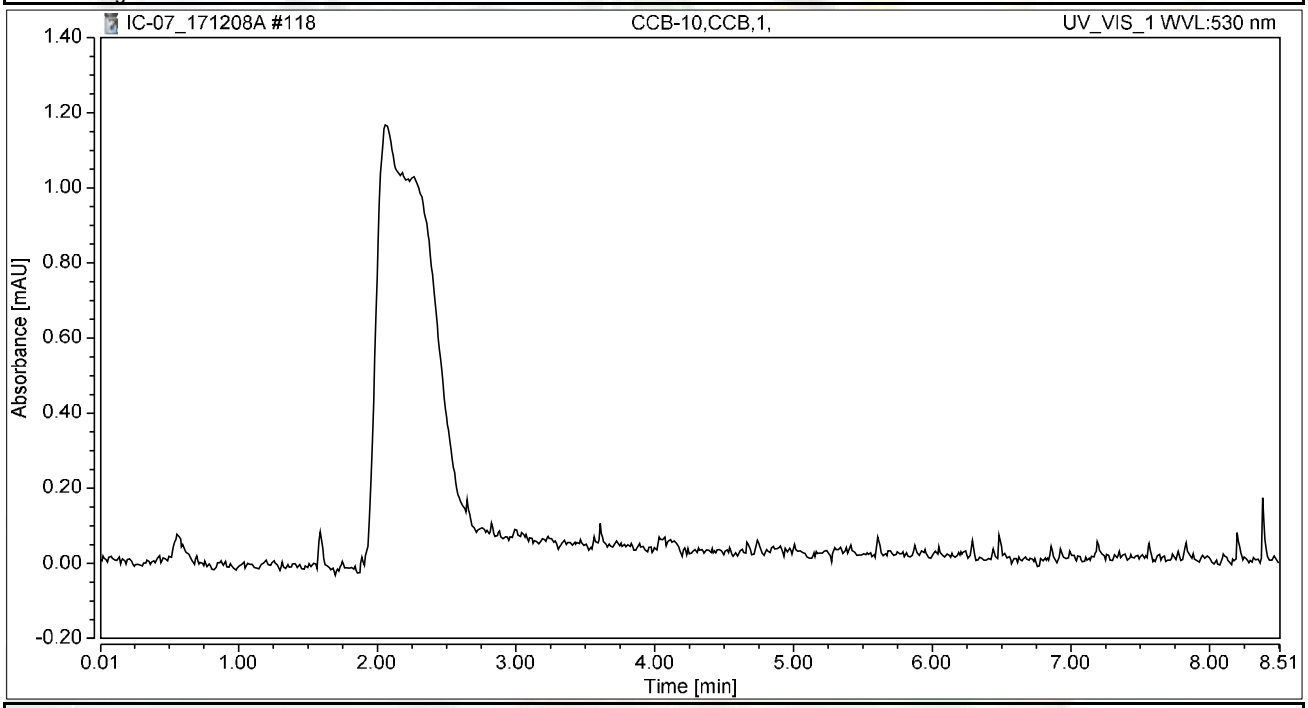
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.496	18.207	100.00	100.00	9.9398
Total:			**2.496**	**18.207**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-10,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Dec/17 01:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 8:57 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 9:08 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/11/17 9:18 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/11/17 9:27 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/11/17 9:37 AM	Reported
15	MB-R120833	MBLK	1	Hexavalent Chromium	12/11/17 9:46 AM	Reported
16	LCS-R120833	LCS	1	Hexavalent Chromium	12/11/17 9:56 AM	Reported
17	N027405-006AMS	MS	5	Hexavalent Chromium	12/11/17 10:09 AM	Reported
18	N027405-006A	SAMP	5	Hexavalent Chromium	12/11/17 10:20 AM	Reported
19	N027405-007AMS	MS	5	Hexavalent Chromium	12/11/17 10:29 AM	Reported
20	N027405-007A	SAMP	5	Hexavalent Chromium	12/11/17 10:39 AM	Reported
21	N027405-008AMS	MS	5	Hexavalent Chromium	12/11/17 10:48 AM	Reported
22	N027405-008A	SAMP	5	Hexavalent Chromium	12/11/17 10:58 AM	Reported
23	N027430-001A	SAMP	1	Hexavalent Chromium	12/11/17 11:07 AM	Reported
24	N027430-001AMS	MS	1	Hexavalent Chromium	12/11/17 11:17 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/11/17 11:26 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/11/17 11:36 AM	Reported
27	N027430-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:45 AM	Reported
28	N027430-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:54 AM	Reported
29	N027430-003A	SAMP	1	Hexavalent Chromium	12/11/17 12:04 PM	Reported
30	N027430-003AMS	MS	1	Hexavalent Chromium	12/11/17 12:13 PM	Reported
31	N027430-004A	SAMP	1	Hexavalent Chromium	12/11/17 12:23 PM	Reported
32	N027430-004AMS	MS	1	Hexavalent Chromium	12/11/17 12:32 PM	Reported
33	N027430-005A	SAMP	1	Hexavalent Chromium	12/11/17 12:42 PM	Reported
34	N027430-005AMS	MS	1	Hexavalent Chromium	12/11/17 12:51 PM	Reported
35	N027430-006A	SAMP	1	Hexavalent Chromium	12/11/17 1:01 PM	Reported
36	N027430-006AMS	MS	1	Hexavalent Chromium	12/11/17 1:10 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/11/17 1:20 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/11/17 1:29 PM	Reported
39	N027430-007A	SAMP	1	Hexavalent Chromium	12/11/17 1:38 PM	Reported
40	N027430-007AMS	MS	1	Hexavalent Chromium	12/11/17 1:48 PM	Reported
41	N027430-008A	SAMP	1	Hexavalent Chromium	12/11/17 1:57 PM	Reported
42	N027430-008AMS	MS	1	Hexavalent Chromium	12/11/17 2:07 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027430-009A	SAMP	1	Hexavalent Chromium	12/11/17 2:16 PM	Reported
44	N027430-009AMS	MS	1	Hexavalent Chromium	12/11/17 2:26 PM	Reported
45	N027430-010A	SAMP	1	Hexavalent Chromium	12/11/17 2:35 PM	Reported
46	N027430-010AMS	MS	1	Hexavalent Chromium	12/11/17 2:45 PM	Reported
47	N027430-020A	SAMP	20	Hexavalent Chromium	12/11/17 2:54 PM	Reported
48	N027430-020AMS	MS	20	Hexavalent Chromium	12/11/17 3:04 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/11/17 3:13 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/11/17 3:23 PM	Reported
51	N027430-012A	SAMP	1	Hexavalent Chromium	12/11/17 3:32 PM	Not Reported
52	N027430-012AMS	MS	1	Hexavalent Chromium	12/11/17 3:41 PM	Not Reported
53	N027430-019A	SAMP	1	Hexavalent Chromium	12/11/17 3:51 PM	Reported
54	N027430-019AMS	MS	1	Hexavalent Chromium	12/11/17 4:00 PM	Reported
55	N027430-011A	SAMP	1	Hexavalent Chromium	12/11/17 4:10 PM	Reported
56	N027430-011AMS	MS	1	Hexavalent Chromium	12/11/17 4:19 PM	Reported
57	N027430-013A	SAMP	5	Hexavalent Chromium	12/11/17 4:29 PM	Reported
58	N027430-013AMS	MS	5	Hexavalent Chromium	12/11/17 4:38 PM	Reported
59	N027430-014A	SAMP	5	Hexavalent Chromium	12/11/17 4:48 PM	Reported
60	N027430-014AMS	MS	5	Hexavalent Chromium	12/11/17 4:57 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/11/17 5:07 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/11/17 5:16 PM	Reported
63	N027430-015A	SAMP	5	Hexavalent Chromium	12/11/17 5:26 PM	Reported
64	N027430-015AMS	MS	5	Hexavalent Chromium	12/11/17 5:35 PM	Reported
65	N027405-006ADUP	DUP	5	Hexavalent Chromium	12/11/17 5:44 PM	Reported
66	N027430-020AMSD	MSD	20	Hexavalent Chromium	12/11/17 5:54 PM	Reported
67	N027430-002A	SAMP	1	Hexavalent Chromium	12/11/17 6:05 PM	Not Reported
68	N027430-002AMS	MS	1	Hexavalent Chromium	12/11/17 6:16 PM	Not Reported
69	N027430-013A	SAMP	1	Hexavalent Chromium	12/11/17 6:25 PM	Not Reported
70	N027430-013AMS	MS	1	Hexavalent Chromium	12/11/17 6:35 PM	Not Reported
71	N027430-014A	SAMP	1	Hexavalent Chromium	12/11/17 6:44 PM	Not Reported
72	N027430-014AMS	MS	1	Hexavalent Chromium	12/11/17 6:54 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	12/11/17 7:03 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	12/11/17 7:13 PM	Reported
75	N027430-015A	SAMP	1	Hexavalent Chromium	12/11/17 7:22 PM	Not Reported
76	N027430-015AMS	MS	1	Hexavalent Chromium	12/11/17 7:32 PM	Not Reported
77	N027430-012A	SAMP	5	Hexavalent Chromium	12/11/17 7:41 PM	Reported
78	N027430-012AMS	MS	5	Hexavalent Chromium	12/11/17 7:50 PM	Reported
79	LCS-R120834	LCS	1	Hexavalent Chromium	12/11/17 8:00 PM	Reported
80	MB-R120834	MBLK	1	Hexavalent Chromium	12/11/17 8:09 PM	Reported
81	N027431-006A	SAMP	1000	Hexavalent Chromium	12/11/17 8:19 PM	Reported
82	N027431-006AMS	MS	1000	Hexavalent Chromium	12/11/17 8:28 PM	Reported
83	N027431-006AMSD	MSD	1000	Hexavalent Chromium	12/11/17 8:38 PM	Reported
84	N027428-002A	SAMP	100	Hexavalent Chromium	12/11/17 8:47 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	12/11/17 8:57 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	12/11/17 9:06 PM	Reported
87	N027428-002ADUP	DUP	100	Hexavalent Chromium	12/11/17 9:16 PM	Reported
88	N027428-002AMS	MS	100	Hexavalent Chromium	12/11/17 9:25 PM	Reported
89	N027428-001A	SAMP	1	Hexavalent Chromium	12/11/17 9:35 PM	Reported
90	N027428-001AMS	MS	1	Hexavalent Chromium	12/11/17 9:44 PM	Reported
91	N027430-016A	SAMP	5	Hexavalent Chromium	12/11/17 9:53 PM	Reported
92	N027430-016AMS	MS	5	Hexavalent Chromium	12/11/17 10:03 PM	Reported
93	N027430-017A	SAMP	5	Hexavalent Chromium	12/11/17 10:12 PM	Reported
94	N027430-017AMS	MS	5	Hexavalent Chromium	12/11/17 10:22 PM	Reported
95	N027430-018A	SAMP	5	Hexavalent Chromium	12/11/17 10:31 PM	Reported
96	N027430-018AMS	MS	5	Hexavalent Chromium	12/11/17 10:41 PM	Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	12/11/17 10:50 PM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	12/11/17 11:00 PM	Reported
99	N027431-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:09 PM	Reported
100	N027431-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:19 PM	Reported
101	N027431-003A	SAMP	5	Hexavalent Chromium	12/11/17 11:28 PM	Reported
102	N027431-003AMS	MS	5	Hexavalent Chromium	12/11/17 11:38 PM	Reported
103	N027431-004A	SAMP	5	Hexavalent Chromium	12/11/17 11:47 PM	Reported
104	N027431-004AMS	MS	5	Hexavalent Chromium	12/11/17 11:56 PM	Reported
105	N027431-001A	SAMP	10	Hexavalent Chromium	12/12/17 12:06 AM	Not Reported
106	N027431-001AMS	MS	10	Hexavalent Chromium	12/12/17 12:15 AM	Not Reported
107	N027431-005A	SAMP	200	Hexavalent Chromium	12/12/17 12:25 AM	Reported
108	N027431-005AMS	MS	200	Hexavalent Chromium	12/12/17 12:34 AM	Reported
109	CCV-9	CCV	1	Hexavalent Chromium	12/12/17 12:44 AM	Reported
110	CCB-9	CCB	1	Hexavalent Chromium	12/12/17 12:53 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171211A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**12/Dec/17 01:24:03**
No. of Injections:	**113**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/11/2017 08:57	Finished	BLANK
11	BLANK	2	1000	Unknown		12/11/2017 09:08	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/11/2017 09:18	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/11/2017 09:27	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/11/2017 09:37	Finished	CCB R171129A
15	MB-1,MBLK,1	6	1000	Unknown		12/11/2017 09:46	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/11/2017 09:56	Finished	LCS, IWST-171002B
17	N027405-006AMS,MS	1	1000	Unknown		12/11/2017 10:09	Finished	MS (1ppb), IWST-171002B,2>1
18	N027405-006A,SAMP	2	1000	Unknown		12/11/2017 10:20	Finished	SAMP,2>10mL
19	N027405-007AMS,MS	3	1000	Unknown		12/11/2017 10:29	Finished	MS (1ppb), IWST-171002B,2>1
20	N027405-007A,SAMP	4	1000	Unknown		12/11/2017 10:39	Finished	SAMP,2>10mL
21	N027405-008AMS,MS	5	1000	Unknown		12/11/2017 10:48	Finished	SAMP,2>10mL
22	N027405-008A,SAMP	6	1000	Unknown		12/11/2017 10:58	Finished	MS (1ppb), IWST-171002B,2>1
23	N027430-001A,SAMP	7	1000	Unknown		12/11/2017 11:07	Finished	SAMP,10mL
24	N027430-001AMS,MS	8	1000	Unknown		12/11/2017 11:17	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	9	1000	Unknown		12/11/2017 11:26	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	10	1000	Unknown		12/11/2017 11:36	Finished	CCB R171129A
27	N027430-002A,SAMP	11	1000	Unknown		12/11/2017 11:45	Finished	SAMP,2>10mL
28	N027430-002AMS,MS	12	1000	Unknown		12/11/2017 11:54	Finished	MS (1ppb), IWST-171002B,2>1
29	N027430-003A,SAMP	13	1000	Unknown		12/11/2017 12:04	Finished	SAMP,10mL
30	N027430-003AMS,MS	14	1000	Unknown		12/11/2017 12:13	Finished	MS (1ppb), IWST-171002B,10
31	N027430-004A,SAMP	15	1000	Unknown		12/11/2017 12:23	Finished	SAMP,10mL
32	N027430-004AMS,MS	16	1000	Unknown		12/11/2017 12:32	Finished	MS (1ppb), IWST-171002B,10
33	N027430-005A,SAMP	17	1000	Unknown		12/11/2017 12:42	Finished	SAMP,10mL
34	N027430-005AMS,MS	18	1000	Unknown		12/11/2017 12:51	Finished	MS (1ppb), IWST-171002B,10
35	N027430-006A,SAMP	19	1000	Unknown		12/11/2017 13:01	Finished	SAMP,10mL
36	N027430-006AMS,MS	20	1000	Unknown		12/11/2017 13:10	Finished	MS (1ppb), IWST-171002B,10
37	CCV-3,CCV,1,	21	1000	Unknown		12/11/2017 13:20	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	22	1000	Unknown		12/11/2017 13:29	Finished	CCB R171129A
39	N027430-007A,SAMP	23	1000	Unknown		12/11/2017 13:38	Finished	SAMP,10mL
40	N027430-007AMS,MS	24	1000	Unknown		12/11/2017 13:48	Finished	MS (1ppb), IWST-171002B,10
41	N027430-008A,SAMP	25	1000	Unknown		12/11/2017 13:57	Finished	SAMP,10mL
42	N027430-008AMS,MS	26	1000	Unknown		12/11/2017 14:07	Finished	MS (1ppb), IWST-171002B,10
43	N027430-009A,SAMP	27	1000	Unknown		12/11/2017 14:16	Finished	SAMP,10mL
44	N027430-009AMS,MS	28	1000	Unknown		12/11/2017 14:26	Finished	MS (1ppb), IWST-171002B,10
45	N027430-010A,SAMP	29	1000	Unknown		12/11/2017 14:35	Finished	SAMP,10mL
46	N027430-010AMS,MS	30	1000	Unknown		12/11/2017 14:45	Finished	MS (1ppb), IWST-171002B,10
47	N027430-020A,SAMP	31	1000	Unknown		12/11/2017 14:54	Finished	SAMP,0.5>10mL
48	N027430-020AMS,MS	32	1000	Unknown		12/11/2017 15:04	Finished	MS (5ppb), IWST-171002B,0.5
49	CCV-4,CCV1,1,	33	1000	Unknown		12/11/2017 15:13	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	34	1000	Unknown		12/11/2017 15:23	Finished	CCB R171129A
51	N027430-012A,SAMP	35	1000	Unknown		12/11/2017 15:32	Finished	SAMP,10mL
52	N027430-012AMS,MS	36	1000	Unknown		12/11/2017 15:41	Finished	MS (1ppb), IWST-171002B,10
53	N027430-019A,SAMP	37	1000	Unknown		12/11/2017 15:51	Finished	SAMP,10mL
54	N027430-019AMS,MS	38	1000	Unknown		12/11/2017 16:00	Finished	MS (1ppb), IWST-171002B,10
55	N027430-011A,SAMP	39	1000	Unknown		12/11/2017 16:10	Finished	SAMP,10mL
56	N027430-011AMS,MS	40	1000	Unknown		12/11/2017 16:19	Finished	MS (1ppb), IWST-171002B,10
57	N027430-013A,SAMP	41	1000	Unknown		12/11/2017 16:29	Finished	SAMP,2>10mL
58	N027430-013AMS,MS	42	1000	Unknown		12/11/2017 16:38	Finished	MS (1ppb), IWST-171002B,2>1
59	N027430-014A,SAMP	43	1000	Unknown		12/11/2017 16:48	Finished	SAMP,2>10mL
60	N027430-014AMS,MS	44	1000	Unknown		12/11/2017 16:57	Finished	MS (1ppb), IWST-171002B,2>1

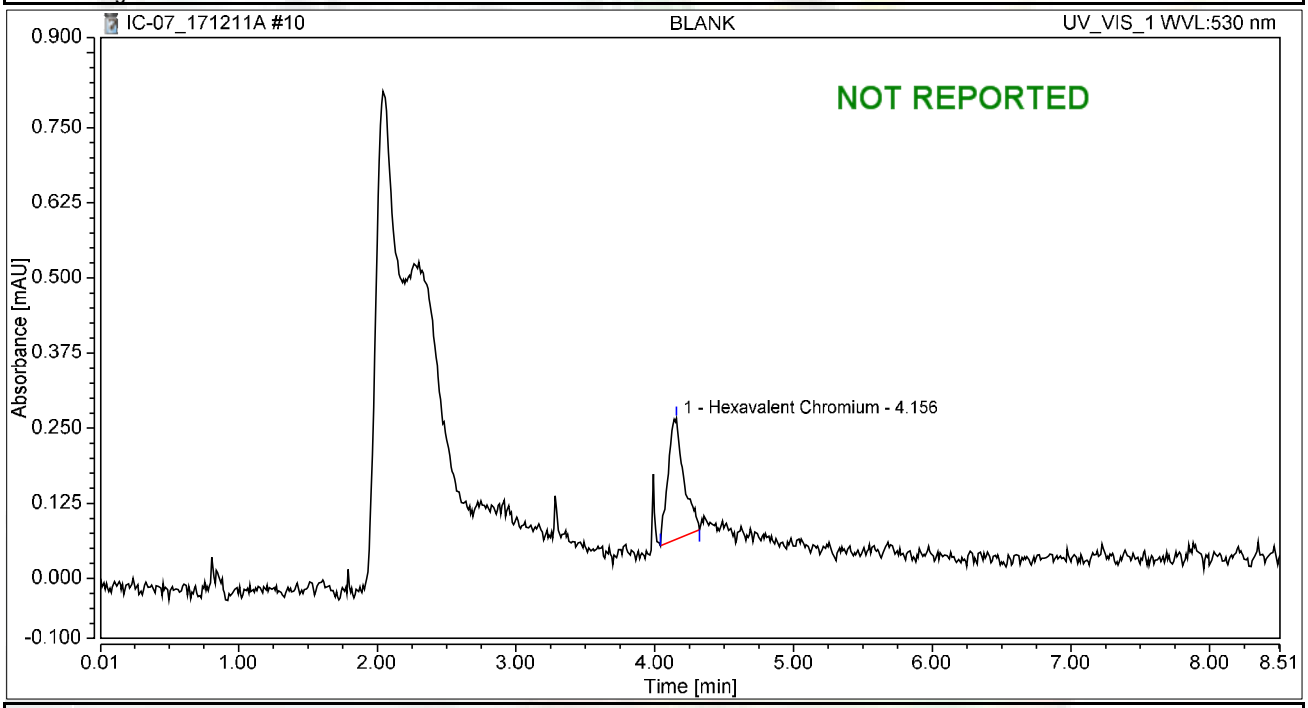
61	CCV-5,CCV,1,	45	1000	Unknown		12/11/2017 17:07	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	46	1000	Unknown		12/11/2017 17:16	Finished	CCB R171129A
63	N027430-015A,SAMF	47	1000	Unknown		12/11/2017 17:26	Finished	SAMP,2>10mL
64	N027430-015AMS,MS	48	1000	Unknown		12/11/2017 17:35	Finished	MS (1ppb), IWST-171002B,2>1
65	N027405-006ADUP,D	49	1000	Unknown		12/11/2017 17:44	Finished	DUP,2>10mL
66	N027430-020AMSD,M	50	1000	Unknown		12/11/2017 17:54	Finished	MSD (5ppb), IWST-171002B,0.
67	N027430-002A,SAMF	1	1000	Unknown		12/11/2017 18:05	Finished	MSD (5ppb), IWST-171002B,0.
68	N027430-002AMS,MS	2	1000	Unknown		12/11/2017 18:16	Finished	DUP,2>10mL
69	N027430-013A,SAMF	3	1000	Unknown		12/11/2017 18:25	Finished	SAMP,2>10mL
70	N027430-013AMS,MS	4	1000	Unknown		12/11/2017 18:35	Finished	MS (1ppb), IWST-171002B,2>1
71	N027430-014A,SAMF	5	1000	Unknown		12/11/2017 18:44	Finished	SAMP,10mL
72	N027430-014AMS,MS	6	1000	Unknown		12/11/2017 18:54	Finished	MS (1ppb), IWST-171002B,10
73	CCV-6,CCV1,1,	7	1000	Unknown		12/11/2017 19:03	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	8	1000	Unknown		12/11/2017 19:13	Finished	CCB R171129A
75	N027430-015A,SAMF	9	1000	Unknown		12/11/2017 19:22	Finished	LCS, IWST-171002B
76	N027430-015AMS,MS	10	1000	Unknown		12/11/2017 19:32	Finished	MB R171129A
77	N027430-012A,SAMF	11	1000	Unknown		12/11/2017 19:41	Finished	SAMP,2>10mL
78	N027430-012AMS,MS	12	1000	Unknown		12/11/2017 19:50	Finished	MS (1ppb), IWST-171002B,2>1
79	LCS-2,LCS,1	13	1000	Unknown		12/11/2017 20:00	Finished	LCS, IWST-171002B
80	MB-2,MBLK,1	14	1000	Unknown		12/11/2017 20:09	Finished	MB R171129A
81	N027431-006A,SAMF	15	1000	Unknown		12/11/2017 20:19	Finished	DUP,0.1>10mL
82	N027431-006AMS,MS	16	1000	Unknown		12/11/2017 20:28	Finished	SAMP,10mL
83	N027431-006AMSD,M	17	1000	Unknown		12/11/2017 20:38	Finished	SAMP,5>10mL
84	N027428-002A,SAMF	18	1000	Unknown		12/11/2017 20:47	Finished	SAMP,0.2>10mL
85	CCV-7,CCV,1,	19	1000	Unknown		12/11/2017 20:57	Finished	CCV @5ppb, IWST-171002A
86	CCB-7,CCB,1,	20	1000	Unknown		12/11/2017 21:06	Finished	CCB R171114C
87	N027428-002ADUP,D	21	1000	Unknown		12/11/2017 21:16	Finished	SAMP,0.2>10mL
88	N027428-002AMS,MS	22	1000	Unknown		12/11/2017 21:25	Finished	SAMP,1>10mL
89	N027428-001A,SAMF	23	1000	Unknown		12/11/2017 21:35	Finished	SAMP,0.5>10mL
90	N027428-001AMS,MS	24	1000	Unknown		12/11/2017 21:44	Finished	SAMP,5>10mL
91	N027430-016A,SAMF	25	1000	Unknown		12/11/2017 21:53	Finished	SAMP,10mL
92	N027430-016AMS,MS	26	1000	Unknown		12/11/2017 22:03	Finished	SAMP,2>10mL
93	N027430-017A,SAMF	27	1000	Unknown		12/11/2017 22:12	Finished	MS (5ppb), IWST-171002B,2>1
94	N027430-017AMS,MS	28	1000	Unknown		12/11/2017 22:22	Finished	MSD (5ppb), IWST-171002B,2
95	N027430-018A,SAMF	29	1000	Unknown		12/11/2017 22:31	Finished	SAMP,10mL
96	N027430-018AMS,MS	30	1000	Unknown		12/11/2017 22:41	Finished	MS (1ppb), IWST-171002B,10
97	CCV-8,CCV1,1,	31	1000	Unknown		12/11/2017 22:50	Finished	CCV @10ppb, IWST-171002A
98	CCB-8,CCB,1,	32	1000	Unknown		12/11/2017 23:00	Finished	CCB R171129A
99	N027431-002A,SAMF	33	1000	Unknown		12/11/2017 23:09	Finished	SAMP,10mL
100	N027431-002AMS,MS	34	1000	Unknown		12/11/2017 23:19	Finished	MS (1ppb), IWST-171002B,10
101	N027431-003A,SAMF	35	1000	Unknown		12/11/2017 23:28	Finished	SAMP,10mL
102	N027431-003AMS,MS	36	1000	Unknown		12/11/2017 23:38	Finished	MS (1ppb), IWST-171002B,10
103	N027431-004A,SAMF	37	1000	Unknown		12/11/2017 23:47	Finished	SAMP,10mL
104	N027431-004AMS,MS	38	1000	Unknown		12/11/2017 23:56	Finished	MS (1ppb), IWST-171002B,10
105	N027431-001A,SAMF	39	1000	Unknown		12/12/2017 00:06	Finished	SAMP,10mL
106	N027431-001AMS,MS	40	1000	Unknown		12/12/2017 00:15	Finished	MS (1ppb), IWST-171002B,10
107	N027431-005A,SAMF	41	1000	Unknown		12/12/2017 00:25	Finished	SAMP,10mL
108	N027431-005AMS,MS	42	1000	Unknown		12/12/2017 00:34	Finished	MS (1ppb), IWST-171002B,10
109	CCV-9,CCV,1,	43	1000	Unknown		12/12/2017 00:44	Finished	CCV @5ppb, IWST-171002A
110	CCB-9,CCB,1,	44	1000	Unknown		12/12/2017 00:53	Finished	CCB R171114C
111	SHUTDOWN	45	1000	Unknown		12/12/2017 01:03	Finished	
112	Eluent: R171211B	46	1000	Unknown		n.a.	Finished	Eluent
113	PCR: R171211C	47	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 08:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

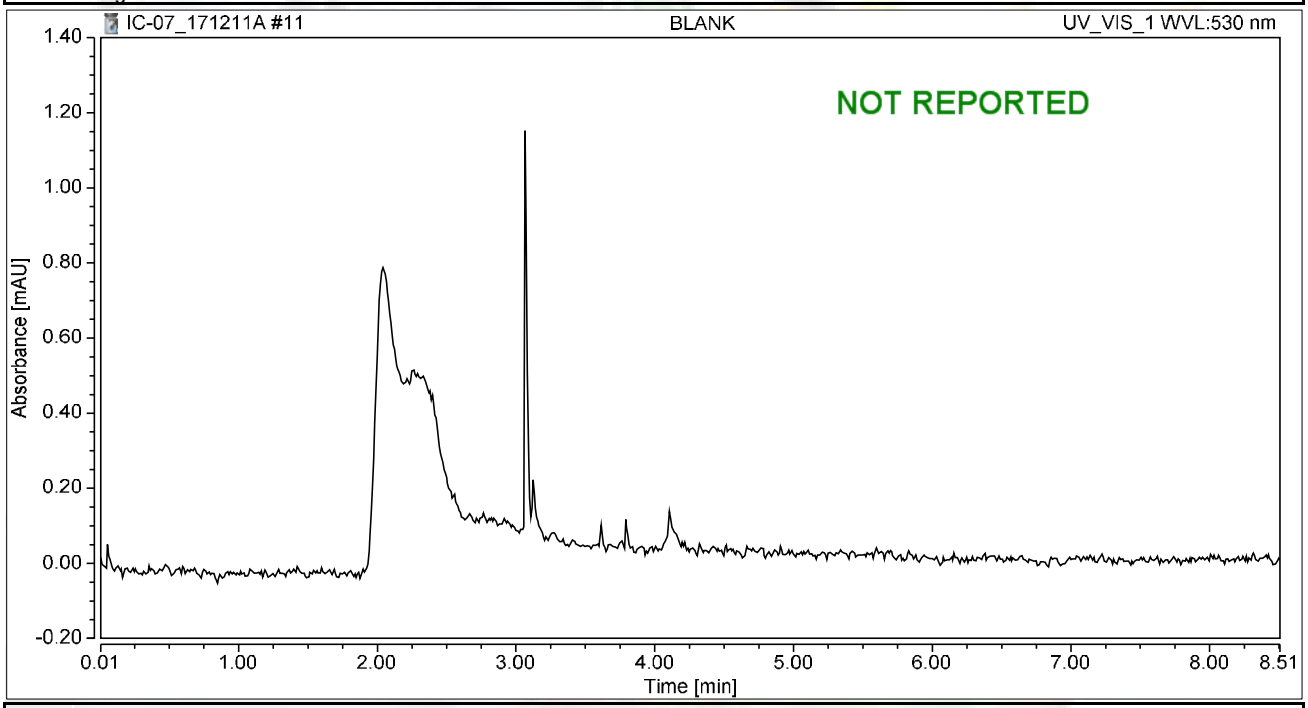
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.027	0.201	100.00	100.00	0.1065
Total:			**0.027**	**0.201**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

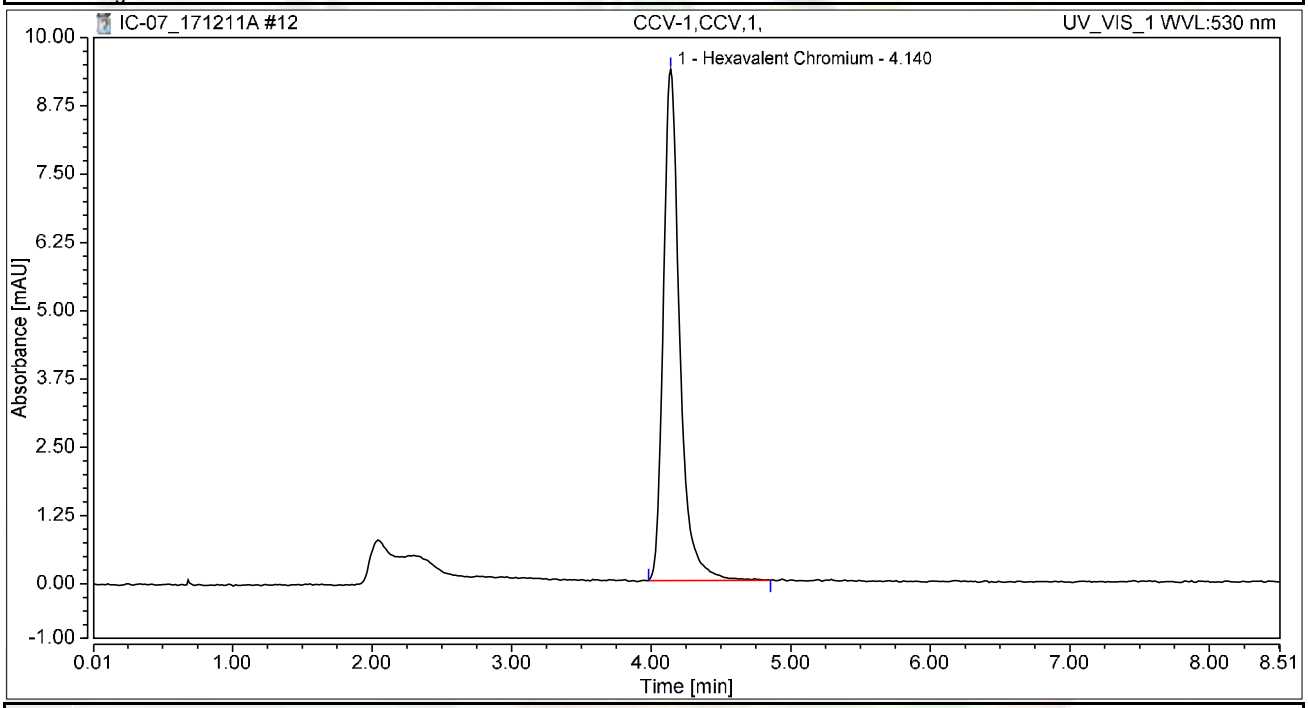
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

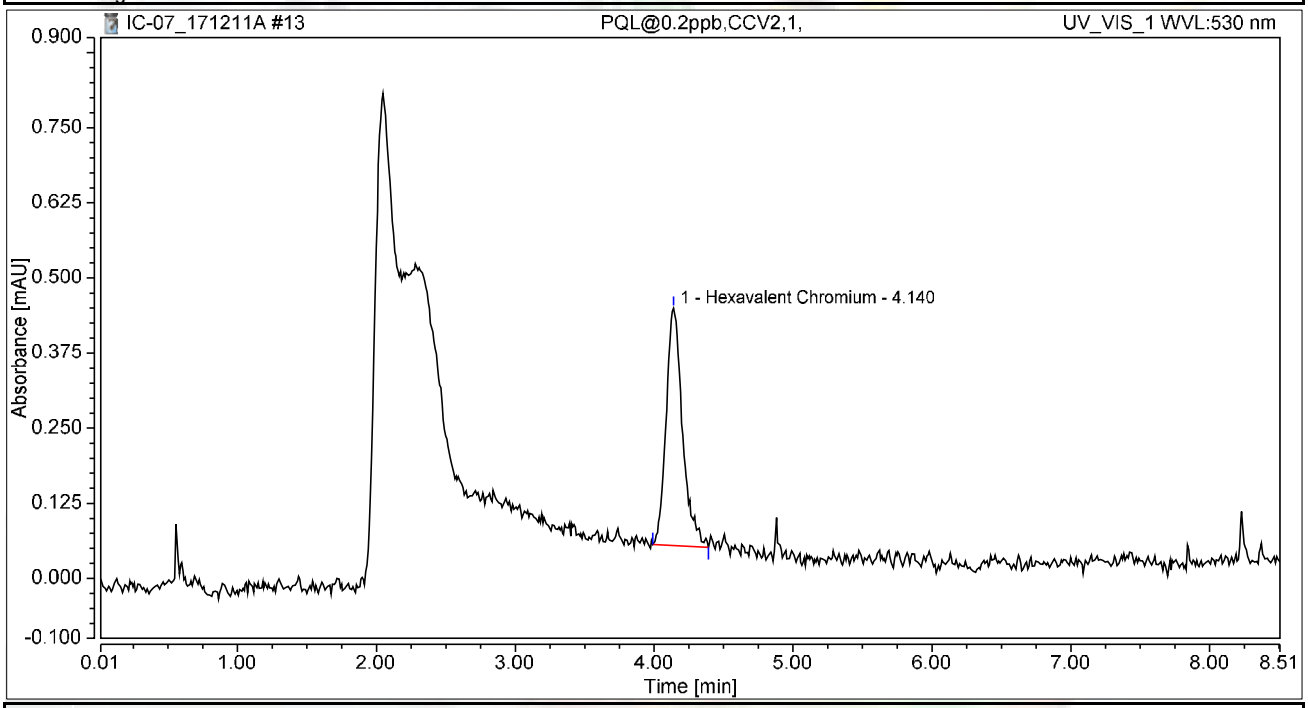
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.275	9.355	100.00	100.00	5.0770
Total:			**1.275**	**9.355**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

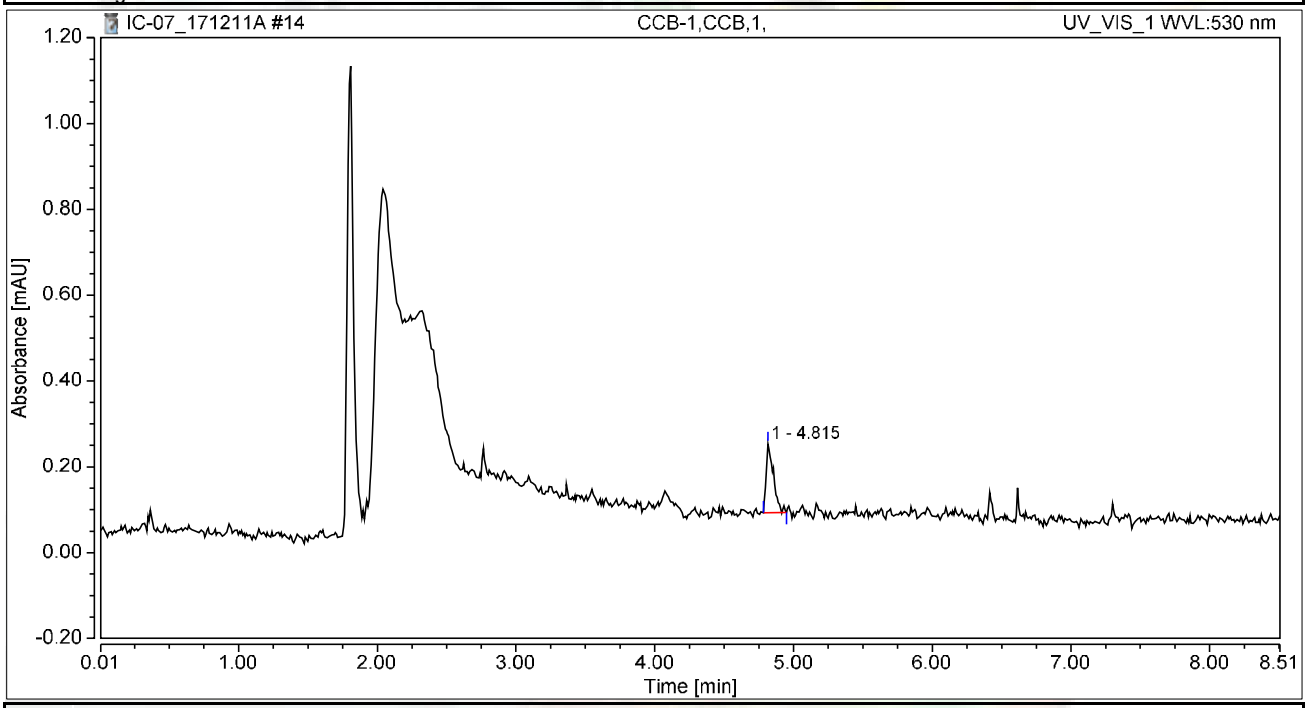
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.054	0.395	100.00	100.00	0.2151
Total:			**0.054**	**0.395**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

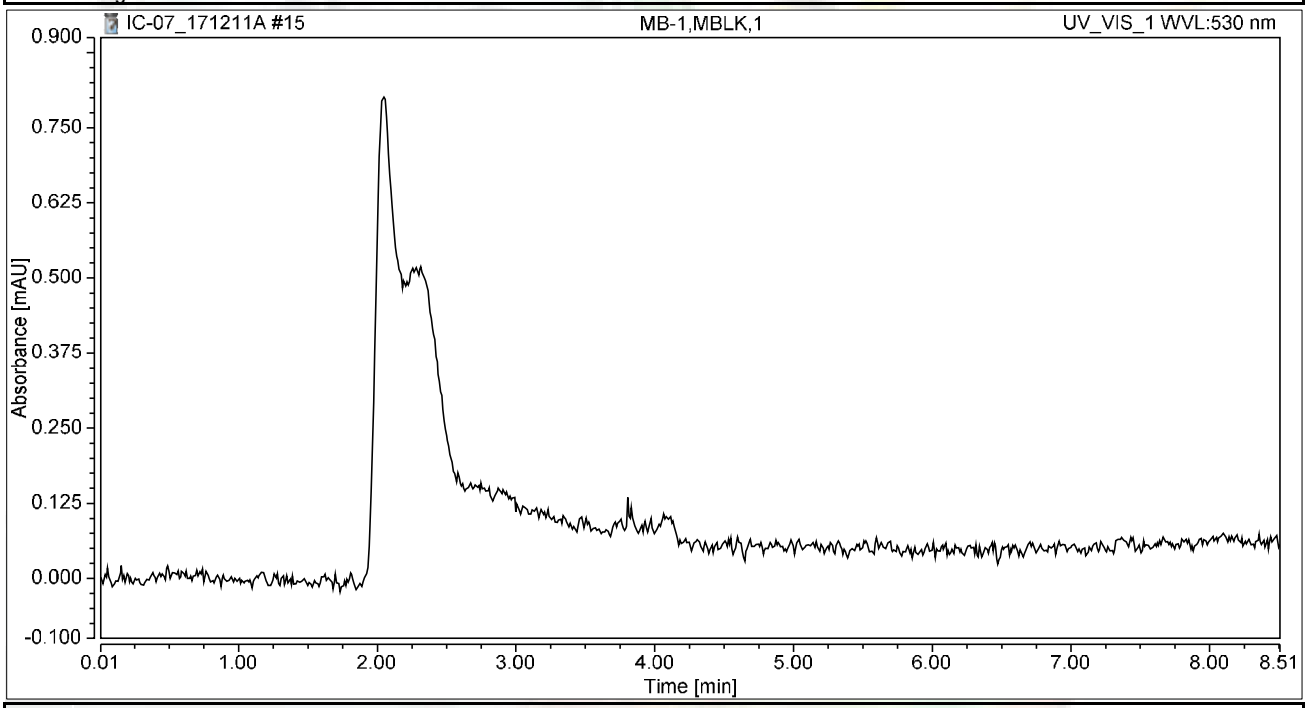
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		4.815	0.010	0.160	100.00	100.00	n.a.
Total:			**0.010**	**0.160**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-1,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

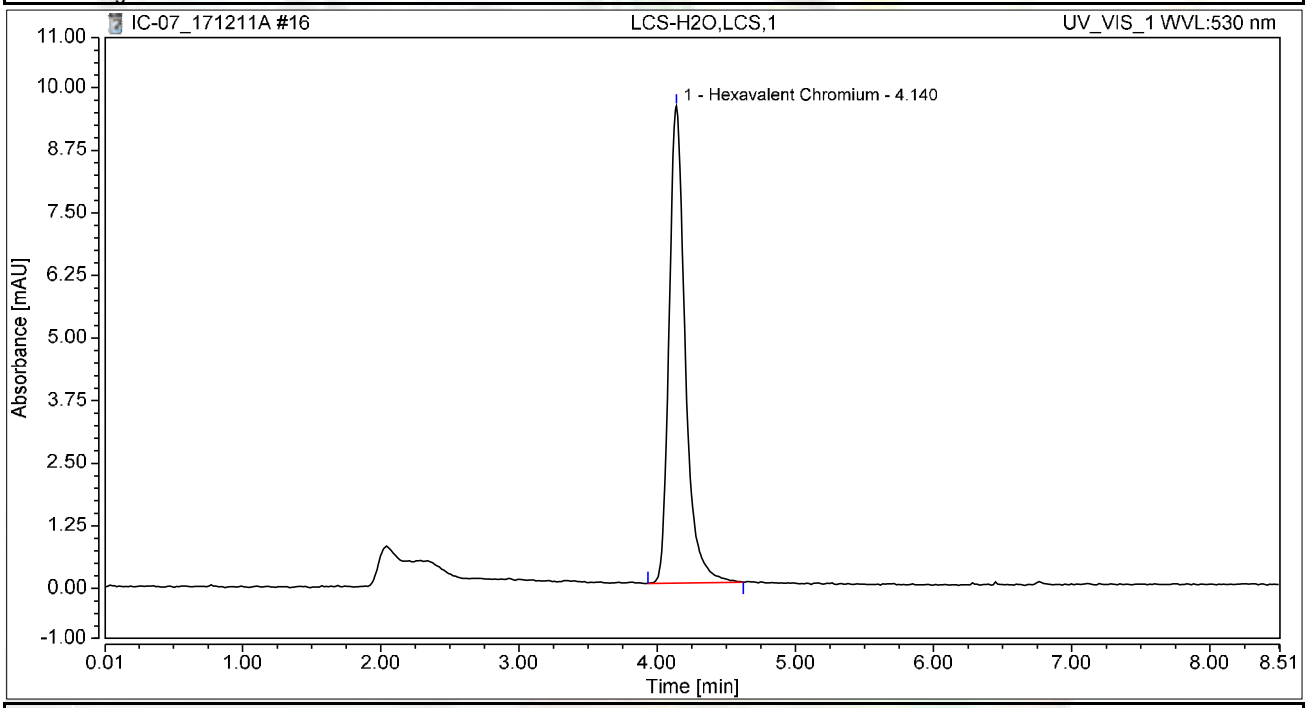
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

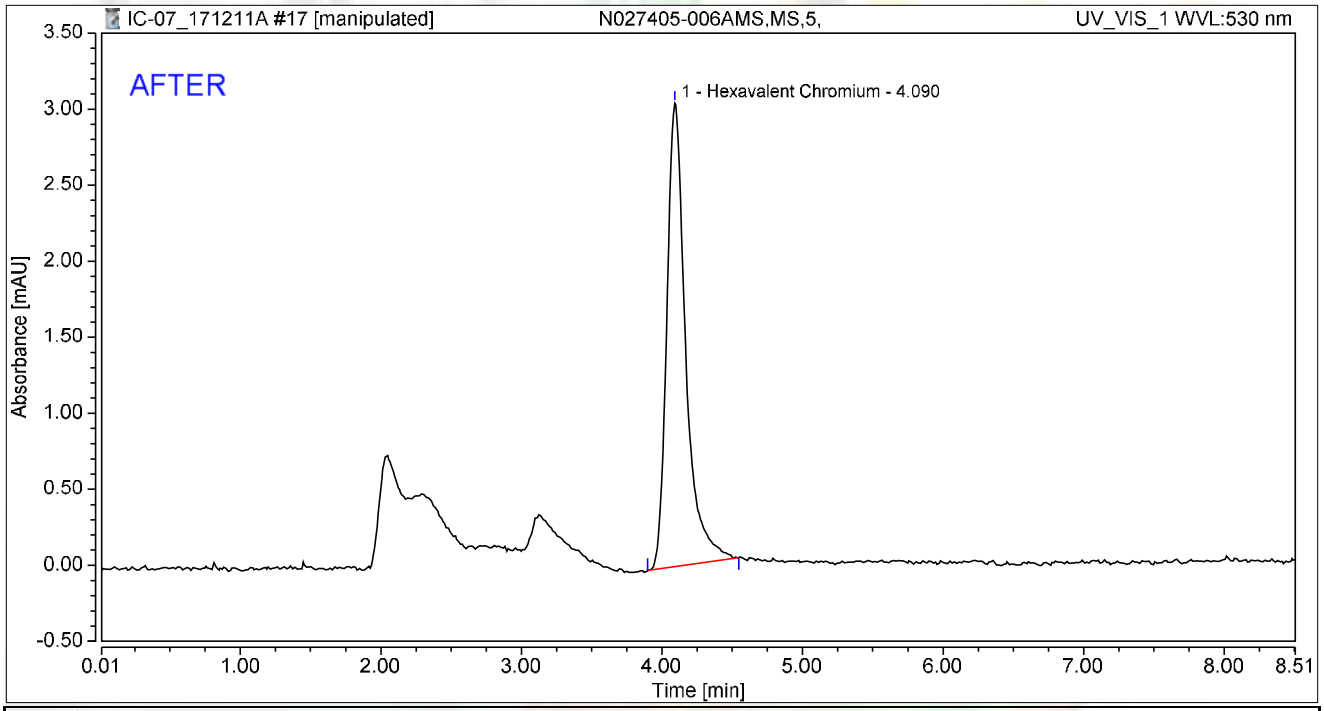
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.296	9.528	100.00	100.00	5.1607
Total:			**1.296**	**9.528**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-006AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.473	3.048	100.00	100.00	1.8848
Total:			**0.473**	**3.048**	**100.00**	**100.00**	

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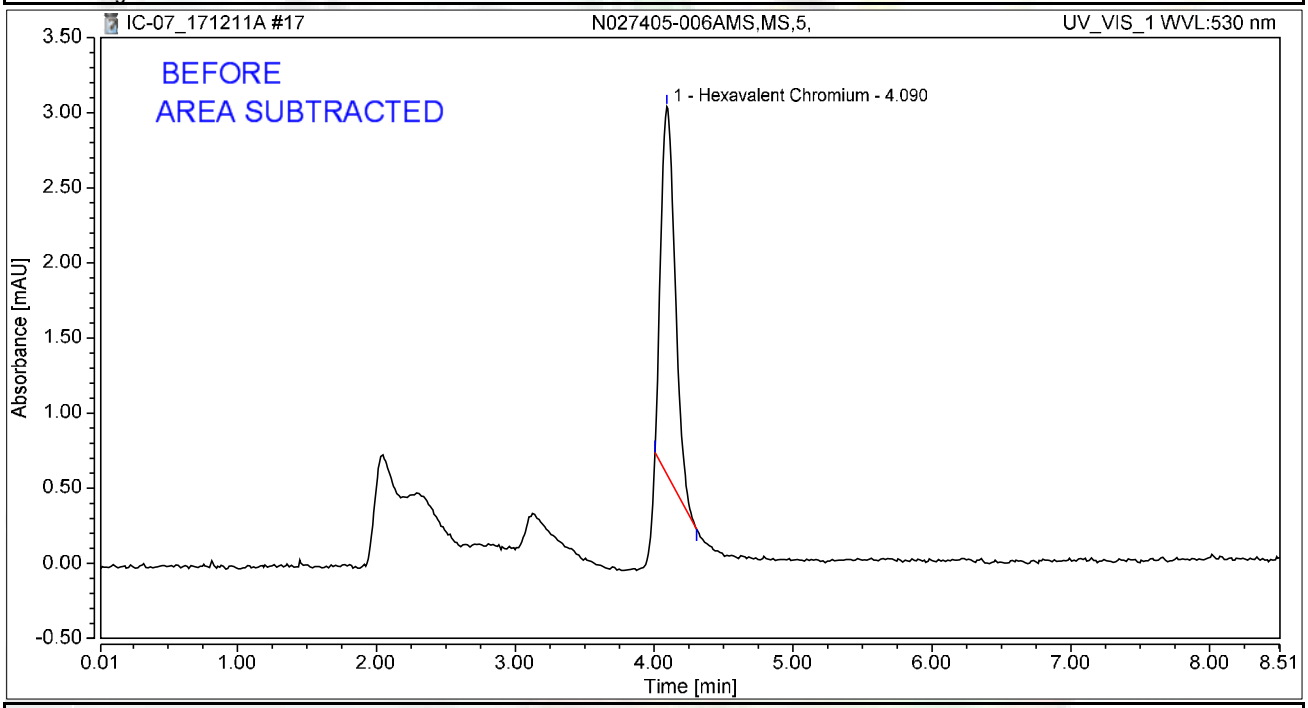
Chromatogram and Results

Injection Details

Injection Name:	**N027405-006AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.293	2.442	100.00	100.00	1.1666
Total:			**0.293**	**2.442**	**100.00**	**100.00**	

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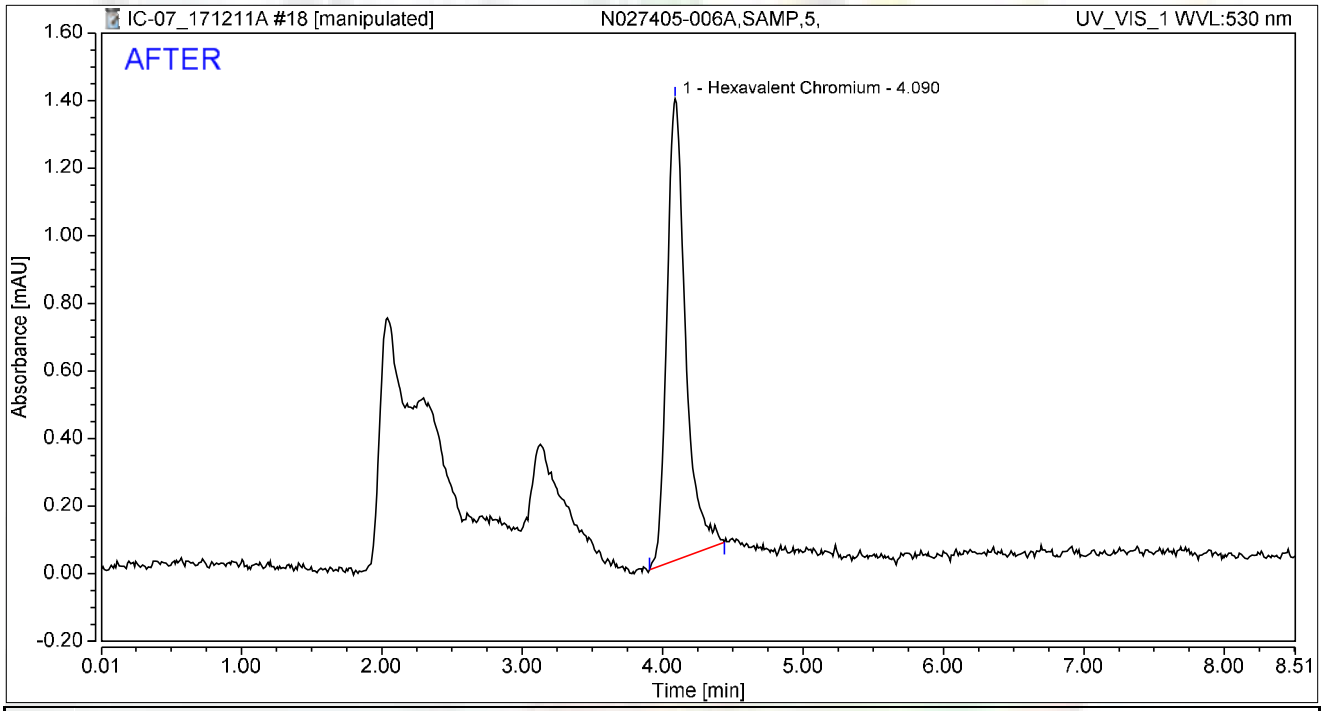
Chromatogram and Results

Injection Details

Injection Name:	**N027405-006A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.211	1.365	100.00	100.00	0.8406
Total:			**0.211**	**1.365**	**100.00**	**100.00**	

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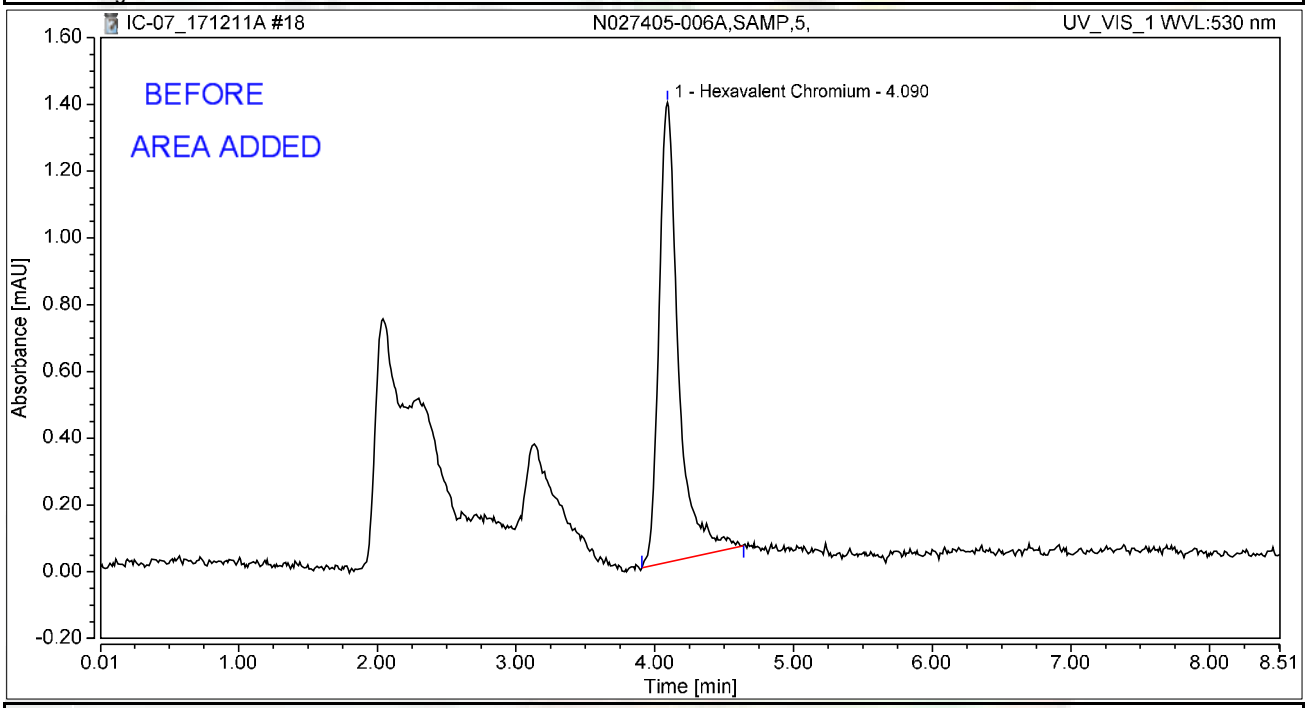
Chromatogram and Results

Injection Details

Injection Name:	**N027405-006A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.225	1.377	100.00	100.00	0.8948
Total:			**0.225**	**1.377**	**100.00**	**100.00**	

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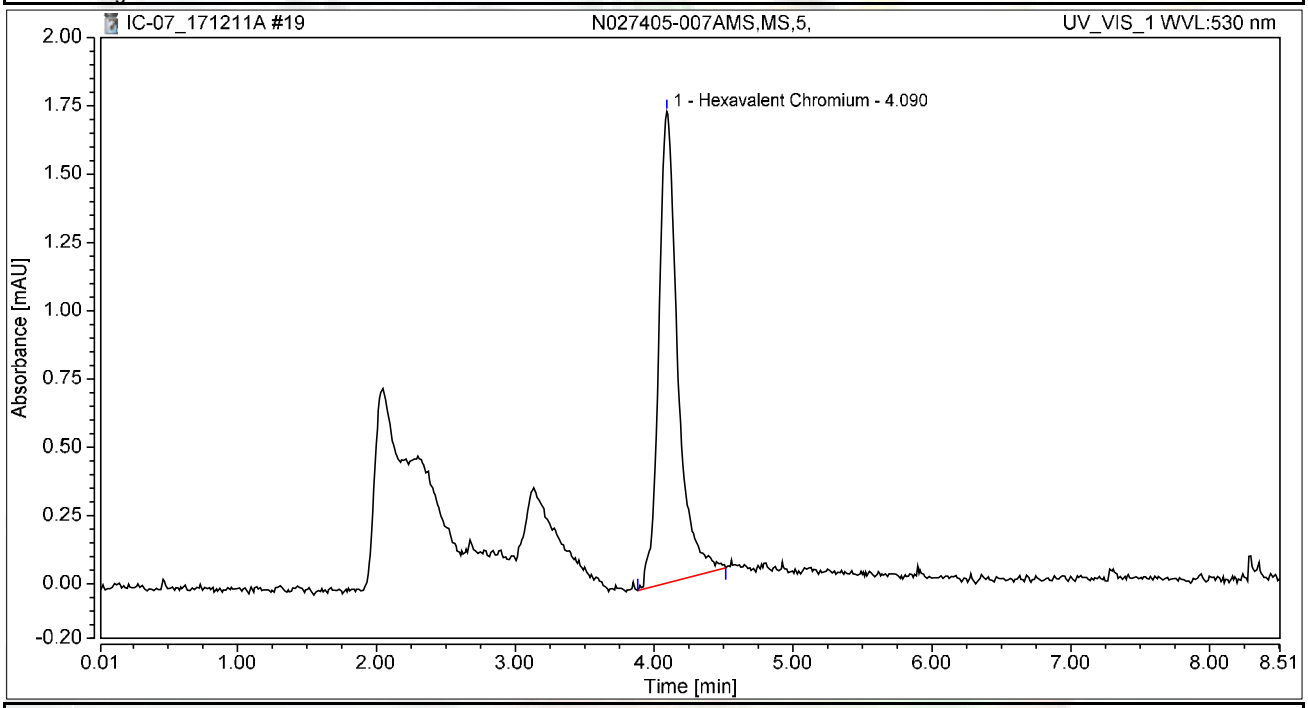
Chromatogram and Results

Injection Details

Injection Name:	**N027405-007AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

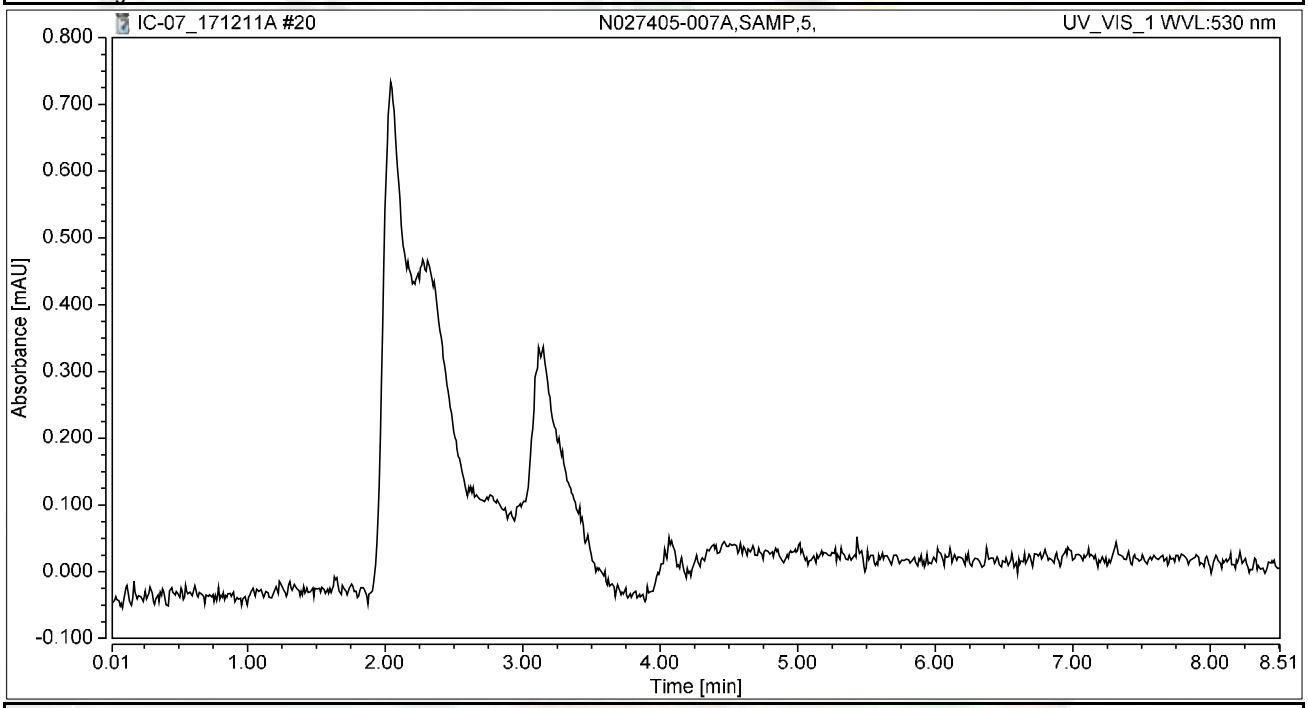
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.274	1.727	100.00	100.00	1.0903
Total:			**0.274**	**1.727**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-007A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

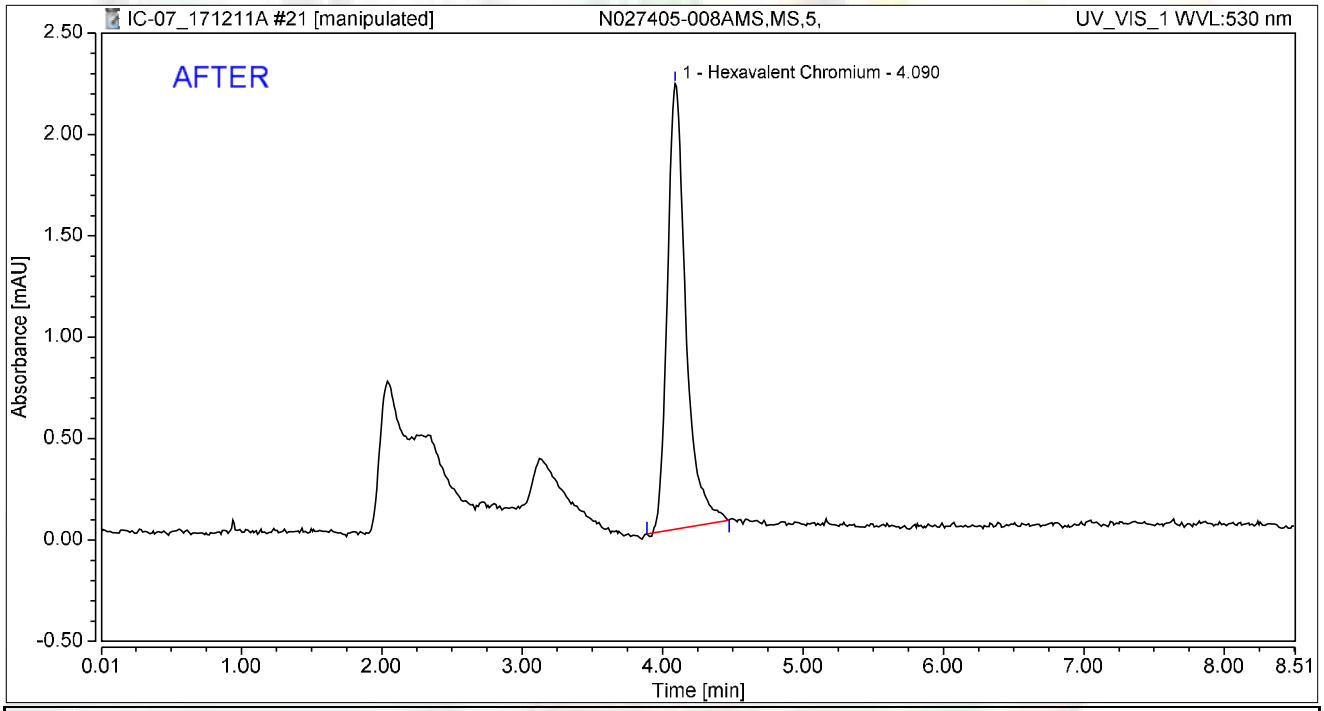
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-008AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.336	2.197	100.00	100.00	1.3384
Total:			**0.336**	**2.197**	**100.00**	**100.00**	

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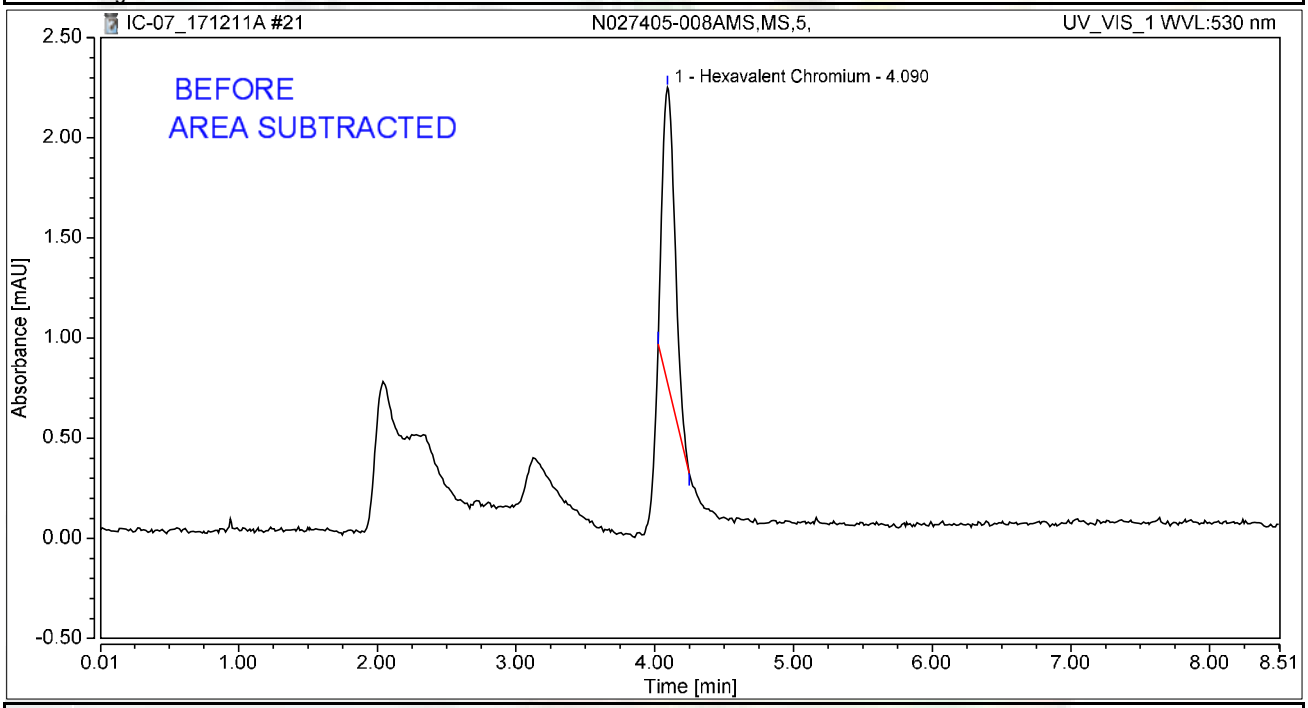
Chromatogram and Results

Injection Details

Injection Name:	**N027405-008AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.158	1.471	100.00	100.00	0.6275
Total:			**0.158**	**1.471**	**100.00**	**100.00**	

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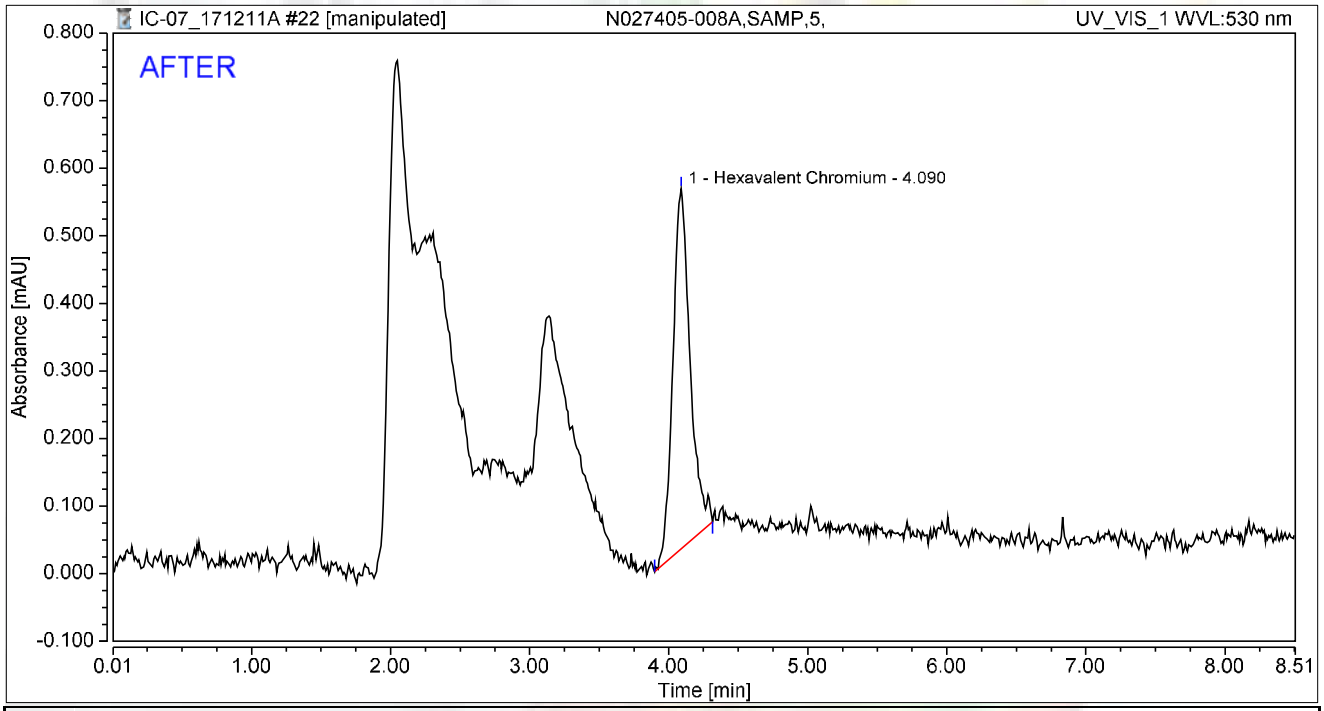
Chromatogram and Results

Injection Details

Injection Name:	**N027405-008A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.077	0.532	100.00	100.00	0.3057
Total:			**0.077**	**0.532**	**100.00**	**100.00**	

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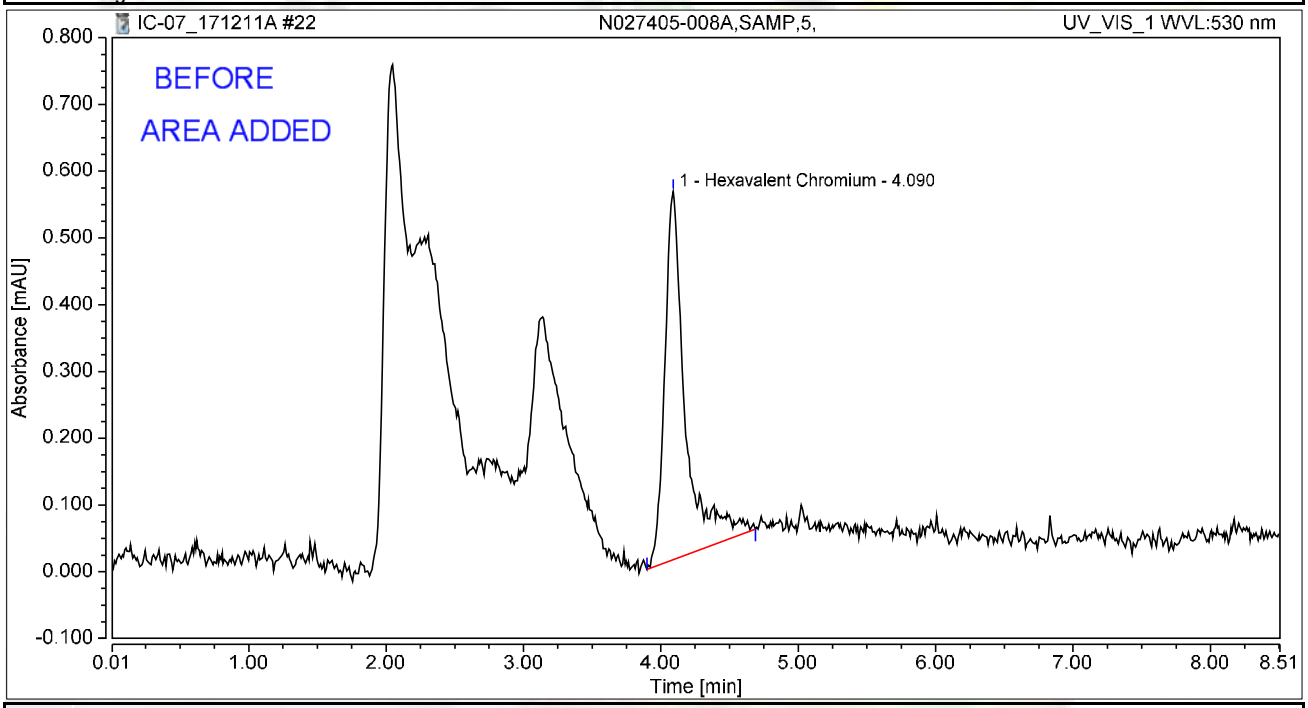
Chromatogram and Results

Injection Details

Injection Name:	**N027405-008A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.097	0.552	100.00	100.00	0.3848
Total:			**0.097**	**0.552**	**100.00**	**100.00**	

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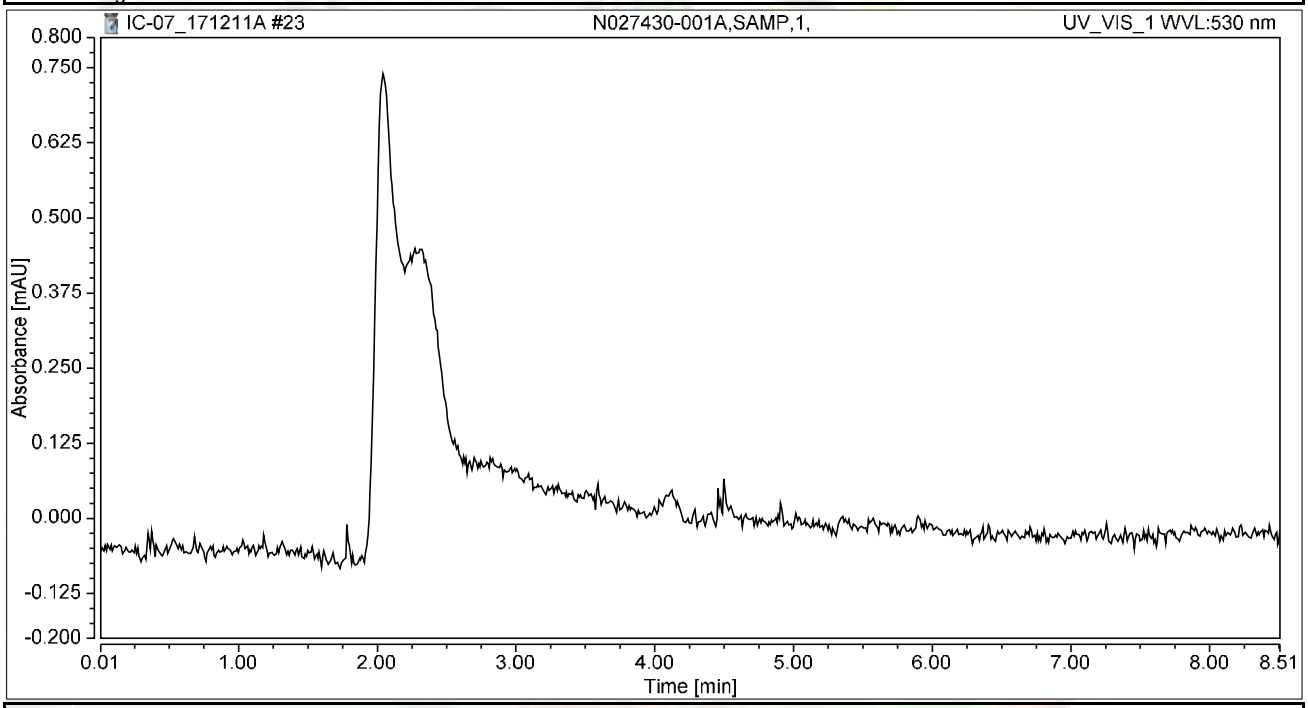
Chromatogram and Results

Injection Details

Injection Name:	**N027430-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

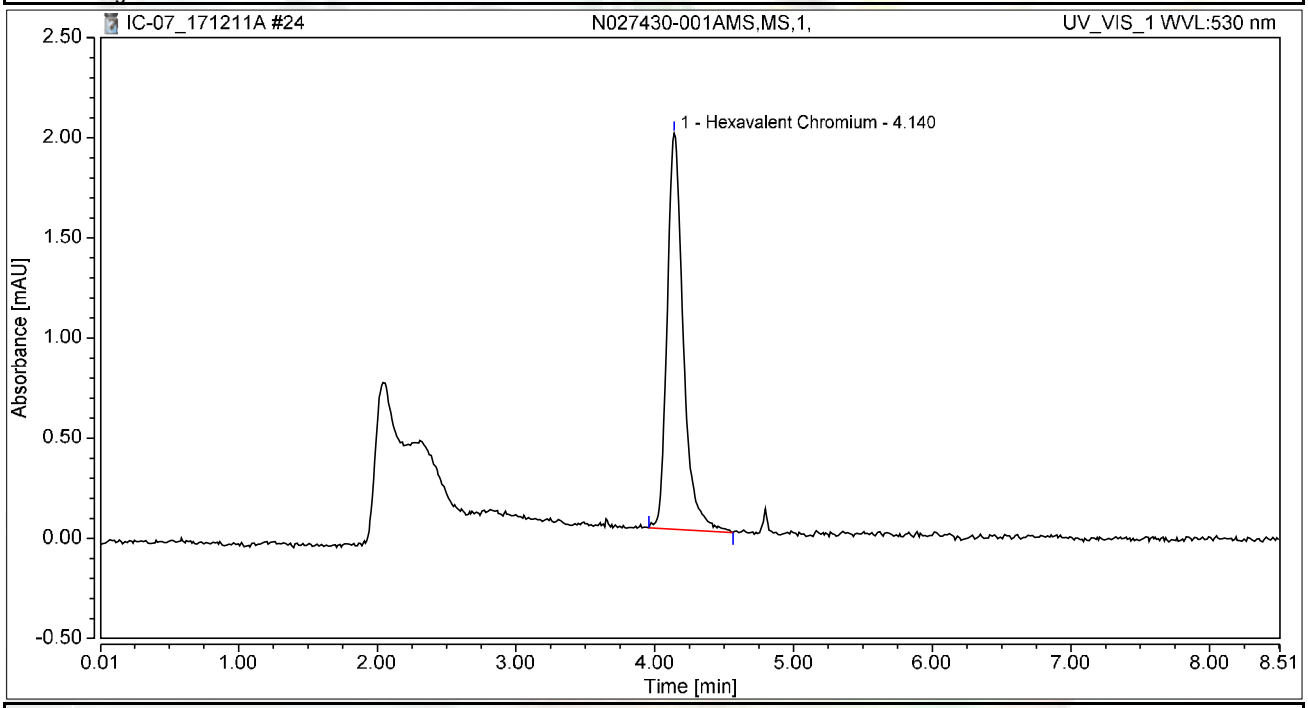
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

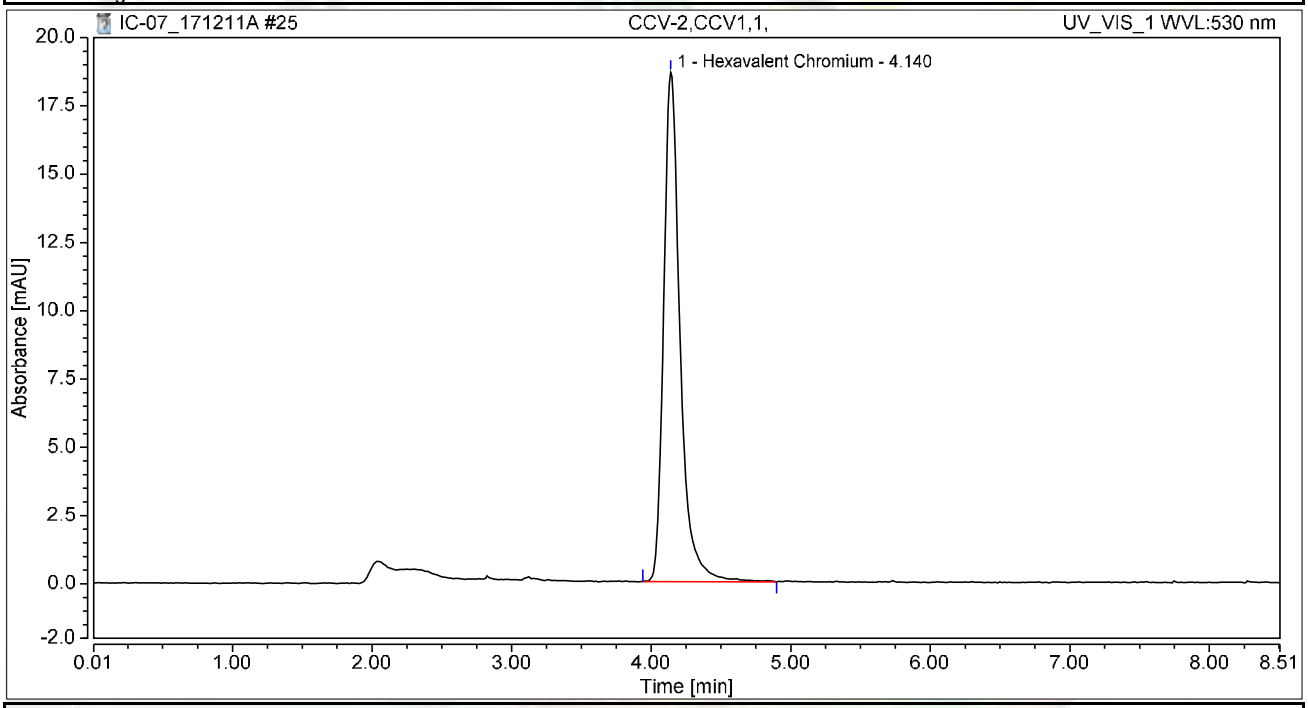
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.268	1.978	100.00	100.00	1.0677
Total:			**0.268**	**1.978**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

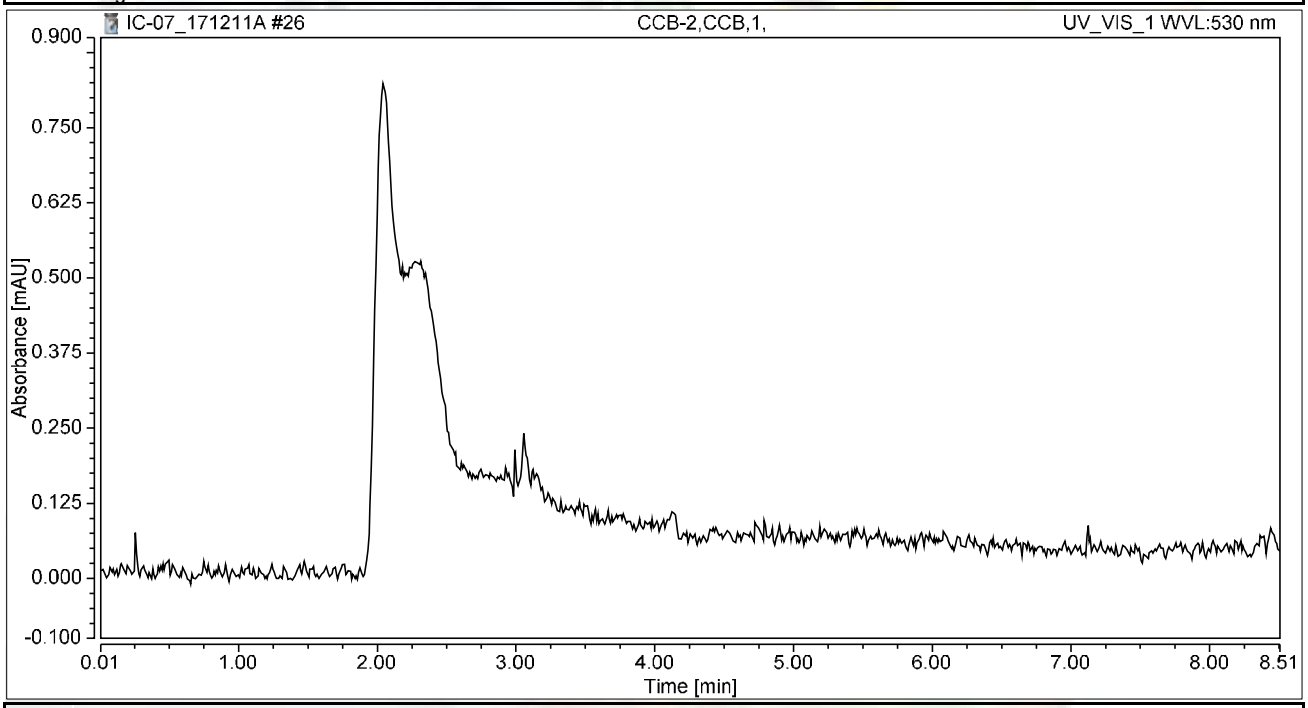
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.549	18.640	100.00	100.00	10.1518
Total:			**2.549**	**18.640**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

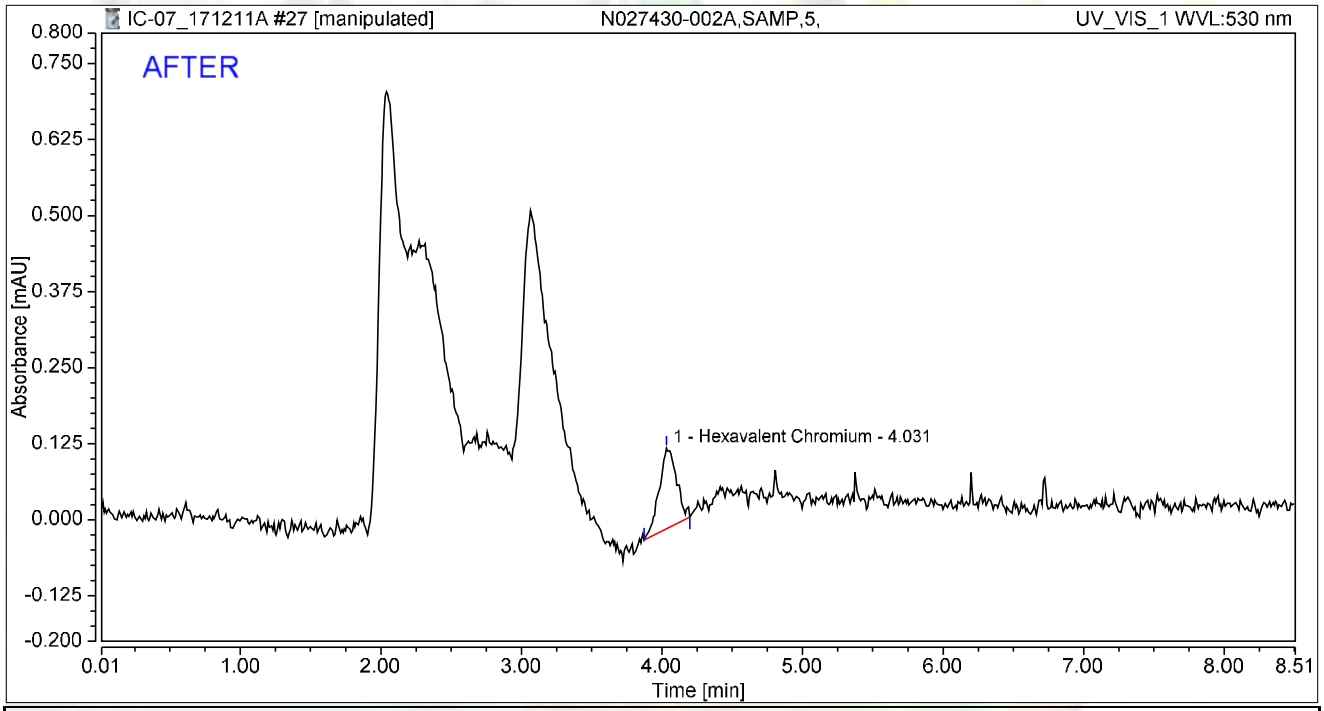
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-002A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.031	0.019	0.133	100.00	100.00	0.0743
Total:			**0.019**	**0.133**	**100.00**	**100.00**	

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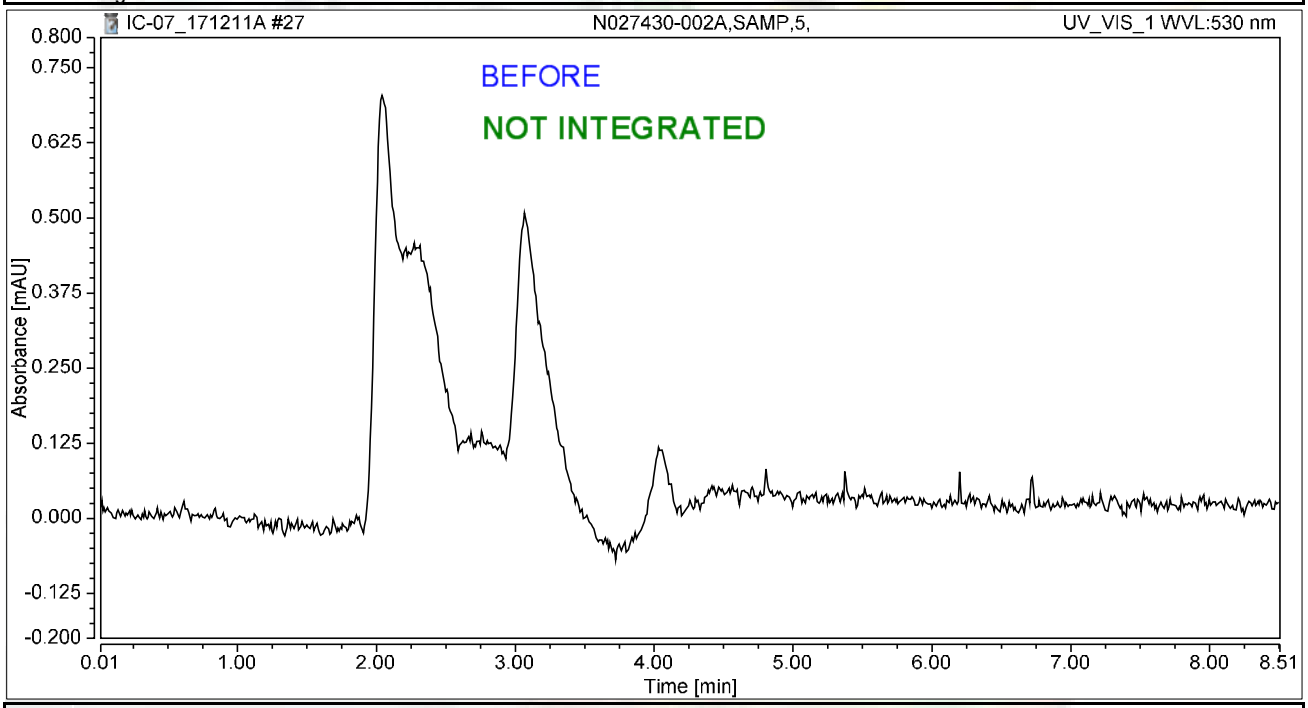
Chromatogram and Results

Injection Details

Injection Name:	**N027430-002A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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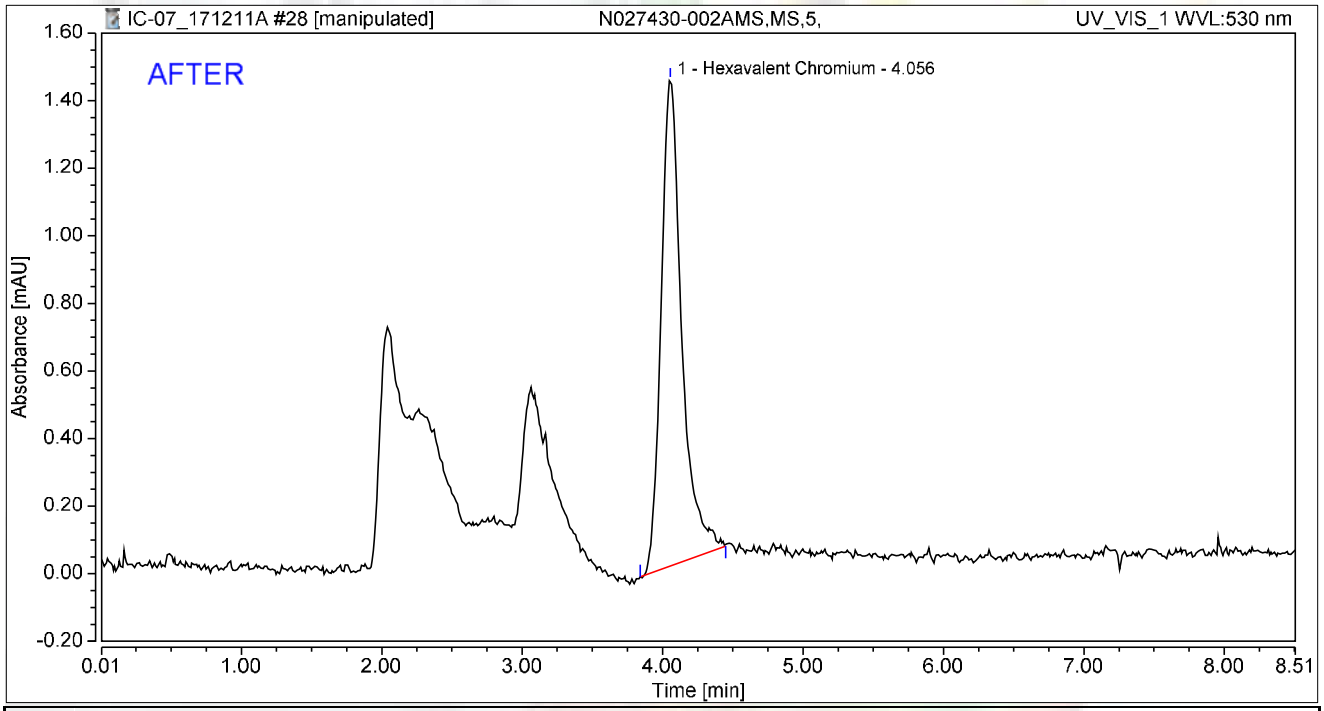
Chromatogram and Results

Injection Details

Injection Name:	**N027430-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.246	1.438	100.00	100.00	0.9810
Total:			**0.246**	**1.438**	**100.00**	**100.00**	

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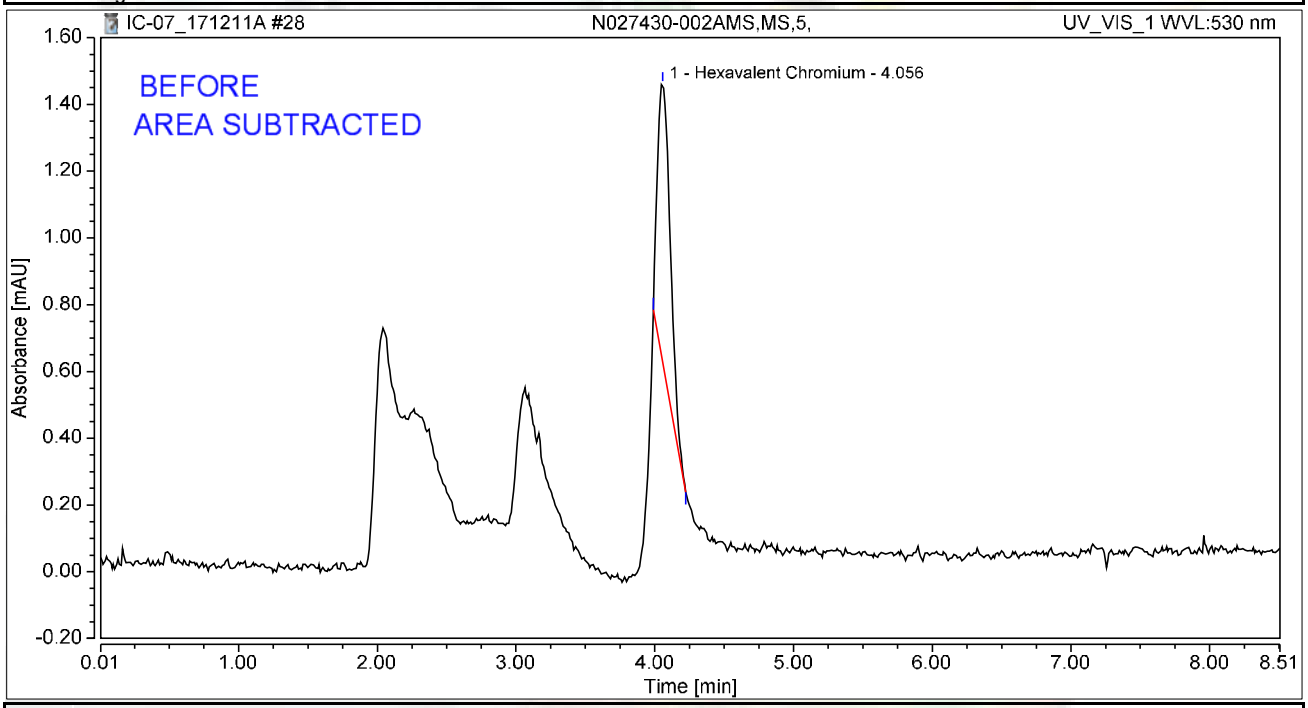
Chromatogram and Results

Injection Details

Injection Name:	**N027430-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.090	0.832	100.00	100.00	0.3580
Total:			**0.090**	**0.832**	**100.00**	**100.00**	

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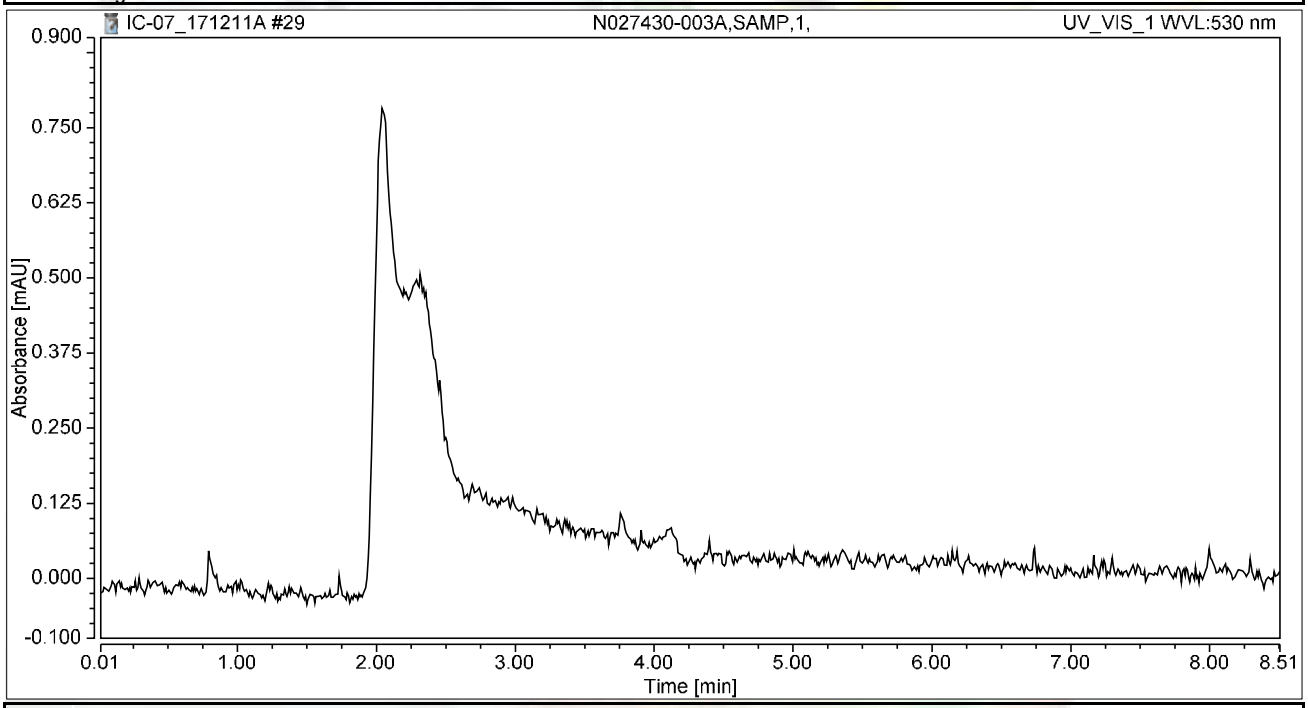
Chromatogram and Results

Injection Details

Injection Name:	**N027430-003A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 12:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

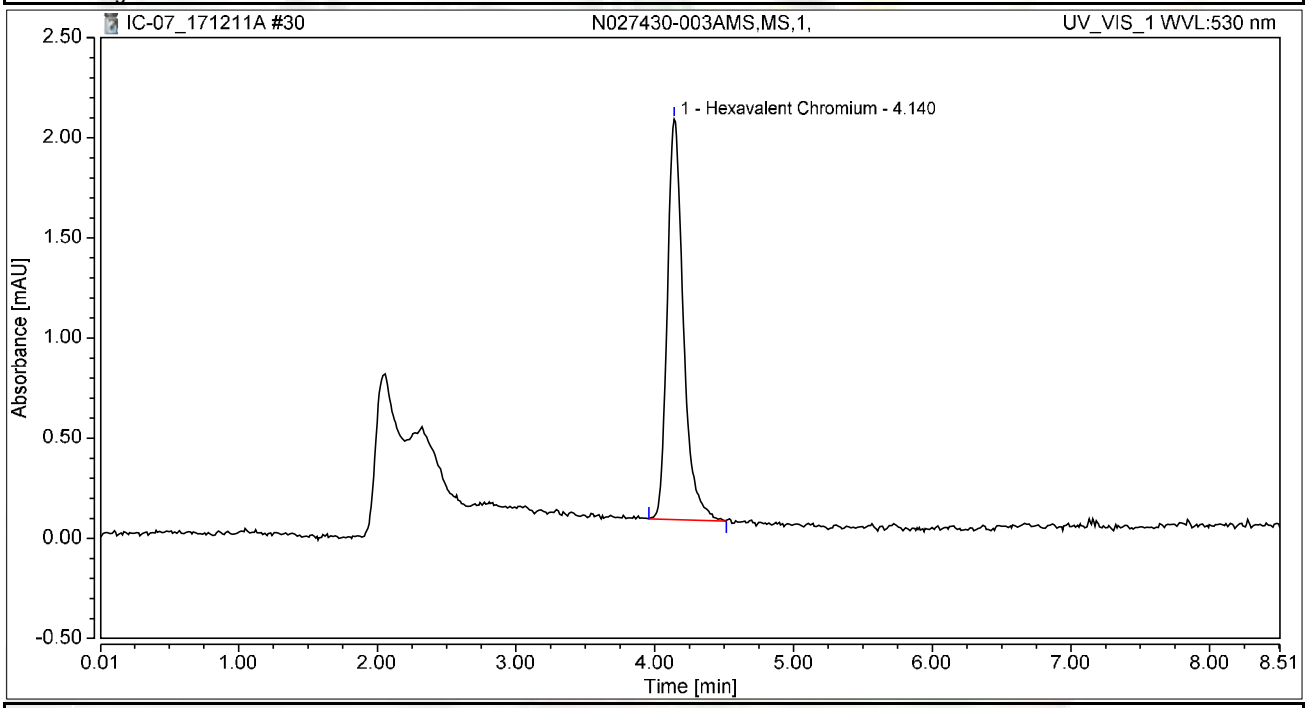
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

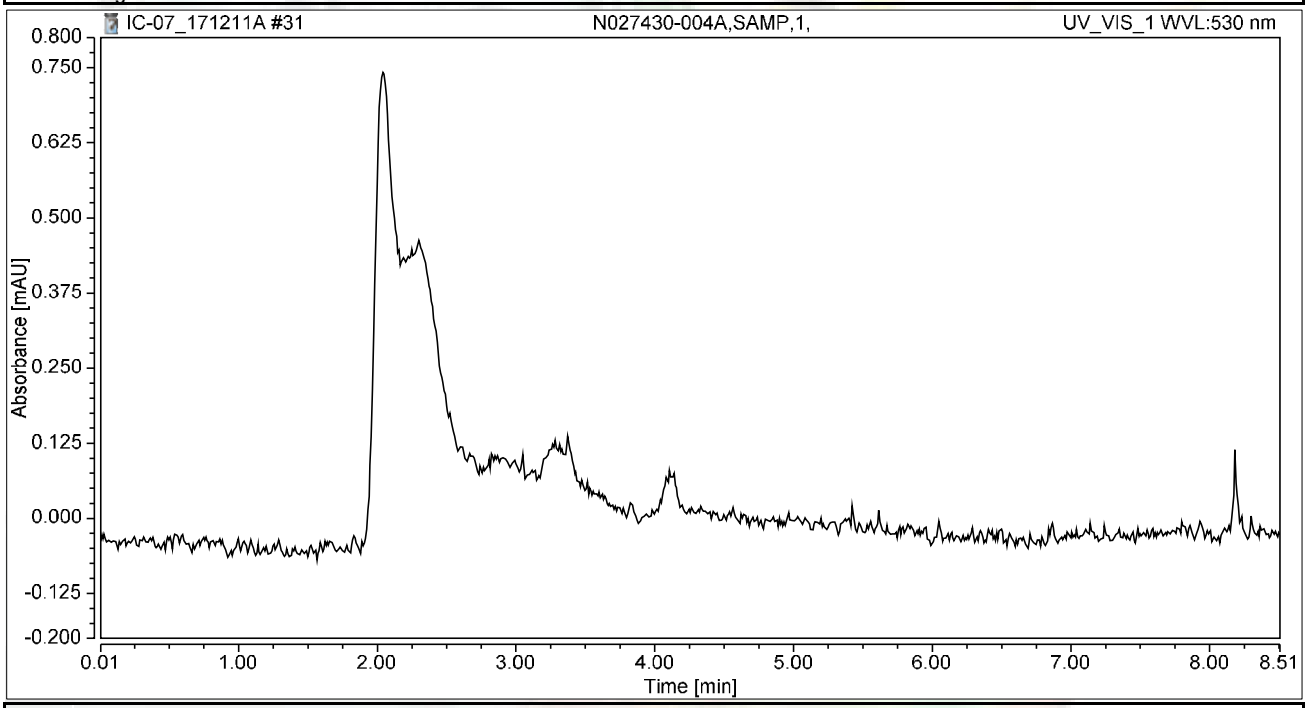
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.270	1.999	100.00	100.00	1.0741
Total:			**0.270**	**1.999**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 12:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

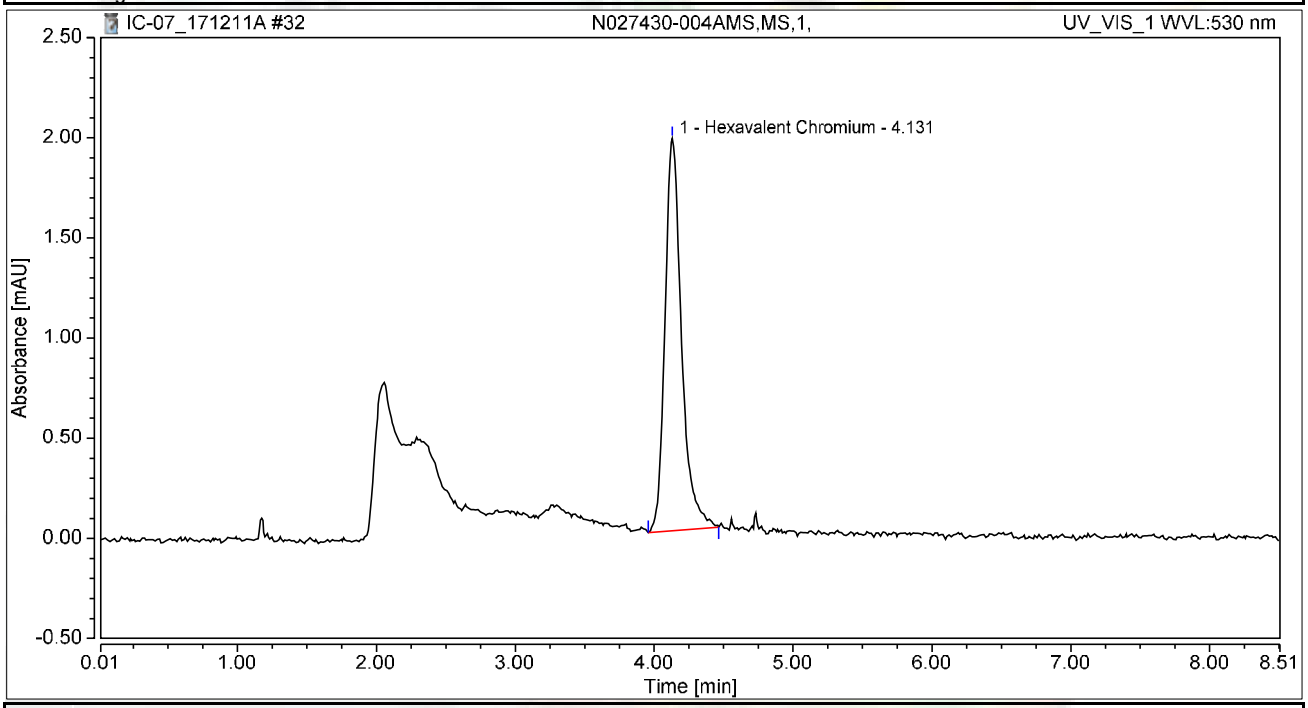
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-004AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 12:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

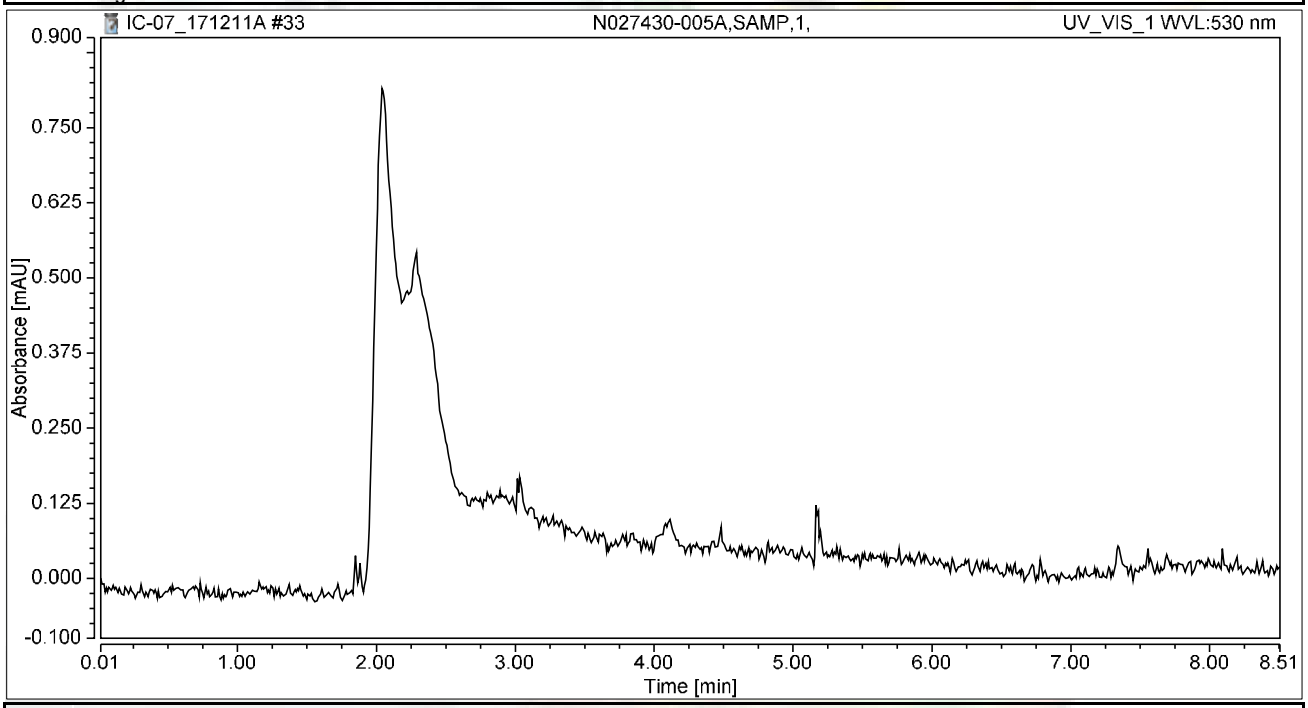
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.270	1.958	100.00	100.00	1.0766
Total:			**0.270**	**1.958**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-005A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 12:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

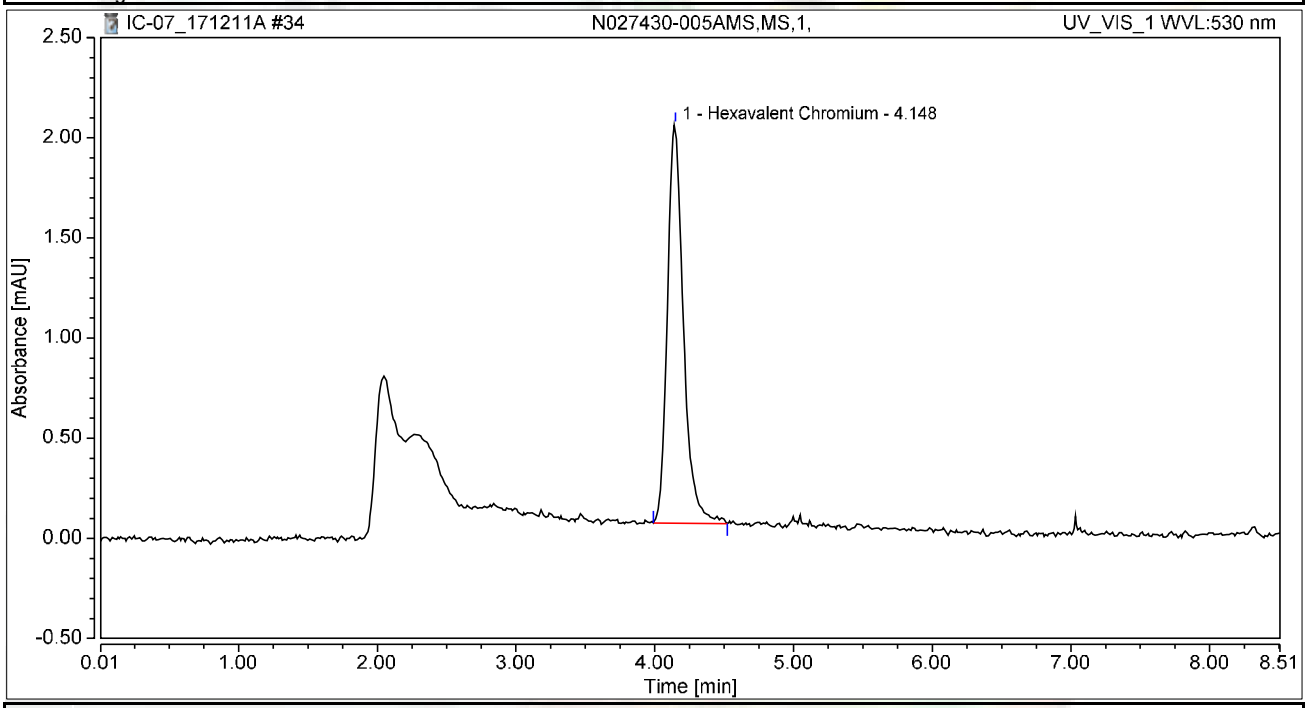
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-005AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 12:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

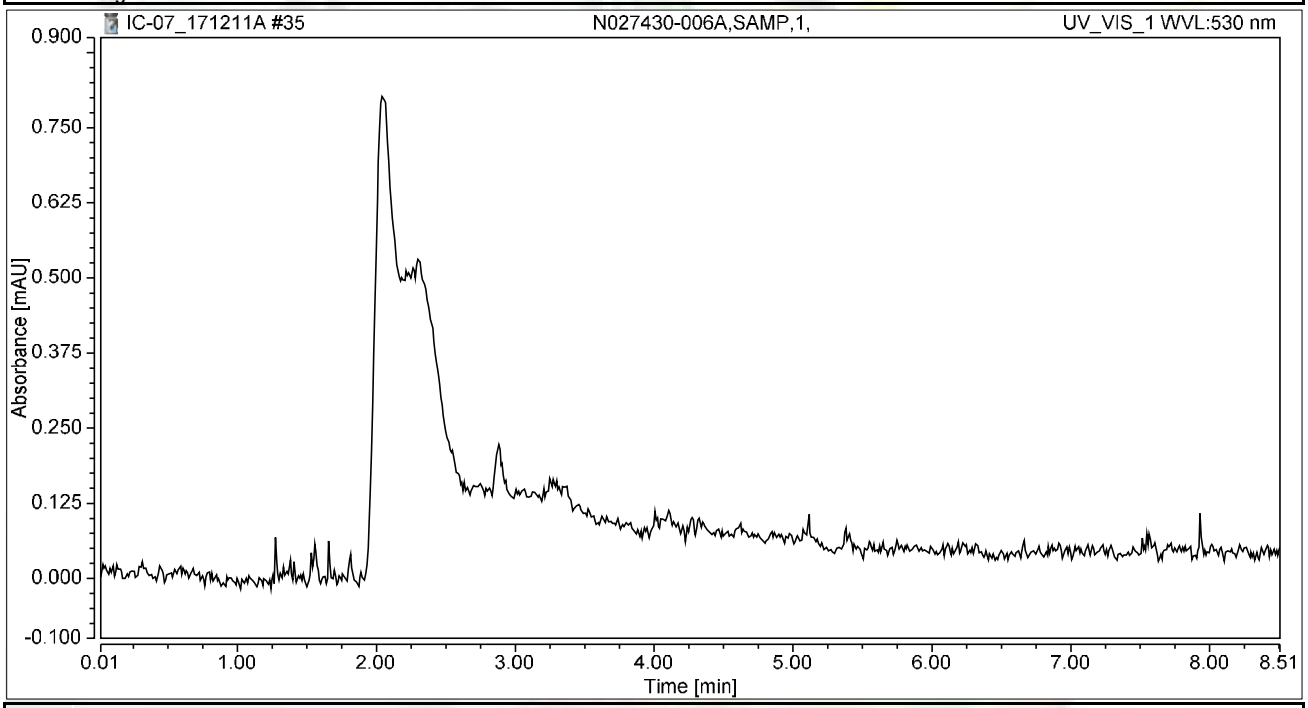
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.269	1.991	100.00	100.00	1.0694
Total:			**0.269**	**1.991**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-006A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

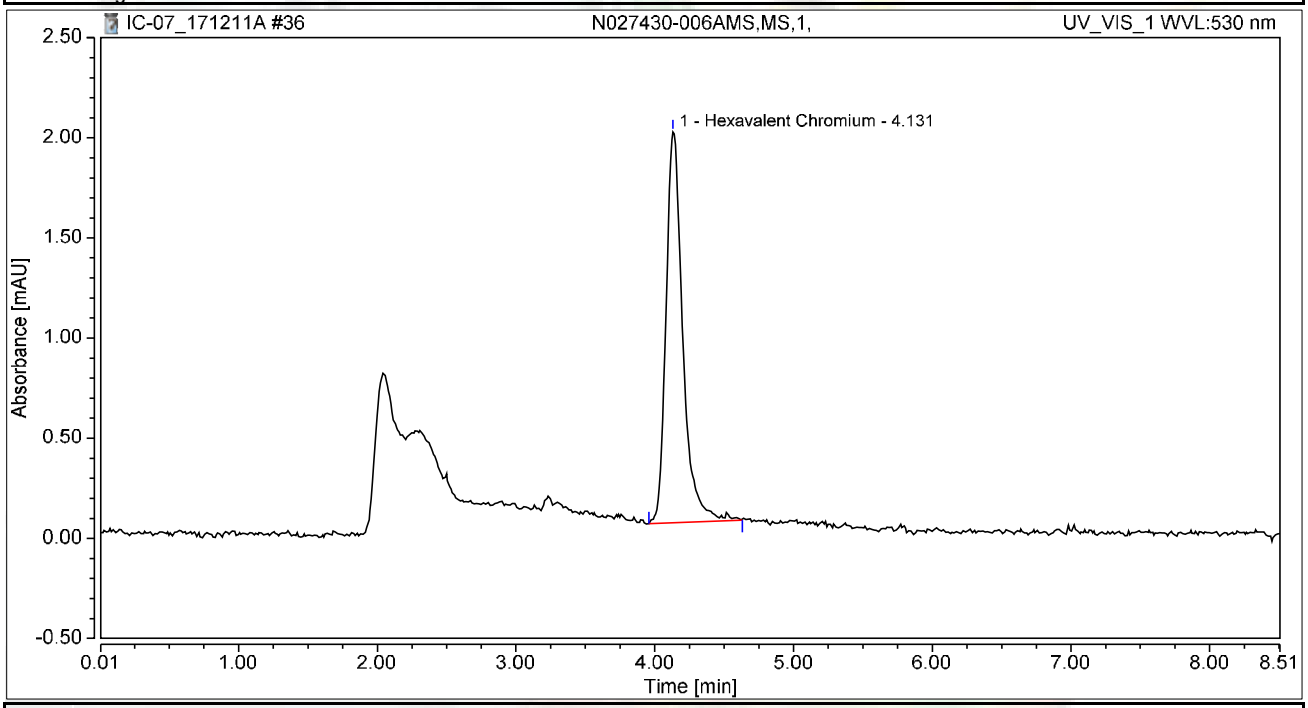
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

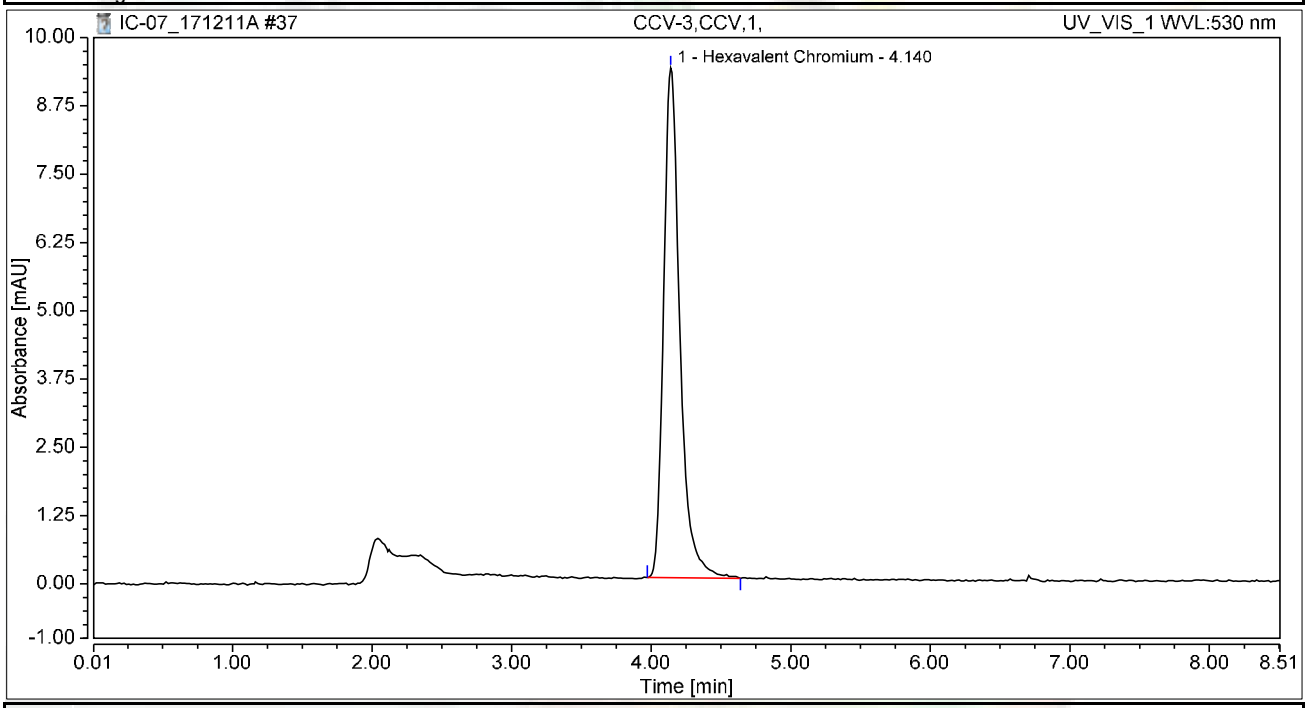
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.275	1.952	100.00	100.00	1.0966
Total:			**0.275**	**1.952**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

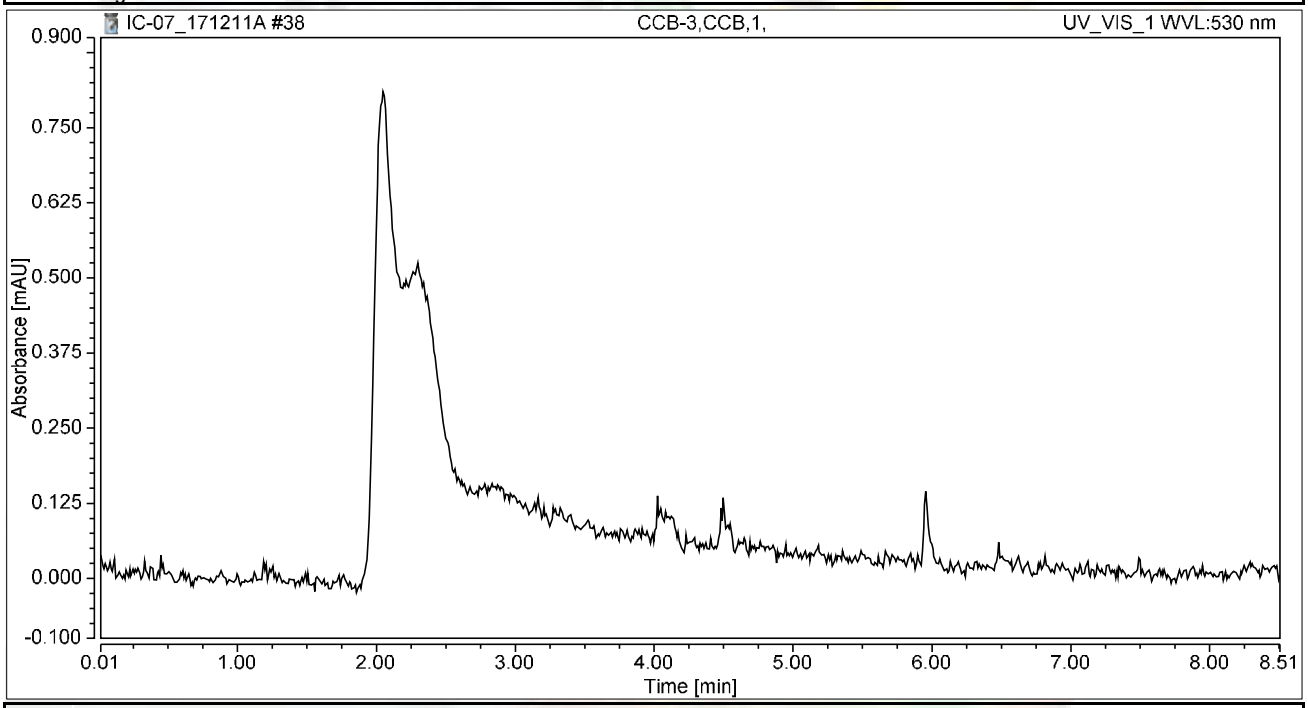
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.263	9.333	100.00	100.00	5.0296
Total:			**1.263**	**9.333**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

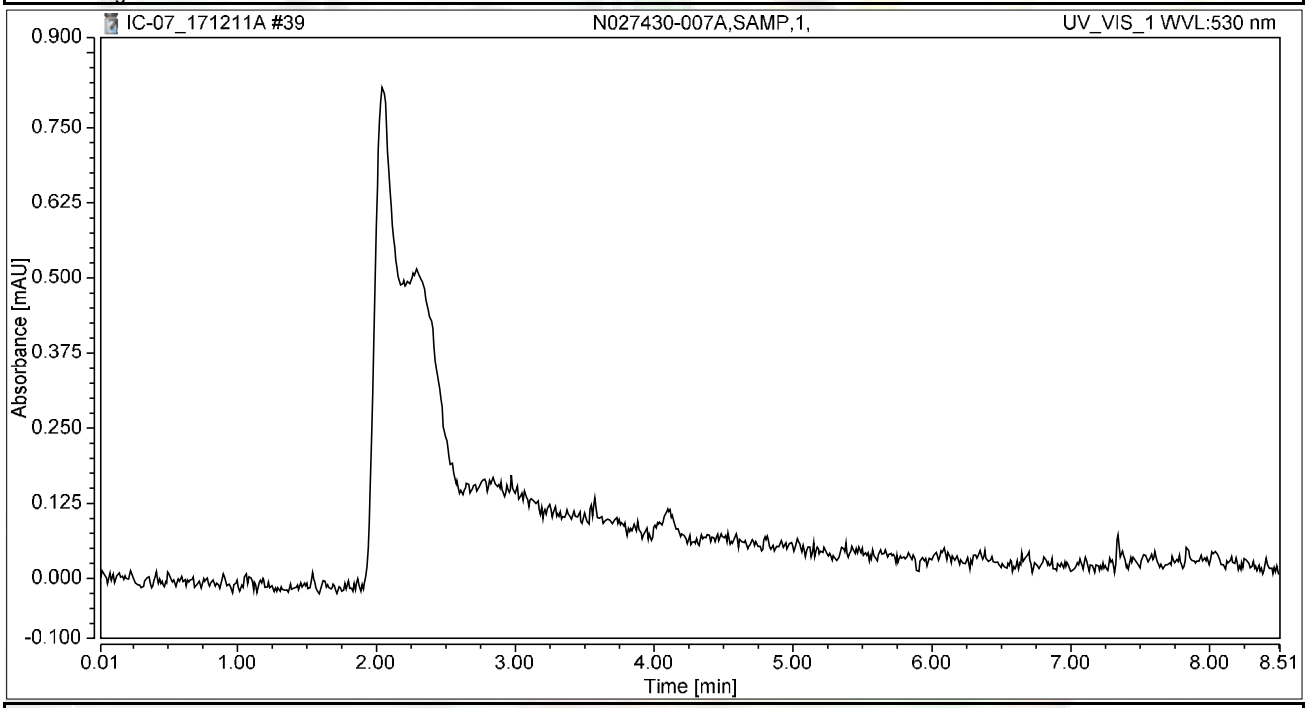
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-007A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

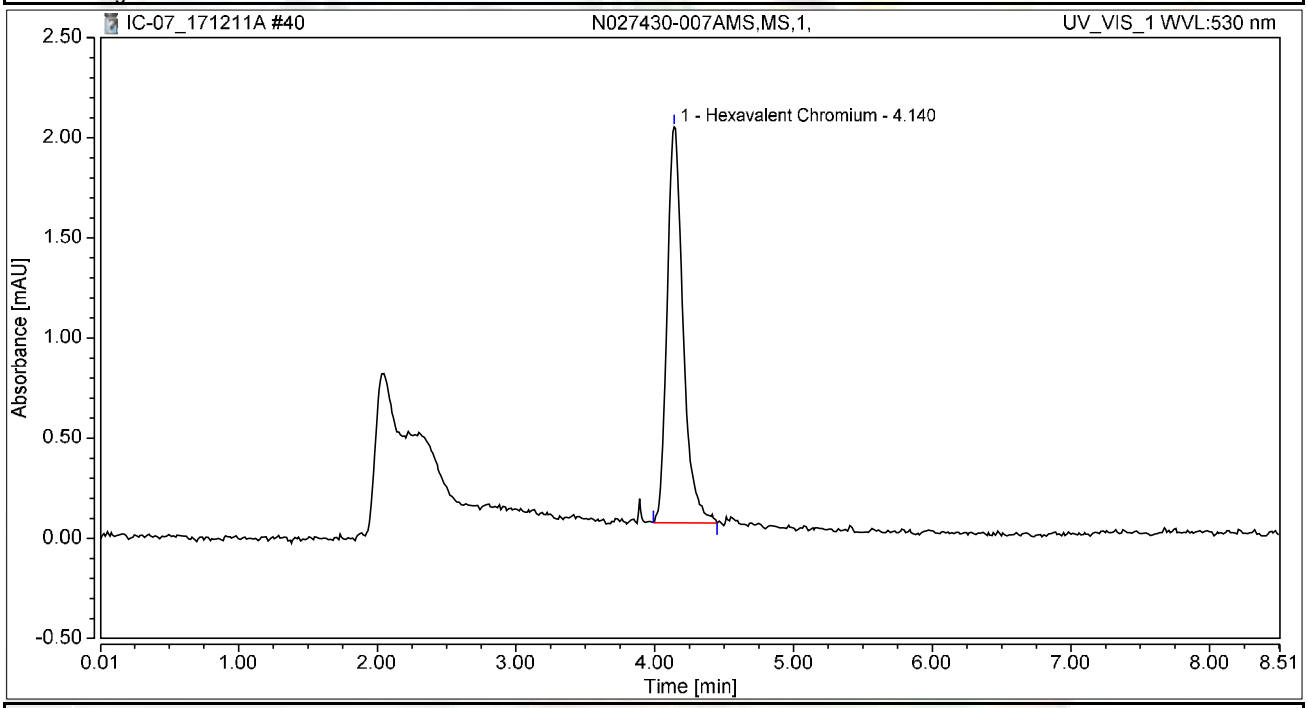
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

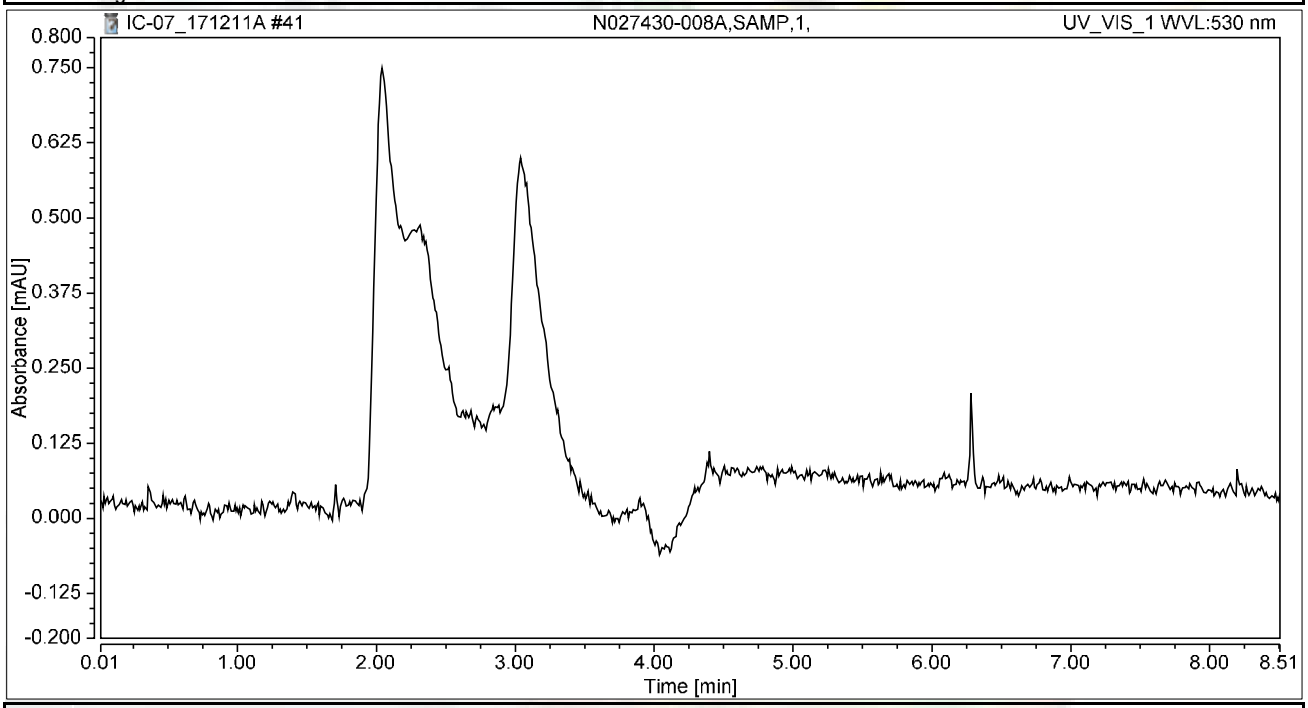
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.265	1.976	100.00	100.00	1.0563
Total:			**0.265**	**1.976**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-008A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

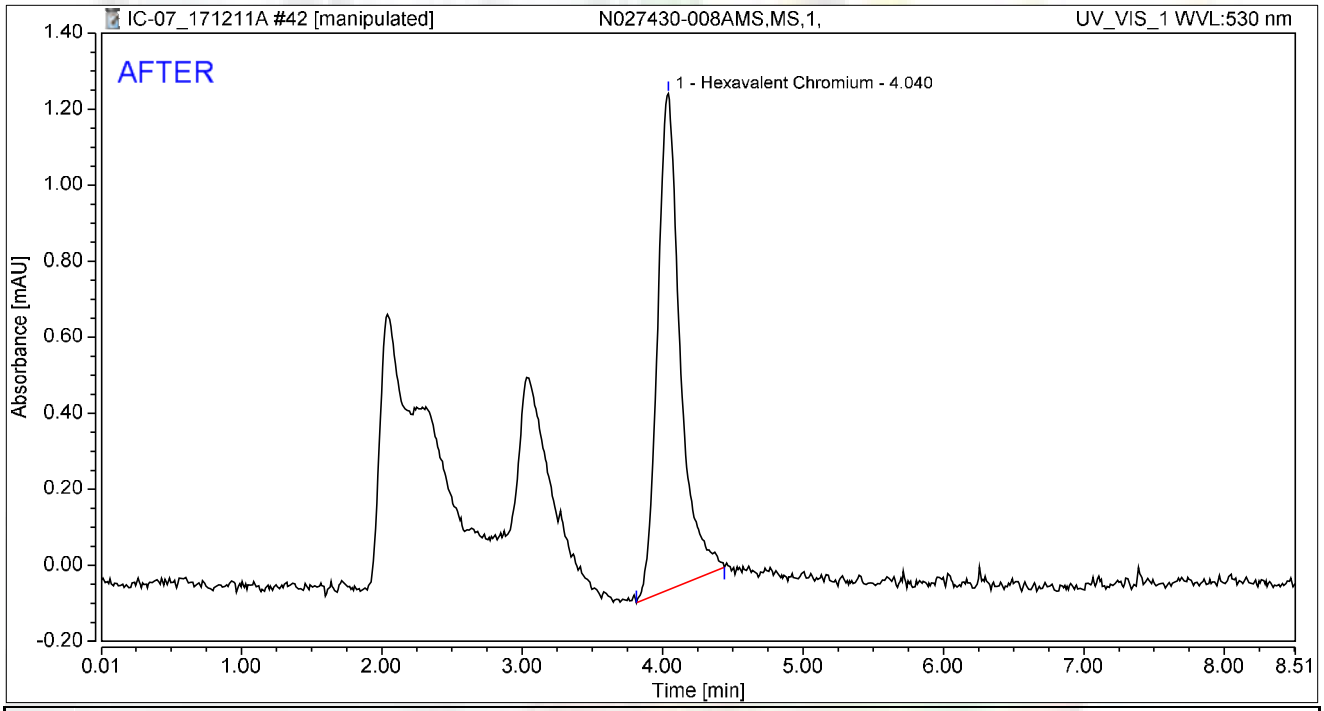
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.040	0.245	1.305	100.00	100.00	0.9757
Total:			**0.245**	**1.305**	**100.00**	**100.00**	

rba 12/16/2017

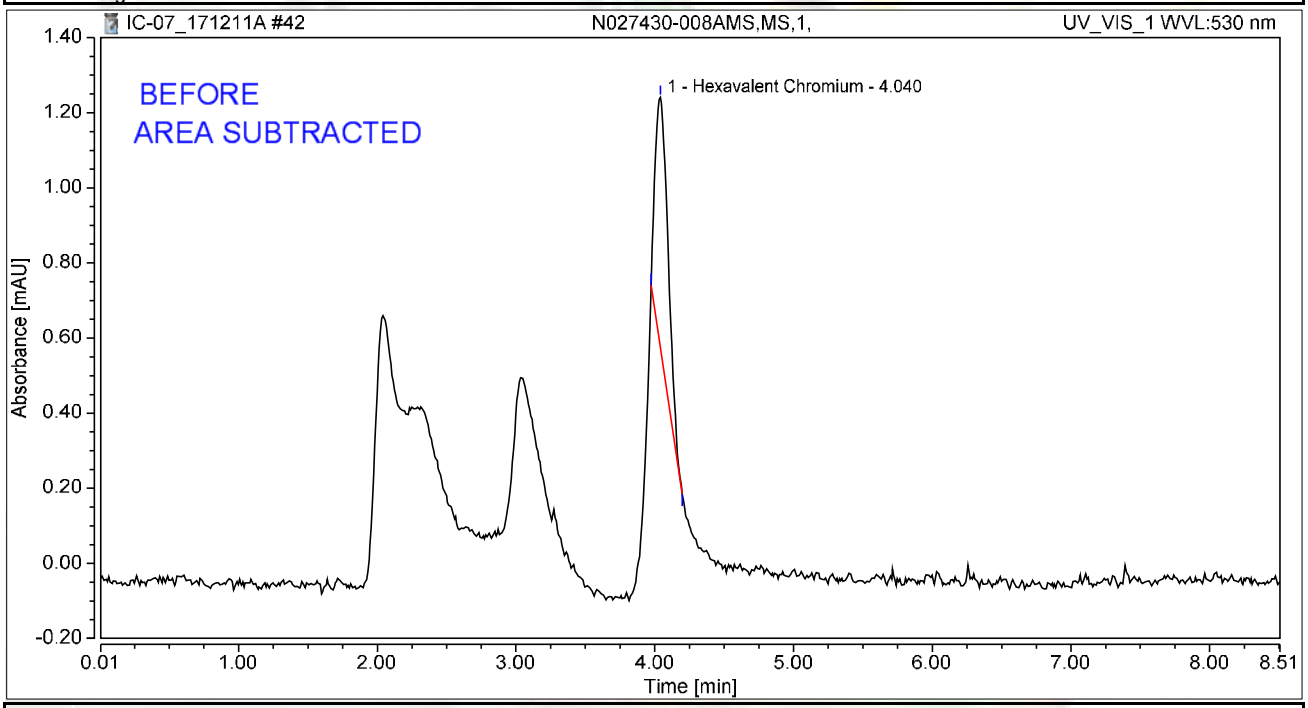
12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027430-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.040	0.072	0.665	100.00	100.00	0.2850
Total:			**0.072**	**0.665**	**100.00**	**100.00**	

rba 12/16/2017

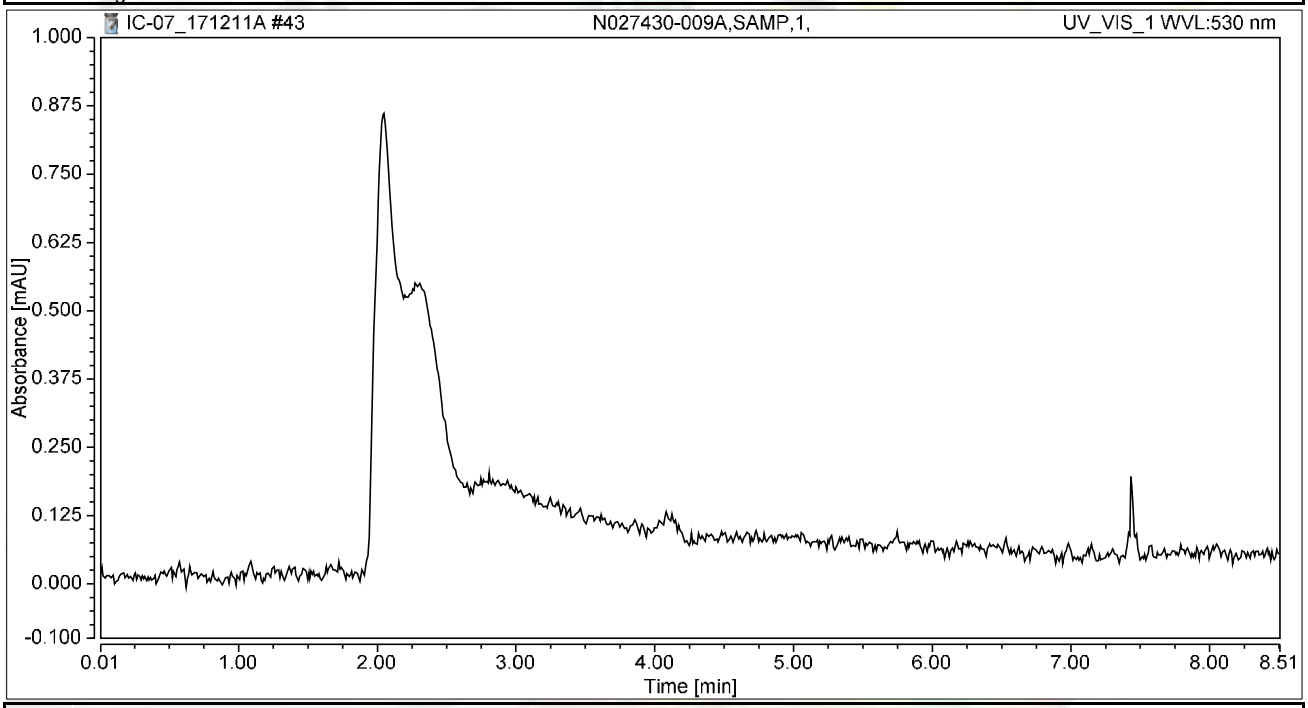
12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027430-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

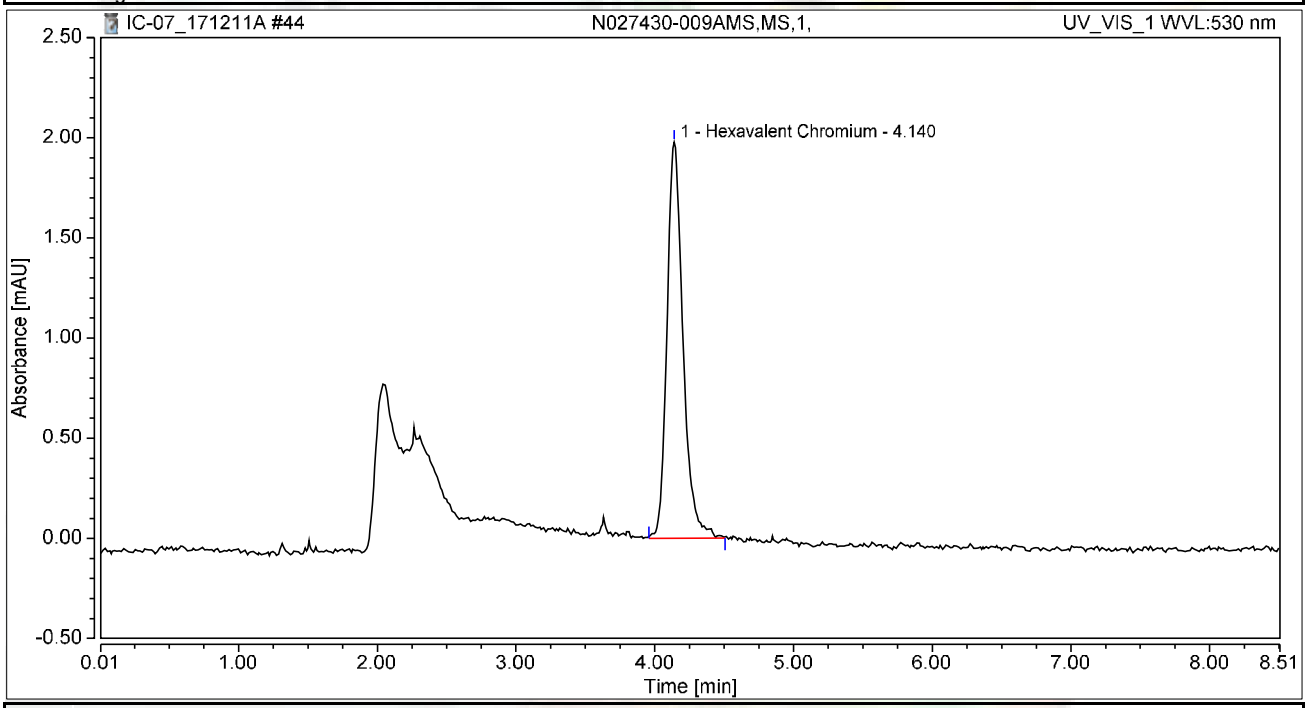
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

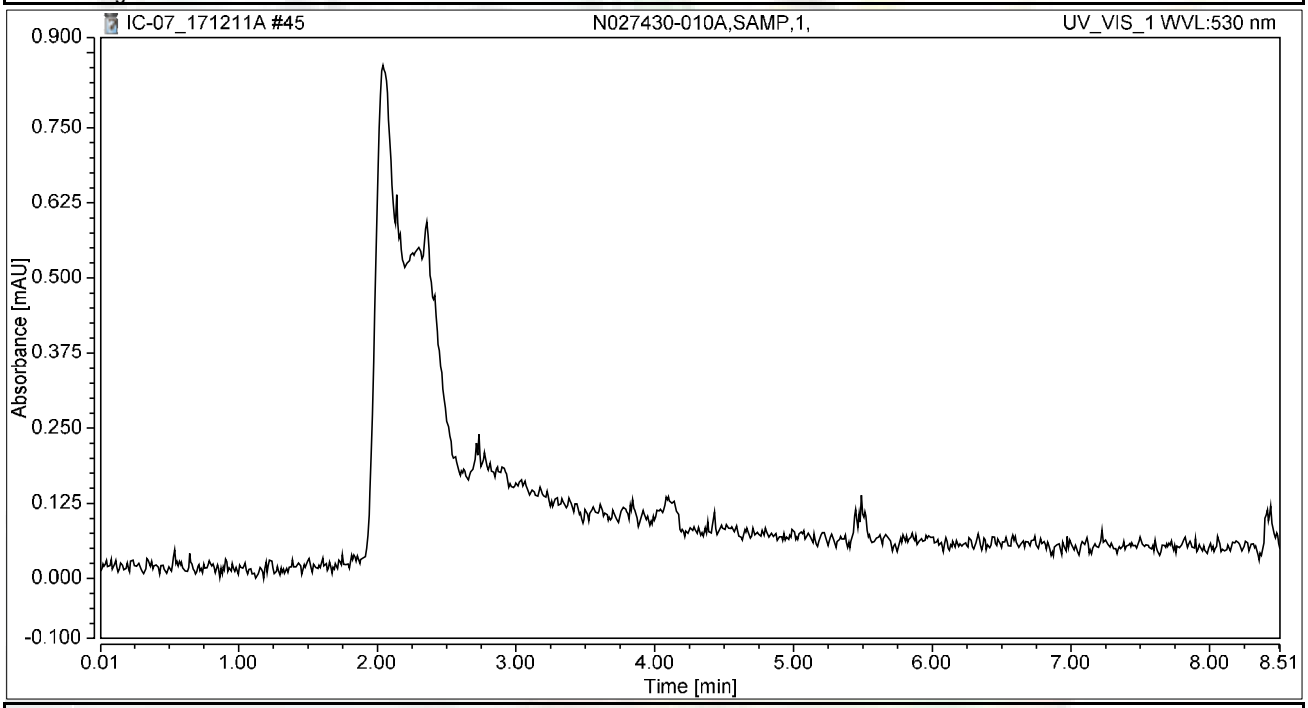
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.265	1.978	100.00	100.00	1.0572
Total:			**0.265**	**1.978**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

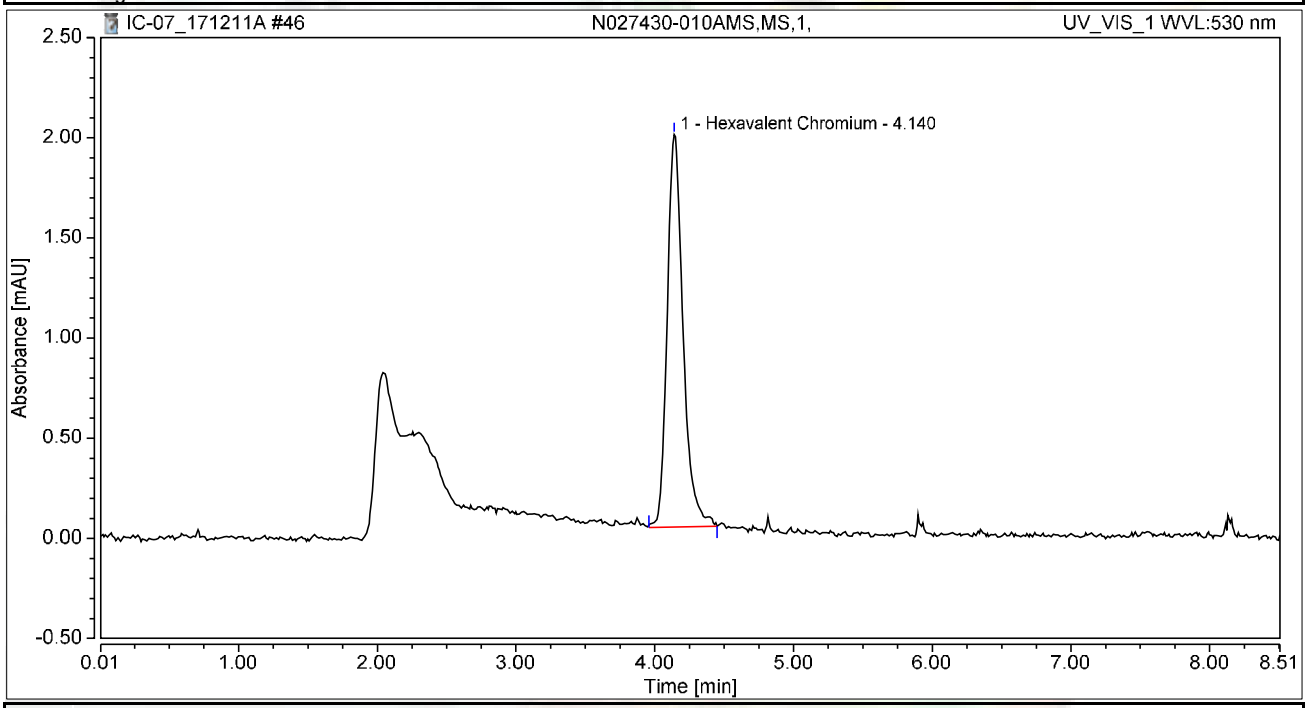
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-010AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

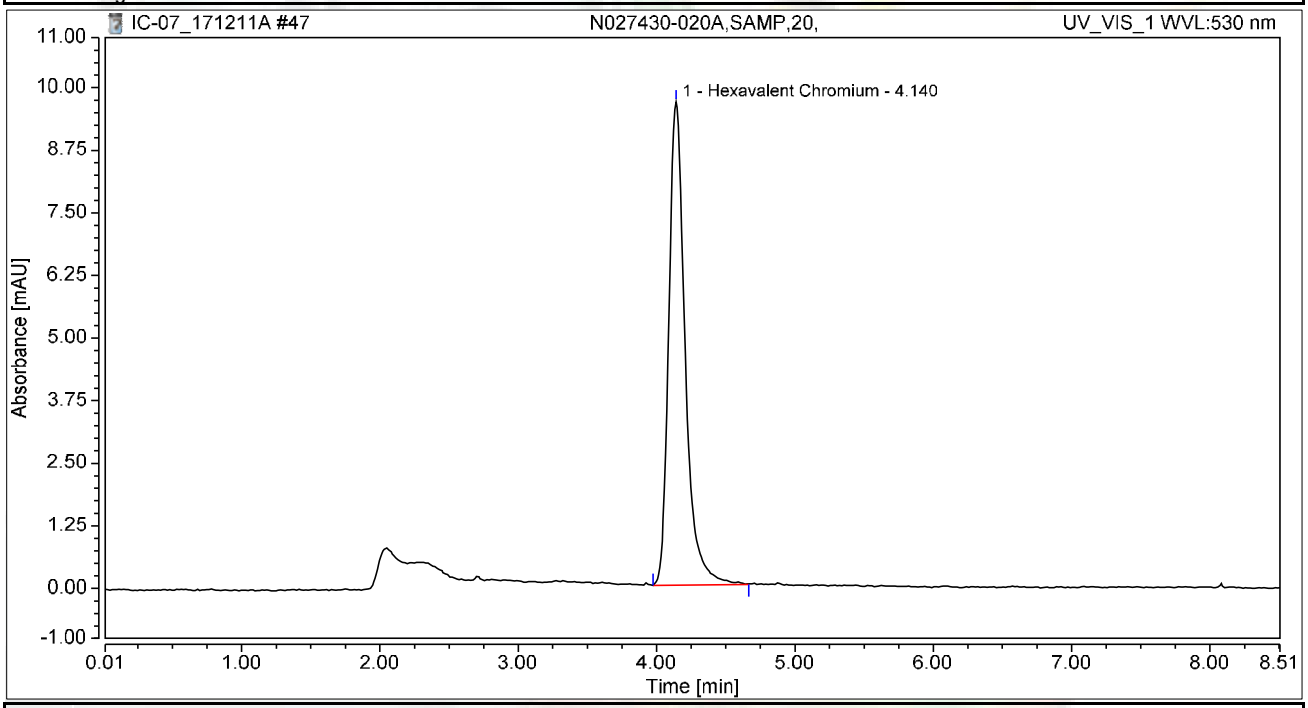
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.261	1.959	100.00	100.00	1.0401
Total:			**0.261**	**1.959**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-020A,SAMP,20,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

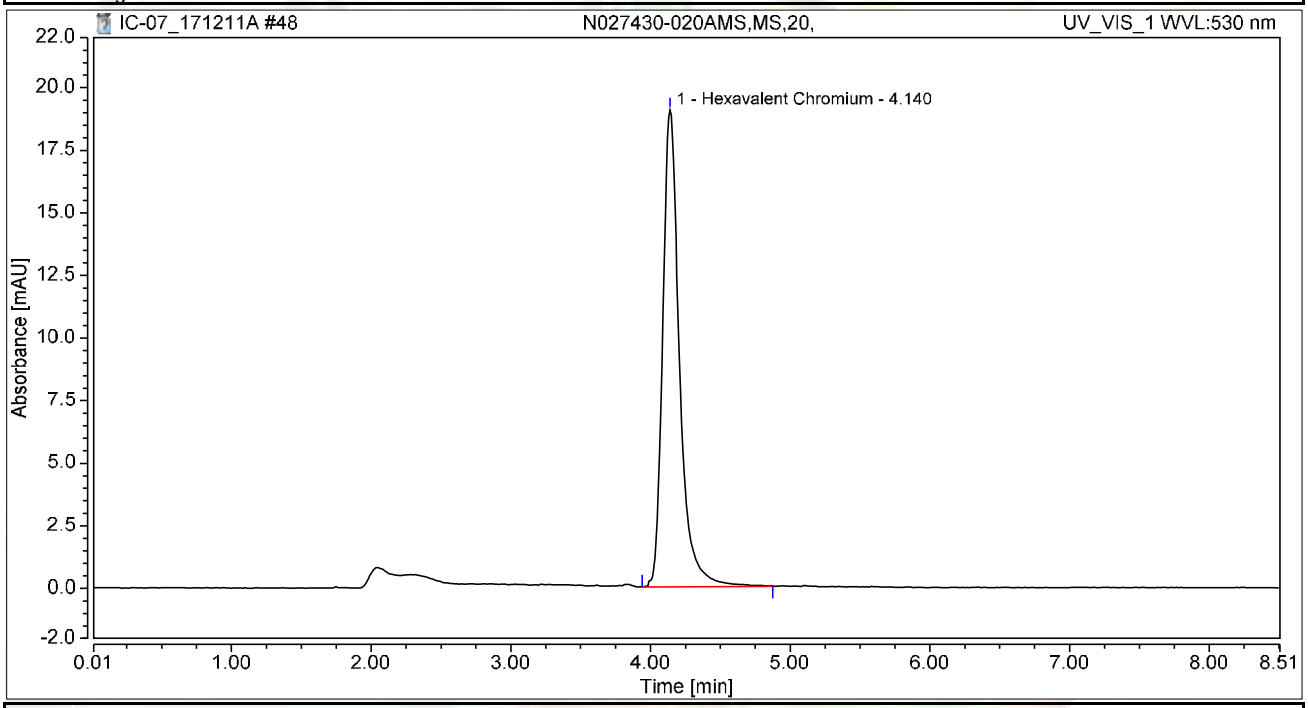
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.328	9.652	100.00	100.00	5.2893
Total:			**1.328**	**9.652**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-020AMS,MS,20,**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

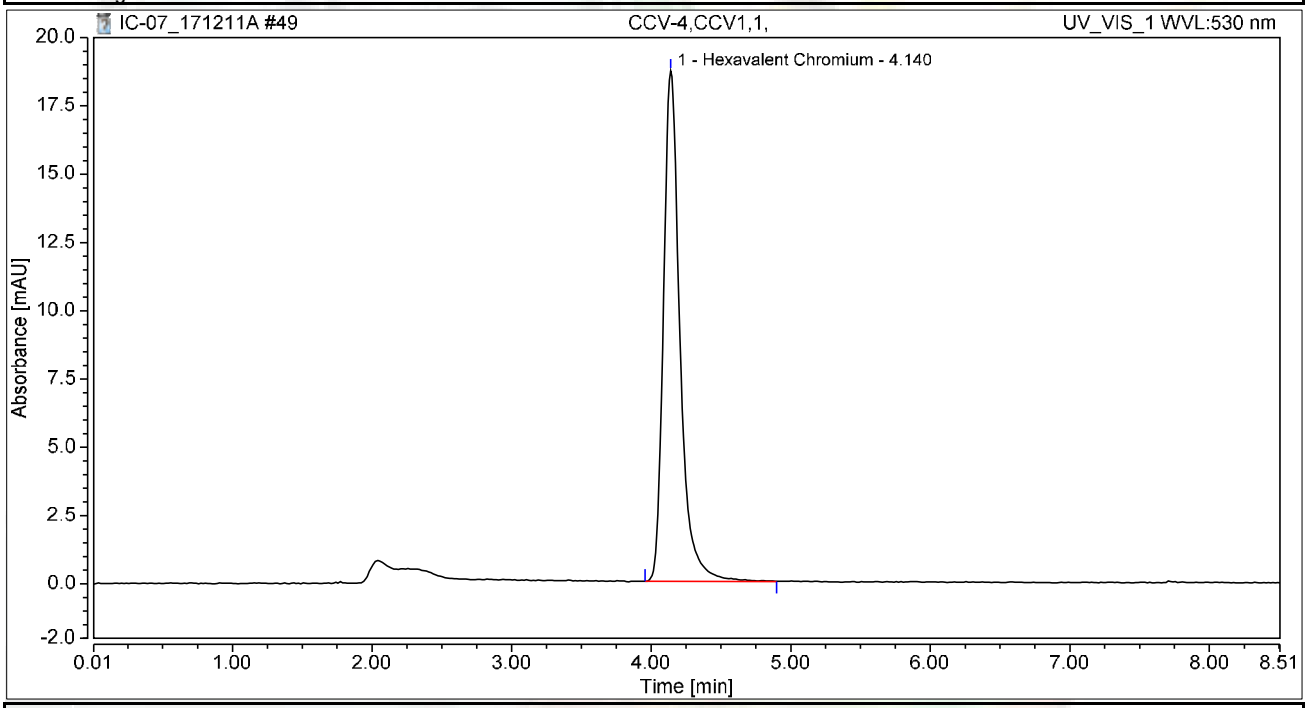
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.650	19.050	100.00	100.00	10.5546
Total:			**2.650**	**19.050**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

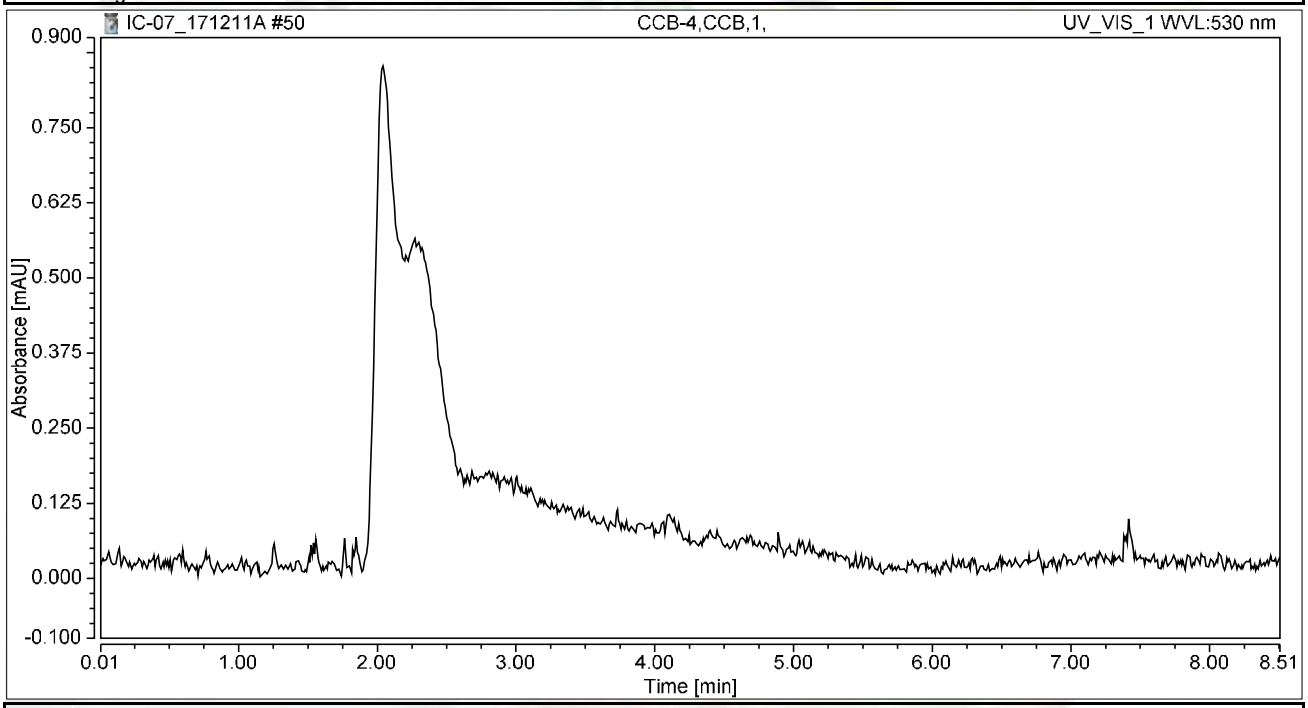
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.559	18.685	100.00	100.00	10.1931
Total:			**2.559**	**18.685**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

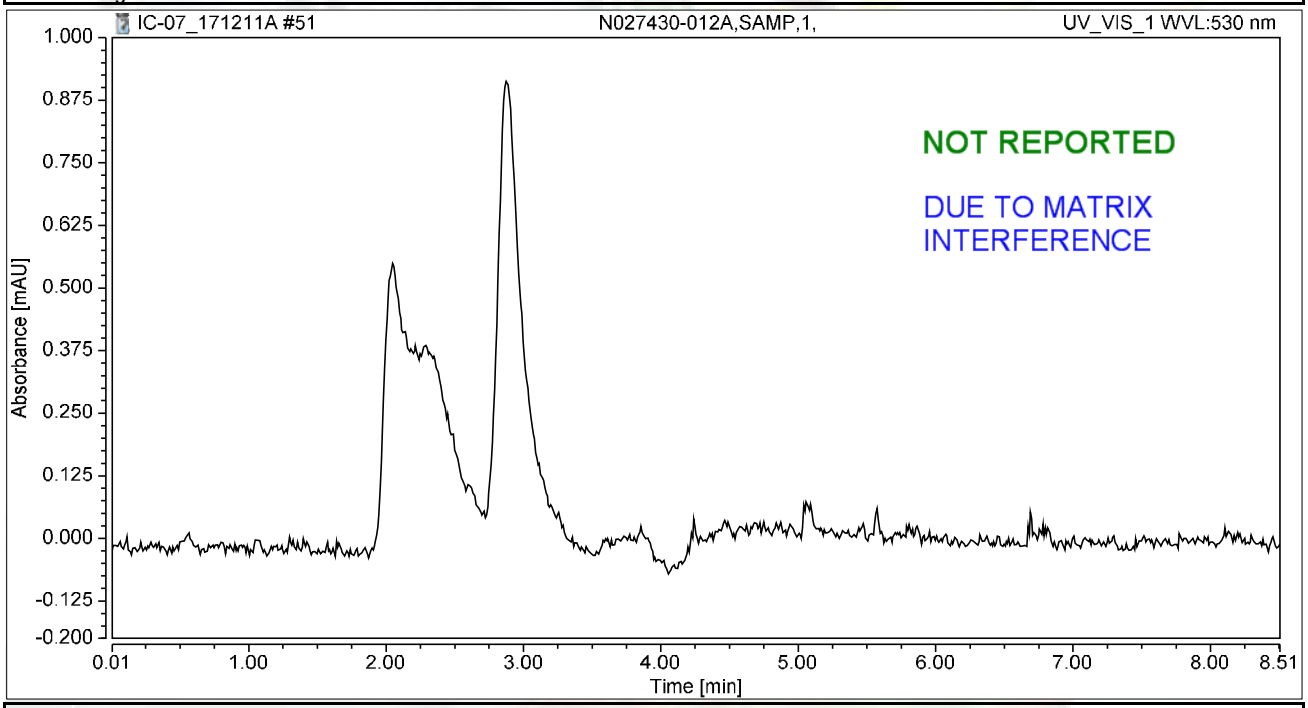
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-012A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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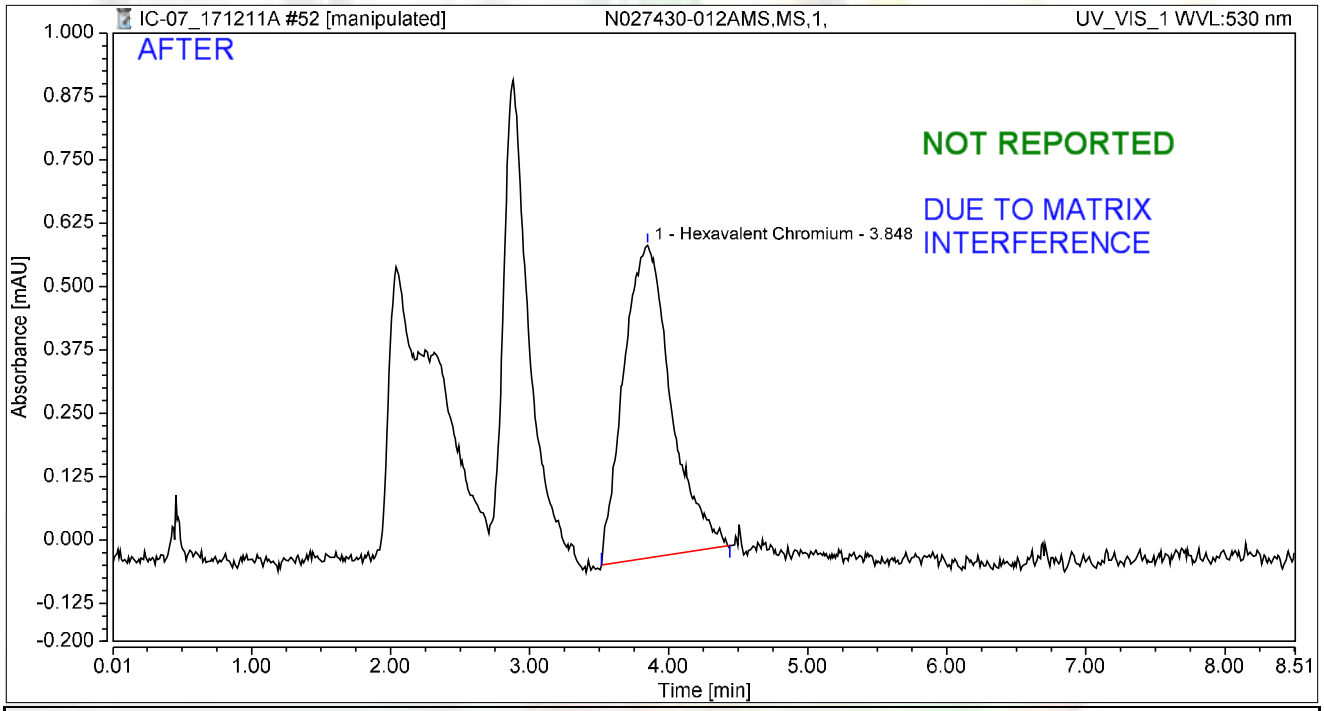
Chromatogram and Results

Injection Details

Injection Name:	**N027430-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.848	0.243	0.616	100.00	100.00	0.9692
Total:			**0.243**	**0.616**	**100.00**	**100.00**	

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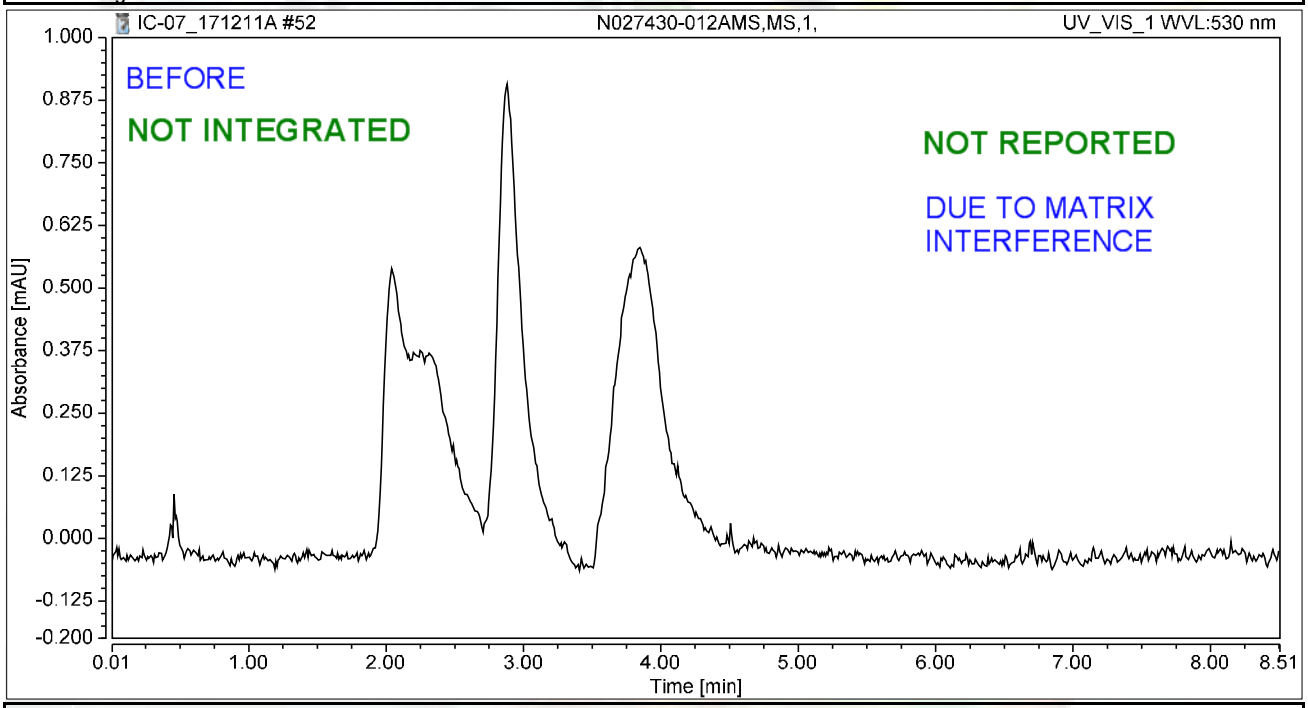
Chromatogram and Results

Injection Details

Injection Name:	**N027430-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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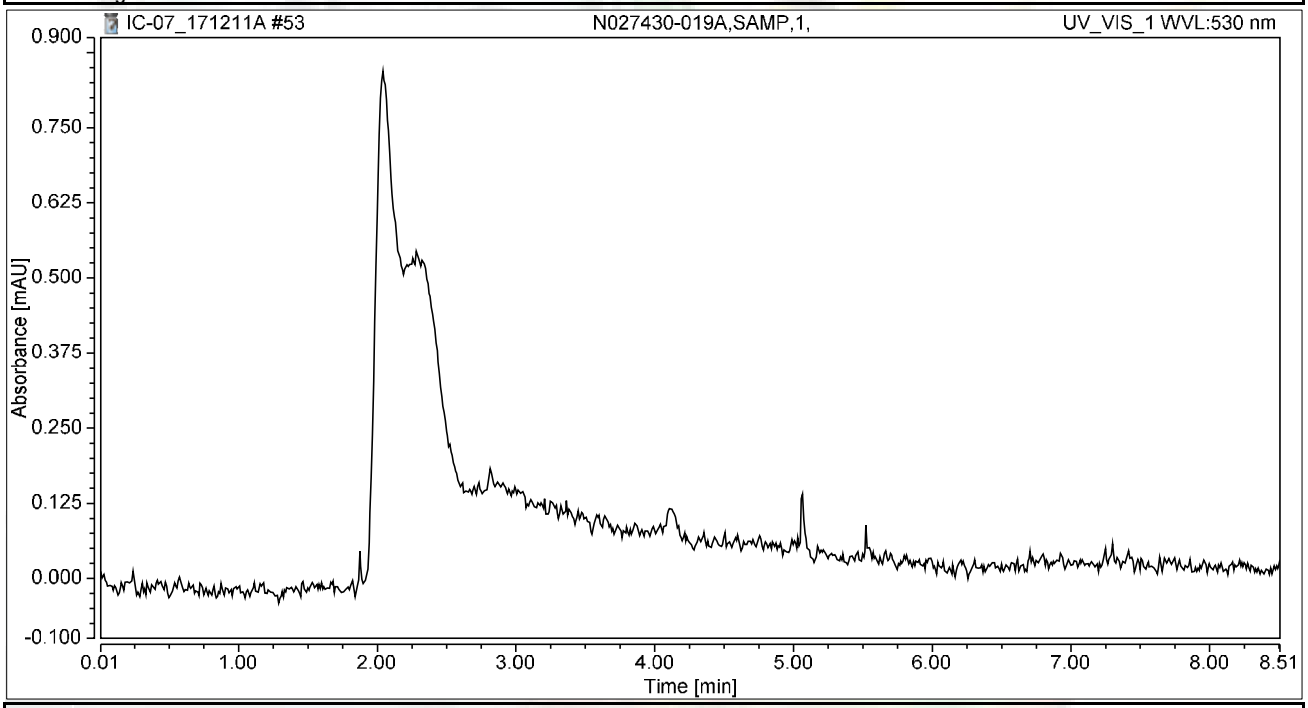
Chromatogram and Results

Injection Details

Injection Name:	**N027430-019A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

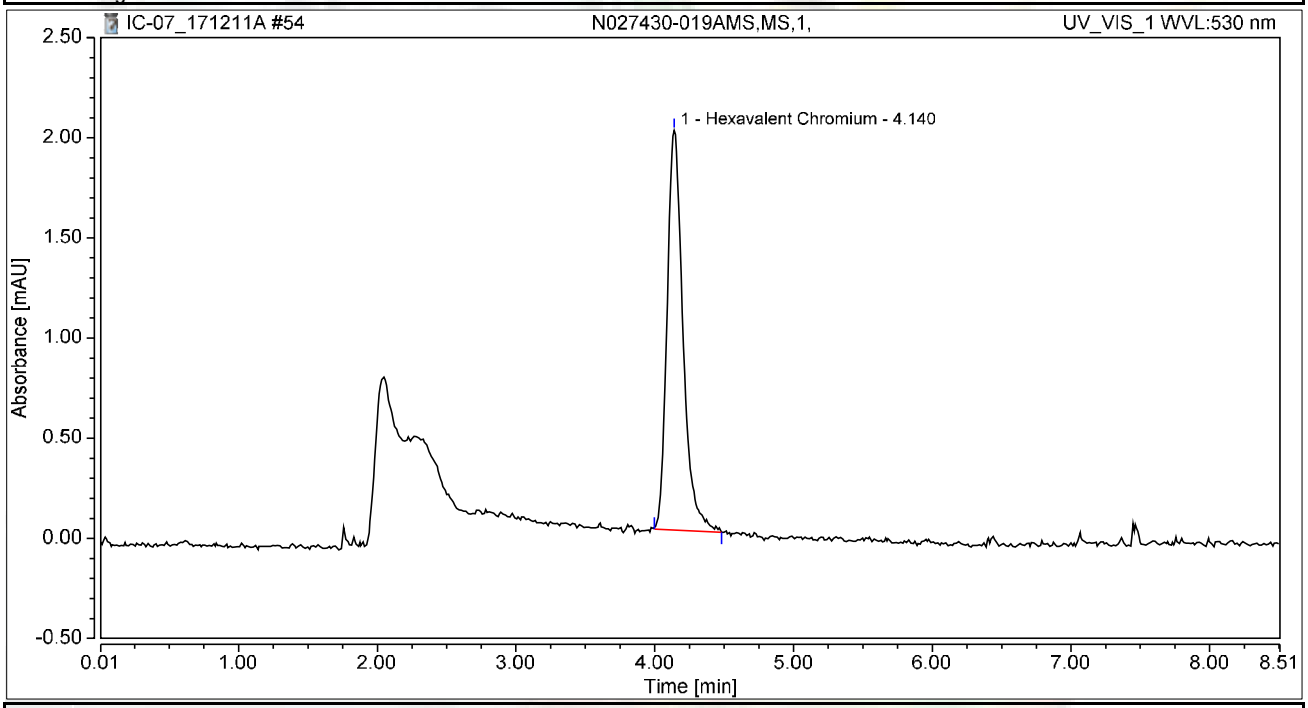
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-019AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

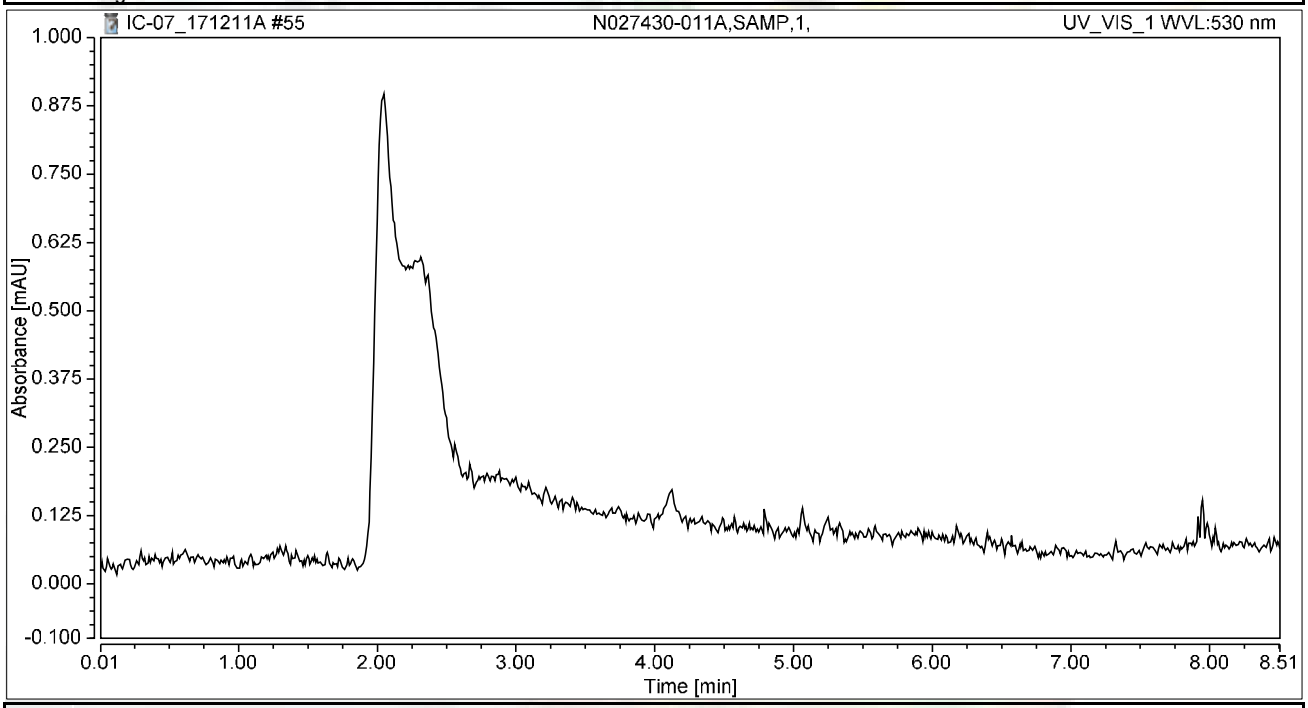
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.266	1.995	100.00	100.00	1.0592
Total:			**0.266**	**1.995**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

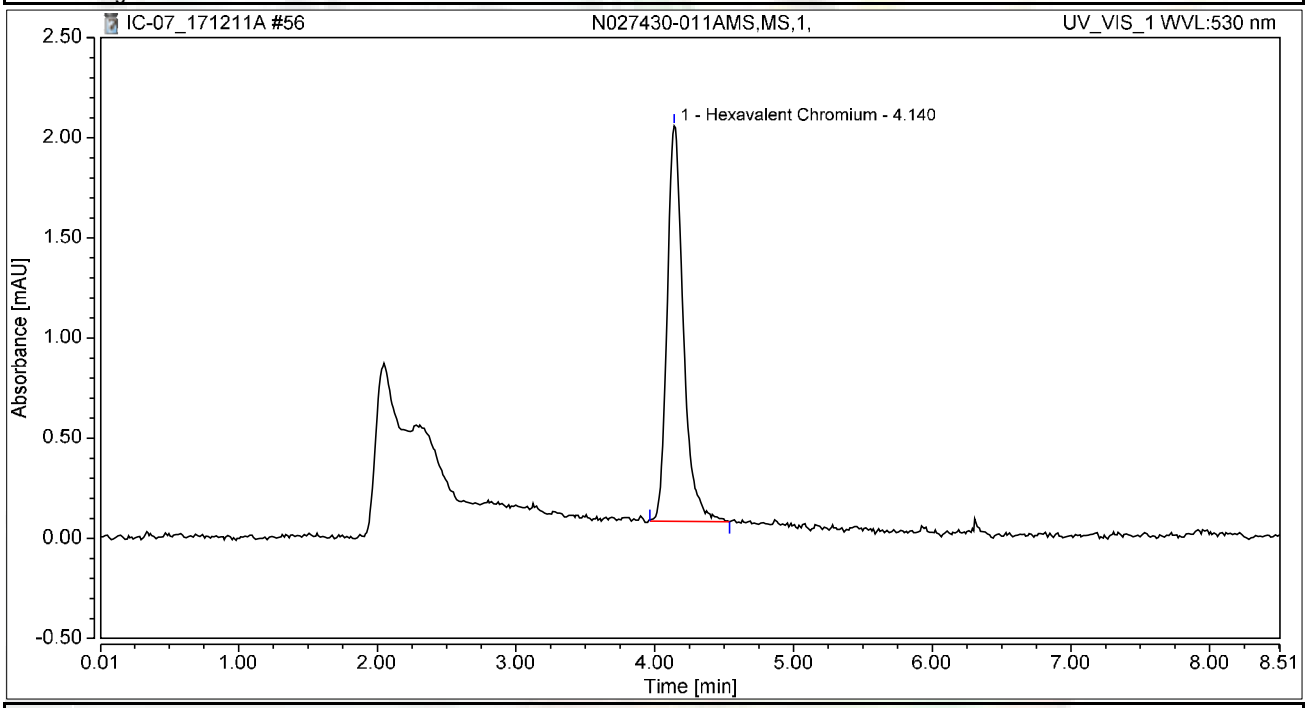
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

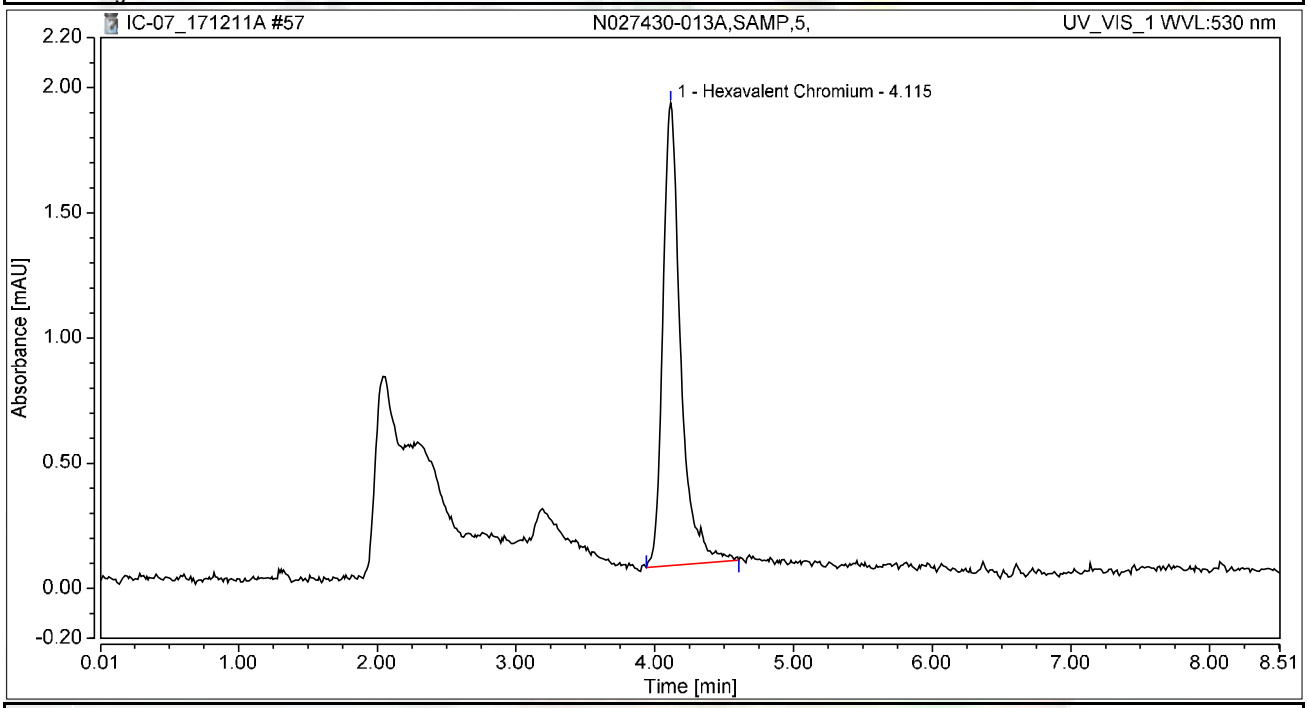
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.268	1.975	100.00	100.00	1.0679
Total:			**0.268**	**1.975**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-013A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

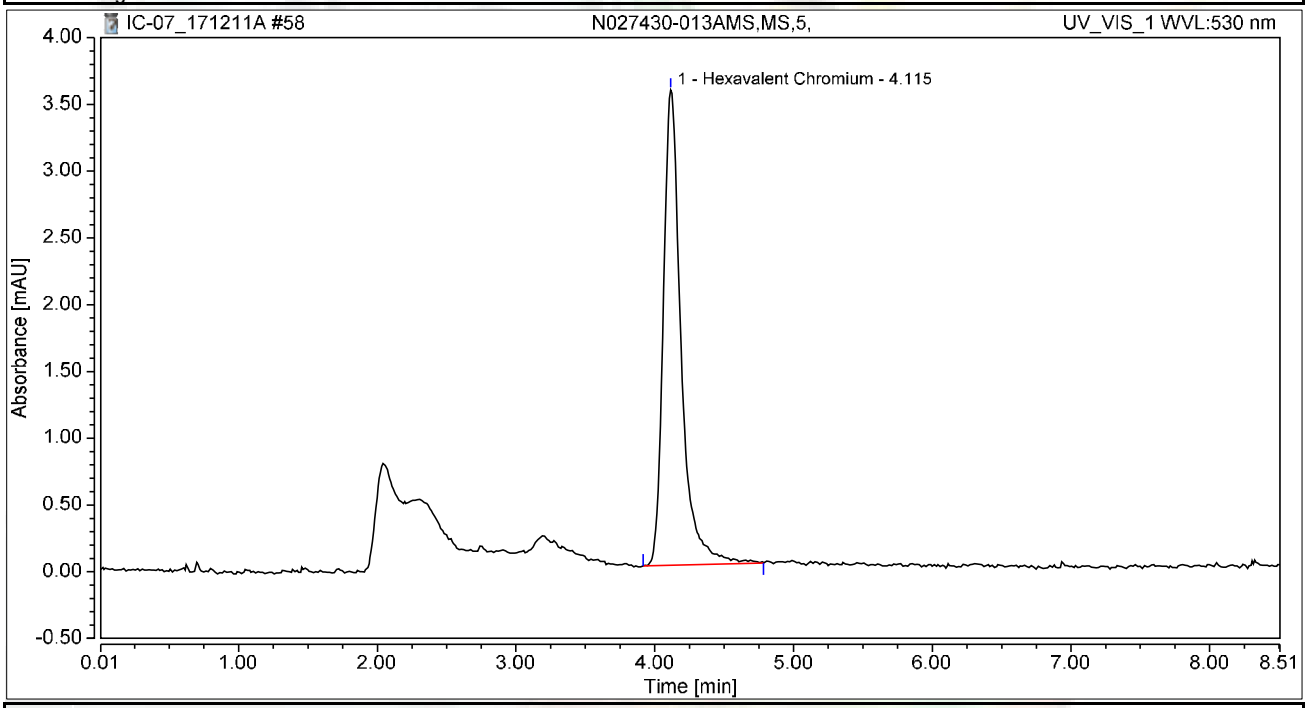
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.276	1.848	100.00	100.00	1.0980
Total:			**0.276**	**1.848**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-013AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

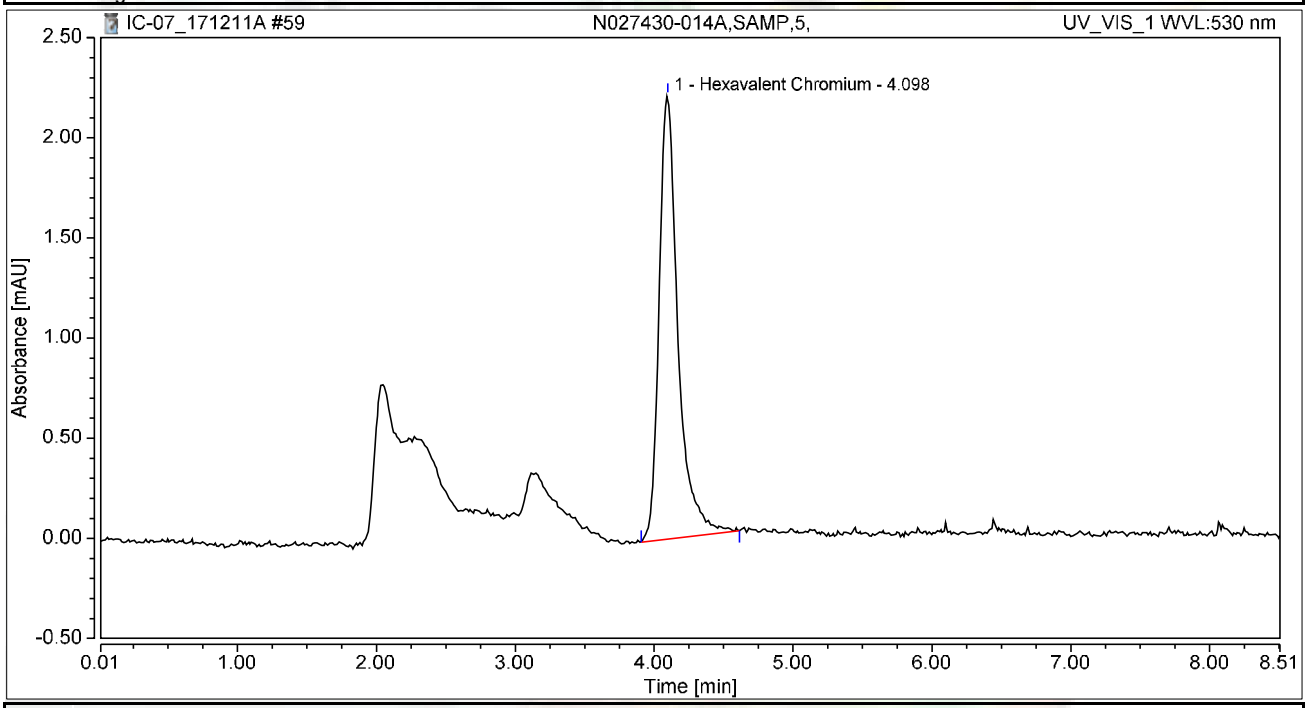
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.530	3.560	100.00	100.00	2.1108
Total:			**0.530**	**3.560**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-014A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

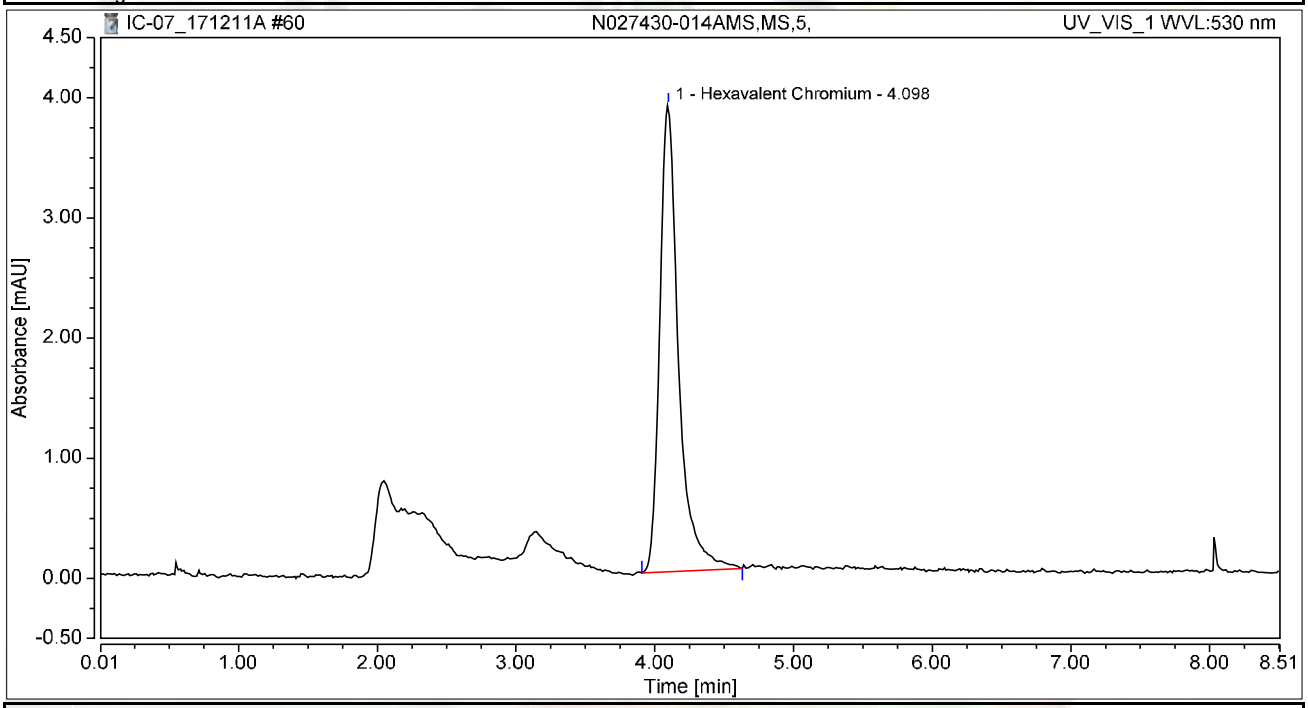
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.349	2.216	100.00	100.00	1.3910
Total:			**0.349**	**2.216**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-014AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

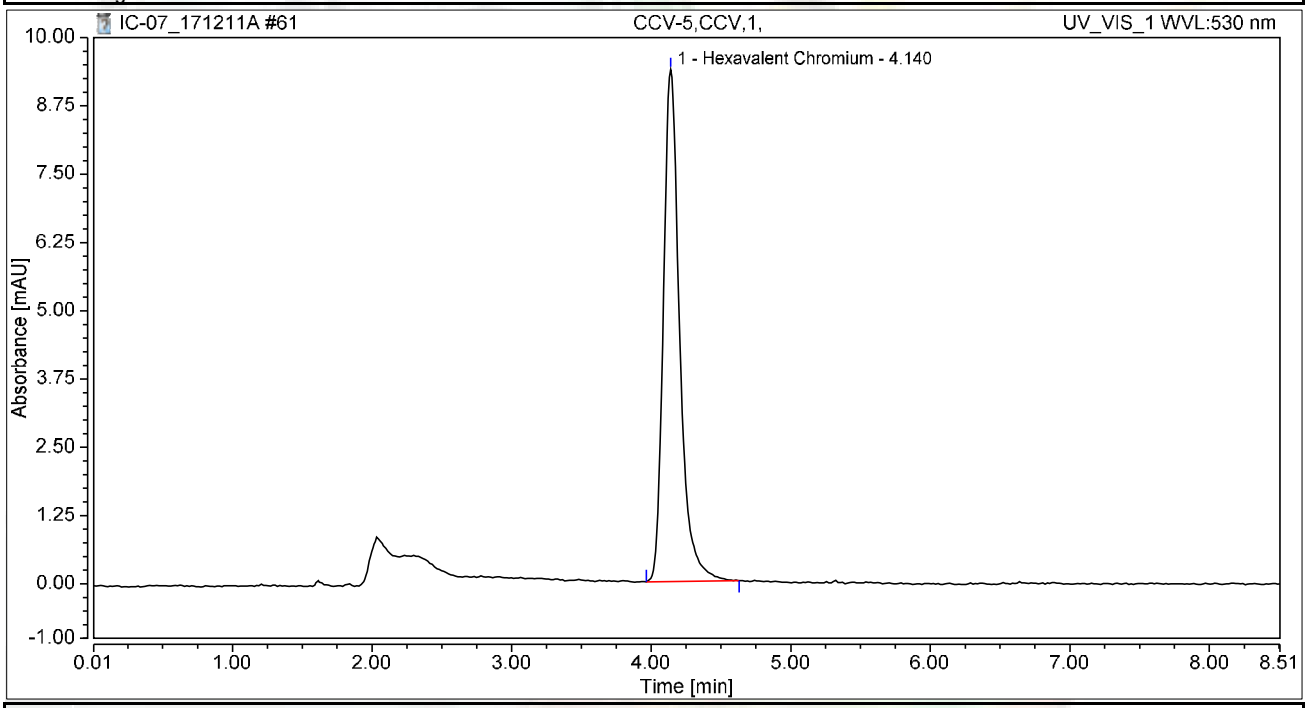
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.611	3.884	100.00	100.00	2.4341
Total:			**0.611**	**3.884**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

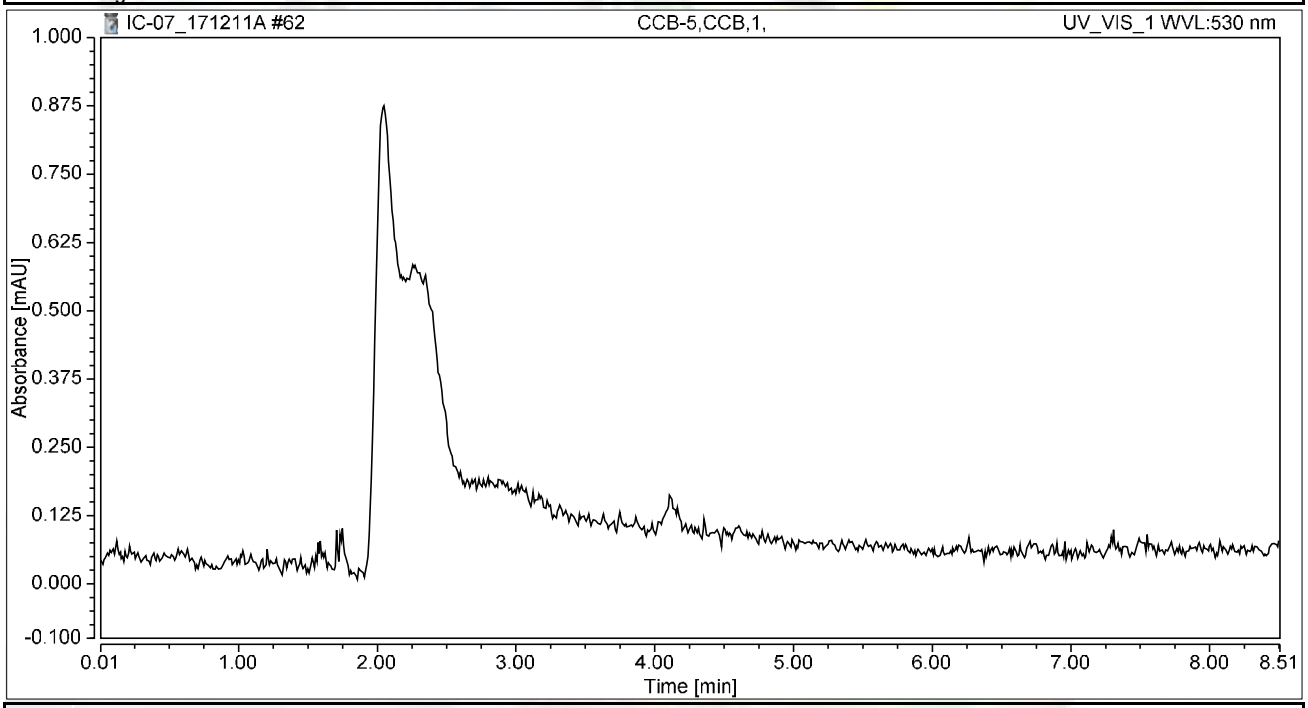
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.267	9.371	100.00	100.00	5.0451
Total:			**1.267**	**9.371**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

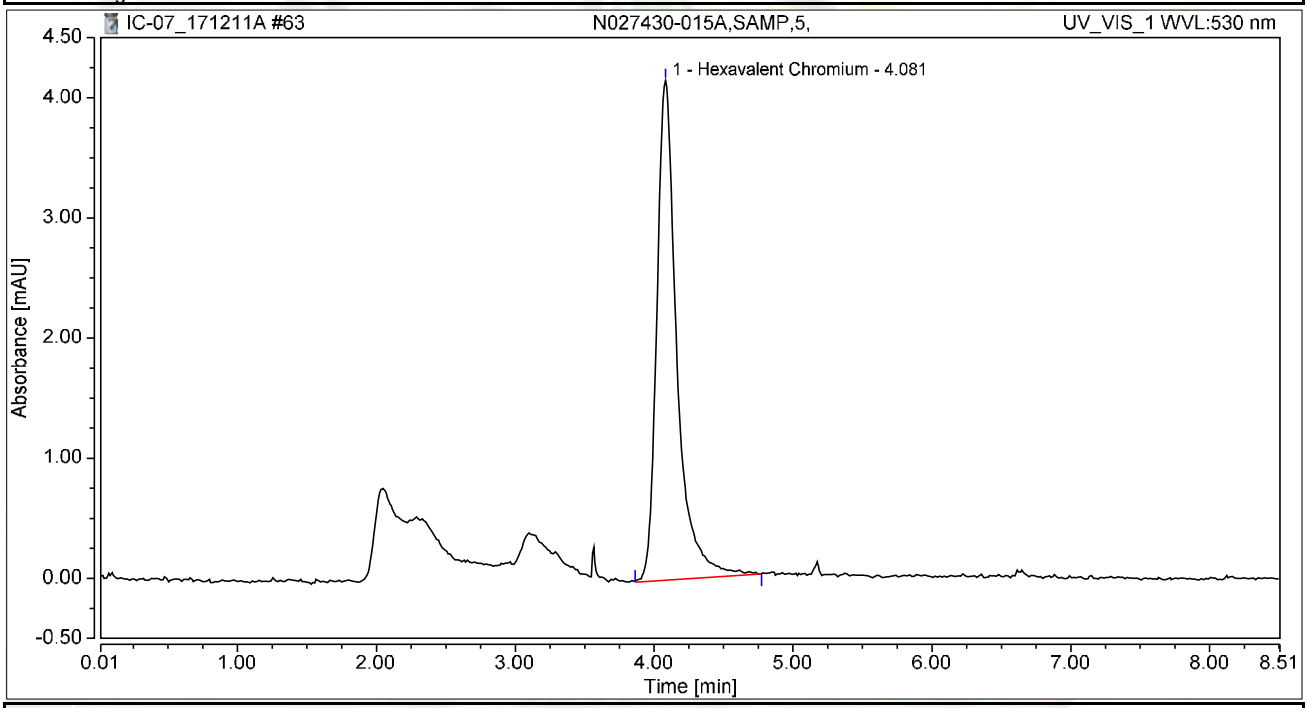
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-015A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

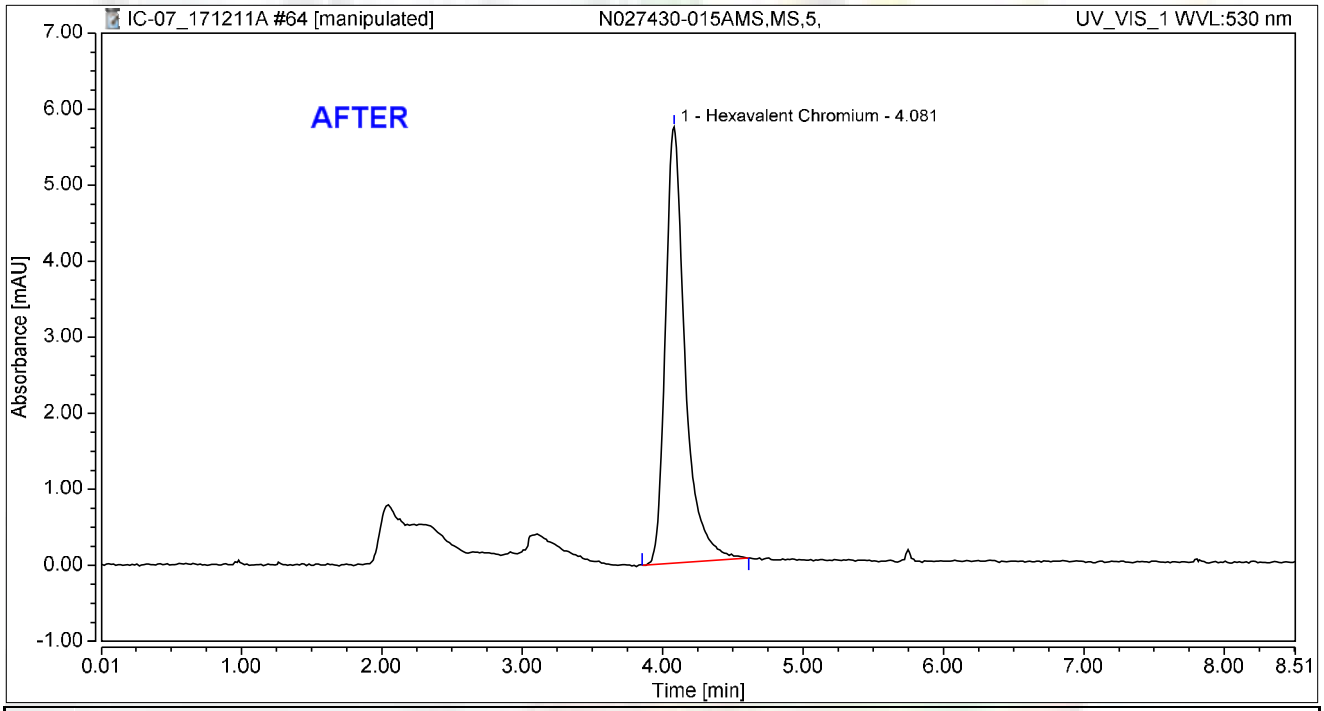
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.697	4.158	100.00	100.00	2.7763
Total:			**0.697**	**4.158**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-015AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.933	5.734	100.00	100.00	3.7159
Total:			**0.933**	**5.734**	**100.00**	**100.00**	

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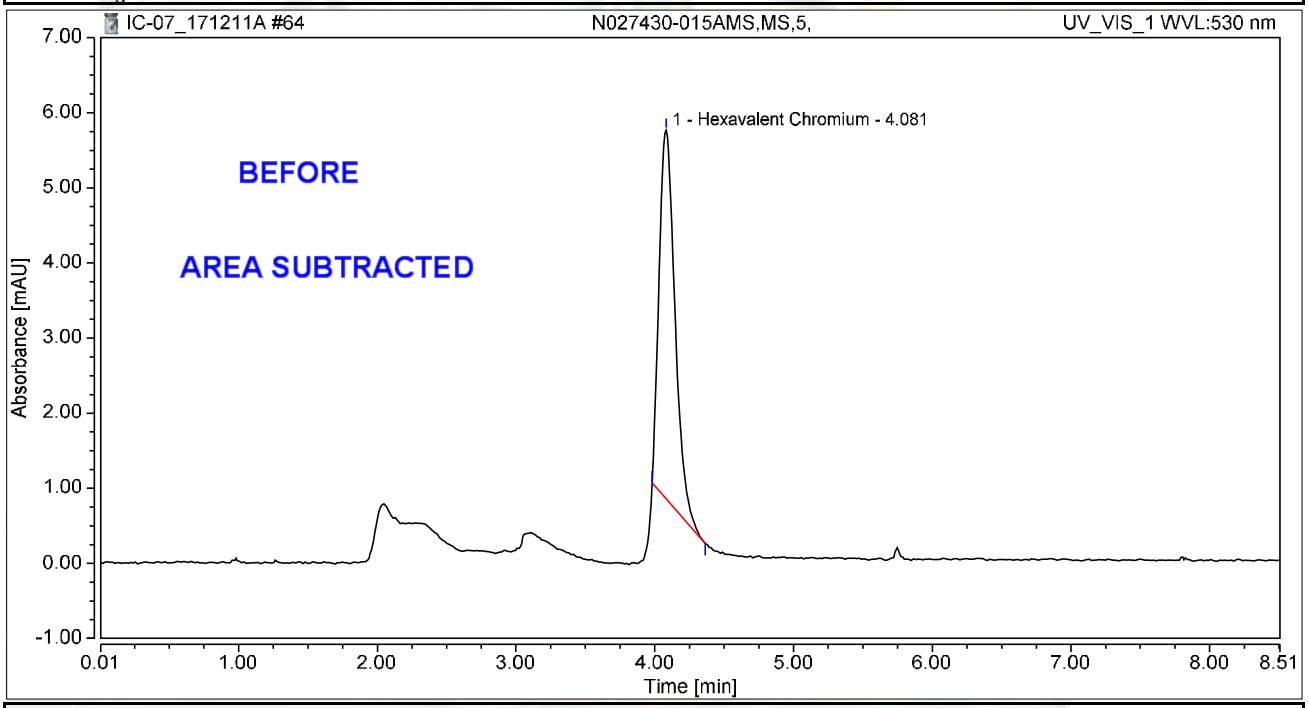
Chromatogram and Results

Injection Details

Injection Name:	**N027430-015AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.652	4.903	100.00	100.00	2.5956
Total:			**0.652**	**4.903**	**100.00**	**100.00**	

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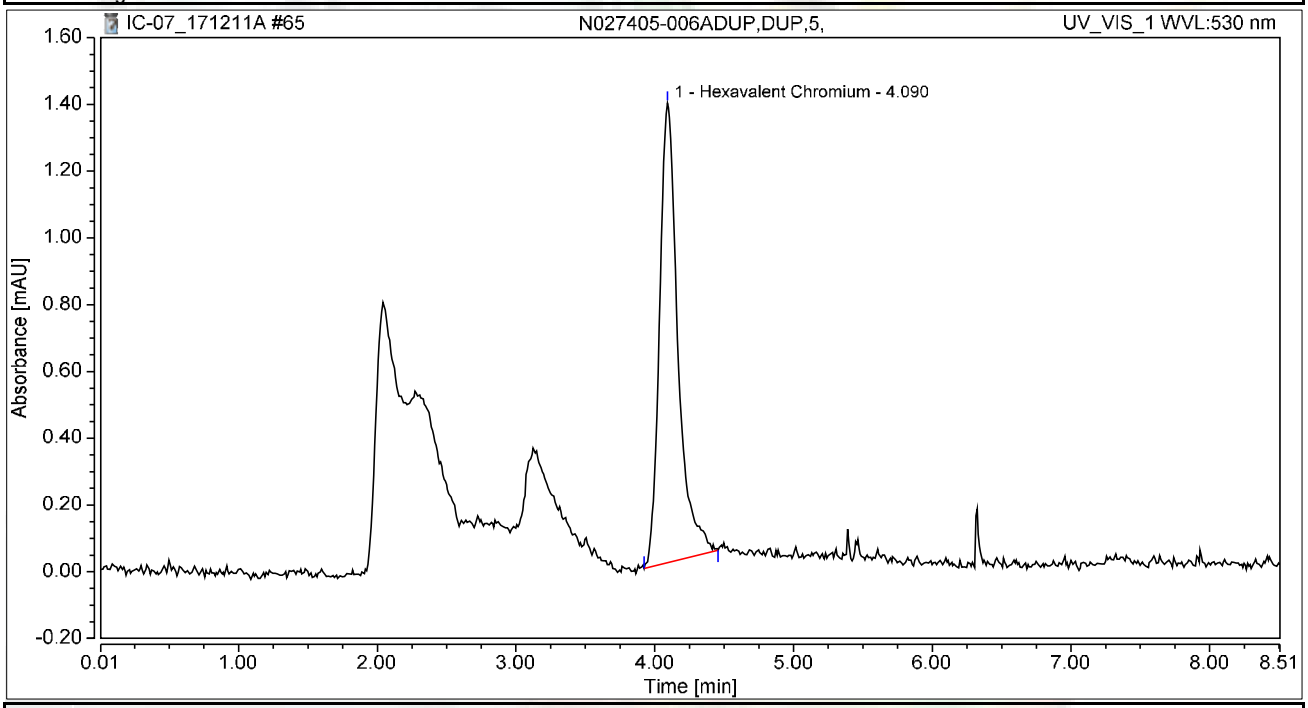
Chromatogram and Results

Injection Details

Injection Name:	**N027405-006ADUP,DUP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**49**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

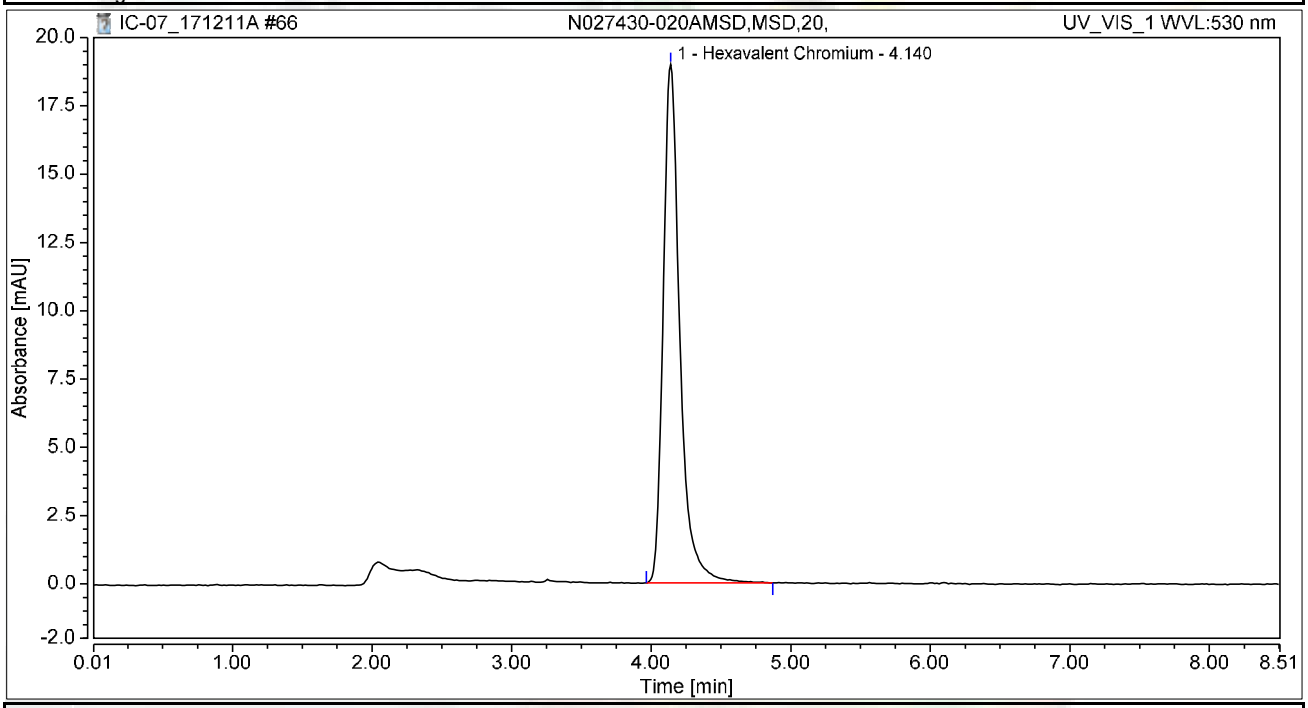
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.212	1.377	100.00	100.00	0.8429
Total:			**0.212**	**1.377**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-020AMSD,MSD,20,**	*Run Time (min):*	**8.50**
Vial Number:	**50**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

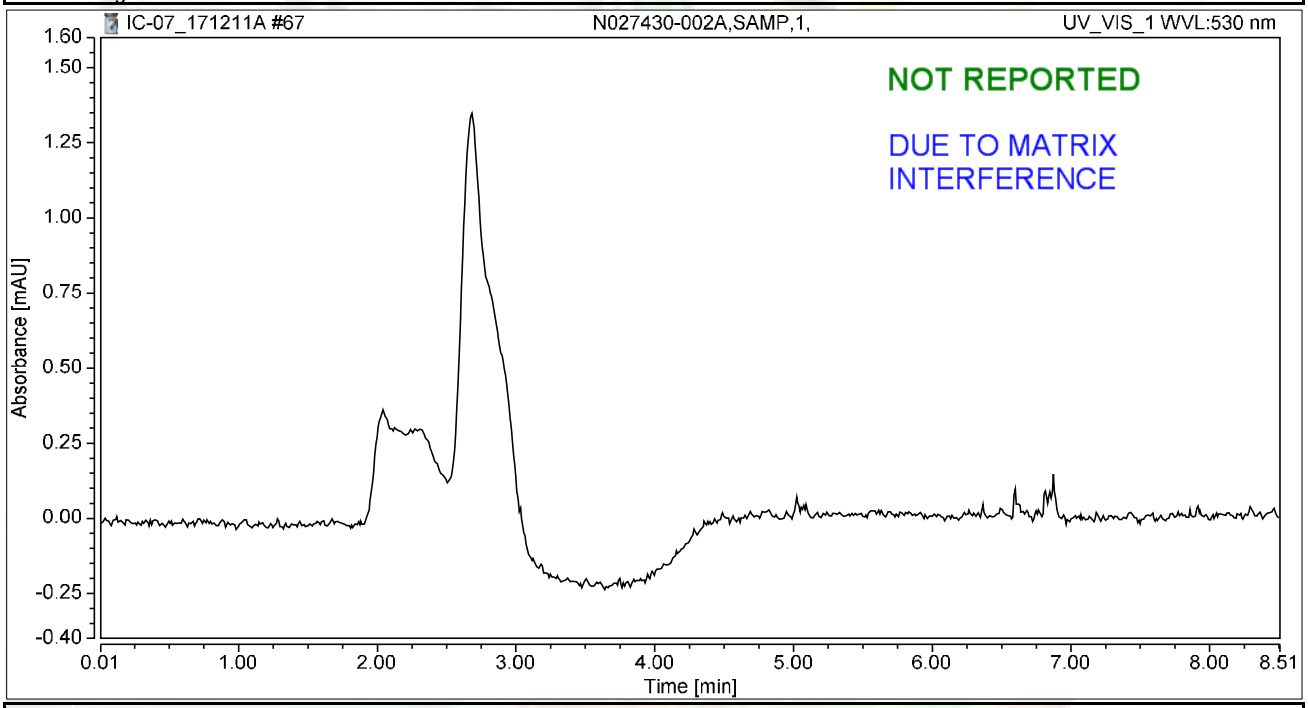
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.638	18.984	100.00	100.00	10.5055
Total:			**2.638**	**18.984**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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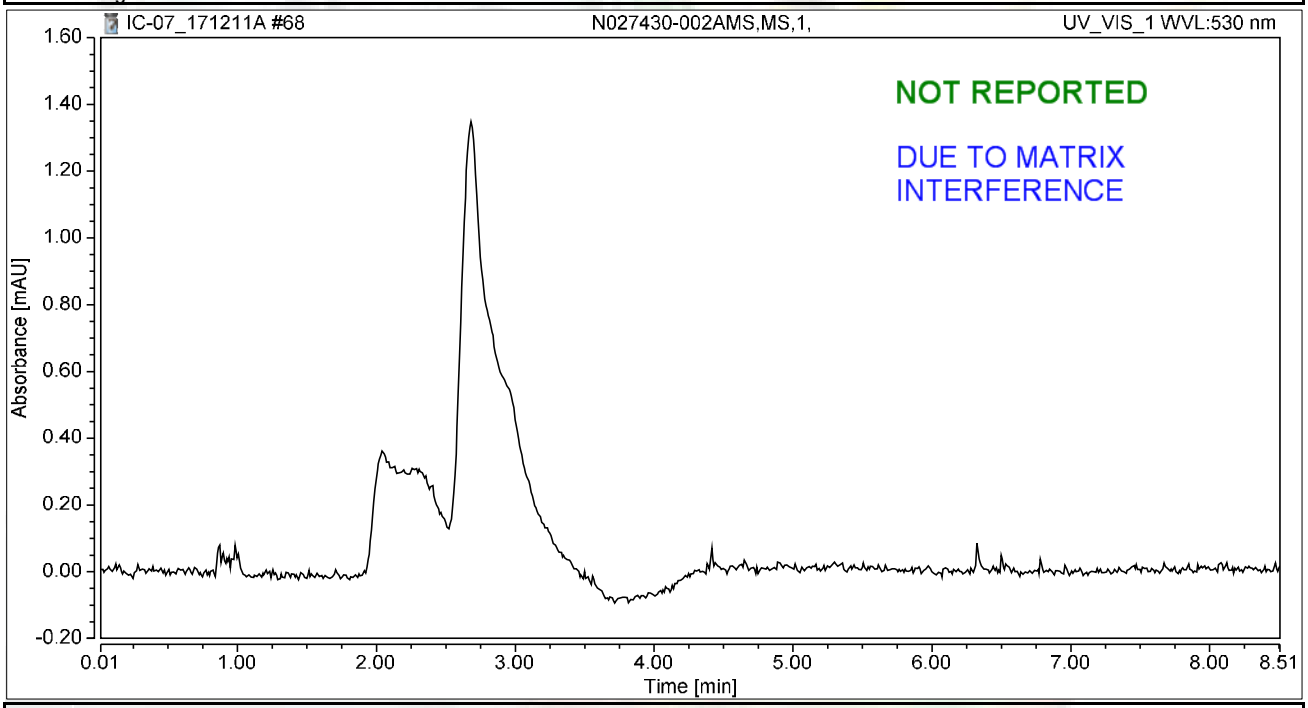
Chromatogram and Results

Injection Details

Injection Name:	**N027430-002AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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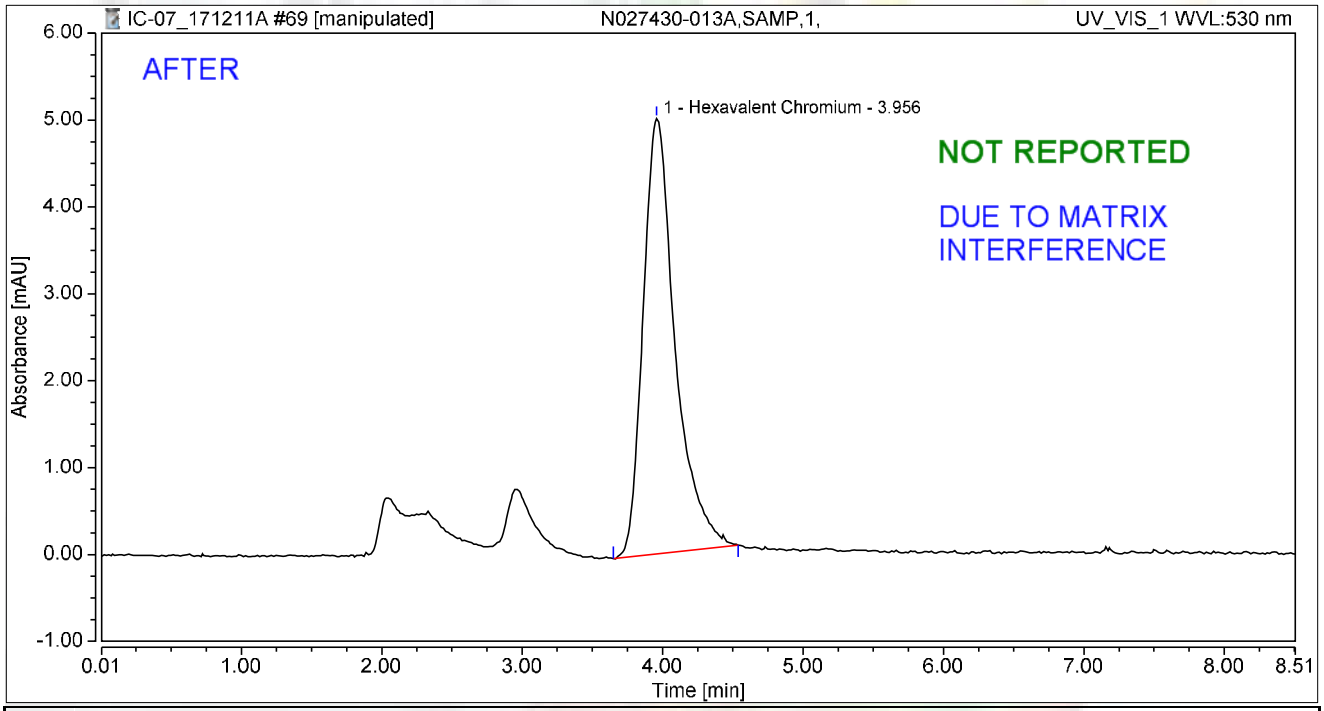
Chromatogram and Results

Injection Details

Injection Name:	**N027430-013A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.956	1.323	5.011	100.00	100.00	5.2695
Total:			**1.323**	**5.011**	**100.00**	**100.00**	

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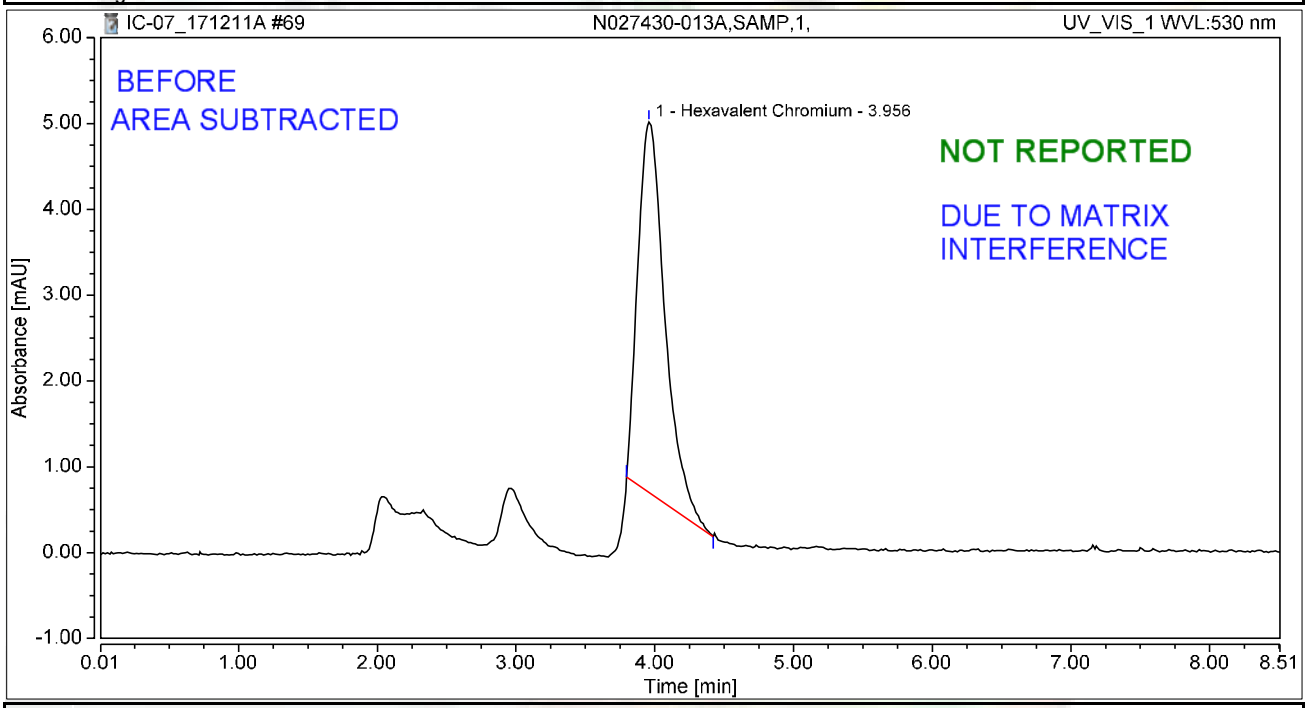
Chromatogram and Results

Injection Details

Injection Name:	**N027430-013A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.956	0.975	4.312	100.00	100.00	3.8839
Total:			**0.975**	**4.312**	**100.00**	**100.00**	

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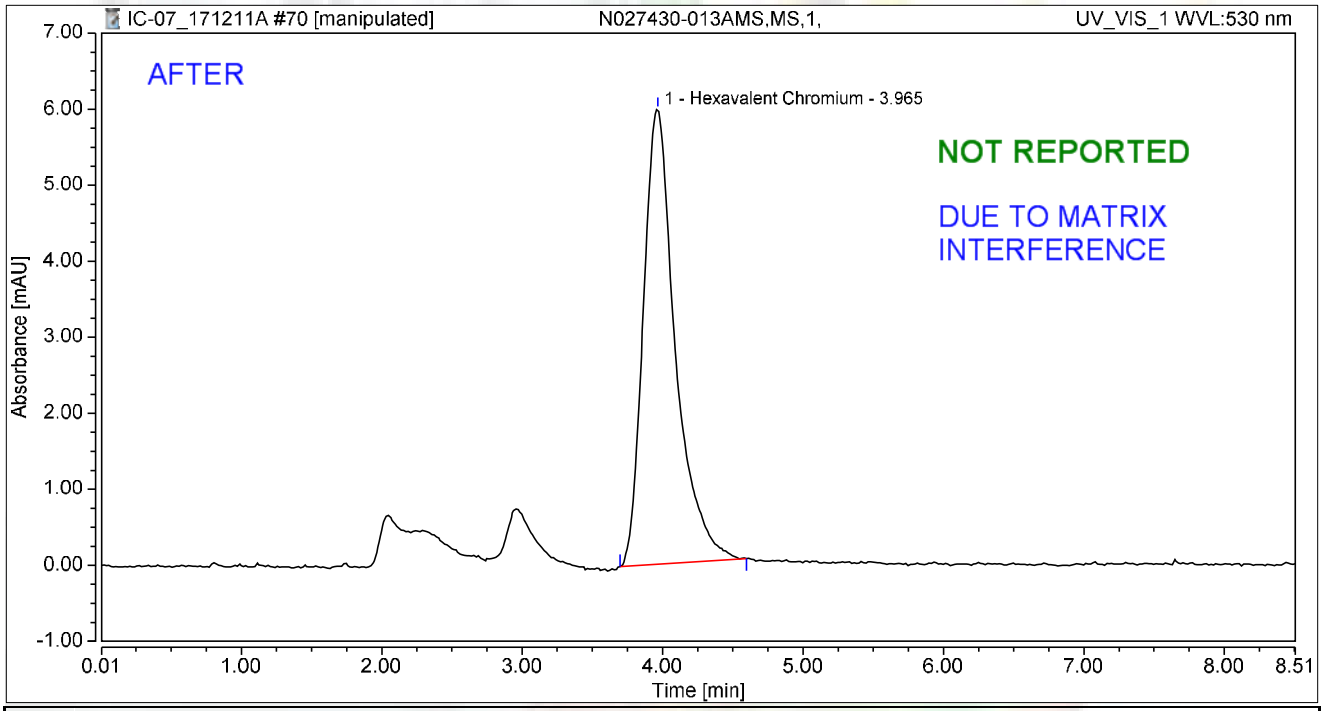
Chromatogram and Results

Injection Details

Injection Name:	**N027430-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.965	1.578	5.981	100.00	100.00	6.2829
Total:			**1.578**	**5.981**	**100.00**	**100.00**	

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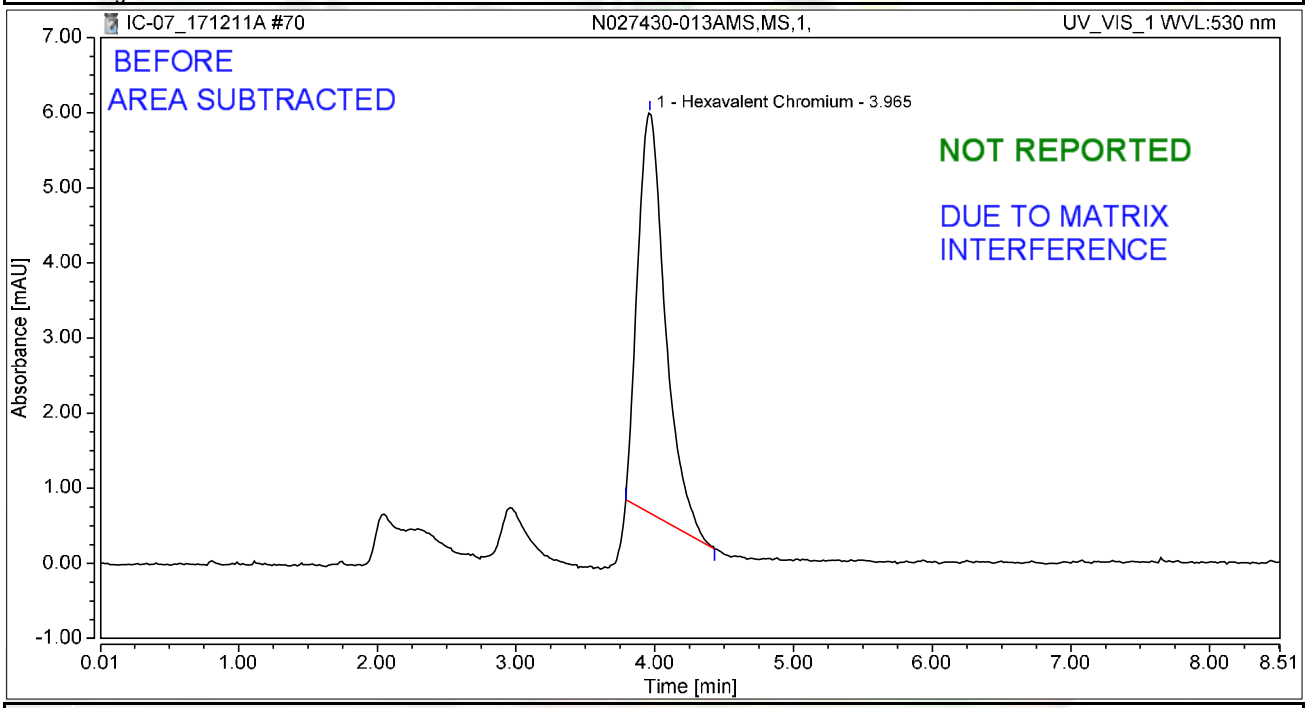
Chromatogram and Results

Injection Details

Injection Name:	**N027430-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.965	1.232	5.326	100.00	100.00	4.9056
Total:			**1.232**	**5.326**	**100.00**	**100.00**	

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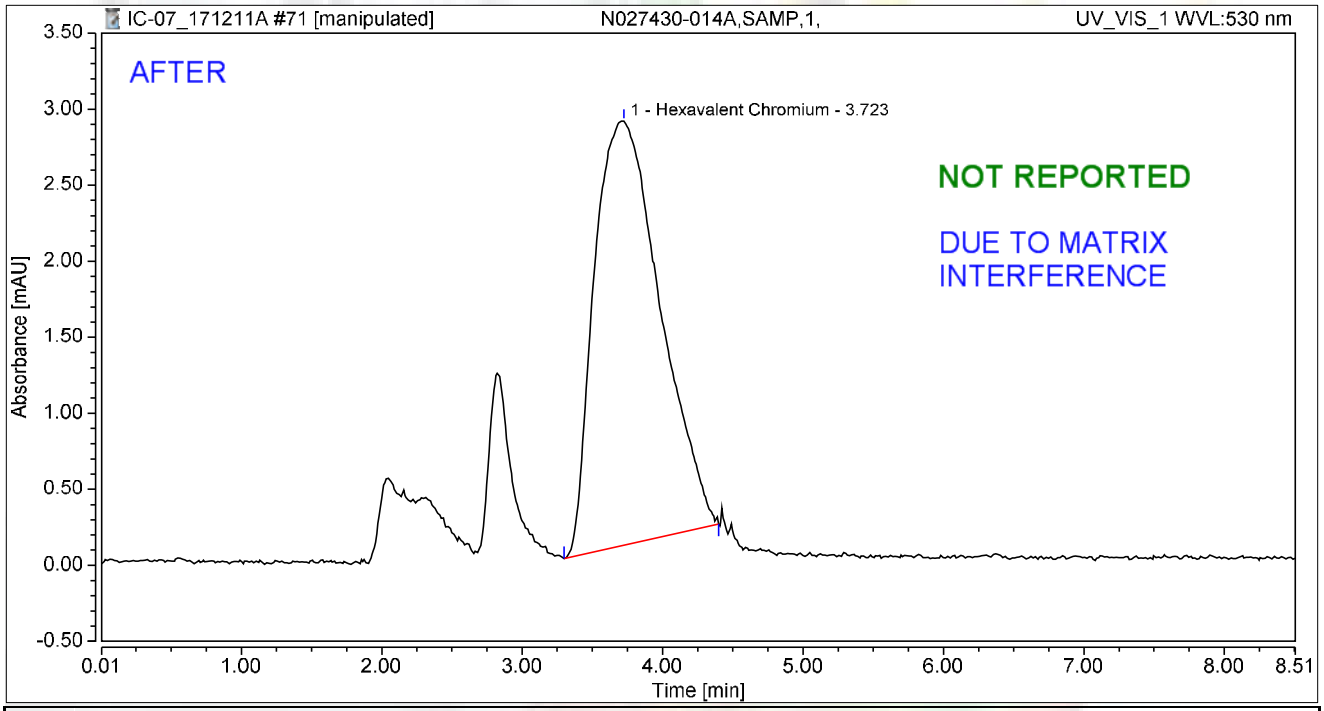
Chromatogram and Results

Injection Details

Injection Name:	**N027430-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	1.515	2.788	100.00	100.00	6.0348
Total:			**1.515**	**2.788**	**100.00**	**100.00**	

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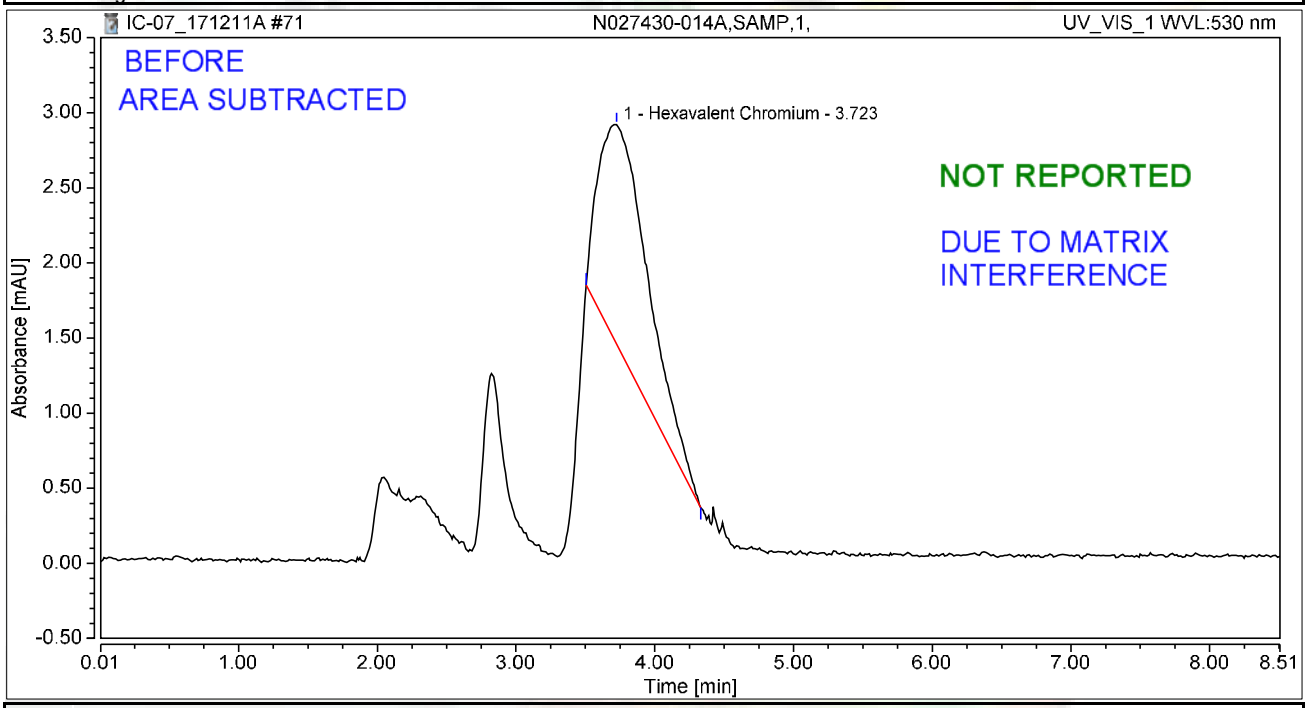
Chromatogram and Results

Injection Details

Injection Name:	**N027430-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	0.615	1.457	100.00	100.00	2.4504
Total:			**0.615**	**1.457**	**100.00**	**100.00**	

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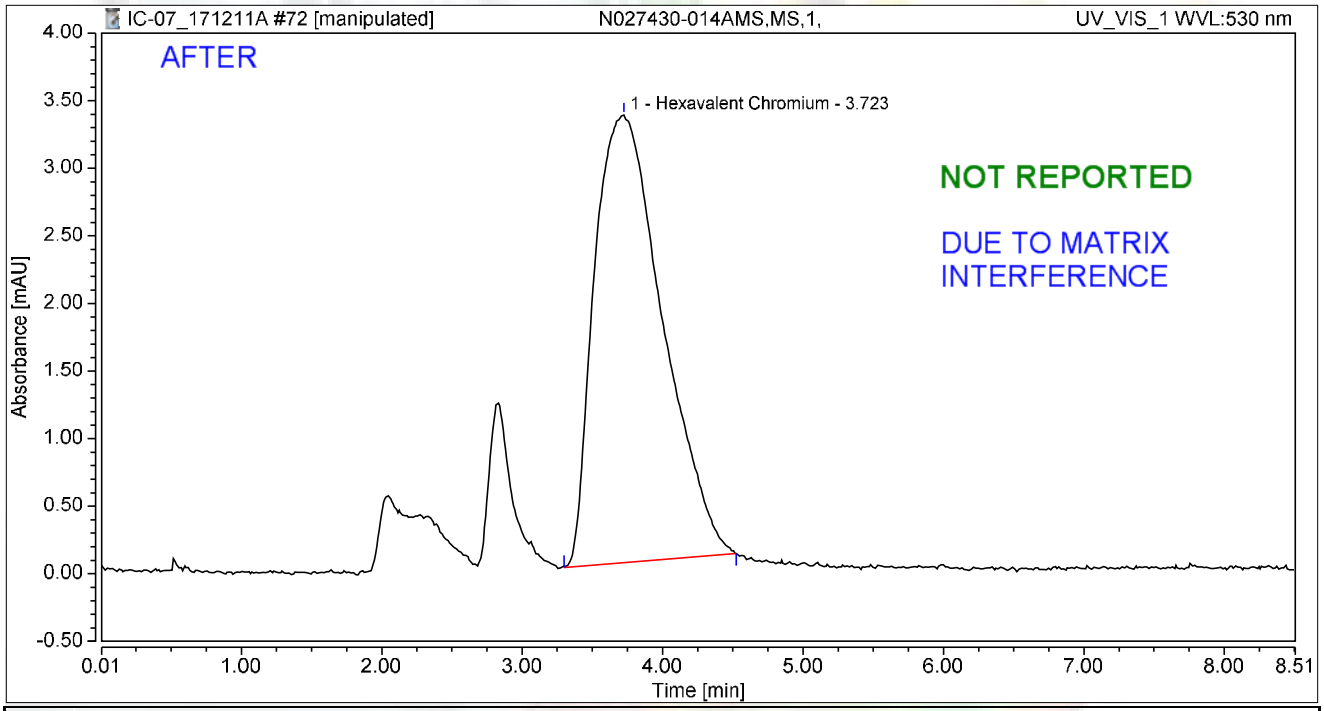
Chromatogram and Results

Injection Details

Injection Name:	**N027430-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	1.860	3.313	100.00	100.00	7.4083
Total:			**1.860**	**3.313**	**100.00**	**100.00**	

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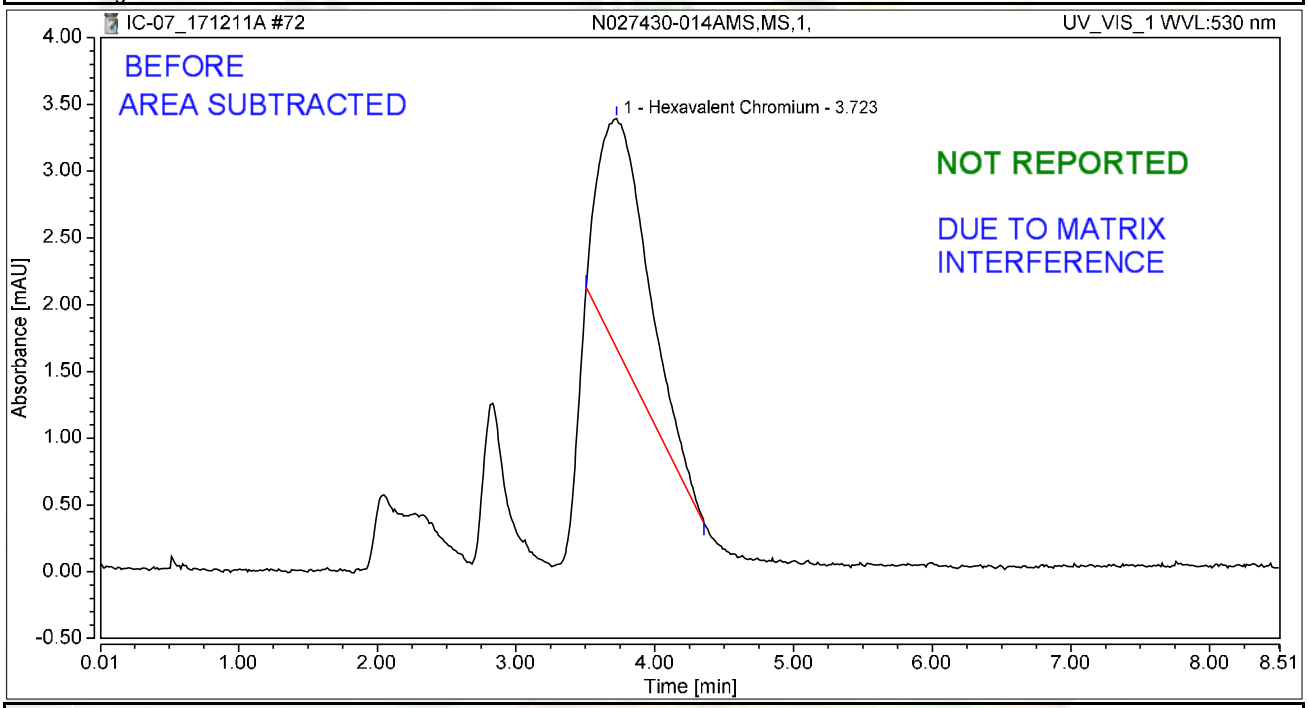
Chromatogram and Results

Injection Details

Injection Name:	**N027430-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	0.727	1.714	100.00	100.00	2.8964
Total:			**0.727**	**1.714**	**100.00**	**100.00**	

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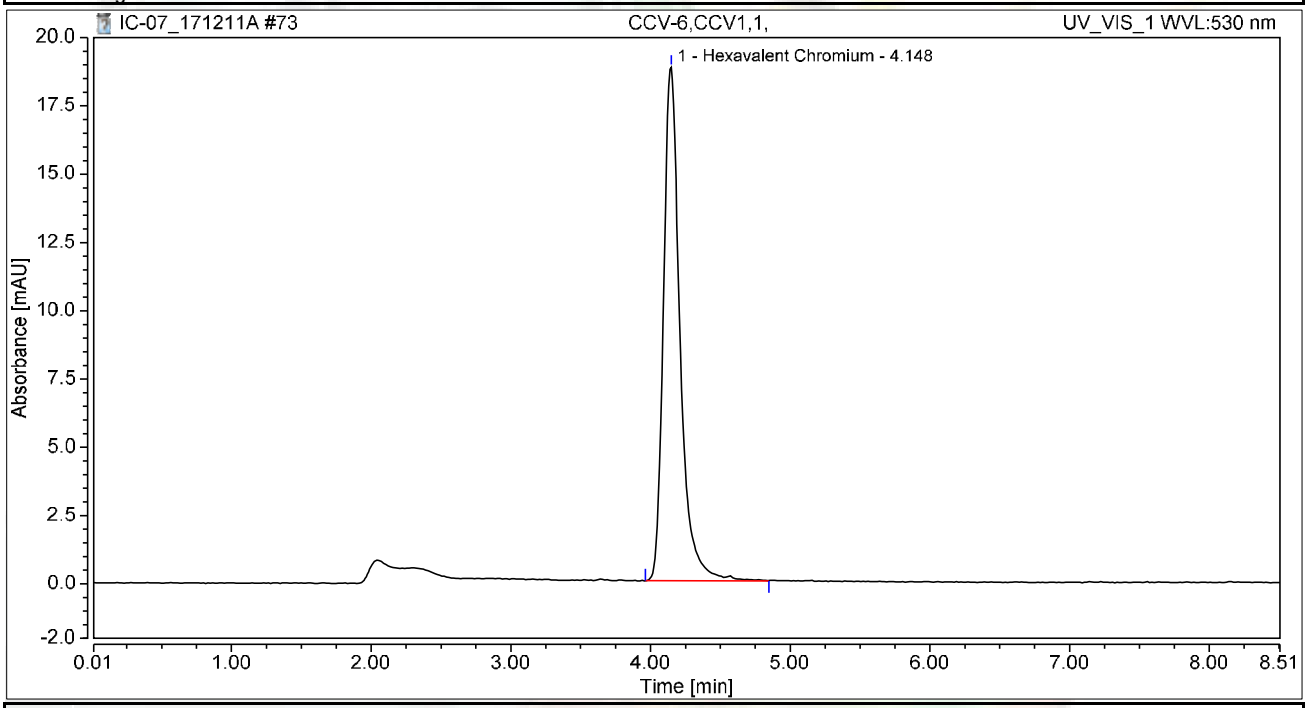
Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

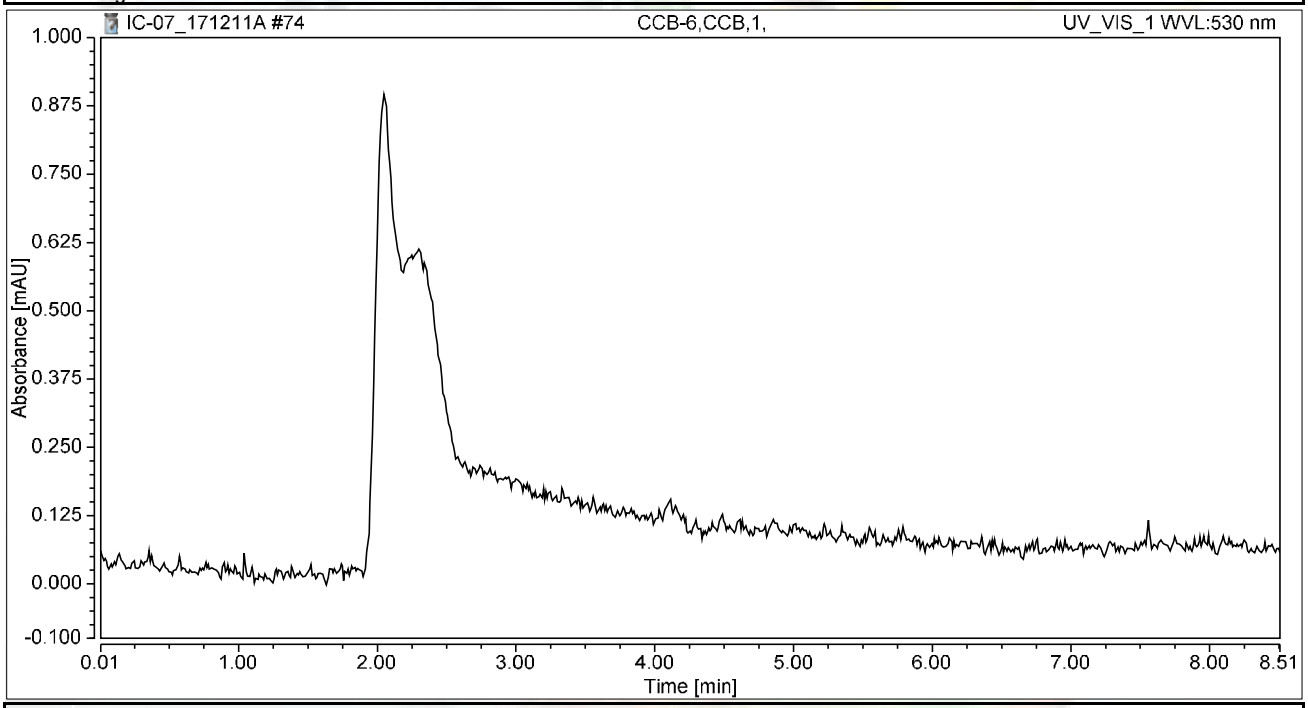
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.585	18.801	100.00	100.00	10.2939
Total:			**2.585**	**18.801**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

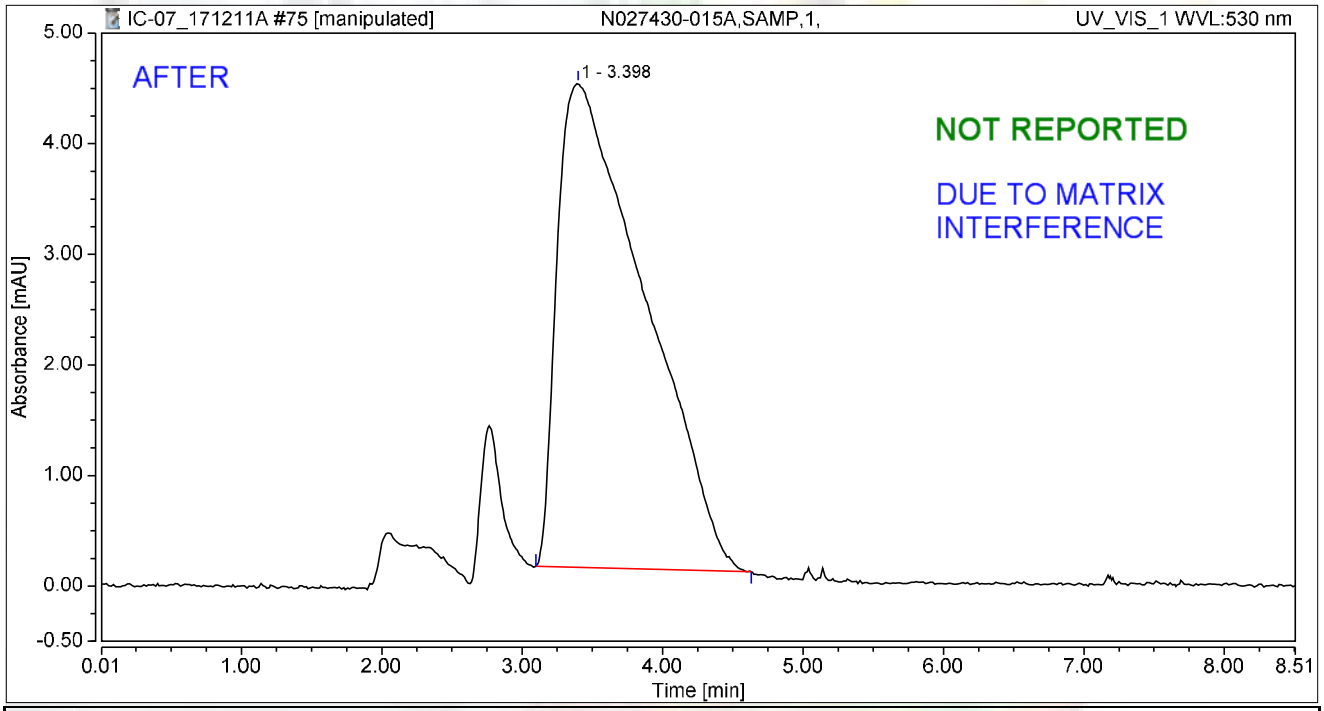
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.398	3.144	4.377	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**3.144**	**4.377**	**100.00**	**100.00**	

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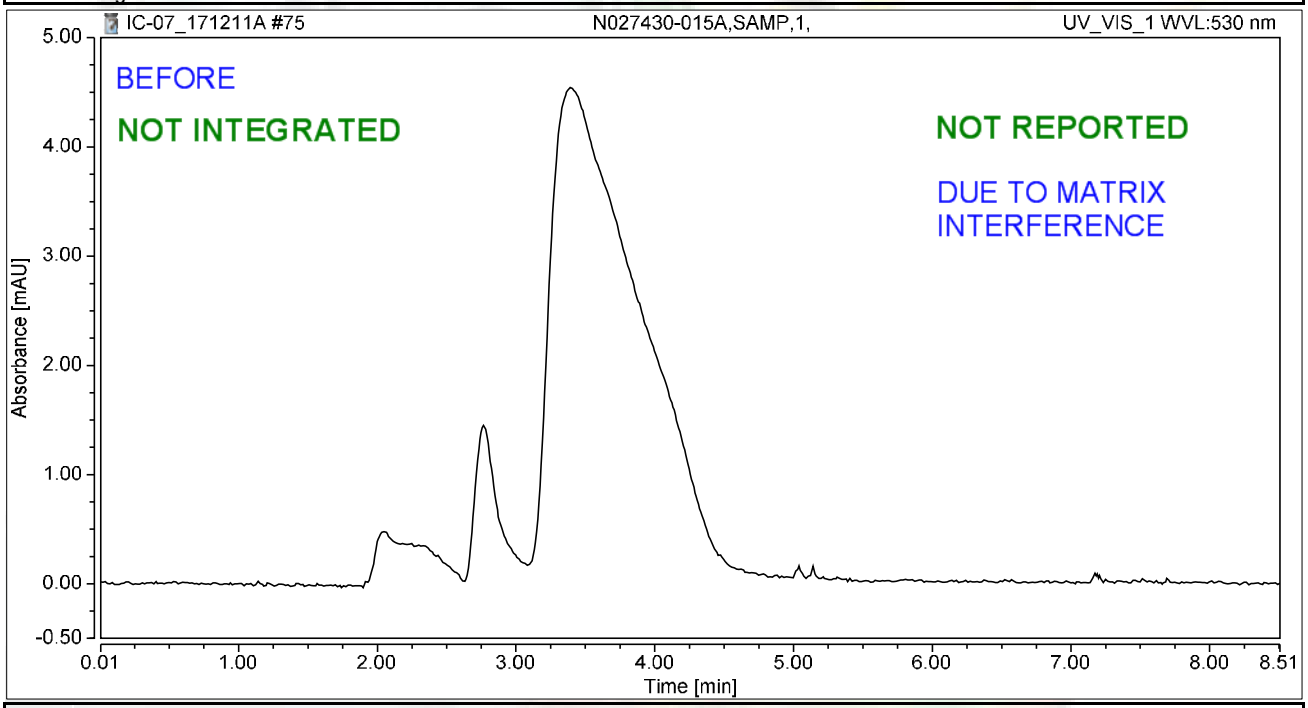
Chromatogram and Results

Injection Details

Injection Name:	**N027430-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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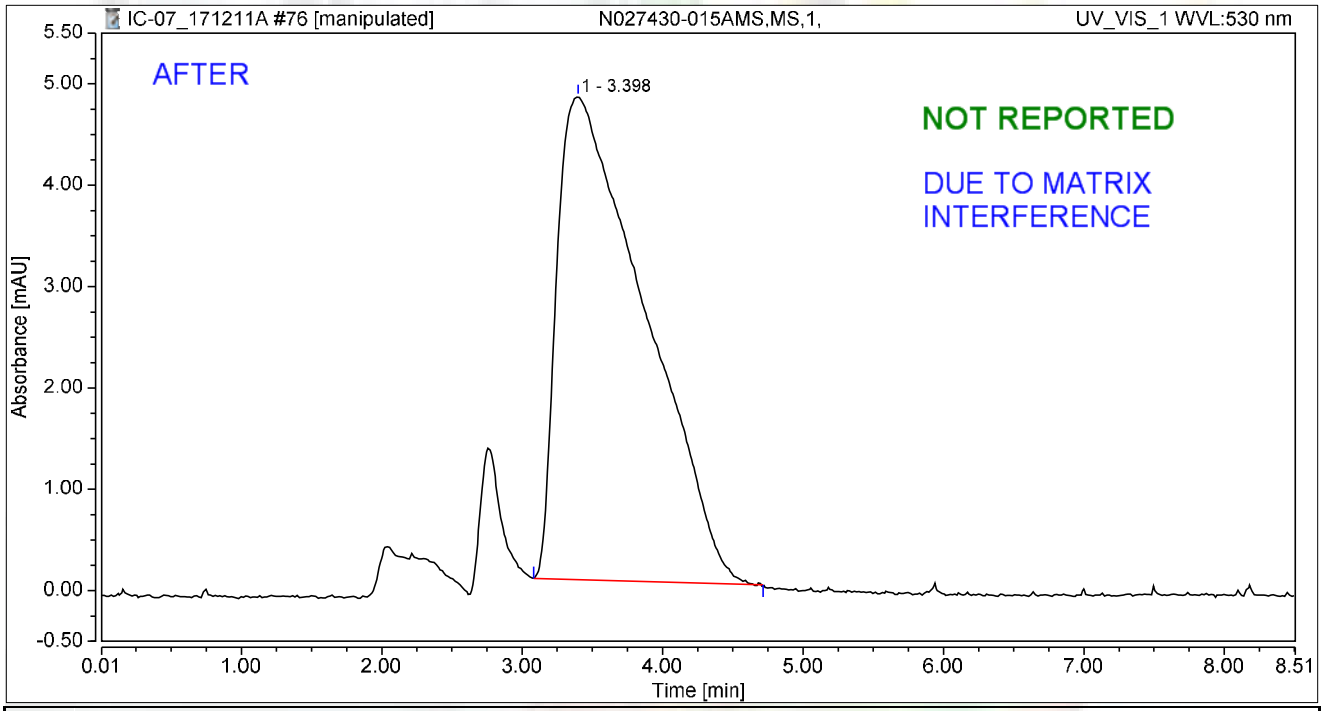
Chromatogram and Results

Injection Details

Injection Name:	**N027430-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.398	3.441	4.762	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**3.441**	**4.762**	**100.00**	**100.00**	

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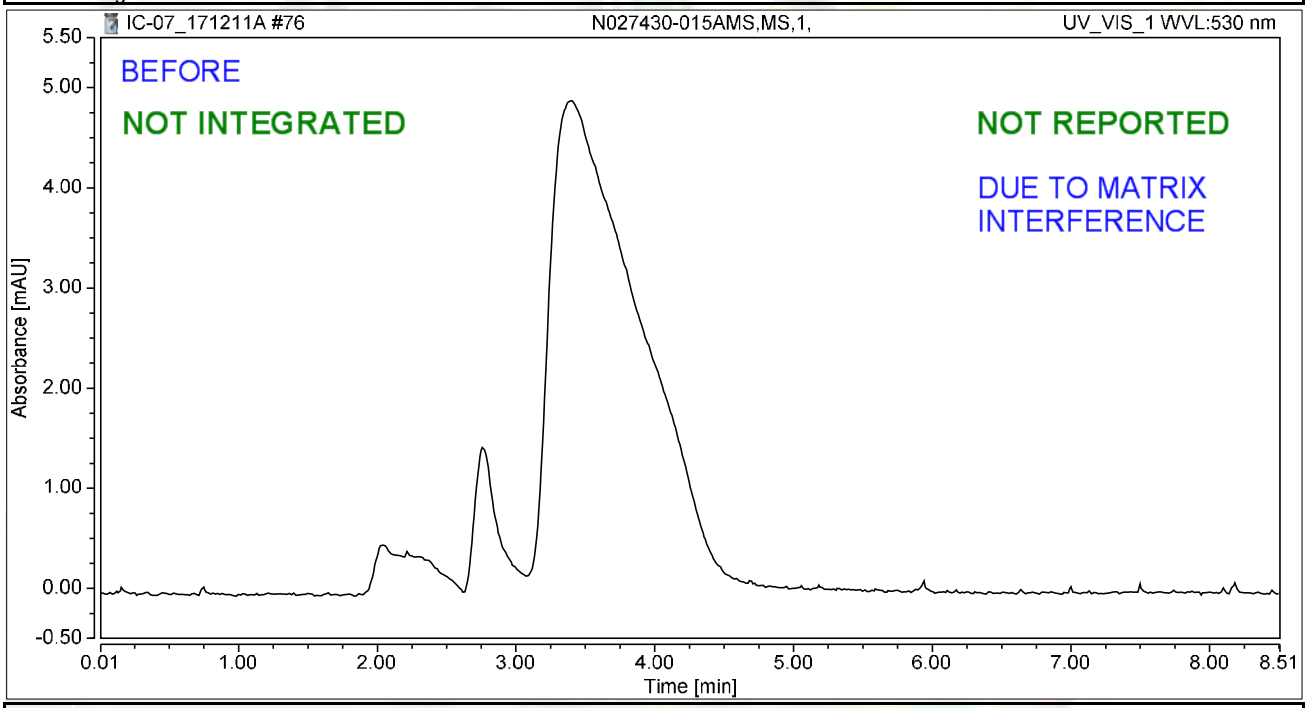
Chromatogram and Results

Injection Details

Injection Name:	**N027430-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

rba 12/16/2017

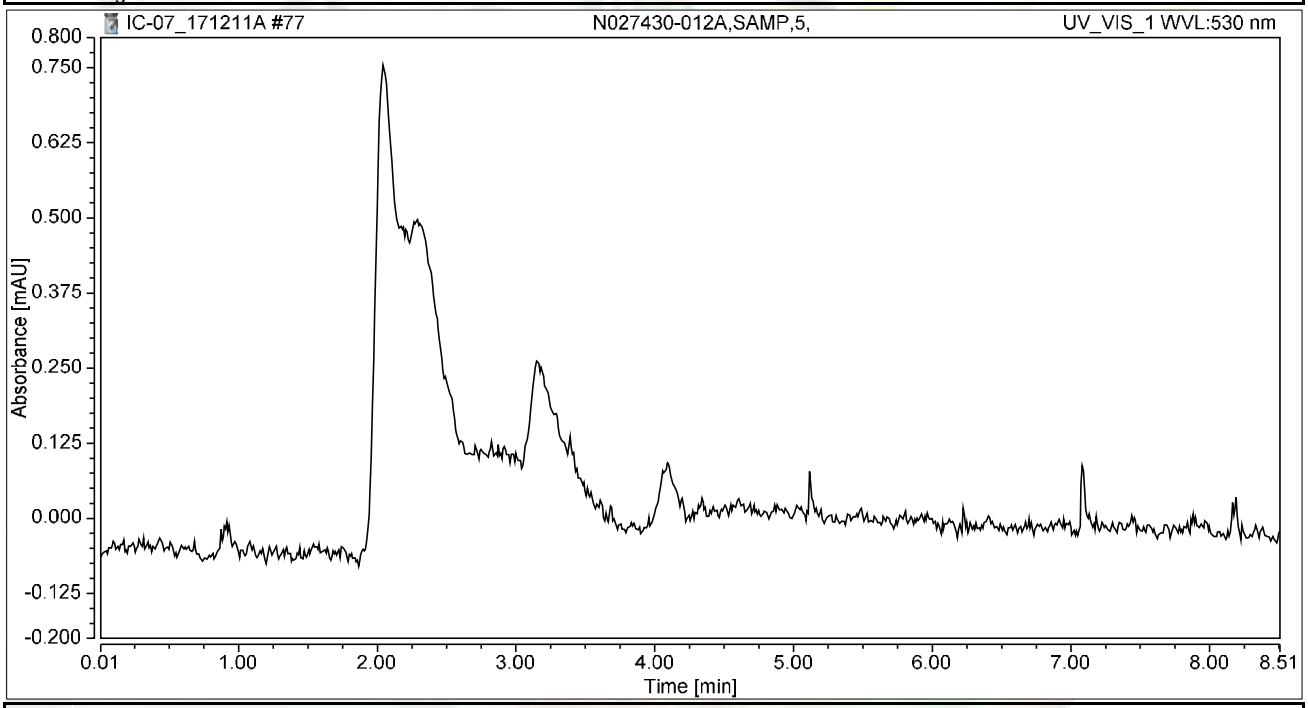
12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027430-012A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

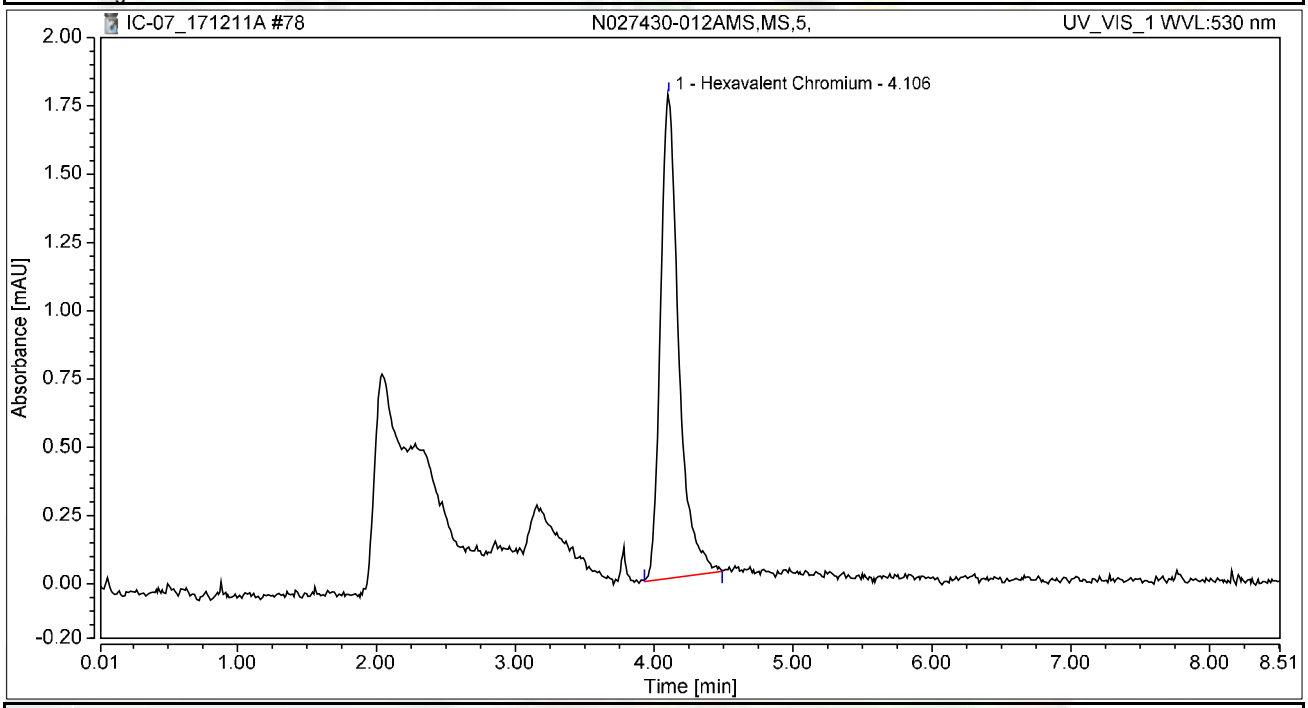
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-012AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

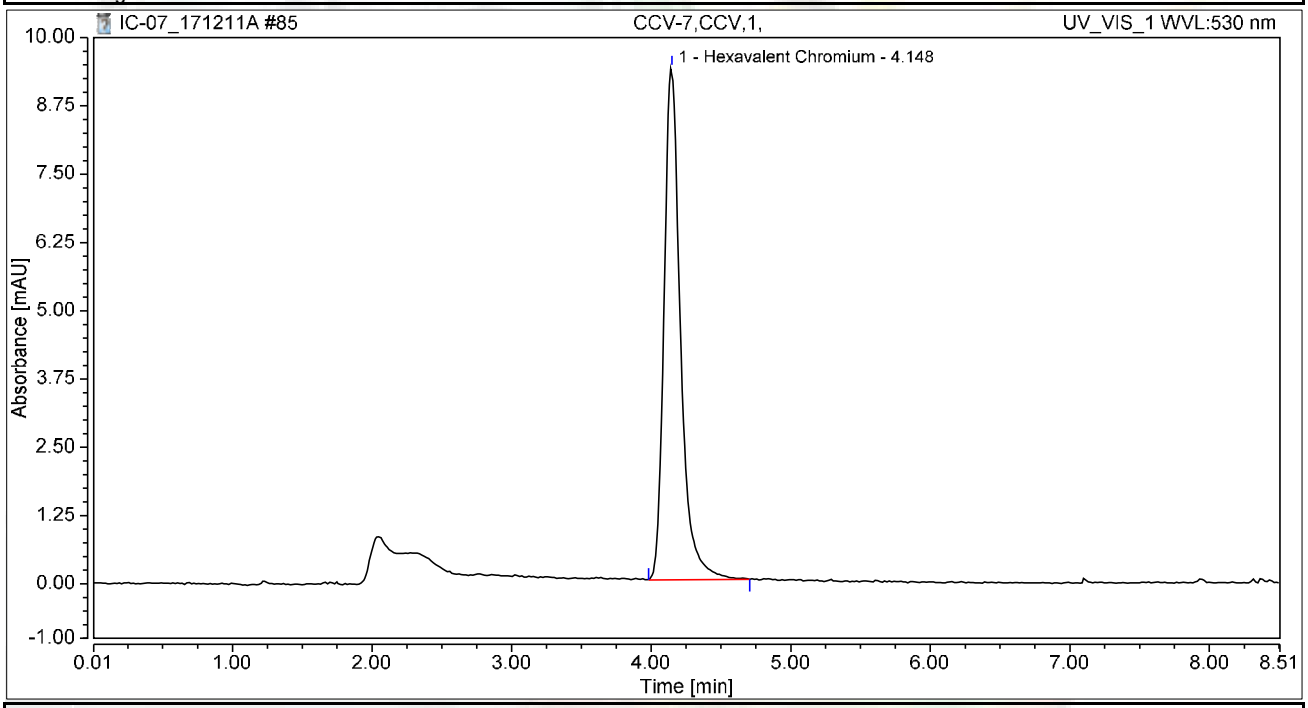
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.270	1.772	100.00	100.00	1.0741
Total:			**0.270**	**1.772**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

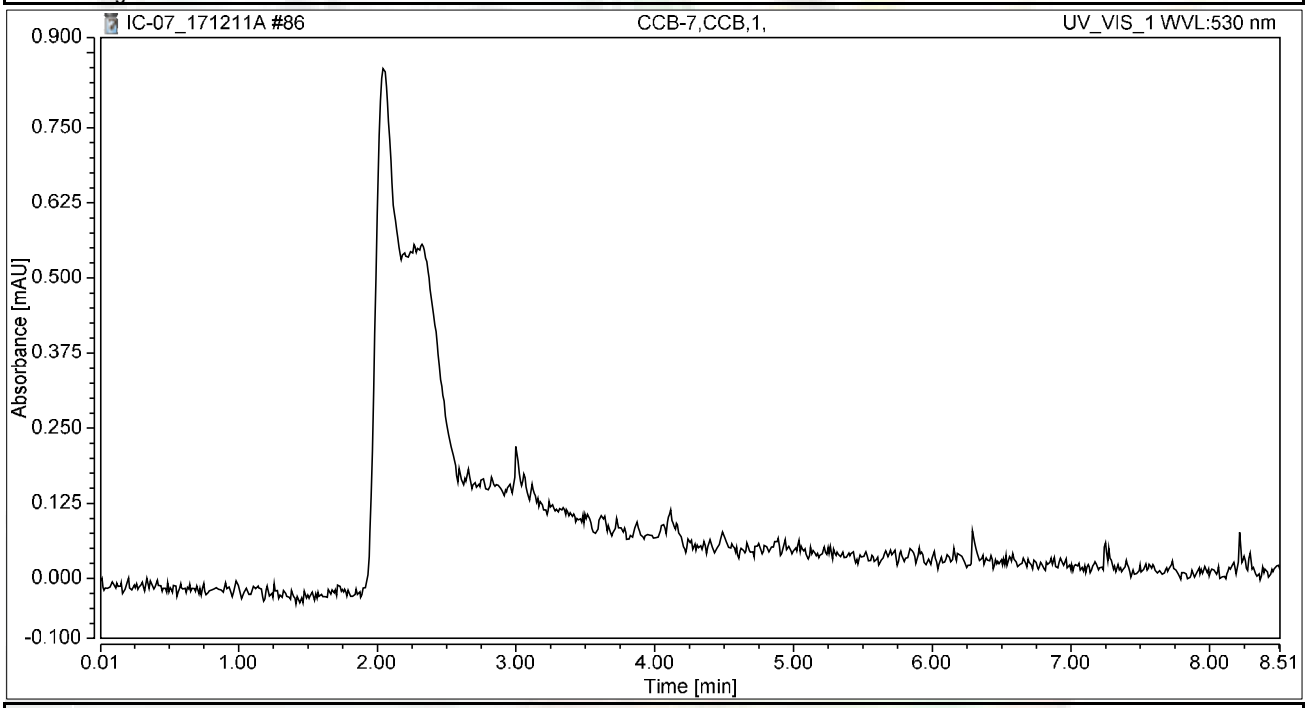
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.283	9.373	100.00	100.00	5.1094
Total:			**1.283**	**9.373**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120~~718~~717/785 **Analyst:** LSR

ASSET #: N027405 **Date Analyzed:** 12/11,12/13/17

Method: EPA 2320

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X			X		
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 12/20/2017

2nd Level Reviewer RLB 12/21/2017 Date:

SAMPLE CALCULATION

Sample ID: **N027405-001D @ pH 7.91**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (12.40 mL)

= **0.02016 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (13.0) (0.02016 N) (1) * 1000

= 262.0800 mg**/L**

Reporting results in two significant figures,

= **260 mg/L** as CaCO3

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C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02016 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (13.0 mL) (0.02016) (1) * 1000

= 262.0800 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 262.0800 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **260 mg/L**

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LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.65	50	0.00	0.050	MBLK
LCS-1	8.33	50	0.00	5.10	LCS
N027404-013D	7.92	50	0.00	8.10	SAMP
N027404-015D	7.70	50	0.00	14.10	SAMP
N027404-016D	7.67	50	0.00	8.40	SAMP
N027404-017D	7.54	50	0.00	2.20	SAMP
N027404-018C	7.91	50	0.00	10.80	SAMP
N027404-020C	7.22	50	0.00	37.80	SAMP
N027405-001D	7.91	50	0.00	13.00	SAMP
N027405-002E	7.58	50	0.00	12.40	SAMP
N027405-003E	7.63	50	0.00	12.30	SAMP
N027405-004C	7.95	50	0.00	8.00	SAMP
N027405-006D	8.09	50	0.00	1.10	SAMP
N027405-007D	7.69	50	0.00	1.20	SAMP
N027405-008D	7.95	50	0.00	1.10	SAMP
N027405-009D	7.58	50	0.00	5.90	SAMP
N027405-011D	7.45	50	0.00	3.50	SAMP
N027405-012D	7.44	50	0.00	2.50	SAMP
N027405-013D	7.60	50	0.00	4.20	SAMP
N027412-001B	7.45	50	0.00	6.00	SAMP
N027413-001B	6.02	50	0.00	27.80	SAMP
N027414-001B	7.49	50	0.00	7.85	SAMP
N027405-006DDUP	8.08	50	0.00	1.10	DUP
N027405-009DMS	8.08	50	0.00	11.10	MS
N027405-009DMSD	8.05	50	0.00	10.95	MSD

Standardization:

Spike amt:	**5**	ml
Titrant used:	**12.40**	ml
N H2SO4	**0.02016**	Normal
Date Analyzed:	**12/11/17**	
Time:	**8:00 AM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-161205A**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R171211A**	

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Date Analyzed:	12/11/17		Reagents:					Standardization:					P = 0
Time Started:	8:00 AM			Sodium Carbonate:		CINV-161205A			Spike amt:	5	mL		P < 1/2 T
Analyzed By:	LSR			Hydrochloric Acid:		0			Titrant used:	12.4	mL		P = 1/2 T
				Sulfuric Acid:		R171211A							P > 1/2 T
									N H2SO4	0.02016	N		P = T

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.65				0.02016	0.00	0.05	0.05	1	0.00	1.01	
LCS-1	50	8.33				0.02016	0.00	5.10	5.10	1	0.00	102.82	
N027404-013D	50	7.92				0.02016	0.00	8.10	8.10	1	0.00	163.31	
N027404-015D	50	7.7				0.02016	0.00	14.10	14.10	1	0.00	284.27	
N027404-016D	50	7.67				0.02016	0.00	8.40	8.40	1	0.00	169.35	
N027404-017D	50	7.54				0.02016	0.00	2.20	2.20	1	0.00	44.35	
N027404-018C	50	7.91				0.02016	0.00	10.80	10.80	1	0.00	217.74	
N027404-020C	50	7.22				0.02016	0.00	37.80	37.80	1	0.00	762.10	
N027405-001D	50	7.91				0.02016	0.00	13.00	13.00	1	0.00	262.10	
N027405-002E	50	7.58				0.02016	0.00	12.40	12.40	1	0.00	250.00	
N027405-003E	50	7.63				0.02016	0.00	12.30	12.30	1	0.00	247.98	
N027405-004C	50	7.95				0.02016	0.00	8.00	8.00	1	0.00	161.29	
N027405-006D	50	8.09				0.02016	0.00	1.10	1.10	1	0.00	22.18	
N027405-007D	50	7.69				0.02016	0.00	1.20	1.20	1	0.00	24.19	
N027405-008D	50	7.95				0.02016	0.00	1.10	1.10	1	0.00	22.18	
N027405-009D	50	7.58				0.02016	0.00	5.90	5.90	1	0.00	118.95	
N027405-011D	50	7.45				0.02016	0.00	3.50	3.50	1	0.00	70.56	
N027405-012D	50	7.44				0.02016	0.00	2.50	2.50	1	0.00	50.40	
N027405-013D	50	7.6				0.02016	0.00	4.20	4.20	1	0.00	84.68	
N027412-001B	50	7.45				0.02016	0.00	6.00	6.00	1	0.00	120.97	
N027413-001B	50	6.02				0.02016	0.00	27.80	27.80	1	0.00	560.48	
N027414-001B	50	7.49				0.02016	0.00	7.85	7.85	1	0.00	158.27	
N027405-006DDU	50	8.08				0.02016	0.00	1.10	1.10	1	0.00	22.18	
N027405-009DMS	50	8.08				0.02016	0.00	11.10	11.10	1	0.00	223.79	
N027405-009DMS	50	8.05				0.02016	0.00	10.95	10.95	1	0.00	220.77	

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Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	12/11/17
Time:	8:00 AM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.01	1.01	1.01		P = 0
LCS-1	0.00	0.00	102.82	102.82	102.82		P = 0
N027404-013D	0.00	0.00	163.31	163.31	163.31		P = 0
N027404-015D	0.00	0.00	284.27	284.27	284.27		P = 0
N027404-016D	0.00	0.00	169.35	169.35	169.35		P = 0
N027404-017D	0.00	0.00	44.35	44.35	44.35		P = 0
N027404-018C	0.00	0.00	217.74	217.74	217.74		P = 0
N027404-020C	0.00	0.00	762.10	762.10	762.10		P = 0
N027405-001D	0.00	0.00	262.10	262.10	262.10		P = 0
N027405-002E	0.00	0.00	250.00	250.00	250.00		P = 0
N027405-003E	0.00	0.00	247.98	247.98	247.98		P = 0
N027405-004C	0.00	0.00	161.29	161.29	161.29		P = 0
N027405-006D	0.00	0.00	22.18	22.18	22.18		P = 0
N027405-007D	0.00	0.00	24.19	24.19	24.19		P = 0
N027405-008D	0.00	0.00	22.18	22.18	22.18		P = 0
N027405-009D	0.00	0.00	118.95	118.95	118.95		P = 0
N027405-011D	0.00	0.00	70.56	70.56	70.56		P = 0
N027405-012D	0.00	0.00	50.40	50.40	50.40		P = 0
N027405-013D	0.00	0.00	84.68	84.68	84.68		P = 0
N027412-001B	0.00	0.00	120.97	120.97	120.97		P = 0
N027413-001B	0.00	0.00	560.48	560.48	560.48		P = 0
N027414-001B	0.00	0.00	158.27	158.27	158.27		P = 0
N027405-006DDUP	0.00	0.00	22.18	22.18	22.18		P = 0
N027405-009DMS	0.00	0.00	223.79	223.79	223.79		P = 0
N027405-009DMSD	0.00	0.00	220.77	220.77	220.77		P = 0

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Alkalinity Preparation and Runlog

Book #6

Matrix: H_2O

Date Extracted: 12/11/17
Time Extracted: 12/11/17
Extracted By: LSL

Date Analyzed: 12/11/17
Time Analyzed: 800
Analyzed By: LSL

Reagent Lot # / Reagent ID
Sodium Carbonate: CMW 161205A
Hydrochloric Acid:
Sulfuric Acid: R171211A
Sodium Bicarbonate: CMW 150601A

~~500~~ pH meter Calibration:
SLOPE: 97.5%
pH 7 - 6.99 CMW 170615F
4 - 4.00 170615E
10 - 10.01 170822B

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50 mL	10.69	1WST171211A	5 mL	0.05N	-	-	12.40	50/50	N H_2SO_4 = (2.65 g/L)(5 mL) / (53)(V titrant)	= 0.02016129
	#2		10.69				-		12.40			
1)	MBLK	50 mL	5.65	-	-	-	0.020/L	0	0.050	50/50		
2)	LCS		8.33	1WST171211B	1 mL	0.05N		0	5.10			
3)	N027404-13D		7.92					0	8.10			
4)	15D		7.70					0	14.10			
5)	16D		7.67					0	8.40			
6)	17D		7.54					0	2.20			
7)	18C		7.91					0	10.80			
8)	20C		7.22					0	37.80			
9)	N027405-1D		7.91					0	13.00			
10)	2E		7.58					0	12.40			
11)	3E		7.63					0	12.30		P = (V pH 8.3)(N H_2SO_4)(50,000) / Vsx	
12)	4C		7.95					0	8.00			
13)	6D		8.09					0	1.10			
14)	7D		7.69					0	1.20			
15)	8D		7.95					0	1.10		T = (V pH 4.5)(N H_2SO_4)(50,000) / Vsx	
16)	9D		7.58					0	5.90			
17)	11D		7.45					0	3.50			
18)	12D		7.44					0	2.50			
19)	13D		7.60					0	4.20			
20)	N027412-1B		7.45					0	6.00			
	MS N027413-1B		6.02					0	27.80			
	MSD N027414-1B		7.49					0	7.85			
	LCS N027405-6D DUP		8.08					0	1.10			
	9D MS		8.08	1WST171211B	1 mL	0.05N		0	11.10			
	9D MSD		8.05					0	10.95			

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SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.53	50	0.00	0.050	MBLK
LCS-1	8.51	50	0.05	4.95	LCS
N027405-014D	8.16	50	0.00	9.20	SAMP
N027422-001A	8.28	50	0.00	14.80	SAMP
N027422-002A	10.27	50	5.60	7.90	SAMP
N027422-003A	10.22	50	5.00	7.20	SAMP
N027428-001B	7.87	50	0.00	12.40	SAMP
N027428-002B	7.78	50	0.00	7.70	SAMP
N027429-005D	7.72	50	0.00	1.50	SAMP
N027429-006D	7.85	50	0.00	1.50	SAMP
N027429-007D	8.20	50	0.00	8.60	SAMP
N027429-008D	8.20	50	0.00	8.35	SAMP
N027429-009D	7.67	50	0.00	2.10	SAMP
N027429-010D	7.34	50	0.00	4.25	SAMP
N027429-012D	7.90	50	0.00	6.25	SAMP
N027429-013D	7.83	50	0.00	5.80	SAMP
N027429-014D	7.31	50	0.00	5.10	SAMP
N027429-015D	7.71	50	0.00	4.60	SAMP
N027429-016D	7.74	50	0.00	3.40	SAMP
N027429-017D	7.66	50	0.00	3.40	SAMP
N027429-018D	7.58	50	0.00	2.80	SAMP
N027429-020D	7.77	50	0.00	3.10	SAMP
N027429-005DDUP	7.69	50	0.00	1.50	DUP
N027429-014DMS	8.12	50	0.00	10.20	MS
N027429-014DMSD	8.14	50	0.00	10.10	MSD

Standardization:

Spike amt:	**5**	ml
Titrant used:	**12.45**	ml
N H2SO4	**0.02008**	Normal
Date Analyzed:	**12/13/17**	
Time:	**8:30 AM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-161205A**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R171211A**	

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RB 12/21/2017

Date Analyzed:	12/13/17		Reagents:					Standardization:					P = 0
Time Started:	8:30 AM			Sodium Carbonate:		CINV-161205A			Spike amt:	5	mL		P < 1/2 T
Analyzed By:	LSR			Hydrochloric Acid:		0			Titrant used:	12.45	mL		P = 1/2 T
				Sulfuric Acid:		R171211A							P > 1/2 T
									N H2SO4	0.02008	N		P = T

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.53				0.02008	0.00	0.05	0.05	1	0.00	1.00	
LCS-1	50	8.51				0.02008	0.05	4.90	4.95	1	1.00	99.40	
N027405-014D	50	8.16				0.02008	0.00	9.20	9.20	1	0.00	184.74	
N027422-001A	50	8.28				0.02008	0.00	14.80	14.80	1	0.00	297.19	
N027422-002A	50	10.27				0.02008	5.60	2.30	7.90	1	112.45	158.63	
N027422-003A	50	10.22				0.02008	5.00	2.20	7.20	1	100.40	144.58	
N027428-001B	50	7.87				0.02008	0.00	12.40	12.40	1	0.00	249.00	
N027428-002B	50	7.78				0.02008	0.00	7.70	7.70	1	0.00	154.62	
N027429-005D	50	7.72				0.02008	0.00	1.50	1.50	1	0.00	30.12	
N027429-006D	50	7.85				0.02008	0.00	1.50	1.50	1	0.00	30.12	
N027429-007D	50	8.2				0.02008	0.00	8.60	8.60	1	0.00	172.69	
N027429-008D	50	8.2				0.02008	0.00	8.35	8.35	1	0.00	167.67	
N027429-009D	50	7.67				0.02008	0.00	2.10	2.10	1	0.00	42.17	
N027429-010D	50	7.34				0.02008	0.00	4.25	4.25	1	0.00	85.34	
N027429-012D	50	7.9				0.02008	0.00	6.25	6.25	1	0.00	125.50	
N027429-013D	50	7.83				0.02008	0.00	5.80	5.80	1	0.00	116.47	
N027429-014D	50	7.31				0.02008	0.00	5.10	5.10	1	0.00	102.41	
N027429-015D	50	7.71				0.02008	0.00	4.60	4.60	1	0.00	92.37	
N027429-016D	50	7.74				0.02008	0.00	3.40	3.40	1	0.00	68.27	
N027429-017D	50	7.66				0.02008	0.00	3.40	3.40	1	0.00	68.27	
N027429-018D	50	7.58				0.02008	0.00	2.80	2.80	1	0.00	56.22	
N027429-020D	50	7.77				0.02008	0.00	3.10	3.10	1	0.00	62.25	
N027429-005DDU	50	7.69				0.02008	0.00	1.50	1.50	1	0.00	30.12	
N027429-014DMS	50	8.12				0.02008	0.00	10.20	10.20	1	0.00	204.82	
N027429-014DMS	50	8.14				0.02008	0.00	10.10	10.10	1	0.00	202.81	

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Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	12/13/17
Time:	8:30 AM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.00	1.00	1.00		P = 0
LCS-1	0.00	2.01	97.39	99.40	99.40		P < 1/2 T
N027405-014D	0.00	0.00	184.74	184.74	184.74		P = 0
N027422-001A	0.00	0.00	297.19	297.19	297.19		P = 0
N027422-002A	66.27	92.37	0.00	158.63	158.63		P > 1/2 T
N027422-003A	56.22	88.35	0.00	144.58	144.58		P > 1/2 T
N027428-001B	0.00	0.00	249.00	249.00	249.00		P = 0
N027428-002B	0.00	0.00	154.62	154.62	154.62		P = 0
N027429-005D	0.00	0.00	30.12	30.12	30.12		P = 0
N027429-006D	0.00	0.00	30.12	30.12	30.12		P = 0
N027429-007D	0.00	0.00	172.69	172.69	172.69		P = 0
N027429-008D	0.00	0.00	167.67	167.67	167.67		P = 0
N027429-009D	0.00	0.00	42.17	42.17	42.17		P = 0
N027429-010D	0.00	0.00	85.34	85.34	85.34		P = 0
N027429-012D	0.00	0.00	125.50	125.50	125.50		P = 0
N027429-013D	0.00	0.00	116.47	116.47	116.47		P = 0
N027429-014D	0.00	0.00	102.41	102.41	102.41		P = 0
N027429-015D	0.00	0.00	92.37	92.37	92.37		P = 0
N027429-016D	0.00	0.00	68.27	68.27	68.27		P = 0
N027429-017D	0.00	0.00	68.27	68.27	68.27		P = 0
N027429-018D	0.00	0.00	56.22	56.22	56.22		P = 0
N027429-020D	0.00	0.00	62.25	62.25	62.25		P = 0
N027429-005DDUP	0.00	0.00	30.12	30.12	30.12		P = 0
N027429-014DMS	0.00	0.00	204.82	204.82	204.82		P = 0
N027429-014DMSD	0.00	0.00	202.81	202.81	202.81		P = 0

Silvia Ramit 12/20/2017

RLB 12/21/2017

Alkalinity Preparation and Runlog

Book #6

Matrix: H2O

Date Extracted: 12/13/17
Time Extracted: 12/13/17
Extracted By: LSR

Date Analyzed: 12/13/17
Time Analyzed: 830
Analyzed By: LSR

Reagent Lot # / Reagent ID
Sodium Carbonate: CMV161206A
Hydrochloric Acid:
Sulfuric Acid: D171211A
Sodium Bicarbonate: CMV150601A

pH meter Calibration:
SLOPE: 97.8%
pH 7 - 7.02 CMV170615F
4 - 4.0 170615E
10 - 10.02 170822B

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50mL	10.66	1WST171211A	5mL	0.05N	-	-	12.50	50/50	$N_{H_2SO_4} = \frac{(2.65 g/L)(5mL)}{(53)(V_{titrant})}$	- 0.0200000
	#2		10.67				-	-	12.40			= 0.02016129
1)	MBLK	50 mL	5.53	-	-	-	0.02008	0	0.050	50/50		Ave: 0.02008
2)	LCS		8.51	1WST171211B	1mL	0.05N		0.05	4.95			
3)	N027405-14D		8.16					0	9.20			
4)	N027422-1A		8.28					0	14.80			
5)	2A		10.27					5.60	7.90			
6)	3A		10.22					5.00	7.20			
7)	N027428-1B		7.87					0	12.40			
8)	2B		7.78					0	7.70			
9)	N027429-5D		7.72					0	1.50			
10)	6D		7.85					0	1.50		$P = \frac{(V_{pH\ 8.3})(N_{H_2SO_4})(50,000)}{V_{sx}}$	
11)	7D		8.20					0	8.60			
12)	8D		8.20					0	8.35			
13)	9D		7.67					0	2.10		$T = \frac{(V_{pH\ 4.5})(N_{H_2SO_4})(50,000)}{V_{sx}}$	
14)	10D		7.34					0	4.25			
15)	12D		7.90					0	6.25			
16)	13D		7.83					0	5.80			
17)	14D		7.31					0	5.10			
18)	15D		7.71					0	4.60			
19)	16D		7.74					0	3.40			
20)	17D		7.66					0	3.40			
MS	18D		7.58					0	2.80			
MSD	20D		7.77					0	3.10			
LCS	50DUP		7.69					0	1.50			
	14D MS		8.12	1WST171211B	1mL	0.05N		0	10.20			
	14D MSD		8.44					0	10.10			

Julia Ramit 12/20/2017
RB 12/21/2017

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120734
ASSET #: N027405

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/8/2017

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.		X			X	
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments: N027405

%Rec of Bromide in ~~N027404~~-004CMS failed. However, LCS passed criteria.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/17/2017

2nd Level Reviewer: RB 12/21/2017 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120764
ASSET #: N027405 / N027428

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/11/2017

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/17/2017

2nd Level Reviewer: RB 12/21/2017 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120770
ASSET #: N027429 / N027405

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/12/2017

Method:

[X] EPA 300.0
[ ] EPA 7199

[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.		X			X	
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

%Rec of Bromide in N027429-007DMS/MSD and N027429-012DMS failed. However, LCS passed criteria.
Several samples were diluted due to precipitate formed when mixed with eluent.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/17/2017

2nd Level Reviewer: RB 12/21/2017 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Chloride
Calculate the ~~Sulfate~~ concentration, in mg/L, in the orignal sample as follows:

Chloride
~~Sulfate~~, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N027405-001D** concentration in mg/L is calculated as follows:

Chloride
~~Sulfate~~, mg/L = 2.7844 * 500

= 1392.2

Reporting result in two significant values,

Chloride
~~Sulfate~~, mg/L = 1400

rba 12/20/2017

RLB 12/21/2017

ANALYSIS RUN LOG

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 25
Created: 11/29/2017 9:35:17 AM by IC-05
Last Update: 11/30/2017 12:33:04 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	ICV,ICV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	ICB,ICB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	N027210-002A,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027232-001A,SAMP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027210-002A,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027210-002ADUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027210-002AMS,MS,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027210-002AMSD,MSD,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027232-001AMS,MS,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027232-001AMSD,MSD,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	N027232-001ADUP,DUP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished



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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 25
Created: 11/29/2017 9:35:17 AM by IC-05
Last Update: 11/30/2017 12:33:04 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	ICV,ICV,1	11/29/2017 12:22:10 PM	ICV
10	ICB,ICB,1	11/29/2017 12:37:28 PM	ICB
11	MB-H2O,MBLK,1	11/29/2017 12:52:47 PM	METHOD BLANK
12	LCS-H2O,LCS,1	11/29/2017 1:08:05 PM	LCS
13	N027210-002A,SAMP,10	11/29/2017 1:23:23 PM	SAMP,1>10mL
14	N027232-001A,SAMP,2	11/29/2017 1:38:41 PM	SAMP,5>10mL
15	N027210-002A,SAMP,50	11/29/2017 2:44:14 PM	SAMP,0.2>10mL
16	N027210-002ADUP,DUP,50	11/29/2017 2:59:31 PM	DUP,0.2>10mL
17	N027210-002AMS,MS,10	11/29/2017 3:14:50 PM	MS,0.2>10mL
18	N027210-002AMSD,MSD,10	11/29/2017 3:30:07 PM	MSD,0.2>10mL
19	N027232-001AMS,MS,2	11/29/2017 3:45:25 PM	MS,5>10mL
20	N027232-001AMSD,MSD,2	11/29/2017 4:00:43 PM	MSD,5>10mL
21	CCV-1,CCV,1	11/29/2017 4:16:01 PM	CCV
22	CCB-1,CCB,1	11/29/2017 4:31:19 PM	CCB
23	N027232-001ADUP,DUP,2	11/29/2017 4:46:38 PM	DUP,5>10mL
24	CCV-2,CCV,1	11/29/2017 5:01:56 PM	CCV
25	CCB-2,CCB,1	11/29/2017 5:17:14 PM	CCB

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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/8/2017 8:18:58 AM by IC-05
Last Update: 12/8/2017 8:15:10 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027422-001A,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027422-001A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027422-001A,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027422-002A,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027422-002A,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027422-002A,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027422-002A,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	N027422-002A,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	N027422-003A,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	N027422-003A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
26	N027422-003A,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
27	N027422-003A,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
28	N027422-003A,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
29	N027422-001ADUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
30	N027422-001AMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
31	N027422-001AMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
32	N027422-001AMS,MS,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
33	N027422-001AMSD,MSD,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
34	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
35	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
36	N027422-001ADUP,DUP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
37	N027422-001AMS,MS,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
38	N027422-001AMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
39	N027422-001ADUP,DUP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
40	N027422-001AMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
41	N027422-001AMSD,MSD,20	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/8/2017 8:18:58 AM by IC-05
Last Update: 12/8/2017 8:15:10 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	BLANK,BLANK,1	12/8/2017 8:19:29 AM	BLANK
10	CCV-1,CCV,1	12/8/2017 8:34:47 AM	CCV
11	CCB-1,CCB,1	12/8/2017 8:50:05 AM	CCB
12	MB-H2O,MBLK,1	12/8/2017 9:05:23 AM	METHOD BLANK
13	LCS-H2O,LCS,1	12/8/2017 9:20:41 AM	LCS
14	N027422-001A,SAMP,1	12/8/2017 9:44:47 AM	SAMP,10mL
15	N027422-001A,SAMP,5	12/8/2017 10:00:06 AM	SAMP,2>10mL
16	N027422-001A,SAMP,20	12/8/2017 10:15:24 AM	SAMP,0.5>10mL
17	N027422-002A,SAMP,1	12/8/2017 10:30:42 AM	SAMP,10mL
18	N027422-002A,SAMP,10	12/8/2017 10:46:00 AM	SAMP,1>10mL
19	N027422-002A,SAMP,20	12/8/2017 11:01:18 AM	SAMP,0.5>10mL
20	N027422-002A,SAMP,50	12/8/2017 11:16:35 AM	SAMP,0.2>10mL
21	N027422-002A,SAMP,200	12/8/2017 11:31:53 AM	SAMP,0.05>10mL
22	CCV-2,CCV,1	12/8/2017 11:47:11 AM	CCV
23	CCB-2,CCB,1	12/8/2017 12:02:29 PM	CCB
24	N027422-003A,SAMP,1	12/8/2017 12:17:47 PM	SAMP,10mL
25	N027422-003A,SAMP,5	12/8/2017 12:33:05 PM	SAMP,2>10mL
26	N027422-003A,SAMP,20	12/8/2017 12:48:24 PM	SAMP,0.5>10mL
27	N027422-003A,SAMP,50	12/8/2017 1:03:42 PM	SAMP,0.2>10mL
28	N027422-003A,SAMP,200	12/8/2017 1:19:00 PM	SAMP,0.05>10mL
29	N027422-001ADUP,DUP,1	12/8/2017 1:34:18 PM	DUP,10mL
30	N027422-001AMS,MS,1	12/8/2017 1:49:36 PM	MS,10mL
31	N027422-001AMSD,MSD,1	12/8/2017 2:04:54 PM	MSD,10mL
32	N027422-001AMS,MS,2	12/8/2017 2:20:11 PM	MS,5>10mL
33	N027422-001AMSD,MSD,2	12/8/2017 2:35:30 PM	MSD,5>10mL
34	CCV-3,CCV,1	12/8/2017 2:50:48 PM	CCV
35	CCB-3,CCB,1	12/8/2017 3:06:06 PM	CCB
36	N027422-001ADUP,DUP,5	12/8/2017 3:21:23 PM	DUP,2>10mL
37	N027422-001AMS,MS,5	12/8/2017 3:36:41 PM	MS,2>10mL
38	N027422-001AMSD,MSD,5	12/8/2017 3:51:59 PM	MSD,2>10mL
39	N027422-001ADUP,DUP,20	12/8/2017 4:07:17 PM	DUP,0.5>10mL
40	N027422-001AMS,MS,20	12/8/2017 4:22:34 PM	MS,0.5>10mL
41	N027422-001AMSD,MSD,20	12/8/2017 4:37:53 PM	MSD,0.5>10mL

rba 12/17/2017

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/8/2017 8:18:58 AM by IC-05
Last Update: 12/8/2017 8:15:10 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027427-001C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
43	N027404-002C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
44	N027404-003D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
45	N027404-005D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
46	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
47	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
48	N027404-017D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
49	N027404-020C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
50	N027404-017DMS,MS,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
51	N027404-017DMSD,MSD,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
52	N027404-020CMS,MS,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
53	N027404-002CDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
54	N027404-006C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
55	N027404-007D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
56	N027404-009D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
57	N027404-010D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
58	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
59	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
60	N027404-011D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
61	N027404-013D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
62	N027404-015D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
63	N027404-016D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
64	N027404-018C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
65	N027404-002CDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
66	N027404-005D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
67	N027404-010DMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
68	N027404-010DMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
69	N027404-007DMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
70	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
71	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
72	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
73	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
74	N027405-004C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
75	N027405-004CMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
76	N027405-004CMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
77	N027405-014D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
78	N027405-014DMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
79	N027405-012D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
80	N027405-012DDUP,DUP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
81	N027405-002E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
82	CCV-7,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/8/2017 8:18:58 AM by IC-05
Last Update: 12/8/2017 8:15:10 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027427-001C,SAMP,5	12/8/2017 4:53:11 PM	SAMP,2>10mL
43	N027404-002C,SAMP,1	12/8/2017 5:08:29 PM	SAMP,10mL
44	N027404-003D,SAMP,1	12/8/2017 5:23:46 PM	SAMP,10mL
45	N027404-005D,SAMP,1	12/8/2017 5:39:05 PM	SAMP,10mL
46	CCV-4,CCV,1	12/8/2017 5:54:24 PM	CCV
47	CCB-4,CCB,1	12/8/2017 6:09:42 PM	CCB
48	N027404-017D,SAMP,10	12/8/2017 6:25:00 PM	SAMP,1>10mL
49	N027404-020C,SAMP,10	12/8/2017 6:40:19 PM	SAMP,1>10mL
50	N027404-017DMS,MS,10	12/8/2017 6:55:36 PM	MS,1>10mL
51	N027404-017DMSD,MSD,10	12/8/2017 7:10:55 PM	MSD,1>10mL
52	N027404-020CMS,MS,10	12/8/2017 7:26:14 PM	MS,1>10mL
53	N027404-002CDUP,DUP,1	12/8/2017 7:41:32 PM	DUP,1>10mL
54	N027404-006C,SAMP,1	12/8/2017 7:56:50 PM	SAMP,10mL
55	N027404-007D,SAMP,1	12/8/2017 8:12:08 PM	SAMP,10mL
56	N027404-009D,SAMP,5	12/8/2017 8:27:26 PM	SAMP,2>10mL
57	N027404-010D,SAMP,1	12/8/2017 8:42:44 PM	SAMP,10mL
58	CCV-5,CCV,1	12/8/2017 8:58:03 PM	CCV
59	CCB-5,CCB,1	12/8/2017 9:13:21 PM	CCB
60	N027404-011D,SAMP,1	12/8/2017 9:28:39 PM	SAMP,10mL
61	N027404-013D,SAMP,1	12/8/2017 9:43:57 PM	SAMP,10mL
62	N027404-015D,SAMP,5	12/8/2017 9:59:14 PM	SAMP,2>10mL
63	N027404-016D,SAMP,5	12/8/2017 10:14:32 PM	SAMP,2>10mL
64	N027404-018C,SAMP,1	12/8/2017 10:29:50 PM	SAMP,10mL
65	N027404-002CDUP,DUP,1	12/8/2017 10:45:08 PM	SAMP,10mL
66	N027404-005D,SAMP,5	12/8/2017 11:00:26 PM	SAMP,2>10mL
67	N027404-010DMS,MS,1	12/8/2017 11:15:44 PM	MS,10mL
68	N027404-010DMSD,MSD,1	12/8/2017 11:31:01 PM	MSD,10mL
69	N027404-007DMS,MS,1	12/8/2017 11:46:19 PM	MS,10mL
70	CCV-6,CCV,1	12/9/2017 12:01:38 AM	CCV
71	CCB-6,CCB,1	12/9/2017 12:16:55 AM	CCB
72	LCS-2,LCS,1	12/9/2017 12:32:13 AM	LCS
73	MB-2,MBLK,1	12/9/2017 12:47:31 AM	METHOD BLANK
74	N027405-004C,SAMP,1	12/9/2017 1:02:49 AM	SAMP,10mL
75	N027405-004CMS,MS,1	12/9/2017 1:18:07 AM	MS,10mL
76	N027405-004CMSD,MSD,1	12/9/2017 1:33:25 AM	MSD,10mL
77	N027405-014D,SAMP,1	12/9/2017 1:48:43 AM	SAMP,10mL
78	N027405-014DMS,MS,1	12/9/2017 2:04:01 AM	MS,10mL
79	N027405-012D,SAMP,10	12/9/2017 2:19:18 AM	SAMP,1>10mL
80	N027405-012DDUP,DUP,10	12/9/2017 2:34:36 AM	DUP,1>10mL
81	N027405-002E,SAMP,5	12/9/2017 2:49:54 AM	SAMP,2>10mL
82	CCV-7,CCV,1	12/9/2017 3:05:12 AM	CCV

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/8/2017 8:18:58 AM by IC-05
Last Update: 12/8/2017 8:15:10 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
83	CCB-7,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
84	N027405-003E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
85	N027405-006D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
86	N027405-007D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
87	N027405-008D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
88	N027405-009D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
89	N027405-011D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
90	N027405-013D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
91	CCV-8,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
92	CCB-8,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/8/2017 8:18:58 AM by IC-05
Last Update: 12/8/2017 8:15:10 PM by IC-05

No.	Name	Inj. Date/Time	Comment
83	CCB-7,CCB,1	12/9/2017 3:20:29 AM	CCB
84	N027405-003E,SAMP,5	12/9/2017 3:35:47 AM	SAMP,2>10mL
85	N027405-006D,SAMP,5	12/9/2017 3:51:05 AM	SAMP,2>10mL
86	N027405-007D,SAMP,5	12/9/2017 4:06:23 AM	SAMP,2>10mL
87	N027405-008D,SAMP,5	12/9/2017 4:21:41 AM	SAMP,2>10mL
88	N027405-009D,SAMP,5	12/9/2017 4:36:59 AM	SAMP,2>10mL
89	N027405-011D,SAMP,5	12/9/2017 4:52:17 AM	SAMP,2>10mL
90	N027405-013D,SAMP,5	12/9/2017 5:07:36 AM	SAMP,2>10mL
91	CCV-8,CCV,1	12/9/2017 5:22:53 AM	CCV
92	CCB-8,CCB,1	12/9/2017 5:38:12 AM	CCB

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 93
Created: 12/11/2017 8:29:57 AM by IC-05
Last Update: 12/11/2017 11:39:29 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027404-003D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027404-003D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027404-005D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027404-005D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027404-010D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027404-010DMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027404-007D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	N027404-007DDUP,DUP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	N027404-002C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	N027404-002CMS,MS,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
26	N027404-002CMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
27	N027404-006C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
28	N027404-009D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
29	N027404-011D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
30	N027404-013D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
31	N027404-015D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
32	N027404-015D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
33	N027404-016D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
34	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
35	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
36	N027404-016D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
37	N027404-017D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
38	N027404-017D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
39	N027404-018C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
40	N027404-020C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
41	N027404-020C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 93
Created: 12/11/2017 8:29:57 AM by IC-05
Last Update: 12/11/2017 11:39:29 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	BLANK,BLANK,1	12/11/2017 8:30:18 AM	BLANK
10	CCV-1,CCV,1	12/11/2017 8:45:36 AM	CCV
11	CCB-1,CCB,1	12/11/2017 9:00:54 AM	CCB
12	MB-H2O,MBLK,1	12/11/2017 9:16:12 AM	METHOD BLANK
13	LCS-H2O,LCS,1	12/11/2017 9:31:30 AM	LCS
14	N027404-003D,SAMP,1000	12/11/2017 9:55:32 AM	SAMP,0.01>10mL
15	N027404-003D,SAMP,200	12/11/2017 10:10:50 AM	SAMP,0.05>10mL
16	N027404-005D,SAMP,1000	12/11/2017 10:26:08 AM	SAMP,0.01>10mL
17	N027404-005D,SAMP,100	12/11/2017 10:41:26 AM	SAMP,0.1>10mL
18	N027404-010D,SAMP,20	12/11/2017 10:56:44 AM	SAMP,0.5>10mL
19	N027404-010DMS,MS,20	12/11/2017 11:12:01 AM	MS,0.5>10mL
20	N027404-007D,SAMP,20	12/11/2017 11:27:19 AM	SAMP,0.5>10mL
21	N027404-007DDUP,DUP,20	12/11/2017 11:42:37 AM	DUP,0.5>10mL
22	CCV-2,CCV,1	12/11/2017 11:57:55 AM	CCV
23	CCB-2,CCB,1	12/11/2017 12:13:13 PM	CCB
24	N027404-002C,SAMP,50	12/11/2017 12:28:30 PM	SAMP,0.2>10mL
25	N027404-002CMS,MS,50	12/11/2017 12:43:48 PM	MS,0.2>10mL
26	N027404-002CMSD,MSD,50	12/11/2017 12:59:06 PM	MSD,0.2>10mL
27	N027404-006C,SAMP,200	12/11/2017 1:14:24 PM	SAMP,0.05>10mL
28	N027404-009D,SAMP,500	12/11/2017 1:29:42 PM	SAMP,0.02>10mL
29	N027404-011D,SAMP,20	12/11/2017 1:45:00 PM	SAMP,0.5>10mL
30	N027404-013D,SAMP,20	12/11/2017 2:00:18 PM	SAMP,0.5>10mL
31	N027404-015D,SAMP,1000	12/11/2017 2:15:36 PM	SAMP,0.01>10mL
32	N027404-015D,SAMP,100	12/11/2017 2:30:54 PM	SAMP,0.1>10mL
33	N027404-016D,SAMP,1000	12/11/2017 2:46:12 PM	SAMP,0.01>10mL
34	CCV-3,CCV,1	12/11/2017 3:01:30 PM	CCV
35	CCB-3,CCB,1	12/11/2017 3:16:48 PM	CCB
36	N027404-016D,SAMP,100	12/11/2017 3:32:05 PM	SAMP,0.1>10mL
37	N027404-017D,SAMP,2000	12/11/2017 3:47:23 PM	SAMP,0.005>10mL
38	N027404-017D,SAMP,100	12/11/2017 4:02:41 PM	SAMP,0.1>10mL
39	N027404-018C,SAMP,20	12/11/2017 4:17:59 PM	SAMP,0.5>10mL
40	N027404-020C,SAMP,2000	12/11/2017 4:33:17 PM	SAMP,0.005>10mL
41	N027404-020C,SAMP,200	12/11/2017 4:48:34 PM	SAMP,0.05>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 93
Created: 12/11/2017 8:29:57 AM by IC-05
Last Update: 12/11/2017 11:39:29 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027405-001D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
43	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
44	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
45	N027405-004C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
46	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
47	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
48	N027405-004CDUP,DUP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
49	N027405-004CMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
50	N027405-004CMSD,MSD,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
51	N027405-002E,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
52	N027405-002EMS,MS,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
53	N027405-014D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
54	N027405-014DMS,MS,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
55	N027405-003E,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
56	N027405-003E,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
57	N027405-002E,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
58	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
59	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
60	N027405-006D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
61	N027405-006D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
62	N027405-007D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
63	N027405-007D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
64	N027405-008D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
65	N027405-008D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
66	N027405-009D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
67	N027405-009D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
68	N027405-011D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
69	N027405-011D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
70	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
71	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
72	N027405-012D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
73	N027405-012D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
74	N027405-013D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
75	N027405-013D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
76	N027405-014D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
77	N027428-001B,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
78	N027428-001B,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
79	N027428-002B,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
80	N027428-002B,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
81	N027405-001D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
82	CCV-7,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 93
Created: 12/11/2017 8:29:57 AM by IC-05
Last Update: 12/11/2017 11:39:29 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027405-001D,SAMP,1	12/11/2017 5:03:52 PM	SAMP,10mL
43	LCS-2,LCS,1	12/11/2017 5:19:10 PM	LCS
44	MB-2,MBLK,1	12/11/2017 5:34:28 PM	METHOD BLANK
45	N027405-004C,SAMP,20	12/11/2017 5:49:46 PM	SAMP,0.5>10mL
46	CCV-4,CCV,1	12/11/2017 6:05:04 PM	CCV
47	CCB-4,CCB,1	12/11/2017 6:20:22 PM	CCB
48	N027405-004CDUP,DUP,20	12/11/2017 6:35:41 PM	DUP,0.5>10mL
49	N027405-004CMS,MS,20	12/11/2017 6:50:59 PM	MS,0.5>10mL
50	N027405-004CMSD,MSD,20	12/11/2017 7:06:17 PM	MSD,0.5>10mL
51	N027405-002E,SAMP,500	12/11/2017 7:21:35 PM	SAMP,0.02>10mL
52	N027405-002EMS,MS,500	12/11/2017 7:36:53 PM	MS,0.02>10mL
53	N027405-014D,SAMP,10	12/11/2017 7:52:11 PM	SAMP,1>10mL
54	N027405-014DMS,MS,10	12/11/2017 8:07:30 PM	MS,1>10mL
55	N027405-003E,SAMP,500	12/11/2017 8:22:48 PM	SAMP,0.02>10mL
56	N027405-003E,SAMP,100	12/11/2017 8:38:05 PM	SAMP,0.1>10mL
57	N027405-002E,SAMP,100	12/11/2017 8:53:23 PM	SAMP,0.1>10mL
58	CCV-5,CCV,1	12/11/2017 9:08:41 PM	CCV
59	CCB-5,CCB,1	12/11/2017 9:23:59 PM	CCB
60	N027405-006D,SAMP,2000	12/11/2017 9:39:17 PM	SAMP,0.005>10mL
61	N027405-006D,SAMP,100	12/11/2017 9:54:35 PM	SAMP,0.1>10mL
62	N027405-007D,SAMP,2000	12/11/2017 10:09:53 PM	SAMP,0.005>10mL
63	N027405-007D,SAMP,100	12/11/2017 10:25:11 PM	SAMP,0.1>10mL
64	N027405-008D,SAMP,2000	12/11/2017 10:40:29 PM	SAMP,0.005>10mL
65	N027405-008D,SAMP,100	12/11/2017 10:55:46 PM	SAMP,0.1>10mL
66	N027405-009D,SAMP,500	12/11/2017 11:11:04 PM	SAMP,0.02>10mL
67	N027405-009D,SAMP,50	12/11/2017 11:26:22 PM	SAMP,0.2>10mL
68	N027405-011D,SAMP,1000	12/11/2017 11:41:40 PM	SAMP,0.01>10mL
69	N027405-011D,SAMP,50	12/11/2017 11:56:58 PM	SAMP,0.2>10mL
70	CCV-6,CCV,1	12/12/2017 12:12:16 AM	CCV
71	CCB-6,CCB,1	12/12/2017 12:27:34 AM	CCB
72	N027405-012D,SAMP,1000	12/12/2017 12:42:52 AM	SAMP,0.01>10mL
73	N027405-012D,SAMP,50	12/12/2017 12:58:11 AM	SAMP,0.2>10mL
74	N027405-013D,SAMP,1000	12/12/2017 1:13:28 AM	SAMP,0.01>10mL
75	N027405-013D,SAMP,50	12/12/2017 1:28:47 AM	SAMP,0.2>10mL
76	N027405-014D,SAMP,50	12/12/2017 1:44:05 AM	SAMP,0.2>10mL
77	N027428-001B,SAMP,200	12/12/2017 1:59:23 AM	SAMP,0.05>10mL
78	N027428-001B,SAMP,50	12/12/2017 2:14:41 AM	SAMP,0.2>10mL
79	N027428-002B,SAMP,500	12/12/2017 2:29:59 AM	SAMP,0.02>10mL
80	N027428-002B,SAMP,50	12/12/2017 2:45:16 AM	SAMP,0.2>10mL
81	N027405-001D,SAMP,500	12/12/2017 3:00:34 AM	SAMP,0.02>10mL
82	CCV-7,CCV,1	12/12/2017 3:15:52 AM	CCV

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 93
Created: 12/11/2017 8:29:57 AM by IC-05
Last Update: 12/11/2017 11:39:29 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
83	CCB-7,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
84	N027405-001D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
85	N027397-001A,SAMP,5	Unknown	1000.0	Anions Default2	Anions_171129	Finished
86	N027397-002A,SAMP,5	Unknown	1000.0	Anions Default2	Anions_171129	Finished
87	N027397-002AMS,MS,5	Unknown	1000.0	Anions Default2	Anions_171129	Finished
88	N027397-002AMSD,MSD,5	Unknown	1000.0	Anions Default2	Anions_171129	Finished
89	N027397-003A,SAMP,5	Unknown	1000.0	Anions Default2	Anions_171129	Finished
90	N027397-003ADUP,DUP,5	Unknown	1000.0	Anions Default2	Anions_171129	Finished
91	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
92	CCV-8,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
93	CCB-8,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 93
Created: 12/11/2017 8:29:57 AM by IC-05
Last Update: 12/11/2017 11:39:29 PM by IC-05

No.	Name	Inj. Date/Time	Comment
83	CCB-7,CCB,1	12/12/2017 3:31:10 AM	CCB
84	N027405-001D,SAMP,50	12/12/2017 3:46:27 AM	SAMP,0.2>10mL
85	N027397-001A,SAMP,5	12/12/2017 4:01:45 AM	SAMP,2>10mL
86	N027397-002A,SAMP,5	12/12/2017 4:24:03 AM	SAMP,2>10mL
87	N027397-002AMS,MS,5	12/12/2017 4:46:21 AM	MS,2>10mL
88	N027397-002AMSD,MSD,5	12/12/2017 5:08:40 AM	MSD,2>10mL
89	N027397-003A,SAMP,5	12/12/2017 5:30:58 AM	SAMP,2>10mL
90	N027397-003ADUP,DUP,5	12/12/2017 5:53:15 AM	DUP,2>10mL
91	BLANK,BLANK,1	12/12/2017 6:15:33 AM	BLANK
92	CCV-8,CCV,1	12/12/2017 6:30:51 AM	CCV
93	CCB-8,CCB,1	12/12/2017 6:46:09 AM	CCB

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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 80
Created: 12/12/2017 8:35:21 AM by IC-05
Last Update: 12/13/2017 1:26:07 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027482-001A,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027482-003A,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027482-002A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027482-004A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027482-001ADUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027482-003A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027482-004AMS,MS,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	N027482-004AMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	N027482-004A,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	N027482-004ADUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
26	N027482-004AMS,MS,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
27	N027482-004AMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
28	N027482-001A,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
29	N027482-002A,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
30	N027482-003A,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
31	N027482-002A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
32	N027482-004ADUP,DUP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
33	N027482-001A,SAMP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
34	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
35	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
36	N027405-001D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
37	N027429-007D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
38	N027429-012D,SAMP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
39	N027429-007DMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
40	N027429-007DMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
41	N027429-012DMS,MS,2	Unknown	1000.0	Anions Default	Anions_171129	Finished

rba 12/17/2017

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 80
Created: 12/12/2017 8:35:21 AM by IC-05
Last Update: 12/13/2017 1:26:07 AM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	BLANK,BLANK,1	12/12/2017 8:36:15 AM	BLANK
10	CCV-1,CCV,1	12/12/2017 8:51:34 AM	CCV
11	CCB-1,CCB,1	12/12/2017 9:06:51 AM	CCB
12	MB-H2O,MBLK,1	12/12/2017 9:22:09 AM	METHOD BLANK
13	LCS-H2O,LCS,1	12/12/2017 9:37:27 AM	LCS
14	N027482-001A,SAMP,1	12/12/2017 10:04:10 AM	SAMP,10mL
15	N027482-003A,SAMP,1	12/12/2017 10:19:28 AM	SAMP,10mL
16	N027482-002A,SAMP,5	12/12/2017 10:34:46 AM	SAMP,2>10mL
17	N027482-004A,SAMP,5	12/12/2017 10:50:04 AM	SAMP,2>10mL
18	N027482-001ADUP,DUP,1	12/12/2017 11:05:22 AM	DUP,10mL
19	N027482-003A,SAMP,5	12/12/2017 11:20:40 AM	SAMP,2>10mL
20	N027482-004AMS,MS,5	12/12/2017 11:35:58 AM	MS,2>10mL
21	N027482-004AMSD,MSD,5	12/12/2017 11:51:16 AM	MSD,2>10mL
22	CCV-2,CCV,1	12/12/2017 12:06:33 PM	CCV
23	CCB-2,CCB,1	12/12/2017 12:21:52 PM	CCB
24	N027482-004A,SAMP,50	12/12/2017 12:37:11 PM	SAMP,0.2>10mL
25	N027482-004ADUP,DUP,50	12/12/2017 12:52:29 PM	DUP,0.2>10mL
26	N027482-004AMS,MS,50	12/12/2017 1:07:47 PM	MS,0.2>10mL
27	N027482-004AMSD,MSD,50	12/12/2017 1:23:05 PM	MSD,0.2>10mL
28	N027482-001A,SAMP,50	12/12/2017 1:38:23 PM	SAMP,0.2>10mL
29	N027482-002A,SAMP,100	12/12/2017 2:06:39 PM	SAMP,0.5>10mL
30	N027482-003A,SAMP,100	12/12/2017 2:21:58 PM	SAMP,0.1>10mL
31	N027482-002A,SAMP,5	12/12/2017 2:37:15 PM	SAMP,2>10mL
32	N027482-004ADUP,DUP,5	12/12/2017 2:52:33 PM	DUP,2>10mL
33	N027482-001A,SAMP,2	12/12/2017 3:07:51 PM	SAMP,5>10mL
34	CCV-3,CCV,1	12/12/2017 3:23:10 PM	CCV
35	CCB-3,CCB,1	12/12/2017 3:38:27 PM	CCB
36	N027405-001D,SAMP,1	12/12/2017 3:53:45 PM	SAMP,10mL
37	N027429-007D,SAMP,1	12/12/2017 4:09:03 PM	SAMP,10mL
38	N027429-012D,SAMP,2	12/12/2017 4:24:21 PM	SAMP,5>10mL
39	N027429-007DMS,MS,1	12/12/2017 4:45:44 PM	SAMP,0.5>10mL
40	N027429-007DMSD,MSD,1	12/12/2017 5:01:02 PM	SAMP,0.005>10mL
41	N027429-012DMS,MS,2	12/12/2017 5:16:20 PM	SAMP,0.05>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 80
Created: 12/12/2017 8:35:21 AM by IC-05
Last Update: 12/13/2017 1:26:07 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027429-007DDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
43	N027429-008D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
44	N027429-005D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
45	N027429-006D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
46	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
47	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
48	N027429-009D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
49	N027429-010D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
50	N027429-013D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
51	N027429-014D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
52	N027429-015D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
53	N027429-016D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
54	N027429-017D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
55	N027429-018D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
56	N027429-020D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
57	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
58	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
59	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
60	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
61	N027430-006C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
62	N027430-006CDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
63	N027430-006CMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
64	N027430-006CMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
65	N027430-004C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
66	N027430-004CMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
67	N027430-012C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
68	N027430-002C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
69	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
70	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
71	N027430-008C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
72	N027430-013C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
73	N027430-014C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
74	N027430-016C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
75	N027430-017C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
76	N027430-015C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
77	N027430-018C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
78	N027430-020C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
79	CCV-7,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
80	CCB-7,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 80
Created: 12/12/2017 8:35:21 AM by IC-05
Last Update: 12/13/2017 1:26:07 AM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027429-007DDUP,DUP,1	12/12/2017 5:31:38 PM	DUP,10mL
43	N027429-008D,SAMP,1	12/12/2017 5:46:56 PM	SAMP,10mL
44	N027429-005D,SAMP,5	12/12/2017 6:02:14 PM	SAMP,2>10mL
45	N027429-006D,SAMP,5	12/12/2017 6:17:32 PM	SAMP,2>10mL
46	CCV-4,CCV,1	12/12/2017 6:32:50 PM	CCV
47	CCB-4,CCB,1	12/12/2017 6:48:08 PM	CCB
48	N027429-009D,SAMP,5	12/12/2017 7:03:25 PM	SAMP,2>10mL
49	N027429-010D,SAMP,10	12/12/2017 7:18:43 PM	SAMP,1>10mL
50	N027429-013D,SAMP,5	12/12/2017 7:34:01 PM	SAMP,2>10mL
51	N027429-014D,SAMP,5	12/12/2017 7:49:19 PM	SAMP,2>10mL
52	N027429-015D,SAMP,5	12/12/2017 8:04:37 PM	SAMP,2>10mL
53	N027429-016D,SAMP,5	12/12/2017 8:19:55 PM	SAMP,2>10mL
54	N027429-017D,SAMP,5	12/12/2017 8:35:12 PM	SAMP,2>10mL
55	N027429-018D,SAMP,5	12/12/2017 8:50:31 PM	SAMP,2>10mL
56	N027429-020D,SAMP,5	12/12/2017 9:05:49 PM	SAMP,2>10mL
57	CCV-5,CCV,1	12/12/2017 9:21:06 PM	CCV
58	CCB-5,CCB,1	12/12/2017 9:36:24 PM	CCB
59	LCS-2,LCS,1	12/12/2017 9:51:42 PM	LCS
60	MB-2,MBLK,1	12/12/2017 10:07:01 PM	METHOD BLANK
61	N027430-006C,SAMP,1	12/12/2017 10:22:19 PM	SAMP,10mL
62	N027430-006CDUP,DUP,1	12/12/2017 10:37:37 PM	DUP,10mL
63	N027430-006CMS,MS,1	12/12/2017 10:52:55 PM	MS,10mL
64	N027430-006CMSD,MSD,1	12/12/2017 11:08:12 PM	MSD,10mL
65	N027430-004C,SAMP,1	12/12/2017 11:23:31 PM	SAMP,10mL
66	N027430-004CMS,MS,1	12/12/2017 11:38:48 PM	MS,10mL
67	N027430-012C,SAMP,1	12/12/2017 11:54:06 PM	SAMP,10mL
68	N027430-002C,SAMP,5	12/13/2017 12:09:24 AM	SAMP,2>10mL
69	CCV-6,CCV,1	12/13/2017 12:24:42 AM	CCV
70	CCB-6,CCB,1	12/13/2017 12:40:00 AM	CCB
71	N027430-008C,SAMP,5	12/13/2017 12:55:18 AM	SAMP,2>10mL
72	N027430-013C,SAMP,5	12/13/2017 1:10:36 AM	SAMP,2>10mL
73	N027430-014C,SAMP,5	12/13/2017 1:25:54 AM	SAMP,2>10mL
74	N027430-016C,SAMP,1	12/13/2017 1:41:11 AM	SAMP,10mL
75	N027430-017C,SAMP,1	12/13/2017 1:56:29 AM	SAMP,10mL
76	N027430-015C,SAMP,5	12/13/2017 2:11:47 AM	SAMP,2>10mL
77	N027430-018C,SAMP,5	12/13/2017 2:27:05 AM	SAMP,2>10mL
78	N027430-020C,SAMP,5	12/13/2017 2:42:23 AM	SAMP,2>10mL
79	CCV-7,CCV,1	12/13/2017 2:57:41 AM	CCV
80	CCB-7,CCB,1	12/13/2017 3:12:58 AM	CCB

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INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0709	0.1410	0.2824	0.7275	1.5389	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.



12/21/2017

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Bromide	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.05	0.25	0.5	1.25	2.5	R^2
Area,mAU*min	0.0000	0.0033	0.0139	0.0287	0.0714	0.1448	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814D

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RLB 12/21/2017

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0532	0.2181	0.4423	1.1375	2.3683	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 12/21/2017

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120734**
Client ID: **ICV**	Batch ID: **R120734**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2860279**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.235	0.50	1.250	0	98.8	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120734**
Client ID: **CCV**	Batch ID: **R120734**	TestNo: **EPA 300.0**		Analysis Date: **12/9/2017**	SeqNo: **2860317**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.272	0.50	1.250	0	102	90	110				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120734**
Client ID: **CCV**	Batch ID: **R120734**	TestNo: **EPA 300.0**		Analysis Date: **12/9/2017**	SeqNo: **2860329**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.261	0.50	1.250	0	101	90	110				

Sample ID **CCV-8**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120734**
Client ID: **CCV**	Batch ID: **R120734**	TestNo: **EPA 300.0**		Analysis Date: **12/9/2017**	SeqNo: **2860338**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.257	0.50	1.250	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **ICV**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2862140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.235	0.50	1.250	0	98.8	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCV**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.276	0.50	1.250	0	102	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCV**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862146**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.272	0.50	1.250	0	102	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCV**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.274	0.50	1.250	0	102	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCV**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862160**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.267	0.50	1.250	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCV**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862171**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.263	0.50	1.250	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **ICV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2861491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.042	0.50	2.000	0	102	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.984	0.50	2.000	0	99.2	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.985	0.50	2.000	0	99.3	90	110				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.989	0.50	2.000	0	99.5	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861537**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.982	0.50	2.000	0	99.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861545**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.989	0.50	2.000	0	99.4	90	110				

Sample ID **CCV-8**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.991	0.50	2.000	0	99.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **ICV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2861555**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.936	0.50	4.000	0	98.4	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.857	0.50	4.000	0	96.4	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861586**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.884	0.50	4.000	0	97.1	90	110				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861595**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.855	0.50	4.000	0	96.4	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.922	0.50	4.000	0	98.1	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861608**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.852	0.50	4.000	0	96.3	90	110				

Sample ID **CCV-8**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.900	0.50	4.000	0	97.5	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	**ICB**	SampType:	**ICB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**120734**
Client ID:	**ICB**	Batch ID:	**R120734**	TestNo:	**EPA 300.0**			Analysis Date:	**11/29/2017**	SeqNo:	**2860280**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-6**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**120734**
Client ID:	**CCB**	Batch ID:	**R120734**	TestNo:	**EPA 300.0**			Analysis Date:	**12/9/2017**	SeqNo:	**2860318**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-7**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**120734**
Client ID:	**CCB**	Batch ID:	**R120734**	TestNo:	**EPA 300.0**			Analysis Date:	**12/9/2017**	SeqNo:	**2860330**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-8**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**120734**
Client ID:	**CCB**	Batch ID:	**R120734**	TestNo:	**EPA 300.0**			Analysis Date:	**12/9/2017**	SeqNo:	**2860339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **ICB**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2862141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCB**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCB**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862147**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCB**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCB**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	CCB-5	SampType:	CCB	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770
Client ID:	CCB	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862172

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **ICB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2861492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861531**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861538**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861546**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861554**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **ICB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2861556**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861578**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861587**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861596**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861603**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861609**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/8/2017

Sample Name		Retention Time	Evaluation
CCV-6	Bromide	4.890	
CCV-7	Bromide	4.894	
CCV-8	Bromide	4.890	
Average		4.891	
Applied RT Window		4.691 - 5.091	
LCS-R120734_BR	Bromide	4.890	PASS
MB-R120734_BR	Bromide	N.A.	N.A.
N027405-004C	Bromide	N.A.	N.A.
N027405-004CMS	Bromide	4.887	PASS
N027405-004CMSD	Bromide	4.890	PASS
N027405-014D	Bromide	4.867	PASS
N027405-014DMS	Bromide	4.887	PASS
N027405-012D	Bromide	N.A.	N.A.
N027405-012DDUP	Bromide	N.A.	N.A.
N027405-002E	Bromide	N.A.	N.A.
N027405-003E	Bromide	N.A.	N.A.
N027405-006D	Bromide	N.A.	N.A.
N027405-007D	Bromide	N.A.	N.A.
N027405-008D	Bromide	N.A.	N.A.
N027405-009D	Bromide	N.A.	N.A.
N027405-011D	Bromide	N.A.	N.A.
N027405-013D	Bromide	N.A.	N.A.

rba 12/20/2017

12/21/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/12/2017

Sample Name		Retention Time	Evaluation
CCV-1	Bromide	4.884	
CCV-2	Bromide	4.887	
CCV-3	Bromide	4.887	
CCV-4	Bromide	4.884	
CCV-5	Bromide	4.884	
	Average	4.885	
	Applied RT Window	4.685 - 5.085	
MB-R120770_BR	Bromide	N.A.	N.A.
LCS-R120770_BR	Bromide	4.884	PASS
N027405-001D	Bromide	N.A.	N.A.
N027429-007DMS	Bromide	4.880	PASS
N027429-007DMSD	Bromide	4.880	PASS
N027429-012DMS	Bromide	4.880	PASS
N027429-007DDUP	Bromide	N.A.	N.A.

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RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name		Retention Time	Evaluation
CCV-3	Chloride	3.794	
CCV-4	Chloride	3.790	
CCV-5	Chloride	3.790	
CCV-6	Chloride	3.787	
CCV-7	Chloride	3.773	
CCV-8	Chloride	3.790	
	Average	3.787	
	Applied RT Window	3.587 - 3.987	
LCS-RR120764_CL	Chloride	3.790	PASS
MB-R120764_CL	Chloride	N.A.	N.A.
N027405-004C	Chloride	3.790	PASS
N027405-004CDUP	Chloride	3.790	PASS
N027405-004CMS	Chloride	3.790	PASS
N027405-004CMSD	Chloride	3.794	PASS
N027405-002E	Chloride	3.790	PASS
N027405-002EMS	Chloride	3.794	PASS
N027405-003E	Chloride	3.793	PASS
N027405-006D	Chloride	3.790	PASS
N027405-007D	Chloride	3.790	PASS
N027405-008D	Chloride	3.790	PASS
N027405-009D	Chloride	3.793	PASS
N027405-011D	Chloride	3.790	PASS
N027405-012D	Chloride	3.787	PASS
N027405-013D	Chloride	3.774	PASS
N027405-014D	Chloride	3.774	PASS
N027405-001D	Chloride	3.773	PASS

rba 12/20/2017

12/21/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name		Retention Time	Evaluation
CCV-3	Sulfate	7.577	
CCV-4	Sulfate	7.563	
CCV-5	Sulfate	7.564	
CCV-6	Sulfate	7.557	
CCV-7	Sulfate	7.520	
CCV-8	Sulfate	7.557	
	Average	7.556	
	Applied RT Window	7.356 - 7.756	
LCS-R120764_SO4	Sulfate	7.577	PASS
MB-R120764_SO4	Sulfate	N.A.	N.A.
N027405-004C	Sulfate	7.563	PASS
N027405-004CDUP	Sulfate	7.564	PASS
N027405-004CMS	Sulfate	7.563	PASS
N027405-004CMSD	Sulfate	7.567	PASS
N027405-014D	Sulfate	7.563	PASS
N027405-014DMS	Sulfate	7.570	PASS
N027405-003E	Sulfate	7.563	PASS
N027405-002E	Sulfate	7.563	PASS
N027405-006D	Sulfate	7.560	PASS
N027405-007D	Sulfate	7.560	PASS
N027405-008D	Sulfate	7.557	PASS
N027405-009D	Sulfate	7.557	PASS
N027405-011D	Sulfate	7.560	PASS
N027405-012D	Sulfate	7.547	PASS
N027405-013D	Sulfate	7.527	PASS
N027405-001D	Sulfate	7.524	PASS

rba 12/20/2017

12/21/2017

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 5/23/2017 ; 5/24/2017; 5/25/2017
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Datafile	170523A D36	170523A D37	170523A D38	170524A D17	170524A D18	170525A D45	170525A D46					
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**MDL**	**LOD**	**PQL**
Fluoride	0.020	0.022	0.021	0.020	0.023	0.026	0.024	0.020	0.0021	**0.0065**	0.020	0.10
Chloride	0.133	0.136	0.136	0.133	0.141	0.133	0.136	0.025	0.0029	**0.0091**	0.020	0.50
Nitrite	0.030	0.028	0.027	0.028	0.028	0.027	0.027	0.020	0.0010	**0.0030**	0.010	0.05
Bromide	0.037	0.042	0.043	0.038	0.040	0.032	0.025	0.040	0.0062	**0.0196**	0.040	0.20
Nitrate	0.035	0.034	0.033	0.033	0.033	0.031	0.030	0.020	0.0016	**0.0050**	0.010	0.05
Phosphate	0.047	0.051	0.049	0.046	0.052	0.047	0.059	0.040	0.0043	**0.0135**	0.030	0.10
Sulfate	0.213	0.199	0.208	0.216	0.199	0.201	0.198	0.050	0.0073	**0.0229**	0.050	0.50

MDL/LOD & PQL Verification 2017

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)** Matrix: **WATER**
Method Number: EPA Method 300.0 Unit: mg/L
Analysis Date(s): 5/26/2017
Analyst: Ria Abes

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0065**	0.020	0.024	0.10	0.0906	**91**
Chloride	**0.0091**	0.020	0.130	0.50	0.5635	**113**
Nitrite	**0.0030**	0.010	0.023	0.05	0.0581	**116**
Bromide	**0.0196**	0.040	0.048	0.20	0.194	**97**
Nitrate	**0.0050**	0.010	0.023	0.05	0.0599	**120**
Phosphate	**0.0135**	0.030	0.043	0.10	0.1111	**111**
Sulfate	**0.0229**	0.050	0.195	0.50	0.6178	**124**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120949 **Analyst:** QBM

ASSET #: N027405, N027428, N027429 **Date Analyzed:** 12/19/2017

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 12/21/2017

2nd Level Reviewer RLB 12/21/2017 Date:

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120963 **Analyst:** QBM

ASSET #: N027405, N027428, N027429 **Date Analyzed:** 12/20/2017

Method: 4500_NO3

Initial Calibration	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented		X			X	
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

RPD of Nitrate/Nitrite as N in N027405-006CDUP @1x failed. possibly due to sample matrix.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 12/21/2017

2nd Level Reviewer RJB 12/21/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N027405-013C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.5454	*	5
	=	2.727	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 2.7 mg/L

RLB 12/21/2017

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

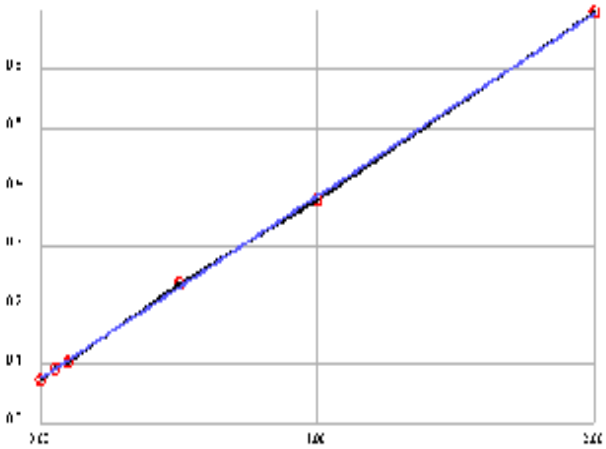
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.3095x + 0.0753
Correlation	.999797

Calibrant	Energy	Set	Conc
1	0.0745	0.0000	-0.0026
2	0.0927	0.0500	0.0562
3	0.1042	0.1000	0.0934
4	0.2365	0.5000	0.5208
5	0.3769	1.0000	0.9745
6	0.6967	2.0000	2.0077

Notes:

12/21/2017

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
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Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

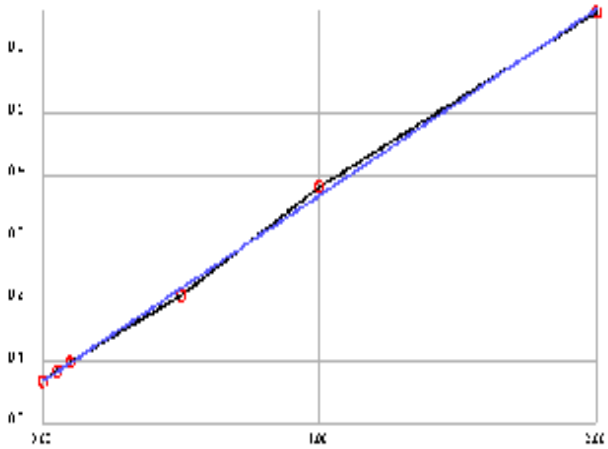
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2996x + 0.0679
Correlation	.999415

Calibrant	Energy	Set	Conc
1	0.0674	0.0000	-0.0018
2	0.0838	0.0500	0.0529
3	0.0988	0.1000	0.1030
4	0.2071	0.5000	0.4645
5	0.3812	1.0000	1.0456
6	0.6629	2.0000	1.9859

Notes:

12/21/2017

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **ICV**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.484	0.050	0.5000	0	96.8	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCV**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.461	0.050	0.5000	0	92.1	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCV**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.475	0.050	0.5000	0	95.1	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCV**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.471	0.050	0.5000	0	94.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **ICV**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873450**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.507	0.050	0.5000	0	101	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **CCV**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873461**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.493	0.050	0.5000	0	98.6	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **CCV**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.498	0.050	0.5000	0	99.5	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **CCV**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.511	0.050	0.5000	0	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **ICB**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCB**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873088**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCB**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCB**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **ICB**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **CCB**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **CCB**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

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Time start: 12-19-2017 16:35
Time end: 12-19-2017 19:38

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	18:55:00	0.0016		0.0758
2	<BLANK>	18:55:53	0.0035		0.0764
3	<CAL1>	18:56:55	-0.0026	[0]	0.0745
4	<CAL2>	18:57:50	0.0562	[0.05]	0.0927
5	<CAL3>	18:58:52	0.0934	[0.1]	0.1042
6	<CAL4>	18:59:46	0.5208	[0.5]	0.2365
7	<CAL5>	19:00:41	0.9745	[1]	0.3769
8	<CAL6>	19:01:37	2.0077	[2]	0.6967
9	,BLANK,BLANK,1, NOT REPORTED	19:02:37	0.0336		0.0857
10	,ICV,ICV,1,	19:03:32	0.4840		0.2251
11	,ICB,ICB,1,	19:04:34	0.0087		0.0780
12	,MB-H2O,MBLK,1,	19:05:29	-0.0007		0.0751
13	,LCS-H2O,LCS,1,	19:06:23	0.4911		0.2273
14	,N027405-009C,SAMP,10,	19:07:25	0.4488		0.2142
15	,N027405-009CMS,MS,10,	19:08:21	0.9451		0.3678
16	,N027405-009CMSD,MSD,10,	19:09:15	0.9018		0.3544
17	,N027405-012C,SAMP,5,	19:10:17	0.8045		0.3243
18	,N027405-012CDUP,DUP,5,	19:11:12	0.6940		0.2901
19	,N027405-011C,SAMP,1, NOT REPORTED	19:12:08	0.2588		0.1554
20	,N027405-013C,SAMP,5,	19:13:08	0.5454		0.2441
21	,BLANK, NOT REPORTED	19:14:04	0.0032		0.0763
22	,CCV-1,CCV,1,	19:14:59	0.4607		0.2179
23	,CCB-1,CCB,1,	19:15:59	-0.0029		0.0744
24	,N027405-002D,SAMP,1, NOT REPORTED	19:16:55	0.1451		0.1202
25	,N027405-003D,SAMP,1,	19:17:56	0.3764		0.1918
26	,N027405-006C,SAMP,1,	19:18:52	0.5486		0.2451

RB 12/21/2017

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N027405-007C,SAMP,1, NOT REPORTED	19:19:46	0.1980		0.1366
28	,N027405-008C,SAMP,1,	19:20:47	0.2594		0.1556
29	,N027405-014C,SAMP,1,	19:21:43	0.1066		0.1083
30	,N027429-001C,SAMP,1,	19:22:31	0.0333		0.0856
31	,N027429-002C,SAMP,1,	19:23:14	0.0281		0.0840
32	,N027428-002C,SAMP,5,	19:24:04	0.5615		0.2491
33	,CCV-2,CCV,1, NOT REPORTED	19:24:46	0.4543		0.2159
34	,CCV-2,CCV,1,	19:25:29	0.4753		0.2224
35	,CCB-2,CCB,1,	19:26:17	-0.0084		0.0727
36	,N027429-003C,SAMP,2, NOT REPORTED	19:27:00	0.8307		0.3324
37	,N027429-005C,SAMP,1,	19:27:48	0.0413		0.0881
38	,N027429-006C,SAMP,1,	19:28:32	0.0504		0.0909
39	,N027406-001A,SAMP,5,	19:29:14	0.5738		0.2529
40	,N027406-002A,SAMP,5,	19:30:03	0.7402		0.3044
41	,N027406-003A,SAMP,5,	19:30:47	0.6846		0.2872
42	,N027406-004A,SAMP,1,	19:31:29	0.0110		0.0787
43	,BLANK, NOT REPORTED	19:32:18	-0.0252		0.0675
44	,BLANK,	19:33:00	-0.0281		0.0666
45	,BLANK,	19:33:43	-0.0259		0.0673
46	,CCV-3,CCV,1,	19:34:31	0.4333		0.2094
47	,CCV-3,CCV,1,	19:35:15	0.4714		0.2212
48	,CCB-3,CCB,1,	19:35:58	-0.0133		0.0712

RLB 12/21/2017

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 12/19/2017
Time Analyzed:4:31 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171201B
Color reagent: R171201C
2% Copper Sulfate: R171201D
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027405-002D		8.40							
N027405-003D		8.48							
N027405-006C		8.49							
N027405-007C		8.65							
N027405-008C		8.42							
N027405-009C		8.15							
N027405-011C		8.09							
N027405-012C		8.33							
N027405-013C		8.16							
N027405-014C		6.64							
N027406-001A		7.59							
N027406-002A		8.68							
N027406-003A		8.40							
N027406-004A		7.92							
N027428-002C		8.38							
N027429-001C		6.91							
N027429-002C		8.13							
N027429-003C		6.9							
N027429-005C		8.33							
N027429-006C		8.17							

Advanced Technology Laboratories, Inc.
Book # 1

RLB 12/21/2017

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Time start: 12-20-2017 15:49
Time end: 12-20-2017 17:58

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	17:30:12	-0.0045		0.0666
2	<BLANK>	17:31:07	0.0008		0.0682
3	<CAL1>	17:32:07	-0.0018	[0]	0.0674
4	<CAL2>	17:33:02	0.0529	[0.05]	0.0838
5	<CAL3>	17:34:03	0.1030	[0.1]	0.0988
6	<CAL4>	17:34:59	0.4645	[0.5]	0.2071
7	<CAL5>	17:35:53	1.0456	[1]	0.3812
8	<CAL6>	17:36:54	1.9859	[2]	0.6629
9	,BLANK,BLANK,1, NOT REPORTED	17:37:49	0.0436		0.0810
10	,ICV,ICV,1,	17:38:51	0.5065		0.2197
11	,ICB,ICB,1,	17:39:45	0.0085		0.0705
12	,MB-H2O,MBLK,1,	17:40:40	0.0062		0.0698
13	,LCS-H2O,LCS,1,	17:41:35	0.4815		0.2122
14	,N027429-003C,SAMP,2,	17:42:36	0.8283		0.3161
15	,N027429-003CMS,MS,2,	17:43:19	1.3186		0.4630
16	,N027429-003CMSD,MSD,2,	17:44:08	1.3323		0.4671
17	,N027405-006C,SAMP,1,	17:44:57	0.1567		0.1149
18	,N027405-006CDUP,DUP,1,	17:45:40	0.1240		0.1051
19	,N027405-002D,SAMP,1,	17:46:22	0.0242		0.0752
20	,N027405-003D,SAMP,1,	17:47:11	0.0175		0.0732
21	,BLANK, NOT REPORTED	17:47:53	0.0008		0.0682
22	,CCV-1,CCV,1,	17:48:36	0.4928		0.2156
23	,CCB-1,CCB,1,	17:49:25	0.0012		0.0683
24	,N027405-007C,SAMP,1,	17:50:07	0.0202		0.0740
25	,N027405-008C,SAMP,1,	17:50:51	0.0623		0.0866
26	,N027405-011C,SAMP,1,	17:51:38	0.0038		0.0691

RLB 12/21/2017

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N027405-014C,SAMP,1,	17:52:22	0.0422		0.0806
28	,N027428-001C,SAMP,1,	17:53:10	0.0062		0.0698
29	,BLANK, NOT REPORTED	17:53:53	-0.0092		0.0652
30	,BLANK, NOT REPORTED	17:54:35	-0.0148		0.0635
31	,CCV-2,CCV,1, NOT REPORTED	17:55:24	0.4975		0.2170
32	,CCV-2,CCV,1,	17:56:08	0.5105		0.2209
33	,CCB-2,CCB,1,	17:56:49	-0.0022		0.0673

12/21/2017

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 12/20/2017
Time Analyzed:3:45 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171220B
Color reagent: R171220C
2% Copper Sulfate: R171220A
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027405-002D		7.77							
N027405-003D		8.35							
N027405-006C		8.46							
N027405-007C		8.09							
N027405-008C		7.87							
N027405-011C		7.65							
N027405-014C		8.24							
N027428-001C		8.19							
N027429-003C		8.26							

Advanced Technology Laboratories, Inc.
Book # 1

RB 12/21/2017

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65964
ASSET #: N027405

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/16/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.		X				
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.		X				
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

Ca in N027405-012B & 013B is over linear range. For dilution.
Dilution test failed for Ca & Mg.
%Rec of Ca in N027405-001C PS/MS/MSD failed. However LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/21/17
2nd Level Reviewer 12/21/2017 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65964
ASSET #: N027405

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/18/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Na run only.
%Rec of N027405-002C PS/MS failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/21/17

2nd Level Reviewer 12/21/2017 Date: _____

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65964
ASSET #: N027405

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/18/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .			X			
24. LCS compounds within control limits.			X			
25. MS/MSD, RPD's are within control limits			X			
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For dilution of Ca in N027405-012B & 013B only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/21/17

2nd Level Reviewer 12/21/2017 Date: _____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calcium

Calculate the ~~Boron~~ concentration, in ug/L , in the original sample as follows:

~~Boron~~ , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N027405-001C** , the concentration ir ug/L is calculated as follows:

~~Boron~~ , ug/L = 107.678 * 1 * (25/25) * 1000

~~Boron~~ , ug/L = 107678

Reporting results in two significant figures,

Calcium

~~Boron~~ , ug/L = 110000

12/21/2017

% RSD SUMMARY

RSD SUMMARY: 171216A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	B	0	0.27	15	PASS
Standard1	ICAL	1	B	0.1	0.88	15	PASS
Standard3	ICAL	1	B	1	0.78	15	PASS
Standard4	ICAL	1	B	2.5	0.7	15	PASS
Standard5	ICAL	1	B	3.75	1	15	PASS
Standard6	ICAL	1	B	5	0.62	15	PASS
Standard7	ICAL	1	B	10	0.2	15	PASS
ICV	ICV	1	B	4.99	0.61	15	PASS
ICB	ICB	1	B	0.022	10.017	15	PASS
LLICV	CCV1	1	B	0.087	1.16	20	PASS
LLICV	CCV1	1	B	0.085	0.48	20	PASS
ICSA1	ICSA	1	B	0.085	1.72	15	PASS
ICSAB1	ICSAB	1	B	1.15	0.35	15	PASS
MB-65964	MBLK	1	B	0.014	10.95	15	PASS
LCS1-65964	MBLK	1	B	4.73	0.55	15	PASS
N027405-001C	SAMP	1	B	0.73	0.2	15	PASS
CCV1	CCV	1	B	4.9	0.63	15	PASS
CCB1	CCB	1	B	0.025	11.8	15	PASS
N027405-001C	SAMP	5	B	0.17	0.68	15	PASS
N027405-001C-PS	PS	1	B	5.46	0.64	15	PASS
N027405-001C-MS1	MS	1	B	5.42	0.51	15	PASS
N027405-001C-MSD1	MSD	1	B	5.45	0.28	15	PASS
N027405-002C	SAMP	1	B	1.029	0.3	15	PASS
N027405-003C	SAMP	1	B	1.019	0.3	15	PASS
N027405-004B	SAMP	1	B	0.18	1.036	15	PASS
N027405-006B	SAMP	1	B	2.23	0.84	15	PASS
N027405-007B	SAMP	1	B	2.15	0.44	15	PASS
N027405-008B	SAMP	1	B	2.26	0.56	15	PASS
CCV2	CCV	1	B	4.73	0.53	15	PASS
CCB2	CCB	1	B	0.022	10.14	15	PASS
N027405-009B	SAMP	1	B	0.69	0.15	15	PASS
N027405-011B	SAMP	1	B	1.51	0.38	15	PASS
N027405-012B	SAMP	1	B	0.67	0.22	15	PASS
N027405-013B	SAMP	1	B	1.014	0.58	15	PASS
N027405-014B	SAMP	1	B	0.14	0.14	15	PASS
N027429-001B	SAMP	1	B	0.82	0.89	15	PASS
N027429-002B	SAMP	1	B	0.82	0.87	15	PASS
N027429-003B	SAMP	1	B	2.0095	0.38	15	PASS
N027429-005B	SAMP	1	B	1.94	0.5	15	PASS
N027429-006B	SAMP	1	B	1.99	0.47	15	PASS
CCV3	CCV	1	B	4.2	0.67	15	PASS
CCB3	CCB	1	B	-0.014	13.53	15	PASS

RSD SUMMARY: 171216A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027429-007B	SAMP	1	B	0.66	0.5	15	PASS
CCV3	CCV	1	B	4.88	0.066	15	PASS
CCB3	CCB	1	B	0.031	6.73	15	PASS
N027429-007B	SAMP	1	B	0.77	0.3	15	PASS
N027429-008B	SAMP	1	B	0.76	0.22	15	PASS
N027429-009B	SAMP	1	B	2.031	0.55	15	PASS
CCV4	CCV	1	B	4.66	0.4	15	PASS
CCB4	CCB	1	B	0.021	10.54	15	PASS
LLCCV1	CCV2	1	B	0.08	0.92	20	PASS
ICSA2	ICSA	1	B	0.079	1.44	15	PASS
ICSAB2	ICSAB	1	B	1.098	0.22	15	PASS
CalBlk	IBLK	1	Ca	0	6.1	15	PASS
Standard1	ICAL	1	Ca	0.2	8.39	15	PASS
Standard2	ICAL	1	Ca	1	1.79	15	PASS
Standard3	ICAL	1	Ca	2	1.72	15	PASS
Standard4	ICAL	1	Ca	5	0.54	15	PASS
Standard5	ICAL	1	Ca	7.5	0.5	15	PASS
Standard6	ICAL	1	Ca	10	0.088	15	PASS
Standard7	ICAL	1	Ca	20	0.62	15	PASS
ICV	ICV	1	Ca	10.12	0.32	15	PASS
ICB	ICB	1	Ca	-0.021	111.95	15	<PQL
LLICV	CCV1	1	Ca	0.16	13.69	20	PASS
LLICV	CCV1	1	Ca	0.17	7.28	20	PASS
ICSA1	ICSA	1	Ca	485.56	0.12	15	PASS
ICSAB1	ICSAB	1	Ca	543.03	0.15	15	PASS
MB-65964	MBLK	1	Ca	-0.019	28.16	15	<PQL
LCS1-65964	MBLK	1	Ca	9.71	0.25	15	PASS
N027405-001C	SAMP	1	Ca	107.68	0.22	15	PASS
CCV1	CCV	1	Ca	10.05	0.23	15	PASS
CCB1	CCB	1	Ca	0.029	25.71	15	<PQL
N027405-001C	SAMP	5	Ca	24.065	0.47	15	PASS
N027405-001C-PS	PS	1	Ca	115.25	0.4	15	PASS
N027405-001C-MS1	MS	1	Ca	121.41	0.13	15	PASS
N027405-001C-MSD1	MSD	1	Ca	121.65	0.22	15	PASS
N027405-002C	SAMP	1	Ca	160.17	0.1	15	PASS
N027405-003C	SAMP	1	Ca	160.39	0.23	15	PASS
N027405-004B	SAMP	1	Ca	77.97	0.37	15	PASS
N027405-006B	SAMP	1	Ca	271.98	0.32	15	PASS
N027405-007B	SAMP	1	Ca	289.43	0.21	15	PASS
N027405-008B	SAMP	1	Ca	281.88	0.068	15	PASS
CCV2	CCV	1	Ca	9.84	0.48	15	PASS
CCB2	CCB	1	Ca	0.019	61.8	15	<PQL

RSD SUMMARY: 171216A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027405-009B	SAMP	1	Ca	206.05	0.18	15	PASS
N027405-011B	SAMP	1	Ca	340.39	0.13	15	PASS
N027405-012B	SAMP	1	Ca	487.77	0.04	15	PASS
N027405-013B	SAMP	1	Ca	479.08	0.19	15	PASS
N027405-014B	SAMP	1	Ca	9.99	0.49	15	PASS
N027429-001B	SAMP	1	Ca	8.24	0.49	15	PASS
N027429-002B	SAMP	1	Ca	8.31	0.78	15	PASS
N027429-003B	SAMP	1	Ca	374.83	0.3	15	PASS
N027429-005B	SAMP	1	Ca	331.21	0.16	15	PASS
N027429-006B	SAMP	1	Ca	347.98	0.28	15	PASS
CCV3	CCV	1	Ca	8.92	0.55	15	PASS
CCB3	CCB	1	Ca	0.086	20.093	15	<PQL
N027429-007B	SAMP	1	Ca	22.62	0.33	15	PASS
CCV3	CCV	1	Ca	10.008	0.29	15	PASS
CCB3	CCB	1	Ca	0.021	76.48	15	<PQL
N027429-007B	SAMP	1	Ca	22.73	0.43	15	PASS
N027429-008B	SAMP	1	Ca	22.93	0.42	15	PASS
N027429-009B	SAMP	1	Ca	355.17	0.13	15	PASS
CCV4	CCV	1	Ca	9.75	0.17	15	PASS
CCB4	CCB	1	Ca	0.024	150.027	15	<PQL
LLCCV1	CCV2	1	Ca	0.14	18.87	20	PASS
ICSA2	ICSA	1	Ca	484.36	0.16	15	PASS
ICSAB2	ICSAB	1	Ca	540.94	0.16	15	PASS
CalBlk	IBLK	1	Fe	0	3.75	15	PASS
Standard1	ICAL	1	Fe	0.02	5.85	15	PASS
Standard2	ICAL	1	Fe	0.05	0.47	15	PASS
Standard3	ICAL	1	Fe	2	0.25	15	PASS
Standard4	ICAL	1	Fe	5	0.18	15	PASS
Standard5	ICAL	1	Fe	7.5	0.48	15	PASS
Standard6	ICAL	1	Fe	10	0.3	15	PASS
Standard7	ICAL	1	Fe	20	0.19	15	PASS
ICV	ICV	1	Fe	10.37	0.27	15	PASS
ICB	ICB	1	Fe	0.00088	26.7	15	<PQL
LLICV	CCV1	1	Fe	0.017	1.79	20	PASS
LLICV	CCV1	1	Fe	0.017	2.21	20	PASS
ICSA1	ICSA	1	Fe	167.44	0.67	15	PASS
ICSAB1	ICSAB	1	Fe	181.7	0.44	15	PASS
MB-65964	MBLK	1	Fe	0.00013	160.36	15	<PQL
LCS1-65964	MBLK	1	Fe	0.11	0.61	15	PASS
N027405-001C	SAMP	1	Fe	0.014	2.54	15	PASS
CCV1	CCV	1	Fe	10.26	0.32	15	PASS
CCB1	CCB	1	Fe	0.00075	63.032	15	<PQL

RSD SUMMARY: 171216A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027405-001C	SAMP	5	Fe	0.0021	37.3	15	<PQL
N027405-001C-PS	PS	1	Fe	0.13	0.65	15	PASS
N027405-001C-MS1	MS	1	Fe	0.11	0.88	15	PASS
N027405-001C-MSD1	MSD	1	Fe	0.11	0.76	15	PASS
N027405-002C	SAMP	1	Fe	0.14	0.056	15	PASS
N027405-003C	SAMP	1	Fe	0.14	0.37	15	PASS
N027405-004B	SAMP	1	Fe	0.024	1.67	15	PASS
N027405-006B	SAMP	1	Fe	0.012	2.022	15	PASS
N027405-007B	SAMP	1	Fe	0.039	0.79	15	PASS
N027405-008B	SAMP	1	Fe	0.034	1.33	15	PASS
CCV2	CCV	1	Fe	9.64	0.097	15	PASS
CCB2	CCB	1	Fe	0.0011	28.76	15	<PQL
N027405-009B	SAMP	1	Fe	0.017	3.0022	15	PASS
N027405-011B	SAMP	1	Fe	0.33	0.43	15	PASS
N027405-012B	SAMP	1	Fe	0.23	0.52	15	PASS
N027405-013B	SAMP	1	Fe	0.14	0.18	15	PASS
N027405-014B	SAMP	1	Fe	3.26	0.46	15	PASS
N027429-001B	SAMP	1	Fe	0.034	1.67	15	PASS
N027429-002B	SAMP	1	Fe	0.098	0.55	15	PASS
N027429-003B	SAMP	1	Fe	0.032	2.097	15	PASS
N027429-005B	SAMP	1	Fe	0.0082	0.34	15	PASS
N027429-006B	SAMP	1	Fe	0.013	4.93	15	PASS
CCV3	CCV	1	Fe	8.46	0.58	15	PASS
CCB3	CCB	1	Fe	0.0014	36.049	15	<PQL
N027429-007B	SAMP	1	Fe	0.015	3.57	15	PASS
CCV3	CCV	1	Fe	10.19	0.53	15	PASS
CCB3	CCB	1	Fe	0.0012	84.98	15	<PQL
N027429-007B	SAMP	1	Fe	0.015	2.92	15	PASS
N027429-008B	SAMP	1	Fe	0.011	1.032	15	PASS
N027429-009B	SAMP	1	Fe	0.017	2.23	15	PASS
CCV4	CCV	1	Fe	9.59	0.12	15	PASS
CCB4	CCB	1	Fe	0.00057	62.53	15	<PQL
LLCCV1	CCV2	1	Fe	0.017	3.28	20	PASS
ICSA2	ICSA	1	Fe	182.66	0.31	15	PASS
ICSAB2	ICSAB	1	Fe	179.86	0.21	15	PASS
CalBlk	IBLK	1	Mg	0	3.35	15	PASS
Standard1	ICAL	1	Mg	0.1	1.23	15	PASS
Standard2	ICAL	1	Mg	1	0.57	15	PASS
Standard3	ICAL	1	Mg	2	0.086	15	PASS
Standard4	ICAL	1	Mg	5	0.087	15	PASS
Standard5	ICAL	1	Mg	7.5	0.39	15	PASS
Standard6	ICAL	1	Mg	10	0.48	15	PASS

RSD SUMMARY: 171216A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard7	ICAL	1	Mg	20	0.32	15	PASS
ICV	ICV	1	Mg	10.34	0.26	15	PASS
ICB	ICB	1	Mg	0.00047	117.039	15	<PQL
LLICV	CCV1	1	Mg	0.081	1.13	20	PASS
LLICV	CCV1	1	Mg	0.081	0.6	20	PASS
ICSA1	ICSA	1	Mg	452.65	0.74	15	PASS
ICSAB1	ICSAB	1	Mg	508.46	0.5	15	PASS
MB-65964	MBLK	1	Mg	0.0037	15.81	15	<PQL
LCS1-65964	MBLK	1	Mg	9.64	0.13	15	PASS
N027405-001C	SAMP	1	Mg	18.85	0.25	15	PASS
CCV1	CCV	1	Mg	10.25	0.29	15	PASS
CCB1	CCB	1	Mg	0.00028	98.65	15	<PQL
N027405-001C	SAMP	5	Mg	4.34	0.41	15	PASS
N027405-001C-PS	PS	1	Mg	27.19	0.099	15	PASS
N027405-001C-MS1	MS	1	Mg	28.52	0.17	15	PASS
N027405-001C-MSD1	MSD	1	Mg	28.59	0.2	15	PASS
N027405-002C	SAMP	1	Mg	27.67	0.21	15	PASS
N027405-003C	SAMP	1	Mg	27.81	0.055	15	PASS
N027405-004B	SAMP	1	Mg	16.96	0.31	15	PASS
N027405-006B	SAMP	1	Mg	2.54	0.27	15	PASS
N027405-007B	SAMP	1	Mg	3.24	0.16	15	PASS
N027405-008B	SAMP	1	Mg	2.7	0.3	15	PASS
CCV2	CCV	1	Mg	9.55	0.13	15	PASS
CCB2	CCB	1	Mg	-0.00024	97.018	15	<PQL
N027405-009B	SAMP	1	Mg	24.13	0.24	15	PASS
N027405-011B	SAMP	1	Mg	14	0.048	15	PASS
N027405-012B	SAMP	1	Mg	21.37	0.054	15	PASS
N027405-013B	SAMP	1	Mg	27.58	0.24	15	PASS
N027405-014B	SAMP	1	Mg	1.37	0.53	15	PASS
N027429-001B	SAMP	1	Mg	0.71	0.63	15	PASS
N027429-002B	SAMP	1	Mg	0.73	0.18	15	PASS
N027429-003B	SAMP	1	Mg	6.16	0.23	15	PASS
N027429-005B	SAMP	1	Mg	4.37	0.11	15	PASS
N027429-006B	SAMP	1	Mg	4.32	0.14	15	PASS
CCV3	CCV	1	Mg	8.023	0.56	15	PASS
CCB3	CCB	1	Mg	-0.0058	1.6	15	PASS
N027429-007B	SAMP	1	Mg	3.77	0.23	15	PASS
CCV3	CCV	1	Mg	10.19	0.9	15	PASS
CCB3	CCB	1	Mg	-0.0013	30.34	15	<PQL
N027429-007B	SAMP	1	Mg	4.16	0.28	15	PASS
N027429-008B	SAMP	1	Mg	4.25	0.36	15	PASS
N027429-009B	SAMP	1	Mg	7.39	0.35	15	PASS

RSD SUMMARY: 171216A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV4	CCV	1	Mg	9.51	0.056	15	PASS
CCB4	CCB	1	Mg	-0.00048	52.69	15	<PQL
LLCCV1	CCV2	1	Mg	0.077	0.98	20	PASS
ICSA2	ICSA	1	Mg	438.27	0.17	15	PASS
ICSAB2	ICSAB	1	Mg	486.37	0.48	15	PASS

RSD SUMMARY: 171218B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	1.57	15	PASS
Standard1	ICAL	1	Na	0.1	0.58	15	PASS
Standard2	ICAL	1	Na	1	0.5	15	PASS
Standard3	ICAL	1	Na	5	0.24	15	PASS
Standard4	ICAL	1	Na	10	0.22	15	PASS
Standard5	ICAL	1	Na	20	0.21	15	PASS
Standard6	ICAL	1	Na	40	0.35	15	PASS
ICV	ICV	1	Na	9.97	0.14	15	PASS
ICB	ICB	1	Na	-0.021	27.4	15	<PQL
ICSA1	ICSA	1	Na	-0.024	16.045	15	<PQL
ICSAB1	ICSAB	1	Na	10.018	0.28	15	PASS
CCV1	CCV	1	Na	17.045	0.7	15	PASS
CCV1	CCV	1	Na	9.94	0.41	15	PASS
CCB1	CCB	1	Na	-0.075	7.87	15	PASS
CCV2	CCV	1	Na	9.94	0.24	15	PASS
CCB2	CCB	1	Na	-0.083	2.89	15	PASS
MB-65964	MBLK	1	Na	-0.092	4.34	15	PASS
LCS2-65964	LCS	1	Na	20.92	0.43	15	PASS
CCV3	CCV	1	Na	10.032	0.18	15	PASS
CCB3	CCB	1	Na	-0.096	2.13	15	PASS
N027405-001C	SAMP	10	Na	106.62	0.2	15	PASS
N027405-002C	SAMP	100	Na	15.54	0.21	15	PASS
N027405-002C	SAMP	500	Na	3.11	0.19	15	PASS
N027405-002C-PS	PS	100	Na	16.019	0.085	15	PASS
N027405-002C-MS2	MS	100	Na	16.045	0.19	15	PASS
N027405-002C-MSD2	MSD	100	Na	15.69	0.14	15	PASS
N027405-003C	SAMP	100	Na	15.58	0.098	15	PASS
N027405-004B	SAMP	10	Na	10.53	0.85	15	PASS
N027405-006B	SAMP	250	Na	13.38	0.25	15	PASS
N027405-007B	SAMP	250	Na	13.68	0.19	15	PASS
CCV4	CCV	1	Na	10.044	0.21	15	PASS
CCB4	CCB	1	Na	-0.12	2.76	15	PASS
ICSA2	ICSA	1	Na	-0.12	1.77	15	PASS
ICSAB2	ICSAB	1	Na	10.09	0.18	15	PASS
N027405-008B	SAMP	250	Na	13.9	0.28	15	PASS
N027405-009B	SAMP	100	Na	11.13	0.19	15	PASS
N027405-011B	SAMP	100	Na	25.61	0.097	15	PASS
N027405-012B	SAMP	100	Na	13.9	0.058	15	PASS
N027405-013B	SAMP	100	Na	20.78	0.062	15	PASS
N027405-014B	SAMP	10	Na	15.25	0.13	15	PASS
N027429-001B	SAMP	25	Na	13.41	0.031	15	PASS
N027429-002B	SAMP	25	Na	13.45	0.14	15	PASS

RSD SUMMARY: 171218B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027429-003B	SAMP	250	Na	17.069	0.15	15	PASS
N027429-005B	SAMP	250	Na	18.62	0.32	15	PASS
CCV5	CCV	1	Na	9.99	0.079	15	PASS
CCB5	CCB	1	Na	-0.12	3.12	15	PASS
N027429-006B	SAMP	250	Na	19.11	0.045	15	PASS
N027429-007B	SAMP	25	Na	12.3	0.07	15	PASS
N027429-008B	SAMP	25	Na	11.77	0.36	15	PASS
N027429-009B	SAMP	250	Na	13.76	0.13	15	PASS
N027405-001C	SAMP	100	Na	10.27	0.34	15	PASS
CCV6	CCV	1	Na	10.04	0.089	15	PASS
CCB6	CCB	1	Na	-0.12	2.26	15	PASS
CCV7	CCV	1	Na	10.033	0.38	15	PASS
CCB7	CCB	1	Na	-0.12	3.43	15	PASS
ICSA3	ICSA	1	Na	-0.13	3.52	15	PASS
ICSAB3	ICSAB	1	Na	10.067	0.18	15	PASS

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Ca	0	3.65	15	PASS
Standard1	ICAL	1	Ca	0.2	11.17	15	PASS
Standard2	ICAL	1	Ca	1	1.87	15	PASS
Standard3	ICAL	1	Ca	2	2.47	15	PASS
Standard4	ICAL	1	Ca	5	0.83	15	PASS
Standard5	ICAL	1	Ca	7.5	0.61	15	PASS
Standard6	ICAL	1	Ca	10	0.51	15	PASS
Standard7	ICAL	1	Ca	20	0.3	15	PASS
ICV	ICV	1	Ca	10.088	0.21	15	PASS
ICB	ICB	1	Ca	-0.0018	778.17	15	<PQL
LLICV	CCV1	1	Ca	0.34	5.65	20	PASS
LLICV	CCV1	1	Ca	0.2	11.79	20	PASS
ICSA1	ICSA	1	Ca	498.55	0.67	15	PASS
ICSAB1	ICSAB	1	Ca	536.96	0.1	15	PASS
CCV1	CCV	1	Ca	9.97	0.27	15	PASS
CCB1	CCB	1	Ca	0.016	132.15	15	<PQL
CCV2	CCV	1	Ca	9.91	0.43	15	PASS
CCB2	CCB	1	Ca	0.029	24.8	15	<PQL
CCV3	CCV	1	Ca	9.99	0.7	15	PASS
CCB3	CCB	1	Ca	-0.011	317.39	15	<PQL
CCV4	CCV	1	Ca	9.89	0.33	15	PASS
CCB4	CCB	1	Ca	-0.0036	655.17	15	<PQL
LLCCV1	CCV2	1	Ca	0.23	25.2	20	<PQL
ICSA2	ICSA	1	Ca	487.27	0.25	15	PASS
ICSAB2	ICSAB	1	Ca	537.05	0.61	15	PASS
CCV5	CCV	1	Ca	9.74	0.6	15	PASS
CCB5	CCB	1	Ca	0.015	48.034	15	<PQL
N027405-013B	SAMP	5	Ca	94.14	0.12	15	PASS
CCV6	CCV	1	Ca	9.73	0.54	15	PASS
CCB6	CCB	1	Ca	0.022	18.88	15	<PQL
LLCCV2	CCV2	1	Ca	0.24	14.45	20	PASS
ICSA3	ICSA	1	Ca	473.64	0.25	15	PASS
ICSAB3	ICSAB	1	Ca	525.29	0.57	15	PASS
N027405-012B	SAMP	5	Ca	101.47	0.1	15	PASS
CCV7	CCV	1	Ca	10.062	0.85	15	PASS
CCB7	CCB	1	Ca	0.013	111.0015	15	<PQL
LLCCV3	CCV2	1	Ca	0.22	7.62	20	PASS
ICSA4	ICSA	1	Ca	491.53	0.12	15	PASS
ICSAB4	ICSAB	1	Ca	539.93	0.17	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 171216A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201K/MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201K/-171030G/-171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/16/2017	10:44:44 AM
2	Standard1	ICAL	1	12/16/2017	10:49:33 AM
3	Standard2	ICAL	1	12/16/2017	10:54:52 AM
11	Standard3	ICAL	1	12/16/2017	11:00:13 AM
12	Standard4	ICAL	1	12/16/2017	11:05:42 AM
6	Standard5	ICAL	1	12/16/2017	11:14:04 AM
7	Standard6	ICAL	1	12/16/2017	11:22:24 AM
8	Standard7	ICAL	1	12/16/2017	11:30:45 AM
9	ICV	ICV	1	12/16/2017	11:38:40 AM
1	ICB	ICB	1	12/16/2017	11:47:04 AM
2	LLICV	CCV1	1	12/16/2017	11:52:06 AM
2	LLICV	CCV1	1	12/16/2017	11:56:24 AM
4	ICSA1	ICSA	1	12/16/2017	12:01:43 PM
5	ICSAB1	ICSAB	1	12/16/2017	12:10:36 PM
14	N027321-001B	SAMP	5	12/16/2017	12:19:10 PM
15	N027404-013B	SAMP	5	12/16/2017	12:27:00 PM
16	N027404-015B	SAMP	1	12/16/2017	12:32:19 PM
17	N027404-016B	SAMP	1	12/16/2017	12:40:09 PM
18	N027404-017B	SAMP	1	12/16/2017	12:47:59 PM
19	N027404-018B	SAMP	1	12/16/2017	12:55:49 PM
20	N027404-020B	SAMP	1	12/16/2017	01:01:09 PM
38	MB-65964	MBLK	1	12/16/2017	01:09:32 PM
39	LCS1-65964	MBLK	1	12/16/2017	01:14:21 PM
40	N027405-001C	SAMP	1	12/16/2017	01:22:44 PM
7	CCV1	CCV	1	12/16/2017	01:30:34 PM
1	CCB1	CCB	1	12/16/2017	01:38:57 PM
41	N027405-001C	SAMP	5	12/16/2017	01:43:46 PM
42	N027405-001C-PS	PS	1	12/16/2017	01:49:07 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
43	N027405-001C-MS1	MS	1	12/16/2017	01:57:29 PM
44	N027405-001C-MSD1	MSD	1	12/16/2017	02:05:22 PM
45	N027405-002C	SAMP	1	12/16/2017	02:13:37 PM
46	N027405-003C	SAMP	1	12/16/2017	02:21:28 PM
47	N027405-004B	SAMP	1	12/16/2017	02:29:21 PM
48	N027405-006B	SAMP	1	12/16/2017	02:34:43 PM
49	N027405-007B	SAMP	1	12/16/2017	02:42:34 PM
50	N027405-008B	SAMP	1	12/16/2017	02:50:27 PM
7	CCV2	CCV	1	12/16/2017	02:58:19 PM
1	CCB2	CCB	1	12/16/2017	03:06:10 PM
51	N027405-009B	SAMP	1	12/16/2017	03:10:59 PM
52	N027405-011B	SAMP	1	12/16/2017	03:18:50 PM
53	N027405-012B	SAMP	1	12/16/2017	03:26:42 PM
54	N027405-013B	SAMP	1	12/16/2017	03:34:34 PM
55	N027405-014B	SAMP	1	12/16/2017	03:42:26 PM
56	N027429-001B	SAMP	1	12/16/2017	03:47:47 PM
57	N027429-002B	SAMP	1	12/16/2017	03:53:08 PM
58	N027429-003B	SAMP	1	12/16/2017	03:58:29 PM
59	N027429-005B	SAMP	1	12/16/2017	04:06:22 PM
60	N027429-006B	SAMP	1	12/16/2017	04:14:14 PM
7	CCV3	CCV	1	12/16/2017	04:22:06 PM
1	CCB3	CCB	1	12/16/2017	04:30:28 PM
61	N027429-007B	SAMP	1	12/16/2017	04:35:16 PM
7	CCV3	CCV	1	12/16/2017	05:38:09 PM
1	CCB3	CCB	1	12/16/2017	05:46:31 PM
61	N027429-007B	SAMP	1	12/16/2017	05:51:20 PM
62	N027429-008B	SAMP	1	12/16/2017	05:56:12 PM
63	N027429-009B	SAMP	1	12/16/2017	06:01:33 PM
64	MB-65992	MBLK	1	12/16/2017	06:09:25 PM
65	LCS1-65992	LCS	1	12/16/2017	06:14:16 PM
66	N027429-010B	SAMP	1	12/16/2017	06:22:37 PM
67	N027429-012B	SAMP	1	12/16/2017	06:30:29 PM
68	N027429-013B	SAMP	1	12/16/2017	06:38:20 PM
69	N027429-014B	SAMP	1	12/16/2017	06:46:12 PM
70	N027429-015B	SAMP	1	12/16/2017	06:54:04 PM
7	CCV4	CCV	1	12/16/2017	07:01:56 PM
1	CCB4	CCB	1	12/16/2017	07:09:47 PM
2	LLCCV1	CCV2	1	12/16/2017	07:14:36 PM
4	ICSA2	ICSA	1	12/16/2017	07:19:55 PM
5	ICSAB2	ICSAB	1	12/16/2017	07:28:28 PM
71	N027429-016C	SAMP	1	12/16/2017	07:37:01 PM
72	N027429-017C	SAMP	1	12/16/2017	07:44:53 PM
73	N027429-018C	SAMP	1	12/16/2017	07:52:44 PM
74	N027429-020C	SAMP	1	12/16/2017	08:00:37 PM
75	N027437-001B	SAMP	1	12/16/2017	08:08:29 PM
76	N027437-002B	SAMP	1	12/16/2017	08:13:50 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
77	N027437-002B	SAMP	5	12/16/2017	08:21:41 PM
78	N027437-002B-PS	PS	1	12/16/2017	08:27:02 PM
79	N027437-002BMS1	MS	1	12/16/2017	08:35:24 PM
80	N027437-002BMSD1	MSD	1	12/16/2017	08:43:16 PM
7	CCV5	CCV	1	12/16/2017	08:51:08 PM
1	CCB5	CCB	1	12/16/2017	08:59:30 PM
81	N027437-003D	SAMP	1	12/16/2017	09:05:07 PM
82	N027437-004B	SAMP	1	12/16/2017	09:09:59 PM
83	N027437-005B	SAMP	1	12/16/2017	09:15:21 PM
84	MB-65993	MBLK	1	12/16/2017	09:20:41 PM
85	LCS1-65993	LCS	1	12/16/2017	09:25:31 PM
86	N027430-002B	SAMP	1	12/16/2017	09:33:54 PM
87	N027430-002B	SAMP	5	12/16/2017	09:41:46 PM
88	N027430-002B-PS	PS	1	12/16/2017	09:46:38 PM
89	N027430-002B-MS1	MS	1	12/16/2017	09:54:30 PM
90	N027430-002B-MSD1	MSD	1	12/16/2017	10:02:23 PM
7	CCV6	CCV	1	12/16/2017	10:10:16 PM
1	CCB6	CCB	1	12/16/2017	10:18:38 PM
91	N027430-004B	SAMP	1	12/16/2017	10:23:27 PM
92	N027430-006B	SAMP	1	12/16/2017	10:28:49 PM
93	N027430-008B	SAMP	1	12/16/2017	10:33:41 PM
94	N027430-012B	SAMP	1	12/16/2017	10:41:33 PM
95	N027430-013B	SAMP	1	12/16/2017	10:49:24 PM
96	N027430-014B	SAMP	1	12/16/2017	10:57:16 PM
97	N027430-015B	SAMP	1	12/16/2017	11:05:09 PM
98	N027430-016B	SAMP	1	12/16/2017	11:13:03 PM
99	N027430-017B	SAMP	1	12/16/2017	11:20:54 PM
100	N027430-018B	SAMP	1	12/16/2017	11:28:47 PM
7	CCV7	CCV	1	12/16/2017	11:36:40 PM
1	CCB7	CCB	1	12/16/2017	11:45:02 PM
101	N027430-020B	SAMP	1	12/16/2017	11:49:50 PM
102	N027431-001B	SAMP	1	12/16/2017	11:58:04 PM
103	N027431-002B	SAMP	1	12/17/2017	12:03:27 AM
104	N027431-003B	SAMP	1	12/17/2017	12:11:20 AM
105	N027431-004B	SAMP	1	12/17/2017	12:19:13 AM
106	N027431-005B	SAMP	1	12/17/2017	12:27:06 AM
107	N027431-006B	SAMP	1	12/17/2017	12:35:29 AM
108	MB-65991	MBLK	1	12/17/2017	12:43:22 AM
109	LCS1-65991	LCS	1	12/17/2017	12:48:13 AM
110	N027437-001A	SAMP	1	12/17/2017	12:56:37 AM
7	CCV8	CCV	1	12/17/2017	01:02:00 AM
1	CCB8	CCB	1	12/17/2017	01:10:22 AM
2	LLCCV2	CCV2	1	12/17/2017	01:15:10 AM
4	ICSA3	ICSA	1	12/17/2017	01:20:29 AM
5	ICSAB3	ICSAB	1	12/17/2017	01:29:02 AM
111	N027437-002A	SAMP	1	12/17/2017	01:37:30 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
112	N027437-002A	SAMP	5	12/17/2017	01:45:23 AM
113	N027437-002A-PS	PS	1	12/17/2017	01:50:44 AM
114	N027437-002AMS1	MS	1	12/17/2017	01:58:38 AM
115	N027437-002AMSD1	MSD	1	12/17/2017	02:07:01 AM
116	N027437-003C	SAMP	1	12/17/2017	02:15:26 AM
117	N027437-004A	SAMP	1	12/17/2017	02:20:51 AM
118	N027437-005A	SAMP	1	12/17/2017	02:26:14 AM
7	CCV9	CCV	1	12/17/2017	02:31:37 AM
1	CCB9	CCB	1	12/17/2017	02:40:00 AM
2	LLCCV3	CCV2	1	12/17/2017	02:44:48 AM
4	ICSA4	ICSA	1	12/17/2017	02:50:08 AM
5	ICSAB4	ICSAB	1	12/17/2017	02:58:41 AM

INJECTION LOG: 171218B

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-170601A,0.025<50mL
Standard2	MWST-170601A,0.25<50mL
Standard3	MWST-170601A,1.25<50mL
Standard4	MWST-170601A,2.5<50mL
Standard5	MWST-170601A,5<50mL
Standard6	MWST-170601A,10<50mL
ICV	MWST-171030L
CCV	MWST-170601A,2.5<50mL
ICSA/ICSAB	MWST-170601L/MWST-170601B
Int. Std. (Sc):	MSST-171009C/B
PS Spike	MSST-130329D/E

MWST-171201R

MWST-171201R
MWST-171201P/MWST-171201S

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/18/2017	03:00:21 PM
26	Standard1	ICAL	1	12/18/2017	03:04:09 PM
27	Standard2	ICAL	1	12/18/2017	03:11:31 PM
28	Standard3	ICAL	1	12/18/2017	03:15:20 PM
29	Standard4	ICAL	1	12/18/2017	03:19:11 PM
30	Standard5	ICAL	1	12/18/2017	03:23:05 PM
31	Standard6	ICAL	1	12/18/2017	03:27:09 PM
32	ICV	ICV	1	12/18/2017	03:31:30 PM
1	ICB	ICB	1	12/18/2017	03:35:25 PM
33	ICSA1	ICSA	1	12/18/2017	03:38:43 PM
34	ICSAB1	ICSAB	1	12/18/2017	03:42:33 PM
38	N027500-001A	SAMP	1	12/18/2017	03:46:29 PM
39	N027500-002A	SAMP	1	12/18/2017	03:50:18 PM
40	N027500-003A	SAMP	1	12/18/2017	03:54:07 PM
41	N027500-004A	SAMP	1	12/18/2017	03:57:57 PM
42	N027500-005A	SAMP	1	12/18/2017	04:01:46 PM
43	N027500-006A	SAMP	1	12/18/2017	04:05:35 PM
44	N027500-007A	SAMP	1	12/18/2017	04:09:24 PM
45	N027500-008A	SAMP	1	12/18/2017	04:13:13 PM
46	N027500-009A	SAMP	1	12/18/2017	04:17:02 PM
47	N027500-010A	SAMP	1	12/18/2017	04:20:23 PM
8	CCV1	CCV	1	12/18/2017	04:24:15 PM
29	CCV1	CCV	1	12/18/2017	04:27:52 PM
1	CCB1	CCB	1	12/18/2017	04:31:47 PM
48	N027500-011A	SAMP	1	12/18/2017	04:35:05 PM
49	N027500-012A	SAMP	1	12/18/2017	04:38:57 PM
50	N027500-013A	SAMP	1	12/18/2017	04:42:48 PM
51	N027500-014A	SAMP	1	12/18/2017	04:46:39 PM
52	N027500-015A	SAMP	1	12/18/2017	04:50:00 PM

12/21/2017

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
53	N027500-016A	SAMP	1	12/18/2017	04:53:51 PM
54	N027500-017A	SAMP	1	12/18/2017	04:57:12 PM
55	N027500-018A	SAMP	1	12/18/2017	05:01:02 PM
56	N027500-019A	SAMP	1	12/18/2017	05:04:51 PM
57	N027500-020A	SAMP	1	12/18/2017	05:08:12 PM
29	CCV2	CCV	1	12/18/2017	05:11:34 PM
1	CCB2	CCB	1	12/18/2017	05:15:30 PM
58	N027500-021A	SAMP	1	12/18/2017	05:19:17 PM
59	N027500-022A	SAMP	1	12/18/2017	05:22:58 PM
60	N027500-023A	SAMP	1	12/18/2017	05:26:50 PM
61	N027500-024A	SAMP	1	12/18/2017	05:30:42 PM
62	N027500-025A	SAMP	1	12/18/2017	05:34:03 PM
63	N027500-026A	SAMP	1	12/18/2017	05:37:24 PM
64	N027500-027A	SAMP	1	12/18/2017	05:40:44 PM
65	N027500-028A	SAMP	1	12/18/2017	05:44:04 PM
38	MB-65964	MBLK	1	12/18/2017	05:52:30 PM
39	LCS2-65964	LCS	1	12/18/2017	05:55:30 PM
29	CCV3	CCV	1	12/18/2017	05:59:34 PM
1	CCB3	CCB	1	12/18/2017	06:03:28 PM
40	N027405-001C	SAMP	10	12/18/2017	06:07:14 PM
41	N027405-002C	SAMP	100	12/18/2017	06:12:03 PM
42	N027405-002C	SAMP	500	12/18/2017	06:15:22 PM
43	N027405-002C-PS	PS	100	12/18/2017	06:18:41 PM
44	N027405-002C-MS2	MS	100	12/18/2017	06:22:01 PM
45	N027405-002C-MSD2	MSD	100	12/18/2017	06:25:09 PM
46	N027405-003C	SAMP	100	12/18/2017	06:28:29 PM
47	N027405-004B	SAMP	10	12/18/2017	06:31:48 PM
48	N027405-006B	SAMP	250	12/18/2017	06:35:39 PM
49	N027405-007B	SAMP	250	12/18/2017	06:38:59 PM
29	CCV4	CCV	1	12/18/2017	06:42:20 PM
1	CCB4	CCB	1	12/18/2017	06:46:15 PM
33	ICSA2	ICSA	1	12/18/2017	06:50:03 PM
34	ICSAB2	ICSAB	1	12/18/2017	06:53:52 PM
50	N027405-008B	SAMP	250	12/18/2017	06:57:49 PM
51	N027405-009B	SAMP	100	12/18/2017	07:01:07 PM
52	N027405-011B	SAMP	100	12/18/2017	07:04:28 PM
53	N027405-012B	SAMP	100	12/18/2017	07:07:46 PM
54	N027405-013B	SAMP	100	12/18/2017	07:11:05 PM
55	N027405-014B	SAMP	10	12/18/2017	07:14:25 PM
56	N027429-001B	SAMP	25	12/18/2017	07:17:45 PM
57	N027429-002B	SAMP	25	12/18/2017	07:21:04 PM
58	N027429-003B	SAMP	250	12/18/2017	07:24:24 PM
59	N027429-005B	SAMP	250	12/18/2017	07:27:44 PM
29	CCV5	CCV	1	12/18/2017	07:31:05 PM
1	CCB5	CCB	1	12/18/2017	07:34:59 PM
60	N027429-006B	SAMP	250	12/18/2017	07:38:47 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
61	N027429-007B	SAMP	25	12/18/2017	07:42:07 PM
62	N027429-008B	SAMP	25	12/18/2017	07:45:27 PM
63	N027429-009B	SAMP	250	12/18/2017	07:48:47 PM
64	N027405-001C	SAMP	100	12/18/2017	07:52:06 PM
65	MB-65992	MBLK	1	12/18/2017	07:55:26 PM
66	LCS2-65992	LCS	1	12/18/2017	07:59:16 PM
67	N027429-010B	SAMP	100	12/18/2017	08:03:23 PM
68	N027429-012B	SAMP	25	12/18/2017	08:06:43 PM
69	N027429-012B	SAMP	125	12/18/2017	08:10:03 PM
29	CCV6	CCV	1	12/18/2017	08:13:23 PM
1	CCB6	CCB	1	12/18/2017	08:17:17 PM
70	N027429-012B-PS	PS	25	12/18/2017	08:21:05 PM
71	N027429-012B-MS2	MS	25	12/18/2017	08:24:56 PM
72	N027429-012B-MSD2	MSD	25	12/18/2017	08:28:47 PM
73	N027429-013B	SAMP	25	12/18/2017	08:32:38 PM
74	N027429-014B	SAMP	25	12/18/2017	08:35:59 PM
75	N027429-015B	SAMP	25	12/18/2017	08:39:19 PM
76	N027429-016C	SAMP	25	12/18/2017	08:42:40 PM
77	N027429-017C	SAMP	25	12/18/2017	08:46:31 PM
78	N027429-018C	SAMP	100	12/18/2017	08:50:22 PM
79	N027429-020C	SAMP	100	12/18/2017	08:53:42 PM
29	CCV7	CCV	1	12/18/2017	08:57:02 PM
1	CCB7	CCB	1	12/18/2017	09:00:57 PM
33	ICSA3	ICSA	1	12/18/2017	09:04:46 PM
34	ICSAB3	ICSAB	1	12/18/2017	09:08:35 PM

INJECTION LOG: 171218C

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201K/MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201K/-171030G/-171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/18/2017	10:32:48 PM
2	Standard1	ICAL	1	12/18/2017	10:42:09 PM
3	Standard2	ICAL	1	12/18/2017	10:47:29 PM
11	Standard3	ICAL	1	12/18/2017	10:52:47 PM
12	Standard4	ICAL	1	12/18/2017	10:58:08 PM
6	Standard5	ICAL	1	12/18/2017	11:05:01 PM
7	Standard6	ICAL	1	12/18/2017	11:12:21 PM
8	Standard7	ICAL	1	12/18/2017	11:19:11 PM
9	ICV	ICV	1	12/18/2017	11:26:02 PM
1	ICB	ICB	1	12/18/2017	11:32:54 PM
2	LLICV	CCV1	1	12/18/2017	11:37:43 PM
2	LLICV	CCV1	1	12/18/2017	11:42:16 PM
4	ICSA1	ICSA	1	12/18/2017	11:47:34 PM
5	ICSAB1	ICSAB	1	12/18/2017	11:55:02 PM
64	MB-65992	MBLK	1	12/19/2017	12:02:34 AM
65	LCS1-65992	LCS	1	12/19/2017	12:07:25 AM
66	N027429-010B	SAMP	1	12/19/2017	12:14:46 AM
67	N027429-012B	SAMP	1	12/19/2017	12:21:46 AM
68	N027429-013B	SAMP	1	12/19/2017	12:28:38 AM
69	N027429-014B	SAMP	1	12/19/2017	12:35:29 AM
70	N027429-015B	SAMP	1	12/19/2017	12:42:20 AM
71	N027429-016C	SAMP	1	12/19/2017	12:49:12 AM
72	N027429-017C	SAMP	1	12/19/2017	12:56:03 AM
73	N027429-018C	SAMP	1	12/19/2017	01:02:55 AM
7	CCV1	CCV	1	12/19/2017	01:09:48 AM
1	CCB1	CCB	1	12/19/2017	01:16:38 AM
74	N027429-020C	SAMP	1	12/19/2017	01:21:27 AM
75	N027437-001B	SAMP	1	12/19/2017	01:28:19 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
76	N027437-002B	SAMP	1	12/19/2017	01:33:41 AM
77	N027437-002B	SAMP	5	12/19/2017	01:40:33 AM
78	N027437-002B-PS	PS	1	12/19/2017	01:45:55 AM
79	N027437-002BMS1	MS	1	12/19/2017	01:53:18 AM
80	N027437-002BMSD1	MSD	1	12/19/2017	02:00:10 AM
81	N027437-003D	SAMP	1	12/19/2017	02:07:02 AM
82	N027437-004B	SAMP	1	12/19/2017	02:11:55 AM
83	N027437-005B	SAMP	1	12/19/2017	02:17:17 AM
7	CCV2	CCV	1	12/19/2017	02:22:08 AM
1	CCB2	CCB	1	12/19/2017	02:28:59 AM
84	MB-65993	MBLK	1	12/19/2017	02:33:47 AM
85	LCS1-65993	LCS	1	12/19/2017	02:38:38 AM
86	N027430-002B	SAMP	1	12/19/2017	02:46:00 AM
87	N027430-002B	SAMP	5	12/19/2017	02:52:53 AM
88	N027430-002B-PS	PS	1	12/19/2017	02:57:45 AM
89	N027430-002B-MS1	MS	1	12/19/2017	03:04:37 AM
90	N027430-002B-MSD1	MSD	1	12/19/2017	03:11:30 AM
91	N027430-004B	SAMP	1	12/19/2017	03:18:23 AM
92	N027430-006B	SAMP	1	12/19/2017	03:23:16 AM
93	N027430-008B	SAMP	1	12/19/2017	03:28:09 AM
7	CCV3	CCV	1	12/19/2017	03:35:01 AM
1	CCB3	CCB	1	12/19/2017	03:41:52 AM
94	N027430-012B	SAMP	1	12/19/2017	03:46:40 AM
95	N027430-013B	SAMP	1	12/19/2017	03:53:31 AM
96	N027430-014B	SAMP	1	12/19/2017	04:00:23 AM
97	N027430-015B	SAMP	1	12/19/2017	04:07:15 AM
98	N027430-016B	SAMP	1	12/19/2017	04:14:08 AM
99	N027430-017B	SAMP	1	12/19/2017	04:20:59 AM
100	N027430-018B	SAMP	1	12/19/2017	04:27:52 AM
101	N027430-020B	SAMP	1	12/19/2017	04:34:45 AM
102	N027431-001B	SAMP	1	12/19/2017	04:41:38 AM
103	N027431-002B	SAMP	1	12/19/2017	04:46:31 AM
7	CCV4	CCV	1	12/19/2017	04:53:25 AM
1	CCB4	CCB	1	12/19/2017	05:00:16 AM
2	LLCCV1	CCV2	1	12/19/2017	05:05:04 AM
4	ICSA2	ICSA	1	12/19/2017	05:10:23 AM
5	ICSAB2	ICSAB	1	12/19/2017	05:17:50 AM
104	N027431-003B	SAMP	1	12/19/2017	05:25:19 AM
105	N027431-004B	SAMP	1	12/19/2017	05:32:11 AM
106	N027431-005B	SAMP	1	12/19/2017	05:39:05 AM
107	N027431-006B	SAMP	1	12/19/2017	05:45:58 AM
108	MB-65991	MBLK	1	12/19/2017	05:52:51 AM
109	LCS1-65991	LCS	1	12/19/2017	05:57:43 AM
110	N027437-001A	SAMP	1	12/19/2017	06:04:35 AM
111	N027437-002A	SAMP	1	12/19/2017	06:09:57 AM
112	N027437-002A	SAMP	5	12/19/2017	06:16:50 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
113	N027437-002A-PS	PS	1	12/19/2017	06:22:12 AM
7	CCV5	CCV	1	12/19/2017	06:29:05 AM
1	CCB5	CCB	1	12/19/2017	06:35:56 AM
114	N027437-002AMS1	MS	1	12/19/2017	06:41:14 AM
115	N027437-002AMSD1	MSD	1	12/19/2017	06:48:08 AM
116	N027437-003C	SAMP	1	12/19/2017	06:55:02 AM
117	N027437-004A	SAMP	1	12/19/2017	07:01:56 AM
118	N027437-005A	SAMP	1	12/19/2017	07:07:18 AM
119	N027405-013B	SAMP	5	12/19/2017	07:12:10 AM
120	N027429-010B	SAMP	5	12/19/2017	07:17:03 AM
7	CCV6	CCV	1	12/19/2017	07:23:56 AM
1	CCB6	CCB	1	12/19/2017	07:30:48 AM
2	LLCCV2	CCV2	1	12/19/2017	07:35:36 AM
4	ICSA3	ICSA	1	12/19/2017	07:40:54 AM
5	ICSAB3	ICSAB	1	12/19/2017	07:48:24 AM
121	N027405-012B	SAMP	5	12/19/2017	08:01:04 AM
38	MB-65994	MBLK	1	12/19/2017	08:07:56 AM
39	LCS1-65994	LCS	1	12/19/2017	08:12:45 AM
40	N027459-001C	SAMP	1	12/19/2017	08:20:04 AM
41	N027459-001C	SAMP	5	12/19/2017	08:26:54 AM
42	N027459-001C-PS	PS	1	12/19/2017	08:31:43 AM
43	N027459-001C-MS1	MS	1	12/19/2017	08:38:34 AM
44	N027459-001C-MSD1	MSD	1	12/19/2017	08:45:25 AM
45	N027459-002C	SAMP	1	12/19/2017	08:52:15 AM
46	N027459-003B	SAMP	1	12/19/2017	08:59:06 AM
7	CCV7	CCV	1	12/19/2017	09:07:07 AM
1	CCB7	CCB	1	12/19/2017	09:17:06 AM
2	LLCCV3	CCV2	1	12/19/2017	09:24:34 AM
4	ICSA4	ICSA	1	12/19/2017	09:34:26 AM
5	ICSAB4	ICSAB	1	12/19/2017	09:41:57 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/8/2017 1:00:00**
Prep End Date: **12/8/2017 5:00:00**
Prep Batch **65964** Prep Code: **3010_W_DISS**

Reviewed/ Date: 12/21/2017
Initials/ Date: FOR
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-44**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-65964	Aqueous		25	☐	0	0	25	1.000		
LCS2-65964	Aqueous		25	☐	0	0	25	1.000		
MB-65964	Aqueous		25	☐	0	0	25	1.000		
N027405-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-002C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-002C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-008B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9589	HYDROCHLORIC ACID
9601	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/8/2017 1:00:00**
Prep End Date: **12/8/2017 5:00:00**
Prep Batch **65964** Prep Code: **3010_W_DISS**

Reviewed/ Date: 12/21/2017
Initials/ Date: FOR
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-44**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027405-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-014B w/ sediments	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-009B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9589	HYDROCHLORIC ACID
9601	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 171216A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Boron								
CalBlk	12/16/2017	10:44:44 AM	B	249.677	5127	0.00	mg/L	
Standard1	12/16/2017	10:49:33 AM	B	249.677	3212	0.1000	mg/L	
Standard3	12/16/2017	11:00:13 AM	B	249.677	42900	1.000	mg/L	
Standard4	12/16/2017	11:05:42 AM	B	249.677	107954	2.500	mg/L	
Standard5	12/16/2017	11:14:04 AM	B	249.677	163997	3.750	mg/L	
Standard6	12/16/2017	11:22:24 AM	B	249.677	216128	5.000	mg/L	
Standard7	12/16/2017	11:30:45 AM	B	249.677	434350	10.000	mg/L	1.0000
Magnesium								
CalBlk	12/16/2017	10:44:44 AM	Mg	279.079	253	0.00	mg/L	
Standard1	12/16/2017	10:49:33 AM	Mg	279.079	1145	0.1000	mg/L	
Standard2	12/16/2017	10:54:52 AM	Mg	279.079	14200	1.000	mg/L	
Standard3	12/16/2017	11:00:13 AM	Mg	279.079	29234	2.000	mg/L	
Standard4	12/16/2017	11:05:42 AM	Mg	279.079	72373	5.000	mg/L	
Standard5	12/16/2017	11:14:04 AM	Mg	279.079	109238	7.500	mg/L	
Standard6	12/16/2017	11:22:24 AM	Mg	279.079	146675	10.000	mg/L	
Standard7	12/16/2017	11:30:45 AM	Mg	279.079	281870	20.000	mg/L	0.9999
Calcium								
CalBlk	12/16/2017	10:44:44 AM	Ca	227.546	-135	0.00	mg/L	
Standard1	12/16/2017	10:49:33 AM	Ca	227.546	58	0.2000	mg/L	
Standard2	12/16/2017	10:54:52 AM	Ca	227.546	367	1.000	mg/L	
Standard3	12/16/2017	11:00:13 AM	Ca	227.546	728	2.000	mg/L	
Standard4	12/16/2017	11:05:42 AM	Ca	227.546	1804	5.000	mg/L	
Standard5	12/16/2017	11:14:04 AM	Ca	227.546	2734	7.500	mg/L	
Standard6	12/16/2017	11:22:24 AM	Ca	227.546	3633	10.000	mg/L	
Standard7	12/16/2017	11:30:45 AM	Ca	227.546	7228	20.000	mg/L	1.0000
Iron								
CalBlk	12/16/2017	10:44:44 AM	Fe	273.953	-146	0.00	mg/L	
Standard1	12/16/2017	10:49:33 AM	Fe	273.953	401	0.0200	mg/L	
Standard2	12/16/2017	10:54:52 AM	Fe	273.953	1894	0.050	mg/L	
Standard3	12/16/2017	11:00:13 AM	Fe	273.953	49592	2.000	mg/L	
Standard4	12/16/2017	11:05:42 AM	Fe	273.953	122889	5.000	mg/L	
Standard5	12/16/2017	11:14:04 AM	Fe	273.953	185560	7.500	mg/L	
Standard6	12/16/2017	11:22:24 AM	Fe	273.953	248681	10.000	mg/L	
Standard7	12/16/2017	11:30:45 AM	Fe	273.953	476581	20.000	mg/L	0.9998

INITIAL CALIBRATION SUMMARY: 171218B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	12/18/2017	03:00:21 PM	Na	589.594	866	0.00	mg/L	
Standard1	12/18/2017	03:04:09 PM	Na	589.594	510	0.1000	mg/L	
Standard2	12/18/2017	03:11:31 PM	Na	589.594	4606	1.000	mg/L	
Standard3	12/18/2017	03:15:20 PM	Na	589.594	21822	5.000	mg/L	
Standard4	12/18/2017	03:19:11 PM	Na	589.594	43426	10.000	mg/L	
Standard5	12/18/2017	03:23:05 PM	Na	589.594	87460	20.000	mg/L	
Standard6	12/18/2017	03:27:09 PM	Na	589.594	174266	40.000	mg/L	1.0000

INITIAL CALIBRATION SUMMARY: 171218C

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Calcium								
CalBlk	12/18/2017	10:32:48 PM	Ca	227.546	-142	0.00	mg/L	
Standard1	12/18/2017	10:42:09 PM	Ca	227.546	97	0.2000	mg/L	
Standard2	12/18/2017	10:47:29 PM	Ca	227.546	304	1.000	mg/L	
Standard3	12/18/2017	10:52:47 PM	Ca	227.546	661	2.000	mg/L	
Standard4	12/18/2017	10:58:08 PM	Ca	227.546	1578	5.000	mg/L	
Standard5	12/18/2017	11:05:01 PM	Ca	227.546	2445	7.500	mg/L	
Standard6	12/18/2017	11:12:21 PM	Ca	227.546	3145	10.000	mg/L	
Standard7	12/18/2017	11:19:11 PM	Ca	227.546	6220	20.000	mg/L	0.9999

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ICV**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4990.055	100	5000	0	99.8	90	110				
Calcium	10117.848	500	10000	0	101	90	110				
Iron	10371.783	20	10000	0	104	90	110				
Magnesium	10338.902	100	10000	0	103	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ZZZZZZ**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	84.911	100	100.0	0	84.9	80	120				
Calcium	170.621	500	200.0	0	85.3	80	120				
Iron	17.461	20	20.00	0	87.3	80	120				
Magnesium	80.716	100	100.0	0	80.7	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **CCV**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870016**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4902.229	100	5000	0	98.0	90	110				
Calcium	10049.761	500	10000	0	100	90	110				
Iron	10259.141	20	10000	0	103	90	110				
Magnesium	10254.169	100	10000	0	103	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **CCV**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4726.029	100	5000	0	94.5	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120897**
Client ID: **CCV** Batch ID: **R120897** TestNo: **EPA 6010B** Analysis Date: **12/16/2017** SeqNo: **2870028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9841.162	500	10000	0	98.4	90	110				
Iron	9640.488	20	10000	0	96.4	90	110				
Magnesium	9546.182	100	10000	0	95.5	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120897**
Client ID: **CCV** Batch ID: **R120897** TestNo: **EPA 6010B** Analysis Date: **12/16/2017** SeqNo: **2870043**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4883.393	100	5000	0	97.7	90	110				
Calcium	10007.653	500	10000	0	100	90	110				
Iron	10184.824	20	10000	0	102	90	110				
Magnesium	10189.958	100	10000	0	102	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120897**
Client ID: **CCV** Batch ID: **R120897** TestNo: **EPA 6010B** Analysis Date: **12/16/2017** SeqNo: **2870055**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4661.374	100	5000	0	93.2	90	110				
Calcium	9745.370	500	10000	0	97.5	90	110				
Iron	9589.654	20	10000	0	95.9	90	110				
Magnesium	9513.808	100	10000	0	95.1	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120897**
Client ID: **ZZZZZZ** Batch ID: **R120897** TestNo: **EPA 6010B** Analysis Date: **12/16/2017** SeqNo: **2870057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	79.523	100	100.0	0	79.5	70	130				
Calcium	142.095	500	200.0	0	71.0	70	130				
Iron	17.170	20	20.00	0	85.8	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**LLCCV1**	SampType:	**CCV2**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**120897**
Client ID:	**ZZZZZZ**	Batch ID:	**R120897**	TestNo:	**EPA 6010B**			Analysis Date:	**12/16/2017**	SeqNo:	**2870057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	77.394	100	100.0	0	77.4	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **ICV**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9974.058	500	10000	0	99.7	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCV**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871248**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9944.620	500	10000	0	99.4	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCV**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9935.725	500	10000	0	99.4	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCV**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871272**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10032.268	500	10000	0	100	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCV**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10044.167	500	10000	0	100	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCV**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871298**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9992.954	500	10000	0	99.9	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCV**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10040.282	500	10000	0	100	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCV**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10032.687	500	10000	0	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10088.062	500	10000	0	101	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	204.883	500	200.0	0	102	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871592**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9969.207	500	10000	0	99.7	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871604**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9908.640	500	10000	0	99.1	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9993.795	500	10000	0	99.9	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCV4	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	CCV	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871628

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9894.698	500	10000	0	98.9	90	110				

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	ZZZZZZ	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871630

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	231.543	500	200.0	0	116	70	130				

Sample ID	CCV5	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	CCV	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871643

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9735.929	500	10000	0	97.4	90	110				

Sample ID	CCV6	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	CCV	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871652

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9734.042	500	10000	0	97.3	90	110				

Sample ID	LLCCV2	SampType:	CCV2	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	ZZZZZZ	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871654

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	240.192	500	200.0	0	120	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871667**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10062.017	500	10000	0	101	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871669**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	222.727	500	200.0	0	111	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ICB**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	21.693	100									
Calcium	-20.785609	500									
Iron	0.877	20									
Magnesium	0.466	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **CCB**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	24.795	100									
Calcium	29.481	500									
Iron	0.753	20									
Magnesium	0.280	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **CCB**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	22.071	100									
Calcium	19.265	500									
Iron	1.089	20									
Magnesium	-0.236916	100									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **CCB**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870044**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	31.063	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCB3	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120897
Client ID:	CCB	Batch ID:	R120897	TestNo:	EPA 6010B			Analysis Date:	12/16/2017	SeqNo:	2870044

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	20.512	500									
Iron	1.246	20									
Magnesium	-1.32059	100									

Sample ID	CCB4	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120897
Client ID:	CCB	Batch ID:	R120897	TestNo:	EPA 6010B			Analysis Date:	12/16/2017	SeqNo:	2870056

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	20.643	100									
Calcium	23.810	500									
Iron	0.570	20									
Magnesium	-0.475308	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **ICB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-20.539383	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871249**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-75.40344	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-82.629939	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871273**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-95.927983	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-118.781508	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871299**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-118.634555	500									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871311**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-123.004033	500									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-121.733252	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-1.802075	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871593**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	16.292	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871605**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	29.130	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-10.673498	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-3.575705	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	15.024	500									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871653**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	21.639	500									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871668**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	13.349	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ICSA**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870004**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	84.704	100									
Calcium	485555.577	500	500000	0	97.1	80	120				
Iron	167440.577	20	200000	0	83.7	80	120				
Magnesium	452647.155	100	500000	0	90.5	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ICSAB**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870005**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1152.559	100	1000	0	115	80	120				
Calcium	543031.842	500	500000	0	109	80	120				
Iron	181701.449	20	200000	0	90.9	80	120				
Magnesium	508463.476	100	500000	0	102	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ICSA**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870058**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	79.102	100									
Calcium	484358.974	500	500000	0	96.9	80	120				
Iron	182658.522	20	200000	0	91.3	80	120				
Magnesium	438265.928	100	500000	0	87.7	80	120				

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ICSAB**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1097.821	100	1000	0	110	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ICSAB**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	540942.543	500	500000	0	108	80	120				
Iron	179860.260	20	200000	0	89.9	80	120				
Magnesium	486371.735	100	500000	0	97.3	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120915
Client ID:	ICSA	Batch ID:	R120915	TestNo:	EPA 6010B			Analysis Date:	12/18/2017	SeqNo:	2871235

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-23.803815	500									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120915
Client ID:	ICSAB	Batch ID:	R120915	TestNo:	EPA 6010B			Analysis Date:	12/18/2017	SeqNo:	2871236

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10018.397	500	10000	0	100	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120915
Client ID:	ICSA	Batch ID:	R120915	TestNo:	EPA 6010B			Analysis Date:	12/18/2017	SeqNo:	2871286

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-117.541975	500									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120915
Client ID:	ICSAB	Batch ID:	R120915	TestNo:	EPA 6010B			Analysis Date:	12/18/2017	SeqNo:	2871287

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10090.050	500	10000	0	101	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120915
Client ID:	ICSA	Batch ID:	R120915	TestNo:	EPA 6010B			Analysis Date:	12/18/2017	SeqNo:	2871324

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-128.118015	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **ICSAB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871325**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10066.635	500	10000	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **ICSA** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/18/2017** SeqNo: **2871580**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	499606.293	50	500000	0	99.9	80	120				
Calcium	498548.809	500	500000	0	99.7	80	120				
Iron	179892.137	20	200000	0	89.9	80	120				
Magnesium	485043.587	100	500000	0	97.0	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **ICSAB** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/18/2017** SeqNo: **2871581**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	549867.041	50	500000	0	110	80	120				
Calcium	536964.037	500	500000	0	107	80	120				
Iron	190028.308	20	200000	0	95.0	80	120				
Magnesium	511694.882	100	500000	0	102	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **ICSA** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2871631**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	484031.618	50	500000	0	96.8	80	120				
Calcium	487269.052	500	500000	0	97.5	80	120				
Iron	171216.397	20	200000	0	85.6	80	120				
Magnesium	463520.732	100	500000	0	92.7	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **ICSAB** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2871632**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	526793.741	50	500000	0	105	80	120				
Calcium	537053.293	500	500000	0	107	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICSAB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871632**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	177822.006	20	200000	0	88.9	80	120				
Magnesium	501435.284	100	500000	0	100	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICSA**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871655**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	484725.819	50	500000	0	96.9	80	120				
Calcium	473640.507	500	500000	0	94.7	80	120				
Iron	172781.452	20	200000	0	86.4	80	120				
Magnesium	451305.649	100	500000	0	90.3	80	120				

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICSAB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871656**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	525073.791	50	500000	0	105	80	120				
Calcium	525291.517	500	500000	0	105	80	120				
Iron	178260.199	20	200000	0	89.1	80	120				
Magnesium	504862.836	100	500000	0	101	80	120				

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICSA**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871670**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	508532.336	50	500000	0	102	80	120				
Calcium	491526.968	500	500000	0	98.3	80	120				
Iron	183120.178	20	200000	0	91.6	80	120				
Manganese	7.173	10									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICSAB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871861**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	558516.003	50	500000	0	112	80	120				
Calcium	539927.247	500	500000	0	108	80	120				
Iron	193129.734	20	200000	0	96.6	80	120				
Manganese	994.233	10	1000	0	99.4	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 171216A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.98	97.61	65-125	PASS
Standard2	ICAL	1	1.064	106.42	65-125	PASS
Standard3	ICAL	1	0.97	96.73	65-125	PASS
Standard4	ICAL	1	0.96	96.046	65-125	PASS
Standard5	ICAL	1	0.96	95.5	65-125	PASS
Standard6	ICAL	1	0.95	94.74	65-125	PASS
Standard7	ICAL	1	0.93	92.61	65-125	PASS
ICV	ICV	1	0.95	94.97	65-125	PASS
ICB	ICB	1	0.97	97.01	65-125	PASS
LLICV	CCV1	1	0.97	96.75	65-125	PASS
LLICV	CCV1	1	0.97	96.95	65-125	PASS
ICSA1	ICSA	1	0.94	94	65-125	PASS
ICSAB1	ICSAB	1	0.8	79.53	65-125	PASS
MB-65964	MBLK	1	0.98	97.56	65-125	PASS
LCS1-65964	MBLK	1	0.88	88.15	65-125	PASS
N027405-001C	SAMP	1	0.85	85.43	65-125	PASS
CCV1	CCV	1	0.96	95.64	65-125	PASS
CCB1	CCB	1	0.99	98.62	65-125	PASS
N027405-001C	SAMP	5	0.9	89.64	65-125	PASS
N027405-001C-PS	PS	1	0.86	85.67	65-125	PASS
N027405-001C-MS1	MS	1	0.87	86.53	65-125	PASS
N027405-001C-MSD1	MSD	1	0.86	86.26	65-125	PASS
N027405-002C	SAMP	1	0.84	84.049	65-125	PASS
N027405-003C	SAMP	1	0.82	81.67	65-125	PASS
N027405-004B	SAMP	1	0.95	94.76	65-125	PASS
N027405-006B	SAMP	1	0.75	75.14	65-125	PASS
N027405-007B	SAMP	1	0.79	78.81	65-125	PASS
N027405-008B	SAMP	1	0.76	76.34	65-125	PASS
CCV2	CCV	1	0.96	96.15	65-125	PASS
CCB2	CCB	1	0.97	96.98	65-125	PASS
N027405-009B	SAMP	1	0.87	87.015	65-125	PASS
N027405-011B	SAMP	1	0.79	78.51	65-125	PASS
N027405-012B	SAMP	1	0.88	87.98	65-125	PASS
N027405-013B	SAMP	1	0.82	81.91	65-125	PASS
N027405-014B	SAMP	1	0.94	94.14	65-125	PASS
N027429-001B	SAMP	1	0.94	93.86	65-125	PASS
N027429-002B	SAMP	1	0.96	96.12	65-125	PASS
N027429-003B	SAMP	1	0.78	78.28	65-125	PASS
N027429-005B	SAMP	1	0.79	79.2	65-125	PASS
N027429-006B	SAMP	1	0.78	77.84	65-125	PASS

INTERNAL STANDARD: 171216A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCV3	CCV	1	0.98	98.19	65-125	PASS
CCB3	CCB	1	1.02	101.96	65-125	PASS
N027429-007B	SAMP	1	0.98	98.085	65-125	PASS
CCV3	CCV	1	0.92	91.95	65-125	PASS
CCB3	CCB	1	0.96	95.53	65-125	PASS
N027429-007B	SAMP	1	0.93	93.48	65-125	PASS
N027429-008B	SAMP	1	0.92	91.77	65-125	PASS
N027429-009B	SAMP	1	0.75	75.29	65-125	PASS
CCV4	CCV	1	0.96	95.88	65-125	PASS
CCB4	CCB	1	0.96	96.14	65-125	PASS
LLCCV1	CCV2	1	0.96	96.036	65-125	PASS
ICSA2	ICSA	1	0.93	92.83	65-125	PASS
ICSAB2	ICSAB	1	0.79	79.056	65-125	PASS

INTERNAL STANDARD: 171218B

Instrument ID: ICP-02

Scandium

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	99.45	65-125	PASS
Standard2	ICAL	1	0.98	97.9	65-125	PASS
Standard3	ICAL	1	0.99	99.44	65-125	PASS
Standard4	ICAL	1	0.98	97.54	65-125	PASS
Standard5	ICAL	1	0.96	96.056	65-125	PASS
Standard6	ICAL	1	0.96	95.73	65-125	PASS
ICV	ICV	1	0.97	97.42	65-125	PASS
ICB	ICB	1	1.012	101.18	65-125	PASS
ICSA1	ICSA	1	0.99	98.9	65-125	PASS
ICSAB1	ICSAB	1	0.97	96.97	65-125	PASS
CCV1	CCV	1	1.11	110.98	65-125	PASS
CCV1	CCV	1	0.97	97.26	65-125	PASS
CCB1	CCB	1	1.015	101.51	65-125	PASS
CCV2	CCV	1	0.98	98.12	65-125	PASS
CCB2	CCB	1	0.99	99.38	65-125	PASS
MB-65964	MBLK	1	1.019	101.88	65-125	PASS
LCS2-65964	LCS	1	1.026	102.57	65-125	PASS
CCV3	CCV	1	0.98	98.1	65-125	PASS
CCB3	CCB	1	1	99.7	65-125	PASS
N027405-001C	SAMP	10	0.97	97.071	65-125	PASS
N027405-002C	SAMP	100	0.99	98.52	65-125	PASS
N027405-002C	SAMP	500	1.0037	100.37	65-125	PASS
N027405-002C-PS	PS	100	0.99	99.36	65-125	PASS
N027405-002C-MS2	MS	100	0.99	99.42	65-125	PASS
N027405-002C-MSD2	MSD	100	1.0008	100.08	65-125	PASS
N027405-003C	SAMP	100	1	99.69	65-125	PASS
N027405-004B	SAMP	10	1.0058	100.58	65-125	PASS
N027405-006B	SAMP	250	0.99	99.2	65-125	PASS
N027405-007B	SAMP	250	0.99	99.088	65-125	PASS
CCV4	CCV	1	0.98	98.31	65-125	PASS
CCB4	CCB	1	1.0085	100.85	65-125	PASS
ICSA2	ICSA	1	1.0092	100.92	65-125	PASS
ICSAB2	ICSAB	1	0.98	98.44	65-125	PASS
N027405-008B	SAMP	250	1	99.86	65-125	PASS
N027405-009B	SAMP	100	1	99.9	65-125	PASS
N027405-011B	SAMP	100	1	99.75	65-125	PASS
N027405-012B	SAMP	100	0.99	99.25	65-125	PASS
N027405-013B	SAMP	100	1	99.82	65-125	PASS
N027405-014B	SAMP	10	1.0071	100.71	65-125	PASS
N027429-001B	SAMP	25	1.0059	100.59	65-125	PASS

INTERNAL STANDARD: 171218B

Instrument ID: ICP-02

Scandium

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N027429-002B	SAMP	25	1.01	101.01	65-125	PASS
N027429-003B	SAMP	250	1	99.97	65-125	PASS
N027429-005B	SAMP	250	1.002	100.2	65-125	PASS
CCV5	CCV	1	0.98	98.38	65-125	PASS
CCB5	CCB	1	1.0095	100.95	65-125	PASS
N027429-006B	SAMP	250	1.0029	100.29	65-125	PASS
N027429-007B	SAMP	25	1.0048	100.48	65-125	PASS
N027429-008B	SAMP	25	1.0077	100.77	65-125	PASS
N027429-009B	SAMP	250	1.0016	100.16	65-125	PASS
N027405-001C	SAMP	100	1.0068	100.68	65-125	PASS
CCV6	CCV	1	0.98	98.28	65-125	PASS
CCB6	CCB	1	1.014	101.35	65-125	PASS
CCV7	CCV	1	0.98	98.22	65-125	PASS
CCB7	CCB	1	1.0074	100.74	65-125	PASS
ICSA3	ICSA	1	1	99.78	65-125	PASS
ICSAB3	ICSAB	1	0.98	98.29	65-125	PASS

INTERNAL STANDARD: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.01	101.02	65-125	PASS
Standard2	ICAL	1	1.0028	100.28	65-125	PASS
Standard3	ICAL	1	1.048	104.75	65-125	PASS
Standard4	ICAL	1	1.088	108.84	65-125	PASS
Standard5	ICAL	1	1.19	118.58	65-125	PASS
Standard6	ICAL	1	0.96	96.25	65-125	PASS
Standard7	ICAL	1	0.95	94.86	65-125	PASS
ICV	ICV	1	0.97	96.72	65-125	PASS
ICB	ICB	1	1	99.76	65-125	PASS
LLICV	CCV1	1	1.0008	100.08	65-125	PASS
LLICV	CCV1	1	1	99.79	65-125	PASS
ICSA1	ICSA	1	0.87	86.92	65-125	PASS
ICSAB1	ICSAB	1	0.79	78.77	65-125	PASS
CCV1	CCV	1	0.97	96.66	65-125	PASS
CCB1	CCB	1	1.0021	100.21	65-125	PASS
CCV2	CCV	1	0.98	97.53	65-125	PASS
CCB2	CCB	1	1.0038	100.38	65-125	PASS
CCV3	CCV	1	0.97	96.71	65-125	PASS
CCB3	CCB	1	1	99.8	65-125	PASS
CCV4	CCV	1	0.98	97.87	65-125	PASS
CCB4	CCB	1	1	99.62	65-125	PASS
LLCCV1	CCV2	1	1.016	101.59	65-125	PASS
ICSA2	ICSA	1	0.87	86.98	65-125	PASS
ICSAB2	ICSAB	1	0.79	78.92	65-125	PASS
CCV5	CCV	1	0.98	97.84	65-125	PASS
CCB5	CCB	1	1.015	101.51	65-125	PASS
N027405-013B	SAMP	5	0.9	89.87	65-125	PASS
CCV6	CCV	1	0.98	98.036	65-125	PASS
CCB6	CCB	1	1.0083	100.83	65-125	PASS
LLCCV2	CCV2	1	1.018	101.82	65-125	PASS
ICSA3	ICSA	1	0.88	88.075	65-125	PASS
ICSAB3	ICSAB	1	0.8	79.74	65-125	PASS
N027405-012B	SAMP	5	0.91	90.9	65-125	PASS
CCV7	CCV	1	0.98	97.56	65-125	PASS
CCB7	CCB	1	0.99	99.13	65-125	PASS
LLCCV3	CCV2	1	1.0075	100.75	65-125	PASS
ICSA4	ICSA	1	0.87	87.1	65-125	PASS
ICSAB4	ICSAB	1	0.8	79.67	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N027405
Test Method: EPA 6010B
Analysis Date: 12/16/2017 & 12/18/2017

Matrix: Groundwater
Batch No.: 65964

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B & Fe. The calculated concentration is <25RL.
Dilution test failed for Ca & Mg.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027405-001C DT 5X	Boron	ug/L	847.0434	NA	726.1909	16.64%	10
N027405-001C DT 5X	Calcium	ug/L	120322.7	FAIL	107678.2	11.74%	10
N027405-001C DT 5X	Iron	ug/L	10.4753	NA	14.04272	25.40%	10
N027405-001C DT 5X	Magnesium	ug/L	21706.29	FAIL	18849.78	15.15%	10
N027405-002C DT 500X	Sodium	ug/L	1556504	PASS	1554016	0.16%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N027405-001C-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ZZZZZZ**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5462.001	100	5000	726.2	94.7	80	120				
Calcium	115253.601	500	10000	107700	75.8	80	120				S
Iron	133.817	20	100.0	14.04	120	80	120				
Magnesium	27194.370	100	10000	18850	83.4	80	120				

Sample ID **N027405-002C-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **ZZZZZZ**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/18/2017**	SeqNo: **2871277**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1601864.762	50000	20000	1554000	239	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

LOD & PQL VERIFICATION

Analytical Method: EPA 6010B / 200.7 **Matrix:** Water
Date of Analysis: 2/21/2017 **Units:** mg/L
Instrument Name: ICP2
Analyst: MI

Compound	MDL	LOD		PQL		
		Spike	Recovered	Spike	Recovered	% Recovery
Sodium	0.02621	0.10	0.08408	0.5	0.52080	104.2
Potassium	0.03815	0.10	0.13587	0.5	0.48231	96.5
Strontium	0.00545	0.02	0.02459	0.05	0.06052	121.0

Method Detection Limit

Analytical Method: EPA 6010B / 200.7
Digestion Method: EPA 3010A
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: mg/L

Analyte	1	2	3	4	5	6	7	SD	Ave	AMT SPIKED	%RSD	MDL	PQL
Potassium	0.15443	0.16201	0.14301	0.16141	0.16124	0.12965	0.14652	0.01215	0.15118	0.1000	8.0	0.03815	0.5
Sodium	0.11445	0.11459	0.11678	0.11286	0.11394	0.09515	0.10066	0.00835	0.10978	0.1000	7.6	0.02621	0.5
Strontium	0.02939	0.03046	0.0307	0.02962	0.03209	0.02708	0.02772	0.00174	0.02958	0.0250	5.9	0.00545	0.05

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65979
ASSET #: N027405

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 12/16/2017

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.		X				
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X				
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

Mn in N027405-011B is over linear range. For further dilution.
As, Mo & Se in N027405-013B & As, Mn, Mo & Se in N027405-014B for rerun.
%RSD of Se in STD 2 failed > 15%. However %RSD of LLICV passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/21/17
2nd Level Reviewer 12/21/2017 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65979
ASSET #: N027405

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 12/19/2017

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .			X			
24. LCS compounds within control limits.			X			
25. MS/MSD, RPD's are within control limits			X			
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For dilution of Mn in N027405-011B only.
For As, Mo & Se in N027405-013B & As, Mn, Mo & Se in N027405-014B rerun only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/21/17

2nd Level Reviewer 12/21/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N027405-002C** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 14.1876 * 1 * (25/25)

Chromium , ug/L = 14.1876

Reporting results in two significant figures,

Chromium , ug/L = 14

% RSD SUMMARY

PERCENT RSD SUMMARY: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	7.74	15	PASS	0.16	9.46	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.54	3.89	15	PASS	0.58	6.038	15	PASS
Std3-5/50 ppb	ICAL	1	5.28	1.45	15	PASS	5.21	0.43	15	PASS
Std4-10/100 ppb	ICAL	1	10.44	1.011	15	PASS	10.38	0.31	15	PASS
Std5-20/200 ppb	ICAL	1	21.11	1.91	15	PASS	20.63	1.4	15	PASS
Std6-40/400 ppb	ICAL	1	41.17	2	15	PASS	40.77	2.27	15	PASS
Std7-100/1000 ppb	ICAL	1	101.81	1.4	15	PASS	99.51	1.38	15	PASS
Std8-200/2000 ppb	ICAL	1	198.72	0.74	15	PASS	195.54	0.72	15	PASS
ICV	ICV	1	10.34	1.82	15	PASS	99.26	1.61	15	PASS
ICB	ICB	1	0.017	5.097	15	PASS	0.031	20.71	15	<PQL
LLICV	CCV1	1	1.042	5.72	20	PASS	0.5	11.72	20	PASS
ICSA1	ICSA	1	0.091	17.0063	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.63	1.18	15	PASS	18.58	0.12	15	PASS
LLICV	CCV1	1	1.0078	1.94	20	PASS	0.51	7.6	20	PASS
MB-65979	MBLK	1	0.012	85.95	15	<PQL	<0.000	N/A	15	<PQL
LCS-65979	LCS	1	10.19	0.8	15	PASS	99.052	0.85	15	PASS
N027405-001C	SAMP	1	0.077	22.89	15	<PQL	126.37	1.36	15	PASS
N027405-001C	SAMP	5	0.018	86.34	15	<PQL	27.71	0.93	15	PASS
N027405-001C	SAMP	25	0.0028	239.24	15	<PQL	5.64	0.85	15	PASS
N027405-001C-PS	PS	1	9.86	3.31	15	PASS	218.0085	1.67	15	PASS
N027405-001C-PS	PS	5	2.044	2.83	15	PASS	45.98	1.26	15	PASS
N027405-001C-MS	MS	1	9.57	2.032	15	PASS	215.61	1.59	15	PASS
N027405-001C-MS	MS	5	2.044	2.17	15	PASS	46.89	1.6	15	PASS
N027405-001C-MSD	MSD	1	9.55	1.35	15	PASS	216.47	1.07	15	PASS
CCV1	CCV	1	20.47	0.91	15	PASS	20.29	1.78	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0081	69.21	15	<PQL
N027405-001C-MSD	MSD	5	2.091	0.79	15	PASS	47.45	0.85	15	PASS
N027405-002C	SAMP	1	14.19	1.48	15	PASS	291.21	1.2	15	PASS
N027405-002C	SAMP	5	2.98	3.64	15	PASS	62.49	1.83	15	PASS
N027405-003C	SAMP	1	14.96	2.66	15	PASS	306.65	1.84	15	PASS
N027405-003C	SAMP	5	3.18	1.74	15	PASS	66.74	0.3	15	PASS
N027405-004B	SAMP	1	0.039	31.22	15	<PQL	219.0069	0.22	15	PASS
N027405-004B	SAMP	5	0.002	330.7	15	<PQL	46.93	0.28	15	PASS
N027405-006B	SAMP	1	3.84	4.35	15	PASS	10.92	1.34	15	PASS
N027405-006B	SAMP	5	0.85	1.67	15	PASS	2.35	5.55	15	PASS
N027405-007B	SAMP	1	<0.000	N/A	15	<PQL	104.26	1.41	15	PASS
CCV2	CCV	1	20.76	1.52	15	PASS	20.65	2.74	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.03	27.98	15	<PQL
N027405-007B	SAMP	5	<0.000	N/A	15	<PQL	22.96	1.65	15	PASS
N027405-008B	SAMP	1	1.72	1.18	15	PASS	36.08	1.39	15	PASS

PERCENT RSD SUMMARY: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027405-008B	SAMP	5	0.38	2.47	15	PASS	7.83	1.11	15	PASS
N027405-009B	SAMP	1	497.52	0.85	15	PASS	2.038	5.53	15	PASS
N027405-009B	SAMP	5	99.85	0.79	15	PASS	0.64	4.052	15	PASS
N027405-011B	SAMP	1	<0.000	N/A	15	<PQL	899.33	0.51	15	PASS
N027405-011B	SAMP	5	<0.000	N/A	15	<PQL	192.62	2.032	15	PASS
N027405-012B	SAMP	1	677.75	0.75	15	PASS	11.43	1.7	15	PASS
N027405-012B	SAMP	5	145.82	0.57	15	PASS	2.99	2.63	15	PASS
N027405-013B	SAMP	1	28.55	2.12	15	PASS	33.94	3.42	15	PASS
CCV3	CCV	1	20.82	1.77	15	PASS	21.53	1.62	15	PASS
CCB3	CCB	1	0.14	16.3	15	<PQL	0.17	34.26	15	<PQL
N027405-013B	SAMP	5	6.4	1.2	15	PASS	7.61	2.22	15	PASS
N027405-014B	SAMP	1	5.35	0.53	15	PASS	42.6	2.069	15	PASS
N027405-014B	SAMP	5	1.22	3.36	15	PASS	9.8	2.32	15	PASS
N027431-001B	SAMP	1	242.77	0.3	15	PASS	<0.000	N/A	15	<PQL
N027431-001B	SAMP	5	51.62	1.87	15	PASS	0.06	29.19	15	<PQL
N027431-002B	SAMP	1	2.67	2.22	15	PASS	199.62	1.021	15	PASS
N027431-002B	SAMP	5	0.61	8.08	15	PASS	44.3	3.18	15	PASS
N027431-003B	SAMP	1	<0.000	N/A	15	<PQL	1008.57	1.29	15	PASS
N027431-003B	SAMP	5	<0.000	N/A	15	<PQL	215.15	0.77	15	PASS
N027431-004B	SAMP	1	<0.000	N/A	15	<PQL	982.41	2.068	15	PASS
CCV4	CCV	1	20.49	0.83	15	PASS	21.47	1.24	15	PASS
CCB4	CCB	1	0.019	50.14	15	<PQL	0.15	13.58	15	PASS
LLCCV1	CCV2	1	0.86	2.73	20	PASS	0.57	3.35	20	PASS
ICSA2	ICSA	1	0.093	9.2	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.53	0.89	15	PASS	18.64	1.37	15	PASS

PERCENT RSD SUMMARY: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.099	19.4	15	<PQL	0.15	53.73	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.53	10.27	15	PASS	0.52	38.51	15	NR!
Std3-5/50 ppb	ICAL	1	5.14	3.21	15	PASS	4.83	2.66	15	PASS
Std4-10/100 ppb	ICAL	1	10.3	2.43	15	PASS	9.72	3.36	15	PASS
Std5-20/200 ppb	ICAL	1	20.67	0.74	15	PASS	20.47	3.57	15	PASS
Std6-40/400 ppb	ICAL	1	40.69	0.46	15	PASS	40.8	1.42	15	PASS
Std7-100/1000 ppb	ICAL	1	100.94	0.66	15	PASS	100.66	2.66	15	PASS
Std8-200/2000 ppb	ICAL	1	199.3	1.53	15	PASS	199.48	1.067	15	PASS
ICV	ICV	1	10.088	3.013	15	PASS	10.5	3.66	15	PASS
ICB	ICB	1	0.013	170.09	15	<PQL	0.03	99.3	15	<PQL
LLICV	CCV1	1	0.12	14.55	20	PASS	0.55	2.53	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.03	69.37	15	<PQL
ICSAB1	ICSAB	1	20.36	1.09	15	PASS	18.45	3.49	15	PASS
LLICV	CCV1	1	0.13	9.48	20	PASS	0.51	6.93	20	PASS
MB-65979	MBLK	1	0.014	66.5	15	<PQL	0.016	100.7	15	<PQL
LCS-65979	LCS	1	10	0.9	15	PASS	9.78	3.77	15	PASS
N027405-001C	SAMP	1	4.63	3.027	15	PASS	0.15	42.59	15	<PQL
N027405-001C	SAMP	5	0.95	6.85	15	PASS	0.023	41.82	15	<PQL
N027405-001C	SAMP	25	0.21	2.32	15	PASS	0.016	0.9	15	PASS
N027405-001C-PS	PS	1	14.65	1.41	15	PASS	9.02	6.43	15	PASS
N027405-001C-PS	PS	5	3.062	2.48	15	PASS	2.21	14.056	15	PASS
N027405-001C-MS	MS	1	14.74	2.38	15	PASS	9.25	5.4	15	PASS
N027405-001C-MS	MS	5	3.12	2.13	15	PASS	2.074	8.46	15	PASS
N027405-001C-MSD	MSD	1	14.55	3.35	15	PASS	8.87	3.97	15	PASS
CCV1	CCV	1	20.64	1.32	15	PASS	19.58	0.49	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.025	124.63	15	<PQL
N027405-001C-MSD	MSD	5	3.027	3	15	PASS	2.17	18.59	15	NR!
N027405-002C	SAMP	1	4.34	1.56	15	PASS	0.081	49.97	15	<PQL
N027405-002C	SAMP	5	0.92	2.74	15	PASS	0.016	100.27	15	<PQL
N027405-003C	SAMP	1	4.46	1.22	15	PASS	0.031	125.45	15	<PQL
N027405-003C	SAMP	5	0.93	9.77	15	PASS	0.042	114.63	15	<PQL
N027405-004B	SAMP	1	2.25	0.54	15	PASS	0.065	74.065	15	<PQL
N027405-004B	SAMP	5	0.46	9.81	15	PASS	0.025	91.66	15	<PQL
N027405-006B	SAMP	1	14.72	2.97	15	PASS	0.31	19.48	15	<PQL
N027405-006B	SAMP	5	3.28	0.95	15	PASS	0.098	80.25	15	<PQL
N027405-007B	SAMP	1	11.42	2.71	15	PASS	0.047	98.91	15	<PQL
CCV2	CCV	1	20.44	1.38	15	PASS	20.88	3.6	15	PASS
CCB2	CCB	1	0.017	51.56	15	<PQL	0.071	48.55	15	<PQL
N027405-007B	SAMP	5	2.53	5.35	15	PASS	0.012	173.21	15	<PQL
N027405-008B	SAMP	1	13.39	0.81	15	PASS	0.24	18.94	15	<PQL

PERCENT RSD SUMMARY: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027405-008B	SAMP	5	2.9	5.49	15	PASS	0.054	88.45	15	<PQL
N027405-009B	SAMP	1	1.72	4.73	15	PASS	3.7	4.62	15	PASS
N027405-009B	SAMP	5	0.38	11.28	15	PASS	0.84	6.87	15	PASS
N027405-011B	SAMP	1	4.2	2.72	15	PASS	0.032	115.68	15	<PQL
N027405-011B	SAMP	5	0.91	18.8	15	NR!	0.019	99.096	15	<PQL
N027405-012B	SAMP	1	1.57	3.73	15	PASS	5.4	6.78	15	PASS
N027405-012B	SAMP	5	0.35	12.069	15	PASS	1.11	11.2	15	PASS
N027405-013B	SAMP	1	1.57	1.65	15	PASS	3.6	9.58	15	PASS
CCV3	CCV	1	20.34	2.69	15	PASS	21.56	4.85	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.012	173.21	15	<PQL
N027405-013B	SAMP	5	0.34	12.073	15	PASS	0.68	6.99	15	PASS
N027405-014B	SAMP	1	13.32	2.55	15	PASS	0.64	14.13	15	PASS
N027405-014B	SAMP	5	2.85	6.087	15	PASS	0.15	53.71	15	<PQL
N027431-001B	SAMP	1	2.064	0.83	15	PASS	3.25	3.76	15	PASS
N027431-001B	SAMP	5	0.45	7.36	15	PASS	0.53	13.46	15	PASS
N027431-002B	SAMP	1	19.58	0.99	15	PASS	0.24	12.18	15	PASS
N027431-002B	SAMP	5	4.2	3.59	15	PASS	0.071	91.45	15	<PQL
N027431-003B	SAMP	1	3.53	0.64	15	PASS	0.063	49.94	15	<PQL
N027431-003B	SAMP	5	0.7	7.35	15	PASS	0.024	99.86	15	<PQL
N027431-004B	SAMP	1	5.34	3.47	15	PASS	0.043	42.35	15	<PQL
CCV4	CCV	1	20.36	0.31	15	PASS	22.51	2.96	15	PASS
CCB4	CCB	1	0.0076	245.51	15	<PQL	0.014	86.61	15	<PQL
LLCCV1	CCV2	1	0.11	17.092	20	PASS	0.38	13.47	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.014	173.21	15	<PQL
ICSAB2	ICSAB	1	19.7	3.22	15	PASS	19.99	5.17	15	PASS

PERCENT RSD SUMMARY: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.09	8.2	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.48	6.35	15	PASS
Std3-5/50 ppb	ICAL	1	4.9	1.45	15	PASS
Std4-10/100 ppb	ICAL	1	9.81	1.43	15	PASS
Std5-20/200 ppb	ICAL	1	19.68	1.29	15	PASS
Std6-40/400 ppb	ICAL	1	39.4	0.57	15	PASS
Std7-100/1000 ppb	ICAL	1	99.34	1.12	15	PASS
Std8-200/2000 ppb	ICAL	1	200.49	0.98	15	PASS
ICV	ICV	1	10.28	2	15	PASS
ICB	ICB	1	0.13	5.88	15	PASS
LLICV	CCV1	1	0.55	1.38	20	PASS
ICSA1	ICSA	1	0.075	12.31	15	PASS
ICSAB1	ICSAB	1	22.13	0.12	15	PASS
LLICV	CCV1	1	0.57	3.3	20	PASS
MB-65979	MBLK	1	0.021	18.78	15	<PQL
LCS-65979	LCS	1	9.72	2.16	15	PASS
N027405-001C	SAMP	1	10.82	1.32	15	PASS
N027405-001C	SAMP	5	2.095	5.48	15	PASS
N027405-001C	SAMP	25	0.4	4.86	15	PASS
N027405-001C-PS	PS	1	22.6	0.69	15	PASS
N027405-001C-PS	PS	5	4.28	1.22	15	PASS
N027405-001C-MS	MS	1	22.78	1.12	15	PASS
N027405-001C-MS	MS	5	4.37	2.28	15	PASS
N027405-001C-MSD	MSD	1	22.86	0.68	15	PASS
CCV1	CCV	1	20.0058	0.49	15	PASS
CCB1	CCB	1	0.085	22.17	15	<PQL
N027405-001C-MSD	MSD	5	4.43	1.89	15	PASS
N027405-002C	SAMP	1	22.75	1.37	15	PASS
N027405-002C	SAMP	5	4.34	1.96	15	PASS
N027405-003C	SAMP	1	23.64	1.79	15	PASS
N027405-003C	SAMP	5	4.4	1.15	15	PASS
N027405-004B	SAMP	1	4.079	1.56	15	PASS
N027405-004B	SAMP	5	0.81	3.7	15	PASS
N027405-006B	SAMP	1	83.41	0.63	15	PASS
N027405-006B	SAMP	5	15.82	0.44	15	PASS
N027405-007B	SAMP	1	79.37	0.92	15	PASS
CCV2	CCV	1	19.82	0.68	15	PASS
CCB2	CCB	1	0.096	9.33	15	PASS
N027405-007B	SAMP	5	14.99	1.44	15	PASS
N027405-008B	SAMP	1	80.22	0.96	15	PASS

PERCENT RSD SUMMARY: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N027405-008B	SAMP	5	15.52	1.021	15	PASS
N027405-009B	SAMP	1	14.69	1.12	15	PASS
N027405-009B	SAMP	5	2.71	1.23	15	PASS
N027405-011B	SAMP	1	69.25	0.82	15	PASS
N027405-011B	SAMP	5	13.51	1.3	15	PASS
N027405-012B	SAMP	1	19.096	1.49	15	PASS
N027405-012B	SAMP	5	3.71	2.79	15	PASS
N027405-013B	SAMP	1	36.91	0.4	15	PASS
CCV3	CCV	1	19.56	1.42	15	PASS
CCB3	CCB	1	0.078	14.7	15	PASS
N027405-013B	SAMP	5	7.37	2.36	15	PASS
N027405-014B	SAMP	1	30.89	1.27	15	PASS
N027405-014B	SAMP	5	6.12	3.085	15	PASS
N027431-001B	SAMP	1	11.56	1.2	15	PASS
N027431-001B	SAMP	5	2.3	0.19	15	PASS
N027431-002B	SAMP	1	46.37	0.89	15	PASS
N027431-002B	SAMP	5	9.081	0.79	15	PASS
N027431-003B	SAMP	1	41.5	1.061	15	PASS
N027431-003B	SAMP	5	7.91	1.22	15	PASS
N027431-004B	SAMP	1	41.34	1.63	15	PASS
CCV4	CCV	1	19.96	0.47	15	PASS
CCB4	CCB	1	0.08	27.17	15	<PQL
LLCCV1	CCV2	1	0.4	7.33	20	PASS
ICSA2	ICSA	1	0.048	15.64	15	<PQL
ICSAB2	ICSAB	1	22.69	1.1	15	PASS

PERCENT RSD SUMMARY: 171219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.15	15.69	15	<PQL	0.1	16.043	15	NR!
Std2-0.5/5 ppb	ICAL	1	0.6	6.46	15	PASS	0.52	0.57	15	PASS
Std3-5/50 ppb	ICAL	1	5.14	1.22	15	PASS	5.11	4.47	15	PASS
Std4-10/100 ppb	ICAL	1	10.55	1.2	15	PASS	10.054	0.88	15	PASS
Std5-20/200 ppb	ICAL	1	20.86	1.38	15	PASS	20.29	1.45	15	PASS
Std6-40/400 ppb	ICAL	1	41.18	1.9	15	PASS	40.3	1.23	15	PASS
Std7-100/1000 ppb	ICAL	1	100.98	1.37	15	PASS	100.77	1.82	15	PASS
Std8-200/2000 ppb	ICAL	1	199.16	0.46	15	PASS	199.52	1.71	15	PASS
ICV	ICV	1	100.78	1.26	15	PASS	9.85	1.49	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.54	5.86	20	PASS	0.067	33.21	20	<PQL
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	18.25	0.32	15	PASS	19.81	2.55	15	PASS
LLICV	CCV1	1	0.55	12.57	20	PASS	0.08	11.57	20	PASS
N027405-011B	SAMP	10	100.3	1.27	15	PASS	0.42	14.12	15	PASS
N027405-013B	SAMP	5	7.68	2.6	15	PASS	0.29	12.17	15	PASS
N027405-014B	SAMP	1	43.26	1.11	15	PASS	13.39	2	15	PASS
N027431-001B	SAMP	1	<0.000	N/A	15	<PQL	2.014	6.85	15	PASS
N027431-002B	SAMP	5	43.72	2.12	15	PASS	4.085	2.71	15	PASS
N027431-003B	SAMP	5	215.82	0.38	15	PASS	0.67	6.31	15	PASS
N027431-003B	SAMP	25	46.64	1.83	15	PASS	0.13	10.037	15	PASS
N027431-004B	SAMP	5	212.61	1.54	15	PASS	1.096	7.72	15	PASS
N027431-004B	SAMP	25	46.33	0.78	15	PASS	0.23	5.0014	15	PASS
CCV1	CCV	1	20.68	2.24	15	PASS	20.014	1.69	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027431-005B	SAMP	1	<0.000	N/A	15	<PQL	2.53	2.65	15	PASS
N027431-005B	SAMP	5	<0.000	N/A	15	<PQL	0.51	8.51	15	PASS
N027431-005B	SAMP	25	<0.000	N/A	15	<PQL	0.071	42.96	15	<PQL
N027431-006B	SAMP	1	1.6	2.7	15	PASS	3.58	0.28	15	PASS
N027431-006B	SAMP	5	0.35	5.2	15	PASS	0.73	3.4	15	PASS
N027431-006B	SAMP	25	0.084	23.39	15	<PQL	0.12	24.59	15	NR!
N027431-004B	SAMP	1	957.28	0.8	15	PASS	5.25	1.51	15	PASS
N027431-003B	SAMP	1	997.72	0.12	15	PASS	3.39	3.84	15	PASS
N027431-002B	SAMP	1	205.54	1.16	15	PASS	19.57	1.25	15	PASS
CCV2	CCV	1	21.038	2.041	15	PASS	19.54	2.36	15	PASS
CCB2	CCB	1	0.031	134.71	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.56	3.51	20	PASS	0.091	6.59	20	PASS
ICSA2	ICSA	1	0.024	40.7	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	18.55	0.82	15	PASS	19.71	1.49	15	PASS

PERCENT RSD SUMMARY: 171219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.071	14.11	15	PASS	0.094	8.49	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.46	37.61	15	<PQL	0.5	13.39	15	PASS
Std3-5/50 ppb	ICAL	1	5.08	4.0044	15	PASS	4.91	1.51	15	PASS
Std4-10/100 ppb	ICAL	1	9.78	1.43	15	PASS	9.75	0.87	15	PASS
Std5-20/200 ppb	ICAL	1	19.58	1.34	15	PASS	19.86	0.69	15	PASS
Std6-40/400 ppb	ICAL	1	41.27	1.78	15	PASS	39.32	0.55	15	PASS
Std7-100/1000 ppb	ICAL	1	99.82	0.65	15	PASS	98.93	0.12	15	PASS
Std8-200/2000 ppb	ICAL	1	199.89	1.089	15	PASS	200.7	1.48	15	PASS
ICV	ICV	1	9.53	8.48	15	PASS	10.51	1.97	15	PASS
ICB	ICB	1	0.0046	382.72	15	<PQL	0.16	6.81	15	PASS
LLICV	CCV1	1	0.48	25.93	20	<PQL	0.57	2.78	20	PASS
ICSA1	ICSA	1	0.042	77.84	15	<PQL	0.071	24.21	15	<PQL
ICSAB1	ICSAB	1	18.53	1.86	15	PASS	22.43	1.21	15	PASS
LLICV	CCV1	1	0.48	30.96	20	<PQL	0.56	2.45	20	PASS
N027405-011B	SAMP	10	<0.000	N/A	15	<PQL	6.47	1.27	15	PASS
N027405-013B	SAMP	5	0.64	3.88	15	PASS	7.24	1.87	15	PASS
N027405-014B	SAMP	1	0.66	13.89	15	PASS	30.99	0.37	15	PASS
N027431-001B	SAMP	1	3.1	11.22	15	PASS	11.6	0.14	15	PASS
N027431-002B	SAMP	5	0.11	48.4	15	<PQL	9.12	0.63	15	PASS
N027431-003B	SAMP	5	0.015	118.083	15	<PQL	7.77	0.44	15	PASS
N027431-003B	SAMP	25	<0.000	N/A	15	<PQL	1.59	6.0012	15	PASS
N027431-004B	SAMP	5	0.0048	186.054	15	<PQL	7.99	3.043	15	PASS
N027431-004B	SAMP	25	<0.000	N/A	15	<PQL	1.65	1.33	15	PASS
CCV1	CCV	1	19.8	0.77	15	PASS	19.85	1.73	15	PASS
CCB1	CCB	1	0.014	121.8	15	<PQL	0.061	45.18	15	<PQL
N027431-005B	SAMP	1	5.032	8.5	15	PASS	36.43	1.086	15	PASS
N027431-005B	SAMP	5	1.11	13.3	15	PASS	7.08	1.59	15	PASS
N027431-005B	SAMP	25	0.22	29.18	15	<PQL	1.48	1.23	15	PASS
N027431-006B	SAMP	1	42.33	3.97	15	PASS	21.27	1.09	15	PASS
N027431-006B	SAMP	5	8.69	4.09	15	PASS	4.16	1.47	15	PASS
N027431-006B	SAMP	25	1.65	9.17	15	PASS	0.83	4.34	15	PASS
N027431-004B	SAMP	1	0.13	56.25	15	<PQL	42.29	1.27	15	PASS
N027431-003B	SAMP	1	0.11	18.94	15	<PQL	41.56	0.33	15	PASS
N027431-002B	SAMP	1	0.44	32.33	15	<PQL	46.022	1.79	15	PASS
CCV2	CCV	1	21.029	1.63	15	PASS	19.58	1.55	15	PASS
CCB2	CCB	1	0.017	151.98	15	<PQL	0.064	8.64	15	PASS
LLCCV1	CCV2	1	0.65	5.76	20	PASS	0.51	2.39	20	PASS
ICSA2	ICSA	1	0.018	227.7	15	<PQL	0.00015	2742.055	15	<PQL
ICSAB2	ICSAB	1	19.25	5.37	15	PASS	21.89	1.36	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 171216A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1216001.D	RINSE	RINSE	1	12/16/17 11:47 AM
A1216002.D	Cal Blank	IBLK	1	12/16/17 11:52 AM
A1216003.D	Std1-0.1/1 ppb	ICAL	1	12/16/17 11:58 AM
A1216004.D	Std2-0.5/5 ppb	ICAL	1	12/16/17 12:03 PM
A1216005.D	Std3-5/50 ppb	ICAL	1	12/16/17 12:09 PM
A1216006.D	Std4-10/100 ppb	ICAL	1	12/16/17 12:15 PM
A1216007.D	Std5-20/200 ppb	ICAL	1	12/16/17 12:20 PM
A1216008.D	Std6-40/400 ppb	ICAL	1	12/16/17 12:26 PM
A1216009.D	Std7-100/1000 ppb	ICAL	1	12/16/17 12:31 PM
A1216010.D	Std8-200/2000 ppb	ICAL	1	12/16/17 12:38 PM
A1216011.D	ICV	ICV	1	12/16/17 12:44 PM
A1216012.D	ICB	ICB	1	12/16/17 12:50 PM
A1216013.D	LLICV	CCV1	1	12/16/17 12:56 PM
A1216014.D	ICSA1	ICSA	1	12/16/17 1:01 PM
A1216015.D	ICSAB1	ICSAB	1	12/16/17 1:07 PM
A1216016.D	LLICV	CCV1	1	12/16/17 1:12 PM
A1216017.D	MB-65979	MBLK	1	12/16/17 1:18 PM
A1216018.D	LCS-65979	LCS	1	12/16/17 1:24 PM
A1216019.D	N027405-001C	SAMP	1	12/16/17 1:29 PM
A1216020.D	N027405-001C	SAMP	5	12/16/17 1:35 PM
A1216021.D	N027405-001C	SAMP	25	12/16/17 1:40 PM
A1216022.D	N027405-001C-PS	PS	1	12/16/17 1:46 PM
A1216023.D	N027405-001C-PS	PS	5	12/16/17 1:51 PM
A1216024.D	N027405-001C-MS	MS	1	12/16/17 1:57 PM
A1216025.D	N027405-001C-MS	MS	5	12/16/17 2:02 PM
A1216026.D	N027405-001C-MSD	MSD	1	12/16/17 2:08 PM
A1216027.D	CCV1	CCV	1	12/16/17 2:14 PM
A1216028.D	CCB1	CCB	1	12/16/17 2:19 PM
A1216029.D	N027405-001C-MSD	MSD	5	12/16/17 2:25 PM
A1216030.D	N027405-002C	SAMP	1	12/16/17 2:30 PM
A1216031.D	N027405-002C	SAMP	5	12/16/17 2:36 PM
A1216032.D	N027405-003C	SAMP	1	12/16/17 2:41 PM
A1216033.D	N027405-003C	SAMP	5	12/16/17 2:47 PM
A1216034.D	N027405-004B	SAMP	1	12/16/17 2:53 PM
A1216035.D	N027405-004B	SAMP	5	12/16/17 2:58 PM
A1216036.D	N027405-006B	SAMP	1	12/16/17 3:04 PM
A1216037.D	N027405-006B	SAMP	5	12/16/17 3:09 PM
A1216038.D	N027405-007B	SAMP	1	12/16/17 3:15 PM
A1216039.D	CCV2	CCV	1	12/16/17 3:21 PM
A1216040.D	CCB2	CCB	1	12/16/17 3:26 PM
A1216041.D	N027405-007B	SAMP	5	12/16/17 3:32 PM
A1216042.D	N027405-008B	SAMP	1	12/16/17 3:37 PM

INJECTION LOG: 171216A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1216043.D	N027405-008B	SAMP	5	12/16/17 3:43 PM
A1216044.D	N027405-009B	SAMP	1	12/16/17 3:48 PM
A1216045.D	N027405-009B	SAMP	5	12/16/17 3:54 PM
A1216046.D	N027405-011B	SAMP	1	12/16/17 4:00 PM
A1216047.D	N027405-011B	SAMP	5	12/16/17 4:05 PM
A1216048.D	N027405-012B	SAMP	1	12/16/17 4:11 PM
A1216049.D	N027405-012B	SAMP	5	12/16/17 4:16 PM
A1216050.D	N027405-013B	SAMP	1	12/16/17 4:22 PM
A1216051.D	CCV3	CCV	1	12/16/17 4:27 PM
A1216052.D	CCB3	CCB	1	12/16/17 4:33 PM
A1216053.D	N027405-013B	SAMP	5	12/16/17 4:39 PM
A1216054.D	N027405-014B	SAMP	1	12/16/17 4:44 PM
A1216055.D	N027405-014B	SAMP	5	12/16/17 4:50 PM
A1216056.D	N027431-001B	SAMP	1	12/16/17 4:55 PM
A1216057.D	N027431-001B	SAMP	5	12/16/17 5:01 PM
A1216058.D	N027431-002B	SAMP	1	12/16/17 5:06 PM
A1216059.D	N027431-002B	SAMP	5	12/16/17 5:12 PM
A1216060.D	N027431-003B	SAMP	1	12/16/17 5:17 PM
A1216061.D	N027431-003B	SAMP	5	12/16/17 5:23 PM
A1216062.D	N027431-004B	SAMP	1	12/16/17 5:29 PM
A1216063.D	CCV4	CCV	1	12/16/17 5:34 PM
A1216064.D	CCB4	CCB	1	12/16/17 5:40 PM
A1216065.D	LLCCV1	CCV2	1	12/16/17 5:46 PM
A1216066.D	ICSA2	ICSA	1	12/16/17 5:50 PM
A1216067.D	ICSAB2	ICSAB	1	12/16/17 5:56 PM

INJECTION LOG: 171219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1219001.D	RINSE	RINSE	1	12/19/17 11:37 AM
A1219002.D	Cal Blank	IBLK	1	12/19/17 11:42 AM
A1219003.D	Std1-0.1/1 ppb	ICAL	1	12/19/17 11:48 AM
A1219004.D	Std2-0.5/5 ppb	ICAL	1	12/19/17 11:53 AM
A1219005.D	Std3-5/50 ppb	ICAL	1	12/19/17 11:59 AM
A1219006.D	Std4-10/100 ppb	ICAL	1	12/19/17 12:05 PM
A1219007.D	Std5-20/200 ppb	ICAL	1	12/19/17 12:10 PM
A1219008.D	Std6-40/400 ppb	ICAL	1	12/19/17 12:16 PM
A1219009.D	Std7-100/1000 ppb	ICAL	1	12/19/17 12:21 PM
A1219010.D	Std8-200/2000 ppb	ICAL	1	12/19/17 12:27 PM
A1219011.D	ICV	ICV	1	12/19/17 12:33 PM
A1219012.D	ICB	ICB	1	12/19/17 12:38 PM
A1219013.D	LLICV	CCV1	1	12/19/17 12:44 PM
A1219014.D	ICSA1	ICSA	1	12/19/17 12:49 PM
A1219015.D	ICSAB1	ICSAB	1	12/19/17 12:54 PM
A1219016.D	LLICV	CCV1	1	12/19/17 1:00 PM
A1219017.D	N027406-004D	SAMP	25	12/19/17 1:06 PM
A1219018.D	N027405-011B	SAMP	10	12/19/17 1:11 PM
A1219019.D	N027405-013B	SAMP	5	12/19/17 1:17 PM
A1219020.D	N027405-014B	SAMP	1	12/19/17 1:18 PM
A1219021.D	N027431-001B	SAMP	1	12/19/17 1:25 PM
A1219022.D	N027431-002B	SAMP	5	12/19/17 1:30 PM
A1219023.D	N027431-003B	SAMP	5	12/19/17 1:36 PM
A1219024.D	N027431-003B	SAMP	25	12/19/17 1:41 PM
A1219025.D	N027431-004B	SAMP	5	12/19/17 1:47 PM
A1219026.D	N027431-004B	SAMP	25	12/19/17 1:53 PM
A1219027.D	CCV1	CCV	1	12/19/17 1:58 PM
A1219028.D	CCB1	CCB	1	12/19/17 2:04 PM
A1219029.D	N027431-005B	SAMP	1	12/19/17 2:09 PM
A1219030.D	N027431-005B	SAMP	5	12/19/17 2:15 PM
A1219031.D	N027431-005B	SAMP	25	12/19/17 2:21 PM
A1219032.D	N027431-006B	SAMP	1	12/19/17 2:26 PM
A1219033.D	N027431-006B	SAMP	5	12/19/17 2:32 PM
A1219034.D	N027431-006B	SAMP	25	12/19/17 2:37 PM
A1219035.D	N027431-004B	SAMP	1	12/19/17 2:43 PM
A1219036.D	N027431-003B	SAMP	1	12/19/17 2:48 PM
A1219037.D	N027431-002B	SAMP	1	12/19/17 2:54 PM
A1219038.D	CCV2	CCV	1	12/19/17 3:00 PM
A1219039.D	CCB2	CCB	1	12/19/17 3:06 PM
A1219040.D	LLCCV1	CCV2	1	12/19/17 3:12 PM
A1219041.D	ICSA2	ICSA	1	12/19/17 3:17 PM
A1219042.D	ICSAB2	ICSAB	1	12/19/17 3:23 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/8/2017 2:07:45**
Prep End Date: **12/8/2017 6:30:00**
Prep Batch **65979** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 12/21/2017
Initials/ Date: 12/21/2017
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**01-10**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-65979	Aqueous		25	☐	0	0	25	1.000		
MB-65979	Aqueous		25	☐	0	0	25	1.000		
N027405-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-012B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/8/2017 2:07:45**
Prep End Date: **12/8/2017 6:30:00**

Reviewed/ Date: 12/21/2017

Initials/ Date: 12/21/2017

Prep Batch **65979** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**01-10**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027405-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-006B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 16 Dec 2017 11:35:33 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	68698.00	0.00	
24 Mg	388178.00	0.00	
25 Mg	51186.10	0.00	
26 Mg	59257.10	0.00	
59 Co	420163.00	0.00	
115 In	841199.00	0.00	
206 Pb	242955.00	0.00	
207 Pb	211665.00	0.00	
208 Pb	520321.00	0.00	

RSD (%)

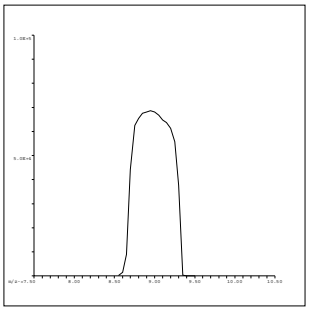
Element	Actual	Required	Flag
9 Be	0.87	5.00	
24 Mg	0.87	5.00	
25 Mg	1.46	5.00	
26 Mg	3.23	5.00	
59 Co	0.78	5.00	
115 In	0.70	5.00	
206 Pb	0.38	5.00	
207 Pb	0.95	5.00	
208 Pb	0.77	5.00	

Ion Ratio

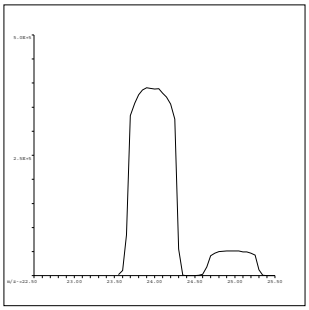
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

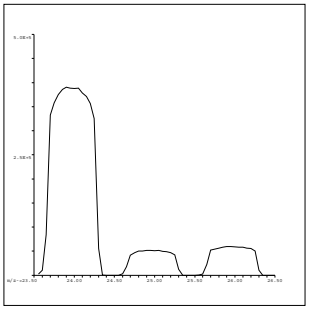
Element	Actual	Required	Flag



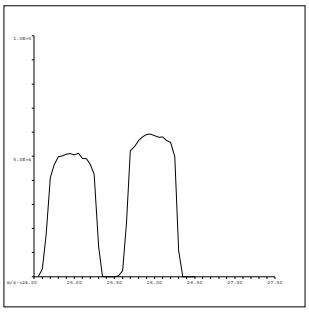
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



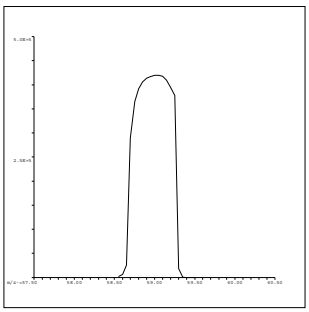
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



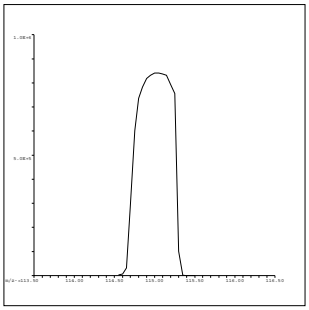
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



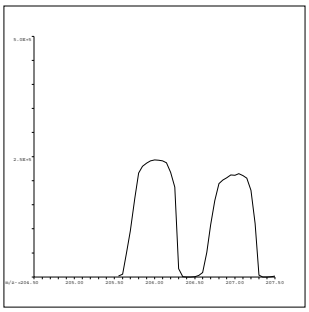
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



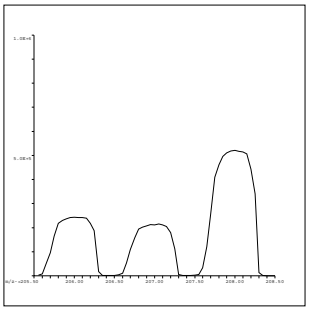
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



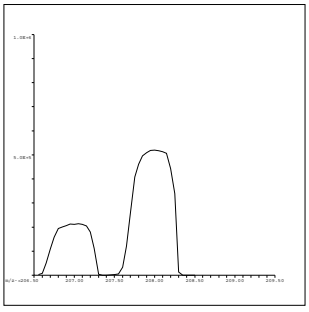
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.05
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 19 Dec 2017 11:23:55 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	92961.80	0.00	
24 Mg	265522.00	0.00	
25 Mg	35031.40	0.00	
26 Mg	41235.30	0.00	
59 Co	383642.00	0.00	
115 In	673609.00	0.00	
206 Pb	196601.00	0.00	
207 Pb	170749.00	0.00	
208 Pb	417665.00	0.00	

RSD (%)

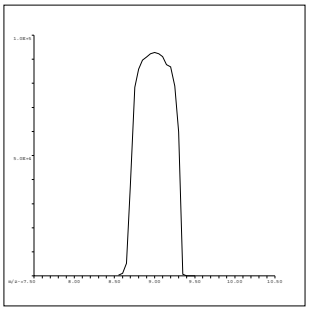
Element	Actual	Required	Flag
9 Be	1.37	5.00	
24 Mg	2.23	5.00	
25 Mg	1.65	5.00	
26 Mg	2.49	5.00	
59 Co	0.70	5.00	
115 In	0.16	5.00	
206 Pb	0.54	5.00	
207 Pb	0.50	5.00	
208 Pb	0.72	5.00	

Ion Ratio

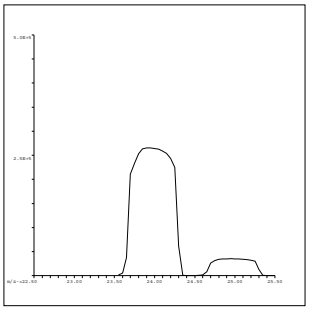
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

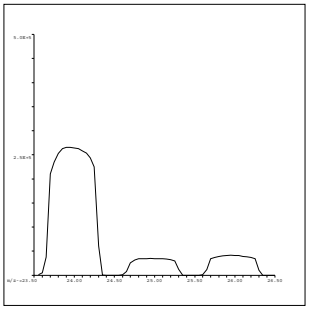
Element	Actual	Required	Flag



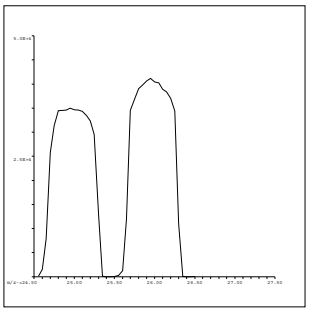
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



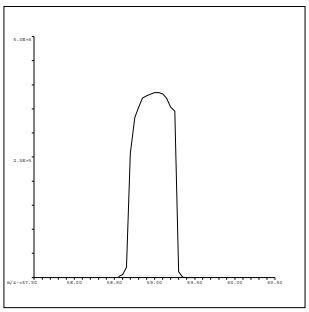
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



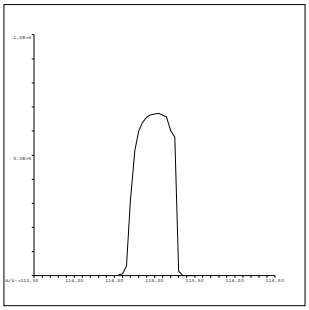
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



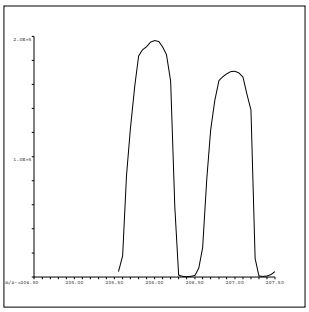
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



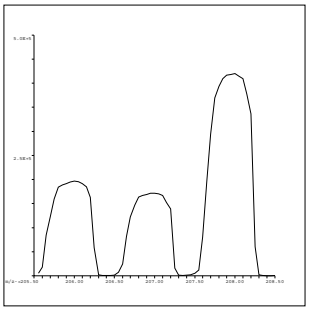
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



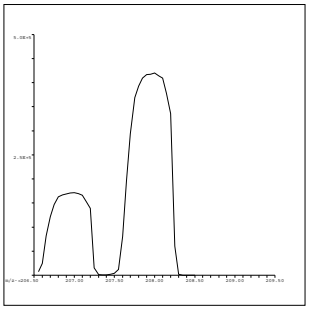
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 171216A

Instrument ID: ICPMS-02

Analyte	Data File	A1216002.D	A1216003.D	A1216004.D	A1216005.D	A1216006.D	A1216007.D	A1216008.D	A1216009.D	A1216010.D	
	Acq. Date-Time	12/16/2017 11:52 AM	12/16/2017 11:58 AM	12/16/2017 12:03 PM	12/16/2017 12:09 PM	12/16/2017 12:15 PM	12/16/2017 12:20 PM	12/16/2017 12:26 PM	12/16/2017 12:31 PM	12/16/2017 12:38 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	56760.6		61134.9	63363.4	63996.8	64339.3	66015.8	65952.3	67440.5	
55 Mn [2]	CPS	69.6		1520.5	13619.9	27345	54535.6	110487	269338.3	541129	0.9999
52 Cr [2]	CPS	165.4		2780.2	26441.5	52614.6	106702.6	213312.8	526818.2	1051424.9	0.9999
72 Ge (ISTD) [1]	CPS	46562.7		49459	50322.7	50976	49323	49929.3	49116	50092	
78 Se [1]	CPS	0		115.6	1090.1	2223.6	4533	9144.1	22190.2	44856.1	1.0000
72 Ge (ISTD) [2]	CPS	40150.2	43448.6	43385.2	44451.5	44957.1	44622.9	45726.9	45460.8	46062.5	
75 As [2]	CPS	11.6	63.1	283.6	2706.9	5474.7	10893.5	21959.7	54138.4	108292.5	1.0000
103 Rh (ISTD) [2]	CPS	1341995.8		1470745.7	1493548	1514129.1	1515157.9	1528551.2	1506260.5	1498170.5	
95 Mo [2]	CPS	53.3		1700.2	16937.3	34305.3	68773.2	138865	344936.2	692370.9	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 171219A

Instrument ID: ICPMS-02

Analyte	Data File	A1219002.D	A1219003.D	A1219004.D	A1219005.D	A1219006.D	A1219007.D	A1219008.D	A1219009.D	A1219010.D	
	Acq. Date-Time	12/19/2017 11:42 AM	12/19/2017 11:48 AM	12/19/2017 11:53 AM	12/19/2017 11:59 AM	12/19/2017 12:05 PM	12/19/2017 12:10 PM	12/19/2017 12:16 PM	12/19/2017 12:21 PM	12/19/2017 12:27 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	59462.6		59631.9	59907.7	59801.3	61105.3	60956.8	61988.3	62035.3	
55 Mn [2]	CPS	140.2		1570.3	12514.2	25483	51319.4	100936.6	251449.4	496246.9	1.0000
72 Ge (ISTD) [1]	CPS	50646.1		50406.2	51001.7	50596.8	50445.4	51376.1	51917.7	51124.1	
78 Se [1]	CPS	1.1		95.6	1049	2002.4	3996.2	8575.9	20959.7	41326.9	1.0000
72 Ge (ISTD) [2]	CPS	39877.4	39333.8	39715.8	39610.1	40161.4	40095.7	39731.4	40037.8	40097.8	
75 As [2]	CPS	25.8	74.2	278.7	2521.1	4997.7	10042.7	19741.3	49703.7	98525.4	1.0000
103 Rh (ISTD) [2]	CPS	1337447.5		1332810.8	1327343	1342310.9	1332371.2	1338883.9	1333989.1	1311763	
95 Mo [2]	CPS	82.2		1623.5	15195.5	30413	61392.7	122074.8	305948.8	610244.8	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.088	0.10	10.00	0	101	90	110				
Manganese	99.262	0.50	100.0	0	99.3	90	110				
Molybdenum	10.284	0.50	10.00	0	103	90	110				
Selenium	10.503	0.50	10.00	0	105	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ZZZZZZ**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870942**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.115	0.10	0.1000	0	115	80	120				
Manganese	0.501	0.50	0.5000	0	100	80	120				
Molybdenum	0.546	0.50	0.5000	0	109	80	120				
Selenium	0.547	0.50	0.5000	0	109	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.641	0.10	20.00	0	103	90	110				
Manganese	20.286	0.50	20.00	0	101	90	110				
Molybdenum	20.006	0.50	20.00	0	100	90	110				
Selenium	19.583	0.50	20.00	0	97.9	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.442	0.10	20.00	0	102	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.647	0.50	20.00	0	103	90	110				
Molybdenum	19.824	0.50	20.00	0	99.1	90	110				
Selenium	20.879	0.50	20.00	0	104	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870980**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.343	0.10	20.00	0	102	90	110				
Manganese	21.534	0.50	20.00	0	108	90	110				
Molybdenum	19.559	0.50	20.00	0	97.8	90	110				
Selenium	21.562	0.50	20.00	0	108	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ZZZZZZ**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870994**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.106	0.10	0.1000	0	106	70	130				
Manganese	0.566	0.50	0.5000	0	113	70	130				
Molybdenum	0.396	0.50	0.5000	0	79.3	70	130				
Selenium	0.378	0.50	0.5000	0	75.6	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICV**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.853	0.10	10.00	0	98.5	90	110				
Manganese	100.779	0.50	100.0	0	101	90	110				
Molybdenum	10.512	0.50	10.00	0	105	90	110				
Selenium	9.533	0.50	10.00	0	95.3	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ZZZZZZ**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872287**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.476	0.50	0.5000	0	95.2	80	120				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ZZZZZZ**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872290**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.080	0.10	0.1000	0	80.0	80	120				S
Manganese	0.548	0.50	0.5000	0	110	80	120				
Molybdenum	0.561	0.50	0.5000	0	112	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **CCV**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.014	0.10	20.00	0	100	90	110				
Manganese	20.685	0.50	20.00	0	103	90	110				
Molybdenum	19.851	0.50	20.00	0	99.3	90	110				
Selenium	19.801	0.50	20.00	0	99.0	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

12/21/2017

As on LLICV is biased low however, ICV and CCVs passed QC criteria. Arsenic on samples analyzed on this run is > than the LLICV concentration.

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **CCV**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872312**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.538	0.10	20.00	0	97.7	90	110				
Manganese	21.038	0.50	20.00	0	105	90	110				
Molybdenum	19.578	0.50	20.00	0	97.9	90	110				
Selenium	21.029	0.50	20.00	0	105	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ZZZZZZ**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.091	0.10	0.1000	0	90.7	70	130				
Manganese	0.560	0.50	0.5000	0	112	70	130				
Molybdenum	0.505	0.50	0.5000	0	101	70	130				
Selenium	0.648	0.50	0.5000	0	130	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870883**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.342	1.0	10.00	0	103	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ZZZZZZ**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870885**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.042	1.0	1.000	0	104	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870899**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.469	1.0	20.00	0	102	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.759	1.0	20.00	0	104	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.821	1.0	20.00	0	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.495	1.0	20.00	0	102	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ZZZZZZ**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870937**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.855	1.0	1.000	0	85.5	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870941**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.129	0.50									
Selenium	0.030	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.085	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.096	0.50									
Selenium	0.071	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.174	0.50									
Molybdenum	0.078	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICB**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872286**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.163	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **CCB**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.061	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **CCB**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.064	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870900**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0						0	0	0	

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.138	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870936**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.019	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICSA**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870943**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.075	0.50									
Selenium	0.030	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICSAB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870944**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.358	0.10	20.00	0	102	80	120				
Manganese	18.583	0.50	20.00	0	92.9	80	120				
Molybdenum	22.132	0.50	20.00	0	111	80	120				
Selenium	18.451	0.50	20.00	0	92.3	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICSA**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.048	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICSAB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870996**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.701	0.10	20.00	0	98.5	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICSAB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870996**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	18.644	0.50	20.00	0	93.2	80	120				
Molybdenum	22.689	0.50	20.00	0	113	80	120				
Selenium	19.988	0.50	20.00	0	99.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICSA**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872288**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.071	0.50									
Selenium	0.042	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICSAB**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872289**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.808	0.10	20.00	0	99.0	80	120				
Manganese	18.249	0.50	20.00	0	91.2	80	120				
Molybdenum	22.426	0.50	20.00	0	112	80	120				
Selenium	18.534	0.50	20.00	0	92.7	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICSA**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICSAB**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.712	0.10	20.00	0	98.6	80	120				
Manganese	18.549	0.50	20.00	0	92.7	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICSAB**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	21.889	0.50	20.00	0	109	80	120				
Selenium	19.253	0.50	20.00	0	96.3	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICSA**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.091	1.0									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICSAB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870887**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.634	1.0	20.00	0	103	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICSA**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870938**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.093	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICSAB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870939**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.534	1.0	20.00	0	97.7	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	56760.6	56760.6	100	PASS	70-125	40150.2	40150.2	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	61176.1	56760.6	107.78	PASS	70-125	43448.6	40150.2	108.22	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	61134.9	56760.6	107.71	PASS	70-125	43385.2	40150.2	108.06	PASS	70-125
Std3-5/50 ppb	ICAL	1	63363.4	56760.6	111.63	PASS	70-125	44451.5	40150.2	110.71	PASS	70-125
Std4-10/100 ppb	ICAL	1	63996.8	56760.6	112.75	PASS	70-125	44957.1	40150.2	111.97	PASS	70-125
Std5-20/200 ppb	ICAL	1	64339.3	56760.6	113.35	PASS	70-125	44622.9	40150.2	111.14	PASS	70-125
Std6-40/400 ppb	ICAL	1	66015.8	56760.6	116.31	PASS	70-125	45726.9	40150.2	113.89	PASS	70-125
Std7-100/1000 ppb	ICAL	1	65952.3	56760.6	116.19	PASS	70-125	45460.8	40150.2	113.23	PASS	70-125
Std8-200/2000 ppb	ICAL	1	67440.5	56760.6	118.82	PASS	70-125	46062.5	40150.2	114.73	PASS	70-125
ICV	ICV	1	66524.4	56760.6	117.2	PASS	70-125	47110.9	40150.2	117.34	PASS	70-125
ICB	ICB	1	64749.9	56760.6	114.08	PASS	70-125	45646.8	40150.2	113.69	PASS	70-125
LLICV	CCV1	1	67006.4	56760.6	118.05	PASS	70-125	47194.5	40150.2	117.54	PASS	70-125
ICSA1	ICSA	1	57972.6	56760.6	102.14	PASS	70-125	39203.4	40150.2	97.64	PASS	70-125
ICSAB1	ICSAB	1	66045.8	56760.6	116.36	PASS	70-125	44241.9	40150.2	110.19	PASS	70-125
LLICV	CCV1	1	68420.1	56760.6	120.54	PASS	70-125	47905.5	40150.2	119.32	PASS	70-125
MB-65979	MBLK	1	58629.2	56760.6	103.29	PASS	70-125	41665	40150.2	103.77	PASS	70-125
LCS-65979	LCS	1	63380.2	56760.6	111.66	PASS	70-125	44724.4	40150.2	111.39	PASS	70-125
N027405-001C	SAMP	1	48114.8	56760.6	84.77	PASS	70-125	31770.7	40150.2	79.13	PASS	70-125
N027405-001C	SAMP	5	54662.5	56760.6	96.3	PASS	70-125	38032.9	40150.2	94.73	PASS	70-125
N027405-001C	SAMP	25	57412.9	56760.6	101.15	PASS	70-125	40576.7	40150.2	101.06	PASS	70-125
N027405-001C-PS	PS	1	50124.1	56760.6	88.31	PASS	70-125	32941.8	40150.2	82.046	PASS	70-125
N027405-001C-PS	PS	5	58272.7	56760.6	102.66	PASS	70-125	39658.8	40150.2	98.78	PASS	70-125
N027405-001C-MS	MS	1	55117.5	56760.6	97.11	PASS	70-125	35332.4	40150.2	88.001	PASS	70-125
N027405-001C-MS	MS	5	60627.8	56760.6	106.81	PASS	70-125	40662.7	40150.2	101.28	PASS	70-125
N027405-001C-MSD	MSD	1	57647.1	56760.6	101.56	PASS	70-125	36920.5	40150.2	91.96	PASS	70-125
CCV1	CCV	1	70225	56760.6	123.72	PASS	70-125	47897.8	40150.2	119.3	PASS	70-125
CCB1	CCB	1	61090.7	56760.6	107.63	PASS	70-125	42434.7	40150.2	105.69	PASS	70-125
N027405-001C-MSD	MSD	5	58167.7	56760.6	102.48	PASS	70-125	39489.7	40150.2	98.35	PASS	70-125
N027405-002C	SAMP	1	54506.8	56760.6	96.029	PASS	70-125	33730.1	40150.2	84.01	PASS	70-125
N027405-002C	SAMP	5	63837.2	56760.6	112.47	PASS	70-125	41478	40150.2	103.31	PASS	70-125
N027405-003C	SAMP	1	58410.9	56760.6	102.91	PASS	70-125	36367.9	40150.2	90.58	PASS	70-125
N027405-003C	SAMP	5	64480	56760.6	113.6	PASS	70-125	42809.1	40150.2	106.62	PASS	70-125
N027405-004B	SAMP	1	67548.5	56760.6	119.01	PASS	70-125	45033.9	40150.2	112.16	PASS	70-125
N027405-004B	SAMP	5	64773	56760.6	114.12	PASS	70-125	44331.9	40150.2	110.42	PASS	70-125
N027405-006B	SAMP	1	50294.5	56760.6	88.61	PASS	70-125	30027.3	40150.2	74.79	PASS	70-125
N027405-006B	SAMP	5	60454.5	56760.6	106.51	PASS	70-125	38936.1	40150.2	96.98	PASS	70-125
N027405-007B	SAMP	1	50714.7	56760.6	89.35	PASS	70-125	29775.7	40150.2	74.16	PASS	70-125
CCV2	CCV	1	68215.5	56760.6	120.18	PASS	70-125	46921.4	40150.2	116.86	PASS	70-125
CCB2	CCB	1	61989.3	56760.6	109.21	PASS	70-125	43116.8	40150.2	107.39	PASS	70-125
N027405-007B	SAMP	5	57568.9	56760.6	101.42	PASS	70-125	37144.3	40150.2	92.51	PASS	70-125
N027405-008B	SAMP	1	50089.5	56760.6	88.25	PASS	70-125	29981.7	40150.2	74.67	PASS	70-125

INTERNAL STANDARD: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027405-008B	SAMP	5	58384.1	56760.6	102.86	PASS	70-125	37571.8	40150.2	93.58	PASS	70-125
N027405-009B	SAMP	1	54110.6	56760.6	95.33	PASS	70-125	34400.4	40150.2	85.68	PASS	70-125
N027405-009B	SAMP	5	58662.9	56760.6	103.35	PASS	70-125	38961.7	40150.2	97.04	PASS	70-125
N027405-011B	SAMP	1	48236.2	56760.6	84.98	PASS	70-125	28571.4	40150.2	71.16	PASS	70-125
N027405-011B	SAMP	5	53261.7	56760.6	93.84	PASS	70-125	34111.9	40150.2	84.96	PASS	70-125
N027405-012B	SAMP	1	48830.2	56760.6	86.028	PASS	70-125	29441.8	40150.2	73.33	PASS	70-125
N027405-012B	SAMP	5	48982.8	56760.6	86.3	PASS	70-125	32745.9	40150.2	81.56	PASS	70-125
N027405-013B	SAMP	1	43655.9	56760.6	76.91	PASS	70-125	25843.4	40150.2	64.37	NR!	70-125
CCV3	CCV	1	52290.4	56760.6	92.12	PASS	70-125	36773.3	40150.2	91.59	PASS	70-125
CCB3	CCB	1	49842.1	56760.6	87.81	PASS	70-125	34914.8	40150.2	86.96	PASS	70-125
N027405-013B	SAMP	5	47783.9	56760.6	84.18	PASS	70-125	31031.3	40150.2	77.29	PASS	70-125
N027405-014B	SAMP	1	52157.1	56760.6	91.89	PASS	70-125	34421.4	40150.2	85.73	PASS	70-125
N027405-014B	SAMP	5	52257.2	56760.6	92.066	PASS	70-125	36078.5	40150.2	89.86	PASS	70-125
N027431-001B	SAMP	1	49133.3	56760.6	86.56	PASS	70-125	31912	40150.2	79.48	PASS	70-125
N027431-001B	SAMP	5	51576.2	56760.6	90.87	PASS	70-125	35059.6	40150.2	87.32	PASS	70-125
N027431-002B	SAMP	1	43744	56760.6	77.068	PASS	70-125	27012	40150.2	67.28	NR!	70-125
N027431-002B	SAMP	5	47479.7	56760.6	83.65	PASS	70-125	31020.3	40150.2	77.26	PASS	70-125
N027431-003B	SAMP	1	37812.7	56760.6	66.62	NR!	70-125	22241.4	40150.2	55.4	NR!	70-125
N027431-003B	SAMP	5	42452.8	56760.6	74.79	PASS	70-125	27363.7	40150.2	68.15	NR!	70-125
N027431-004B	SAMP	1	36996.4	56760.6	65.18	NR!	70-125	21271.1	40150.2	52.98	NR!	70-125
CCV4	CCV	1	46254	56760.6	81.49	PASS	70-125	32231.5	40150.2	80.28	PASS	70-125
CCB4	CCB	1	42827.1	56760.6	75.45	PASS	70-125	30510.3	40150.2	75.99	PASS	70-125
LLCCV1	CCV2	1	59699.9	56760.6	105.18	PASS	70-125	40228.3	40150.2	100.19	PASS	70-125
ICSA2	ICSA	1	62827	56760.6	110.69	PASS	70-125	40977.7	40150.2	102.06	PASS	70-125
ICSAB2	ICSAB	1	45994.4	56760.6	81.032	PASS	70-125	29723.3	40150.2	74.03	PASS	70-125

INTERNAL STANDARD: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	46562.7	46562.7	100	PASS	70-125	1341995.8	1341995.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	50038.6	46562.7	107.46	PASS	70-125	1438897.6	1341995.8	107.22	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	49459	46562.7	106.22	PASS	70-125	1470745.7	1341995.8	109.59	PASS	70-125
Std3-5/50 ppb	ICAL	1	50322.7	46562.7	108.08	PASS	70-125	1493548	1341995.8	111.29	PASS	70-125
Std4-10/100 ppb	ICAL	1	50976	46562.7	109.48	PASS	70-125	1514129.1	1341995.8	112.83	PASS	70-125
Std5-20/200 ppb	ICAL	1	49323	46562.7	105.93	PASS	70-125	1515157.9	1341995.8	112.9	PASS	70-125
Std6-40/400 ppb	ICAL	1	49929.3	46562.7	107.23	PASS	70-125	1528551.2	1341995.8	113.9	PASS	70-125
Std7-100/1000 ppb	ICAL	1	49116	46562.7	105.48	PASS	70-125	1506260.5	1341995.8	112.24	PASS	70-125
Std8-200/2000 ppb	ICAL	1	50092	46562.7	107.58	PASS	70-125	1498170.5	1341995.8	111.64	PASS	70-125
ICV	ICV	1	50250.5	46562.7	107.92	PASS	70-125	1570216.3	1341995.8	117.01	PASS	70-125
ICB	ICB	1	49938.3	46562.7	107.25	PASS	70-125	1555141.5	1341995.8	115.88	PASS	70-125
LLICV	CCV1	1	50712.8	46562.7	108.91	PASS	70-125	1603761.4	1341995.8	119.51	PASS	70-125
ICSA1	ICSA	1	41790	46562.7	89.75	PASS	70-125	1250719	1341995.8	93.2	PASS	70-125
ICSAB1	ICSAB	1	47903.4	46562.7	102.88	PASS	70-125	1394623.4	1341995.8	103.92	PASS	70-125
LLICV	CCV1	1	52923.3	46562.7	113.66	PASS	70-125	1616916.2	1341995.8	120.49	PASS	70-125
MB-65979	MBLK	1	46676.6	46562.7	100.24	PASS	70-125	1412258.9	1341995.8	105.24	PASS	70-125
LCS-65979	LCS	1	49889.2	46562.7	107.14	PASS	70-125	1518023.1	1341995.8	113.12	PASS	70-125
N027405-001C	SAMP	1	36152	46562.7	77.64	PASS	70-125	955964.3	1341995.8	71.23	PASS	70-125
N027405-001C	SAMP	5	42526.1	46562.7	91.33	PASS	70-125	1187178	1341995.8	88.46	PASS	70-125
N027405-001C	SAMP	25	46255.3	46562.7	99.34	PASS	70-125	1312230.3	1341995.8	97.78	PASS	70-125
N027405-001C-PS	PS	1	36157.6	46562.7	77.65	PASS	70-125	979635.9	1341995.8	73	PASS	70-125
N027405-001C-PS	PS	5	44146.1	46562.7	94.81	PASS	70-125	1224258.4	1341995.8	91.23	PASS	70-125
N027405-001C-MS	MS	1	39381.7	46562.7	84.58	PASS	70-125	1033405.9	1341995.8	77.005	PASS	70-125
N027405-001C-MS	MS	5	45577.6	46562.7	97.88	PASS	70-125	1273632.2	1341995.8	94.91	PASS	70-125
N027405-001C-MSD	MSD	1	40478.6	46562.7	86.93	PASS	70-125	1067174.4	1341995.8	79.52	PASS	70-125
CCV1	CCV	1	54460.5	46562.7	116.96	PASS	70-125	1562877.7	1341995.8	116.46	PASS	70-125
CCB1	CCB	1	48152.8	46562.7	103.41	PASS	70-125	1419998.5	1341995.8	105.81	PASS	70-125
N027405-001C-MSD	MSD	5	43108.7	46562.7	92.58	PASS	70-125	1224436.2	1341995.8	91.24	PASS	70-125
N027405-002C	SAMP	1	36674.2	46562.7	78.76	PASS	70-125	982408.2	1341995.8	73.21	PASS	70-125
N027405-002C	SAMP	5	46107	46562.7	99.021	PASS	70-125	1287433.4	1341995.8	95.93	PASS	70-125
N027405-003C	SAMP	1	39375.1	46562.7	84.56	PASS	70-125	1033506.6	1341995.8	77.013	PASS	70-125
N027405-003C	SAMP	5	47681.6	46562.7	102.4	PASS	70-125	1301507.4	1341995.8	96.98	PASS	70-125
N027405-004B	SAMP	1	49642.9	46562.7	106.62	PASS	70-125	1364982.8	1341995.8	101.71	PASS	70-125
N027405-004B	SAMP	5	50063.1	46562.7	107.52	PASS	70-125	1410214.9	1341995.8	105.08	PASS	70-125
N027405-006B	SAMP	1	31953.4	46562.7	68.62	NR!	70-125	832715.7	1341995.8	62.051	NR!	70-125
N027405-006B	SAMP	5	43053.2	46562.7	92.46	PASS	70-125	1181974.6	1341995.8	88.076	PASS	70-125
N027405-007B	SAMP	1	31770.6	46562.7	68.23	NR!	70-125	829505.8	1341995.8	61.81	NR!	70-125
CCV2	CCV	1	52518.6	46562.7	112.79	PASS	70-125	1555707.3	1341995.8	115.92	PASS	70-125
CCB2	CCB	1	48855	46562.7	104.92	PASS	70-125	1435821.9	1341995.8	106.99	PASS	70-125
N027405-007B	SAMP	5	40939.9	46562.7	87.92	PASS	70-125	1100743.7	1341995.8	82.023	PASS	70-125
N027405-008B	SAMP	1	31608	46562.7	67.88	NR!	70-125	831807.8	1341995.8	61.98	NR!	70-125

INTERNAL STANDARD: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027405-008B	SAMP	5	41568.3	46562.7	89.27	PASS	70-125	1123239.4	1341995.8	83.7	PASS	70-125
N027405-009B	SAMP	1	37726.7	46562.7	81.023	PASS	70-125	997840.5	1341995.8	74.35	PASS	70-125
N027405-009B	SAMP	5	43443	46562.7	93.3	PASS	70-125	1212655.9	1341995.8	90.36	PASS	70-125
N027405-011B	SAMP	1	30936.8	46562.7	66.44	NR!	70-125	822765.7	1341995.8	61.31	NR!	70-125
N027405-011B	SAMP	5	38039.6	46562.7	81.7	PASS	70-125	1054323.4	1341995.8	78.56	PASS	70-125
N027405-012B	SAMP	1	33023.1	46562.7	70.92	PASS	70-125	871594.7	1341995.8	64.95	NR!	70-125
N027405-012B	SAMP	5	35987.1	46562.7	77.29	PASS	70-125	1008104.4	1341995.8	75.12	PASS	70-125
N027405-013B	SAMP	1	27794.4	46562.7	59.69	NR!	70-125	767447.1	1341995.8	57.19	NR!	70-125
CCV3	CCV	1	40717.1	46562.7	87.45	PASS	70-125	1258175.3	1341995.8	93.75	PASS	70-125
CCB3	CCB	1	38966.3	46562.7	83.69	PASS	70-125	1201878	1341995.8	89.56	PASS	70-125
N027405-013B	SAMP	5	34620.8	46562.7	74.35	PASS	70-125	957323.2	1341995.8	71.34	PASS	70-125
N027405-014B	SAMP	1	37388	46562.7	80.3	PASS	70-125	1075314.6	1341995.8	80.13	PASS	70-125
N027405-014B	SAMP	5	40221.4	46562.7	86.38	PASS	70-125	1187981.9	1341995.8	88.52	PASS	70-125
N027431-001B	SAMP	1	35914.8	46562.7	77.13	PASS	70-125	986601.2	1341995.8	73.52	PASS	70-125
N027431-001B	SAMP	5	39215.8	46562.7	84.22	PASS	70-125	1101973.6	1341995.8	82.11	PASS	70-125
N027431-002B	SAMP	1	29366.1	46562.7	63.068	NR!	70-125	802237.9	1341995.8	59.78	NR!	70-125
N027431-002B	SAMP	5	34972.7	46562.7	75.11	PASS	70-125	982179.2	1341995.8	73.19	PASS	70-125
N027431-003B	SAMP	1	23505.4	46562.7	50.48	NR!	70-125	645931.7	1341995.8	48.13	NR!	70-125
N027431-003B	SAMP	5	30885.5	46562.7	66.33	NR!	70-125	860292.4	1341995.8	64.11	NR!	70-125
N027431-004B	SAMP	1	22866.7	46562.7	49.11	NR!	70-125	640043.5	1341995.8	47.69	NR!	70-125
CCV4	CCV	1	35718.7	46562.7	76.71	PASS	70-125	1117603.5	1341995.8	83.28	PASS	70-125
CCB4	CCB	1	34839.1	46562.7	74.82	PASS	70-125	1041973.2	1341995.8	77.64	PASS	70-125
LLCCV1	CCV2	1	48381.4	46562.7	103.91	PASS	70-125	1302629	1341995.8	97.067	PASS	70-125
ICSA2	ICSA	1	51421.8	46562.7	110.44	PASS	70-125	1208457.8	1341995.8	90.049	PASS	70-125
ICSAB2	ICSAB	1	33660	46562.7	72.29	PASS	70-125	963971.6	1341995.8	71.83	PASS	70-125

INTERNAL STANDARD: 171219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	59462.6	59462.6	100	PASS	70-125	39877.4	39877.4	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	59538.2	59462.6	100.13	PASS	70-125	39333.8	39877.4	98.64	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	59631.9	59462.6	100.28	PASS	70-125	39715.8	39877.4	99.59	PASS	70-125
Std3-5/50 ppb	ICAL	1	59907.7	59462.6	100.75	PASS	70-125	39610.1	39877.4	99.33	PASS	70-125
Std4-10/100 ppb	ICAL	1	59801.3	59462.6	100.57	PASS	70-125	40161.4	39877.4	100.71	PASS	70-125
Std5-20/200 ppb	ICAL	1	61105.3	59462.6	102.76	PASS	70-125	40095.7	39877.4	100.55	PASS	70-125
Std6-40/400 ppb	ICAL	1	60956.8	59462.6	102.51	PASS	70-125	39731.4	39877.4	99.63	PASS	70-125
Std7-100/1000 ppb	ICAL	1	61988.3	59462.6	104.25	PASS	70-125	40037.8	39877.4	100.4	PASS	70-125
Std8-200/2000 ppb	ICAL	1	62035.3	59462.6	104.33	PASS	70-125	40097.8	39877.4	100.55	PASS	70-125
ICV	ICV	1	74138.7	59462.6	124.68	PASS	70-125	49226.1	39877.4	123.44	PASS	70-125
ICB	ICB	1	63007.7	59462.6	105.96	PASS	70-125	42029.4	39877.4	105.4	PASS	70-125
LLICV	CCV1	1	64905	59462.6	109.15	PASS	70-125	43650.3	39877.4	109.46	PASS	70-125
ICSA1	ICSA	1	72099.7	59462.6	121.25	PASS	70-125	45899.8	39877.4	115.1	PASS	70-125
ICSAB1	ICSAB	1	67656	59462.6	113.78	PASS	70-125	43731.6	39877.4	109.67	PASS	70-125
LLICV	CCV1	1	72115.5	59462.6	121.28	PASS	70-125	48508.5	39877.4	121.64	PASS	70-125
N027405-011B	SAMP	10	66222.1	59462.6	111.37	PASS	70-125	43028.7	39877.4	107.9	PASS	70-125
N027405-013B	SAMP	5	69385.1	59462.6	116.69	PASS	70-125	44408.1	39877.4	111.36	PASS	70-125
N027405-014B	SAMP	1	62358.7	59462.6	104.87	PASS	70-125	40872.1	39877.4	102.49	PASS	70-125
N027431-001B	SAMP	1	60612	59462.6	101.93	PASS	70-125	39859.6	39877.4	99.96	PASS	70-125
N027431-002B	SAMP	5	68850.6	59462.6	115.79	PASS	70-125	44945	39877.4	112.71	PASS	70-125
N027431-003B	SAMP	5	65602.2	59462.6	110.33	PASS	70-125	42368.1	39877.4	106.25	PASS	70-125
N027431-003B	SAMP	25	68206.9	59462.6	114.71	PASS	70-125	45657.8	39877.4	114.5	PASS	70-125
N027431-004B	SAMP	5	66176.6	59462.6	111.29	PASS	70-125	42492.9	39877.4	106.56	PASS	70-125
N027431-004B	SAMP	25	69423.2	59462.6	116.75	PASS	70-125	45507.6	39877.4	114.12	PASS	70-125
CCV1	CCV	1	68605	59462.6	115.38	PASS	70-125	45982.1	39877.4	115.31	PASS	70-125
CCB1	CCB	1	64893.6	59462.6	109.13	PASS	70-125	45325	39877.4	113.66	PASS	70-125
N027431-005B	SAMP	1	64355.9	59462.6	108.23	PASS	70-125	42493.9	39877.4	106.56	PASS	70-125
N027431-005B	SAMP	5	70996.1	59462.6	119.4	PASS	70-125	47846.3	39877.4	119.98	PASS	70-125
N027431-005B	SAMP	25	66345.1	59462.6	111.57	PASS	70-125	46423.5	39877.4	116.42	PASS	70-125
N027431-006B	SAMP	1	62635.1	59462.6	105.34	PASS	70-125	38515	39877.4	96.58	PASS	70-125
N027431-006B	SAMP	5	72986	59462.6	122.74	PASS	70-125	47497.7	39877.4	119.11	PASS	70-125
N027431-006B	SAMP	25	72820.7	59462.6	122.46	PASS	70-125	48267.8	39877.4	121.04	PASS	70-125
N027431-004B	SAMP	1	68125.5	59462.6	114.57	PASS	70-125	38874.9	39877.4	97.49	PASS	70-125
N027431-003B	SAMP	1	71322.1	59462.6	119.94	PASS	70-125	40799.4	39877.4	102.31	PASS	70-125
N027431-002B	SAMP	1	56715.4	59462.6	95.38	PASS	70-125	34973.9	39877.4	87.7	PASS	70-125
CCV2	CCV	1	66920.8	59462.6	112.54	PASS	70-125	45963.3	39877.4	115.26	PASS	70-125
CCB2	CCB	1	59914.4	59462.6	100.76	PASS	70-125	40731.6	39877.4	102.14	PASS	70-125
LLCCV1	CCV2	1	60256.5	59462.6	101.34	PASS	70-125	42365.8	39877.4	106.24	PASS	70-125
ICSA2	ICSA	1	57422	59462.6	96.57	PASS	70-125	39060.9	39877.4	97.95	PASS	70-125
ICSAB2	ICSAB	1	71420.3	59462.6	120.11	PASS	70-125	47148.8	39877.4	118.23	PASS	70-125

INTERNAL STANDARD: 171219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	50646.1	50646.1	100	PASS	70-125	1337447.5	1337447.5	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	50096.7	50646.1	98.92	PASS	70-125	1337148.9	1337447.5	99.98	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	50406.2	50646.1	99.53	PASS	70-125	1332810.8	1337447.5	99.65	PASS	70-125
Std3-5/50 ppb	ICAL	1	51001.7	50646.1	100.7	PASS	70-125	1327343	1337447.5	99.24	PASS	70-125
Std4-10/100 ppb	ICAL	1	50596.8	50646.1	99.9	PASS	70-125	1342310.9	1337447.5	100.36	PASS	70-125
Std5-20/200 ppb	ICAL	1	50445.4	50646.1	99.6	PASS	70-125	1332371.2	1337447.5	99.62	PASS	70-125
Std6-40/400 ppb	ICAL	1	51376.1	50646.1	101.44	PASS	70-125	1338883.9	1337447.5	100.11	PASS	70-125
Std7-100/1000 ppb	ICAL	1	51917.7	50646.1	102.51	PASS	70-125	1333989.1	1337447.5	99.74	PASS	70-125
Std8-200/2000 ppb	ICAL	1	51124.1	50646.1	100.94	PASS	70-125	1311763	1337447.5	98.08	PASS	70-125
ICV	ICV	1	62693.5	50646.1	123.79	PASS	70-125	1631263.7	1337447.5	121.97	PASS	70-125
ICB	ICB	1	54274.5	50646.1	107.16	PASS	70-125	1403011.3	1337447.5	104.9	PASS	70-125
LLICV	CCV1	1	56021.2	50646.1	110.61	PASS	70-125	1454004	1337447.5	108.71	PASS	70-125
ICSA1	ICSA	1	57642.6	50646.1	113.81	PASS	70-125	1388533.5	1337447.5	103.82	PASS	70-125
ICSAB1	ICSAB	1	53311.2	50646.1	105.26	PASS	70-125	1321126.6	1337447.5	98.78	PASS	70-125
LLICV	CCV1	1	63884.4	50646.1	126.14	NR!	70-125	1533848.6	1337447.5	114.68	PASS	70-125
N027405-011B	SAMP	10	53797.1	50646.1	106.22	PASS	70-125	1299585.3	1337447.5	97.17	PASS	70-125
N027405-013B	SAMP	5	57472.8	50646.1	113.48	PASS	70-125	1324110.6	1337447.5	99.003	PASS	70-125
N027405-014B	SAMP	1	49900.6	50646.1	98.53	PASS	70-125	1238929.7	1337447.5	92.63	PASS	70-125
N027431-001B	SAMP	1	48634.4	50646.1	96.028	PASS	70-125	1178494.8	1337447.5	88.12	PASS	70-125
N027431-002B	SAMP	5	57626.7	50646.1	113.78	PASS	70-125	1299520.5	1337447.5	97.16	PASS	70-125
N027431-003B	SAMP	5	53301.1	50646.1	105.24	PASS	70-125	1223625.6	1337447.5	91.49	PASS	70-125
N027431-003B	SAMP	25	57451.9	50646.1	113.44	PASS	70-125	1357299.4	1337447.5	101.48	PASS	70-125
N027431-004B	SAMP	5	53084.7	50646.1	104.81	PASS	70-125	1236099.7	1337447.5	92.42	PASS	70-125
N027431-004B	SAMP	25	57526.8	50646.1	113.59	PASS	70-125	1373039.9	1337447.5	102.66	PASS	70-125
CCV1	CCV	1	58603.8	50646.1	115.71	PASS	70-125	1475194.2	1337447.5	110.3	PASS	70-125
CCB1	CCB	1	57336	50646.1	113.21	PASS	70-125	1438095.6	1337447.5	107.53	PASS	70-125
N027431-005B	SAMP	1	53888.7	50646.1	106.4	PASS	70-125	1240752.6	1337447.5	92.77	PASS	70-125
N027431-005B	SAMP	5	61189.7	50646.1	120.82	PASS	70-125	1448384	1337447.5	108.29	PASS	70-125
N027431-005B	SAMP	25	58492.1	50646.1	115.49	PASS	70-125	1427883.7	1337447.5	106.76	PASS	70-125
N027431-006B	SAMP	1	45818.4	50646.1	90.47	PASS	70-125	1102538.3	1337447.5	82.44	PASS	70-125
N027431-006B	SAMP	5	58634.8	50646.1	115.77	PASS	70-125	1404611.6	1337447.5	105.02	PASS	70-125
N027431-006B	SAMP	25	58987.5	50646.1	116.47	PASS	70-125	1489414.9	1337447.5	111.36	PASS	70-125
N027431-004B	SAMP	1	40898.7	50646.1	80.75	PASS	70-125	1036029.9	1337447.5	77.46	PASS	70-125
N027431-003B	SAMP	1	44047.9	50646.1	86.97	PASS	70-125	1102066.5	1337447.5	82.4	PASS	70-125
N027431-002B	SAMP	1	37374.7	50646.1	73.8	PASS	70-125	992930.9	1337447.5	74.24	PASS	70-125
CCV2	CCV	1	51858.7	50646.1	102.39	PASS	70-125	1445185.3	1337447.5	108.06	PASS	70-125
CCB2	CCB	1	48892.9	50646.1	96.54	PASS	70-125	1314668.4	1337447.5	98.3	PASS	70-125
LLCCV1	CCV2	1	50008.6	50646.1	98.74	PASS	70-125	1315798.9	1337447.5	98.38	PASS	70-125
ICSA2	ICSA	1	47387.4	50646.1	93.57	PASS	70-125	1260976.2	1337447.5	94.28	PASS	70-125
ICSAB2	ICSAB	1	52946.6	50646.1	104.54	PASS	70-125	1427813.7	1337447.5	106.76	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N027405
Test Method: EPA 6020
Analysis Date: 12/16/2017

Matrix: Groundwater
Batch No.: 65979

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to severala analytes. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027405-001C DT 5X	Arsenic	ug/L	4.73769	PASS	4.629015	2.35%	10
N027405-001C DT 5X	Chromium	ug/L	0	NA	0.076638	100.00%	10
N027405-001C DT 5X	Manganese	ug/L	140.9829	PASS	138.534	1.77%	10
N027405-001C DT 5X	Molybdenum	ug/L	10.47355	NA	10.82288	3.23%	10
N027405-001C DT 5X	Selenium	ug/L	0	NA	0.151013	100.00%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027405-001C-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	120912
Client ID:	ZZZZZZ	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870951

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.649	0.10	10.00	4.629	100	80	120				
Molybdenum	22.604	0.50	10.00	10.82	118	80	120				
Selenium	9.020	0.50	10.00	0.1510	88.7	80	120				

Sample ID	N027405-001C-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	120912
Client ID:	ZZZZZZ	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870952

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	229.920	2.5	100.0	138.5	91.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N027405-001C-PS**	SampType: **PS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID:	**ZZZZZZ**	Batch ID: **65979**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870894**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.860	1.0	10.00	0.07664	97.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

December 28, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027405

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 06, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Litucas for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Subcontracted Analyses:

Oxygen/Deuterium was subcontracted to Zymax- Pittsburg,PA.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N027405-006, -007, -008 and -011 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 300.0:

Dilution was necessary for some samples due to precipitation upon the addition of eluent.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Bromide in QC samples N027405-004CMS, N027429-007DMS, N027429-007DMSD and N027429-012DMS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for SM 4500-NO3F:

RPD for Sample Duplicate(DUP) is outside criteria ; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N027405-001C-MS1 and N027405-001C-MSD1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) is outside recovery criteria for Sodium in QC sample N027405-002C-MS2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N027405-006, -007, -008, -011, -012 and-013 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027405
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027405-001A	MW-36-090-Q417	Groundwater	12/6/2017 1:11:00 PM	12/6/2017	12/21/2017
N027405-001B	MW-36-090-Q417	Groundwater	12/6/2017 1:11:00 PM	12/6/2017	12/21/2017
N027405-001C	MW-36-090-Q417	Groundwater	12/6/2017 1:11:00 PM	12/6/2017	12/21/2017
N027405-001D	MW-36-090-Q417	Groundwater	12/6/2017 1:11:00 PM	12/6/2017	12/21/2017
N027405-002A	MW-36-100-Q417	Groundwater	12/6/2017 11:51:00 AM	12/6/2017	12/21/2017
N027405-002B	MW-36-100-Q417	Groundwater	12/6/2017 11:51:00 AM	12/6/2017	12/21/2017
N027405-002C	MW-36-100-Q417	Groundwater	12/6/2017 11:51:00 AM	12/6/2017	12/21/2017
N027405-002D	MW-36-100-Q417	Groundwater	12/6/2017 11:51:00 AM	12/6/2017	12/21/2017
N027405-002E	MW-36-100-Q417	Groundwater	12/6/2017 11:51:00 AM	12/6/2017	12/21/2017
N027405-003A	MW-910-Q417	Groundwater	12/6/2017 12:01:00 PM	12/6/2017	12/21/2017
N027405-003B	MW-910-Q417	Groundwater	12/6/2017 12:01:00 PM	12/6/2017	12/21/2017
N027405-003C	MW-910-Q417	Groundwater	12/6/2017 12:01:00 PM	12/6/2017	12/21/2017
N027405-003D	MW-910-Q417	Groundwater	12/6/2017 12:01:00 PM	12/6/2017	12/21/2017
N027405-003E	MW-910-Q417	Groundwater	12/6/2017 12:01:00 PM	12/6/2017	12/21/2017
N027405-004A	MW-36-070-Q417	Groundwater	12/6/2017 11:44:00 AM	12/6/2017	12/21/2017
N027405-004B	MW-36-070-Q417	Groundwater	12/6/2017 11:44:00 AM	12/6/2017	12/21/2017
N027405-004C	MW-36-070-Q417	Groundwater	12/6/2017 11:44:00 AM	12/6/2017	12/21/2017
N027405-005A	MW-720-Q417	Groundwater	12/6/2017 3:30:00 PM	12/6/2017	12/21/2017
N027405-006A	MW-72BR-200-3V-Q417	Groundwater	12/6/2017 2:54:00 PM	12/6/2017	12/21/2017
N027405-006B	MW-72BR-200-3V-Q417	Groundwater	12/6/2017 2:54:00 PM	12/6/2017	12/21/2017
N027405-006C	MW-72BR-200-3V-Q417	Groundwater	12/6/2017 2:54:00 PM	12/6/2017	12/21/2017
N027405-006D	MW-72BR-200-3V-Q417	Groundwater	12/6/2017 2:54:00 PM	12/6/2017	12/21/2017
N027405-007A	MW-72BR-200-LF_D-Q417	Groundwater	12/6/2017 10:17:00 AM	12/6/2017	12/21/2017
N027405-007B	MW-72BR-200-LF_D-Q417	Groundwater	12/6/2017 10:17:00 AM	12/6/2017	12/21/2017
N027405-007C	MW-72BR-200-LF_D-Q417	Groundwater	12/6/2017 10:17:00 AM	12/6/2017	12/21/2017
N027405-007D	MW-72BR-200-LF_D-Q417	Groundwater	12/6/2017 10:17:00 AM	12/6/2017	12/21/2017
N027405-008A	MW-72BR-200-LF_S-Q417	Groundwater	12/6/2017 9:35:00 AM	12/6/2017	12/21/2017
N027405-008B	MW-72BR-200-LF_S-Q417	Groundwater	12/6/2017 9:35:00 AM	12/6/2017	12/21/2017
N027405-008C	MW-72BR-200-LF_S-Q417	Groundwater	12/6/2017 9:35:00 AM	12/6/2017	12/21/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027405
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027405-008D	MW-72BR-200-LF_S-Q417	Groundwater	12/6/2017 9:35:00 AM	12/6/2017	12/21/2017
N027405-009A	MW-62-065-Q417	Groundwater	12/6/2017 3:45:00 PM	12/6/2017	12/21/2017
N027405-009B	MW-62-065-Q417	Groundwater	12/6/2017 3:45:00 PM	12/6/2017	12/21/2017
N027405-009C	MW-62-065-Q417	Groundwater	12/6/2017 3:45:00 PM	12/6/2017	12/21/2017
N027405-009D	MW-62-065-Q417	Groundwater	12/6/2017 3:45:00 PM	12/6/2017	12/21/2017
N027405-010A	MW-718-Q417	Groundwater	12/6/2017 3:10:00 PM	12/6/2017	12/21/2017
N027405-011A	MW-64BR-Q417	Groundwater	12/6/2017 11:50:00 AM	12/6/2017	12/21/2017
N027405-011B	MW-64BR-Q417	Groundwater	12/6/2017 11:50:00 AM	12/6/2017	12/21/2017
N027405-011C	MW-64BR-Q417	Groundwater	12/6/2017 11:50:00 AM	12/6/2017	12/21/2017
N027405-011D	MW-64BR-Q417	Groundwater	12/6/2017 11:50:00 AM	12/6/2017	12/21/2017
N027405-012A	MW-60-125-Q417	Groundwater	12/6/2017 1:20:00 PM	12/6/2017	12/21/2017
N027405-012B	MW-60-125-Q417	Groundwater	12/6/2017 1:20:00 PM	12/6/2017	12/21/2017
N027405-012C	MW-60-125-Q417	Groundwater	12/6/2017 1:20:00 PM	12/6/2017	12/21/2017
N027405-012D	MW-60-125-Q417	Groundwater	12/6/2017 1:20:00 PM	12/6/2017	12/21/2017
N027405-013A	MW-73-080-Q417	Groundwater	12/6/2017 2:40:00 PM	12/6/2017	12/21/2017
N027405-013B	MW-73-080-Q417	Groundwater	12/6/2017 2:40:00 PM	12/6/2017	12/21/2017
N027405-013C	MW-73-080-Q417	Groundwater	12/6/2017 2:40:00 PM	12/6/2017	12/21/2017
N027405-013D	MW-73-080-Q417	Groundwater	12/6/2017 2:40:00 PM	12/6/2017	12/21/2017
N027405-014A	MW-74-240-Q417	Groundwater	12/6/2017 10:00:00 AM	12/6/2017	12/21/2017
N027405-014B	MW-74-240-Q417	Groundwater	12/6/2017 10:00:00 AM	12/6/2017	12/21/2017
N027405-014C	MW-74-240-Q417	Groundwater	12/6/2017 10:00:00 AM	12/6/2017	12/21/2017
N027405-014D	MW-74-240-Q417	Groundwater	12/6/2017 10:00:00 AM	12/6/2017	12/21/2017
N027405-015A	MW-719-Q417	Groundwater	12/6/2017 3:30:00 PM	12/6/2017	12/21/2017

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-090-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 1:11:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171207B**	QC Batch: **R120656**			PrepDate			Analyst: **LR**
Specific Conductance	5100	0.10	0.10		umhos/cm	1	12/7/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-100-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171207B**	QC Batch: **R120656**			PrepDate			Analyst: **LR**
Specific Conductance	7200	0.10	0.10		umhos/cm	1	12/7/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171207B**	QC Batch: **R120656**			PrepDate			Analyst: **LR**
Specific Conductance	7200	0.10	0.10		umhos/cm	1	12/7/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-070-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171207B**	QC Batch: **R120656**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	12/7/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-3V-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 2:54:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171207B**	QC Batch: **R120656**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	12/7/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_D-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 10:17:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171207B**	QC Batch: **R120656**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	12/7/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_S-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 9:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171207C**	QC Batch: **R120657**			PrepDate			Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	12/7/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171207C**	QC Batch: **R120657**			PrepDate			Analyst: **LR**
Specific Conductance	5800	0.10	0.10		umhos/cm	1	12/7/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171207C**	QC Batch: **R120657**			PrepDate			Analyst: **LR**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	12/7/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60-125-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 1:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171207C**	QC Batch: **R120657**			PrepDate			Analyst: **LR**
Specific Conductance	8800	0.10	0.10		umhos/cm	1	12/7/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171207C**	QC Batch: **R120657**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	12/7/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-74-240-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 10:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171207C**	QC Batch: **R120657**			PrepDate			Analyst: **LR**
Specific Conductance	860	0.10	0.10		umhos/cm	1	12/7/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N027404-009DDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **120656**
Client ID: **ZZZZZZ**	Batch ID: **R120656**	TestNo: **EPA 120.1**		Analysis Date: **12/7/2017**	SeqNo: **2856454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	12070.000	0.10						12060	0.0829	10	

Sample ID **N027404-020CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **120656**
Client ID: **ZZZZZZ**	Batch ID: **R120656**	TestNo: **EPA 120.1**		Analysis Date: **12/7/2017**	SeqNo: **2856474**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	21700.000	0.10						22100	1.83	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N027405-008DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120657
Client ID:	ZZZZZZ	Batch ID:	R120657	TestNo:	EPA 120.1			Analysis Date:	12/7/2017	SeqNo:	2856482

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	14420.000	0.10						14380	0.278	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-090-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 1:11:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171208C**	QC Batch: **65973**			PrepDate	**12/8/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2900	50	50		mg/L	1	12/8/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-100-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171208C**	QC Batch: **65973**			PrepDate	**12/8/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4200	50	50		mg/L	1	12/8/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171208C**	QC Batch: **65973**			PrepDate	**12/8/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4300	50	50		mg/L	1	12/8/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-070-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171211D**	QC Batch: **66002**				PrepDate	**12/11/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	670	10	10		mg/L	1	12/11/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-3V-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 2:54:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171211D**	QC Batch: **66002**				PrepDate	**12/11/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	8500	100	100		mg/L	1	12/11/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_D-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 10:17:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171211D**	QC Batch: **66002**				PrepDate	**12/11/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	8600	100	100		mg/L	1	12/11/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_S-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 9:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171211D**	QC Batch: **66002**				PrepDate	**12/11/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	9000	100	100		mg/L	1	12/11/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171211D**	QC Batch: **66002**				PrepDate	**12/11/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3500	50	50		mg/L	1	12/11/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171211D**	QC Batch: **66002**			PrepDate	**12/11/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	7300	100	100		mg/L	1	12/11/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60-125-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 1:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171211D**	QC Batch: **66002**			PrepDate	**12/11/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	5800	50	50		mg/L	1	12/11/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171211E**	QC Batch: **66003**				PrepDate	**12/11/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	6300	100	100		mg/L	1	12/11/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-74-240-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 10:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171211E**	QC Batch: **66003**				PrepDate	**12/11/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	520	10	10		mg/L	1	12/11/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-65973**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/8/2017**	RunNo: **120715**
Client ID: **LCSW**	Batch ID: **65973**	TestNo: **SM2540C**		Analysis Date: **12/8/2017**	SeqNo: **2859417**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	924.000	10	1000	0	92.4	80	120				

Sample ID **MB-65973**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/8/2017**	RunNo: **120715**
Client ID: **PBW**	Batch ID: **65973**	TestNo: **SM2540C**		Analysis Date: **12/8/2017**	SeqNo: **2859418**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N027417-001BDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/8/2017**	RunNo: **120715**
Client ID: **ZZZZZZ**	Batch ID: **65973**	TestNo: **SM2540C**		Analysis Date: **12/8/2017**	SeqNo: **2859429**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	177600.000	1000						170100	4.31	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66002**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/11/2017**	RunNo: **120758**
Client ID: **LCSW**	Batch ID: **66002**	TestNo: **SM2540C**		Analysis Date: **12/11/2017**	SeqNo: **2861041**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	936.000	10	1000	0	93.6	80	120				

Sample ID **MB-66002**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/11/2017**	RunNo: **120758**
Client ID: **PBW**	Batch ID: **66002**	TestNo: **SM2540C**		Analysis Date: **12/11/2017**	SeqNo: **2861042**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N027404-020CDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/11/2017**	RunNo: **120758**
Client ID: **ZZZZZZ**	Batch ID: **66002**	TestNo: **SM2540C**		Analysis Date: **12/11/2017**	SeqNo: **2861046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	16980.000	200						16880	0.591	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-66003	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/11/2017	RunNo:	120759
Client ID:	LCSW	Batch ID:	66003	TestNo:	SM2540C			Analysis Date:	12/11/2017	SeqNo:	2861054

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	959.000	10	1000	0	95.9	80	120				

Sample ID	MB-66003	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/11/2017	RunNo:	120759
Client ID:	PBW	Batch ID:	66003	TestNo:	SM2540C			Analysis Date:	12/11/2017	SeqNo:	2861055

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N027429-005DDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/11/2017	RunNo:	120759
Client ID:	ZZZZZZ	Batch ID:	66003	TestNo:	SM2540C			Analysis Date:	12/11/2017	SeqNo:	2861066

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	12040.000	100						12550	4.15	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-001

Client Sample ID: MW-36-090-Q417
Collection Date: 12/6/2017 1:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171208B** QC Batch: **R120683**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/8/2017 08:40 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_171216A** QC Batch: **65979**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/16/2017 01:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-002

Client Sample ID: MW-36-100-Q417
Collection Date: 12/6/2017 11:51:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171208B** QC Batch: **R120683**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	12	0.17	1.0		µg/L	5	12/8/2017 07:52 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A** QC Batch: **65979**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	14	0.019	1.0		µg/L	1	12/16/2017 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-003

Client Sample ID: MW-910-Q417
Collection Date: 12/6/2017 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171208B** QC Batch: **R120683**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	12	0.17	1.0		µg/L	5	12/8/2017 08:58 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_171216A** QC Batch: **65979**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	15	0.019	1.0		µg/L	1	12/16/2017 02:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-004

Client Sample ID: MW-36-070-Q417
Collection Date: 12/6/2017 11:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171208B** QC Batch: **R120683**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/8/2017 09:17 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_171216A** QC Batch: **65979**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/16/2017 02:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-720-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171208B**	QC Batch: **R120683**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/8/2017 09:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-3V-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 2:54:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A** QC Batch: **R120833**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	4.2	0.17	1.0		µg/L	5	12/11/2017 10:20 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A	**EPA 6020**			
RunID: **NV00922-ICP7_171216A** QC Batch: **65979**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	3.8	0.019	1.0		µg/L	1	12/16/2017 03:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_D-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 10:17:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_171211A** QC Batch: **R120833**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/11/2017 10:39 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A** QC Batch: **65979**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/16/2017 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_S-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 9:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1.5	0.17	1.0		µg/L	5	12/11/2017 10:58 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	1.7	0.019	1.0		µg/L	1	12/16/2017 03:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-009

Client Sample ID: MW-62-065-Q417
Collection Date: 12/6/2017 3:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171208B**	QC Batch: **R120683**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	510	3.3	20		µg/L	100	12/8/2017 09:55 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	500	0.096	5.0		µg/L	5	12/16/2017 03:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-718-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 3:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171208B**	QC Batch: **R120683**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/8/2017 10:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_171208B** QC Batch: **R120683**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/8/2017 11:11 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_171216A** QC Batch: **65979**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/16/2017 04:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60-125-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 1:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171208B**	QC Batch: **R120683**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	770	3.3	20		µg/L	100	12/8/2017 07:05 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	730	0.096	5.0		µg/L	5	12/16/2017 04:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_171208B** QC Batch: **R120683**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	28	0.17	1.0		µg/L	5	12/8/2017 07:33 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A** QC Batch: **65979**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	29	0.019	1.0		µg/L	1	12/16/2017 04:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-014

Client Sample ID: MW-74-240-Q417
Collection Date: 12/6/2017 10:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171208B** QC Batch: **R120683**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/8/2017 11:30 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_171216A** QC Batch: **65979**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	5.3	0.019	1.0		µg/L	1	12/16/2017 04:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-719-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171208B**	QC Batch: **R120683**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/8/2017 11:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R120683**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **LCSW**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857607**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.063	0.20	5.000	0	101	90	110				

Sample ID **MB-R120683**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **PBW**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857608**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **N027405-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857610**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1261.340	20	500.0	771.7	97.9	90	110				

Sample ID **N027405-012AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1269.840	20	500.0	771.7	99.6	90	110	1261	0.672	20	

Sample ID **N027405-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857613**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	52.979	1.0	25.00	28.20	99.1	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027405-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857615**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	37.356	1.0	25.00	11.52	103	90	110				

Sample ID **N027405-002ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.442	1.0						11.52	0.649	20	

Sample ID **N027405-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857620**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.969	0.20	1.000	0	96.9	90	110				

Sample ID **N027405-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	36.524	1.0	25.00	12.02	98.0	90	110				

Sample ID **N027405-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120683**
Client ID: **ZZZZZZ**	Batch ID: **R120683**	TestNo: **EPA 218.6**		Analysis Date: **12/8/2017**	SeqNo: **2857624**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.992	0.20	1.000	0	99.2	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027405-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120683
Client ID:	ZZZZZZ	Batch ID:	R120683	TestNo:	EPA 218.6			Analysis Date:	12/8/2017	SeqNo:	2857626

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.033	0.20	1.000	0	103	90	110				

Sample ID	N027405-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120683
Client ID:	ZZZZZZ	Batch ID:	R120683	TestNo:	EPA 218.6			Analysis Date:	12/8/2017	SeqNo:	2857628

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1006.930	20	500.0	508.5	99.7	90	110				

Sample ID	N027405-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120683
Client ID:	ZZZZZZ	Batch ID:	R120683	TestNo:	EPA 218.6			Analysis Date:	12/8/2017	SeqNo:	2857632

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.087	0.20	1.000	0	109	90	110				

Sample ID	N027405-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120683
Client ID:	ZZZZZZ	Batch ID:	R120683	TestNo:	EPA 218.6			Analysis Date:	12/8/2017	SeqNo:	2857634

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.024	1.0	5.000	0	100	90	110				

Sample ID	N027405-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120683
Client ID:	ZZZZZZ	Batch ID:	R120683	TestNo:	EPA 218.6			Analysis Date:	12/8/2017	SeqNo:	2857636

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.086	0.20	1.000	0	109	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027405-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120683
Client ID:	ZZZZZZ	Batch ID:	R120683	TestNo:	EPA 218.6			Analysis Date:	12/8/2017	SeqNo:	2857638

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R120833	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	PBW	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866006

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	LCS-R120833	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	LCSW	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866007

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.161	0.20	5.000	0	103	90	110				

Sample ID	N027405-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866008

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.424	1.0	5.000	4.203	104	90	110				

Sample ID	N027405-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866010

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.452	1.0	5.000	0	109	90	110				

Sample ID	N027405-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866012

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.692	1.0	5.000	1.529	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027430-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.068	0.20	1.000	0	107	90	110				

Sample ID **N027430-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.905	1.0	5.000	0.3715	90.7	90	110				

Sample ID **N027430-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.074	0.20	1.000	0	107	90	110				

Sample ID **N027430-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Sample ID **N027430-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866025**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0	107	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027430-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866027

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.097	0.20	1.000	0	110	90	110				

Sample ID	N027430-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866031

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.056	0.20	1.000	0	106	90	110				

Sample ID	N027430-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866033

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.976	0.20	1.000	0	97.6	90	110				

Sample ID	N027430-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866035

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.057	0.20	1.000	0	106	90	110				

Sample ID	N027430-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866037

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.040	0.20	1.000	0	104	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027430-020AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866039**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	211.092	4.0	100.0	105.8	105	90	110				

Sample ID **N027430-019AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866043**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Sample ID **N027430-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866045**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.068	0.20	1.000	0	107	90	110				

Sample ID **N027430-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866047**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.554	1.0	5.000	5.490	101	90	110				

Sample ID **N027430-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866049**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.171	1.0	5.000	6.955	104	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027430-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866053

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	18.580	1.0	5.000	13.88	94.0	90	110				

Sample ID	N027405-006ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866054

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.215	1.0						4.203	0.273	20	

Sample ID	N027430-020AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866055

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	210.110	4.0	100.0	105.8	104	90	110	211.1	0.466	20	

Sample ID	N027430-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866059

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.371	1.0	5.000	0	107	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-65979	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120912
Client ID:	PBW	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870889

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-65979	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120912
Client ID:	LCSW	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870890

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.188	1.0	10.00	0	102	85	115				

Sample ID	N027405-001C-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120912
Client ID:	ZZZZZZ	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870896

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.569	1.0	10.00	0.07664	94.9	75	125				

Sample ID	N027405-001C-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120912
Client ID:	ZZZZZZ	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870898

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.547	1.0	10.00	0.07664	94.7	75	125	9.569	0.235	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-090-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 1:11:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171211A**	QC Batch: **R120717**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	260	1.2	5.0		mg/L	1	12/11/2017 08:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-100-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171211A**	QC Batch: **R120717**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	250	1.2	5.0		mg/L	1	12/11/2017 08:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171211A**	QC Batch: **R120717**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	250	1.2	5.0		mg/L	1	12/11/2017 08:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-070-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171211A**	QC Batch: **R120717**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	160	1.2	5.0		mg/L	1	12/11/2017 08:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-3V-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 2:54:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171211A**	QC Batch: **R120717**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	22	1.2	5.0		mg/L	1	12/11/2017 08:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_D-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 10:17:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171211A**	QC Batch: **R120717**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	24	1.2	5.0		mg/L	1	12/11/2017 08:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_S-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 9:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171211A**	QC Batch: **R120717**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	22	1.2	5.0		mg/L	1	12/11/2017 08:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171211A**	QC Batch: **R120717**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	120	1.2	5.0		mg/L	1	12/11/2017 08:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171211A**	QC Batch: **R120717**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	71	1.2	5.0		mg/L	1	12/11/2017 08:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60-125-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 1:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171211A**	QC Batch: **R120717**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	50	1.2	5.0		mg/L	1	12/11/2017 08:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171211A**	QC Batch: **R120717**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	85	1.2	5.0		mg/L	1	12/11/2017 08:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-74-240-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 10:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	180	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R120717**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120717**
Client ID: **LCSW**	Batch ID: **R120717**	TestNo: **SM 2320 B**		Analysis Date: **12/11/2017**	SeqNo: **2859434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	102.823	5.0	100.0	0	103	85	115				

Sample ID **MB-R120717**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120717**
Client ID: **PBW**	Batch ID: **R120717**	TestNo: **SM 2320 B**		Analysis Date: **12/11/2017**	SeqNo: **2859435**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N027405-006DDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120717**
Client ID: **ZZZZZZ**	Batch ID: **R120717**	TestNo: **SM 2320 B**		Analysis Date: **12/11/2017**	SeqNo: **2859447**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	22.177	5.0						22.18	0	30	

Sample ID **N027405-009DMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120717**
Client ID: **ZZZZZZ**	Batch ID: **R120717**	TestNo: **SM 2320 B**		Analysis Date: **12/11/2017**	SeqNo: **2859451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	223.790	5.0	100.0	119.0	105	75	125				

Sample ID **N027405-009DMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120717**
Client ID: **ZZZZZZ**	Batch ID: **R120717**	TestNo: **SM 2320 B**		Analysis Date: **12/11/2017**	SeqNo: **2859452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	220.766	5.0	100.0	119.0	102	75	125	223.8	1.36	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID	LCS-R120785	SampType:	LCS	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120785		
Client ID:	LCSW	Batch ID:	R120785	TestNo:	SM 2320 B			Analysis Date:	12/13/2017	SeqNo:	2863164		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Alkalinity, Total (As CaCO3)	99.398	5.0	100.0	0	99.4	85	115						

Sample ID	MB-R120785	SampType:	MBLK	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120785		
Client ID:	PBW	Batch ID:	R120785	TestNo:	SM 2320 B			Analysis Date:	12/13/2017	SeqNo:	2863165		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Alkalinity, Total (As CaCO3)	ND	5.0											

Sample ID	N027429-005DDUP	SampType:	DUP	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120785		
Client ID:	ZZZZZZ	Batch ID:	R120785	TestNo:	SM 2320 B			Analysis Date:	12/13/2017	SeqNo:	2863173		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Alkalinity, Total (As CaCO3)	30.120	5.0						30.12	0	30			

Sample ID	N027429-014DMS	SampType:	MS	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120785		
Client ID:	ZZZZZZ	Batch ID:	R120785	TestNo:	SM 2320 B			Analysis Date:	12/13/2017	SeqNo:	2863182		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Alkalinity, Total (As CaCO3)	204.819	5.0	100.0	102.4	102	75	125						

Sample ID	N027429-014DMSD	SampType:	MSD	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120785		
Client ID:	ZZZZZZ	Batch ID:	R120785	TestNo:	SM 2320 B			Analysis Date:	12/13/2017	SeqNo:	2863183		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Alkalinity, Total (As CaCO3)	202.811	5.0	100.0	102.4	100	75	125	204.8	0.985	20			

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-001

Client Sample ID: MW-36-090-Q417
Collection Date: 12/6/2017 1:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**			PrepDate				Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/12/2017 03:53 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**			PrepDate				Analyst: **RAB**
Chloride	1400	4.6	250		mg/L	500	12/12/2017 03:00 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**			PrepDate				Analyst: **RAB**
Sulfate	470	1.1	25		mg/L	50	12/12/2017 03:46 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-002

Client Sample ID: MW-36-100-Q417
Collection Date: 12/6/2017 11:51:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/9/2017 02:49 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**			PrepDate				Analyst: **RAB**
Chloride	2200	4.6	250		mg/L	500	12/11/2017 07:21 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**			PrepDate				Analyst: **RAB**
Sulfate	630	2.3	50		mg/L	100	12/11/2017 08:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-003

Client Sample ID: MW-910-Q417
Collection Date: 12/6/2017 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/9/2017 03:35 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	2200	4.6	250		mg/L	500	12/11/2017 08:22 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	630	2.3	50		mg/L	100	12/11/2017 08:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-004

Client Sample ID: MW-36-070-Q417
Collection Date: 12/6/2017 11:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/9/2017 01:02 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	96	0.18	10		mg/L	20	12/11/2017 05:49 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	240	0.46	10		mg/L	20	12/11/2017 05:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-006

Client Sample ID: MW-72BR-200-3V-Q417
Collection Date: 12/6/2017 2:54:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/9/2017 03:51 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	5300	18	1000		mg/L	2000	12/11/2017 09:39 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	700	2.3	50		mg/L	100	12/11/2017 09:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-007

Client Sample ID: MW-72BR-200-LF_D-Q417
Collection Date: 12/6/2017 10:17:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/9/2017 04:06 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	5300	18	1000		mg/L	2000	12/11/2017 10:09 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	700	2.3	50		mg/L	100	12/11/2017 10:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-008

Client Sample ID: MW-72BR-200-LF_S-Q417
Collection Date: 12/6/2017 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/9/2017 04:21 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	5400	18	1000		mg/L	2000	12/11/2017 10:40 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	700	2.3	50		mg/L	100	12/11/2017 10:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-009

Client Sample ID: MW-62-065-Q417
Collection Date: 12/6/2017 3:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/9/2017 04:36 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	1800	4.6	250		mg/L	500	12/11/2017 11:11 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	420	1.1	25		mg/L	50	12/11/2017 11:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-011

Client Sample ID: MW-64BR-Q417
Collection Date: 12/6/2017 11:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/9/2017 04:52 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	4600	9.1	500		mg/L	1000	12/11/2017 11:41 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	590	1.1	25		mg/L	50	12/11/2017 11:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-012

Client Sample ID: MW-60-125-Q417
Collection Date: 12/6/2017 1:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.20	5.0		mg/L	10	12/9/2017 02:19 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	3200	9.1	500		mg/L	1000	12/12/2017 12:42 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	490	1.1	25		mg/L	50	12/12/2017 12:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-013

Client Sample ID: MW-73-080-Q417
Collection Date: 12/6/2017 2:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/9/2017 05:07 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	3900	9.1	500		mg/L	1000	12/12/2017 01:13 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	460	1.1	25		mg/L	50	12/12/2017 01:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-014

Client Sample ID: MW-74-240-Q417
Collection Date: 12/6/2017 10:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171208B** QC Batch: **R120734**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/9/2017 01:48 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	120	0.46	25		mg/L	50	12/12/2017 01:44 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	74	0.23	5.0		mg/L	10	12/11/2017 07:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	LCS-R120734_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120734
Client ID:	LCSW	Batch ID:	R120734	TestNo:	EPA 300.0			Analysis Date:	12/9/2017	SeqNo:	2860319

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.258	0.50	1.250	0	101	90	110				

Sample ID	MB-R120734_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120734
Client ID:	PBW	Batch ID:	R120734	TestNo:	EPA 300.0			Analysis Date:	12/9/2017	SeqNo:	2860320

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	N027405-004CMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120734
Client ID:	ZZZZZZ	Batch ID:	R120734	TestNo:	EPA 300.0			Analysis Date:	12/9/2017	SeqNo:	2860322

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.978	0.50	1.250	0	78.2	80	120				S

Sample ID	N027405-004CMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120734
Client ID:	ZZZZZZ	Batch ID:	R120734	TestNo:	EPA 300.0			Analysis Date:	12/9/2017	SeqNo:	2860323

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.067	0.50	1.250	0	85.4	80	120	0.9781	8.69	20	

Sample ID	N027405-014DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120734
Client ID:	ZZZZZZ	Batch ID:	R120734	TestNo:	EPA 300.0			Analysis Date:	12/9/2017	SeqNo:	2860325

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.249	0.50	1.250	0.08030	93.5	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **N027405-012DDUP**	SampType: **DUP**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:			RunNo: **120734**				
Client ID: **ZZZZZZ**	Batch ID: **R120734**	TestNo: **EPA 300.0**		Analysis Date: **12/9/2017**			SeqNo: **2860327**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	5.0						0	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	MB-R120770_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770
Client ID:	PBW	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862144

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	LCS-R120770_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770
Client ID:	LCSW	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862145

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.272	0.50	1.250	0	102	90	110				

Sample ID	N027429-007DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770
Client ID:	ZZZZZZ	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862153

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.920	0.50	1.250	0	73.6	80	120				S

Sample ID	N027429-007DMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770
Client ID:	ZZZZZZ	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862154

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.990	0.50	1.250	0	79.2	80	120	0.9202	7.33	20	S

Sample ID	N027429-012DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770
Client ID:	ZZZZZZ	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862155

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.273	1.0	2.500	0	50.9	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **N027429-007DDUP**	SampType: **DUP**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:			RunNo: **120770**				
Client ID: **ZZZZZZ**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**			SeqNo: **2862156**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50						0	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	LCS-RR120764_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	LCSW	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861519

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.108	0.50	2.000	0	105	90	110				

Sample ID	MB-R120764_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	PBW	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861520

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	N027405-004CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861524

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	95.556	10						95.61	0.0607	20	

Sample ID	N027405-004CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861525

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	138.172	10	40.00	95.61	106	80	120				

Sample ID	N027405-004CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861526

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	139.498	10	40.00	95.61	110	80	120	138.2	0.955	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N027405-002EMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861528

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3295.850	250	1000	2224	107	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	LCS-R120764_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	LCSW	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861583

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.012	0.50	4.000	0	100	90	110				

Sample ID	MB-R120764_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	PBW	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861584

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	N027405-004CDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861588

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	234.750	10						236.2	0.616	20	

Sample ID	N027405-004CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861589

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	317.202	10	80.00	236.2	101	80	120				

Sample ID	N027405-004CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861590

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	316.116	10	80.00	236.2	99.9	80	120	317.2	0.343	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N027405-014DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861592

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	113.326	5.0	40.00	73.75	99.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-100-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171220C**	QC Batch: **R120963**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/20/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171220C**	QC Batch: **R120963**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/20/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-3V-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 2:54:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171220C**	QC Batch: **R120963**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.16	0.022	0.050		mg/L	1	12/20/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_D-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 10:17:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171220C**	QC Batch: **R120963**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/20/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_S-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 9:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171220C**	QC Batch: **R120963**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.062	0.022	0.050		mg/L	1	12/20/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171219B**	QC Batch: **R120949**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	4.5	0.22	0.50		mg/L	10	12/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171220C**	QC Batch: **R120963**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/20/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60-125-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 1:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171219B**	QC Batch: **R120949**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	4.0	0.11	0.25		mg/L	5	12/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171219B**	QC Batch: **R120949**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	2.7	0.11	0.25		mg/L	5	12/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-74-240-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 10:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171220C**	QC Batch: **R120963**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/20/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R120949	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120949
Client ID:	PBW	Batch ID:	R120949	TestNo:	SM4500-NO3			Analysis Date:	12/19/2017	SeqNo:	2873078

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R120949	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120949
Client ID:	LCSW	Batch ID:	R120949	TestNo:	SM4500-NO3			Analysis Date:	12/19/2017	SeqNo:	2873079

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.491	0.050	0.5000	0	98.2	85	115				

Sample ID	N027405-009CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120949
Client ID:	ZZZZZZ	Batch ID:	R120949	TestNo:	SM4500-NO3			Analysis Date:	12/19/2017	SeqNo:	2873081

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.451	0.50	5.000	4.488	99.3	75	125				

Sample ID	N027405-009CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120949
Client ID:	ZZZZZZ	Batch ID:	R120949	TestNo:	SM4500-NO3			Analysis Date:	12/19/2017	SeqNo:	2873082

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.018	0.50	5.000	4.488	90.6	75	125	9.451	4.69	20	

Sample ID	N027405-012CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120949
Client ID:	ZZZZZZ	Batch ID:	R120949	TestNo:	SM4500-NO3			Analysis Date:	12/19/2017	SeqNo:	2873084

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.470	0.25						4.022	14.7	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R120963**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **PBW**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R120963**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **LCSW**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.482	0.050	0.5000	0	96.3	85	115				

Sample ID **N027429-003CMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **ZZZZZZ**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.637	0.10	1.000	1.657	98.1	75	125				

Sample ID **N027429-003CMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **ZZZZZZ**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873456**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.665	0.10	1.000	1.657	101	75	125	2.637	1.03	20	

Sample ID **N027405-006CDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **ZZZZZZ**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873458**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.124	0.050						0.1567	23.3	20	R

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-001

Client Sample ID: MW-36-090-Q417
Collection Date: 12/6/2017 1:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Boron	730	38	100		ug/L	1	12/16/2017 01:22 PM
Calcium	110000	28	500		ug/L	1	12/16/2017 01:22 PM
Iron	ND	1.8	20		ug/L	1	12/16/2017 01:22 PM
Magnesium	19000	4.4	100		ug/L	1	12/16/2017 01:22 PM
Sodium	1000000	2600	50000		ug/L	100	12/18/2017 07:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-002

Client Sample ID: MW-36-100-Q417
Collection Date: 12/6/2017 11:51:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**		Analyst: **CEI**
Boron	1000	38	100		ug/L	1	12/16/2017 02:13 PM
Calcium	160000	28	500		ug/L	1	12/16/2017 02:13 PM
Iron	140	1.8	20		ug/L	1	12/16/2017 02:13 PM
Magnesium	28000	4.4	100		ug/L	1	12/16/2017 02:13 PM
Sodium	1600000	2600	50000		ug/L	100	12/18/2017 06:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-003

Client Sample ID: MW-910-Q417
Collection Date: 12/6/2017 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**		Analyst: **CEI**
Boron	1000	38	100		ug/L	1	12/16/2017 02:21 PM
Calcium	160000	28	500		ug/L	1	12/16/2017 02:21 PM
Iron	140	1.8	20		ug/L	1	12/16/2017 02:21 PM
Magnesium	28000	4.4	100		ug/L	1	12/16/2017 02:21 PM
Sodium	1600000	2600	50000		ug/L	100	12/18/2017 06:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-004

Client Sample ID: MW-36-070-Q417
Collection Date: 12/6/2017 11:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**		Analyst: **CEI**
Boron	180	38	100		ug/L	1	12/16/2017 02:29 PM
Calcium	78000	28	500		ug/L	1	12/16/2017 02:29 PM
Iron	24	1.8	20		ug/L	1	12/16/2017 02:29 PM
Magnesium	17000	4.4	100		ug/L	1	12/16/2017 02:29 PM
Sodium	110000	260	5000		ug/L	10	12/18/2017 06:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-006

Client Sample ID: MW-72BR-200-3V-Q417
Collection Date: 12/6/2017 2:54:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**		Analyst: **CEI**
Boron	2200	38	100		ug/L	1	12/16/2017 02:34 PM
Calcium	270000	28	500		ug/L	1	12/16/2017 02:34 PM
Iron	ND	1.8	20		ug/L	1	12/16/2017 02:34 PM
Magnesium	2500	4.4	100		ug/L	1	12/16/2017 02:34 PM
Sodium	3300000	6600	120000		ug/L	250	12/18/2017 06:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_D-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 10:17:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**				PrepDate	**12/8/2017**	Analyst: **CEI**
Boron	2100	38	100		ug/L	1	12/16/2017 02:42 PM
Calcium	290000	28	500		ug/L	1	12/16/2017 02:42 PM
Iron	39	1.8	20		ug/L	1	12/16/2017 02:42 PM
Magnesium	3200	4.4	100		ug/L	1	12/16/2017 02:42 PM
Sodium	3400000	6600	120000		ug/L	250	12/18/2017 06:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-008

Client Sample ID: MW-72BR-200-LF_S-Q417
Collection Date: 12/6/2017 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**		Analyst: **CEI**
Boron	2300	38	100		ug/L	1	12/16/2017 02:50 PM
Calcium	280000	28	500		ug/L	1	12/16/2017 02:50 PM
Iron	34	1.8	20		ug/L	1	12/16/2017 02:50 PM
Magnesium	2700	4.4	100		ug/L	1	12/16/2017 02:50 PM
Sodium	3500000	6600	120000		ug/L	250	12/18/2017 06:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-009

Client Sample ID: MW-62-065-Q417
Collection Date: 12/6/2017 3:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Boron	690	38	100		ug/L	1	12/16/2017 03:10 PM
Calcium	210000	28	500		ug/L	1	12/16/2017 03:10 PM
Iron	ND	1.8	20		ug/L	1	12/16/2017 03:10 PM
Magnesium	24000	4.4	100		ug/L	1	12/16/2017 03:10 PM
Sodium	1100000	2600	50000		ug/L	100	12/18/2017 07:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**				PrepDate	**12/8/2017**	Analyst: **CEI**
Boron	1500	38	100		ug/L	1	12/16/2017 03:18 PM
Calcium	340000	28	500		ug/L	1	12/16/2017 03:18 PM
Iron	330	1.8	20		ug/L	1	12/16/2017 03:18 PM
Magnesium	14000	4.4	100		ug/L	1	12/16/2017 03:18 PM
Sodium	2600000	2600	50000		ug/L	100	12/18/2017 07:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-012

Client Sample ID: MW-60-125-Q417
Collection Date: 12/6/2017 1:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Boron	670	38	100		ug/L	1	12/16/2017 03:26 PM
Calcium	510000	140	2500		ug/L	5	12/19/2017 08:01 AM
Iron	230	1.8	20		ug/L	1	12/16/2017 03:26 PM
Magnesium	21000	4.4	100		ug/L	1	12/16/2017 03:26 PM
Sodium	1400000	2600	50000		ug/L	100	12/18/2017 07:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-013

Client Sample ID: MW-73-080-Q417
Collection Date: 12/6/2017 2:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**		Analyst: **CEI**
Boron	1000	38	100		ug/L	1	12/16/2017 03:34 PM
Calcium	470000	140	2500		ug/L	5	12/19/2017 07:12 AM
Iron	140	1.8	20		ug/L	1	12/16/2017 03:34 PM
Magnesium	28000	4.4	100		ug/L	1	12/16/2017 03:34 PM
Sodium	2100000	2600	50000		ug/L	100	12/18/2017 07:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-014

Client Sample ID: MW-74-240-Q417
Collection Date: 12/6/2017 10:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**		Analyst: **CEI**
Boron	140	38	100		ug/L	1	12/16/2017 03:42 PM
Calcium	10000	28	500		ug/L	1	12/16/2017 03:42 PM
Iron	3300	1.8	20		ug/L	1	12/16/2017 03:42 PM
Magnesium	1400	4.4	100		ug/L	1	12/16/2017 03:42 PM
Sodium	150000	260	5000		ug/L	10	12/18/2017 07:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

Date: *28-Dec-17*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-65964**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120897**
Client ID: **PBW**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-65964**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120897**
Client ID: **LCSW**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4730.665	100	5000	0	94.6	85	115				
Calcium	9706.269	500	10000	0	97.1	85	115				
Iron	109.838	20	100.0	0	110	85	115				
Magnesium	9640.945	100	10000	0	96.4	85	115				

Sample ID **N027405-001C-MS1**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120897**
Client ID: **ZZZZZZ**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870020**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5424.089	100	5000	726.2	94.0	75	125				
Calcium	121412.864	500	10000	107700	137	75	125				S
Iron	110.283	20	100.0	14.04	96.2	75	125				
Magnesium	28521.567	100	10000	18850	96.7	75	125				

Sample ID **N027405-001C-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120897**
Client ID: **ZZZZZZ**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5448.513	100	5000	726.2	94.4	75	125	5424	0.449	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027405-001C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/8/2017	RunNo:	120897
Client ID:	ZZZZZZ	Batch ID:	65964	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870021

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	121647.419	500	10000	107700	140	75	125	121400	0.193	20	S
Iron	109.351	20	100.0	14.04	95.3	75	125	110.3	0.849	20	
Magnesium	28589.254	100	10000	18850	97.4	75	125	28520	0.237	20	

Sample ID	MB-65964	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/8/2017	RunNo:	120915
Client ID:	PBW	Batch ID:	65964	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/18/2017	SeqNo:	2871270

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID	LCS2-65964	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/8/2017	RunNo:	120915
Client ID:	LCSW	Batch ID:	65964	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/18/2017	SeqNo:	2871271

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20922.885	500	20000	0	105	85	115				

Sample ID	N027405-002C-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/8/2017	RunNo:	120915
Client ID:	ZZZZZZ	Batch ID:	65964	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/18/2017	SeqNo:	2871278

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1604471.596	50000	20000	1554000	252	75	125				S

Sample ID	N027405-002C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/8/2017	RunNo:	120915
Client ID:	ZZZZZZ	Batch ID:	65964	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/18/2017	SeqNo:	2871279

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1569386.145	50000	20000	1554000	76.9	75	125	1604000	2.21	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-090-Q417
Lab Order:	N027405	**Collection Date:**	12/6/2017 1:11:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027405-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	4.6	0.025	0.10		µg/L	1	12/16/2017 01:29 PM
Manganese	140	0.28	2.5		µg/L	5	12/16/2017 01:35 PM
Molybdenum	11	0.039	0.50		µg/L	1	12/16/2017 01:29 PM
Selenium	ND	0.028	0.50		µg/L	1	12/16/2017 01:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-002

Client Sample ID: MW-36-100-Q417
Collection Date: 12/6/2017 11:51:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	4.3	0.025	0.10		µg/L	1	12/16/2017 02:30 PM
Manganese	310	0.28	2.5		µg/L	5	12/16/2017 02:36 PM
Molybdenum	23	0.039	0.50		µg/L	1	12/16/2017 02:30 PM
Selenium	ND	0.028	0.50		µg/L	1	12/16/2017 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-003

Client Sample ID: MW-910-Q417
Collection Date: 12/6/2017 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	4.5	0.025	0.10		µg/L	1	12/16/2017 02:41 PM
Manganese	330	0.28	2.5		µg/L	5	12/16/2017 02:47 PM
Molybdenum	24	0.039	0.50		µg/L	1	12/16/2017 02:41 PM
Selenium	ND	0.028	0.50		µg/L	1	12/16/2017 02:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-004

Client Sample ID: MW-36-070-Q417
Collection Date: 12/6/2017 11:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Arsenic	2.3	0.025	0.10		µg/L	1	12/16/2017 02:53 PM
Manganese	230	0.28	2.5		µg/L	5	12/16/2017 02:58 PM
Molybdenum	4.1	0.039	0.50		µg/L	1	12/16/2017 02:53 PM
Selenium	ND	0.028	0.50		µg/L	1	12/16/2017 02:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-006

Client Sample ID: MW-72BR-200-3V-Q417
Collection Date: 12/6/2017 2:54:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Arsenic	15	0.025	0.10		µg/L	1	12/16/2017 03:04 PM
Manganese	11	0.056	0.50		µg/L	1	12/16/2017 03:04 PM
Molybdenum	79	0.19	2.5		µg/L	5	12/16/2017 03:09 PM
Selenium	ND	0.14	2.5		µg/L	5	12/16/2017 03:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-007

Client Sample ID: MW-72BR-200-LF_D-Q417
Collection Date: 12/6/2017 10:17:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Arsenic	11	0.025	0.10		µg/L	1	12/16/2017 03:15 PM
Manganese	100	0.056	0.50		µg/L	1	12/16/2017 03:15 PM
Molybdenum	75	0.19	2.5		µg/L	5	12/16/2017 03:32 PM
Selenium	ND	0.14	2.5		µg/L	5	12/16/2017 03:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-008

Client Sample ID: MW-72BR-200-LF_S-Q417
Collection Date: 12/6/2017 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Arsenic	13	0.025	0.10		µg/L	1	12/16/2017 03:37 PM
Manganese	36	0.056	0.50		µg/L	1	12/16/2017 03:37 PM
Molybdenum	78	0.19	2.5		µg/L	5	12/16/2017 03:43 PM
Selenium	ND	0.14	2.5		µg/L	5	12/16/2017 03:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-009

Client Sample ID: MW-62-065-Q417
Collection Date: 12/6/2017 3:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Arsenic	1.7	0.025	0.10		µg/L	1	12/16/2017 03:48 PM
Manganese	2.0	0.056	0.50		µg/L	1	12/16/2017 03:48 PM
Molybdenum	15	0.039	0.50		µg/L	1	12/16/2017 03:48 PM
Selenium	3.7	0.028	0.50		µg/L	1	12/16/2017 03:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-011

Client Sample ID: MW-64BR-Q417
Collection Date: 12/6/2017 11:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	4.2	0.025	0.10		µg/L	1	12/16/2017 04:00 PM
Manganese	1000	0.56	5.0		µg/L	10	12/19/2017 01:11 PM
Molybdenum	68	0.19	2.5		µg/L	5	12/16/2017 04:05 PM
Selenium	ND	0.14	2.5		µg/L	5	12/16/2017 04:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-012

Client Sample ID: MW-60-125-Q417
Collection Date: 12/6/2017 1:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Arsenic	1.6	0.025	0.10		µg/L	1	12/16/2017 04:11 PM
Manganese	11	0.056	0.50		µg/L	1	12/16/2017 04:11 PM
Molybdenum	19	0.19	2.5		µg/L	5	12/16/2017 04:16 PM
Selenium	5.4	0.028	0.50		µg/L	1	12/16/2017 04:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-013

Client Sample ID: MW-73-080-Q417
Collection Date: 12/6/2017 2:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	1.4	0.12	0.50		µg/L	5	12/19/2017 01:17 PM
Manganese	34	0.056	0.50		µg/L	1	12/16/2017 04:22 PM
Molybdenum	36	0.19	2.5		µg/L	5	12/19/2017 01:17 PM
Selenium	3.2	0.14	2.5		µg/L	5	12/19/2017 01:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027405
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027405-014

Client Sample ID: MW-74-240-Q417
Collection Date: 12/6/2017 10:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Arsenic	13	0.025	0.10		µg/L	1	12/19/2017 01:18 PM
Manganese	43	0.056	0.50		µg/L	1	12/19/2017 01:18 PM
Molybdenum	31	0.039	0.50		µg/L	1	12/19/2017 01:18 PM
Selenium	0.66	0.028	0.50		µg/L	1	12/19/2017 01:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-65979**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120912**
Client ID: **PBW**	Batch ID: **65979**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-65979**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120912**
Client ID: **LCSW**	Batch ID: **65979**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.997	0.10	10.00	0	100	85	115				
Manganese	99.052	0.50	100.0	0	99.1	85	115				
Molybdenum	9.723	0.50	10.00	0	97.2	85	115				
Selenium	9.777	0.50	10.00	0	97.8	85	115				

Sample ID **N027405-001C-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120912**
Client ID: **ZZZZZZ**	Batch ID: **65979**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.743	0.10	10.00	4.629	101	75	125				
Molybdenum	22.777	0.50	10.00	10.82	120	75	125				
Selenium	9.247	0.50	10.00	0.1510	91.0	75	125				

Sample ID **N027405-001C-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120912**
Client ID: **ZZZZZZ**	Batch ID: **65979**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	234.439	2.5	100.0	138.5	95.9	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027405
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027405-001C-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120912
Client ID:	ZZZZZZ	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870955

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.547	0.10	10.00	4.629	99.2	75	125	14.74	1.34	20	
Molybdenum	22.863	0.50	10.00	10.82	120	75	125	22.78	0.376	20	
Selenium	8.866	0.50	10.00	0.1510	87.1	75	125	9.247	4.21	20	

Sample ID	N027405-001C-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120912
Client ID:	ZZZZZZ	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870958

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	237.256	2.5	100.0	138.5	98.7	75	125	234.4	1.19	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200	Fax:
Title: Geologist II	Phone: 916-786-3302 Fax:		
Signature: Date: 12/6/2017	Sampled By: Gantt Jeffers		
Project Name: PG&E Topock - GMP	Signature: Date: 12/6/2017		
Project Number: RC000753.801B			

I hereby authorize ASSET Labs to perform the tests indicated below.

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Matrix			
Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
Global ID:		Regulatory	
		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled		
2. Headspace		
3. Container Intact	✓	
4. Seal Present		
5. IR number 2		
6. Method of Cooling: ICE		

Sample Temp: 3.3, 3.1, 3.4, 4.1, 2.7

Courier: ASSET

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM 250 mL poly	Metals Dissolved (SW6020A FF) (As, Cr, Mg, Mn, Mo, Se); HNO3 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3 500 mL poly	Metals Dissolved (SW6020A FF) (As, Cr, Mn,); HNO3 500 mL poly	Metals Dissolved (SW6020A FF) (Cr, Mg, Mn, Mo, Se); HNO3 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) 1 liter poly	Specific Conductance (EPA 120.1) 1 liter poly	Total Dissolved Solids (SM2540C) 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) 1 liter poly	Floride (EPA 300.0) 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027405 -01	MW-36-090-Q417	12/6/2017	13:11		X		X	X		X				X	X	X	X		E	4	P	BN	
2	-02	MW-36-100-Q417	12/6/2017	11:51		X		X	X		X			X	X	X	X	X		E	5	P	BNS	
3	-03	MW-910-Q417	12/6/2017	12:01		X		X	X		X			X	X	X	X	X		E	5	P	BNS	
4	-04	MW-36-070-Q417	12/6/2017	11:44		X			X		X				X	X	X	X		E	3	P	BN	
5	-05	MW-720-Q417	12/6/2017	15:30		X														E	1	P	B	
6	-06	MW-72BR-200-3V-Q417	12/6/2017	14:54		X			X		X			X	X	X	X	X		E	4	P	BNS	
7	-07	MW-72BR-200-LF_D-Q417	12/6/2017	10:17		X			X		X			X	X	X	X	X		E	4	P	BNS	
8	-08	MW-72BR-200-LF_S-Q417	12/6/2017	9:35		X			X		X			X	X	X	X	X		E	4	P	BNS	
9	-09	MW-62-065-Q417	12/6/2017	15:45		X			X		X			X	X	X	X	X		E	4	P	BNS	
10	-10	MW-718-Q417	12/6/2017	15:10		X														E	1	P	B	

Relinquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
Gantt Jeffers	12.6.17 16:30		12/6/17@1630
	12/6/17 20:00		12/6/17@2000

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis.
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B = (NH4)2SO4/NH4OH		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Page 4 of 4

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition: 1. Chilled; 2. Headspace; 3. Container Intact ✓; 4. Seal Present; 5. IR number 2; 6. Method of Cooling: ICE
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	
Title: Geologist II	Phone: 916-786-3302 Fax:		
Signature: Date: 12/6/2017	Sampled By: Gantt Jeffers		Sample Temp: 3.1, 3.1, 3.4, 4.1, 2.7

I hereby authorize ASSET Labs to perform the tests indicated below.

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Project Name: PG&E Topock - GMP | Signature: | Date: 12/6/2017

Project Number: RC000753.801B

Matrix: Ground x; Potable; NPDES; Surface; Sediment; Soil; Other Solid

Courier: ASSET

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	250 mL poly Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	2x250 mL poly Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	250 mL poly Oxygen and Deuterium Stable Isotopes SFIRM	500 mL poly Metals Dissolved (SW6020A FF) (As, Cr, Mg, Mn, Mo, Se); HNO3	500 mL poly Dissolved metals (SW6010B FF) Potassium; HNO3	500 mL poly Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3	500 mL poly Metals Dissolved (SW6020A FF) (As, Cr, Mn,); HNO3	500 mL poly Metals Dissolved (SW6020A FF) (Cr, Mg, Mn, Mo, Se); HNO3	250 mL poly Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4	1 liter poly Bromide, Sulfate, Chloride (EPA 300.0)	1 liter poly Specific Conductance (EPA 120.1)	1 liter poly Total Dissolved Solids (SM2540C)	1 liter poly Alkalinity, Total as CaCO3 (SM2320B)	1 liter poly Floride (EPA 300.0)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027405 -11	MW-64BR-Q417	12/6/2017	11:50		X			X		X			X	X	X	X	X		E	4	P	BNS	
2	-12	MW-60-125-Q417	12/6/2017	13:20		X			X		X			X	X	X	X	X		E	4	P	BNS	
3	-13	MW-73-080-Q417	12/6/2017	14:40		X			X		X			X	X	X	X	X		E	4	P	BNS	
4	-14	MW-74-240-Q417	12/6/2017	10:00		X			X		X			X	X	X	X	X		E	4	P	BNS	
5	-15	MW-719-Q417	12/6/2017	15:30		X														E	1	P	B	
6																								
7																								
8																								
9																								
10																								

Remarks

Relinquished by (Signature and Printed Name): G. Jeffers	Date/Time: 12.6.17 1630	Relinquished by (Signature and Printed Name):	Date/Time: 12/6/17 @ 1650
Relinquished by (Signature and Printed Name):	Date/Time: 12/6/17 @ 2050	Relinquished by (Signature and Printed Name):	Date/Time: 12/6/17 @ 2050
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

- A = < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms

1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis.
   Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B = (NH4)2SO4/NH4OH		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/6/2017	Workorder:	N027405
Rep sample Temp (Deg C):	3.3,3.1,3.4,4.1,2.7	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	N/A	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Sample 14 (MW-74-240-Q417): Sediment observed in the bottle for Diss Metals.

For:

Checklist Completed By: MBC 12/18/2017

Reviewed By: 12/19/2017

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (760) 781 3338
FAX: (805) 544-8226
Acct #:

Field Sampler: SIGNED Gantt Jeffers

07-Dec-17

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**OXY_DEUT**		
N027405-001B / MW-36-090-Q417	Groundwater	12/6/2017 1:11:00 PM	16OZP	1		
N027405-002B / MW-36-100-Q417	Groundwater	12/6/2017 11:51:00 AM	16OZP	1		
N027405-003B / MW-910-Q417	Groundwater	12/6/2017 12:01:00 PM	16OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N27405A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Oxygen and Deuterium Stable isotopes SFIRM. EDD requirement Labspec7 edata.

Fedex #: 770935832848

		Date/Time			Date/Time
Relinquished by:		12/07/2017 16:00		**Received by:**	
Relinquished by:				**Received by:**	

ASSET Laboratories

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-001A	MW-36-090-Q417	12/6/2017 1:11:00 PM	12/20/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-001B			12/20/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027405-001C			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-001D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-002A	MW-36-100-Q417	12/6/2017 11:51:00 AM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-002B			12/20/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027405-002C			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-002D	MW-36-100-Q417	12/6/2017 11:51:00 AM	12/20/2017	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-002E			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-003A	MW-910-Q417	12/6/2017 12:01:00 PM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-003B			12/20/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027405-003C			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-003D			12/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-003E			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-003E	MW-910-Q417	12/6/2017 12:01:00 PM	12/20/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-004A	MW-36-070-Q417	12/6/2017 11:44:00 AM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-004B			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-004C			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-005A	MW-720-Q417	12/6/2017 3:30:00 PM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-006A	MW-72BR-200-3V-Q417	12/6/2017 2:54:00 PM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-006B			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-006B	MW-72BR-200-3V-Q417	12/6/2017 2:54:00 PM	12/20/2017	Groundwater	EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-006C			12/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-006D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-007A	MW-72BR-200-LF_D-Q417	12/6/2017 10:17:00 AM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-007B			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-007C			12/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-007D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-007D	MW-72BR-200-LF_D-Q417	12/6/2017 10:17:00 AM	12/20/2017	Groundwater		Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-008A	MW-72BR-200-LF_S-Q417	12/6/2017 9:35:00 AM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-008B			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-008C			12/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-008D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-009A	MW-62-065-Q417	12/6/2017 3:45:00 PM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-009B	MW-62-065-Q417	12/6/2017 3:45:00 PM	12/20/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-009C			12/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-009D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-010A	MW-718-Q417	12/6/2017 3:10:00 PM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-011A	MW-64BR-Q417	12/6/2017 11:50:00 AM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-011B			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-011C	MW-64BR-Q417	12/6/2017 11:50:00 AM	12/20/2017	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-011D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-012A	MW-60-125-Q417	12/6/2017 1:20:00 PM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-012B			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-012C			12/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-012D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-012D	MW-60-125-Q417	12/6/2017 1:20:00 PM	12/20/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-013A	MW-73-080-Q417	12/6/2017 2:40:00 PM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-013B			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-013C			12/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-013D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-014A	MW-74-240-Q417	12/6/2017 10:00:00 AM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-014B			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/20/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

07-Dec-17

WorkOrder: N027405

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027405-014B	MW-74-240-Q417	12/6/2017 10:00:00 AM	12/20/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027405-014C			12/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027405-014D			12/20/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/20/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/20/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/20/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/20/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027405-015A	MW-719-Q417	12/6/2017 3:30:00 PM	12/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027405-016A	FOLDER	12/20/2017	12/20/2017		EDD	RWQCB	☐	☐	☐	LAB
			12/20/2017		Folder	Folder	☐	☐	☐	LAB
			12/20/2017		Folder	Folder	☐	☐	☐	LAB

nancy@assetlaboratories.com

From: nancy@assetlaboratories.com
Sent: Friday, December 22, 2017 2:20 PM
To: 'Tina Rice'; 'Jennifer.Singer@arcadis.com'; 'Dan.Bush@arcadis.com'
Cc: 'Daniel Moore'; 'Laura.Madsen@arcadis.com'; 'Sean.Maurel@arcadis.com'; 'Kalib Sumter'; 'marlon@assetlaboratories.com'; 'Serna, Erica'
Subject: RE: Data uploaded to EQUIS 12/22/17 Topock

Hi Tina,

Noted for the following:

N027404- we will update the IDs

N027405- we are checking the error on the edd as of this moment

MW-44-125-EB-Q417- we will have to check with the sample control why it was not included

Thanks,
Nancy

From: Tina Rice [mailto:Tina.Rice@critigen.com]
Sent: Friday, December 22, 2017 12:07 PM
To: 'nancy@assetlaboratories.com'; Jennifer.Singer@arcadis.com; Dan.Bush@arcadis.com
Cc: Daniel Moore; Laura.Madsen@arcadis.com; Sean.Maurel@arcadis.com; Kalib Sumter; marlon@assetlaboratories.com; Serna, Erica
Subject: RE: Data uploaded to EQUIS 12/22/17 Topock

Hey Nancy,

Looks like N027405 and N027404 did not load successfully.

N027405 – lab issue

For N027404, the reason the load failed is because duplicate sample ID's were used again. Would you please update as follows:

ClientSampID	NewClientSampID
MW-44-115-Q417	MW-44-115-1217
MW-34-100-Q417	MW-34-100-1217

Also, MW-44-125-EB-Q417 was not included in the lab log-in status report so that sample didn't get uploaded to the database. Do you know why it wasn't included? I went ahead and added it so that won't cause a problem now.

Thanks,
Tina

From: nancy@assetlaboratories.com [mailto:nancy@assetlaboratories.com]
Sent: Friday, December 22, 2017 11:39 AM
To: Jennifer.Singer@arcadis.com; Dan.Bush@arcadis.com
Cc: Daniel Moore <Daniel.Moore@critigen.com>; Tina Rice <Tina.Rice@critigen.com>; Laura.Madsen@arcadis.com; Sean.Maurel@arcadis.com; Kalib Sumter <Kalib.Sumter@critigen.com>; marlon@assetlaboratories.com; Serna, Erica <Erica.Serna@arcadis.com>
Subject: Data uploaded to EQUIS 12/22/17 Topock

N027404–PDF and EDD uploaded.

N027405–PDF and EDD uploaded.

Thanks,

Nancy Sibucao
Project Manager
Nevada: 3151 W. Post Road, Las Vegas, NV 89118 | P: 702.307.2659 Ext. 412 | F: 702.307.2691
California: 11060 Artesia Blvd., Ste. C, Cerritos, CA 90703 | P: 562.219.7435 | F: 562.219.7436
www.assetlaboratories.com



ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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December 22, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027428

RE: PG&E Topock - PMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 07, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburdi for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N027359-001E-MS2, N027359-001E-MSD2 and N027428-002D-MS2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *22-Dec-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.801B
Lab Order: N027428
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027428-001A	PE-01-1217	Groundwater	12/7/2017 12:26:00 PM	12/7/2017	12/22/2017
N027428-001B	PE-01-1217	Groundwater	12/7/2017 12:26:00 PM	12/7/2017	12/22/2017
N027428-001C	PE-01-1217	Groundwater	12/7/2017 12:26:00 PM	12/7/2017	12/22/2017
N027428-001D	PE-01-1217	Groundwater	12/7/2017 12:26:00 PM	12/7/2017	12/22/2017
N027428-002A	TW-03D-1217	Groundwater	12/7/2017 12:18:00 PM	12/7/2017	12/22/2017
N027428-002B	TW-03D-1217	Groundwater	12/7/2017 12:18:00 PM	12/7/2017	12/22/2017
N027428-002C	TW-03D-1217	Groundwater	12/7/2017 12:18:00 PM	12/7/2017	12/22/2017
N027428-002D	TW-03D-1217	Groundwater	12/7/2017 12:18:00 PM	12/7/2017	12/22/2017

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-1217
Lab Order:	N027428	**Collection Date:**	12/7/2017 12:26:00 PM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027428-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	3700	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-1217
Lab Order:	N027428	**Collection Date:**	12/7/2017 12:18:00 PM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027428-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	6100	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	**N027429-005DDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **120747**
Client ID:	**ZZZZZZ**	Batch ID: **R120747**	TestNo: **EPA 120.1**		Analysis Date: **12/8/2017**	SeqNo: **2860676**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	15840.000	0.10						15870	0.189	10	

Sample ID	**N027430-002CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **120747**
Client ID:	**ZZZZZZ**	Batch ID: **R120747**	TestNo: **EPA 120.1**		Analysis Date: **12/8/2017**	SeqNo: **2860691**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	17930.000	0.10						17890	0.223	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027428
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027428-001

Client Sample ID: PE-01-1217
Collection Date: 12/7/2017 12:26:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_171208D**	QC Batch: **R120716**			PrepDate			Analyst: **LR**
pH	7.4	0.10	0.10	H	pH Units	1	12/8/2017 06:35 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	12/8/2017 06:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027428
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027428-002

Client Sample ID: TW-03D-1217
Collection Date: 12/7/2017 12:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_171208D**	QC Batch: **R120716**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	12/8/2017 06:35 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	12/8/2017 06:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N027428-001BDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **120716**
Client ID: **ZZZZZZ** Batch ID: **R120716** TestNo: **SM4500-H+B** Analysis Date: **12/8/2017** SeqNo: **2859432**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.480	0.10						7.430	0.671	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-1217
Lab Order:	N027428	**Collection Date:**	12/7/2017 12:26:00 PM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027428-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171211E**	QC Batch: **66003**				PrepDate	**12/11/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2600	25	25		mg/L	1	12/11/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-1217
Lab Order:	N027428	**Collection Date:**	12/7/2017 12:18:00 PM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027428-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171211E**	QC Batch: **66003**			PrepDate	**12/11/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4300	50	50		mg/L	1	12/11/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-66003	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/11/2017	RunNo:	120759
Client ID:	LCSW	Batch ID:	66003	TestNo:	SM2540C			Analysis Date:	12/11/2017	SeqNo:	2861054

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	959.000	10	1000	0	95.9	80	120				

Sample ID	MB-66003	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/11/2017	RunNo:	120759
Client ID:	PBW	Batch ID:	66003	TestNo:	SM2540C			Analysis Date:	12/11/2017	SeqNo:	2861055

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N027429-005DDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/11/2017	RunNo:	120759
Client ID:	ZZZZZZ	Batch ID:	66003	TestNo:	SM2540C			Analysis Date:	12/11/2017	SeqNo:	2861066

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	12040.000	100						12550	4.15	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027428
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027428-001

Client Sample ID: PE-01-1217
Collection Date: 12/7/2017 12:26:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 200.7							
RunID: **NV00922-ICP2_171213D** QC Batch: **65998** PrepDate **12/11/2017** Analyst: **CEI**							
Calcium	100000	28	500		µg/L	1	12/13/2017 04:39 PM
Iron	630	1.8	20		µg/L	1	12/13/2017 04:39 PM
Magnesium	26000	4.4	100		µg/L	1	12/13/2017 04:39 PM
Sodium	370000	2600	50000		µg/L	100	12/14/2017 03:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027428
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027428-002

Client Sample ID: TW-03D-1217
Collection Date: 12/7/2017 12:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_171213D**	QC Batch: **65998**			PrepDate	**12/11/2017**		Analyst: **CEI**
Calcium	190000	28	500		µg/L	1	12/13/2017 04:55 PM
Iron	ND	1.8	20		µg/L	1	12/13/2017 04:55 PM
Magnesium	29000	4.4	100		µg/L	1	12/13/2017 04:55 PM
Sodium	1500000	2600	50000		µg/L	100	12/14/2017 07:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-65998**	SampType: **MBLK**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **12/11/2017**	RunNo: **120815**
Client ID: **PBW**	Batch ID: **65998**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	ND	20									
Magnesium	8.003	100									

Sample ID **LCS1-65998**	SampType: **LCS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **12/11/2017**	RunNo: **120815**
Client ID: **LCSW**	Batch ID: **65998**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9932.516	500	10000	0	99.3	85	115				
Iron	105.384	20	100.0	0	105	85	115				
Magnesium	9488.089	100	10000	0	94.9	85	115				

Sample ID **N027358-002E-MS1**	SampType: **MS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **12/11/2017**	RunNo: **120815**
Client ID: **ZZZZZZ**	Batch ID: **65998**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865169**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	122839.728	500	10000	113200	95.9	75	125				
Iron	112.485	20	100.0	18.80	93.7	75	125				
Magnesium	35293.982	100	10000	26850	84.4	75	125				

Sample ID **N027358-002E-MSD**	SampType: **MSD**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **12/11/2017**	RunNo: **120815**
Client ID: **ZZZZZZ**	Batch ID: **65998**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865170**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	122808.405	500	10000	113200	95.6	75	125	122800	0.0255	20	
Iron	112.872	20	100.0	18.80	94.1	75	125	112.5	0.343	20	
Magnesium	35372.580	100	10000	26850	85.2	75	125	35290	0.222	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	N027428-001D-MS1	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	12/11/2017	RunNo:	120815
Client ID:	ZZZZZZ	Batch ID:	65998	TestNo:	EPA 200.7			Analysis Date:	12/13/2017	SeqNo:	2865185

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	112041.857	500	10000	104300	77.3	75	125				
Iron	708.504	20	100.0	625.9	82.6	75	125				
Magnesium	34115.238	100	10000	26080	80.4	75	125				

Sample ID	MB-65998	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	12/11/2017	RunNo:	120831
Client ID:	PBW	Batch ID:	65998	TestNo:	EPA 200.7			Analysis Date:	12/14/2017	SeqNo:	2865923

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID	LCS2-65998	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	12/11/2017	RunNo:	120831
Client ID:	LCSW	Batch ID:	65998	TestNo:	EPA 200.7			Analysis Date:	12/14/2017	SeqNo:	2865924

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20202.653	500	20000	0	101	85	115				

Sample ID	N027359-001E-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	12/11/2017	RunNo:	120831
Client ID:	ZZZZZZ	Batch ID:	65998	TestNo:	EPA 200.7			Analysis Date:	12/14/2017	SeqNo:	2865935

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1391264.148	50000	20000	1499000	-539	75	125				S

Sample ID	N027359-001E-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	12/11/2017	RunNo:	120831
Client ID:	ZZZZZZ	Batch ID:	65998	TestNo:	EPA 200.7			Analysis Date:	12/14/2017	SeqNo:	2865936

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1364819.953	50000	20000	1499000	-671	75	125	1391000	1.92	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	N027428-002D-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	12/11/2017	RunNo:	120831
Client ID:	ZZZZZZ	Batch ID:	65998	TestNo:	EPA 200.7			Analysis Date:	12/14/2017	SeqNo:	2866274

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1401994.465	50000	20000	1472000	-348	75	125				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-1217
Lab Order:	N027428	**Collection Date:**	12/7/2017 12:26:00 PM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027428-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_171213F** QC Batch: **66023** PrepDate **12/12/2017** Analyst: **CEI**							
Manganese	310	0.28	2.5		µg/L	5	12/14/2017 12:22 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-1217
Lab Order:	N027428	**Collection Date:**	12/7/2017 12:18:00 PM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027428-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_171213F** QC Batch: **66023** PrepDate **12/12/2017** Analyst: **CEI**							
Manganese	12	0.056	0.50		µg/L	1	12/14/2017 12:05 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-66023**	SampType: **MBLK**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120840**
Client ID: **PBW**	Batch ID: **66023**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2866977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **LCS-66023**	SampType: **LCS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120840**
Client ID: **LCSW**	Batch ID: **66023**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2866978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	105.972	0.50	100.0	0	106	85	115				

Sample ID **N027359-001E-MS**	SampType: **MS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120840**
Client ID: **ZZZZZZ**	Batch ID: **66023**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2866984**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	97.272	0.50	100.0	0.5753	96.7	75	125				

Sample ID **N027359-001E-MSD**	SampType: **MSD**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120840**
Client ID: **ZZZZZZ**	Batch ID: **66023**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2866986**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	96.370	0.50	100.0	0.5753	95.8	75	125	97.27	0.932	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027428
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027428-001

Client Sample ID: PE-01-1217
Collection Date: 12/7/2017 12:26:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211B** QC Batch: **R120834**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 09:35 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_171213F** QC Batch: **66023**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/14/2017 12:17 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027428
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027428-002

Client Sample ID: TW-03D-1217
Collection Date: 12/7/2017 12:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211B** QC Batch: **R120834**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	550	3.3	20		µg/L	100	12/11/2017 08:47 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_171213F** QC Batch: **66023**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	570	0.096	5.0		µg/L	5	12/14/2017 12:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	MB-66023	SampType:	MBLK	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	120840
Client ID:	PBW	Batch ID:	66023	TestNo:	EPA 200.8			Analysis Date:	12/13/2017	SeqNo:	2867167

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66023	SampType:	LCS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	120840
Client ID:	LCSW	Batch ID:	66023	TestNo:	EPA 200.8			Analysis Date:	12/13/2017	SeqNo:	2867168

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.390	1.0	10.00	0	104	85	115				

Sample ID	N027359-001E-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	120840
Client ID:	ZZZZZZ	Batch ID:	66023	TestNo:	EPA 200.8			Analysis Date:	12/13/2017	SeqNo:	2867174

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.257	1.0	10.00	0.5576	97.0	75	125				

Sample ID	N027359-001E-MSD	SampType:	MSD	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	120840
Client ID:	ZZZZZZ	Batch ID:	66023	TestNo:	EPA 200.8			Analysis Date:	12/13/2017	SeqNo:	2867176

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.010	1.0	10.00	0.5576	94.5	75	125	10.26	2.44	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	LCS-R120834	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834	
Client ID:	LCSW	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866068	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	5.175	0.20	5.000	0	104	90	110					

Sample ID	MB-R120834	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834	
Client ID:	PBW	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866069	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	ND	0.20										

Sample ID	N027431-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834	
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866071	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	9591.600	200	5000	4141	109	90	110					

Sample ID	N027431-006AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834	
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866072	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	9630.200	200	5000	4141	110	90	110	9592	0.402	20		

Sample ID	N027428-002ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834	
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866076	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	546.890	20						549.7	0.509	20		

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027428-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1059.800	20	500.0	549.7	102	90	110				

Sample ID **N027428-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0	108	90	110				

Sample ID **N027430-016AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866081**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	16.573	1.0	5.000	11.46	102	90	110				

Sample ID **N027430-017AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.899	1.0	5.000	0.8090	102	90	110				

Sample ID **N027430-018AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.580	1.0	5.000	0	91.6	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027431-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866089

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.637	1.0	5.000	0.3545	106	90	110				

Sample ID	N027431-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866091

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.256	1.0	5.000	0.2550	100	90	110				

Sample ID	N027431-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866093

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.104	1.0	5.000	0.2855	96.4	90	110				

Sample ID	N027431-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866095

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2844.640	40	1000	1798	105	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-1217
Lab Order:	N027428	**Collection Date:**	12/7/2017 12:26:00 PM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027428-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	250	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-1217
Lab Order:	N027428	**Collection Date:**	12/7/2017 12:18:00 PM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027428-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	150	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R120785**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120785**
Client ID: **LCSW**	Batch ID: **R120785**	TestNo: **SM 2320 B**		Analysis Date: **12/13/2017**	SeqNo: **2863164**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	99.398	5.0	100.0	0	99.4	85	115				

Sample ID **MB-R120785**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120785**
Client ID: **PBW**	Batch ID: **R120785**	TestNo: **SM 2320 B**		Analysis Date: **12/13/2017**	SeqNo: **2863165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N027429-005DDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120785**
Client ID: **ZZZZZZ**	Batch ID: **R120785**	TestNo: **SM 2320 B**		Analysis Date: **12/13/2017**	SeqNo: **2863173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	30.120	5.0						30.12	0	30	

Sample ID **N027429-014DMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120785**
Client ID: **ZZZZZZ**	Batch ID: **R120785**	TestNo: **SM 2320 B**		Analysis Date: **12/13/2017**	SeqNo: **2863182**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	204.819	5.0	100.0	102.4	102	75	125				

Sample ID **N027429-014DMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120785**
Client ID: **ZZZZZZ**	Batch ID: **R120785**	TestNo: **SM 2320 B**		Analysis Date: **12/13/2017**	SeqNo: **2863183**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	202.811	5.0	100.0	102.4	100	75	125	204.8	0.985	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027428
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027428-001

Client Sample ID: PE-01-1217
Collection Date: 12/7/2017 12:26:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	1200	1.8	100		mg/L	200	12/12/2017 01:59 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	400	1.1	25		mg/L	50	12/12/2017 02:14 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027428
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027428-002

Client Sample ID: TW-03D-1217
Collection Date: 12/7/2017 12:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	2300	4.6	250		mg/L	500	12/12/2017 02:29 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	500	1.1	25		mg/L	50	12/12/2017 02:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	LCS-RR120764_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	LCSW	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861519

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.108	0.50	2.000	0	105	90	110				

Sample ID	MB-R120764_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	PBW	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861520

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	N027405-004CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861524

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	95.556	10						95.61	0.0607	20	

Sample ID	N027405-004CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861525

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	138.172	10	40.00	95.61	106	80	120				

Sample ID	N027405-004CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861526

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	139.498	10	40.00	95.61	110	80	120	138.2	0.955	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N027405-002EMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861528

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3295.850	250	1000	2224	107	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	LCS-R120764_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	LCSW	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861583

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.012	0.50	4.000	0	100	90	110				

Sample ID	MB-R120764_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	PBW	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861584

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	N027405-004CDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861588

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	234.750	10						236.2	0.616	20	

Sample ID	N027405-004CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861589

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	317.202	10	80.00	236.2	101	80	120				

Sample ID	N027405-004CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861590

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	316.116	10	80.00	236.2	99.9	80	120	317.2	0.343	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N027405-014DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861592

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	113.326	5.0	40.00	73.75	99.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-1217
Lab Order:	N027428	**Collection Date:**	12/7/2017 12:26:00 PM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027428-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171220C**	QC Batch: **R120963**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/20/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-1217
Lab Order:	N027428	**Collection Date:**	12/7/2017 12:18:00 PM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027428-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171219B**	QC Batch: **R120949**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	2.8	0.11	0.25		mg/L	5	12/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R120949	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120949
Client ID:	PBW	Batch ID:	R120949	TestNo:	SM4500-NO3			Analysis Date:	12/19/2017	SeqNo:	2873078

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R120949	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120949
Client ID:	LCSW	Batch ID:	R120949	TestNo:	SM4500-NO3			Analysis Date:	12/19/2017	SeqNo:	2873079

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.491	0.050	0.5000	0	98.2	85	115				

Sample ID	N027405-009CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120949
Client ID:	ZZZZZZ	Batch ID:	R120949	TestNo:	SM4500-NO3			Analysis Date:	12/19/2017	SeqNo:	2873081

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.451	0.50	5.000	4.488	99.3	75	125				

Sample ID	N027405-009CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120949
Client ID:	ZZZZZZ	Batch ID:	R120949	TestNo:	SM4500-NO3			Analysis Date:	12/19/2017	SeqNo:	2873082

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.018	0.50	5.000	4.488	90.6	75	125	9.451	4.69	20	

Sample ID	N027405-012CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120949
Client ID:	ZZZZZZ	Batch ID:	R120949	TestNo:	SM4500-NO3			Analysis Date:	12/19/2017	SeqNo:	2873084

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.470	0.25						4.022	14.7	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R120963	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120963
Client ID:	PBW	Batch ID:	R120963	TestNo:	SM4500-NO3			Analysis Date:	12/20/2017	SeqNo:	2873452

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R120963	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120963
Client ID:	LCSW	Batch ID:	R120963	TestNo:	SM4500-NO3			Analysis Date:	12/20/2017	SeqNo:	2873453

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.482	0.050	0.5000	0	96.3	85	115				

Sample ID	N027429-003CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120963
Client ID:	ZZZZZZ	Batch ID:	R120963	TestNo:	SM4500-NO3			Analysis Date:	12/20/2017	SeqNo:	2873455

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.637	0.10	1.000	1.657	98.1	75	125				

Sample ID	N027429-003CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120963
Client ID:	ZZZZZZ	Batch ID:	R120963	TestNo:	SM4500-NO3			Analysis Date:	12/20/2017	SeqNo:	2873456

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.665	0.10	1.000	1.657	101	75	125	2.637	1.03	20	

Sample ID	N027405-006CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120963
Client ID:	ZZZZZZ	Batch ID:	R120963	TestNo:	SM4500-NO3			Analysis Date:	12/20/2017	SeqNo:	2873458

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.124	0.050						0.1567	23.3	20	R

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement		QA/QC		Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD		RTNE		Y N
			Geotracker		RWQCB	✓	1. Chilled ✓
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Labspec		CalTrans		2. Headspace
			Others	✓	LEVEL III		3. Container Intact
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Specify: RWQCB		LEVEL IV		4. Seal Present
					Regulatory		5. IR number ✓
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	Global ID:		Specify State:		6. Method of Cooling: ice
Title: Geologist II	Phone: 916-786-3302 Fax:						Sample Temp: 2.9°C
Signature: Date: 12/7/2017	Sampled By: Gantt Jeffers						

I hereby authorize ASSET Labs to perform the tests indicated below.

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Project Name: PG&E Topock - PMP
Project Number: RC000753.801B
Signature: Date: 12/7/2017

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Courier:
Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (EPA 218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	pH (SM4500-HB) (1 liter poly)	Chloide, Sulfate (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM2540C) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Nitrate/Nitrite as Nitrogen (SM4500-N03 F); H2SO4 (250 mL poly)	Metals Dissolved (EPA 200.8 FF) (Cr, Mn); HNO3 (500 mL poly)	Metals Dissolved (EPA 200.7 FF) (Ca, Fe, Mg, Na); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027428-01	PE-01-1217	12/7/2017	12:26		X	X	X	X	X	X	X	X	X	E	4	P	BNS	
2	-02	TW-03D-1217	12/7/2017	12:18		X	X	X	X	X	X	X	X	X	E	4	P	BNS	
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
Gantt Jeffers Gantt Jeffers	12.7.17	[illegible]	12/7/17 1624
[illegible]	12/7/17 1842	[illegible]	12/7/17 1842
[illegible]			

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages. 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B = $(NH4)2SO4/NH4OH$		

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/7/2017	Workorder:	N027428
Rep sample Temp (Deg C):	2.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	N/A	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were past holding time upon receipt.

Checklist Completed By: YR 12/19/2017

Reviewed By: 12/20/2017

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027428

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027428-001A	PE-01-1217	12/7/2017 12:26:00 PM	12/21/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027428-001B			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM4500-H+B	pH	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027428-001C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027428-001D			12/21/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			12/21/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027428-002A	TW-03D-1217	12/7/2017 12:18:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027428-002B			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM4500-H+B	pH	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027428

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027428-002B	TW-03D-1217	12/7/2017 12:18:00 PM	12/21/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027428-002C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027428-002D			12/21/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			12/21/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027428-003A	FOLDER	12/21/2017	12/21/2017		Folder	Folder	☐	☐	☐	LAB
			12/21/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - PMP

Project No.: RC000753.801B

ASSET Laboratories Work Order:

N027428

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

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December 22, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027428

RE: PG&E Topock - PMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 07, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburdi for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N027359-001E-MS2, N027359-001E-MSD2 and N027428-002D-MS2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *22-Dec-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.801B
Lab Order: N027428
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027428-001A	PE-01-1217	Groundwater	12/7/2017 12:26:00 PM	12/7/2017	12/22/2017
N027428-001B	PE-01-1217	Groundwater	12/7/2017 12:26:00 PM	12/7/2017	12/22/2017
N027428-001C	PE-01-1217	Groundwater	12/7/2017 12:26:00 PM	12/7/2017	12/22/2017
N027428-001D	PE-01-1217	Groundwater	12/7/2017 12:26:00 PM	12/7/2017	12/22/2017
N027428-002A	TW-03D-1217	Groundwater	12/7/2017 12:18:00 PM	12/7/2017	12/22/2017
N027428-002B	TW-03D-1217	Groundwater	12/7/2017 12:18:00 PM	12/7/2017	12/22/2017
N027428-002C	TW-03D-1217	Groundwater	12/7/2017 12:18:00 PM	12/7/2017	12/22/2017
N027428-002D	TW-03D-1217	Groundwater	12/7/2017 12:18:00 PM	12/7/2017	12/22/2017

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027428
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027428-001

Client Sample ID: PE-01-1217
Collection Date: 12/7/2017 12:26:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	3700	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027428
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027428-002

Client Sample ID: TW-03D-1217
Collection Date: 12/7/2017 12:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	6100	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N027429-005DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120747
Client ID:	ZZZZZZ	Batch ID:	R120747	TestNo:	EPA 120.1			Analysis Date:	12/8/2017	SeqNo:	2860676

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	15840.000	0.10						15870	0.189	10	

Sample ID	N027430-002CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120747
Client ID:	ZZZZZZ	Batch ID:	R120747	TestNo:	EPA 120.1			Analysis Date:	12/8/2017	SeqNo:	2860691

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	17930.000	0.10						17890	0.223	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027428
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027428-001

Client Sample ID: PE-01-1217
Collection Date: 12/7/2017 12:26:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_171208D**	QC Batch: **R120716**			PrepDate			Analyst: **LR**
pH	7.4	0.10	0.10	H	pH Units	1	12/8/2017 06:35 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	12/8/2017 06:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027428
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027428-002

Client Sample ID: TW-03D-1217
Collection Date: 12/7/2017 12:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_171208D**	QC Batch: **R120716**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	12/8/2017 06:35 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	12/8/2017 06:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N027428-001BDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **120716**
Client ID: **ZZZZZZ** Batch ID: **R120716** TestNo: **SM4500-H+B** Analysis Date: **12/8/2017** SeqNo: **2859432**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.480	0.10						7.430	0.671	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-1217
Lab Order:	N027428	**Collection Date:**	12/7/2017 12:26:00 PM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027428-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171211E**	QC Batch: **66003**				PrepDate	**12/11/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2600	25	25		mg/L	1	12/11/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-1217
Lab Order:	N027428	**Collection Date:**	12/7/2017 12:18:00 PM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027428-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171211E**	QC Batch: **66003**			PrepDate	**12/11/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4300	50	50		mg/L	1	12/11/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66003**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/11/2017**	RunNo: **120759**
Client ID: **LCSW**	Batch ID: **66003**	TestNo: **SM2540C**		Analysis Date: **12/11/2017**	SeqNo: **2861054**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	959.000	10	1000	0	95.9	80	120				

Sample ID **MB-66003**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/11/2017**	RunNo: **120759**
Client ID: **PBW**	Batch ID: **66003**	TestNo: **SM2540C**		Analysis Date: **12/11/2017**	SeqNo: **2861055**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N027429-005DDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/11/2017**	RunNo: **120759**
Client ID: **ZZZZZZ**	Batch ID: **66003**	TestNo: **SM2540C**		Analysis Date: **12/11/2017**	SeqNo: **2861066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	12040.000	100						12550	4.15	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027428
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027428-001

Client Sample ID: PE-01-1217
Collection Date: 12/7/2017 12:26:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 200.7

RunID: **NV00922-ICP2_171213D** QC Batch: **65998** PrepDate **12/11/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Calcium	100000	28	500		µg/L	1	12/13/2017 04:39 PM
Iron	630	1.8	20		µg/L	1	12/13/2017 04:39 PM
Magnesium	26000	4.4	100		µg/L	1	12/13/2017 04:39 PM
Sodium	370000	2600	50000		µg/L	100	12/14/2017 03:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027428
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027428-002

Client Sample ID: TW-03D-1217
Collection Date: 12/7/2017 12:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_171213D**	QC Batch: **65998**			PrepDate	**12/11/2017**		Analyst: **CEI**
Calcium	190000	28	500		µg/L	1	12/13/2017 04:55 PM
Iron	ND	1.8	20		µg/L	1	12/13/2017 04:55 PM
Magnesium	29000	4.4	100		µg/L	1	12/13/2017 04:55 PM
Sodium	1500000	2600	50000		µg/L	100	12/14/2017 07:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-65998**	SampType: **MBLK**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **12/11/2017**	RunNo: **120815**
Client ID: **PBW**	Batch ID: **65998**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	ND	20									
Magnesium	8.003	100									

Sample ID **LCS1-65998**	SampType: **LCS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **12/11/2017**	RunNo: **120815**
Client ID: **LCSW**	Batch ID: **65998**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9932.516	500	10000	0	99.3	85	115				
Iron	105.384	20	100.0	0	105	85	115				
Magnesium	9488.089	100	10000	0	94.9	85	115				

Sample ID **N027358-002E-MS1**	SampType: **MS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **12/11/2017**	RunNo: **120815**
Client ID: **ZZZZZZ**	Batch ID: **65998**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865169**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	122839.728	500	10000	113200	95.9	75	125				
Iron	112.485	20	100.0	18.80	93.7	75	125				
Magnesium	35293.982	100	10000	26850	84.4	75	125				

Sample ID **N027358-002E-MSD**	SampType: **MSD**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **12/11/2017**	RunNo: **120815**
Client ID: **ZZZZZZ**	Batch ID: **65998**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865170**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	122808.405	500	10000	113200	95.6	75	125	122800	0.0255	20	
Iron	112.872	20	100.0	18.80	94.1	75	125	112.5	0.343	20	
Magnesium	35372.580	100	10000	26850	85.2	75	125	35290	0.222	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	N027428-001D-MS1	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	12/11/2017	RunNo:	120815
Client ID:	ZZZZZZ	Batch ID:	65998	TestNo:	EPA 200.7			Analysis Date:	12/13/2017	SeqNo:	2865185

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	112041.857	500	10000	104300	77.3	75	125				
Iron	708.504	20	100.0	625.9	82.6	75	125				
Magnesium	34115.238	100	10000	26080	80.4	75	125				

Sample ID	MB-65998	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	12/11/2017	RunNo:	120831
Client ID:	PBW	Batch ID:	65998	TestNo:	EPA 200.7			Analysis Date:	12/14/2017	SeqNo:	2865923

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID	LCS2-65998	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	12/11/2017	RunNo:	120831
Client ID:	LCSW	Batch ID:	65998	TestNo:	EPA 200.7			Analysis Date:	12/14/2017	SeqNo:	2865924

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20202.653	500	20000	0	101	85	115				

Sample ID	N027359-001E-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	12/11/2017	RunNo:	120831
Client ID:	ZZZZZZ	Batch ID:	65998	TestNo:	EPA 200.7			Analysis Date:	12/14/2017	SeqNo:	2865935

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1391264.148	50000	20000	1499000	-539	75	125				S

Sample ID	N027359-001E-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	12/11/2017	RunNo:	120831
Client ID:	ZZZZZZ	Batch ID:	65998	TestNo:	EPA 200.7			Analysis Date:	12/14/2017	SeqNo:	2865936

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1364819.953	50000	20000	1499000	-671	75	125	1391000	1.92	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	N027428-002D-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	12/11/2017	RunNo:	120831
Client ID:	ZZZZZZ	Batch ID:	65998	TestNo:	EPA 200.7			Analysis Date:	12/14/2017	SeqNo:	2866274

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1401994.465	50000	20000	1472000	-348	75	125				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027428
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027428-001

Client Sample ID: PE-01-1217
Collection Date: 12/7/2017 12:26:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_171213F** QC Batch: **66023** PrepDate **12/12/2017** Analyst: **CEI**							
Manganese	310	0.28	2.5		µg/L	5	12/14/2017 12:22 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027428
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027428-002

Client Sample ID: TW-03D-1217
Collection Date: 12/7/2017 12:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_171213F** QC Batch: **66023** PrepDate **12/12/2017** Analyst: **CEI**							
Manganese	12	0.056	0.50		µg/L	1	12/14/2017 12:05 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-66023**	SampType: **MBLK**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120840**
Client ID: **PBW**	Batch ID: **66023**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2866977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **LCS-66023**	SampType: **LCS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120840**
Client ID: **LCSW**	Batch ID: **66023**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2866978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	105.972	0.50	100.0	0	106	85	115				

Sample ID **N027359-001E-MS**	SampType: **MS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120840**
Client ID: **ZZZZZZ**	Batch ID: **66023**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2866984**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	97.272	0.50	100.0	0.5753	96.7	75	125				

Sample ID **N027359-001E-MSD**	SampType: **MSD**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120840**
Client ID: **ZZZZZZ**	Batch ID: **66023**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2866986**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	96.370	0.50	100.0	0.5753	95.8	75	125	97.27	0.932	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027428
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027428-001

Client Sample ID: PE-01-1217
Collection Date: 12/7/2017 12:26:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211B**	QC Batch: **R120834**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 09:35 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_171213F**	QC Batch: **66023**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/14/2017 12:17 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027428
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027428-002

Client Sample ID: TW-03D-1217
Collection Date: 12/7/2017 12:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211B** QC Batch: **R120834**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	550	3.3	20		µg/L	100	12/11/2017 08:47 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_171213F** QC Batch: **66023**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	570	0.096	5.0		µg/L	5	12/14/2017 12:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	MB-66023	SampType:	MBLK	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	120840
Client ID:	PBW	Batch ID:	66023	TestNo:	EPA 200.8			Analysis Date:	12/13/2017	SeqNo:	2867167

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66023	SampType:	LCS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	120840
Client ID:	LCSW	Batch ID:	66023	TestNo:	EPA 200.8			Analysis Date:	12/13/2017	SeqNo:	2867168

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.390	1.0	10.00	0	104	85	115				

Sample ID	N027359-001E-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	120840
Client ID:	ZZZZZZ	Batch ID:	66023	TestNo:	EPA 200.8			Analysis Date:	12/13/2017	SeqNo:	2867174

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.257	1.0	10.00	0.5576	97.0	75	125				

Sample ID	N027359-001E-MSD	SampType:	MSD	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	120840
Client ID:	ZZZZZZ	Batch ID:	66023	TestNo:	EPA 200.8			Analysis Date:	12/13/2017	SeqNo:	2867176

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.010	1.0	10.00	0.5576	94.5	75	125	10.26	2.44	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	LCS-R120834	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834	
Client ID:	LCSW	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866068	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	5.175	0.20	5.000	0	104	90	110					

Sample ID	MB-R120834	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834	
Client ID:	PBW	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866069	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	ND	0.20										

Sample ID	N027431-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834	
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866071	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	9591.600	200	5000	4141	109	90	110					

Sample ID	N027431-006AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834	
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866072	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	9630.200	200	5000	4141	110	90	110	9592	0.402	20		

Sample ID	N027428-002ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834	
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866076	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	546.890	20						549.7	0.509	20		

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027428-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120834**
Client ID: **ZZZZZZ** Batch ID: **R120834** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1059.800	20	500.0	549.7	102	90	110				

Sample ID **N027428-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120834**
Client ID: **ZZZZZZ** Batch ID: **R120834** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0	108	90	110				

Sample ID **N027430-016AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120834**
Client ID: **ZZZZZZ** Batch ID: **R120834** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866081**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	16.573	1.0	5.000	11.46	102	90	110				

Sample ID **N027430-017AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120834**
Client ID: **ZZZZZZ** Batch ID: **R120834** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.899	1.0	5.000	0.8090	102	90	110				

Sample ID **N027430-018AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120834**
Client ID: **ZZZZZZ** Batch ID: **R120834** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.580	1.0	5.000	0	91.6	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027431-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866089

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.637	1.0	5.000	0.3545	106	90	110				

Sample ID	N027431-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866091

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.256	1.0	5.000	0.2550	100	90	110				

Sample ID	N027431-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866093

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.104	1.0	5.000	0.2855	96.4	90	110				

Sample ID	N027431-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866095

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2844.640	40	1000	1798	105	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-1217
Lab Order:	N027428	**Collection Date:**	12/7/2017 12:26:00 PM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027428-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	250	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-1217
Lab Order:	N027428	**Collection Date:**	12/7/2017 12:18:00 PM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027428-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	150	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R120785**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120785**
Client ID: **LCSW**	Batch ID: **R120785**	TestNo: **SM 2320 B**		Analysis Date: **12/13/2017**	SeqNo: **2863164**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	99.398	5.0	100.0	0	99.4	85	115				

Sample ID **MB-R120785**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120785**
Client ID: **PBW**	Batch ID: **R120785**	TestNo: **SM 2320 B**		Analysis Date: **12/13/2017**	SeqNo: **2863165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N027429-005DDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120785**
Client ID: **ZZZZZZ**	Batch ID: **R120785**	TestNo: **SM 2320 B**		Analysis Date: **12/13/2017**	SeqNo: **2863173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	30.120	5.0						30.12	0	30	

Sample ID **N027429-014DMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120785**
Client ID: **ZZZZZZ**	Batch ID: **R120785**	TestNo: **SM 2320 B**		Analysis Date: **12/13/2017**	SeqNo: **2863182**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	204.819	5.0	100.0	102.4	102	75	125				

Sample ID **N027429-014DMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120785**
Client ID: **ZZZZZZ**	Batch ID: **R120785**	TestNo: **SM 2320 B**		Analysis Date: **12/13/2017**	SeqNo: **2863183**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	202.811	5.0	100.0	102.4	100	75	125	204.8	0.985	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027428
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027428-001

Client Sample ID: PE-01-1217
Collection Date: 12/7/2017 12:26:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	1200	1.8	100		mg/L	200	12/12/2017 01:59 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	400	1.1	25		mg/L	50	12/12/2017 02:14 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-1217
Lab Order:	N027428	**Collection Date:**	12/7/2017 12:18:00 PM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027428-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Chloride	2300	4.6	250		mg/L	500	12/12/2017 02:29 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171211B** QC Batch: **R120764**				PrepDate			Analyst: **RAB**
Sulfate	500	1.1	25		mg/L	50	12/12/2017 02:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	LCS-RR120764_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	LCSW	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861519

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.108	0.50	2.000	0	105	90	110				

Sample ID	MB-R120764_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	PBW	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861520

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	N027405-004CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861524

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	95.556	10						95.61	0.0607	20	

Sample ID	N027405-004CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861525

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	138.172	10	40.00	95.61	106	80	120				

Sample ID	N027405-004CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861526

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	139.498	10	40.00	95.61	110	80	120	138.2	0.955	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N027405-002EMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861528

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3295.850	250	1000	2224	107	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	LCS-R120764_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	LCSW	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861583

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.012	0.50	4.000	0	100	90	110				

Sample ID	MB-R120764_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	PBW	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861584

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	N027405-004CDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861588

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	234.750	10						236.2	0.616	20	

Sample ID	N027405-004CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861589

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	317.202	10	80.00	236.2	101	80	120				

Sample ID	N027405-004CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861590

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	316.116	10	80.00	236.2	99.9	80	120	317.2	0.343	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N027405-014DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120764
Client ID:	ZZZZZZ	Batch ID:	R120764	TestNo:	EPA 300.0			Analysis Date:	12/11/2017	SeqNo:	2861592

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	113.326	5.0	40.00	73.75	99.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-1217
Lab Order:	N027428	**Collection Date:**	12/7/2017 12:26:00 PM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027428-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171220C**	QC Batch: **R120963**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/20/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027428
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027428-002

Client Sample ID: TW-03D-1217
Collection Date: 12/7/2017 12:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171219B**	QC Batch: **R120949**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	2.8	0.11	0.25		mg/L	5	12/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R120949	**MBLK**	**4500N03F_W**	**mg/L**		**120949**
Client ID: **PBW**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873078**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-R120949	**LCS**	**4500N03F_W**	**mg/L**		**120949**
Client ID: **LCSW**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.491	0.050	0.5000	0	98.2	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027405-009CMS	**MS**	**4500N03F_W**	**mg/L**		**120949**
Client ID: **ZZZZZZ**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873081**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.451	0.50	5.000	4.488	99.3	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027405-009CMSD	**MSD**	**4500N03F_W**	**mg/L**		**120949**
Client ID: **ZZZZZZ**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873082**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.018	0.50	5.000	4.488	90.6	75	125	9.451	4.69	20	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027405-012CDUP	**DUP**	**4500N03F_W**	**mg/L**		**120949**
Client ID: **ZZZZZZ**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.470	0.25						4.022	14.7	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R120963	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120963
Client ID:	PBW	Batch ID:	R120963	TestNo:	SM4500-NO3			Analysis Date:	12/20/2017	SeqNo:	2873452

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R120963	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120963
Client ID:	LCSW	Batch ID:	R120963	TestNo:	SM4500-NO3			Analysis Date:	12/20/2017	SeqNo:	2873453

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.482	0.050	0.5000	0	96.3	85	115				

Sample ID	N027429-003CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120963
Client ID:	ZZZZZZ	Batch ID:	R120963	TestNo:	SM4500-NO3			Analysis Date:	12/20/2017	SeqNo:	2873455

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.637	0.10	1.000	1.657	98.1	75	125				

Sample ID	N027429-003CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120963
Client ID:	ZZZZZZ	Batch ID:	R120963	TestNo:	SM4500-NO3			Analysis Date:	12/20/2017	SeqNo:	2873456

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.665	0.10	1.000	1.657	101	75	125	2.637	1.03	20	

Sample ID	N027405-006CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120963
Client ID:	ZZZZZZ	Batch ID:	R120963	TestNo:	SM4500-NO3			Analysis Date:	12/20/2017	SeqNo:	2873458

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.124	0.050						0.1567	23.3	20	R

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement		QA/QC		Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD		RTNE		Y N
			Geotracker		RWQCB	✓	1. Chilled ✓
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Labspec		CalTrans		2. Headspace
			Others	✓	LEVEL III		3. Container Intact
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Specify: RWQCB		LEVEL IV		4. Seal Present
					Regulatory		5. IR number ✓
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	Global ID:		Specify State:		6. Method of Cooling: ice
Title: Geologist II	Phone: 916-786-3302 Fax:						Sample Temp: 2.9°C
Signature: Date: 12/7/2017	Sampled By: Gantt Jeffers						Courier:
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*						Tracking No.:
Project Name: PG&E Topock - PMP	Signature: Date: 12/7/2017						
Project Number: RC000753.801B							

Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (EPA 218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	pH (SM4500-HB) (1 liter poly)	Chloide, Sulfate (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM2540C) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Nitrate/Nitrite as Nitrogen (SM4500-N03 F); H2SO4 (250 mL poly)	Metals Dissolved (EPA 200.8 FF) (Cr, Mn); HNO3 (500 mL poly)	Metals Dissolved (EPA 200.7 FF) (Ca, Fe, Mg, Na); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027428-01	PE-01-1217	12/7/2017	12:26		X	X	X	X	X	X	X	X	X	E	4	P	BNS	
2	-02	TW-03D-1217	12/7/2017	12:18		X	X	X	X	X	X	X	X	X	E	4	P	BNS	
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Relinquished by (Signature and Printed Name): Gantt Jeffers	Date/Time: 12.7.17	Relinquished by (Signature and Printed Name):	Date/Time: 12/7/17 1624
Relinquished by (Signature and Printed Name):	Date/Time: 12/7/17 1842	Relinquished by (Signature and Printed Name):	Date/Time: 12/7/17 1842
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages. 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B = $(NH_4)2SO4/NH4OH$		

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/7/2017	Workorder:	N027428
Rep sample Temp (Deg C):	2.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	N/A	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were past holding time upon receipt.

Checklist Completed By: YR 12/19/2017

Reviewed By: 12/20/2017

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027428

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027428-001A	PE-01-1217	12/7/2017 12:26:00 PM	12/21/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027428-001B			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM4500-H+B	pH	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027428-001C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027428-001D			12/21/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			12/21/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027428-002A	TW-03D-1217	12/7/2017 12:18:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027428-002B			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM4500-H+B	pH	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027428

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027428-002B	TW-03D-1217	12/7/2017 12:18:00 PM	12/21/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027428-002C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027428-002D			12/21/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			12/21/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027428-003A	FOLDER	12/21/2017	12/21/2017		Folder	Folder	☐	☐	☐	LAB
			12/21/2017		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N027428

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 200.7_Dissolved, EPA 200.8_Dissolved
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	EPA 120.1, SM 4500-H+B, SM 2540C, SM 2320 B

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120747 **Analyst:** LSR

ASSET #: N027428 **Date Analyzed:** 12/8/2017

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 12/21/2017

2nd Level Reviewer: RLB 12/22/2017 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 12/7/17 1710
Analyst: LSR

Standard	Std ID	Reading	Comments
9.43 µS/cm	CNW-171018A	9.65 @ 19.5°C	% Rec: (90-110%)
1410	170822C	1425 @ 19.5°C	
9986	171018B	10120 @ 19.5°C	
99672	170822E	99600 @ 19.5°C	

	Sample ID	Matrix	Reading	Comments
1	NO27412-001B	H2O	60800 @ 18.8C	
2	NO27413-001B		88700 @ 18.9C	
3	NO27414-001B		3860 @ 18.7°C	
4	NO27416-001B		93100 @ 18.4C	
5	NO27417-001B		97600 @ 18.7°C	
6	1BDUP		97300 @ 18.4C	
7				
8				
9	1413 µS/cm	CNW-170615G	1462 @ 20.9°C	
10	10000	170822F	10150 @ 21.1°C	
Dup	99672	170831B	95800 @ 21.3°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: 12/8/17 1700
Analyst: LSR

Julia Ramit 12/21/2017

RB 12/22/2017

Standard	Std ID	Reading	Comments
9.43 µS/cm	CNW-171018A	9.42 @ 21.1°C	% Rec: (90-110%)
1410	170822C	1429 @ 21.3°C	
9986	171018B	10070 @ 21.4°C	
99672	170822E	99300 @ 21.4°C	

	Sample ID	Matrix	Reading	Comments
1	NO27428-001B	H2O	3710 @ 21.1°C	
2	2B		6060 @ 20.5°C	
3	NO27429-001D		13970 @ 20.4C	1413 CNW 170615G
4	2D		1396 @ 20.4°C	= 1485 @ 21.9°C
5	3D		14230 @ 20.3C	10000 CNW 170822F
6	5D		15870 @ 20.6°C	= 10150 @ 21.8C
7	6D		15730 @ 20.6°C	99672 CNW 170831B
8	7D		1374 @ 20.5°C	= 98900 @ 21.8C
9	8D		1378 @ 20.0°C	
10	9D		11950 @ 20.1°C	
Dup	5D DUP		15840 @ 20.6C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 6

SM 4500-H+B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120949 **Analyst:** QBM

ASSET #: N027405, N027428, N027429 **Date Analyzed:** 12/19/2017

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 12/22/2017

2nd Level Reviewer RLB 12/22/2017 Date:

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120963 **Analyst:** QBM

ASSET #: N027405, N027428, N027429 **Date Analyzed:** 12/20/2017

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented		X			X	
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

RPD of Nitrate/Nitrite as N in N027405-006CDUP @1x failed.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 12/22/2017

2nd Level Reviewer RJB 12/22/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N027428-002C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.5615	*	5
	=	2.8075	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 2.8 mg/L

RLB 12/22/2017

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

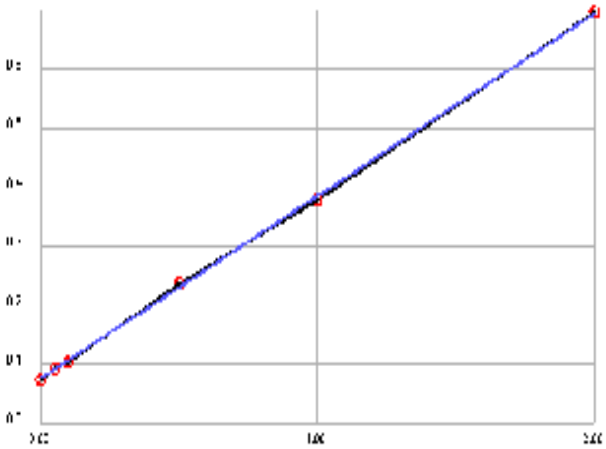
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.3095x + 0.0753
Correlation	.999797

Calibrant	Energy	Set	Conc
1	0.0745	0.0000	-0.0026
2	0.0927	0.0500	0.0562
3	0.1042	0.1000	0.0934
4	0.2365	0.5000	0.5208
5	0.3769	1.0000	0.9745
6	0.6967	2.0000	2.0077

Notes:

12/22/2017

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

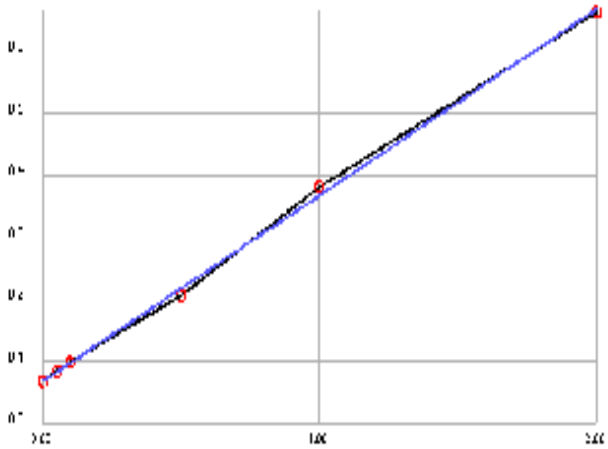
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2996x + 0.0679
Correlation	.999415

Calibrant	Energy	Set	Conc
1	0.0674	0.0000	-0.0018
2	0.0838	0.0500	0.0529
3	0.0988	0.1000	0.1030
4	0.2071	0.5000	0.4645
5	0.3812	1.0000	1.0456
6	0.6629	2.0000	1.9859

Notes:

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **ICV**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.484	0.050	0.5000	0	96.8	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCV**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.461	0.050	0.5000	0	92.1	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCV**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.475	0.050	0.5000	0	95.1	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCV**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.471	0.050	0.5000	0	94.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **ICV**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873450**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.507	0.050	0.5000	0	101	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **CCV**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873461**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.493	0.050	0.5000	0	98.6	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **CCV**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.498	0.050	0.5000	0	99.5	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **CCV**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.511	0.050	0.5000	0	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **ICB**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCB**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873088**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCB**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCB**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **ICB**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **CCB**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **CCB**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 12-19-2017 16:35
Time end: 12-19-2017 19:38

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	18:55:00	0.0016		0.0758
2	<BLANK>	18:55:53	0.0035		0.0764
3	<CAL1>	18:56:55	-0.0026	[0]	0.0745
4	<CAL2>	18:57:50	0.0562	[0.05]	0.0927
5	<CAL3>	18:58:52	0.0934	[0.1]	0.1042
6	<CAL4>	18:59:46	0.5208	[0.5]	0.2365
7	<CAL5>	19:00:41	0.9745	[1]	0.3769
8	<CAL6>	19:01:37	2.0077	[2]	0.6967
9	,BLANK,BLANK,1, NOT REPORTED	19:02:37	0.0336		0.0857
10	,ICV,ICV,1,	19:03:32	0.4840		0.2251
11	,ICB,ICB,1,	19:04:34	0.0087		0.0780
12	,MB-H2O,MBLK,1,	19:05:29	-0.0007		0.0751
13	,LCS-H2O,LCS,1,	19:06:23	0.4911		0.2273
14	,N027405-009C,SAMP,10,	19:07:25	0.4488		0.2142
15	,N027405-009CMS,MS,10,	19:08:21	0.9451		0.3678
16	,N027405-009CMSD,MSD,10,	19:09:15	0.9018		0.3544
17	,N027405-012C,SAMP,5,	19:10:17	0.8045		0.3243
18	,N027405-012CDUP,DUP,5,	19:11:12	0.6940		0.2901
19	,N027405-011C,SAMP,1, NOT REPORTED	19:12:08	0.2588		0.1554
20	,N027405-013C,SAMP,5,	19:13:08	0.5454		0.2441
21	,BLANK, NOT REPORTED	19:14:04	0.0032		0.0763
22	,CCV-1,CCV,1,	19:14:59	0.4607		0.2179
23	,CCB-1,CCB,1,	19:15:59	-0.0029		0.0744
24	,N027405-002D,SAMP,1, NOT REPORTED	19:16:55	0.1451		0.1202
25	,N027405-003D,SAMP,1,	19:17:56	0.3764		0.1918
26	,N027405-006C,SAMP,1,	19:18:52	0.5486		0.2451

RLB 12/22/2017

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N027405-007C,SAMP,1,	19:19:46	0.1980		0.1366
28	,N027405-008C,SAMP,1,	19:20:47	0.2594		0.1556
29	,N027405-014C,SAMP,1,	19:21:43	0.1066		0.1083
30	,N027429-001C,SAMP,1,	19:22:31	0.0333		0.0856
31	,N027429-002C,SAMP,1,	19:23:14	0.0281		0.0840
32	,N027428-002C,SAMP,5,	19:24:04	0.5615		0.2491
33	,CCV-2,CCV,1,	19:24:46	0.4543		0.2159
34	,CCV-2,CCV,1,	19:25:29	0.4753		0.2224
35	,CCB-2,CCB,1,	19:26:17	-0.0084		0.0727
36	,N027429-003C,SAMP,2,	19:27:00	0.8307		0.3324
37	,N027429-005C,SAMP,1,	19:27:48	0.0413		0.0881
38	,N027429-006C,SAMP,1,	19:28:32	0.0504		0.0909
39	,N027406-001A,SAMP,5,	19:29:14	0.5738		0.2529
40	,N027406-002A,SAMP,5,	19:30:03	0.7402		0.3044
41	,N027406-003A,SAMP,5,	19:30:47	0.6846		0.2872
42	,N027406-004A,SAMP,1,	19:31:29	0.0110		0.0787
43	,BLANK,	19:32:18	-0.0252		0.0675
44	,BLANK,	19:33:00	-0.0281		0.0666
45	,BLANK,	19:33:43	-0.0259		0.0673
46	,CCV-3,CCV,1,	19:34:31	0.4333		0.2094
47	,CCV-3,CCV,1,	19:35:15	0.4714		0.2212
48	,CCB-3,CCB,1,	19:35:58	-0.0133		0.0712

NOT REPORTED

12/22/2017

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 12/19/2017
Time Analyzed:4:31 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171201B
Color reagent: R171201C
2% Copper Sulfate: R171201D
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027405-002D		8.40							
N027405-003D		8.48							
N027405-006C		8.49							
N027405-007C		8.65							
N027405-008C		8.42							
N027405-009C		8.15							
N027405-011C		8.09							
N027405-012C		8.33							
N027405-013C		8.16							
N027405-014C		6.64							
N027406-001A		7.59							
N027406-002A		8.68							
N027406-003A		8.40							
N027406-004A		7.92							
N027428-002C		8.38							
N027429-001C		6.91							
N027429-002C		8.13							
N027429-003C		6.9							
N027429-005C		8.33							
N027429-006C		8.17							

Advanced Technology Laboratories, Inc.
Book # 1

RLB 12/22/2017

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 12-20-2017 15:49
Time end: 12-20-2017 17:58

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	17:30:12	-0.0045		0.0666
2	<BLANK>	17:31:07	0.0008		0.0682
3	<CAL1>	17:32:07	-0.0018	[0]	0.0674
4	<CAL2>	17:33:02	0.0529	[0.05]	0.0838
5	<CAL3>	17:34:03	0.1030	[0.1]	0.0988
6	<CAL4>	17:34:59	0.4645	[0.5]	0.2071
7	<CAL5>	17:35:53	1.0456	[1]	0.3812
8	<CAL6>	17:36:54	1.9859	[2]	0.6629
9	,BLANK,BLANK,1, NOT REPORTED	17:37:49	0.0436		0.0810
10	,ICV,ICV,1,	17:38:51	0.5065		0.2197
11	,ICB,ICB,1,	17:39:45	0.0085		0.0705
12	,MB-H2O,MBLK,1,	17:40:40	0.0062		0.0698
13	,LCS-H2O,LCS,1,	17:41:35	0.4815		0.2122
14	,N027429-003C,SAMP,2,	17:42:36	0.8283		0.3161
15	,N027429-003CMS,MS,2,	17:43:19	1.3186		0.4630
16	,N027429-003CMSD,MSD,2,	17:44:08	1.3323		0.4671
17	,N027405-006C,SAMP,1,	17:44:57	0.1567		0.1149
18	,N027405-006CDUP,DUP,1,	17:45:40	0.1240		0.1051
19	,N027405-002D,SAMP,1,	17:46:22	0.0242		0.0752
20	,N027405-003D,SAMP,1,	17:47:11	0.0175		0.0732
21	,BLANK, NOT REPORTED	17:47:53	0.0008		0.0682
22	,CCV-1,CCV,1,	17:48:36	0.4928		0.2156
23	,CCB-1,CCB,1,	17:49:25	0.0012		0.0683
24	,N027405-007C,SAMP,1,	17:50:07	0.0202		0.0740
25	,N027405-008C,SAMP,1,	17:50:51	0.0623		0.0866
26	,N027405-011C,SAMP,1,	17:51:38	0.0038		0.0691

RLB 12/22/2017

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N027405-014C,SAMP,1,	17:52:22	0.0422		0.0806
28	,N027428-001C,SAMP,1,	17:53:10	0.0062		0.0698
29	,BLANK, NOT REPORTED	17:53:53	-0.0092		0.0652
30	,BLANK, NOT REPORTED	17:54:35	-0.0148		0.0635
31	,CCV-2,CCV,1, NOT REPORTED	17:55:24	0.4975		0.2170
32	,CCV-2,CCV,1,	17:56:08	0.5105		0.2209
33	,CCB-2,CCB,1,	17:56:49	-0.0022		0.0673

12/22/2017

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 12/20/2017
Time Analyzed:3:45 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171220B
Color reagent: R171220C
2% Copper Sulfate: R171220A
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027405-002D		7.77							
N027405-003D		8.35							
N027405-006C		8.46							
N027405-007C		8.09							
N027405-008C		7.87							
N027405-011C		7.65							
N027405-014C		8.24							
N027428-001C		8.19							
N027429-003C		8.26							

Advanced Technology Laboratories, Inc.
Book # 1

RLB 12/22/2017

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66003 **Analyst:** LSR

ASSET #: N027428 **Date Analyzed:** 12/11/2017

Method: EPA 160.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 12/21/2017

2nd Level Reviewer: RLB 12/22/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N027428-001B,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(71.7187 - 71.6146)*1000000}{40}$$

= 2602.5 mg/L

Reporting result in two significant figures,

TDS = 2600 mg/L

Divia Ramit 12/21/2017

RLB 12/22/2017

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/11/2017 1:06:33**
Prep End Date:

Reviewed/ Date: RB 12/22/2017
Initials/ Date: Lilia Ramit 12/20/2017

Prep Batch **66003** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units
mL / mL

Sample ID	Matrix	Cond pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66003	Water	[illegible]	100	☐	0	0	100	1.000		
MB-66003	Water		100	☐	0	0	100	1.000		
N027405-013D	Groundwater	10520	100 /10	☐	0	0	100	1.000		
N027405-014D	Groundwater	865	100	☐	0	0	100	1.000		
N027422-001A	Surface Water	742	100	☐	0	0	100	1.000		
N027422-002A	Surface Water	3450	100 /40	☐	0	0	100	1.000		
N027422-003A	Surface Water	3450	100 /40	☐	0	0	100	1.000		
N027427-001C	Groundwater	1198	100	☐	0	0	100	1.000		
N027428-001B	Groundwater	3710	100 /40	☐	0	0	100	1.000		
N027428-002B	Groundwater	6060	100 /20	☐	0	0	100	1.000		
N027429-005D	Groundwater	15870	100 /10	☐	0	0	100	1.000		
N027429-005D-DU	Groundwater	1	100 /10	☐	0	0	100	1.000		
~~N027429-006D~~	~~Groundwater~~	~~15720~~	~~100 /10~~	☐	0	0	100	1.000		
N027416-1B		92500	1							

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9469
9664

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/11/2017 1:06:33**
Prep End Date: **12/12/2017 11:30:0**

Reviewed/ Date: RB 12/22/2017
Initials/ Date: Lilia Ramit 12/20/2017

Prep Batch **66003** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66003	Water		100	☐	0	0	100	1.000		
MB-66003	Water		100	☐	0	0	100	1.000		
N027405-013D	Groundwater		10	☐	0	0	100	10.000		
N027405-014D	Groundwater		100	☐	0	0	100	1.000		
N027416-001B	Leachate		1	☐	0	0	100	100.000		
N027422-001A	Surface Water		100	☐	0	0	100	1.000		
N027422-002A	Surface Water		40	☐	0	0	100	2.500		
N027422-003A	Surface Water		40	☐	0	0	100	2.500		
N027427-001C	Groundwater		100	☐	0	0	100	1.000		
N027428-001B	Groundwater		40	☐	0	0	100	2.500		
N027428-002B	Groundwater		20	☐	0	0	100	5.000		
N027429-005D	Groundwater		10	☐	0	0	100	10.000		
N027429-005D-DU	Groundwater		10	☐	0	0	100	10.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9469	Glass Fiber Filter, 47mm
9666	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171211C	1000 ppm NaCl	LCS	100

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/11/17 1201 JT	MB 66003	100	67.0939 67.0942	67.0943 67.0945	
IX	LCS 66003	100	76.5929 76.5928	76.6887 76.6887	
RR	NO27405-013D	10	62.3285 62.3281	62.3905 62.3908	
KK	140	100	70.7456 70.7453	70.7964 70.7968	
EE	NO27427-001A	100	68.2223 68.2219	68.2759 68.2763	
IW	7A	40	64.0224 64.0228	64.1494 64.1498	
—	3A	40	60.5857 60.5857	60.7148 60.7152	
21	NO27427-001C	100	63.3072 63.3075	63.4058 63.4061	
20	NO27428-001B	40	71.6147 71.6146	71.7183 71.7187	
8	2B	20	53.7003 53.7007	53.7860 53.7864	

Divia Ramit 12/20/2017

ASSET LABORATORIES
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 891

RG 12/22/2017

SOLIDS RAW DATA

TEST : TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/11/17 XX	N027429-005D	10	~~53.6893~~ 49.6347 49.6350 LW 12/11	49.7601 49.7605	
	5D DUP	10	48.8877 48.8877	49.0078 49.0081	
12	~~6D~~	~~10~~	~~53.6893 53.6898~~	53.8131 53.8132 LW 12/12/17	
1K	N027416-001B	1	62.4570 62.4570	62.6393 62.6393	
	Julia Ramit 12/20/2017 RB 12/22/2017				

closing wt: 49.9997 12/12/17 @ 1130

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV009
OPELAP/NELAP Cert 4046

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
12/12/2017									
MB-66003	100	67.0942	67.0945	3	1	3			MBLK
LCS-66003	100	76.5928	76.6887	959	1	959			LCS
N027405-013D	10	62.3281	62.3908	627	10	6270	10520	0.596	SAMP
N027405-014D	100	70.7453	70.7968	515	1	515	865	0.595	SAMP
N027422-001A	100	68.2219	68.2763	544	1	544	742	0.733	SAMP
N027422-002A	40	64.0228	64.1498	1270	2.5	3175	3450	0.920	SAMP
N027422-003A	40	60.5857	60.7152	1295	2.5	3237.5	3450	0.938	SAMP
N027427-001C	100	63.3075	63.4061	986	1	986	1198	0.823	SAMP
N027428-001B	40	71.6146	71.7187	1041	2.5	2602.5	3710	0.701	SAMP
N027428-002B	20	53.7007	53.7864	857	5	4285	6060	0.707	SAMP
N027429-005D	10	49.635	49.7605	1255	10	12550	15870	0.791	SAMP
N027429-005DDUP	10	48.8877	49.0081	1204	10	12040	15870	0.759	DUP
N027416-001B	1	62.457	62.6393	1823	100	182300	92500	1.971	SAMP

Silvia Ramit 12/20/2017

RB 12/22/2017

EPA 200.7
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65998
ASSET #: N027428

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/13/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			/		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			/
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.		X			/	
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			/		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			/
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			/
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			/
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			/
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				/
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

Dilution test failed for Ca & Mg. However PS, passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct	/		
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/22/17

2nd Level Reviewer 12/22/2017 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65998
ASSET #: N027428

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/14/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Na run only.
%Rec of Na in N027359-001E PS/MS/MSD & N027428-002D MS failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/22/17

2nd Level Reviewer 12/22/2017 Date: -

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 200.7
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N027428-001D** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.62587 * 1 * (25/25) * 1000

Iron , ug/L = 625.87

Reporting results in two significant figures,

Iron , ug/L = 630

% RSD SUMMARY

RSD SUMMARY: 171213A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Ca	0	0.78	15	PASS
Standard1	ICAL	1	Ca	0.2	4.19	15	PASS
Standard2	ICAL	1	Ca	1	1.52	15	PASS
Standard3	ICAL	1	Ca	2	0.17	15	PASS
Standard4	ICAL	1	Ca	5	0.7	15	PASS
Standard5	ICAL	1	Ca	7.5	1.3	15	PASS
Standard6	ICAL	1	Ca	10	1.097	15	PASS
Standard7	ICAL	1	Ca	20	0.3	15	PASS
ICV	ICV	1	Ca	10.031	0.6	15	PASS
ICB	ICB	1	Ca	0.022	33.9	15	<PQL
LLICV	CCV1	1	Ca	0.32	5.26	20	PASS
LLICV	CCV1	1	Ca	0.21	19.11	20	PASS
ICSA1	ICSA	1	Ca	473.34	0.05	15	PASS
ICSAB1	ICSAB	1	Ca	512.97	0.084	15	PASS
CCV1	CCV	1	Ca	10.36	0.21	15	PASS
CCB1	CCB	1	Ca	-0.007	192.24	15	<PQL
CCB1	CCB	1	Ca	0.012	81.58	15	<PQL
CCV2	CCV	1	Ca	10.36	0.2	15	PASS
CCB2	CCB	1	Ca	0.05	74.52	15	<PQL
MB-65998	MBLK	1	Ca	0.015	39.17	15	<PQL
LCS1-65998	LCS	1	Ca	9.93	0.36	15	PASS
N027358-002E	SAMP	1	Ca	113.25	0.21	15	PASS
N027358-002E	SAMP	5	Ca	25.74	0.57	15	PASS
CCV3	CCV	1	Ca	10.28	0.37	15	PASS
CCB3	CCB	1	Ca	0.04	13.69	15	PASS
N027358-002E-PS	PS	1	Ca	122.99	0.11	15	PASS
N027358-002E-MS1	MS	1	Ca	122.84	0.078	15	PASS
N027358-002E-MSD1	MSD	1	Ca	122.81	0.042	15	PASS
N027359-001E	SAMP	1	Ca	138.45	0.12	15	PASS
N027359-002E	SAMP	1	Ca	130.14	0.16	15	PASS
N027359-003E	SAMP	1	Ca	145.3	0.29	15	PASS
N027359-004E	SAMP	1	Ca	143.26	0.06	15	PASS
N027359-005E	SAMP	1	Ca	147.31	0.12	15	PASS
N027359-006D	SAMP	1	Ca	354.46	0.16	15	PASS
N027359-007D	SAMP	1	Ca	79.14	0.046	15	PASS
CCV4	CCV	1	Ca	10.43	0.56	15	PASS
CCB4	CCB	1	Ca	0.01	274.28	15	<PQL
LLCCV1	CCV2	1	Ca	0.25	8.98	20	PASS
ICSA2	ICSA	1	Ca	474.06	0.15	15	PASS
ICSAB2	ICSAB	1	Ca	515.09	0.044	15	PASS
N027359-008E	SAMP	1	Ca	126.81	0.075	15	PASS
N027428-001D	SAMP	1	Ca	104.31	0.13	15	PASS

RSD SUMMARY: 171213A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027428-001D-MS1	MS	1	Ca	112.04	0.43	15	PASS
N027428-002D	SAMP	1	Ca	194.29	0.18	15	PASS
CCV5	CCV	1	Ca	10.35	0.74	15	PASS
CCB5	CCB	1	Ca	0.043	67.76	15	<PQL
CCB5	CCB	1	Ca	0.032	115.98	15	<PQL
CCV6	CCV	1	Ca	10.37	0.41	15	PASS
CCB6	CCB	1	Ca	0.026	65.44	15	<PQL
CCV7	CCV	1	Ca	10.7	0.27	15	PASS
CCV7	CCV	1	Ca	10.2	0.35	15	PASS
CCB7	CCB	1	Ca	-0.012	179.42	15	<PQL
CCB7	CCB	1	Ca	-0.014	29.27	15	<PQL
CCV8	CCV	1	Ca	9.95	0.54	15	PASS
CCB8	CCB	1	Ca	0.049	82.73	15	<PQL
LLCCV2	CCV2	1	Ca	0.26	1.16	20	PASS
LLCCV2	CCV2	1	Ca	0.26	2.49	20	PASS
ICSA3	ICSA	1	Ca	470.76	0.1	15	PASS
ICSAB3	ICSAB	1	Ca	510.82	0.19	15	PASS
CCV9	CCV	1	Ca	9.72	0.38	15	PASS
CCB9	CCB	1	Ca	-0.066	32.95	15	<PQL
CCB9	CCB	1	Ca	-0.085	38.12	15	<PQL
CCV10	CCV	1	Ca	9.65	0.27	15	PASS
CCB10	CCB	1	Ca	-0.059	68.93	15	<PQL
CCV11	CCV	1	Ca	9.65	0.73	15	PASS
CCB11	CCB	1	Ca	-0.049	32.55	15	<PQL
CCV12	CCV	1	Ca	9.66	0.82	15	PASS
CCB12	CCB	1	Ca	-0.11	5.023	15	PASS
LLCCV4	CCV2	1	Ca	0.12	26.95	20	<PQL
ICSA4	ICSA	1	Ca	453.32	0.13	15	PASS
ICSAB4	ICSAB	1	Ca	493.13	0.29	15	PASS
CalBlk	IBLK	1	Fe	0	24.98	15	<PQL
Standard1	ICAL	1	Fe	0.02	1.27	15	PASS
Standard2	ICAL	1	Fe	0.05	1.072	15	PASS
Standard3	ICAL	1	Fe	2	0.65	15	PASS
Standard4	ICAL	1	Fe	5	0.098	15	PASS
Standard5	ICAL	1	Fe	7.5	0.92	15	PASS
Standard6	ICAL	1	Fe	10	0.14	15	PASS
Standard7	ICAL	1	Fe	20	0.099	15	PASS
ICV	ICV	1	Fe	9.95	0.2	15	PASS
ICB	ICB	1	Fe	-0.0011	44.34	15	<PQL
LLICV	CCV1	1	Fe	0.033	2.9	20	PASS
LLICV	CCV1	1	Fe	0.022	2.15	20	PASS
ICSA1	ICSA	1	Fe	167.19	1.24	15	PASS

RSD SUMMARY: 171213A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
ICSAB1	ICSAB	1	Fe	174.97	0.72	15	PASS
CCV1	CCV	1	Fe	10.2	0.13	15	PASS
CCB1	CCB	1	Fe	-0.0021	26.44	15	<PQL
CCB1	CCB	1	Fe	-0.0025	22.62	15	<PQL
CCV2	CCV	1	Fe	10.083	0.2	15	PASS
CCB2	CCB	1	Fe	-0.0023	29.87	15	<PQL
MB-65998	MBLK	1	Fe	-0.00065	73.23	15	<PQL
LCS1-65998	LCS	1	Fe	0.11	0.46	15	PASS
N027358-002E	SAMP	1	Fe	0.019	2.78	15	PASS
N027358-002E	SAMP	5	Fe	0.0026	33.88	15	<PQL
CCV3	CCV	1	Fe	10.039	0.046	15	PASS
CCB3	CCB	1	Fe	-0.0008	90.53	15	<PQL
N027358-002E-PS	PS	1	Fe	0.12	0.46	15	PASS
N027358-002E-MS1	MS	1	Fe	0.11	1.064	15	PASS
N027358-002E-MSD1	MSD	1	Fe	0.11	0.45	15	PASS
N027359-001E	SAMP	1	Fe	-0.00003	924.88	15	<PQL
N027359-002E	SAMP	1	Fe	0.6	0.75	15	PASS
N027359-003E	SAMP	1	Fe	0.19	2.66	15	PASS
N027359-004E	SAMP	1	Fe	0.0014	68.34	15	<PQL
N027359-005E	SAMP	1	Fe	0.018	4.68	15	PASS
N027359-006D	SAMP	1	Fe	0.08	1.44	15	PASS
N027359-007D	SAMP	1	Fe	0.012	5.53	15	PASS
CCV4	CCV	1	Fe	10.1	0.27	15	PASS
CCB4	CCB	1	Fe	-0.0019	19.35	15	<PQL
LLCCV1	CCV2	1	Fe	0.022	1.94	20	PASS
ICSA2	ICSA	1	Fe	165.61	0.54	15	PASS
ICSAB2	ICSAB	1	Fe	178.9	0.095	15	PASS
N027359-008E	SAMP	1	Fe	0.0023	19.87	15	<PQL
N027428-001D	SAMP	1	Fe	0.63	0.17	15	PASS
N027428-001D-MS1	MS	1	Fe	0.71	0.41	15	PASS
N027428-002D	SAMP	1	Fe	0.0046	16.79	15	<PQL
CCV5	CCV	1	Fe	9.96	0.13	15	PASS
CCB5	CCB	1	Fe	-0.0022	21.65	15	<PQL
CCB5	CCB	1	Fe	-0.0016	15.63	15	<PQL
CCV6	CCV	1	Fe	10.002	0.052	15	PASS
CCB6	CCB	1	Fe	-0.002	8.54	15	PASS
CCV7	CCV	1	Fe	10.65	0.17	15	PASS
CCV7	CCV	1	Fe	9.92	0.18	15	PASS
CCB7	CCB	1	Fe	-0.0024	28.5	15	<PQL
CCB7	CCB	1	Fe	-0.0027	20.87	15	<PQL
CCV8	CCV	1	Fe	9.91	0.35	15	PASS
CCB8	CCB	1	Fe	-0.0013	22.94	15	<PQL

RSD SUMMARY: 171213A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
LLCCV2	CCV2	1	Fe	0.022	2.53	20	PASS
LLCCV2	CCV2	1	Fe	0.02	2.032	20	PASS
ICSA3	ICSA	1	Fe	164.33	0.75	15	PASS
ICSAB3	ICSAB	1	Fe	170.69	0.56	15	PASS
CCV9	CCV	1	Fe	10.082	0.081	15	PASS
CCB9	CCB	1	Fe	-0.0028	14.49	15	PASS
CCB9	CCB	1	Fe	-0.0037	17.26	15	<PQL
CCV10	CCV	1	Fe	10.18	0.029	15	PASS
CCB10	CCB	1	Fe	-0.003	26.83	15	<PQL
CCV11	CCV	1	Fe	10.07	0.11	15	PASS
CCB11	CCB	1	Fe	-0.0027	17.61	15	<PQL
CCV12	CCV	1	Fe	10.1	0.28	15	PASS
CCB12	CCB	1	Fe	-0.0029	33.11	15	<PQL
LLCCV4	CCV2	1	Fe	0.019	1.77	20	PASS
ICSA4	ICSA	1	Fe	172.84	0.48	15	PASS
ICSAB4	ICSAB	1	Fe	185.87	0.075	15	PASS
CalBlk	IBLK	1	Mg	0	1.97	15	PASS
Standard1	ICAL	1	Mg	0.1	0.49	15	PASS
Standard2	ICAL	1	Mg	1	0.34	15	PASS
Standard3	ICAL	1	Mg	2	0.69	15	PASS
Standard4	ICAL	1	Mg	5	0.13	15	PASS
Standard5	ICAL	1	Mg	7.5	0.88	15	PASS
Standard6	ICAL	1	Mg	10	0.12	15	PASS
Standard7	ICAL	1	Mg	20	0.14	15	PASS
ICV	ICV	1	Mg	9.9	0.24	15	PASS
ICB	ICB	1	Mg	0.0014	7.4	15	PASS
LLICV	CCV1	1	Mg	0.16	0.81	20	PASS
LLICV	CCV1	1	Mg	0.11	1.087	20	PASS
ICSA1	ICSA	1	Mg	442.12	1.34	15	PASS
ICSAB1	ICSAB	1	Mg	480.51	0.67	15	PASS
CCV1	CCV	1	Mg	9.99	0.16	15	PASS
CCB1	CCB	1	Mg	0.0066	14.15	15	PASS
CCB1	CCB	1	Mg	0.0052	25.023	15	<PQL
CCV2	CCV	1	Mg	9.84	0.34	15	PASS
CCB2	CCB	1	Mg	0.0027	28.71	15	<PQL
MB-65998	MBLK	1	Mg	0.008	17.0019	15	<PQL
LCS1-65998	LCS	1	Mg	9.49	0.3	15	PASS
N027358-002E	SAMP	1	Mg	26.85	0.19	15	PASS
N027358-002E	SAMP	5	Mg	6.25	0.15	15	PASS
CCV3	CCV	1	Mg	9.84	0.13	15	PASS
CCB3	CCB	1	Mg	0.0071	21.27	15	<PQL
N027358-002E-PS	PS	1	Mg	35.26	0.15	15	PASS

RSD SUMMARY: 171213A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027358-002E-MS1	MS	1	Mg	35.29	0.08	15	PASS
N027358-002E-MSD1	MSD	1	Mg	35.37	0.16	15	PASS
N027359-001E	SAMP	1	Mg	14.71	0.17	15	PASS
N027359-002E	SAMP	1	Mg	14.059	0.22	15	PASS
N027359-003E	SAMP	1	Mg	11.65	0.13	15	PASS
N027359-004E	SAMP	1	Mg	11.5	0.23	15	PASS
N027359-005E	SAMP	1	Mg	11.78	0.054	15	PASS
N027359-006D	SAMP	1	Mg	59.61	0.2	15	PASS
N027359-007D	SAMP	1	Mg	10.46	0.29	15	PASS
CCV4	CCV	1	Mg	9.93	0.35	15	PASS
CCB4	CCB	1	Mg	0.0018	43.032	15	<PQL
LLCCV1	CCV2	1	Mg	0.11	0.25	20	PASS
ICSA2	ICSA	1	Mg	437.63	0.55	15	PASS
ICSAB2	ICSAB	1	Mg	474.67	0.18	15	PASS
N027359-008E	SAMP	1	Mg	24.16	0.22	15	PASS
N027428-001D	SAMP	1	Mg	26.076	0.17	15	PASS
N027428-001D-MS1	MS	1	Mg	34.12	0.06	15	PASS
N027428-002D	SAMP	1	Mg	28.54	0.25	15	PASS
CCV5	CCV	1	Mg	9.84	0.28	15	PASS
CCB5	CCB	1	Mg	0.0015	15.94	15	<PQL
CCB5	CCB	1	Mg	0.0018	23.38	15	<PQL
CCV6	CCV	1	Mg	9.89	0.077	15	PASS
CCB6	CCB	1	Mg	0.002	41.73	15	<PQL
CCV7	CCV	1	Mg	10.7	0.28	15	PASS
CCV7	CCV	1	Mg	9.97	0.27	15	PASS
CCB7	CCB	1	Mg	0.0048	17.25	15	<PQL
CCB7	CCB	1	Mg	0.0026	12.21	15	PASS
CCV8	CCV	1	Mg	9.88	0.32	15	PASS
CCB8	CCB	1	Mg	0.0023	65.13	15	<PQL
LLCCV2	CCV2	1	Mg	0.11	0.97	20	PASS
LLCCV2	CCV2	1	Mg	0.1	4.5	20	PASS
ICSA3	ICSA	1	Mg	440.78	0.85	15	PASS
ICSAB3	ICSAB	1	Mg	474.8	0.49	15	PASS
CCV9	CCV	1	Mg	10.15	0.21	15	PASS
CCB9	CCB	1	Mg	0.0048	17.74	15	<PQL
CCB9	CCB	1	Mg	0.0049	23.098	15	<PQL
CCV10	CCV	1	Mg	10.35	0.095	15	PASS
CCB10	CCB	1	Mg	0.0062	5.91	15	PASS
CCV11	CCV	1	Mg	10.23	0.08	15	PASS
CCB11	CCB	1	Mg	0.006	9.82	15	PASS
CCV12	CCV	1	Mg	10.28	0.23	15	PASS
CCB12	CCB	1	Mg	0.0056	9.19	15	PASS

RSD SUMMARY: 171213A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
LLCCV4	CCV2	1	Mg	0.11	1.021	20	PASS
ICSA4	ICSA	1	Mg	472.86	0.45	15	PASS
ICSAB4	ICSAB	1	Mg	513.42	0.59	15	PASS

RSD SUMMARY: 171214B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	1.53	15	PASS
Standard1	ICAL	1	Na	0.1	0.82	15	PASS
Standard2	ICAL	1	Na	1	0.23	15	PASS
Standard3	ICAL	1	Na	5	0.59	15	PASS
Standard4	ICAL	1	Na	10	0.25	15	PASS
Standard5	ICAL	1	Na	20	0.2	15	PASS
Standard6	ICAL	1	Na	40	0.27	15	PASS
ICV	ICV	1	Na	10.026	0.28	15	PASS
ICB	ICB	1	Na	-0.2	3.53	15	PASS
ICSA1	ICSA	1	Na	-0.22	2.97	15	PASS
ICSAB1	ICSAB	1	Na	10.023	0.47	15	PASS
MB-65998	MBLK	1	Na	-0.18	3.47	15	PASS
LCS2-65998	LCS	1	Na	20.2	0.29	15	PASS
N027359-001E	SAMP	1	Na	1211	0.74	15	PASS
CCV1	CCV	1	Na	10.2	0.47	15	PASS
CCB1	CCB	1	Na	-0.16	17.15	15	<PQL
N027359-001E	SAMP	5	Na	281.47	0.37	15	PASS
N027359-001E-PS	PS	1	Na	1208.4	0.52	15	PASS
N027359-001E-MS2	MS	1	Na	1224	0.35	15	PASS
N027359-001E-MSD2	MSD	1	Na	1232.4	0.79	15	PASS
N027359-001E	SAMP	100	Na	14.99	0.34	15	PASS
N027359-001E	SAMP	500	Na	3.14	3.66	15	PASS
N027359-001E-PS	PS	100	Na	13.95	0.38	15	PASS
N027359-001E-MS2	MS	100	Na	13.91	0.14	15	PASS
N027359-001E-MSD2	MSD	100	Na	13.65	0.082	15	PASS
N027359-002E	SAMP	1	Na	1151.4	0.97	15	PASS
CCV2	CCV	1	Na	10.24	0.42	15	PASS
CCB2	CCB	1	Na	-0.092	48.42	15	<PQL
N027359-002E	SAMP	100	Na	13.53	0.39	15	PASS
N027359-003E	SAMP	1	Na	1199.9	0.61	15	PASS
N027359-003E	SAMP	100	Na	14.39	0.12	15	PASS
N027359-004E	SAMP	1	Na	1190.5	0.72	15	PASS
N027359-004E	SAMP	100	Na	14.28	0.092	15	PASS
N027359-005E	SAMP	1	Na	1232.1	1.5	15	PASS
N027359-005E	SAMP	100	Na	14.38	0.35	15	PASS
N027359-006D	SAMP	100	Na	9.25	0.074	15	PASS
N027359-007D	SAMP	25	Na	20.34	0.31	15	PASS
N027359-008E	SAMP	1	Na	1231.9	1.059	15	PASS
CCV3	CCV	1	Na	10.24	0.31	15	PASS
CCB3	CCB	1	Na	-0.087	4.38	15	PASS
N027359-008E	SAMP	100	Na	14.32	0.097	15	PASS
N027428-001D	SAMP	100	Na	3.66	1.51	15	PASS

RSD SUMMARY: 171214B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027428-002D	SAMP	1	Na	1237.6	0.57	15	PASS
N027428-002D-MS2	MS	1	Na	1202.8	0.72	15	PASS
N027428-002D	SAMP	25	Na	60.7	0.56	15	PASS
N027428-002D-MS2	MS	25	Na	57.29	0.18	15	PASS
CCV4	CCV	1	Na	10.16	0.18	15	PASS
CCB4	CCB	1	Na	-0.13	18.67	15	<PQL
CCV5	CCV	1	Na	10.079	0.17	15	PASS
CCB5	CCB	1	Na	-0.19	5.0096	15	PASS
ICSA2	ICSA	1	Na	-0.19	3.45	15	PASS
ICSAB2	ICSAB	1	Na	10.057	0.33	15	PASS
CCV6	CCV	1	Na	10.11	0.086	15	PASS
CCB6	CCB	1	Na	-0.2	4	15	PASS
CCV7	CCV	1	Na	10.074	0.24	15	PASS
CCB7	CCB	1	Na	-0.24	1.28	15	PASS
CCV8	CCV	1	Na	10.069	0.25	15	PASS
CCB8	CCB	1	Na	-0.26	2.058	15	PASS
CCV9	CCV	1	Na	10.078	0.44	15	PASS
CCB9	CCB	1	Na	-0.27	2.79	15	PASS
ICSA3	ICSA	1	Na	-0.27	3.03	15	PASS
ICSAB3	ICSAB	1	Na	10.11	0.38	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 171213A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201K/MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201K/-171030G/-171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/13/2017	08:32:41 AM
2	Standard1	ICAL	1	12/13/2017	08:37:32 AM
3	Standard2	ICAL	1	12/13/2017	08:42:50 AM
11	Standard3	ICAL	1	12/13/2017	08:48:09 AM
12	Standard4	ICAL	1	12/13/2017	08:53:31 AM
6	Standard5	ICAL	1	12/13/2017	09:01:23 AM
7	Standard6	ICAL	1	12/13/2017	09:09:44 AM
8	Standard7	ICAL	1	12/13/2017	09:17:34 AM
9	ICV	ICV	1	12/13/2017	09:21:20 AM
1	ICB	ICB	1	12/13/2017	09:34:19 AM
2	LLICV	CCV1	1	12/13/2017	09:39:37 AM
2	LLICV	CCV1	1	12/13/2017	09:46:28 AM
4	ICSA1	ICSA	1	12/13/2017	10:08:38 AM
5	ICSAB1	ICSAB	1	12/13/2017	10:22:17 AM
38	MB-65932	MBLK	1	12/13/2017	10:33:01 AM
39	LCS1-65932	LCS	1	12/13/2017	10:37:48 AM
40	N027293-001B	SAMP	1	12/13/2017	10:45:40 AM
41	N027293-001B	SAMP	5	12/13/2017	10:50:29 AM
42	N027293-001B-PS	PS	1	12/13/2017	10:55:48 AM
43	N027293-001B-MS1	MS	1	12/13/2017	11:03:38 AM
44	N027293-001B-MSD1	MSD	1	12/13/2017	11:11:29 AM
45	N027293-002B	SAMP	1	12/13/2017	11:19:21 AM
46	N027320-001B	SAMP	1	12/13/2017	11:24:42 AM
47	N027320-003B	SAMP	1	12/13/2017	11:33:06 AM
7	CCV1	CCV	1	12/13/2017	11:41:30 AM
1	CCB1	CCB	1	12/13/2017	11:49:21 AM
1	CCB1	CCB	1	12/13/2017	11:53:07 AM
48	N027320-005B	SAMP	1	12/13/2017	11:57:54 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
49	N027320-008B	SAMP	1	12/13/2017	12:02:46 PM
50	N027320-010B	SAMP	1	12/13/2017	12:07:39 PM
51	N027321-001B	SAMP	1	12/13/2017	12:15:31 PM
52	N027321-002B	SAMP	1	12/13/2017	12:23:51 PM
53	N027321-003B	SAMP	1	12/13/2017	12:31:44 PM
54	N027321-004B	SAMP	1	12/13/2017	12:39:35 PM
55	N027321-006B	SAMP	1	12/13/2017	12:47:26 PM
56	N027321-008B	SAMP	1	12/13/2017	12:52:18 PM
57	N027362-001B	SAMP	1	12/13/2017	12:57:37 PM
7	CCV2	CCV	1	12/13/2017	01:06:00 PM
1	CCB2	CCB	1	12/13/2017	01:13:51 PM
58	N027362-003B	SAMP	1	12/13/2017	01:19:09 PM
59	N027380-001D	SAMP	1	12/13/2017	01:27:00 PM
60	N027380-002D	SAMP	1	12/13/2017	01:35:24 PM
61	N027380-003D	SAMP	1	12/13/2017	01:40:17 PM
62	N027380-004D	SAMP	1	12/13/2017	01:48:42 PM
14	N027320-001B	SAMP	5	12/13/2017	01:53:09 PM
63	MB-65998	MBLK	1	12/13/2017	02:00:58 PM
64	LCS1-65998	LCS	1	12/13/2017	02:05:49 PM
65	N027358-002E	SAMP	1	12/13/2017	02:14:10 PM
66	N027358-002E	SAMP	5	12/13/2017	02:22:01 PM
7	CCV3	CCV	1	12/13/2017	02:26:52 PM
1	CCB3	CCB	1	12/13/2017	02:34:43 PM
67	N027358-002E-PS	PS	1	12/13/2017	02:40:02 PM
68	N027358-002E-MS1	MS	1	12/13/2017	02:47:53 PM
69	N027358-002E-MSD1	MSD	1	12/13/2017	02:55:45 PM
70	N027359-001E	SAMP	1	12/13/2017	03:03:38 PM
71	N027359-002E	SAMP	1	12/13/2017	03:11:29 PM
72	N027359-003E	SAMP	1	12/13/2017	03:19:21 PM
73	N027359-004E	SAMP	1	12/13/2017	03:27:14 PM
74	N027359-005E	SAMP	1	12/13/2017	03:35:07 PM
75	N027359-006D	SAMP	1	12/13/2017	03:42:59 PM
76	N027359-007D	SAMP	1	12/13/2017	03:50:51 PM
7	CCV4	CCV	1	12/13/2017	03:55:43 PM
1	CCB4	CCB	1	12/13/2017	04:03:33 PM
2	LLCCV1	CCV2	1	12/13/2017	04:08:52 PM
4	ICSA2	ICSA	1	12/13/2017	04:14:10 PM
5	ICSAB2	ICSAB	1	12/13/2017	04:22:43 PM
77	N027359-008E	SAMP	1	12/13/2017	04:31:16 PM
78	N027428-001D	SAMP	1	12/13/2017	04:39:08 PM
79	N027428-001D-MS1	MS	1	12/13/2017	04:47:01 PM
80	N027428-002D	SAMP	1	12/13/2017	04:55:25 PM
81	MB-65933	MBLK	1	12/13/2017	05:03:17 PM
82	LCS1-65933	LCS	1	12/13/2017	05:08:08 PM
83	N027360-001B	SAMP	1	12/13/2017	05:16:29 PM
84	N027360-001B	SAMP	5	12/13/2017	05:24:22 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
85	N027360-001B-PS	PS	1	12/13/2017	05:29:14 PM
86	N027360-001B-MS1	MS	1	12/13/2017	05:37:07 PM
7	CCV5	CCV	1	12/13/2017	05:45:00 PM
1	CCB5	CCB	1	12/13/2017	05:52:50 PM
1	CCB5	CCB	1	12/13/2017	05:57:29 PM
87	N027360-001B-MSD1	MSD	1	12/13/2017	06:02:17 PM
88	N027360-002B	SAMP	1	12/13/2017	06:10:09 PM
89	N027360-003B	SAMP	1	12/13/2017	06:18:01 PM
90	N027360-004B	SAMP	1	12/13/2017	06:25:53 PM
91	N027360-007B	SAMP	1	12/13/2017	06:33:46 PM
92	N027360-008B	SAMP	1	12/13/2017	06:38:39 PM
93	N027360-009C	SAMP	1	12/13/2017	06:44:01 PM
94	N027360-010C	SAMP	1	12/13/2017	06:48:53 PM
95	N027361-001C	SAMP	1	12/13/2017	06:56:45 PM
96	N027361-002B	SAMP	1	12/13/2017	07:04:37 PM
7	CCV6	CCV	1	12/13/2017	07:12:30 PM
1	CCB6	CCB	1	12/13/2017	07:20:20 PM
97	N027361-003B	SAMP	1	12/13/2017	07:25:38 PM
98	N027361-004B	SAMP	1	12/13/2017	07:33:30 PM
99	N027361-005B	SAMP	1	12/13/2017	07:41:23 PM
100	N027361-006B	SAMP	1	12/13/2017	07:49:48 PM
101	N027361-007B	SAMP	1	12/13/2017	07:57:41 PM
102	N027361-009B	SAMP	1	12/13/2017	08:05:33 PM
103	MB-65963	MBLK	1	12/13/2017	08:10:26 PM
104	LCS1-65963	LCS	1	12/13/2017	08:15:46 PM
105	N027404-002B	SAMP	1	12/13/2017	08:24:08 PM
106	N027404-002B	SAMP	5	12/13/2017	08:29:00 PM
7	CCV7	CCV	1	12/13/2017	08:34:22 PM
7	CCV7	CCV	1	12/13/2017	08:38:36 PM
1	CCB7	CCB	1	12/13/2017	08:46:27 PM
1	CCB7	CCB	1	12/13/2017	08:59:08 PM
107	N027404-002B-PS	PS	1	12/13/2017	09:04:26 PM
108	N027404-002B-MS1	MS	1	12/13/2017	09:07:29 PM
109	N027404-002B-MSD1	MSD	1	12/13/2017	09:10:43 PM
110	N027404-003B	SAMP	1	12/13/2017	09:18:57 PM
111	N027404-005B	SAMP	1	12/13/2017	09:26:48 PM
112	N027404-006B	SAMP	1	12/13/2017	09:34:41 PM
113	N027404-007B	SAMP	1	12/13/2017	09:42:34 PM
114	N027404-009B	SAMP	1	12/13/2017	09:47:27 PM
115	N027404-010B	SAMP	1	12/13/2017	09:55:21 PM
116	N027404-011B	SAMP	1	12/13/2017	10:00:13 PM
7	CCV8	CCV	1	12/13/2017	10:05:35 PM
1	CCB8	CCB	1	12/13/2017	10:13:57 PM
2	LLCCV2	CCV2	1	12/13/2017	10:19:15 PM
2	LLCCV2	CCV2	1	12/13/2017	10:24:18 PM
4	ICSA3	ICSA	1	12/13/2017	10:29:37 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
5	ICSAB3	ICSAB	1	12/13/2017	10:38:09 PM
118	N027404-015B	SAMP	1	12/13/2017	10:55:18 PM
119	N027404-016B	SAMP	1	12/13/2017	11:03:11 PM
120	N027404-017B	SAMP	1	12/13/2017	11:11:02 PM
121	N027404-018B	SAMP	1	12/13/2017	11:18:54 PM
122	N027404-020B	SAMP	1	12/13/2017	11:23:47 PM
17	N027404-020B	SAMP	5	12/13/2017	11:32:10 PM
15	N027404-015B	SAMP	5	12/13/2017	11:39:59 PM
16	N027404-017B	SAMP	5	12/13/2017	11:44:48 PM
123	N027406-001D	SAMP	1	12/13/2017	11:52:38 PM
7	CCV9	CCV	1	12/13/2017	11:57:31 PM
1	CCB9	CCB	1	12/14/2017	12:05:21 AM
1	CCB9	CCB	1	12/14/2017	12:37:57 AM
124	N027406-002D	SAMP	1	12/14/2017	12:43:16 AM
125	N027406-003D	SAMP	1	12/14/2017	12:48:09 AM
126	N027406-004D	SAMP	1	12/14/2017	12:53:02 AM
127	MB-65962	MBLK	1	12/14/2017	01:01:27 AM
128	LCS-65962	LCS	1	12/14/2017	01:06:49 AM
129	N027359-001F	SAMP	1	12/14/2017	01:14:42 AM
130	N027359-001F	SAMP	5	12/14/2017	01:22:35 AM
131	N027359-001F-PS	PS	1	12/14/2017	01:27:28 AM
132	N027359-001F-MS	MS	1	12/14/2017	01:35:21 AM
133	N027359-001F-MSD	MSD	1	12/14/2017	01:43:14 AM
7	CCV10	CCV	1	12/14/2017	01:51:07 AM
1	CCB10	CCB	1	12/14/2017	01:58:58 AM
134	N027359-002F	SAMP	1	12/14/2017	02:04:15 AM
135	N027359-003F	SAMP	1	12/14/2017	02:12:36 AM
136	N027359-004F	SAMP	1	12/14/2017	02:20:29 AM
137	N027359-005F	SAMP	1	12/14/2017	02:28:22 AM
138	N027359-008F	SAMP	1	12/14/2017	02:36:15 AM
139	N027380-001C	SAMP	1	12/14/2017	02:44:08 AM
140	N027380-002C	SAMP	1	12/14/2017	02:52:33 AM
141	N027380-003C	SAMP	1	12/14/2017	03:00:26 AM
142	N027380-004C	SAMP	1	12/14/2017	03:08:52 AM
143	N027406-001C	SAMP	1	12/14/2017	03:13:46 AM
7	CCV11	CCV	1	12/14/2017	03:18:39 AM
1	CCB11	CCB	1	12/14/2017	03:26:29 AM
144	N027406-002C	SAMP	1	12/14/2017	03:31:47 AM
145	N027406-003C	SAMP	1	12/14/2017	03:36:40 AM
146	N027406-004C	SAMP	1	12/14/2017	03:41:42 AM
7	CCV12	CCV	1	12/14/2017	03:49:36 AM
1	CCB12	CCB	1	12/14/2017	03:57:26 AM
2	LLCCV4	CCV2	1	12/14/2017	04:02:44 AM
4	ICSA4	ICSA	1	12/14/2017	04:08:01 AM
5	ICSAB4	ICSAB	1	12/14/2017	04:16:33 AM

INJECTION LOG: 171214B

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-170601A,0.025<50mL
Standard2	MWST-170601A,0.25<50mL
Standard3	MWST-170601A,1.25<50mL
Standard4	MWST-170601A,2.5<50mL
Standard5	MWST-170601A,5<50mL
Standard6	MWST-170601A,10<50mL
ICV	MWST-171030L
CCV	MWST-170601A,2.5<50mL
ICSA/ICSAB	MWST-170601L/MWST-170601B
Int. Std. (Sc):	MSST-171009C/B
PS Spike	MSST-130329D/E

MWST-171201R



MWST-171201R

MWST-171201P/ MWST-171201S

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/14/2017	12:28:41 PM
26	Standard1	ICAL	1	12/14/2017	12:31:59 PM
27	Standard2	ICAL	1	12/14/2017	12:35:16 PM
28	Standard3	ICAL	1	12/14/2017	12:39:04 PM
8	Standard4	ICAL	1	12/14/2017	12:42:54 PM
30	Standard5	ICAL	1	12/14/2017	12:46:49 PM
31	Standard6	ICAL	1	12/14/2017	12:50:52 PM
32	ICV	ICV	1	12/14/2017	01:05:34 PM
1	ICB	ICB	1	12/14/2017	01:09:30 PM
33	ICSA1	ICSA	1	12/14/2017	01:12:46 PM
34	ICSAB1	ICSAB	1	12/14/2017	01:16:06 PM
106	N027404-015B	SAMP	1	12/14/2017	01:20:02 PM
107	N027404-015B	SAMP	100	12/14/2017	01:25:16 PM
108	N027404-016B	SAMP	1	12/14/2017	01:28:36 PM
109	N027404-016B	SAMP	100	12/14/2017	01:33:51 PM
110	N027404-017B	SAMP	100	12/14/2017	01:37:11 PM
111	N027404-018B	SAMP	10	12/14/2017	01:40:33 PM
112	N027404-020B	SAMP	250	12/14/2017	01:44:24 PM
113	MB-65998	MBLK	1	12/14/2017	01:47:45 PM
114	LCS2-65998	LCS	1	12/14/2017	01:51:05 PM
115	N027359-001E	SAMP	1	12/14/2017	01:55:13 PM
8	CCV1	CCV	1	12/14/2017	02:00:27 PM
1	CCB1	CCB	1	12/14/2017	02:04:22 PM
116	N027359-001E	SAMP	5	12/14/2017	02:07:40 PM
117	N027359-001E-PS	PS	1	12/14/2017	02:12:42 PM
118	N027359-001E-MS2	MS	1	12/14/2017	02:17:56 PM
119	N027359-001E-MSD2	MSD	1	12/14/2017	02:23:11 PM
120	N027359-001E	SAMP	100	12/14/2017	02:28:26 PM
121	N027359-001E	SAMP	500	12/14/2017	02:31:48 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
122	N027359-001E-PS	PS	100	12/14/2017	02:35:09 PM
123	N027359-001E-MS2	MS	100	12/14/2017	02:38:32 PM
124	N027359-001E-MSD2	MSD	100	12/14/2017	02:41:53 PM
125	N027359-002E	SAMP	1	12/14/2017	02:45:15 PM
8	CCV2	CCV	1	12/14/2017	02:50:30 PM
1	CCB2	CCB	1	12/14/2017	02:54:24 PM
126	N027359-002E	SAMP	100	12/14/2017	02:57:42 PM
127	N027359-003E	SAMP	1	12/14/2017	03:03:56 PM
128	N027359-003E	SAMP	100	12/14/2017	03:09:11 PM
129	N027359-004E	SAMP	1	12/14/2017	03:12:32 PM
130	N027359-004E	SAMP	100	12/14/2017	03:17:47 PM
131	N027359-005E	SAMP	1	12/14/2017	03:21:08 PM
132	N027359-005E	SAMP	100	12/14/2017	03:26:47 PM
133	N027359-006D	SAMP	100	12/14/2017	03:30:08 PM
134	N027359-007D	SAMP	25	12/14/2017	03:33:29 PM
135	N027359-008E	SAMP	1	12/14/2017	03:36:50 PM
8	CCV3	CCV	1	12/14/2017	03:41:50 PM
1	CCB3	CCB	1	12/14/2017	03:45:43 PM
136	N027359-008E	SAMP	100	12/14/2017	03:49:00 PM
137	N027428-001D	SAMP	100	12/14/2017	03:52:22 PM
138	N027428-002D	SAMP	1	12/14/2017	03:55:44 PM
139	N027428-002D-MS2	MS	1	12/14/2017	04:00:58 PM
140	N027428-002D	SAMP	25	12/14/2017	04:06:13 PM
141	N027428-002D-MS2	MS	25	12/14/2017	04:10:06 PM
142	MB-65959	MBLK	1	12/14/2017	04:13:58 PM
143	LCS2-65959	LCS	1	12/14/2017	04:17:19 PM
144	N027422-001B	SAMP	1	12/14/2017	04:21:27 PM
145	N027422-002B	SAMP	1	12/14/2017	04:24:48 PM
8	CCV4	CCV	1	12/14/2017	04:29:45 PM
1	CCB4	CCB	1	12/14/2017	04:33:40 PM
146	N027422-003B	SAMP	1	12/14/2017	04:36:56 PM
147	N027422-002B	SAMP	5	12/14/2017	04:41:52 PM
148	N027422-002B-PS	PS	1	12/14/2017	04:46:55 PM
149	N027422-002B-MS2	MS	1	12/14/2017	04:52:36 PM
150	N027422-002B-MSD2	MSD	1	12/14/2017	04:58:17 PM
144	N027422-001B	SAMP	1	12/14/2017	05:07:43 PM
151	N027422-003B	SAMP	25	12/14/2017	05:11:37 PM
152	N027422-002B	SAMP	25	12/14/2017	05:14:59 PM
153	N027422-002B	SAMP	125	12/14/2017	05:18:21 PM
154	N027422-002B-PS	PS	25	12/14/2017	05:21:42 PM
8	CCV5	CCV	1	12/14/2017	05:25:03 PM
1	CCB5	CCB	1	12/14/2017	05:28:58 PM
33	ICSA2	ICSA	1	12/14/2017	05:32:16 PM
34	ICSAB2	ICSAB	1	12/14/2017	05:35:35 PM
155	N027422-002B-MS2	MS	25	12/14/2017	05:39:32 PM
156	N027422-002B-MSD2	MSD	25	12/14/2017	05:43:24 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
157	N027422-001B	SAMP	5	12/14/2017	05:47:03 PM
38	MB-65986	MBLK	1	12/14/2017	05:50:24 PM
39	LCS2-65986	LCS	1	12/14/2017	05:53:44 PM
40	N027398-001A	SAMP	1	12/14/2017	05:57:50 PM
41	N027398-001A	SAMP	5	12/14/2017	06:01:08 PM
42	N027398-001A-PS	PS	1	12/14/2017	06:04:27 PM
43	N027398-001A-MS2	MS	1	12/14/2017	06:08:33 PM
44	N027398-001A-MSD2	MSD	1	12/14/2017	06:12:38 PM
8	CCV6	CCV	1	12/14/2017	06:16:45 PM
1	CCB6	CCB	1	12/14/2017	06:20:40 PM
45	N027412-001A	SAMP	100	12/14/2017	06:23:58 PM
46	N027413-001A	SAMP	100	12/14/2017	06:28:48 PM
47	N027414-001A	SAMP	100	12/14/2017	06:33:41 PM
48	N027416-001A	SAMP	100	12/14/2017	06:37:01 PM
49	N027417-001A	SAMP	100	12/14/2017	06:41:53 PM
50	N027412-001A	SAMP	1000	12/14/2017	06:46:46 PM
51	N027413-001A	SAMP	1000	12/14/2017	06:50:04 PM
52	N027414-001A	SAMP	10	12/14/2017	06:53:23 PM
53	N027416-001A	SAMP	1000	12/14/2017	06:56:42 PM
54	N027417-001A	SAMP	1000	12/14/2017	07:00:01 PM
8	CCV7	CCV	1	12/14/2017	07:03:21 PM
1	CCB7	CCB	1	12/14/2017	07:07:16 PM
55	N027414-001A	SAMP	50	12/14/2017	07:10:34 PM
56	N027416-001A	SAMP	2000	12/14/2017	07:13:52 PM
57	N027417-001A	SAMP	2000	12/14/2017	07:17:10 PM
8	CCV8	CCV	1	12/14/2017	07:20:31 PM
1	CCB8	CCB	1	12/14/2017	07:24:26 PM
58	N027428-002D	SAMP	100	12/14/2017	07:28:21 PM
59	N027428-002D-MS2	MS	100	12/14/2017	07:31:41 PM
8	CCV9	CCV	1	12/14/2017	07:35:01 PM
1	CCB9	CCB	1	12/14/2017	07:38:57 PM
33	ICSA3	ICSA	1	12/14/2017	07:42:13 PM
34	ICSAB3	ICSAB	1	12/14/2017	07:45:33 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/11/2017 8:36:17**
Prep End Date: **12/11/2017 4:00:00**
Prep Batch **65998** Prep Code: **200.7_PR**

Reviewed/ Date: 12/22/2017
Initials/ Date: for MG
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-51**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-65998	Aqueous		25	☐	0	0	25	1.000		
LCS2-65998	Aqueous		25	☐	0	0	25	1.000		
MB-65998	Aqueous		25	☐	0	0	25	1.000		
N027358-002E	Water	<2	25	☐	0	0	25	1.000		
N027358-002E-MS	Water	<2	25	☐	0	0	25	1.000		
N027358-002E-MS	Water	<2	25	☐	0	0	25	1.000		
N027359-001E	Groundwater	<2	25	☐	0	0	25	1.000		
N027359-001E-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027359-001E-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027359-002E	Groundwater	<2	25	☐	0	0	25	1.000		
N027359-003E	Groundwater	<2	25	☐	0	0	25	1.000		
N027359-004E	Groundwater	<2	25	☐	0	0	25	1.000		
N027359-005E	Groundwater	<2	25	☐	0	0	25	1.000		
N027359-006D	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9601	NITRIC ACID
9611	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/11/2017 8:36:17**
Prep End Date: **12/11/2017 4:00:00**
Prep Batch **65998** Prep Code: **200.7_PR**

Reviewed/ Date: 12/22/2017
Initials/ Date: _____
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-51**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027359-007D	Groundwater	<2	25	☐	0	0	25	1.000		
N027359-008E	Groundwater	<2	25	☐	0	0	25	1.000		
N027428-001D	Groundwater	<2	25	☐	0	0	25	1.000		
N027428-001D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027428-002D	Groundwater	<2	25	☐	0	0	25	1.000		
N027428-002D-MS	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9601	NITRIC ACID
9611	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 171213A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Magnesium								
CalBlk	12/13/2017	08:32:41 AM	Mg	279.079	263	0.00	mg/L	
Standard1	12/13/2017	08:37:32 AM	Mg	279.079	2174	0.1000	mg/L	
Standard2	12/13/2017	08:42:50 AM	Mg	279.079	14120	1.000	mg/L	
Standard3	12/13/2017	08:48:09 AM	Mg	279.079	29577	2.000	mg/L	
Standard4	12/13/2017	08:53:31 AM	Mg	279.079	70210	5.000	mg/L	
Standard5	12/13/2017	09:01:23 AM	Mg	279.079	108436	7.500	mg/L	
Standard6	12/13/2017	09:09:44 AM	Mg	279.079	139035	10.000	mg/L	
Standard7	12/13/2017	09:17:34 AM	Mg	279.079	277678	20.000	mg/L	0.9999
Calcium								
CalBlk	12/13/2017	08:32:41 AM	Ca	227.546	-155	0.00	mg/L	
Standard1	12/13/2017	08:37:32 AM	Ca	227.546	107	0.2000	mg/L	
Standard2	12/13/2017	08:42:50 AM	Ca	227.546	344	1.000	mg/L	
Standard3	12/13/2017	08:48:09 AM	Ca	227.546	711	2.000	mg/L	
Standard4	12/13/2017	08:53:31 AM	Ca	227.546	1692	5.000	mg/L	
Standard5	12/13/2017	09:01:23 AM	Ca	227.546	2565	7.500	mg/L	
Standard6	12/13/2017	09:09:44 AM	Ca	227.546	3367	10.000	mg/L	
Standard7	12/13/2017	09:17:34 AM	Ca	227.546	6607	20.000	mg/L	0.9999
Iron								
CalBlk	12/13/2017	08:32:41 AM	Fe	273.953	-113	0.00	mg/L	
Standard1	12/13/2017	08:37:32 AM	Fe	273.953	784	0.0200	mg/L	
Standard2	12/13/2017	08:42:50 AM	Fe	273.953	1854	0.050	mg/L	
Standard3	12/13/2017	08:48:09 AM	Fe	273.953	49678	2.000	mg/L	
Standard4	12/13/2017	08:53:31 AM	Fe	273.953	118493	5.000	mg/L	
Standard5	12/13/2017	09:01:23 AM	Fe	273.953	183117	7.500	mg/L	
Standard6	12/13/2017	09:09:44 AM	Fe	273.953	234849	10.000	mg/L	
Standard7	12/13/2017	09:17:34 AM	Fe	273.953	467285	20.000	mg/L	0.9999

INITIAL CALIBRATION SUMMARY: 171214B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	12/14/2017	12:28:41 PM	Na	589.594	2510	0.00	mg/L	
Standard1	12/14/2017	12:31:59 PM	Na	589.594	389	0.1000	mg/L	
Standard2	12/14/2017	12:35:16 PM	Na	589.594	3480	1.000	mg/L	
Standard3	12/14/2017	12:39:04 PM	Na	589.594	19084	5.000	mg/L	
Standard4	12/14/2017	12:42:54 PM	Na	589.594	38413	10.000	mg/L	
Standard5	12/14/2017	12:46:49 PM	Na	589.594	77062	20.000	mg/L	
Standard6	12/14/2017	12:50:52 PM	Na	589.594	152969	40.000	mg/L	1.0000

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **120815**
Client ID: **ICV** Batch ID: **R120815** TestNo: **EPA 200.7** Analysis Date: **12/13/2017** SeqNo: **2865125**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10031.084	500	10000	0	100	90	110				
Iron	9952.977	20	10000	0	99.5	90	110				
Magnesium	9903.124	100	10000	0	99.0	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **120815**
Client ID: **ZZZZZZ** Batch ID: **R120815** TestNo: **EPA 200.7** Analysis Date: **12/13/2017** SeqNo: **2865128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	213.767	500	200.0	0	107	80	120				
Iron	22.259	20	20.00	0	111	80	120				
Magnesium	107.629	100	100.0	0	108	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **120815**
Client ID: **CCV** Batch ID: **R120815** TestNo: **EPA 200.7** Analysis Date: **12/13/2017** SeqNo: **2865141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10363.370	500	10000	0	104	90	110				
Iron	10203.788	20	10000	0	102	90	110				
Magnesium	9993.511	100	10000	0	99.9	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **120815**
Client ID: **CCV** Batch ID: **R120815** TestNo: **EPA 200.7** Analysis Date: **12/13/2017** SeqNo: **2865154**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10357.376	500	10000	0	104	90	110				
Iron	10083.491	20	10000	0	101	90	110				
Magnesium	9843.754	100	10000	0	98.4	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCV3** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **120815**
Client ID: **CCV** Batch ID: **R120815** TestNo: **EPA 200.7** Analysis Date: **12/13/2017** SeqNo: **2865166**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10281.178	500	10000	0	103	90	110				
Iron	10039.086	20	10000	0	100	90	110				
Magnesium	9838.938	100	10000	0	98.4	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **120815**
Client ID: **CCV** Batch ID: **R120815** TestNo: **EPA 200.7** Analysis Date: **12/13/2017** SeqNo: **2865178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10429.071	500	10000	0	104	90	110				
Iron	10104.215	20	10000	0	101	90	110				
Magnesium	9930.336	100	10000	0	99.3	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **120815**
Client ID: **ZZZZZZ** Batch ID: **R120815** TestNo: **EPA 200.7** Analysis Date: **12/13/2017** SeqNo: **2865180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	247.827	500	200.0	0	124	70	130				
Iron	21.586	20	20.00	0	108	70	130				
Magnesium	106.848	100	100.0	0	107	70	130				

Sample ID **CCV5** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **120815**
Client ID: **CCV** Batch ID: **R120815** TestNo: **EPA 200.7** Analysis Date: **12/13/2017** SeqNo: **2865193**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10349.436	500	10000	0	103	90	110				
Iron	9963.888	20	10000	0	99.6	90	110				
Magnesium	9841.070	100	10000	0	98.4	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCV6**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120815**
Client ID: **CCV**	Batch ID: **R120815**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865206**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10366.308	500	10000	0	104	90	110				
Iron	10001.696	20	10000	0	100	90	110				
Magnesium	9886.546	100	10000	0	98.9	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120815**
Client ID: **CCV**	Batch ID: **R120815**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865219**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10199.186	500	10000	0	102	90	110				
Iron	9924.662	20	10000	0	99.2	90	110				
Magnesium	9969.463	100	10000	0	99.7	90	110				

Sample ID **CCV8**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120815**
Client ID: **CCV**	Batch ID: **R120815**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865232**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9949.531	500	10000	0	99.5	90	110				
Iron	9908.085	20	10000	0	99.1	90	110				
Magnesium	9881.632	100	10000	0	98.8	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120815**
Client ID: **ZZZZZZ**	Batch ID: **R120815**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	258.108	500	200.0	0	129	70	130				
Iron	19.879	20	20.00	0	99.4	70	130				
Magnesium	102.341	100	100.0	0	102	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120831**
Client ID: **ICV**	Batch ID: **R120831**	TestNo: **EPA 200.7**		Analysis Date: **12/14/2017**	SeqNo: **2865912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10025.899	500	10000	0	100	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120831**
Client ID: **CCV**	Batch ID: **R120831**	TestNo: **EPA 200.7**		Analysis Date: **12/14/2017**	SeqNo: **2865926**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10204.430	500	10000	0	102	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120831**
Client ID: **CCV**	Batch ID: **R120831**	TestNo: **EPA 200.7**		Analysis Date: **12/14/2017**	SeqNo: **2865938**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10237.051	500	10000	0	102	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120831**
Client ID: **CCV**	Batch ID: **R120831**	TestNo: **EPA 200.7**		Analysis Date: **12/14/2017**	SeqNo: **2865950**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10236.071	500	10000	0	102	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120831**
Client ID: **CCV**	Batch ID: **R120831**	TestNo: **EPA 200.7**		Analysis Date: **12/14/2017**	SeqNo: **2865962**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10156.225	500	10000	0	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCV5**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120831**
Client ID: **CCV**	Batch ID: **R120831**	TestNo: **EPA 200.7**		Analysis Date: **12/14/2017**	SeqNo: **2865974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10078.707	500	10000	0	101	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120831**
Client ID: **CCV**	Batch ID: **R120831**	TestNo: **EPA 200.7**		Analysis Date: **12/14/2017**	SeqNo: **2866254**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10110.132	500	10000	0	101	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120831**
Client ID: **CCV**	Batch ID: **R120831**	TestNo: **EPA 200.7**		Analysis Date: **12/14/2017**	SeqNo: **2866266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10073.607	500	10000	0	101	90	110				

Sample ID **CCV8**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120831**
Client ID: **CCV**	Batch ID: **R120831**	TestNo: **EPA 200.7**		Analysis Date: **12/14/2017**	SeqNo: **2866271**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10069.496	500	10000	0	101	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120831**
Client ID: **CCV**	Batch ID: **R120831**	TestNo: **EPA 200.7**		Analysis Date: **12/14/2017**	SeqNo: **2866275**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10077.895	500	10000	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120815**
Client ID: **ICB**	Batch ID: **R120815**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	21.959	500									
Iron	-1.089847	20									
Magnesium	1.429	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120815**
Client ID: **CCB**	Batch ID: **R120815**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	11.753	500									
Iron	-2.457554	20									
Magnesium	5.226	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120815**
Client ID: **CCB**	Batch ID: **R120815**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	49.555	500									
Iron	-2.290998	20									
Magnesium	2.657	100									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120815**
Client ID: **CCB**	Batch ID: **R120815**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865167**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	40.246	500									
Iron	-0.803618	20									
Magnesium	7.144	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCB4**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120815**
Client ID: **CCB**	Batch ID: **R120815**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10.188	500									
Iron	-1.900647	20									
Magnesium	1.749	100									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120815**
Client ID: **CCB**	Batch ID: **R120815**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	31.865	500									
Iron	-1.62856	20									
Magnesium	1.820	100									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120815**
Client ID: **CCB**	Batch ID: **R120815**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865207**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	25.962	500									
Iron	-1.984001	20									
Magnesium	1.972	100									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120815**
Client ID: **CCB**	Batch ID: **R120815**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865221**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-13.66975	500									
Iron	-2.711421	20									
Magnesium	2.563	100									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	CCB8	SampType:	CCB	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:		RunNo:	120815
Client ID:	CCB	Batch ID:	R120815	TestNo:	EPA 200.7			Analysis Date:	12/13/2017	SeqNo:	2865233

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	48.966	500									
Iron	-1.291356	20									
Magnesium	2.276	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120831**
Client ID: **ICB**	Batch ID: **R120831**	TestNo: **EPA 200.7**		Analysis Date: **12/14/2017**	SeqNo: **2865913**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-201.492822	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120831**
Client ID: **CCB**	Batch ID: **R120831**	TestNo: **EPA 200.7**		Analysis Date: **12/14/2017**	SeqNo: **2865927**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-156.4451	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120831**
Client ID: **CCB**	Batch ID: **R120831**	TestNo: **EPA 200.7**		Analysis Date: **12/14/2017**	SeqNo: **2865939**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-92.019434	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120831**
Client ID: **CCB**	Batch ID: **R120831**	TestNo: **EPA 200.7**		Analysis Date: **12/14/2017**	SeqNo: **2865951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-87.47506	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120831**
Client ID: **CCB**	Batch ID: **R120831**	TestNo: **EPA 200.7**		Analysis Date: **12/14/2017**	SeqNo: **2865963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-134.590503	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCB5**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120831**
Client ID: **CCB**	Batch ID: **R120831**	TestNo: **EPA 200.7**		Analysis Date: **12/14/2017**	SeqNo: **2865975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-186.228001	500									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120831**
Client ID: **CCB**	Batch ID: **R120831**	TestNo: **EPA 200.7**		Analysis Date: **12/14/2017**	SeqNo: **2866255**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-199.759258	500									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120831**
Client ID: **CCB**	Batch ID: **R120831**	TestNo: **EPA 200.7**		Analysis Date: **12/14/2017**	SeqNo: **2866267**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-236.499449	500									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120831**
Client ID: **CCB**	Batch ID: **R120831**	TestNo: **EPA 200.7**		Analysis Date: **12/14/2017**	SeqNo: **2866272**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-257.684294	500									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120831**
Client ID: **CCB**	Batch ID: **R120831**	TestNo: **EPA 200.7**		Analysis Date: **12/14/2017**	SeqNo: **2866276**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-273.684695	500									

Qualifiers:

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Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120815**
Client ID: **ICSA**	Batch ID: **R120815**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	482094.237	50	500000	0	96.4	80	120				
Boron	89.560	100									
Calcium	473335.852	500	500000	0	94.7	80	120				
Iron	167194.396	20	200000	0	83.6	80	120				
Magnesium	442124.430	100	500000	0	88.4	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120815**
Client ID: **ICSAB**	Batch ID: **R120815**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	525819.048	50	500000	0	105	80	120				
Boron	1161.771	100	1000	0	116	80	120				
Calcium	512965.771	500	500000	0	103	80	120				
Iron	174965.202	20	200000	0	87.5	80	120				
Magnesium	480512.349	100	500000	0	96.1	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120815**
Client ID: **ICSA**	Batch ID: **R120815**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	481620.183	50	500000	0	96.3	80	120				
Boron	92.451	100									
Calcium	474064.374	500	500000	0	94.8	80	120				
Iron	165608.673	20	200000	0	82.8	80	120				
Magnesium	437629.901	100	500000	0	87.5	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120815**
Client ID: **ICSAB**	Batch ID: **R120815**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865182**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	526202.469	50	500000	0	105	80	120				
Boron	1162.951	100	1000	0	116	80	120				
Calcium	515093.908	500	500000	0	103	80	120				
Iron	178901.281	20	200000	0	89.5	80	120				
Magnesium	474667.776	100	500000	0	94.9	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120815**
Client ID: **ICSA**	Batch ID: **R120815**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	479705.717	50	500000	0	95.9	80	120				
Boron	81.394	100									
Calcium	470758.813	500	500000	0	94.2	80	120				
Iron	164325.242	20	200000	0	82.2	80	120				
Magnesium	440779.103	100	500000	0	88.2	80	120				

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120815**
Client ID: **ICSAB**	Batch ID: **R120815**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865237**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	523280.125	50	500000	0	105	80	120				
Boron	1131.368	100	1000	0	113	80	120				
Calcium	510815.417	500	500000	0	102	80	120				
Iron	170685.674	20	200000	0	85.3	80	120				
Magnesium	474796.645	100	500000	0	95.0	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	ICSA1	SampType:	ICSA	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:		RunNo:	120831
Client ID:	ICSA	Batch ID:	R120831	TestNo:	EPA 200.7			Analysis Date:	12/14/2017	SeqNo:	2865914

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	-14.547514	500									
Sodium	-215.082799	500									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:		RunNo:	120831
Client ID:	ICSAB	Batch ID:	R120831	TestNo:	EPA 200.7			Analysis Date:	12/14/2017	SeqNo:	2865915

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10046.812	500	10000	0	100	80	120				
Sodium	10023.335	500	10000	0	100	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:		RunNo:	120831
Client ID:	ICSA	Batch ID:	R120831	TestNo:	EPA 200.7			Analysis Date:	12/14/2017	SeqNo:	2865976

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	-24.500686	500									
Sodium	-185.608296	500									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:		RunNo:	120831
Client ID:	ICSAB	Batch ID:	R120831	TestNo:	EPA 200.7			Analysis Date:	12/14/2017	SeqNo:	2865977

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9911.131	500	10000	0	99.1	80	120				
Sodium	10057.416	500	10000	0	101	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:		RunNo:	120831
Client ID:	ICSA	Batch ID:	R120831	TestNo:	EPA 200.7			Analysis Date:	12/14/2017	SeqNo:	2866277

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	-18.866206	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120831**
Client ID: **ICSA**	Batch ID: **R120831**	TestNo: **EPA 200.7**		Analysis Date: **12/14/2017**	SeqNo: **2866277**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-269.458427	500									

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120831**
Client ID: **ICSAB**	Batch ID: **R120831**	TestNo: **EPA 200.7**		Analysis Date: **12/14/2017**	SeqNo: **2866278**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9987.884	500	10000	0	99.9	80	120				
Sodium	10113.252	500	10000	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 171213A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.0032	100.32	65-125	PASS
Standard2	ICAL	1	1.067	106.75	65-125	PASS
Standard3	ICAL	1	1.0059	100.59	65-125	PASS
Standard4	ICAL	1	1.036	103.55	65-125	PASS
Standard5	ICAL	1	1	100	65-125	PASS
Standard6	ICAL	1	0.98	98.48	65-125	PASS
Standard7	ICAL	1	0.97	97.37	65-125	PASS
ICV	ICV	1	0.99	98.89	65-125	PASS
ICB	ICB	1	0.99	98.53	65-125	PASS
LLICV	CCV1	1	0.99	99.25	65-125	PASS
LLICV	CCV1	1	0.98	98.47	65-125	PASS
ICSA1	ICSA	1	0.92	92.006	65-125	PASS
ICSAB1	ICSAB	1	0.8	79.68	65-125	PASS
CCV1	CCV	1	0.96	96.12	65-125	PASS
CCB1	CCB	1	0.94	94.095	65-125	PASS
CCB1	CCB	1	0.97	96.81	65-125	PASS
CCV2	CCV	1	0.97	97.34	65-125	PASS
CCB2	CCB	1	0.98	98.24	65-125	PASS
MB-65998	MBLK	1	0.97	97.2	65-125	PASS
LCS1-65998	LCS	1	0.88	88.35	65-125	PASS
N027358-002E	SAMP	1	0.89	88.5	65-125	PASS
N027358-002E	SAMP	5	0.89	89.31	65-125	PASS
CCV3	CCV	1	0.98	97.88	65-125	PASS
CCB3	CCB	1	0.99	98.75	65-125	PASS
N027358-002E-PS	PS	1	0.88	88.32	65-125	PASS
N027358-002E-MS1	MS	1	0.88	88.28	65-125	PASS
N027358-002E-MSD1	MSD	1	0.89	88.71	65-125	PASS
N027359-001E	SAMP	1	0.89	89.04	65-125	PASS
N027359-002E	SAMP	1	0.89	89.41	65-125	PASS
N027359-003E	SAMP	1	0.89	88.79	65-125	PASS
N027359-004E	SAMP	1	0.9	89.97	65-125	PASS
N027359-005E	SAMP	1	0.89	88.84	65-125	PASS
N027359-006D	SAMP	1	0.9	90.24	65-125	PASS
N027359-007D	SAMP	1	0.96	96.29	65-125	PASS
CCV4	CCV	1	0.99	99.14	65-125	PASS
CCB4	CCB	1	0.98	98.25	65-125	PASS
LLCCV1	CCV2	1	1.0063	100.63	65-125	PASS
ICSA2	ICSA	1	0.95	94.56	65-125	PASS
ICSAB2	ICSAB	1	0.82	82.051	65-125	PASS
N027359-008E	SAMP	1	0.89	89.36	65-125	PASS

INTERNAL STANDARD: 171213A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N027428-001D	SAMP	1	1	99.74	65-125	PASS
N027428-001D-MS1	MS	1	0.95	95.21	65-125	PASS
N027428-002D	SAMP	1	0.89	89.077	65-125	PASS
CCV5	CCV	1	1.013	101.27	65-125	PASS
CCB5	CCB	1	1.0031	100.31	65-125	PASS
CCB5	CCB	1	1.0035	100.35	65-125	PASS
CCV6	CCV	1	1.02	101.99	65-125	PASS
CCB6	CCB	1	1	99.83	65-125	PASS
CCV7	CCV	1	0.97	97.31	65-125	PASS
CCV7	CCV	1	0.97	96.68	65-125	PASS
CCB7	CCB	1	0.94	93.98	65-125	PASS
CCB7	CCB	1	0.95	94.67	65-125	PASS
CCV8	CCV	1	1.035	103.51	65-125	PASS
CCB8	CCB	1	1.027	102.71	65-125	PASS
LLCCV2	CCV2	1	1.042	104.16	65-125	PASS
LLCCV2	CCV2	1	1.038	103.8	65-125	PASS
ICSA3	ICSA	1	0.99	99.005	65-125	PASS
ICSAB3	ICSAB	1	0.87	86.72	65-125	PASS
CCV9	CCV	1	0.89	89.28	65-125	PASS
CCB9	CCB	1	0.86	86.49	65-125	PASS
CCB9	CCB	1	0.87	86.77	65-125	PASS
CCV10	CCV	1	0.89	88.88	65-125	PASS
CCB10	CCB	1	0.86	86.094	65-125	PASS
CCV11	CCV	1	0.89	88.75	65-125	PASS
CCB11	CCB	1	0.86	85.94	65-125	PASS
CCV12	CCV	1	0.89	88.7	65-125	PASS
CCB12	CCB	1	0.86	85.86	65-125	PASS
LLCCV4	CCV2	1	0.89	88.59	65-125	PASS
ICSA4	ICSA	1	0.89	88.7	65-125	PASS
ICSAB4	ICSAB	1	0.77	76.8	65-125	PASS

INTERNAL STANDARD: 171214B

Instrument ID: ICP-02

Scandium

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.018	101.78	65-125	PASS
Standard2	ICAL	1	1.019	101.94	65-125	PASS
Standard3	ICAL	1	1.0012	100.12	65-125	PASS
Standard4	ICAL	1	0.98	98.13	65-125	PASS
Standard5	ICAL	1	0.98	98.37	65-125	PASS
Standard6	ICAL	1	0.98	98.5	65-125	PASS
ICV	ICV	1	0.98	98.13	65-125	PASS
ICB	ICB	1	1.0047	100.47	65-125	PASS
ICSA1	ICSA	1	1.0057	100.57	65-125	PASS
ICSAB1	ICSAB	1	0.98	97.61	65-125	PASS
MB-65998	MBLK	1	1.014	101.43	65-125	PASS
LCS2-65998	LCS	1	1.13	112.87	65-125	PASS
N027359-001E	SAMP	1	1.0073	100.73	65-125	PASS
CCV1	CCV	1	1	99.85	65-125	PASS
CCB1	CCB	1	1.034	103.42	65-125	PASS
N027359-001E	SAMP	5	0.98	98.32	65-125	PASS
N027359-001E-PS	PS	1	1	99.61	65-125	PASS
N027359-001E-MS2	MS	1	1.016	101.57	65-125	PASS
N027359-001E-MSD2	MSD	1	1.0047	100.47	65-125	PASS
N027359-001E	SAMP	100	1.036	103.59	65-125	PASS
N027359-001E	SAMP	500	1.036	103.56	65-125	PASS
N027359-001E-PS	PS	100	1.033	103.27	65-125	PASS
N027359-001E-MS2	MS	100	1.036	103.56	65-125	PASS
N027359-001E-MSD2	MSD	100	1.036	103.64	65-125	PASS
N027359-002E	SAMP	1	1.027	102.69	65-125	PASS
CCV2	CCV	1	1.011	101.07	65-125	PASS
CCB2	CCB	1	1.039	103.88	65-125	PASS
N027359-002E	SAMP	100	1.036	103.58	65-125	PASS
N027359-003E	SAMP	1	1.017	101.7	65-125	PASS
N027359-003E	SAMP	100	1.036	103.63	65-125	PASS
N027359-004E	SAMP	1	1.014	101.45	65-125	PASS
N027359-004E	SAMP	100	1.042	104.18	65-125	PASS
N027359-005E	SAMP	1	1	99.64	65-125	PASS
N027359-005E	SAMP	100	1.036	103.63	65-125	PASS
N027359-006D	SAMP	100	1.037	103.68	65-125	PASS
N027359-007D	SAMP	25	1.04	103.95	65-125	PASS
N027359-008E	SAMP	1	1.0011	100.11	65-125	PASS
CCV3	CCV	1	1.022	102.17	65-125	PASS
CCB3	CCB	1	1.052	105.22	65-125	PASS
N027359-008E	SAMP	100	1.04	103.95	65-125	PASS

12/22/2017

INTERNAL STANDARD: 171214B

Instrument ID: ICP-02

Scandium

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N027428-001D	SAMP	100	1.045	104.54	65-125	PASS
N027428-002D	SAMP	1	1.008	100.8	65-125	PASS
N027428-002D-MS2	MS	1	1	99.8	65-125	PASS
N027428-002D	SAMP	25	1.031	103.11	65-125	PASS
N027428-002D-MS2	MS	25	1.035	103.53	65-125	PASS
CCV4	CCV	1	1.028	102.75	65-125	PASS
CCB4	CCB	1	1.059	105.93	65-125	PASS
CCV5	CCV	1	1.012	101.18	65-125	PASS
CCB5	CCB	1	1.033	103.28	65-125	PASS
ICSA2	ICSA	1	1.011	101.08	65-125	PASS
ICSAB2	ICSAB	1	0.99	99.33	65-125	PASS
CCV6	CCV	1	1	99.89	65-125	PASS
CCB6	CCB	1	1.022	102.21	65-125	PASS
CCV7	CCV	1	0.97	97.41	65-125	PASS
CCB7	CCB	1	1.0082	100.82	65-125	PASS
CCV8	CCV	1	0.97	97.099	65-125	PASS
CCB8	CCB	1	1	99.53	65-125	PASS
CCV9	CCV	1	0.97	96.98	65-125	PASS
CCB9	CCB	1	1	99.78	65-125	PASS
ICSA3	ICSA	1	0.99	98.75	65-125	PASS
ICSAB3	ICSAB	1	0.97	96.67	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N027428
Test Method: EPA 200.7
Analysis Date: 12/13/2017 & 12/14/2017

Matrix: Groundwater
Batch No.: 65998

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.
Dilution test failed for Ca & Mg. However, PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027358-002E DT 5X	Calcium	ug/L	128698.4	FAIL	113246.2	13.64%	10
N027358-002E DT 5X	Iron	ug/L	12.93877	NA	18.80145	31.18%	10
N027358-002E DT 5X	Magnesium	ug/L	31236.89	FAIL	26852.96	16.33%	10
N027358-002E DT 500X	Sodium	ug/L	1570736	PASS	1499111	4.78%	10

N027359-001E

Note: NA - Not applicable

12/22/2017
for

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **N027358-002E-PS**	SampType: **PS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120815**
Client ID: **ZZZZZZ**	Batch ID: **65998**	TestNo: **EPA 200.7**		Analysis Date: **12/13/2017**	SeqNo: **2865168**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	122987.185	500	10000	113200	97.4	80	120				
Iron	115.528	20	100.0	18.80	96.7	80	120				
Magnesium	35262.692	100	10000	26850	84.1	80	120				

Sample ID **N027359-001E-PS**	SampType: **PS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **120831**
Client ID: **ZZZZZZ**	Batch ID: **65998**	TestNo: **EPA 200.7**		Analysis Date: **12/14/2017**	SeqNo: **2865934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1394574.949	50000	20000	1499000	-523	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

LOD & PQL VERIFICATION

Analytical Method: EPA 6010B / 200.7 **Matrix:** Water
Date of Analysis: 2/21/2017 **Units:** mg/L
Instrument Name: ICP2
Analyst: MI

Compound	MDL	LOD		PQL		
		Spike	Recovered	Spike	Recovered	% Recovery
Sodium	0.02621	0.10	0.08408	0.5	0.52080	104.2
Potassium	0.03815	0.10	0.13587	0.5	0.48231	96.5
Strontium	0.00545	0.02	0.02459	0.05	0.06052	121.0

Method Detection Limit

Analytical Method: EPA 6010B / 200.7
Digestion Method: EPA 3010A
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: mg/L

Analyte	1	2	3	4	5	6	7	SD	Ave	AMT SPIKED	%RSD	MDL	PQL
Potassium	0.15443	0.16201	0.14301	0.16141	0.16124	0.12965	0.14652	0.01215	0.15118	0.1000	8.0	0.03815	0.5
Sodium	0.11445	0.11459	0.11678	0.11286	0.11394	0.09515	0.10066	0.00835	0.10978	0.1000	7.6	0.02621	0.5
Strontium	0.02939	0.03046	0.0307	0.02962	0.03209	0.02708	0.02772	0.00174	0.02958	0.0250	5.9	0.00545	0.05

EPA 200.8
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66023
ASSET #: N027428

Instrument ID: ICPMS-02
Analyst: CEI

Method:

Date Analyzed: 12/13/2017

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?		X				
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?		X				
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For Confirmation:
~~N027428-001D (6020) = 570 ug/L :confirmation:~~ ug/L ; ~~N027428-001A (218.6) = <0.20 ug/L :confirmation:~~ ug/L
~~N027428-002D (6020) = 0.30 ug/L :confirmation:~~ ug/L ; ~~N027428-002A (218.6) = 550 ug/L :confirmation:~~ ug/L

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/22/17

2nd Level Reviewer 12/22/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 200.8
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N027428-001D** (002D), the concentration in ug/L is calculated as follows:

Chromium , ug/L = 113.432 * 5 * (25/25)

Chromium , ug/L = 567.16

Reporting results in two significant figures,

Chromium , ug/L = 570

12/22/2017

% RSD SUMMARY

PERCENT RSD SUMMARY: 171213A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.091	4.77	15	PASS	0.096	17.69	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.52	2.07	15	PASS	0.57	2.64	15	PASS
Std3-5/50 ppb	ICAL	1	5.083	2.12	15	PASS	5.15	3.14	15	PASS
Std4-10/100 ppb	ICAL	1	10.35	1.3	15	PASS	10.61	1.29	15	PASS
Std5-20/200 ppb	ICAL	1	20.36	1.51	15	PASS	21.029	0.63	15	PASS
Std6-40/400 ppb	ICAL	1	38.87	0.66	15	PASS	39.83	0.23	15	PASS
Std7-100/1000 ppb	ICAL	1	99.91	0.85	15	PASS	101.27	0.97	15	PASS
Std8-200/2000 ppb	ICAL	1	200.22	1.026	15	PASS	199.26	0.55	15	PASS
ICV	ICV	1	10.67	2.18	15	PASS	105.11	1.43	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.012	40.8	15	<PQL
LLICV	CCV1	1	1.019	1.41	20	PASS	0.5	10.92	20	PASS
ICSA1	ICSA	1	0.072	28.017	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.56	0.6	15	PASS	19.28	0.5	15	PASS
LLICV	CCV1	1	1.027	2.016	20	PASS	0.51	9.95	20	PASS
CCV1	CCV	1	20.12	0.95	15	PASS	20.83	0.75	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.03	19.22	15	<PQL
CCV2	CCV	1	20.2	1.34	15	PASS	20.63	1.56	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.013	36.53	15	<PQL
CCV3	CCV	1	20.084	1.36	15	PASS	20.6	1.052	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.005	80.31	15	<PQL
LLCCV1	CCV2	1	1.00032	4.22	20	PASS	0.55	10.61	20	PASS
ICSA2	ICSA	1	0.079	7.92	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.52	1.39	15	PASS	19.2	2.22	15	PASS
CCV4	CCV	1	20.03	1.22	15	PASS	20.56	1.46	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.0062	82.41	15	<PQL
CCV5	CCV	1	20.56	1.37	15	PASS	20.74	0.87	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.023	37.26	15	<PQL
CCV6	CCV	1	19.92	1.053	15	PASS	20.45	0.4	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	0.02	94.38	15	<PQL
LLCCV2	CCV2	1	1.022	4.41	20	PASS	0.52	8.28	20	PASS
ICSA3	ICSA	1	0.094	23.42	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.64	1.68	15	PASS	19.6	0.51	15	PASS
MB-66023	MBLK	1	<0.000	N/A	15	<PQL	0.016	72.06	15	<PQL
LCS-66023	LCS	1	10.39	1.73	15	PASS	105.97	1.31	15	PASS
N027359-001E	SAMP	1	0.56	4.46	15	PASS	0.58	4.45	15	PASS
N027359-001E	SAMP	5	0.13	6.79	15	PASS	0.13	11.85	15	PASS
N027359-001E	SAMP	25	0.013	48.88	15	<PQL	0.019	17.96	15	<PQL
N027359-001E-PS	PS	1	10.34	1.73	15	PASS	98.38	1.38	15	PASS
N027359-001E-PS	PS	5	2.2	2.037	15	PASS	21.071	1.4	15	PASS
N027359-001E-MS	MS	1	10.26	1.29	15	PASS	97.27	0.51	15	PASS

PERCENT RSD SUMMARY: 171213A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027359-001E-MS	MS	5	2.21	1.97	15	PASS	20.92	1.15	15	PASS
N027359-001E-MSD	MSD	1	10.01	1.42	15	PASS	96.37	0.66	15	PASS
CCV7	CCV	1	21.033	0.71	15	PASS	21.18	0.47	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL	0.0072	96.46	15	<PQL
N027359-001E-MSD	MSD	5	2.18	2.25	15	PASS	20.8	0.98	15	PASS
N027359-002E	SAMP	1	13.27	1.92	15	PASS	100.91	0.49	15	PASS
N027359-002E	SAMP	5	2.66	1.19	15	PASS	21.046	2.57	15	PASS
N027359-003E	SAMP	1	4.036	2.39	15	PASS	6.8	0.57	15	PASS
N027359-003E	SAMP	5	0.82	0.99	15	PASS	1.36	1.57	15	PASS
N027359-004E	SAMP	1	0.97	1.049	15	PASS	1	0.7	15	PASS
N027359-004E	SAMP	5	0.21	12.95	15	PASS	0.21	4.074	15	PASS
N027359-005E	SAMP	1	0.97	0.86	15	PASS	0.91	3.62	15	PASS
N027359-005E	SAMP	5	0.21	3.92	15	PASS	0.19	8.38	15	PASS
N027359-006D	SAMP	1	5.9	0.75	15	PASS	2.19	2.39	15	PASS
CCV8	CCV	1	21.058	0.59	15	PASS	21.094	0.96	15	PASS
CCB8	CCB	1	<0.000	N/A	15	<PQL	0.011	76.24	15	<PQL
N027359-006D	SAMP	5	1.22	3.2	15	PASS	0.46	8.55	15	PASS
N027359-007D	SAMP	1	17.5	0.69	15	PASS	0.67	1.9	15	PASS
N027359-007D	SAMP	5	3.72	1.72	15	PASS	0.15	12.55	15	PASS
N027359-008E	SAMP	1	0.87	4.93	15	PASS	0.36	12.18	15	PASS
N027359-008E	SAMP	5	0.17	5.15	15	PASS	0.08	18.62	15	<PQL
N027428-002D	SAMP	1	552.21	0.58	15	PASS	11.5	0.19	15	PASS
N027428-002D	SAMP	5	113.43	0.65	15	PASS	2.43	0.99	15	PASS
N027428-001D	SAMP	1	0.3	3.51	15	PASS	294.89	1.93	15	PASS
N027428-001D	SAMP	5	0.065	25.57	15	<PQL	62.0018	1.33	15	PASS
CCV9	CCV	1	19.93	0.93	15	PASS	20.34	1.52	15	PASS
CCB9	CCB	1	0.0013	137.26	15	<PQL	0.011	49.98	15	<PQL
LLCCV3	CCV2	1	1.028	2.1	20	PASS	0.53	3.89	20	PASS
ICSA4	ICSA	1	0.081	13.052	15	PASS	<0.000	N/A	15	<PQL
ICSAB4	ICSAB	1	20.22	1.81	15	PASS	19.038	1.4	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 171213A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1213001.D	RINSE	RINSE	1	12/13/17 12:00 PM
A1213002.D	Cal Blank	IBLK	1	12/13/17 12:05 PM
A1213003.D	Std1-0.1/1 ppb	ICAL	1	12/13/17 12:11 PM
A1213004.D	Std2-0.5/5 ppb	ICAL	1	12/13/17 12:16 PM
A1213005.D	Std3-5/50 ppb	ICAL	1	12/13/17 12:22 PM
A1213006.D	Std4-10/100 ppb	ICAL	1	12/13/17 12:27 PM
A1213007.D	Std5-20/200 ppb	ICAL	1	12/13/17 12:33 PM
A1213008.D	Std6-40/400 ppb	ICAL	1	12/13/17 12:49 PM
A1213009.D	Std7-100/1000 ppb	ICAL	1	12/13/17 12:54 PM
A1213010.D	Std8-200/2000 ppb	ICAL	1	12/13/17 1:00 PM
A1213011.D	ICV	ICV	1	12/13/17 1:07 PM
A1213012.D	ICB	ICB	1	12/13/17 1:11 PM
A1213013.D	LLICV	CCV1	1	12/13/17 1:17 PM
A1213014.D	ICSA1	ICSA	1	12/13/17 1:22 PM
A1213015.D	ICSAB1	ICSAB	1	12/13/17 1:28 PM
A1213016.D	LLICV	CCV1	1	12/13/17 1:33 PM
A1213017.D	MB-66046	MBLK	1	12/13/17 1:39 PM
A1213018.D	LCS-66046	LCS	1	12/13/17 1:44 PM
A1213019.D	N027512-001A	SAMP	1	12/13/17 1:50 PM
A1213020.D	N027512-001A	SAMP	5	12/13/17 1:55 PM
A1213021.D	N027512-001A-DUP	DUP	1	12/13/17 2:01 PM
A1213022.D	N027512-001A-PS	PS	1	12/13/17 2:06 PM
A1213023.D	N027512-001A-MS	MS	1	12/13/17 2:12 PM
A1213024.D	N027512-001A-MSD	MSD	1	12/13/17 2:18 PM
A1213025.D	N027512-002A	SAMP	1	12/13/17 2:23 PM
A1213026.D	N027251-003B	SAMP	1	12/13/17 2:29 PM
A1213027.D	CCV1	CCV	1	12/13/17 2:34 PM
A1213028.D	CCB1	CCB	1	12/13/17 2:40 PM
A1213029.D	N027251-003A	SAMP	1	12/13/17 2:47 PM
A1213030.D	N027251-007B	SAMP	1	12/13/17 2:52 PM
A1213031.D	N027251-007B	SAMP	1	12/13/17 2:59 PM
A1213032.D	MB-65977	MBLK	1	12/13/17 3:17 PM
A1213033.D	LCS-65977	LCS	1	12/13/17 3:22 PM
A1213034.D	N027380-001D	SAMP	5	12/13/17 3:28 PM
A1213035.D	N027380-001D	SAMP	25	12/13/17 3:33 PM
A1213036.D	N027380-001D-PS	PS	5	12/13/17 3:39 PM
A1213037.D	N027380-001D-MS	MS	5	12/13/17 3:45 PM
A1213038.D	N027380-001D-MSD	MSD	5	12/13/17 3:50 PM
A1213039.D	CCV2	CCV	1	12/13/17 3:56 PM
A1213040.D	CCB2	CCB	1	12/13/17 4:01 PM
A1213041.D	N027380-001D	SAMP	50	12/13/17 4:07 PM
A1213042.D	N027380-001D	SAMP	250	12/13/17 4:12 PM

INJECTION LOG: 171213A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1213043.D	N027380-001D-PS	PS	50	12/13/17 4:18 PM
A1213044.D	N027380-001D-MS	MS	50	12/13/17 4:24 PM
A1213045.D	N027380-001D-MSD	MSD	50	12/13/17 4:29 PM
A1213046.D	N027380-002D	SAMP	1	12/13/17 4:35 PM
A1213047.D	N027380-002D	SAMP	25	12/13/17 4:40 PM
A1213048.D	N027380-003D	SAMP	5	12/13/17 4:46 PM
A1213049.D	N027380-003D	SAMP	25	12/13/17 4:51 PM
A1213050.D	N027380-004D	SAMP	5	12/13/17 4:57 PM
A1213051.D	CCV3	CCV	1	12/13/17 5:02 PM
A1213052.D	CCB3	CCB	1	12/13/17 5:08 PM
A1213053.D	LLCCV1	CCV2	1	12/13/17 5:13 PM
A1213054.D	ICSA2	ICSA	1	12/13/17 5:19 PM
A1213055.D	ICSAB2	ICSAB	1	12/13/17 5:24 PM
A1213056.D	N027380-004D	SAMP	25	12/13/17 5:30 PM
A1213057.D	N027404-006B	SAMP	1	12/13/17 5:35 PM
A1213058.D	N027404-020B	SAMP	5	12/13/17 5:41 PM
A1213059.D	N027404-020B	SAMP	25	12/13/17 5:46 PM
A1213060.D	N027404-020B	SAMP	50	12/13/17 5:52 PM
A1213061.D	MB-65976	MBLK	1	12/13/17 5:58 PM
A1213062.D	LCS-65976	LCS	1	12/13/17 6:03 PM
A1213063.D	N027380-001C	SAMP	5	12/13/17 6:09 PM
A1213064.D	N027380-001C	SAMP	50	12/13/17 6:14 PM
A1213065.D	N027380-002C	SAMP	1	12/13/17 6:20 PM
A1213066.D	CCV4	CCV	1	12/13/17 6:25 PM
A1213067.D	CCB4	CCB	1	12/13/17 6:31 PM
A1213068.D	N027380-002C	SAMP	25	12/13/17 6:36 PM
A1213069.D	N027380-003C	SAMP	5	12/13/17 6:42 PM
A1213070.D	N027380-003C	SAMP	25	12/13/17 6:47 PM
A1213071.D	N027380-004C	SAMP	5	12/13/17 6:53 PM
A1213072.D	N027380-004C	SAMP	25	12/13/17 6:58 PM
A1213073.D	N027406-001C	SAMP	1	12/13/17 7:04 PM
A1213074.D	N027406-002C	SAMP	1	12/13/17 7:09 PM
A1213075.D	N027406-003C	SAMP	1	12/13/17 7:15 PM
A1213076.D	N027406-004C	SAMP	1	12/13/17 7:20 PM
A1213077.D	N027406-004C	SAMP	25	12/13/17 7:26 PM
A1213078.D	CCV5	CCV	1	12/13/17 7:31 PM
A1213079.D	CCB5	CCB	1	12/13/17 7:37 PM
A1213080.D	N027437-001A	SAMP	1	12/13/17 7:42 PM
A1213081.D	N027437-002A	SAMP	1	12/13/17 7:48 PM
A1213082.D	N027437-002A	SAMP	5	12/13/17 7:53 PM
A1213083.D	N027437-002A-PS	PS	1	12/13/17 7:59 PM
A1213084.D	N027437-002A-MS	MS	1	12/13/17 8:04 PM

INJECTION LOG: 171213A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1213085.D	N027437-002A-MSD	MSD	1	12/13/17 8:10 PM
A1213086.D	N027437-003C	SAMP	1	12/13/17 8:15 PM
A1213087.D	N027437-003C	SAMP	25	12/13/17 8:21 PM
A1213088.D	N027437-004A	SAMP	1	12/13/17 8:27 PM
A1213089.D	N027437-005A	SAMP	1	12/13/17 8:32 PM
A1213090.D	CCV6	CCV	1	12/13/17 8:38 PM
A1213091.D	CCB6	CCB	1	12/13/17 8:43 PM
A1213092.D	LLCCV2	CCV2	1	12/13/17 8:49 PM
A1213093.D	ICSA3	ICSA	1	12/13/17 8:54 PM
A1213094.D	ICSAB3	ICSAB	1	12/13/17 9:00 PM
A1213095.D	MB-66023	MBLK	1	12/13/17 9:25 PM
A1213096.D	LCS-66023	LCS	1	12/13/17 9:30 PM
A1213097.D	N027359-001E	SAMP	1	12/13/17 9:36 PM
A1213098.D	N027359-001E	SAMP	5	12/13/17 9:41 PM
A1213099.D	N027359-001E	SAMP	25	12/13/17 9:47 PM
A1213100.D	N027359-001E-PS	PS	1	12/13/17 9:52 PM
A1213101.D	N027359-001E-PS	PS	5	12/13/17 9:58 PM
A1213102.D	N027359-001E-MS	MS	1	12/13/17 10:03 PM
A1213103.D	N027359-001E-MS	MS	5	12/13/17 10:09 PM
A1213104.D	N027359-001E-MSD	MSD	1	12/13/17 10:15 PM
A1213105.D	CCV7	CCV	1	12/13/17 10:19 PM
A1213106.D	CCB7	CCB	1	12/13/17 10:26 PM
A1213107.D	N027359-001E-MSD	MSD	5	12/13/17 10:31 PM
A1213108.D	N027359-002E	SAMP	1	12/13/17 10:37 PM
A1213109.D	N027359-002E	SAMP	5	12/13/17 10:42 PM
A1213110.D	N027359-003E	SAMP	1	12/13/17 10:48 PM
A1213111.D	N027359-003E	SAMP	5	12/13/17 10:53 PM
A1213112.D	N027359-004E	SAMP	1	12/13/17 10:59 PM
A1213113.D	N027359-004E	SAMP	5	12/13/17 11:04 PM
A1213114.D	N027359-005E	SAMP	1	12/13/17 11:10 PM
A1213115.D	N027359-005E	SAMP	5	12/13/17 11:15 PM
A1213116.D	N027359-006D	SAMP	1	12/13/17 11:21 PM
A1213117.D	CCV8	CCV	1	12/13/17 11:27 PM
A1213118.D	CCB8	CCB	1	12/13/17 11:32 PM
A1213119.D	N027359-006D	SAMP	5	12/13/17 11:38 PM
A1213120.D	N027359-007D	SAMP	1	12/13/17 11:43 PM
A1213121.D	N027359-007D	SAMP	5	12/13/17 11:49 PM
A1213122.D	N027359-008E	SAMP	1	12/13/17 11:54 PM
A1213123.D	N027359-008E	SAMP	5	12/14/17 12:00 AM
A1213124.D	N027428-002D	SAMP	1	12/14/17 12:05 AM
A1213125.D	N027428-002D	SAMP	5	12/14/17 12:11 AM
A1213126.D	N027428-001D	SAMP	1	12/14/17 12:17 AM

INJECTION LOG: 171213A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1213127.D	N027428-001D	SAMP	5	12/14/17 12:22 AM
A1213128.D	MB-65980	MBLK	1	12/14/17 12:28 AM
A1213129.D	CCV9	CCV	1	12/14/17 12:33 AM
A1213130.D	CCB9	CCB	1	12/14/17 12:39 AM
A1213131.D	LLCCV3	CCV2	1	12/14/17 12:44 AM
A1213132.D	ICSA4	ICSA	1	12/14/17 12:50 AM
A1213133.D	ICSAB4	ICSAB	1	12/14/17 12:55 AM
A1213134.D	LCS-65980	LCS	1	12/14/17 1:01 AM
A1213135.D	N027406-001D	SAMP	1	12/14/17 1:06 AM
A1213136.D	N027406-001D	SAMP	5	12/14/17 1:12 AM
A1213137.D	N027406-002D	SAMP	1	12/14/17 1:17 AM
A1213138.D	N027406-002D	SAMP	5	12/14/17 1:23 AM
A1213139.D	N027406-003D	SAMP	1	12/14/17 1:28 AM
A1213140.D	N027406-003D	SAMP	5	12/14/17 1:34 AM
A1213141.D	N027406-004D	SAMP	1	12/14/17 1:39 AM
A1213142.D	N027406-004D	SAMP	5	12/14/17 1:45 AM
A1213143.D	N027437-001B	SAMP	1	12/14/17 1:50 AM
A1213145.D	CCV10	CCV	1	12/14/17 1:56 AM
A1213146.D	CCB10	CCB	1	12/14/17 2:01 AM
A1213144.D	N027437-001B	SAMP	5	12/14/17 2:07 AM
A1213147.D	N027437-002B	SAMP	1	12/14/17 2:12 AM
A1213148.D	N027437-002B	SAMP	5	12/14/17 2:18 AM
A1213149.D	N027437-002B	SAMP	25	12/14/17 2:24 AM
A1213150.D	N027437-002B-PS	PS	1	12/14/17 2:29 AM
A1213151.D	N027437-002B-PS	PS	5	12/14/17 2:35 AM
A1213152.D	N027437-002BMS	MS	1	12/14/17 2:40 AM
A1213153.D	N027437-002BMS	MS	5	12/14/17 2:46 AM
A1213154.D	N027437-002BMSD	MSD	1	12/14/17 2:51 AM
A1213155.D	N027437-002BMSD	MSD	5	12/14/17 2:57 AM
A1213156.D	CCV11	CCV	1	12/14/17 3:02 AM
A1213157.D	CCB11	CCB	1	12/14/17 3:08 AM
A1213158.D	N027437-003D	SAMP	1	12/14/17 3:13 AM
A1213159.D	N027437-003D	SAMP	5	12/14/17 3:19 AM
A1213160.D	N027437-003D	SAMP	25	12/14/17 3:24 AM
A1213161.D	N027437-004B	SAMP	1	12/14/17 3:30 AM
A1213162.D	N027437-004B	SAMP	5	12/14/17 3:36 AM
A1213163.D	N027437-005B	SAMP	1	12/14/17 3:41 AM
A1213164.D	N027437-005B	SAMP	5	12/14/17 3:47 AM
A1213165.D	MB-66053	MBLK	1	12/14/17 3:52 AM
A1213166.D	LCS-66053	LCS	1	12/14/17 3:58 AM
A1213167.D	N027526-001A	SAMP	1	12/14/17 4:03 AM
A1213168.D	CCV12	CCV	1	12/14/17 4:09 AM

INJECTION LOG: 171213A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1213169.D	CCB12	CCB	1	12/14/17 4:14 AM
A1213170.D	N027526-001A	SAMP	5	12/14/17 4:20 AM
A1213171.D	N027526-001A-PS	PS	1	12/14/17 4:25 AM
A1213172.D	N027526-001A-MS	MS	1	12/14/17 4:31 AM
A1213173.D	N027526-001A-MSD	MSD	1	12/14/17 4:36 AM
A1213174.D	CCV13	CCV	1	12/14/17 4:42 AM
A1213175.D	CCB13	CCB	1	12/14/17 4:48 AM
A1213176.D	LLCCV4	CCV2	1	12/14/17 4:53 AM
A1213177.D	ICSA5	ICSA	1	12/14/17 4:59 AM
A1213178.D	ICSAB5	ICSAB	1	12/14/17 5:04 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/12/2017 12:46:4**
Prep End Date: **12/12/2017 5:00:00**
Prep Batch **66023** Prep Code: **200.8_DISS_P**

Reviewed/ Date: 12/22/2017
Initials/ Date: 12/22/2017
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.6**	**02-22**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66023	Aqueous		25	☐	0	0	25	1.000		
MB-66023	Aqueous		25	☐	0	0	25	1.000		
N027359-001E	Groundwater	<2	25	☐	0	0	25	1.000		
N027359-001E-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027359-001E-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027359-002E	Groundwater	<2	25	☐	0	0	25	1.000		
N027359-003E	Groundwater	<2	25	☐	0	0	25	1.000		
N027359-004E	Groundwater	<2	25	☐	0	0	25	1.000		
N027359-005E	Groundwater	<2	25	☐	0	0	25	1.000		
N027359-006D	Groundwater	<2	25	☐	0	0	25	1.000		
N027359-007D	Groundwater	<2	25	☐	0	0	25	1.000		
N027359-008E	Groundwater	<2	25	☐	0	0	25	1.000		
N027428-001D	Groundwater	<2	25	☐	0	0	25	1.000		
N027428-002D	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 13 Dec 2017 11:46:06 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	113501.00	0.00	
24 Mg	393354.00	0.00	
25 Mg	52268.40	0.00	
26 Mg	61257.10	0.00	
59 Co	624213.00	0.00	
115 In	1188800.00	0.00	
206 Pb	344390.00	0.00	
207 Pb	301272.00	0.00	
208 Pb	739979.00	0.00	

RSD (%)

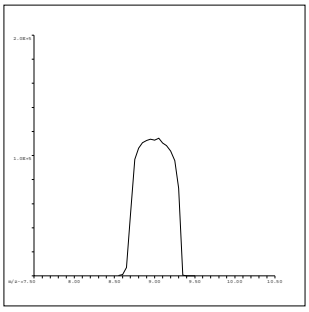
Element	Actual	Required	Flag
9 Be	1.38	5.00	
24 Mg	0.75	5.00	
25 Mg	0.98	5.00	
26 Mg	1.86	5.00	
59 Co	0.80	5.00	
115 In	0.53	5.00	
206 Pb	0.71	5.00	
207 Pb	0.62	5.00	
208 Pb	0.99	5.00	

Ion Ratio

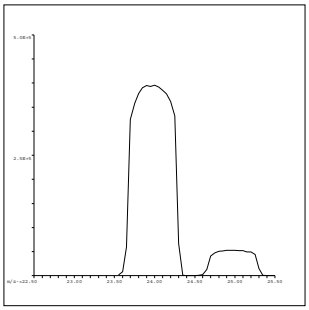
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

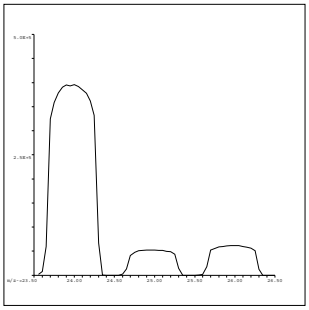
Element	Actual	Required	Flag



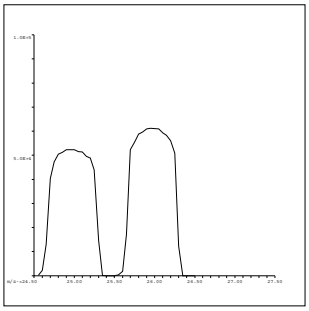
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



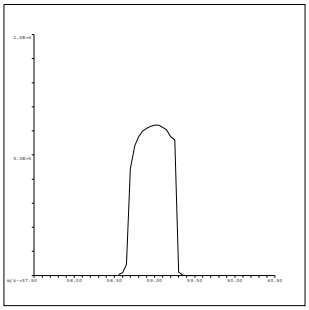
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



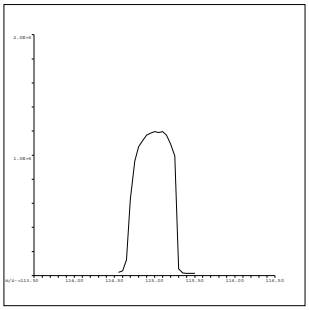
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



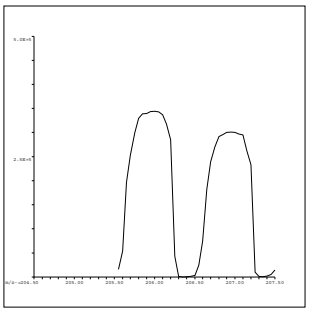
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



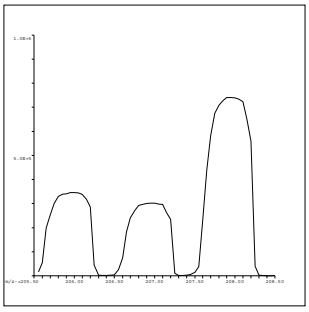
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



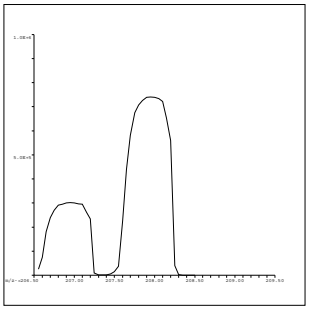
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 171213A

Instrument ID: ICPMS-02

Analyte	Data File	A1213002.D	A1213004.D	A1213005.D	A1213006.D	A1213007.D	A1213008.D	A1213009.D	A1213010.D	
	Acq. Date-Time	12/13/2017 12:05 PM	12/13/2017 12:16 PM	12/13/2017 12:22 PM	12/13/2017 12:27 PM	12/13/2017 12:33 PM	12/13/2017 12:49 PM	12/13/2017 12:54 PM	12/13/2017 01:00 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	92652.9	92763.1	93658.5	92455	92540.9	99446.8	93679.8	91555.3	
55 Mn [2]	CPS	120.8	2187.5	18979.1	38479	76229.9	155044.6	371142.9	713632.8	1.0000
52 Cr [2]	CPS	261	4140.6	38622	77375.7	152091.2	311777.5	754503.8	1477481.2	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICV** SampType: **ICV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **120840**
Client ID: **ICV** Batch ID: **R120840** TestNo: **EPA 200.8** Analysis Date: **12/13/2017** SeqNo: **2866893**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	105.110	0.50	100.0	0	105	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **120840**
Client ID: **ZZZZZZ** Batch ID: **R120840** TestNo: **EPA 200.8** Analysis Date: **12/13/2017** SeqNo: **2866895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.504	0.50	0.5000	0	101	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **120840**
Client ID: **CCV** Batch ID: **R120840** TestNo: **EPA 200.8** Analysis Date: **12/13/2017** SeqNo: **2866909**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.832	0.50	20.00	0	104	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **120840**
Client ID: **CCV** Batch ID: **R120840** TestNo: **EPA 200.8** Analysis Date: **12/13/2017** SeqNo: **2866921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.626	0.50	20.00	0	103	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **120840**
Client ID: **CCV** Batch ID: **R120840** TestNo: **EPA 200.8** Analysis Date: **12/13/2017** SeqNo: **2866933**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.601	0.50	20.00	0	103	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **ZZZZZZ**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2866935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.552	0.50	0.5000	0	110	70	130				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCV**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2866948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.559	0.50	20.00	0	103	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCV**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2866960**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.745	0.50	20.00	0	104	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCV**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2866972**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.452	0.50	20.00	0	102	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **ZZZZZZ**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2866974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.524	0.50	0.5000	0	105	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCV7**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCV**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2866987**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	21.181	0.50	20.00	0	106	90	110				

Sample ID **CCV8**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCV**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2866999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	21.094	0.50	20.00	0	105	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCV**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/14/2017**	SeqNo: **2867011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.343	0.50	20.00	0	102	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **ZZZZZZ**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/14/2017**	SeqNo: **2867013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.532	0.50	0.5000	0	106	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **ICV**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2867083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.669	1.0	10.00	0	107	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **ZZZZZZ**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2867085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.019	1.0	1.000	0	102	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCV**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2867099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.123	1.0	20.00	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCV**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2867111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.195	1.0	20.00	0	101	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCV**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2867123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.084	1.0	20.00	0	100	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	120840
Client ID:	ZZZZZZ	Batch ID:	R120840	TestNo:	EPA 200.8			Analysis Date:	12/13/2017	SeqNo:	2867125

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.000	1.0	1.000	0	100	70	130				

Sample ID	CCV4	SampType:	CCV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	120840
Client ID:	CCV	Batch ID:	R120840	TestNo:	EPA 200.8			Analysis Date:	12/13/2017	SeqNo:	2867138

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.030	1.0	20.00	0	100	90	110				

Sample ID	CCV5	SampType:	CCV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	120840
Client ID:	CCV	Batch ID:	R120840	TestNo:	EPA 200.8			Analysis Date:	12/13/2017	SeqNo:	2867150

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.557	1.0	20.00	0	103	90	110				

Sample ID	CCV6	SampType:	CCV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	120840
Client ID:	CCV	Batch ID:	R120840	TestNo:	EPA 200.8			Analysis Date:	12/13/2017	SeqNo:	2867162

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.922	1.0	20.00	0	99.6	90	110				

Sample ID	LLCCV2	SampType:	CCV2	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	120840
Client ID:	ZZZZZZ	Batch ID:	R120840	TestNo:	EPA 200.8			Analysis Date:	12/13/2017	SeqNo:	2867164

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.022	1.0	1.000	0	102	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **CCV7**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCV**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2867177**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.033	1.0	20.00	0	105	90	110				

Sample ID **CCV8**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCV**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2867189**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.058	1.0	20.00	0	105	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCV**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/14/2017**	SeqNo: **2867201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.932	1.0	20.00	0	99.7	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **ZZZZZZ**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/14/2017**	SeqNo: **2867203**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.028	1.0	1.000	0	103	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **ICB**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2866894**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCB**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2866910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCB**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2866922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCB**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2866934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCB**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2866949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCB5**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCB**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2866961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCB**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2866973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCB**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2866988**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCB**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2867000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCB**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/14/2017**	SeqNo: **2867012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **ICB**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2867084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCB**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2867100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCB**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2867112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCB**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2867124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCB**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2867139**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCB**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2867151**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCB**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2867163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCB**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2867178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCB**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2867190**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **CCB**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/14/2017**	SeqNo: **2867202**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	**ICSA1**	SampType:	**ICSA**	TestCode:	**200.8_WDISS**	Units:	**µg/L**	Prep Date:		RunNo:	**120840**
Client ID:	**ICSA**	Batch ID:	**R120840**	TestNo:	**EPA 200.8**			Analysis Date:	**12/13/2017**	SeqNo:	**2866896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID	**ICSAB1**	SampType:	**ICSAB**	TestCode:	**200.8_WDISS**	Units:	**µg/L**	Prep Date:		RunNo:	**120840**
Client ID:	**ICSAB**	Batch ID:	**R120840**	TestNo:	**EPA 200.8**			Analysis Date:	**12/13/2017**	SeqNo:	**2866897**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.279	0.50	20.00	0	96.4	80	120				

Sample ID	**ICSA2**	SampType:	**ICSA**	TestCode:	**200.8_WDISS**	Units:	**µg/L**	Prep Date:		RunNo:	**120840**
Client ID:	**ICSA**	Batch ID:	**R120840**	TestNo:	**EPA 200.8**			Analysis Date:	**12/13/2017**	SeqNo:	**2866936**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID	**ICSAB2**	SampType:	**ICSAB**	TestCode:	**200.8_WDISS**	Units:	**µg/L**	Prep Date:		RunNo:	**120840**
Client ID:	**ICSAB**	Batch ID:	**R120840**	TestNo:	**EPA 200.8**			Analysis Date:	**12/13/2017**	SeqNo:	**2866937**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.197	0.50	20.00	0	96.0	80	120				

Sample ID	**ICSA3**	SampType:	**ICSA**	TestCode:	**200.8_WDISS**	Units:	**µg/L**	Prep Date:		RunNo:	**120840**
Client ID:	**ICSA**	Batch ID:	**R120840**	TestNo:	**EPA 200.8**			Analysis Date:	**12/13/2017**	SeqNo:	**2866975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **ICSAB**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2866976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.604	0.50	20.00	0	98.0	80	120				

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **ICSA**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/14/2017**	SeqNo: **2867014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **ICSAB**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/14/2017**	SeqNo: **2867015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.038	0.50	20.00	0	95.2	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	120840
Client ID:	ICSA	Batch ID:	R120840	TestNo:	EPA 200.8			Analysis Date:	12/13/2017	SeqNo:	2867086

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.072	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	120840
Client ID:	ICSAB	Batch ID:	R120840	TestNo:	EPA 200.8			Analysis Date:	12/13/2017	SeqNo:	2867087

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.557	1.0	20.00	0	103	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	120840
Client ID:	ICSA	Batch ID:	R120840	TestNo:	EPA 200.8			Analysis Date:	12/13/2017	SeqNo:	2867126

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.079	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	120840
Client ID:	ICSAB	Batch ID:	R120840	TestNo:	EPA 200.8			Analysis Date:	12/13/2017	SeqNo:	2867127

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.523	1.0	20.00	0	103	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	120840
Client ID:	ICSA	Batch ID:	R120840	TestNo:	EPA 200.8			Analysis Date:	12/13/2017	SeqNo:	2867165

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.094	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **ICSAB**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/13/2017**	SeqNo: **2867166**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.640	1.0	20.00	0	103	80	120				

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **ICSA**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/14/2017**	SeqNo: **2867204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.081	1.0									

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **120840**
Client ID: **ICSAB**	Batch ID: **R120840**	TestNo: **EPA 200.8**		Analysis Date: **12/14/2017**	SeqNo: **2867205**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.223	1.0	20.00	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 171213A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	92652.9	92652.9	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	94321.8	92652.9	101.8	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	92763.1	92652.9	100.12	PASS	70-125
Std3-5/50 ppb	ICAL	1	93658.5	92652.9	101.09	PASS	70-125
Std4-10/100 ppb	ICAL	1	92455	92652.9	99.79	PASS	70-125
Std5-20/200 ppb	ICAL	1	92540.9	92652.9	99.88	PASS	70-125
Std6-40/400 ppb	ICAL	1	99446.8	92652.9	107.33	PASS	70-125
Std7-100/1000 ppb	ICAL	1	93679.8	92652.9	101.11	PASS	70-125
Std8-200/2000 ppb	ICAL	1	91555.3	92652.9	98.82	PASS	70-125
ICV	ICV	1	75874.4	92652.9	81.89	PASS	70-125
ICB	ICB	1	93156	92652.9	100.54	PASS	70-125
LLICV	CCV1	1	89550.2	92652.9	96.65	PASS	70-125
ICSA1	ICSA	1	102218.5	92652.9	110.32	PASS	70-125
ICSAB1	ICSAB	1	109493.4	92652.9	118.18	PASS	70-125
LLICV	CCV1	1	107451.9	92652.9	115.97	PASS	70-125
CCV1	CCV	1	90798.1	92652.9	98	PASS	70-125
CCB1	CCB	1	88270.5	92652.9	95.27	PASS	70-125
CCV2	CCV	1	87094.5	92652.9	94.001	PASS	70-125
CCB2	CCB	1	84308.7	92652.9	90.99	PASS	70-125
CCV3	CCV	1	91509.7	92652.9	98.77	PASS	70-125
CCB3	CCB	1	87942	92652.9	94.92	PASS	70-125
LLCCV1	CCV2	1	89843.7	92652.9	96.97	PASS	70-125
ICSA2	ICSA	1	101341.6	92652.9	109.38	PASS	70-125
ICSAB2	ICSAB	1	108680.9	92652.9	117.3	PASS	70-125
CCV4	CCV	1	97211.5	92652.9	104.92	PASS	70-125
CCB4	CCB	1	91910.7	92652.9	99.2	PASS	70-125
CCV5	CCV	1	87613.5	92652.9	94.56	PASS	70-125
CCB5	CCB	1	82313.5	92652.9	88.84	PASS	70-125
CCV6	CCV	1	98254.8	92652.9	106.05	PASS	70-125
CCB6	CCB	1	89810.9	92652.9	96.93	PASS	70-125
LLCCV2	CCV2	1	87301	92652.9	94.22	PASS	70-125
ICSA3	ICSA	1	95007.3	92652.9	102.54	PASS	70-125
ICSAB3	ICSAB	1	102002.5	92652.9	110.09	PASS	70-125
MB-66023	MBLK	1	94204.5	92652.9	101.67	PASS	70-125
LCS-66023	LCS	1	88710.2	92652.9	95.74	PASS	70-125
N027359-001E	SAMP	1	82426.1	92652.9	88.96	PASS	70-125
N027359-001E	SAMP	5	91048.1	92652.9	98.27	PASS	70-125
N027359-001E	SAMP	25	93632.4	92652.9	101.06	PASS	70-125
N027359-001E-PS	PS	1	88436.6	92652.9	95.45	PASS	70-125
N027359-001E-PS	PS	5	97010.3	92652.9	104.7	PASS	70-125
N027359-001E-MS	MS	1	92450.8	92652.9	99.78	PASS	70-125

INTERNAL STANDARD: 171213A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N027359-001E-MS	MS	5	101602.1	92652.9	109.66	PASS	70-125
N027359-001E-MSD	MSD	1	95942	92652.9	103.55	PASS	70-125
CCV7	CCV	1	86873	92652.9	93.76	PASS	70-125
CCB7	CCB	1	109967.4	92652.9	118.69	PASS	70-125
N027359-001E-MSD	MSD	5	100610.7	92652.9	108.59	PASS	70-125
N027359-002E	SAMP	1	91757.3	92652.9	99.033	PASS	70-125
N027359-002E	SAMP	5	105835.3	92652.9	114.23	PASS	70-125
N027359-003E	SAMP	1	96428	92652.9	104.07	PASS	70-125
N027359-003E	SAMP	5	105656.7	92652.9	114.04	PASS	70-125
N027359-004E	SAMP	1	96556.4	92652.9	104.21	PASS	70-125
N027359-004E	SAMP	5	106090.9	92652.9	114.5	PASS	70-125
N027359-005E	SAMP	1	98327.1	92652.9	106.12	PASS	70-125
N027359-005E	SAMP	5	106971.7	92652.9	115.45	PASS	70-125
N027359-006D	SAMP	1	97652.4	92652.9	105.4	PASS	70-125
CCV8	CCV	1	82010.6	92652.9	88.51	PASS	70-125
CCB8	CCB	1	111780.3	92652.9	120.64	PASS	70-125
N027359-006D	SAMP	5	101135.1	92652.9	109.15	PASS	70-125
N027359-007D	SAMP	1	97366.2	92652.9	105.09	PASS	70-125
N027359-007D	SAMP	5	103871.2	92652.9	112.11	PASS	70-125
N027359-008E	SAMP	1	94981.5	92652.9	102.51	PASS	70-125
N027359-008E	SAMP	5	105827.1	92652.9	114.22	PASS	70-125
N027428-002D	SAMP	1	94415.5	92652.9	101.9	PASS	70-125
N027428-002D	SAMP	5	105261.6	92652.9	113.61	PASS	70-125
N027428-001D	SAMP	1	102853.3	92652.9	111.01	PASS	70-125
N027428-001D	SAMP	5	105915.8	92652.9	114.31	PASS	70-125
CCV9	CCV	1	114848.2	92652.9	123.96	PASS	70-125
CCB9	CCB	1	106801.2	92652.9	115.27	PASS	70-125
LLCCV3	CCV2	1	105312.5	92652.9	113.66	PASS	70-125
ICSA4	ICSA	1	109475.1	92652.9	118.16	PASS	70-125
ICSAB4	ICSAB	1	114049	92652.9	123.09	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N027428
Test Method: EPA 200.8
Analysis Date: 12/13/2017

Matrix: Groundwater
Batch No.: 66023

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr & Mn. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027359-001E DT 5X	Chromium	ug/L	0.63151	NA	0.557624	13.25%	10
N027359-001E DT 5X	Manganese	ug/L	0.651939	NA	0.575334	13.31%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **N027359-001E-PS** SampType: **PS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **120840**
Client ID: **ZZZZZZ** Batch ID: **66023** TestNo: **EPA 200.8** Analysis Date: **12/13/2017** SeqNo: **2866982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	98.375	0.50	100.0	0.5753	97.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	**N027359-001E-PS**	SampType:	**PS**	TestCode:	**200.8DIS_Cr**	Units:	**µg/L**	Prep Date:		RunNo:	**120840**
Client ID:	**ZZZZZZ**	Batch ID:	**66023**	TestNo:	**EPA 200.8**			Analysis Date:	**12/13/2017**	SeqNo:	**2867172**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.342	1.0	10.00	0.5576	97.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120834
ASSET #: N027428

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 12/11/2017

Method:

[ ] EPA 300.0
[ ] EPA 7199
[X] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/16/2017

2nd Level Reviewer: RLB 12/22/2017 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N027428-002A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 5.4968 * 100$$

$$Cr^{+6}, \mu g/L = 549.68$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 550}$$

rba 12/16/2017

RLB 12/22/2017

ANALYSIS RUN LOG

INJECTION LOG: 171128A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/28/17 10:57 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/28/17 11:08 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/28/17 11:17 AM	Reported
13	MB-R120468	MBLK	1	Hexavalent Chromium	11/28/17 11:27 AM	Reported
14	LCS-R120468	LCS	1	Hexavalent Chromium	11/28/17 11:36 AM	Reported
15	N027215-001A	SAMP	1	Hexavalent Chromium	11/28/17 11:47 AM	Reported
16	N027215-002A	SAMP	1	Hexavalent Chromium	11/28/17 11:59 AM	Reported
17	N027215-003A	SAMP	1	Hexavalent Chromium	11/28/17 12:08 PM	Reported
18	N027215-004A	SAMP	1	Hexavalent Chromium	11/28/17 12:18 PM	Reported
19	N027215-005A	SAMP	1	Hexavalent Chromium	11/28/17 12:27 PM	Reported
20	N027215-002ADUP	DUP	1	Hexavalent Chromium	11/28/17 12:37 PM	Reported
21	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 12:46 PM	Not Reported
22	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 12:56 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	11/28/17 1:05 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/28/17 1:14 PM	Reported
25	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:04 PM	Not Reported
26	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:16 PM	Not Reported
27	N027215-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:29 PM	Reported
28	N027215-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:41 PM	Reported
29	CCV-2	CCV	1	Hexavalent Chromium	11/28/17 2:50 PM	Reported
30	CCB-2	CCB	1	Hexavalent Chromium	11/28/17 3:00 PM	Reported



Injection Log Summary

Sequence Details

Name:	**IC-07_171128A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**28/Nov/17 15:47:35**
No. of Injections:	**33**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		11/28/2017 10:57	Finished	ICV @5ppb, IWST-171002A
11	PQL@0.2ppb,CCV2,1	12	1000	Unknown		11/28/2017 11:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		11/28/2017 11:17	Finished	ICB R171114C
13	MB-H2O,MBLK,1	14	1000	Unknown		11/28/2017 11:27	Finished	MB R171114C
14	LCS-H2O,LCS,1	15	1000	Unknown		11/28/2017 11:36	Finished	LCS, IWST-171002B
15	N027215-001A,SAMP	17	1000	Unknown		11/28/2017 11:47	Finished	SAMP,10mL
16	N027215-002A,SAMP	18	1000	Unknown		11/28/2017 11:59	Finished	SAMP,10mL
17	N027215-003A,SAMP	19	1000	Unknown		11/28/2017 12:08	Finished	SAMP,10mL
18	N027215-004A,SAMP	20	1000	Unknown		11/28/2017 12:18	Finished	SAMP,10mL
19	N027215-005A,SAMP	21	1000	Unknown		11/28/2017 12:27	Finished	SAMP,10mL
20	N027215-002ADUP,D	22	1000	Unknown		11/28/2017 12:37	Finished	DUP,10mL
21	N027157-001AMS,MS	23	1000	Unknown		11/28/2017 12:46	Finished	MS (5ppb), IWST-171002B,10
22	N027157-001AMSD,M	24	1000	Unknown		11/28/2017 12:56	Finished	MSD (5ppb), IWST-171002B,1(
23	CCV-1,CCV1,1,	25	1000	Unknown		11/28/2017 13:05	Finished	CCV @10ppb, IWST-171002A
24	CCB-1,CCB,1,	26	1000	Unknown		11/28/2017 13:14	Finished	CCB R171031A
25	N027157-001AMS,MS	28	1000	Unknown		11/28/2017 14:04	Finished	MS (5ppb), IWST-171002B,10
26	N027157-001AMSD,M	29	1000	Unknown		11/28/2017 14:16	Finished	MSD (5ppb), IWST-171002B,1(
27	N027215-001AMS,MS	31	1000	Unknown		11/28/2017 14:29	Finished	MS (5ppb), IWST-171002B,10
28	N027215-001AMSD,M	32	1000	Unknown		11/28/2017 14:41	Finished	MSD (5ppb), IWST-171002B,1(
29	CCV-2,CCV,1,	33	1000	Unknown		11/28/2017 14:50	Finished	CCV @5ppb, IWST-171002A
30	CCB-2,CCB,1,	34	1000	Unknown		11/28/2017 15:00	Finished	CCB R171031A
31	SHUTDOWN	35	1000	Unknown		11/28/2017 15:09	Finished	
32	Eluent: R171128A	36	1000	Unknown		n.a.	Finished	Eluent
33	PCR: R171128B	37	1000	Unknown		n.a.	Finished	Post-Column Reagent

rba 11/29/2017

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 8:57 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 9:08 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/11/17 9:18 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/11/17 9:27 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/11/17 9:37 AM	Reported
15	MB-R120833	MBLK	1	Hexavalent Chromium	12/11/17 9:46 AM	Reported
16	LCS-R120833	LCS	1	Hexavalent Chromium	12/11/17 9:56 AM	Reported
17	N027405-006AMS	MS	5	Hexavalent Chromium	12/11/17 10:09 AM	Reported
18	N027405-006A	SAMP	5	Hexavalent Chromium	12/11/17 10:20 AM	Reported
19	N027405-007AMS	MS	5	Hexavalent Chromium	12/11/17 10:29 AM	Reported
20	N027405-007A	SAMP	5	Hexavalent Chromium	12/11/17 10:39 AM	Reported
21	N027405-008AMS	MS	5	Hexavalent Chromium	12/11/17 10:48 AM	Reported
22	N027405-008A	SAMP	5	Hexavalent Chromium	12/11/17 10:58 AM	Reported
23	N027430-001A	SAMP	1	Hexavalent Chromium	12/11/17 11:07 AM	Reported
24	N027430-001AMS	MS	1	Hexavalent Chromium	12/11/17 11:17 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/11/17 11:26 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/11/17 11:36 AM	Reported
27	N027430-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:45 AM	Reported
28	N027430-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:54 AM	Reported
29	N027430-003A	SAMP	1	Hexavalent Chromium	12/11/17 12:04 PM	Reported
30	N027430-003AMS	MS	1	Hexavalent Chromium	12/11/17 12:13 PM	Reported
31	N027430-004A	SAMP	1	Hexavalent Chromium	12/11/17 12:23 PM	Reported
32	N027430-004AMS	MS	1	Hexavalent Chromium	12/11/17 12:32 PM	Reported
33	N027430-005A	SAMP	1	Hexavalent Chromium	12/11/17 12:42 PM	Reported
34	N027430-005AMS	MS	1	Hexavalent Chromium	12/11/17 12:51 PM	Reported
35	N027430-006A	SAMP	1	Hexavalent Chromium	12/11/17 1:01 PM	Reported
36	N027430-006AMS	MS	1	Hexavalent Chromium	12/11/17 1:10 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/11/17 1:20 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/11/17 1:29 PM	Reported
39	N027430-007A	SAMP	1	Hexavalent Chromium	12/11/17 1:38 PM	Reported
40	N027430-007AMS	MS	1	Hexavalent Chromium	12/11/17 1:48 PM	Reported
41	N027430-008A	SAMP	1	Hexavalent Chromium	12/11/17 1:57 PM	Reported
42	N027430-008AMS	MS	1	Hexavalent Chromium	12/11/17 2:07 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027430-009A	SAMP	1	Hexavalent Chromium	12/11/17 2:16 PM	Reported
44	N027430-009AMS	MS	1	Hexavalent Chromium	12/11/17 2:26 PM	Reported
45	N027430-010A	SAMP	1	Hexavalent Chromium	12/11/17 2:35 PM	Reported
46	N027430-010AMS	MS	1	Hexavalent Chromium	12/11/17 2:45 PM	Reported
47	N027430-020A	SAMP	20	Hexavalent Chromium	12/11/17 2:54 PM	Reported
48	N027430-020AMS	MS	20	Hexavalent Chromium	12/11/17 3:04 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/11/17 3:13 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/11/17 3:23 PM	Reported
51	N027430-012A	SAMP	1	Hexavalent Chromium	12/11/17 3:32 PM	Not Reported
52	N027430-012AMS	MS	1	Hexavalent Chromium	12/11/17 3:41 PM	Not Reported
53	N027430-019A	SAMP	1	Hexavalent Chromium	12/11/17 3:51 PM	Reported
54	N027430-019AMS	MS	1	Hexavalent Chromium	12/11/17 4:00 PM	Reported
55	N027430-011A	SAMP	1	Hexavalent Chromium	12/11/17 4:10 PM	Reported
56	N027430-011AMS	MS	1	Hexavalent Chromium	12/11/17 4:19 PM	Reported
57	N027430-013A	SAMP	5	Hexavalent Chromium	12/11/17 4:29 PM	Reported
58	N027430-013AMS	MS	5	Hexavalent Chromium	12/11/17 4:38 PM	Reported
59	N027430-014A	SAMP	5	Hexavalent Chromium	12/11/17 4:48 PM	Reported
60	N027430-014AMS	MS	5	Hexavalent Chromium	12/11/17 4:57 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/11/17 5:07 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/11/17 5:16 PM	Reported
63	N027430-015A	SAMP	5	Hexavalent Chromium	12/11/17 5:26 PM	Reported
64	N027430-015AMS	MS	5	Hexavalent Chromium	12/11/17 5:35 PM	Reported
65	N027405-006ADUP	DUP	5	Hexavalent Chromium	12/11/17 5:44 PM	Reported
66	N027430-020AMSD	MSD	20	Hexavalent Chromium	12/11/17 5:54 PM	Reported
67	N027430-002A	SAMP	1	Hexavalent Chromium	12/11/17 6:05 PM	Not Reported
68	N027430-002AMS	MS	1	Hexavalent Chromium	12/11/17 6:16 PM	Not Reported
69	N027430-013A	SAMP	1	Hexavalent Chromium	12/11/17 6:25 PM	Not Reported
70	N027430-013AMS	MS	1	Hexavalent Chromium	12/11/17 6:35 PM	Not Reported
71	N027430-014A	SAMP	1	Hexavalent Chromium	12/11/17 6:44 PM	Not Reported
72	N027430-014AMS	MS	1	Hexavalent Chromium	12/11/17 6:54 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	12/11/17 7:03 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	12/11/17 7:13 PM	Reported
75	N027430-015A	SAMP	1	Hexavalent Chromium	12/11/17 7:22 PM	Not Reported
76	N027430-015AMS	MS	1	Hexavalent Chromium	12/11/17 7:32 PM	Not Reported
77	N027430-012A	SAMP	5	Hexavalent Chromium	12/11/17 7:41 PM	Reported
78	N027430-012AMS	MS	5	Hexavalent Chromium	12/11/17 7:50 PM	Reported
79	LCS-R120834	LCS	1	Hexavalent Chromium	12/11/17 8:00 PM	Reported
80	MB-R120834	MBLK	1	Hexavalent Chromium	12/11/17 8:09 PM	Reported
81	N027431-006A	SAMP	1000	Hexavalent Chromium	12/11/17 8:19 PM	Reported
82	N027431-006AMS	MS	1000	Hexavalent Chromium	12/11/17 8:28 PM	Reported
83	N027431-006AMSD	MSD	1000	Hexavalent Chromium	12/11/17 8:38 PM	Reported
84	N027428-002A	SAMP	100	Hexavalent Chromium	12/11/17 8:47 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	12/11/17 8:57 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	12/11/17 9:06 PM	Reported
87	N027428-002ADUP	DUP	100	Hexavalent Chromium	12/11/17 9:16 PM	Reported
88	N027428-002AMS	MS	100	Hexavalent Chromium	12/11/17 9:25 PM	Reported
89	N027428-001A	SAMP	1	Hexavalent Chromium	12/11/17 9:35 PM	Reported
90	N027428-001AMS	MS	1	Hexavalent Chromium	12/11/17 9:44 PM	Reported
91	N027430-016A	SAMP	5	Hexavalent Chromium	12/11/17 9:53 PM	Reported
92	N027430-016AMS	MS	5	Hexavalent Chromium	12/11/17 10:03 PM	Reported
93	N027430-017A	SAMP	5	Hexavalent Chromium	12/11/17 10:12 PM	Reported
94	N027430-017AMS	MS	5	Hexavalent Chromium	12/11/17 10:22 PM	Reported
95	N027430-018A	SAMP	5	Hexavalent Chromium	12/11/17 10:31 PM	Reported
96	N027430-018AMS	MS	5	Hexavalent Chromium	12/11/17 10:41 PM	Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	12/11/17 10:50 PM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	12/11/17 11:00 PM	Reported
99	N027431-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:09 PM	Reported
100	N027431-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:19 PM	Reported
101	N027431-003A	SAMP	5	Hexavalent Chromium	12/11/17 11:28 PM	Reported
102	N027431-003AMS	MS	5	Hexavalent Chromium	12/11/17 11:38 PM	Reported
103	N027431-004A	SAMP	5	Hexavalent Chromium	12/11/17 11:47 PM	Reported
104	N027431-004AMS	MS	5	Hexavalent Chromium	12/11/17 11:56 PM	Reported
105	N027431-001A	SAMP	10	Hexavalent Chromium	12/12/17 12:06 AM	Not Reported
106	N027431-001AMS	MS	10	Hexavalent Chromium	12/12/17 12:15 AM	Not Reported
107	N027431-005A	SAMP	200	Hexavalent Chromium	12/12/17 12:25 AM	Reported
108	N027431-005AMS	MS	200	Hexavalent Chromium	12/12/17 12:34 AM	Reported
109	CCV-9	CCV	1	Hexavalent Chromium	12/12/17 12:44 AM	Reported
110	CCB-9	CCB	1	Hexavalent Chromium	12/12/17 12:53 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171211A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**12/Dec/17 01:24:03**
No. of Injections:	**113**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/11/2017 08:57	Finished	BLANK
11	BLANK	2	1000	Unknown		12/11/2017 09:08	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/11/2017 09:18	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/11/2017 09:27	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/11/2017 09:37	Finished	CCB R171129A
15	MB-1,MBLK,1	6	1000	Unknown		12/11/2017 09:46	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/11/2017 09:56	Finished	LCS, IWST-171002B
17	N027405-006AMS,MS	1	1000	Unknown		12/11/2017 10:09	Finished	MS (1ppb), IWST-171002B,2>1
18	N027405-006A,SAMP	2	1000	Unknown		12/11/2017 10:20	Finished	SAMP,2>10mL
19	N027405-007AMS,MS	3	1000	Unknown		12/11/2017 10:29	Finished	MS (1ppb), IWST-171002B,2>1
20	N027405-007A,SAMP	4	1000	Unknown		12/11/2017 10:39	Finished	SAMP,2>10mL
21	N027405-008AMS,MS	5	1000	Unknown		12/11/2017 10:48	Finished	SAMP,2>10mL
22	N027405-008A,SAMP	6	1000	Unknown		12/11/2017 10:58	Finished	MS (1ppb), IWST-171002B,2>1
23	N027430-001A,SAMP	7	1000	Unknown		12/11/2017 11:07	Finished	SAMP,10mL
24	N027430-001AMS,MS	8	1000	Unknown		12/11/2017 11:17	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	9	1000	Unknown		12/11/2017 11:26	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	10	1000	Unknown		12/11/2017 11:36	Finished	CCB R171129A
27	N027430-002A,SAMP	11	1000	Unknown		12/11/2017 11:45	Finished	SAMP,2>10mL
28	N027430-002AMS,MS	12	1000	Unknown		12/11/2017 11:54	Finished	MS (1ppb), IWST-171002B,2>1
29	N027430-003A,SAMP	13	1000	Unknown		12/11/2017 12:04	Finished	SAMP,10mL
30	N027430-003AMS,MS	14	1000	Unknown		12/11/2017 12:13	Finished	MS (1ppb), IWST-171002B,10
31	N027430-004A,SAMP	15	1000	Unknown		12/11/2017 12:23	Finished	SAMP,10mL
32	N027430-004AMS,MS	16	1000	Unknown		12/11/2017 12:32	Finished	MS (1ppb), IWST-171002B,10
33	N027430-005A,SAMP	17	1000	Unknown		12/11/2017 12:42	Finished	SAMP,10mL
34	N027430-005AMS,MS	18	1000	Unknown		12/11/2017 12:51	Finished	MS (1ppb), IWST-171002B,10
35	N027430-006A,SAMP	19	1000	Unknown		12/11/2017 13:01	Finished	SAMP,10mL
36	N027430-006AMS,MS	20	1000	Unknown		12/11/2017 13:10	Finished	MS (1ppb), IWST-171002B,10
37	CCV-3,CCV,1,	21	1000	Unknown		12/11/2017 13:20	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	22	1000	Unknown		12/11/2017 13:29	Finished	CCB R171129A
39	N027430-007A,SAMP	23	1000	Unknown		12/11/2017 13:38	Finished	SAMP,10mL
40	N027430-007AMS,MS	24	1000	Unknown		12/11/2017 13:48	Finished	MS (1ppb), IWST-171002B,10
41	N027430-008A,SAMP	25	1000	Unknown		12/11/2017 13:57	Finished	SAMP,10mL
42	N027430-008AMS,MS	26	1000	Unknown		12/11/2017 14:07	Finished	MS (1ppb), IWST-171002B,10
43	N027430-009A,SAMP	27	1000	Unknown		12/11/2017 14:16	Finished	SAMP,10mL
44	N027430-009AMS,MS	28	1000	Unknown		12/11/2017 14:26	Finished	MS (1ppb), IWST-171002B,10
45	N027430-010A,SAMP	29	1000	Unknown		12/11/2017 14:35	Finished	SAMP,10mL
46	N027430-010AMS,MS	30	1000	Unknown		12/11/2017 14:45	Finished	MS (1ppb), IWST-171002B,10
47	N027430-020A,SAMP	31	1000	Unknown		12/11/2017 14:54	Finished	SAMP,0.5>10mL
48	N027430-020AMS,MS	32	1000	Unknown		12/11/2017 15:04	Finished	MS (5ppb), IWST-171002B,0.5
49	CCV-4,CCV1,1,	33	1000	Unknown		12/11/2017 15:13	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	34	1000	Unknown		12/11/2017 15:23	Finished	CCB R171129A
51	N027430-012A,SAMP	35	1000	Unknown		12/11/2017 15:32	Finished	SAMP,10mL
52	N027430-012AMS,MS	36	1000	Unknown		12/11/2017 15:41	Finished	MS (1ppb), IWST-171002B,10
53	N027430-019A,SAMP	37	1000	Unknown		12/11/2017 15:51	Finished	SAMP,10mL
54	N027430-019AMS,MS	38	1000	Unknown		12/11/2017 16:00	Finished	MS (1ppb), IWST-171002B,10
55	N027430-011A,SAMP	39	1000	Unknown		12/11/2017 16:10	Finished	SAMP,10mL
56	N027430-011AMS,MS	40	1000	Unknown		12/11/2017 16:19	Finished	MS (1ppb), IWST-171002B,10
57	N027430-013A,SAMP	41	1000	Unknown		12/11/2017 16:29	Finished	SAMP,2>10mL
58	N027430-013AMS,MS	42	1000	Unknown		12/11/2017 16:38	Finished	MS (1ppb), IWST-171002B,2>1
59	N027430-014A,SAMP	43	1000	Unknown		12/11/2017 16:48	Finished	SAMP,2>10mL
60	N027430-014AMS,MS	44	1000	Unknown		12/11/2017 16:57	Finished	MS (1ppb), IWST-171002B,2>1

61	CCV-5,CCV,1,	45	1000	Unknown		12/11/2017 17:07	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	46	1000	Unknown		12/11/2017 17:16	Finished	CCB R171129A
63	N027430-015A,SAMP	47	1000	Unknown		12/11/2017 17:26	Finished	SAMP,2>10mL
64	N027430-015AMS,MS	48	1000	Unknown		12/11/2017 17:35	Finished	MS (1ppb), IWST-171002B,2>1
65	N027405-006ADUP,D	49	1000	Unknown		12/11/2017 17:44	Finished	DUP,2>10mL
66	N027430-020AMSD,M	50	1000	Unknown		12/11/2017 17:54	Finished	MSD (5ppb), IWST-171002B,0.
67	N027430-002A,SAMP	1	1000	Unknown		12/11/2017 18:05	Finished	MSD (5ppb), IWST-171002B,0.
68	N027430-002AMS,MS	2	1000	Unknown		12/11/2017 18:16	Finished	DUP,2>10mL
69	N027430-013A,SAMP	3	1000	Unknown		12/11/2017 18:25	Finished	SAMP,2>10mL
70	N027430-013AMS,MS	4	1000	Unknown		12/11/2017 18:35	Finished	MS (1ppb), IWST-171002B,2>1
71	N027430-014A,SAMP	5	1000	Unknown		12/11/2017 18:44	Finished	SAMP,10mL
72	N027430-014AMS,MS	6	1000	Unknown		12/11/2017 18:54	Finished	MS (1ppb), IWST-171002B,10
73	CCV-6,CCV1,1,	7	1000	Unknown		12/11/2017 19:03	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	8	1000	Unknown		12/11/2017 19:13	Finished	CCB R171129A
75	N027430-015A,SAMP	9	1000	Unknown		12/11/2017 19:22	Finished	LCS, IWST-171002B
76	N027430-015AMS,MS	10	1000	Unknown		12/11/2017 19:32	Finished	MB R171129A
77	N027430-012A,SAMP	11	1000	Unknown		12/11/2017 19:41	Finished	SAMP,2>10mL
78	N027430-012AMS,MS	12	1000	Unknown		12/11/2017 19:50	Finished	MS (1ppb), IWST-171002B,2>1
79	LCS-2,LCS,1	13	1000	Unknown		12/11/2017 20:00	Finished	LCS, IWST-171002B
80	MB-2,MBLK,1	14	1000	Unknown		12/11/2017 20:09	Finished	MB R171129A
81	N027431-006A,SAMP	15	1000	Unknown		12/11/2017 20:19	Finished	DUP,0.1>10mL
82	N027431-006AMS,MS	16	1000	Unknown		12/11/2017 20:28	Finished	SAMP,10mL
83	N027431-006AMSD,M	17	1000	Unknown		12/11/2017 20:38	Finished	SAMP,5>10mL
84	N027428-002A,SAMP	18	1000	Unknown		12/11/2017 20:47	Finished	SAMP,0.2>10mL
85	CCV-7,CCV,1,	19	1000	Unknown		12/11/2017 20:57	Finished	CCV @5ppb, IWST-171002A
86	CCB-7,CCB,1,	20	1000	Unknown		12/11/2017 21:06	Finished	CCB R171114C
87	N027428-002ADUP,D	21	1000	Unknown		12/11/2017 21:16	Finished	SAMP,0.2>10mL
88	N027428-002AMS,MS	22	1000	Unknown		12/11/2017 21:25	Finished	SAMP,1>10mL
89	N027428-001A,SAMP	23	1000	Unknown		12/11/2017 21:35	Finished	SAMP,0.5>10mL
90	N027428-001AMS,MS	24	1000	Unknown		12/11/2017 21:44	Finished	SAMP,5>10mL
91	N027430-016A,SAMP	25	1000	Unknown		12/11/2017 21:53	Finished	SAMP,10mL
92	N027430-016AMS,MS	26	1000	Unknown		12/11/2017 22:03	Finished	SAMP,2>10mL
93	N027430-017A,SAMP	27	1000	Unknown		12/11/2017 22:12	Finished	MS (5ppb), IWST-171002B,2>1
94	N027430-017AMS,MS	28	1000	Unknown		12/11/2017 22:22	Finished	MSD (5ppb), IWST-171002B,2>
95	N027430-018A,SAMP	29	1000	Unknown		12/11/2017 22:31	Finished	SAMP,10mL
96	N027430-018AMS,MS	30	1000	Unknown		12/11/2017 22:41	Finished	MS (1ppb), IWST-171002B,10
97	CCV-8,CCV1,1,	31	1000	Unknown		12/11/2017 22:50	Finished	CCV @10ppb, IWST-171002A
98	CCB-8,CCB,1,	32	1000	Unknown		12/11/2017 23:00	Finished	CCB R171129A
99	N027431-002A,SAMP	33	1000	Unknown		12/11/2017 23:09	Finished	SAMP,10mL
100	N027431-002AMS,MS	34	1000	Unknown		12/11/2017 23:19	Finished	MS (1ppb), IWST-171002B,10
101	N027431-003A,SAMP	35	1000	Unknown		12/11/2017 23:28	Finished	SAMP,10mL
102	N027431-003AMS,MS	36	1000	Unknown		12/11/2017 23:38	Finished	MS (1ppb), IWST-171002B,10
103	N027431-004A,SAMP	37	1000	Unknown		12/11/2017 23:47	Finished	SAMP,10mL
104	N027431-004AMS,MS	38	1000	Unknown		12/11/2017 23:56	Finished	MS (1ppb), IWST-171002B,10
105	N027431-001A,SAMP	39	1000	Unknown		12/12/2017 00:06	Finished	SAMP,10mL
106	N027431-001AMS,MS	40	1000	Unknown		12/12/2017 00:15	Finished	MS (1ppb), IWST-171002B,10
107	N027431-005A,SAMP	41	1000	Unknown		12/12/2017 00:25	Finished	SAMP,10mL
108	N027431-005AMS,MS	42	1000	Unknown		12/12/2017 00:34	Finished	MS (1ppb), IWST-171002B,10
109	CCV-9,CCV,1,	43	1000	Unknown		12/12/2017 00:44	Finished	CCV @5ppb, IWST-171002A
110	CCB-9,CCB,1,	44	1000	Unknown		12/12/2017 00:53	Finished	CCB R171114C
111	SHUTDOWN	45	1000	Unknown		12/12/2017 01:03	Finished	
112	Eluent: R171211B	46	1000	Unknown		n.a.	Finished	Eluent
113	PCR: R171211C	47	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 12/8/17
Time Prepared: 4:40
Prepared By: MC

Reagent ID:
Sulfuric Acid: 9465
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: ~~M71718~~ M71211B
NH4OH + NH4SO4 buffer: M71129A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N027430-12A	9.32	—	250	250		2/2 M71129A
2)	13A	9.33	—				
3)	14A	9.43	—				
4)	MC ~~14E~~	~~7.55~~					
5)	15A	9.45	—				
6)	16A	9.56	—				
7)	17A	9.52	—				
8)	18A	9.49	—				1/2
9)	18A	9.49	—				2/2
10)							
11)							
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 12/11/17
Time Prepared: 1437H
Prepared By: MDA

Reagent ID:
Sulfuric Acid: 9465
Diphenylcarbazide: CINV-170620A
NH4OH + NH4SO4 eluent: M71211B
NH4OH + NH4SO4 buffer: M71129A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N027431-1A	9.31	-	~250ml	~250ml		M71129A
2)	2A	9.31	-				
3)	3A	9.32	-				
4)	4A	9.34	-				
5)	5A	9.37	-				
6)	6A	9.33	-				
7)	N027465-1A	9.50	-				
8)	2A	9.51	-				
9)	3A	9.48	-				
10)	N027428-1A	9.38					
11)	2A	9.42					
12)							
13)							
14)							
15)							

Logbook No. 13

rba 12/16/2017

12/22/2017

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 11/28/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0529	0.2484	1.2584	2.5328	3.7596	5.0155	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-171002A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 12/22/2017

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ICV**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866062**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.092	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.185	0.20	0.2000	0	92.6	80	120				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866065**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.215	0.20	0.2000	0	108	80	120				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.294	0.20	10.00	0	103	95	105				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **CCV**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.109	0.20	5.000	0	102	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-8**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866086**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.160	0.20	10.00	0	102	95	105				

Sample ID **CCV-9**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **CCV**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866096**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.072	0.20	5.000	0	101	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ICB**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **CCB**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **CCB**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866075**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **CCB**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-9**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **CCB**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.148	
CCV-7	4.148	
CCV-8	4.140	
CCV-9	4.148	
Average	4.143	
Actual RT Window	4.063 - 4.223	
Applied RT Window	3.943 - 4.343	
MB-R120833	N.A.	N.A.
LCS-R120833	4.140	PASS
N027405-006AMS	4.090	PASS
N027405-006A	4.090	PASS
N027405-007AMS	4.090	PASS
N027405-007A	N.A.	N.A.
N027405-008AMS	4.090	PASS
N027405-008A	4.090	PASS
N027430-001A	N.A.	N.A.
N027430-001AMS	4.140	PASS
N027430-002A	4.031	PASS
N027430-002AMS	4.056	PASS
N027430-003A	N.A.	N.A.
N027430-003AMS	4.140	PASS
N027430-004A	N.A.	N.A.
N027430-004AMS	4.131	PASS
N027430-005A	N.A.	N.A.
N027430-005AMS	4.148	PASS
N027430-006A	N.A.	N.A.
N027430-006AMS	4.131	PASS

RLB 12/22/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.148	
CCV-7	4.148	
CCV-8	4.140	
CCV-9	4.148	
Average	4.143	
Actual RT Window	4.063 - 4.223	
Applied RT Window	3.943 - 4.343	
N027430-007A	N.A.	N.A.
N027430-007AMS	4.140	PASS
N027430-008A	N.A.	N.A.
N027430-008AMS	4.040	PASS
N027430-009A	N.A.	N.A.
N027430-009AMS	4.140	PASS
N027430-010A	N.A.	N.A.
N027430-010AMS	4.140	PASS
N027430-020A	4.140	PASS
N027430-020AMS	4.140	PASS
N027430-012A	N.A.	N.A.
N027430-012AMS	3.848	FAIL
N027430-019A	N.A.	N.A.
N027430-019AMS	4.140	PASS
N027430-011A	N.A.	N.A.
N027430-011AMS	4.140	PASS
N027430-013A	4.115	PASS
N027430-013AMS	4.115	PASS
N027430-014A	4.098	PASS
N027430-014AMS	4.098	PASS



12/22/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.148	
CCV-7	4.148	
CCV-8	4.140	
CCV-9	4.148	
Average	4.143	
Actual RT Window	4.063 - 4.223	
Applied RT Window	3.943 - 4.343	
N027430-015A	4.081	PASS
N027430-015AMS	4.081	PASS
N027405-006ADUP	4.090	PASS
N027430-020AMSD	4.140	PASS
N027430-002A	N.A.	N.A.
N027430-002AMS	N.A.	N.A.
N027430-013A	3.956	PASS
N027430-013AMS	3.965	PASS
N027430-014A	3.723	FAIL
N027430-014AMS	3.723	FAIL
N027430-015A	N.A.	N.A.
N027430-015AMS	N.A.	N.A.
N027430-012A	N.A.	N.A.
N027430-012AMS	4.106	PASS
LCS-R120834	4.148	PASS
MB-R120834	N.A.	N.A.
N027431-006A	4.140	PASS
N027431-006AMS	4.140	PASS
N027431-006AMSD	4.140	PASS
N027428-002A	4.140	PASS



12/22/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.148	
CCV-7	4.148	
CCV-8	4.140	
CCV-9	4.148	
Average	4.143	
Actual RT Window	4.063 - 4.223	
Applied RT Window	3.943 - 4.343	
N027428-002ADUP	4.140	PASS
N027428-002AMS	4.140	PASS
N027428-001A	N.A.	N.A.
N027428-001AMS	4.131	PASS
N027430-016A	4.081	PASS
N027430-016AMS	4.081	PASS
N027430-017A	4.056	PASS
N027430-017AMS	4.073	PASS
N027430-018A	N.A.	N.A.
N027430-018AMS	3.998	PASS
N027431-002A	4.115	PASS
N027431-002AMS	4.115	PASS
N027431-003A	4.090	PASS
N027431-003AMS	4.081	PASS
N027431-004A	4.081	PASS
N027431-004AMS	4.090	PASS
N027431-001A	4.140	PASS
N027431-001AMS	4.140	PASS
N027431-005A	4.140	PASS
N027431-005AMS	4.140	PASS

RLB 12/22/2017

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 Unit: ug/L
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

MDL/LOD & PQL Verification 2017

Method Name: **Hexavalent Chromium by IC**
Method Number: EPA Method 218.6
Analysis Date(s): 5/31/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: µg/L

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.103

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.194	**97**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 171128A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/28/17 10:57 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/28/17 11:08 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/28/17 11:17 AM	Reported
13	MB-R120468	MBLK	1	Hexavalent Chromium	11/28/17 11:27 AM	Reported
14	LCS-R120468	LCS	1	Hexavalent Chromium	11/28/17 11:36 AM	Reported
15	N027215-001A	SAMP	1	Hexavalent Chromium	11/28/17 11:47 AM	Reported
16	N027215-002A	SAMP	1	Hexavalent Chromium	11/28/17 11:59 AM	Reported
17	N027215-003A	SAMP	1	Hexavalent Chromium	11/28/17 12:08 PM	Reported
18	N027215-004A	SAMP	1	Hexavalent Chromium	11/28/17 12:18 PM	Reported
19	N027215-005A	SAMP	1	Hexavalent Chromium	11/28/17 12:27 PM	Reported
20	N027215-002ADUP	DUP	1	Hexavalent Chromium	11/28/17 12:37 PM	Reported
21	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 12:46 PM	Not Reported
22	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 12:56 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	11/28/17 1:05 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/28/17 1:14 PM	Reported
25	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:04 PM	Not Reported
26	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:16 PM	Not Reported
27	N027215-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:29 PM	Reported
28	N027215-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:41 PM	Reported
29	CCV-2	CCV	1	Hexavalent Chromium	11/28/17 2:50 PM	Reported
30	CCB-2	CCB	1	Hexavalent Chromium	11/28/17 3:00 PM	Reported

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Injection Log Summary

Sequence Details

Name:	**IC-07_171128A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**28/Nov/17 15:47:35**
No. of Injections:	**33**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		11/28/2017 10:57	Finished	ICV @5ppb, IWST-171002A
11	PQL@0.2ppb,CCV2,	12	1000	Unknown		11/28/2017 11:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		11/28/2017 11:17	Finished	ICB R171114C
13	MB-H2O,MBLK,1	14	1000	Unknown		11/28/2017 11:27	Finished	MB R171114C
14	LCS-H2O,LCS,1	15	1000	Unknown		11/28/2017 11:36	Finished	LCS, IWST-171002B
15	N027215-001A,SAMP	17	1000	Unknown		11/28/2017 11:47	Finished	SAMP,10mL
16	N027215-002A,SAMP	18	1000	Unknown		11/28/2017 11:59	Finished	SAMP,10mL
17	N027215-003A,SAMP	19	1000	Unknown		11/28/2017 12:08	Finished	SAMP,10mL
18	N027215-004A,SAMP	20	1000	Unknown		11/28/2017 12:18	Finished	SAMP,10mL
19	N027215-005A,SAMP	21	1000	Unknown		11/28/2017 12:27	Finished	SAMP,10mL
20	N027215-002ADUP,D	22	1000	Unknown		11/28/2017 12:37	Finished	DUP,10mL
21	N027157-001AMS,MS	23	1000	Unknown		11/28/2017 12:46	Finished	MS (5ppb), IWST-171002B,10
22	N027157-001AMSD,M	24	1000	Unknown		11/28/2017 12:56	Finished	MSD (5ppb), IWST-171002B,1
23	CCV-1,CCV1,1,	25	1000	Unknown		11/28/2017 13:05	Finished	CCV @10ppb, IWST-171002A
24	CCB-1,CCB,1,	26	1000	Unknown		11/28/2017 13:14	Finished	CCB R171031A
25	N027157-001AMS,MS	28	1000	Unknown		11/28/2017 14:04	Finished	MS (5ppb), IWST-171002B,10
26	N027157-001AMSD,M	29	1000	Unknown		11/28/2017 14:16	Finished	MSD (5ppb), IWST-171002B,1
27	N027215-001AMS,MS	31	1000	Unknown		11/28/2017 14:29	Finished	MS (5ppb), IWST-171002B,10
28	N027215-001AMSD,M	32	1000	Unknown		11/28/2017 14:41	Finished	MSD (5ppb), IWST-171002B,1
29	CCV-2,CCV,1,	33	1000	Unknown		11/28/2017 14:50	Finished	CCV @5ppb, IWST-171002A
30	CCB-2,CCB,1,	34	1000	Unknown		11/28/2017 15:00	Finished	CCB R171031A
31	SHUTDOWN	35	1000	Unknown		11/28/2017 15:09	Finished	
32	Eluent: R171128A	36	1000	Unknown		n.a.	Finished	Eluent
33	PCR: R171128B	37	1000	Unknown		n.a.	Finished	Post-Column Reagent

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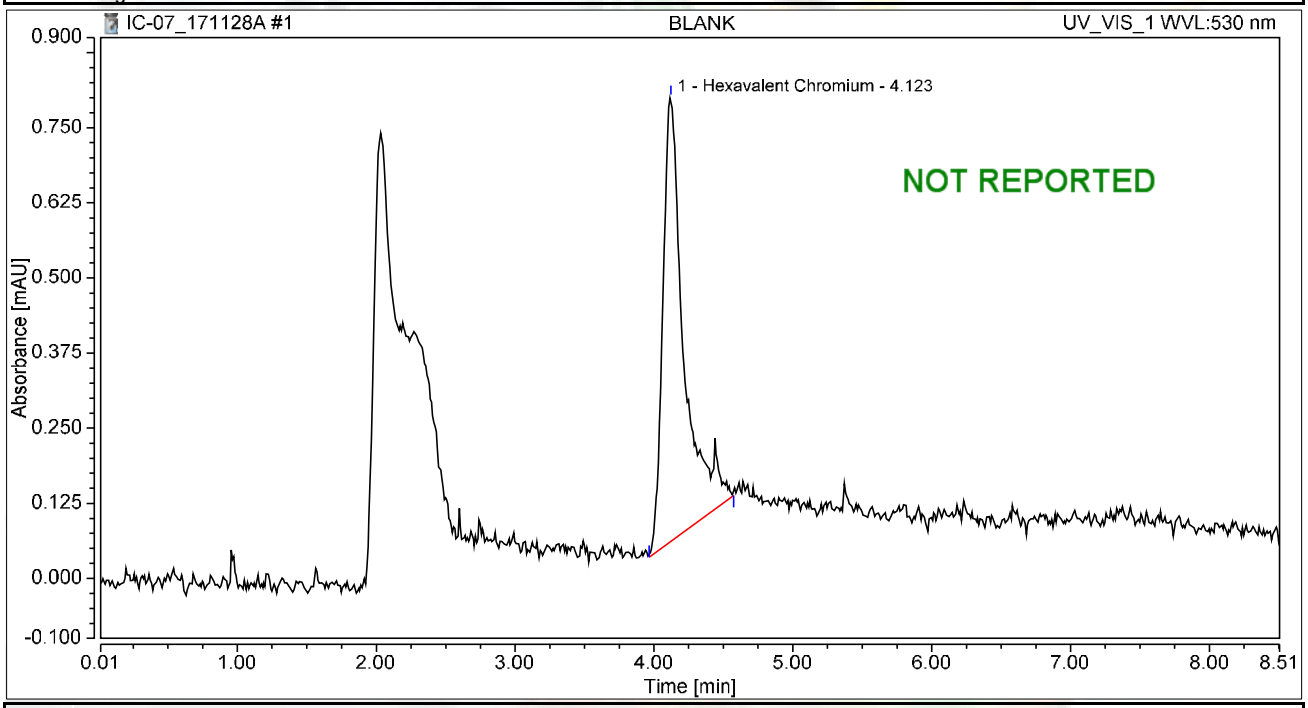
Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

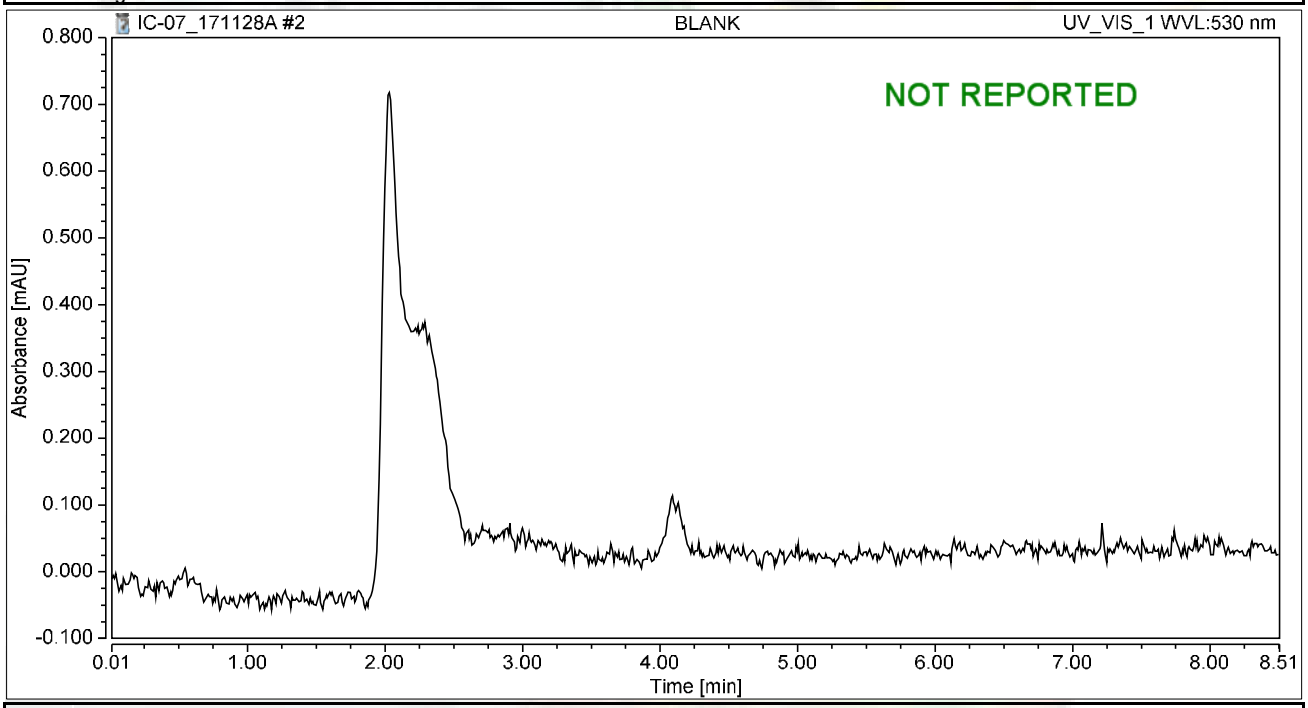
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.130	0.738	100.00	100.00	0.5193
Total:			**0.130**	**0.738**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

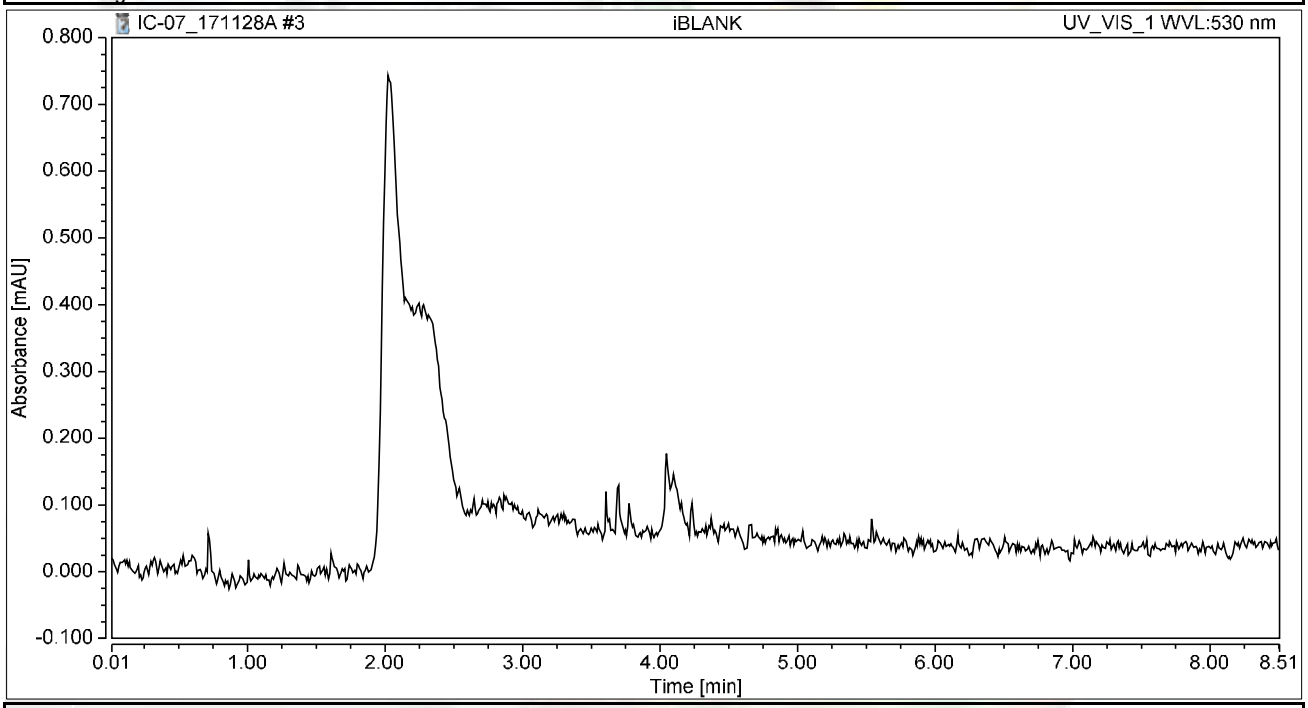
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

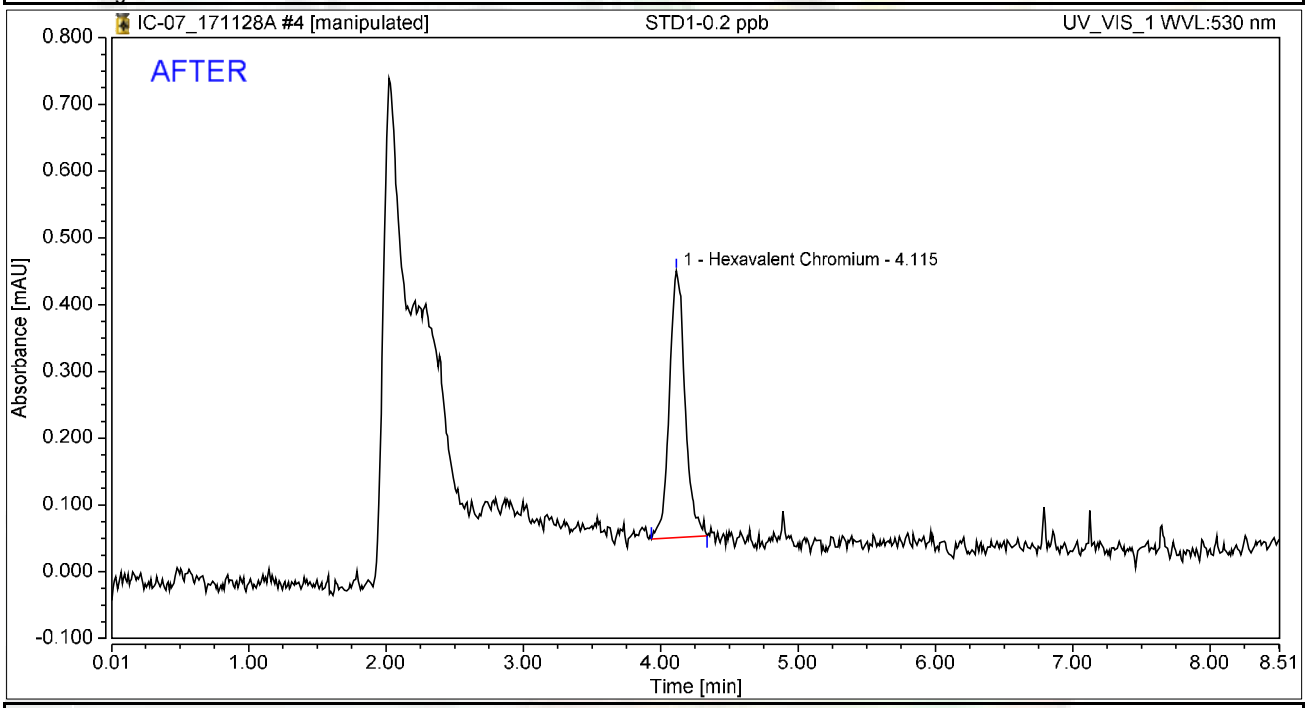
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.053	0.400	100.00	100.00	0.2108
Total:			**0.053**	**0.400**	**100.00**	**100.00**	

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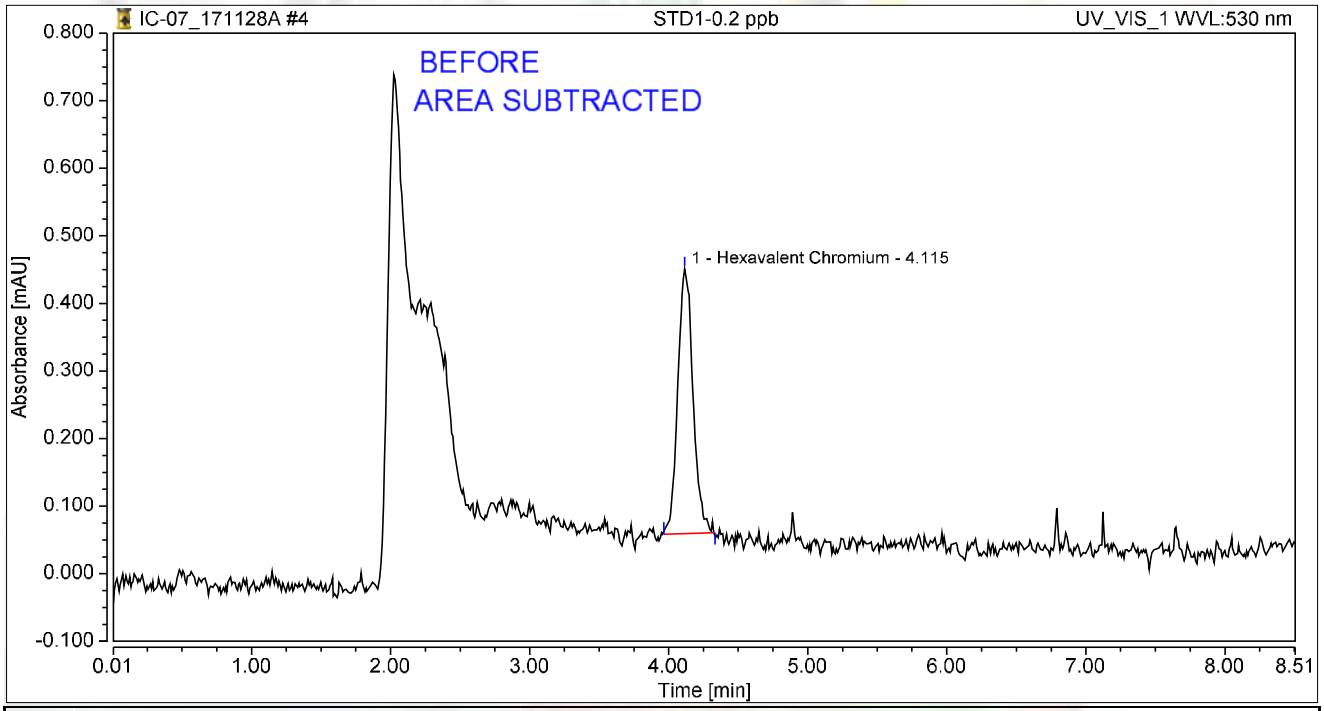
Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.050	0.391	100.00	100.00	0.1957
Total:			**0.050**	**0.391**	**100.00**	**100.00**	

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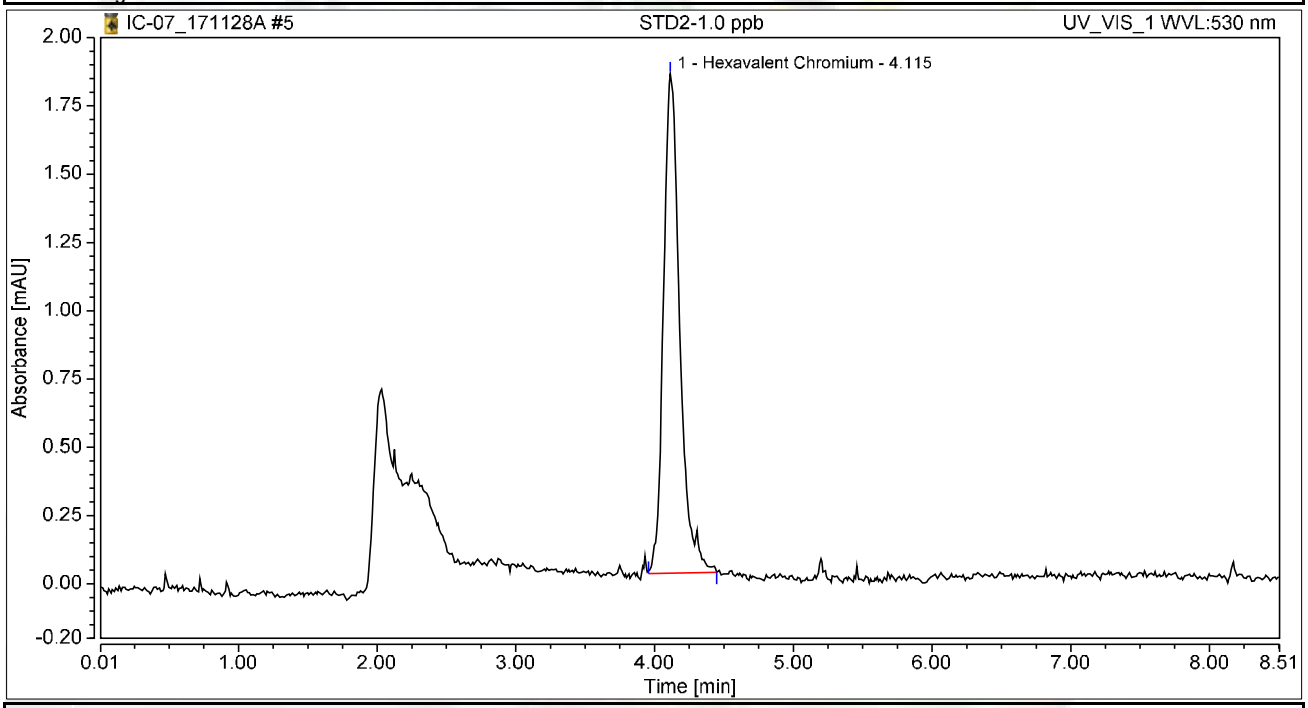
Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

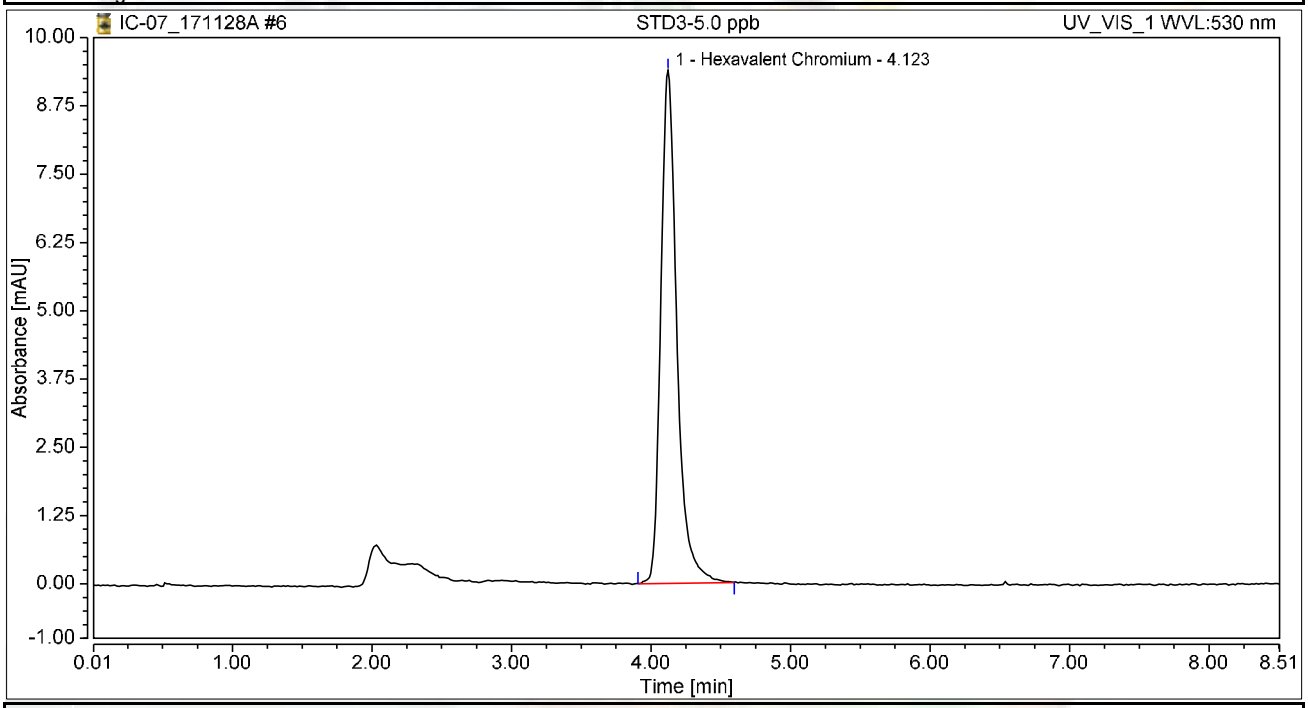
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.248	1.827	100.00	100.00	0.9892
Total:			**0.248**	**1.827**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

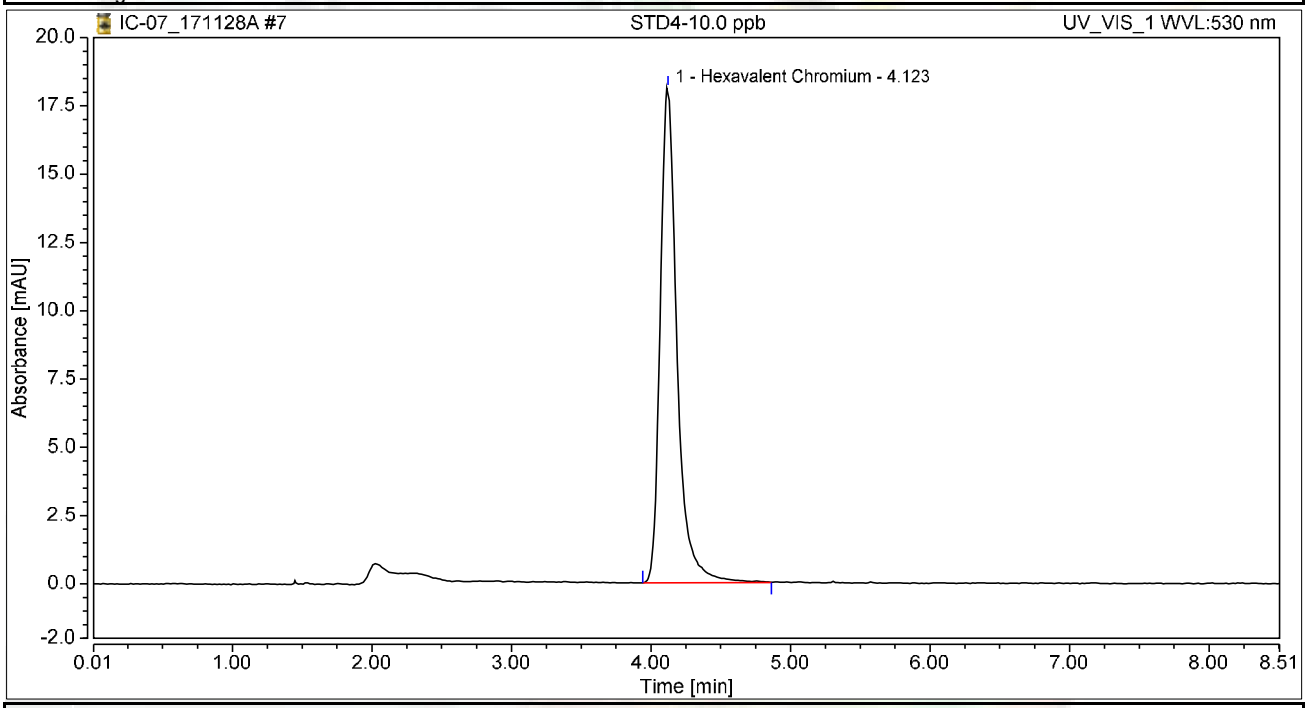
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.258	9.388	100.00	100.00	5.0118
Total:			**1.258**	**9.388**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

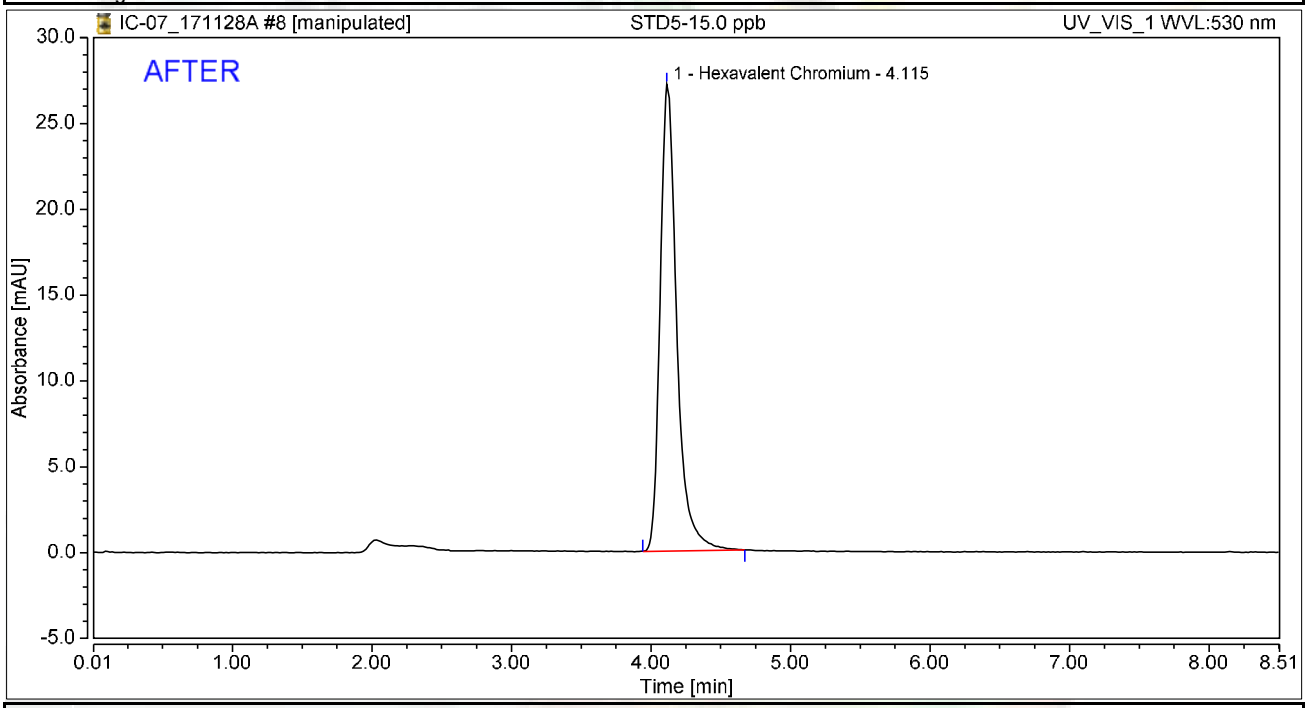
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	2.533	18.115	100.00	100.00	10.0869
Total:			**2.533**	**18.115**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	3.760	27.183	100.00	100.00	14.9728
Total:			**3.760**	**27.183**	**100.00**	**100.00**	

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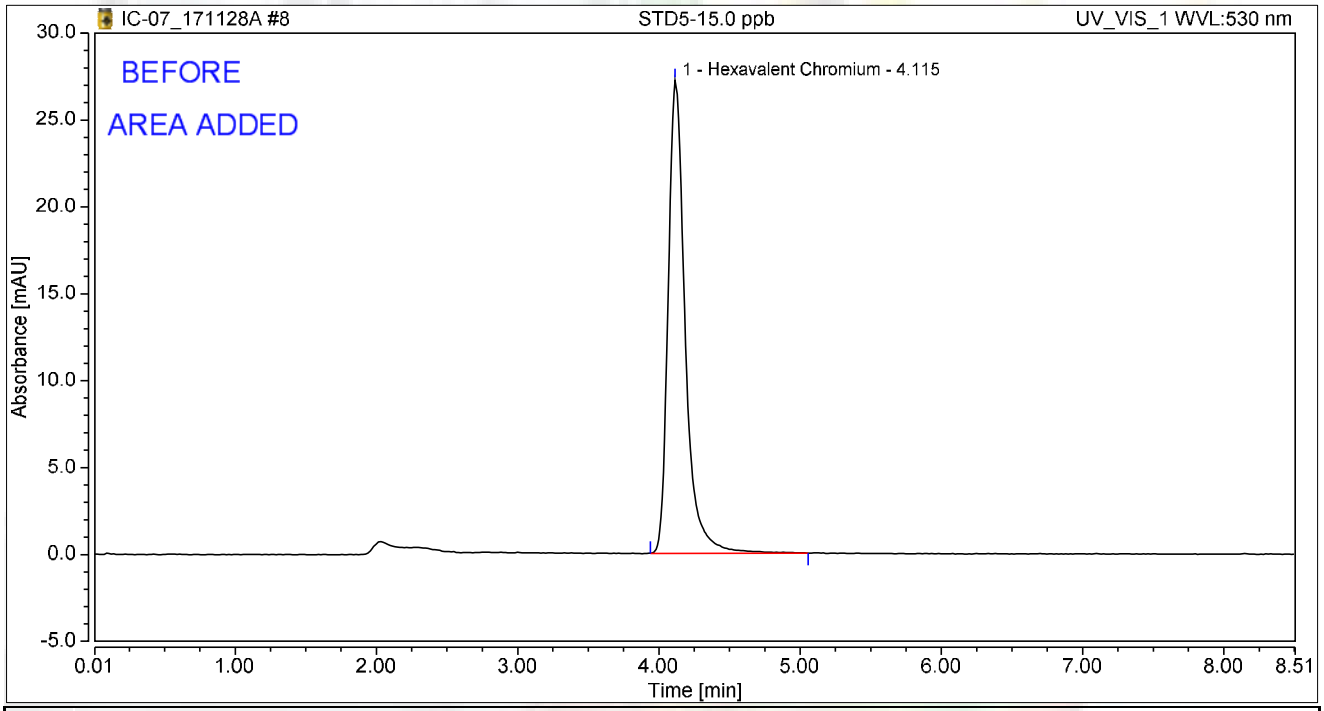
Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	3.807	27.204	100.00	100.00	14.9839
Total:			**3.807**	**27.204**	**100.00**	**100.00**	

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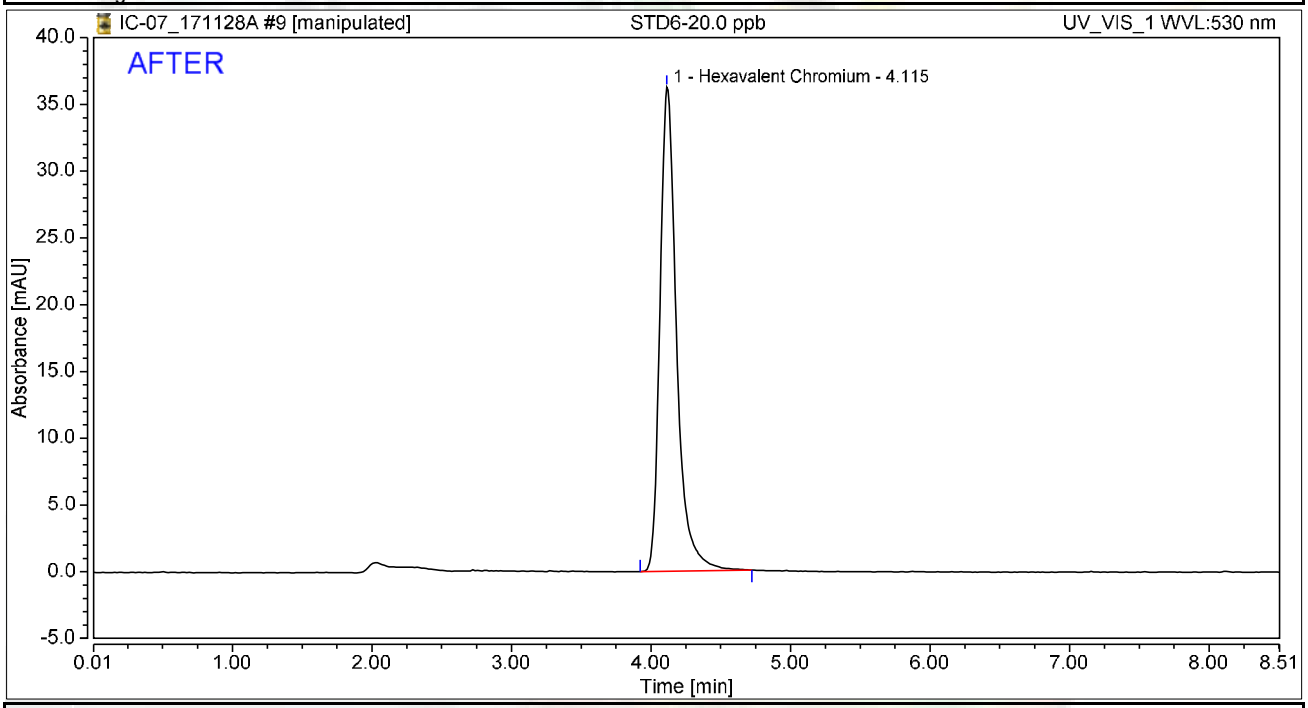
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	5.015	36.251	100.00	100.00	19.9744
Total:			**5.015**	**36.251**	**100.00**	**100.00**	

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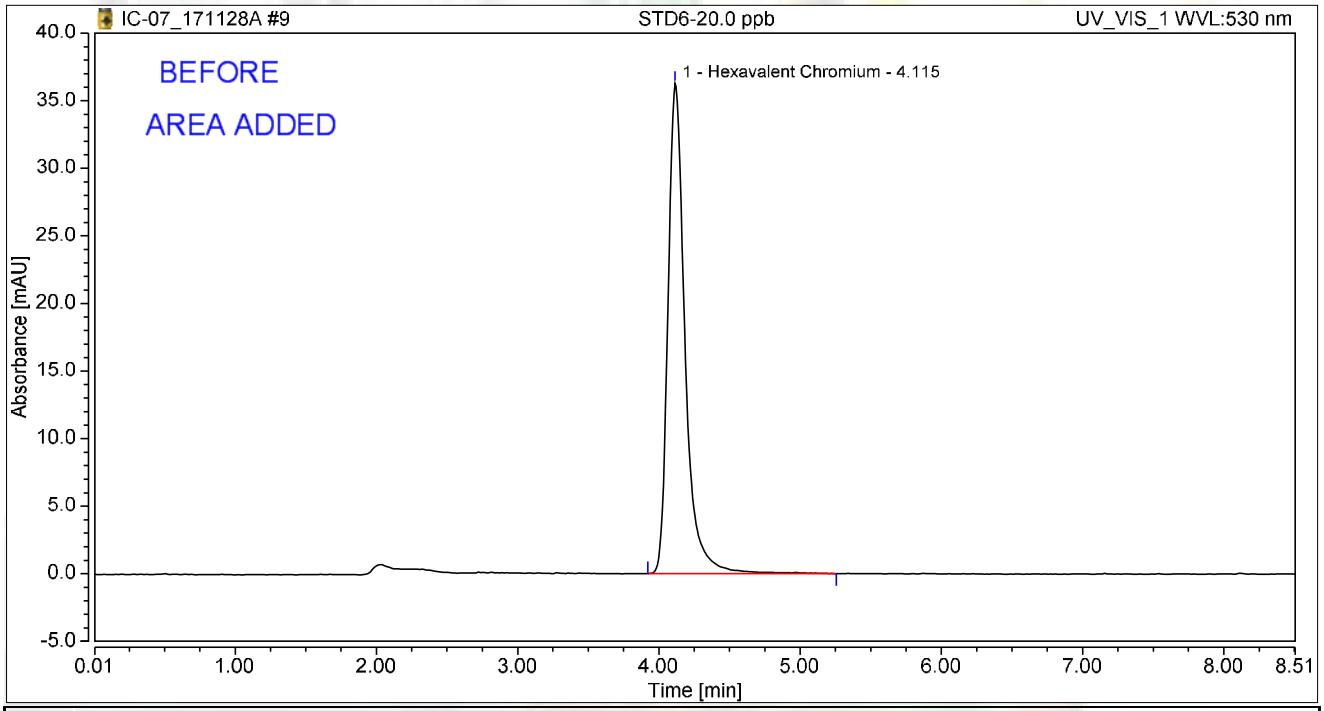
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	5.092	36.279	100.00	100.00	20.0407
Total:			**5.092**	**36.279**	**100.00**	**100.00**	

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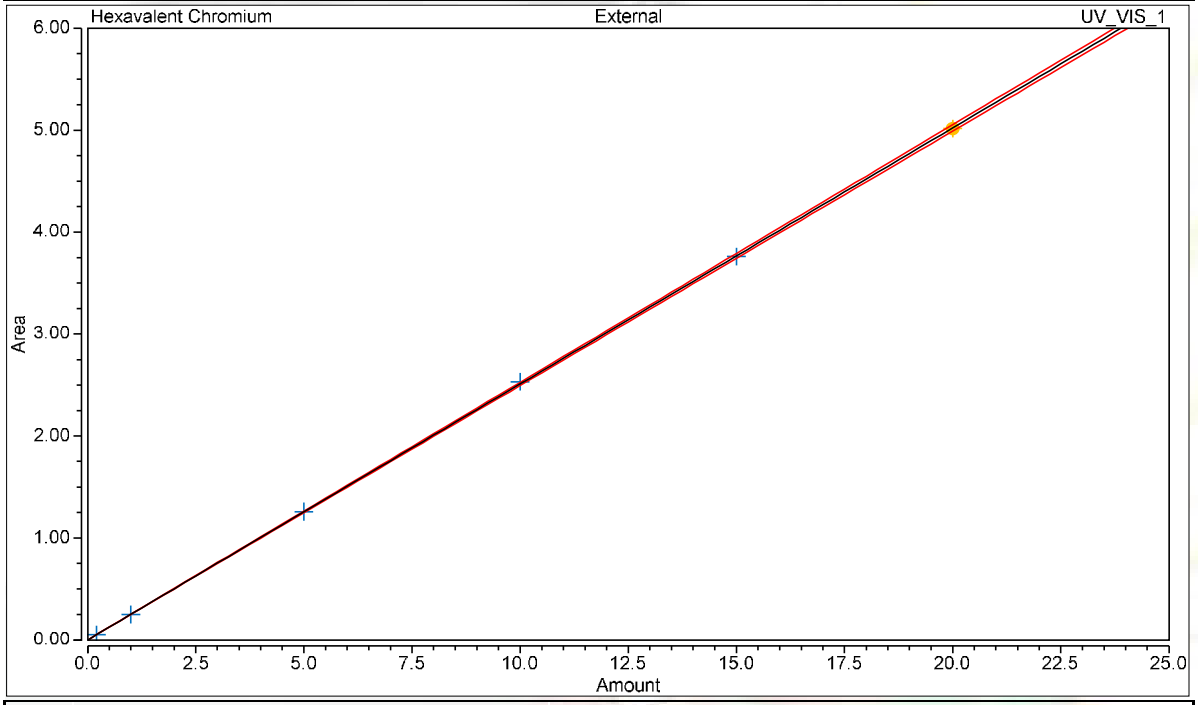
Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2511
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99997

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

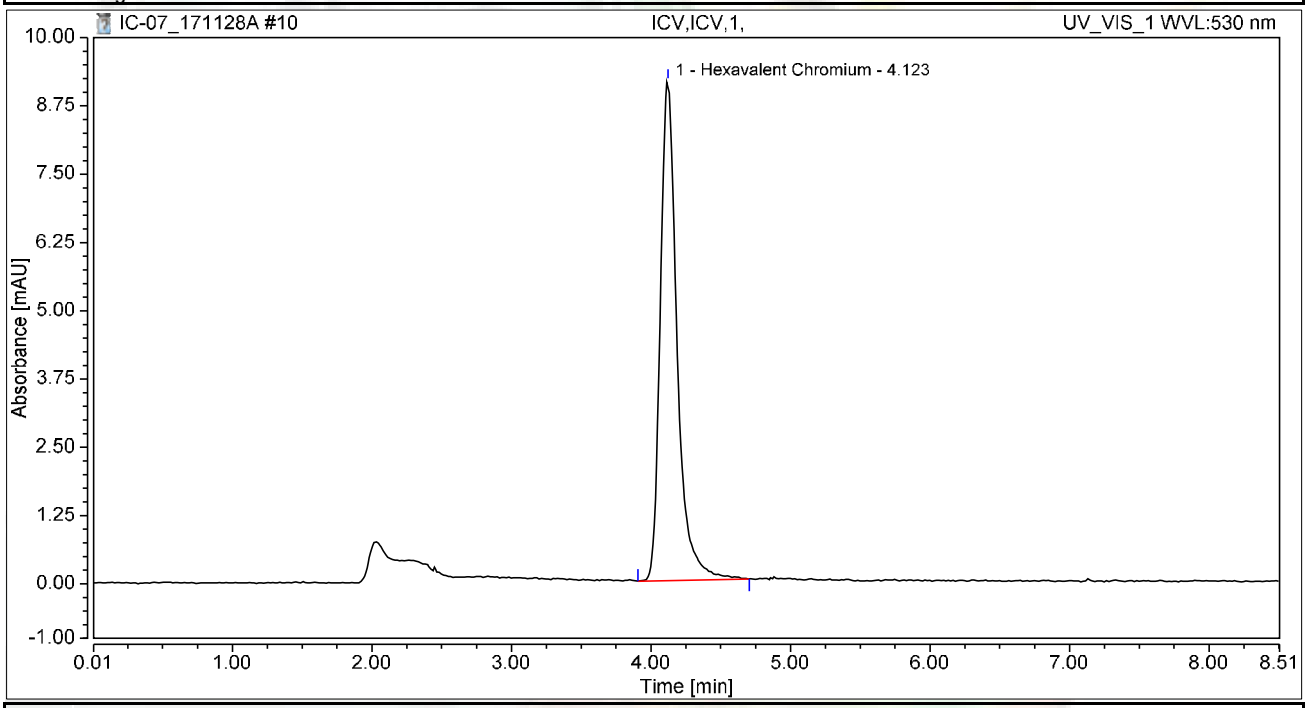
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0529	0.053	0.400
5	STD2-1.0 ppb	02	1.0000	0.2484	0.248	1.827
6	STD3-5.0 ppb	03	5.0000	1.2584	1.258	9.388
7	STD4-10.0 ppb	04	10.0000	2.5328	2.533	18.115
8	STD5-15.0 ppb	05	15.0000	3.7596	3.760	27.183
9	STD6-20.0 ppb	06	20.0000	5.0155	5.015	36.251

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

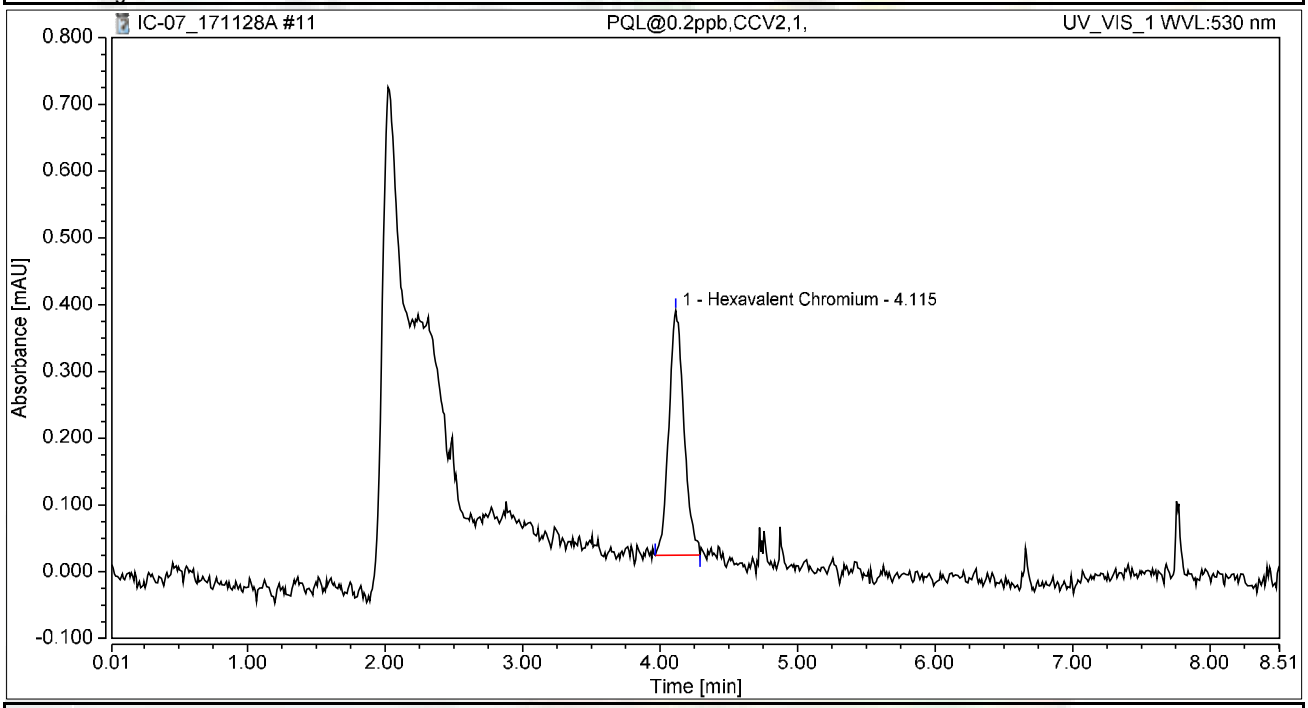
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.279	9.143	100.00	100.00	5.0922
Total:			**1.279**	**9.143**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

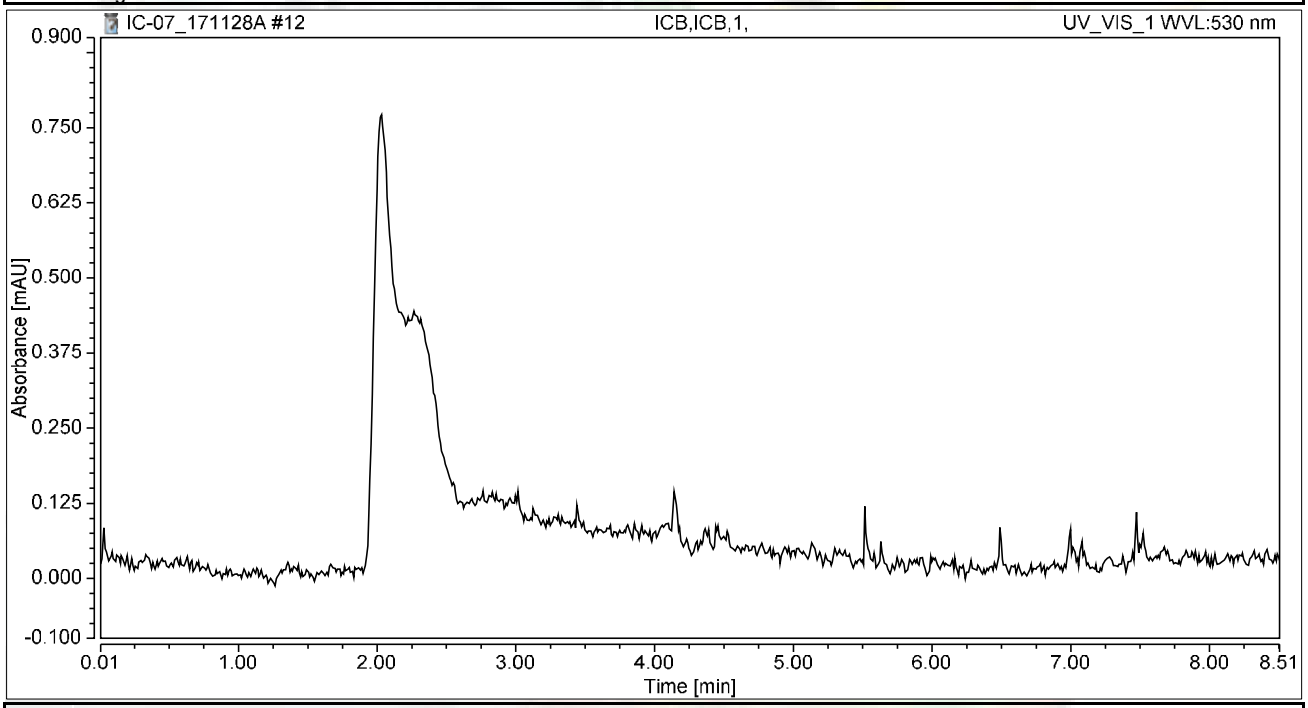
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.046	0.367	100.00	100.00	0.1851
Total:			**0.046**	**0.367**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 8:57 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 9:08 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/11/17 9:18 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/11/17 9:27 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/11/17 9:37 AM	Reported
15	MB-R120833	MBLK	1	Hexavalent Chromium	12/11/17 9:46 AM	Reported
16	LCS-R120833	LCS	1	Hexavalent Chromium	12/11/17 9:56 AM	Reported
17	N027405-006AMS	MS	5	Hexavalent Chromium	12/11/17 10:09 AM	Reported
18	N027405-006A	SAMP	5	Hexavalent Chromium	12/11/17 10:20 AM	Reported
19	N027405-007AMS	MS	5	Hexavalent Chromium	12/11/17 10:29 AM	Reported
20	N027405-007A	SAMP	5	Hexavalent Chromium	12/11/17 10:39 AM	Reported
21	N027405-008AMS	MS	5	Hexavalent Chromium	12/11/17 10:48 AM	Reported
22	N027405-008A	SAMP	5	Hexavalent Chromium	12/11/17 10:58 AM	Reported
23	N027430-001A	SAMP	1	Hexavalent Chromium	12/11/17 11:07 AM	Reported
24	N027430-001AMS	MS	1	Hexavalent Chromium	12/11/17 11:17 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/11/17 11:26 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/11/17 11:36 AM	Reported
27	N027430-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:45 AM	Reported
28	N027430-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:54 AM	Reported
29	N027430-003A	SAMP	1	Hexavalent Chromium	12/11/17 12:04 PM	Reported
30	N027430-003AMS	MS	1	Hexavalent Chromium	12/11/17 12:13 PM	Reported
31	N027430-004A	SAMP	1	Hexavalent Chromium	12/11/17 12:23 PM	Reported
32	N027430-004AMS	MS	1	Hexavalent Chromium	12/11/17 12:32 PM	Reported
33	N027430-005A	SAMP	1	Hexavalent Chromium	12/11/17 12:42 PM	Reported
34	N027430-005AMS	MS	1	Hexavalent Chromium	12/11/17 12:51 PM	Reported
35	N027430-006A	SAMP	1	Hexavalent Chromium	12/11/17 1:01 PM	Reported
36	N027430-006AMS	MS	1	Hexavalent Chromium	12/11/17 1:10 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/11/17 1:20 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/11/17 1:29 PM	Reported
39	N027430-007A	SAMP	1	Hexavalent Chromium	12/11/17 1:38 PM	Reported
40	N027430-007AMS	MS	1	Hexavalent Chromium	12/11/17 1:48 PM	Reported
41	N027430-008A	SAMP	1	Hexavalent Chromium	12/11/17 1:57 PM	Reported
42	N027430-008AMS	MS	1	Hexavalent Chromium	12/11/17 2:07 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027430-009A	SAMP	1	Hexavalent Chromium	12/11/17 2:16 PM	Reported
44	N027430-009AMS	MS	1	Hexavalent Chromium	12/11/17 2:26 PM	Reported
45	N027430-010A	SAMP	1	Hexavalent Chromium	12/11/17 2:35 PM	Reported
46	N027430-010AMS	MS	1	Hexavalent Chromium	12/11/17 2:45 PM	Reported
47	N027430-020A	SAMP	20	Hexavalent Chromium	12/11/17 2:54 PM	Reported
48	N027430-020AMS	MS	20	Hexavalent Chromium	12/11/17 3:04 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/11/17 3:13 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/11/17 3:23 PM	Reported
51	N027430-012A	SAMP	1	Hexavalent Chromium	12/11/17 3:32 PM	Not Reported
52	N027430-012AMS	MS	1	Hexavalent Chromium	12/11/17 3:41 PM	Not Reported
53	N027430-019A	SAMP	1	Hexavalent Chromium	12/11/17 3:51 PM	Reported
54	N027430-019AMS	MS	1	Hexavalent Chromium	12/11/17 4:00 PM	Reported
55	N027430-011A	SAMP	1	Hexavalent Chromium	12/11/17 4:10 PM	Reported
56	N027430-011AMS	MS	1	Hexavalent Chromium	12/11/17 4:19 PM	Reported
57	N027430-013A	SAMP	5	Hexavalent Chromium	12/11/17 4:29 PM	Reported
58	N027430-013AMS	MS	5	Hexavalent Chromium	12/11/17 4:38 PM	Reported
59	N027430-014A	SAMP	5	Hexavalent Chromium	12/11/17 4:48 PM	Reported
60	N027430-014AMS	MS	5	Hexavalent Chromium	12/11/17 4:57 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/11/17 5:07 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/11/17 5:16 PM	Reported
63	N027430-015A	SAMP	5	Hexavalent Chromium	12/11/17 5:26 PM	Reported
64	N027430-015AMS	MS	5	Hexavalent Chromium	12/11/17 5:35 PM	Reported
65	N027405-006ADUP	DUP	5	Hexavalent Chromium	12/11/17 5:44 PM	Reported
66	N027430-020AMSD	MSD	20	Hexavalent Chromium	12/11/17 5:54 PM	Reported
67	N027430-002A	SAMP	1	Hexavalent Chromium	12/11/17 6:05 PM	Not Reported
68	N027430-002AMS	MS	1	Hexavalent Chromium	12/11/17 6:16 PM	Not Reported
69	N027430-013A	SAMP	1	Hexavalent Chromium	12/11/17 6:25 PM	Not Reported
70	N027430-013AMS	MS	1	Hexavalent Chromium	12/11/17 6:35 PM	Not Reported
71	N027430-014A	SAMP	1	Hexavalent Chromium	12/11/17 6:44 PM	Not Reported
72	N027430-014AMS	MS	1	Hexavalent Chromium	12/11/17 6:54 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	12/11/17 7:03 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	12/11/17 7:13 PM	Reported
75	N027430-015A	SAMP	1	Hexavalent Chromium	12/11/17 7:22 PM	Not Reported
76	N027430-015AMS	MS	1	Hexavalent Chromium	12/11/17 7:32 PM	Not Reported
77	N027430-012A	SAMP	5	Hexavalent Chromium	12/11/17 7:41 PM	Reported
78	N027430-012AMS	MS	5	Hexavalent Chromium	12/11/17 7:50 PM	Reported
79	LCS-R120834	LCS	1	Hexavalent Chromium	12/11/17 8:00 PM	Reported
80	MB-R120834	MBLK	1	Hexavalent Chromium	12/11/17 8:09 PM	Reported
81	N027431-006A	SAMP	1000	Hexavalent Chromium	12/11/17 8:19 PM	Reported
82	N027431-006AMS	MS	1000	Hexavalent Chromium	12/11/17 8:28 PM	Reported
83	N027431-006AMSD	MSD	1000	Hexavalent Chromium	12/11/17 8:38 PM	Reported
84	N027428-002A	SAMP	100	Hexavalent Chromium	12/11/17 8:47 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	12/11/17 8:57 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	12/11/17 9:06 PM	Reported
87	N027428-002ADUP	DUP	100	Hexavalent Chromium	12/11/17 9:16 PM	Reported
88	N027428-002AMS	MS	100	Hexavalent Chromium	12/11/17 9:25 PM	Reported
89	N027428-001A	SAMP	1	Hexavalent Chromium	12/11/17 9:35 PM	Reported
90	N027428-001AMS	MS	1	Hexavalent Chromium	12/11/17 9:44 PM	Reported
91	N027430-016A	SAMP	5	Hexavalent Chromium	12/11/17 9:53 PM	Reported
92	N027430-016AMS	MS	5	Hexavalent Chromium	12/11/17 10:03 PM	Reported
93	N027430-017A	SAMP	5	Hexavalent Chromium	12/11/17 10:12 PM	Reported
94	N027430-017AMS	MS	5	Hexavalent Chromium	12/11/17 10:22 PM	Reported
95	N027430-018A	SAMP	5	Hexavalent Chromium	12/11/17 10:31 PM	Reported
96	N027430-018AMS	MS	5	Hexavalent Chromium	12/11/17 10:41 PM	Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	12/11/17 10:50 PM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	12/11/17 11:00 PM	Reported
99	N027431-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:09 PM	Reported
100	N027431-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:19 PM	Reported
101	N027431-003A	SAMP	5	Hexavalent Chromium	12/11/17 11:28 PM	Reported
102	N027431-003AMS	MS	5	Hexavalent Chromium	12/11/17 11:38 PM	Reported
103	N027431-004A	SAMP	5	Hexavalent Chromium	12/11/17 11:47 PM	Reported
104	N027431-004AMS	MS	5	Hexavalent Chromium	12/11/17 11:56 PM	Reported
105	N027431-001A	SAMP	10	Hexavalent Chromium	12/12/17 12:06 AM	Not Reported
106	N027431-001AMS	MS	10	Hexavalent Chromium	12/12/17 12:15 AM	Not Reported
107	N027431-005A	SAMP	200	Hexavalent Chromium	12/12/17 12:25 AM	Reported
108	N027431-005AMS	MS	200	Hexavalent Chromium	12/12/17 12:34 AM	Reported
109	CCV-9	CCV	1	Hexavalent Chromium	12/12/17 12:44 AM	Reported
110	CCB-9	CCB	1	Hexavalent Chromium	12/12/17 12:53 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171211A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**12/Dec/17 01:24:03**
No. of Injections:	**113**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/11/2017 08:57	Finished	BLANK
11	BLANK	2	1000	Unknown		12/11/2017 09:08	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/11/2017 09:18	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/11/2017 09:27	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/11/2017 09:37	Finished	CCB R171129A
15	MB-1,MBLK,1	6	1000	Unknown		12/11/2017 09:46	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/11/2017 09:56	Finished	LCS, IWST-171002B
17	N027405-006AMS,MS	1	1000	Unknown		12/11/2017 10:09	Finished	MS (1ppb), IWST-171002B,2>1
18	N027405-006A,SAMP	2	1000	Unknown		12/11/2017 10:20	Finished	SAMP,2>10mL
19	N027405-007AMS,MS	3	1000	Unknown		12/11/2017 10:29	Finished	MS (1ppb), IWST-171002B,2>1
20	N027405-007A,SAMP	4	1000	Unknown		12/11/2017 10:39	Finished	SAMP,2>10mL
21	N027405-008AMS,MS	5	1000	Unknown		12/11/2017 10:48	Finished	SAMP,2>10mL
22	N027405-008A,SAMP	6	1000	Unknown		12/11/2017 10:58	Finished	MS (1ppb), IWST-171002B,2>1
23	N027430-001A,SAMP	7	1000	Unknown		12/11/2017 11:07	Finished	SAMP,10mL
24	N027430-001AMS,MS	8	1000	Unknown		12/11/2017 11:17	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	9	1000	Unknown		12/11/2017 11:26	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	10	1000	Unknown		12/11/2017 11:36	Finished	CCB R171129A
27	N027430-002A,SAMP	11	1000	Unknown		12/11/2017 11:45	Finished	SAMP,2>10mL
28	N027430-002AMS,MS	12	1000	Unknown		12/11/2017 11:54	Finished	MS (1ppb), IWST-171002B,2>1
29	N027430-003A,SAMP	13	1000	Unknown		12/11/2017 12:04	Finished	SAMP,10mL
30	N027430-003AMS,MS	14	1000	Unknown		12/11/2017 12:13	Finished	MS (1ppb), IWST-171002B,10
31	N027430-004A,SAMP	15	1000	Unknown		12/11/2017 12:23	Finished	SAMP,10mL
32	N027430-004AMS,MS	16	1000	Unknown		12/11/2017 12:32	Finished	MS (1ppb), IWST-171002B,10
33	N027430-005A,SAMP	17	1000	Unknown		12/11/2017 12:42	Finished	SAMP,10mL
34	N027430-005AMS,MS	18	1000	Unknown		12/11/2017 12:51	Finished	MS (1ppb), IWST-171002B,10
35	N027430-006A,SAMP	19	1000	Unknown		12/11/2017 13:01	Finished	SAMP,10mL
36	N027430-006AMS,MS	20	1000	Unknown		12/11/2017 13:10	Finished	MS (1ppb), IWST-171002B,10
37	CCV-3,CCV,1,	21	1000	Unknown		12/11/2017 13:20	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	22	1000	Unknown		12/11/2017 13:29	Finished	CCB R171129A
39	N027430-007A,SAMP	23	1000	Unknown		12/11/2017 13:38	Finished	SAMP,10mL
40	N027430-007AMS,MS	24	1000	Unknown		12/11/2017 13:48	Finished	MS (1ppb), IWST-171002B,10
41	N027430-008A,SAMP	25	1000	Unknown		12/11/2017 13:57	Finished	SAMP,10mL
42	N027430-008AMS,MS	26	1000	Unknown		12/11/2017 14:07	Finished	MS (1ppb), IWST-171002B,10
43	N027430-009A,SAMP	27	1000	Unknown		12/11/2017 14:16	Finished	SAMP,10mL
44	N027430-009AMS,MS	28	1000	Unknown		12/11/2017 14:26	Finished	MS (1ppb), IWST-171002B,10
45	N027430-010A,SAMP	29	1000	Unknown		12/11/2017 14:35	Finished	SAMP,10mL
46	N027430-010AMS,MS	30	1000	Unknown		12/11/2017 14:45	Finished	MS (1ppb), IWST-171002B,10
47	N027430-020A,SAMP	31	1000	Unknown		12/11/2017 14:54	Finished	SAMP,0.5>10mL
48	N027430-020AMS,MS	32	1000	Unknown		12/11/2017 15:04	Finished	MS (5ppb), IWST-171002B,0.5
49	CCV-4,CCV1,1,	33	1000	Unknown		12/11/2017 15:13	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	34	1000	Unknown		12/11/2017 15:23	Finished	CCB R171129A
51	N027430-012A,SAMP	35	1000	Unknown		12/11/2017 15:32	Finished	SAMP,10mL
52	N027430-012AMS,MS	36	1000	Unknown		12/11/2017 15:41	Finished	MS (1ppb), IWST-171002B,10
53	N027430-019A,SAMP	37	1000	Unknown		12/11/2017 15:51	Finished	SAMP,10mL
54	N027430-019AMS,MS	38	1000	Unknown		12/11/2017 16:00	Finished	MS (1ppb), IWST-171002B,10
55	N027430-011A,SAMP	39	1000	Unknown		12/11/2017 16:10	Finished	SAMP,10mL
56	N027430-011AMS,MS	40	1000	Unknown		12/11/2017 16:19	Finished	MS (1ppb), IWST-171002B,10
57	N027430-013A,SAMP	41	1000	Unknown		12/11/2017 16:29	Finished	SAMP,2>10mL
58	N027430-013AMS,MS	42	1000	Unknown		12/11/2017 16:38	Finished	MS (1ppb), IWST-171002B,2>1
59	N027430-014A,SAMP	43	1000	Unknown		12/11/2017 16:48	Finished	SAMP,2>10mL
60	N027430-014AMS,MS	44	1000	Unknown		12/11/2017 16:57	Finished	MS (1ppb), IWST-171002B,2>1

IC-07 RBA 12/14/2017 7:32:55 PM

rba 12/16/2017

12/21/2017

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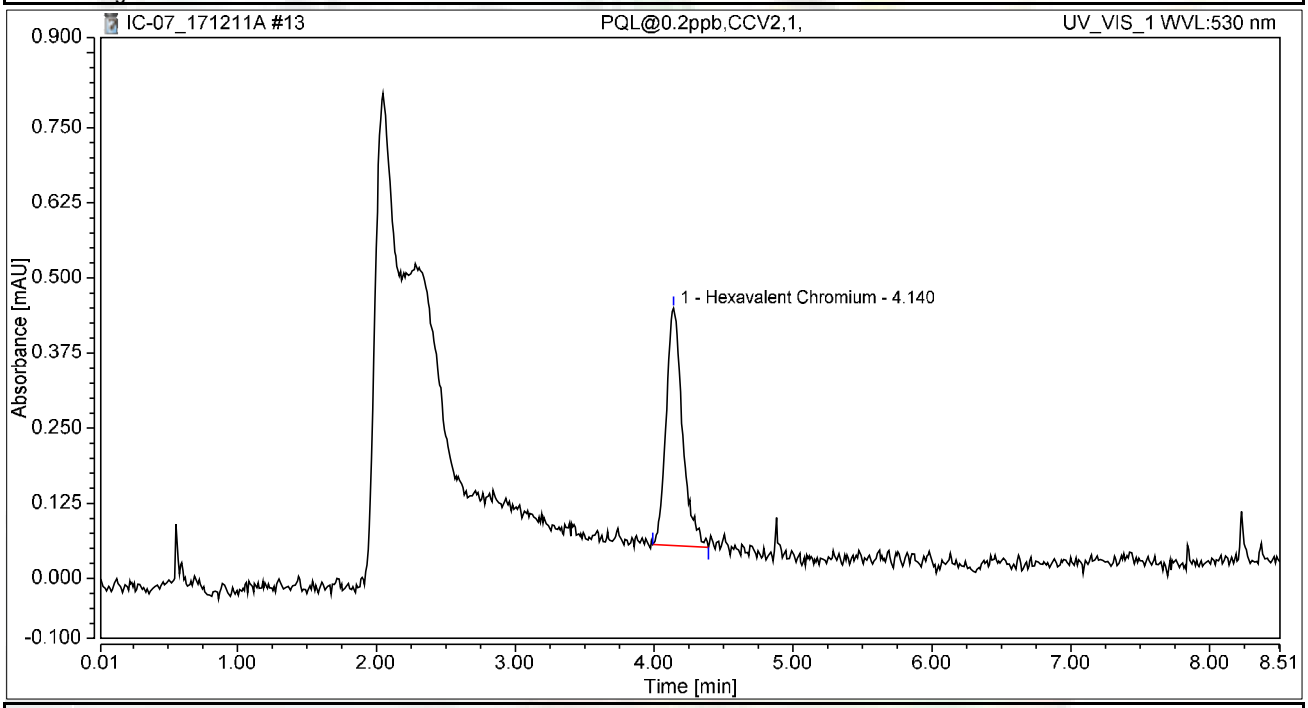
61	CCV-5,CCV,1,	45	1000	Unknown		12/11/2017 17:07	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	46	1000	Unknown		12/11/2017 17:16	Finished	CCB R171129A
63	N027430-015A,SAMF	47	1000	Unknown		12/11/2017 17:26	Finished	SAMP,2>10mL
64	N027430-015AMS,MS	48	1000	Unknown		12/11/2017 17:35	Finished	MS (1ppb), IWST-171002B,2>1
65	N027405-006ADUP,D	49	1000	Unknown		12/11/2017 17:44	Finished	DUP,2>10mL
66	N027430-020AMSD,M	50	1000	Unknown		12/11/2017 17:54	Finished	MSD (5ppb), IWST-171002B,0.
67	N027430-002A,SAMF	1	1000	Unknown		12/11/2017 18:05	Finished	MSD (5ppb), IWST-171002B,0.
68	N027430-002AMS,MS	2	1000	Unknown		12/11/2017 18:16	Finished	DUP,2>10mL
69	N027430-013A,SAMF	3	1000	Unknown		12/11/2017 18:25	Finished	SAMP,2>10mL
70	N027430-013AMS,MS	4	1000	Unknown		12/11/2017 18:35	Finished	MS (1ppb), IWST-171002B,2>1
71	N027430-014A,SAMF	5	1000	Unknown		12/11/2017 18:44	Finished	SAMP,10mL
72	N027430-014AMS,MS	6	1000	Unknown		12/11/2017 18:54	Finished	MS (1ppb), IWST-171002B,10
73	CCV-6,CCV1,1,	7	1000	Unknown		12/11/2017 19:03	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	8	1000	Unknown		12/11/2017 19:13	Finished	CCB R171129A
75	N027430-015A,SAMF	9	1000	Unknown		12/11/2017 19:22	Finished	LCS, IWST-171002B
76	N027430-015AMS,MS	10	1000	Unknown		12/11/2017 19:32	Finished	MB R171129A
77	N027430-012A,SAMF	11	1000	Unknown		12/11/2017 19:41	Finished	SAMP,2>10mL
78	N027430-012AMS,MS	12	1000	Unknown		12/11/2017 19:50	Finished	MS (1ppb), IWST-171002B,2>1
79	LCS-2,LCS,1	13	1000	Unknown		12/11/2017 20:00	Finished	LCS, IWST-171002B
80	MB-2,MBLK,1	14	1000	Unknown		12/11/2017 20:09	Finished	MB R171129A
81	N027431-006A,SAMF	15	1000	Unknown		12/11/2017 20:19	Finished	DUP,0.1>10mL
82	N027431-006AMS,MS	16	1000	Unknown		12/11/2017 20:28	Finished	SAMP,10mL
83	N027431-006AMSD,M	17	1000	Unknown		12/11/2017 20:38	Finished	SAMP,5>10mL
84	N027428-002A,SAMF	18	1000	Unknown		12/11/2017 20:47	Finished	SAMP,0.2>10mL
85	CCV-7,CCV,1,	19	1000	Unknown		12/11/2017 20:57	Finished	CCV @5ppb, IWST-171002A
86	CCB-7,CCB,1,	20	1000	Unknown		12/11/2017 21:06	Finished	CCB R171114C
87	N027428-002ADUP,D	21	1000	Unknown		12/11/2017 21:16	Finished	SAMP,0.2>10mL
88	N027428-002AMS,MS	22	1000	Unknown		12/11/2017 21:25	Finished	SAMP,1>10mL
89	N027428-001A,SAMF	23	1000	Unknown		12/11/2017 21:35	Finished	SAMP,0.5>10mL
90	N027428-001AMS,MS	24	1000	Unknown		12/11/2017 21:44	Finished	SAMP,5>10mL
91	N027430-016A,SAMF	25	1000	Unknown		12/11/2017 21:53	Finished	SAMP,10mL
92	N027430-016AMS,MS	26	1000	Unknown		12/11/2017 22:03	Finished	SAMP,2>10mL
93	N027430-017A,SAMF	27	1000	Unknown		12/11/2017 22:12	Finished	MS (5ppb), IWST-171002B,2>1
94	N027430-017AMS,MS	28	1000	Unknown		12/11/2017 22:22	Finished	MSD (5ppb), IWST-171002B,2
95	N027430-018A,SAMF	29	1000	Unknown		12/11/2017 22:31	Finished	SAMP,10mL
96	N027430-018AMS,MS	30	1000	Unknown		12/11/2017 22:41	Finished	MS (1ppb), IWST-171002B,10
97	CCV-8,CCV1,1,	31	1000	Unknown		12/11/2017 22:50	Finished	CCV @10ppb, IWST-171002A
98	CCB-8,CCB,1,	32	1000	Unknown		12/11/2017 23:00	Finished	CCB R171129A
99	N027431-002A,SAMF	33	1000	Unknown		12/11/2017 23:09	Finished	SAMP,10mL
100	N027431-002AMS,MS	34	1000	Unknown		12/11/2017 23:19	Finished	MS (1ppb), IWST-171002B,10
101	N027431-003A,SAMF	35	1000	Unknown		12/11/2017 23:28	Finished	SAMP,10mL
102	N027431-003AMS,MS	36	1000	Unknown		12/11/2017 23:38	Finished	MS (1ppb), IWST-171002B,10
103	N027431-004A,SAMF	37	1000	Unknown		12/11/2017 23:47	Finished	SAMP,10mL
104	N027431-004AMS,MS	38	1000	Unknown		12/11/2017 23:56	Finished	MS (1ppb), IWST-171002B,10
105	N027431-001A,SAMF	39	1000	Unknown		12/12/2017 00:06	Finished	SAMP,10mL
106	N027431-001AMS,MS	40	1000	Unknown		12/12/2017 00:15	Finished	MS (1ppb), IWST-171002B,10
107	N027431-005A,SAMF	41	1000	Unknown		12/12/2017 00:25	Finished	SAMP,10mL
108	N027431-005AMS,MS	42	1000	Unknown		12/12/2017 00:34	Finished	MS (1ppb), IWST-171002B,10
109	CCV-9,CCV,1,	43	1000	Unknown		12/12/2017 00:44	Finished	CCV @5ppb, IWST-171002A
110	CCB-9,CCB,1,	44	1000	Unknown		12/12/2017 00:53	Finished	CCB R171114C
111	SHUTDOWN	45	1000	Unknown		12/12/2017 01:03	Finished	
112	Eluent: R171211B	46	1000	Unknown		n.a.	Finished	Eluent
113	PCR: R171211C	47	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

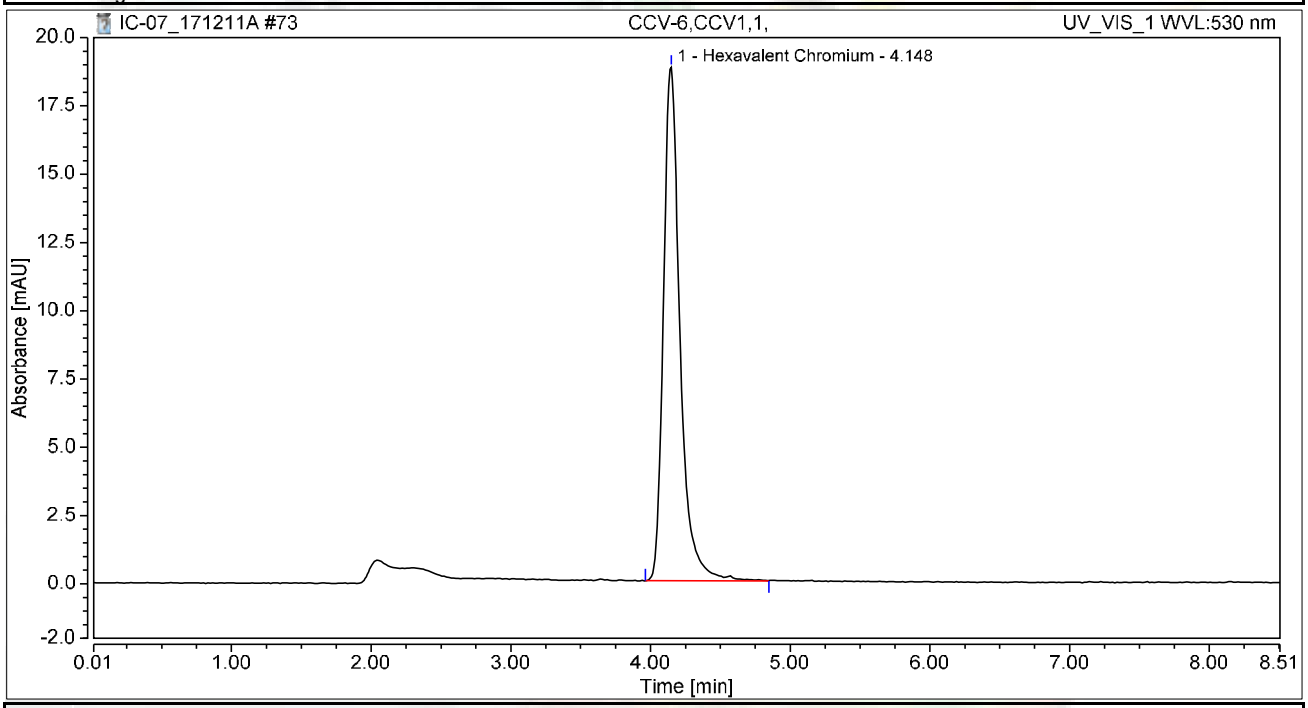
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.054	0.395	100.00	100.00	0.2151
Total:			**0.054**	**0.395**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

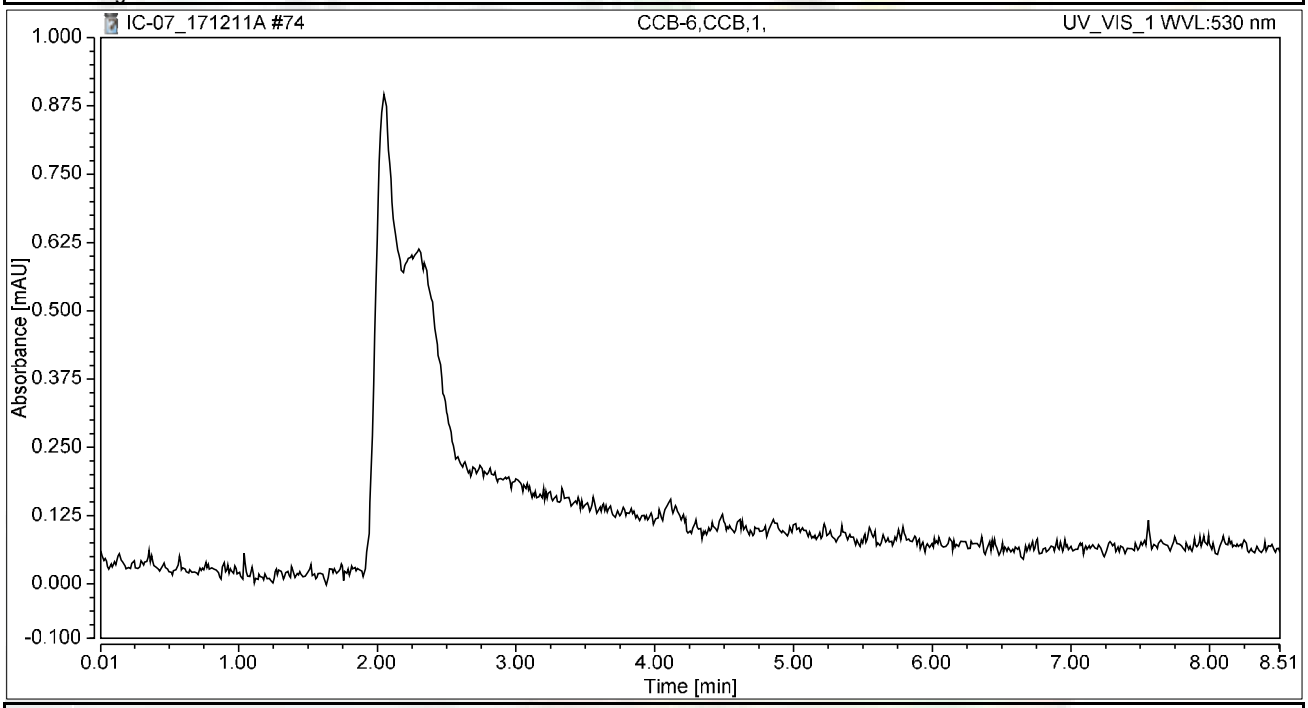
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.585	18.801	100.00	100.00	10.2939
Total:			**2.585**	**18.801**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

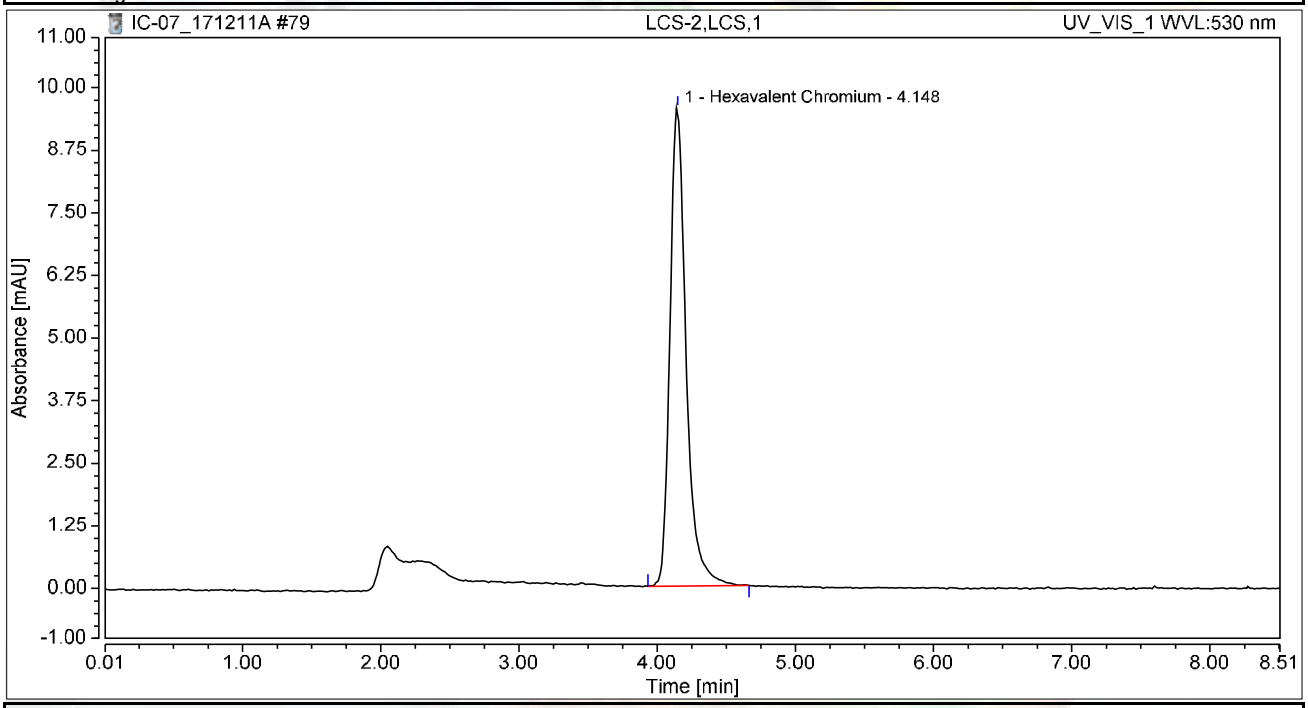
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-2,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

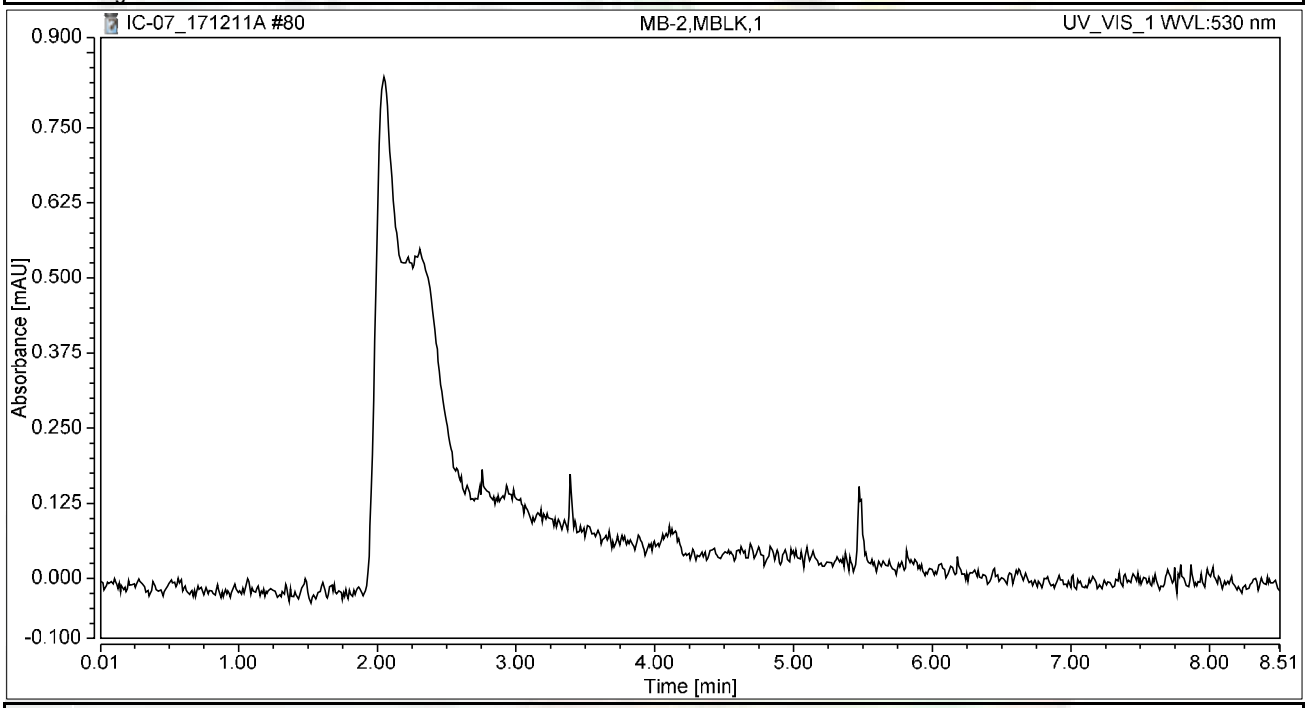
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.299	9.550	100.00	100.00	5.1752
Total:			**1.299**	**9.550**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-2,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

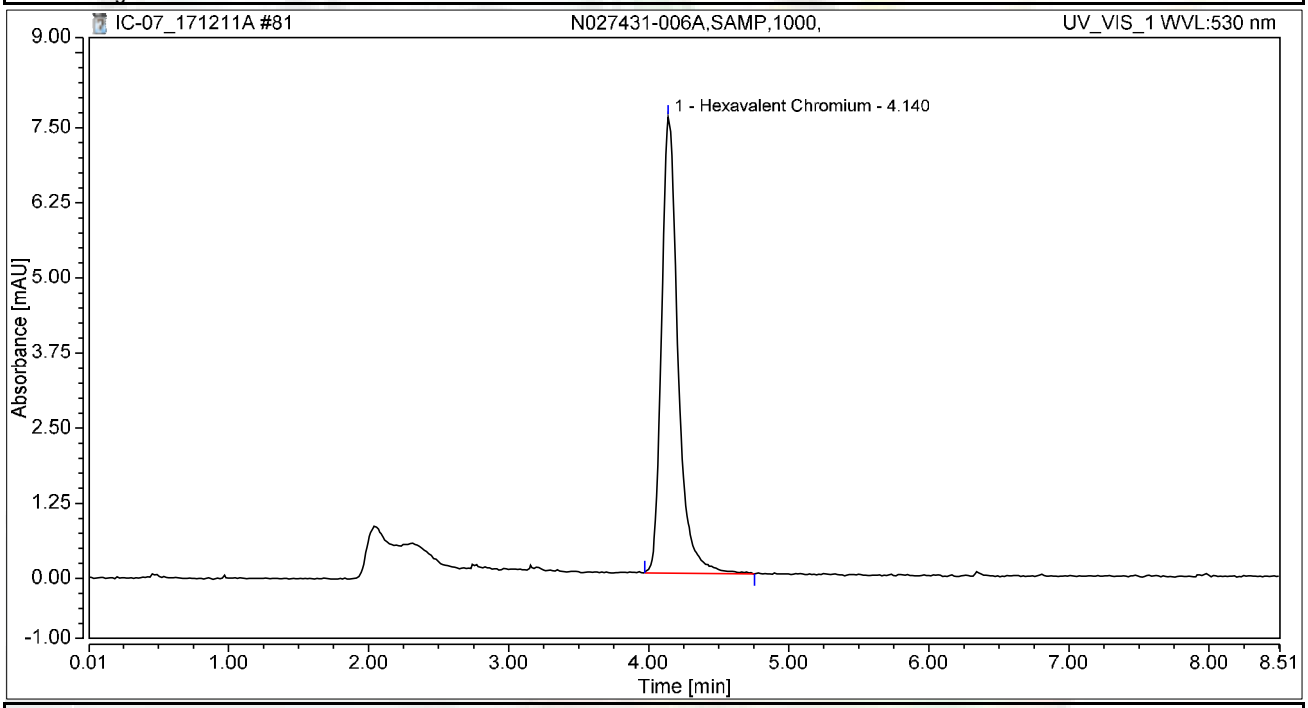
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-006A,SAMP,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

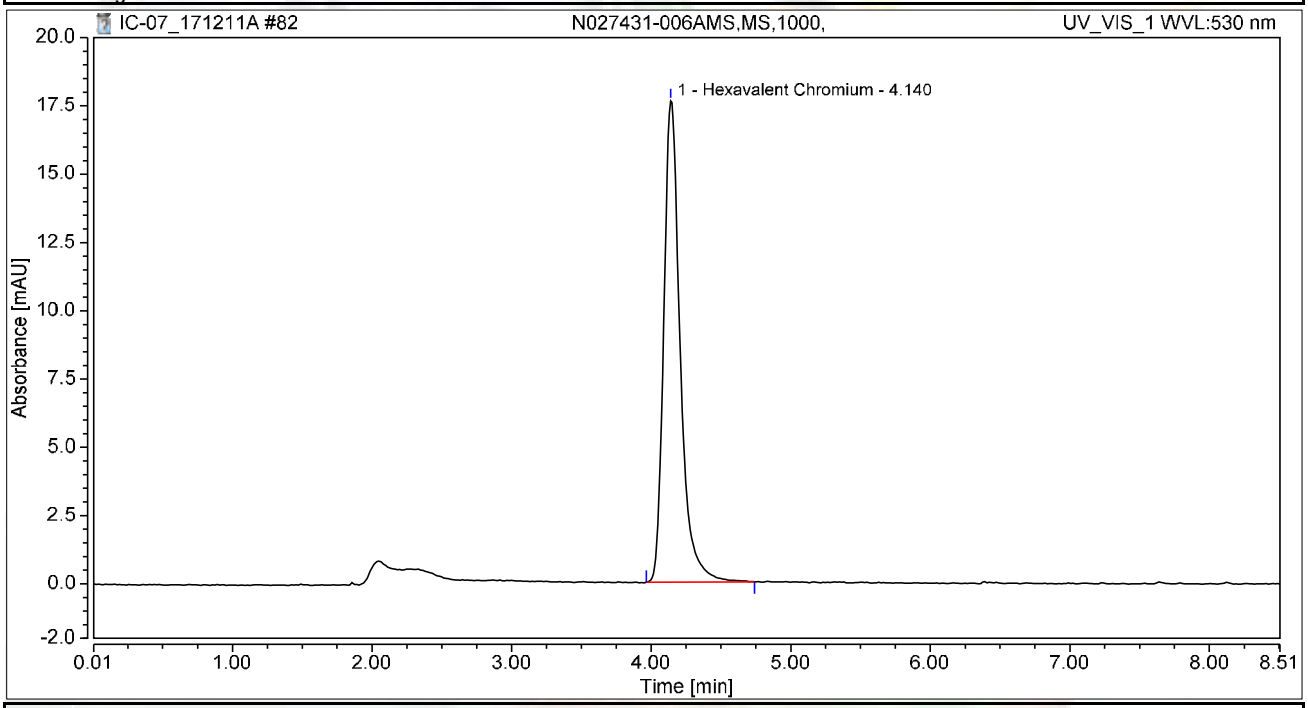
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.040	7.590	100.00	100.00	4.1412
Total:			**1.040**	**7.590**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-006AMS,MS,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

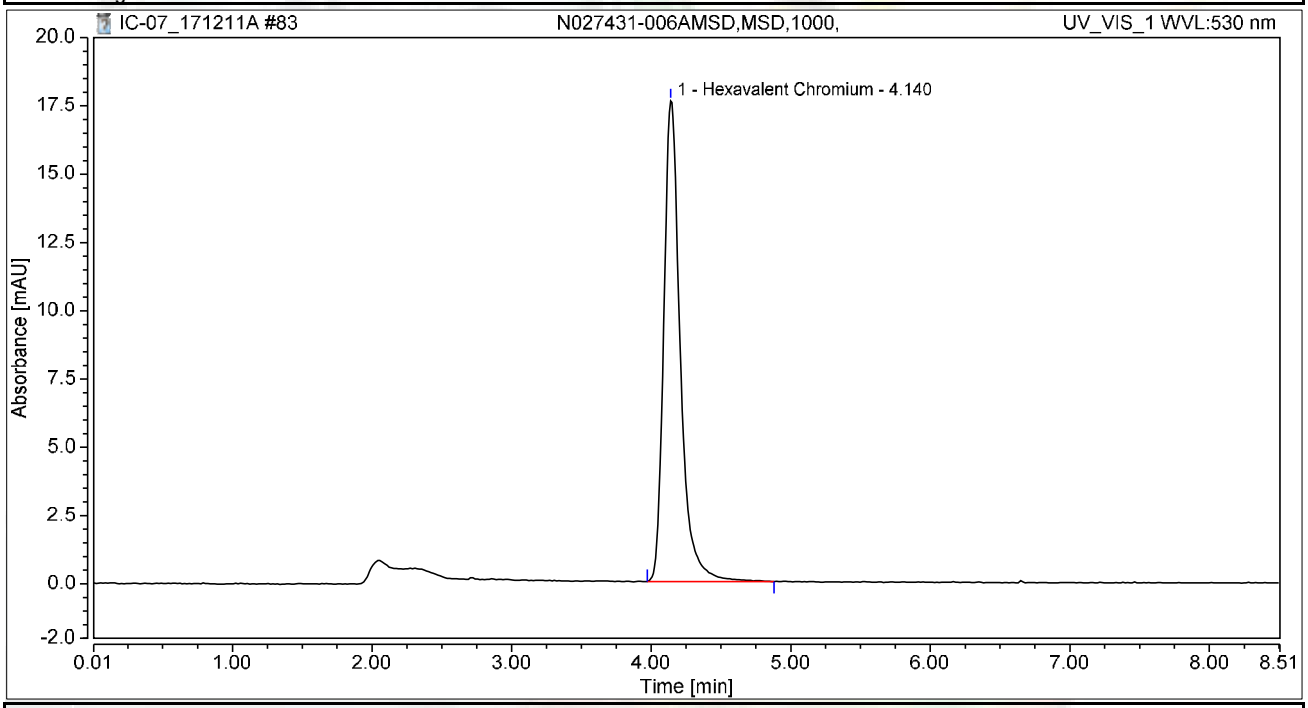
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.408	17.620	100.00	100.00	9.5916
Total:			**2.408**	**17.620**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-006AMSD,MSD,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

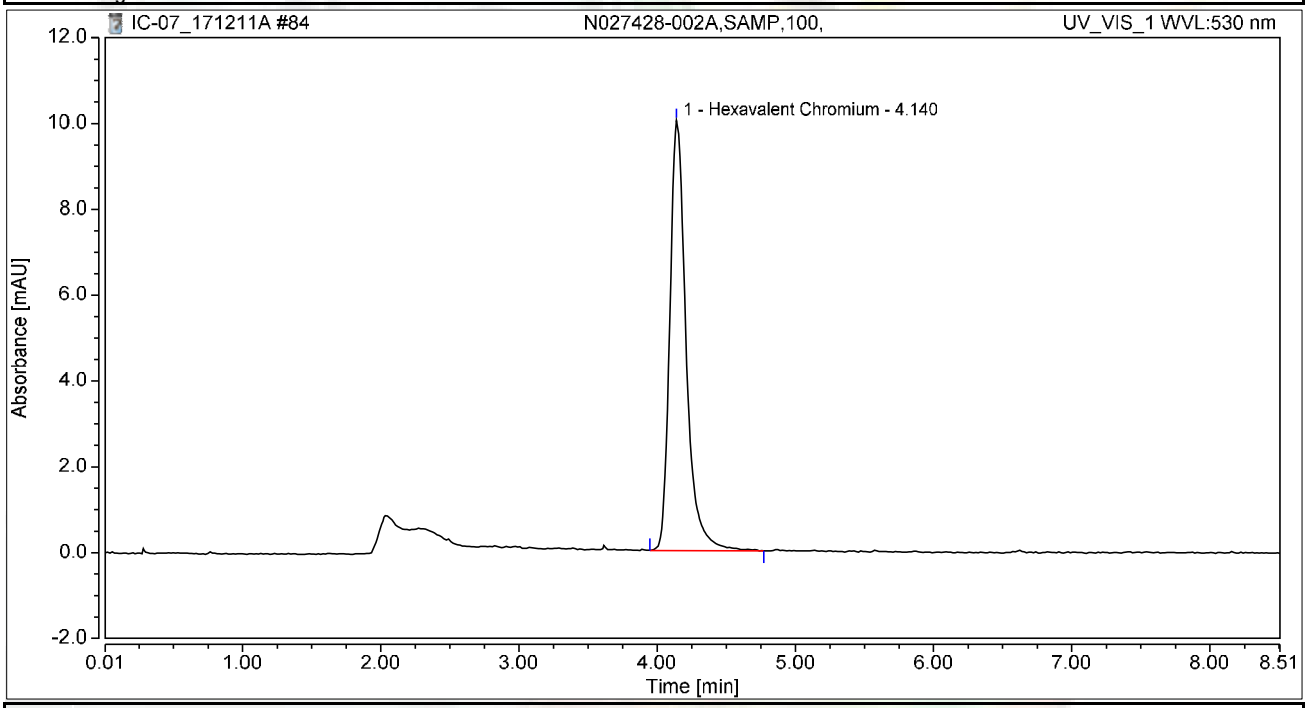
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.418	17.606	100.00	100.00	9.6302
Total:			**2.418**	**17.606**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027428-002A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

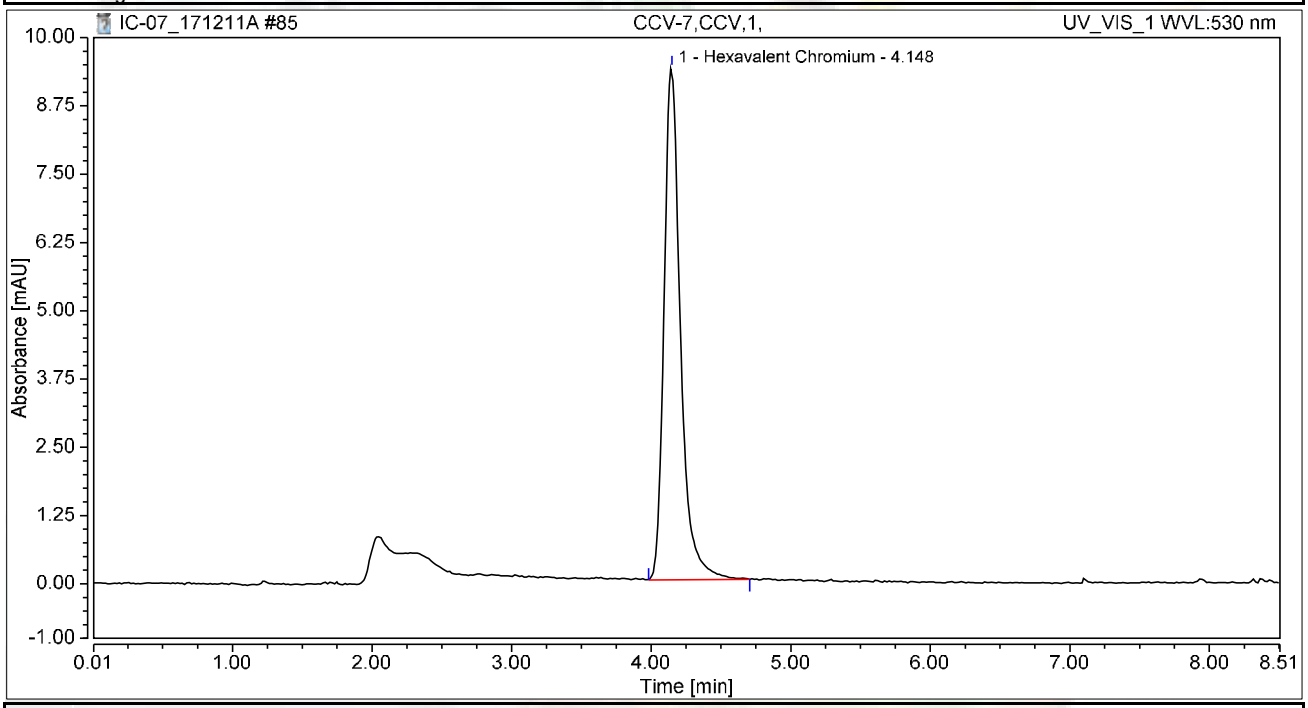
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.380	10.020	100.00	100.00	5.4968
Total:			**1.380**	**10.020**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

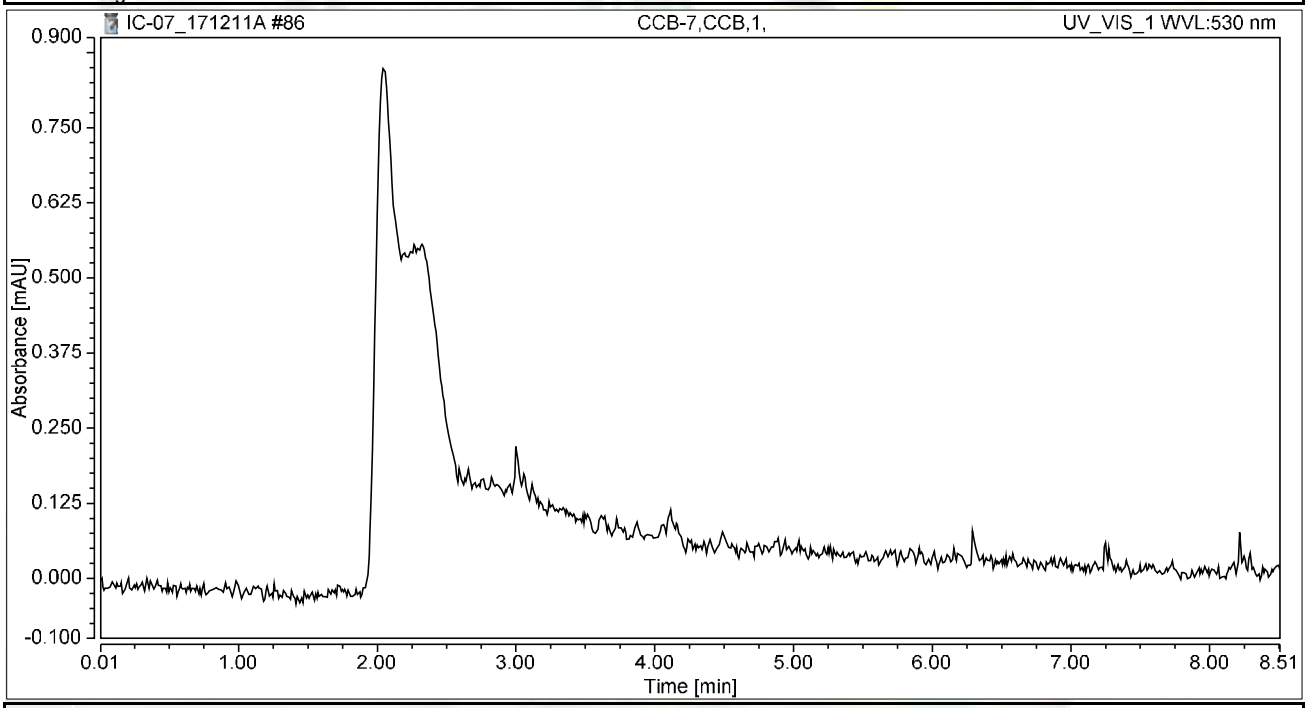
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.283	9.373	100.00	100.00	5.1094
Total:			**1.283**	**9.373**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

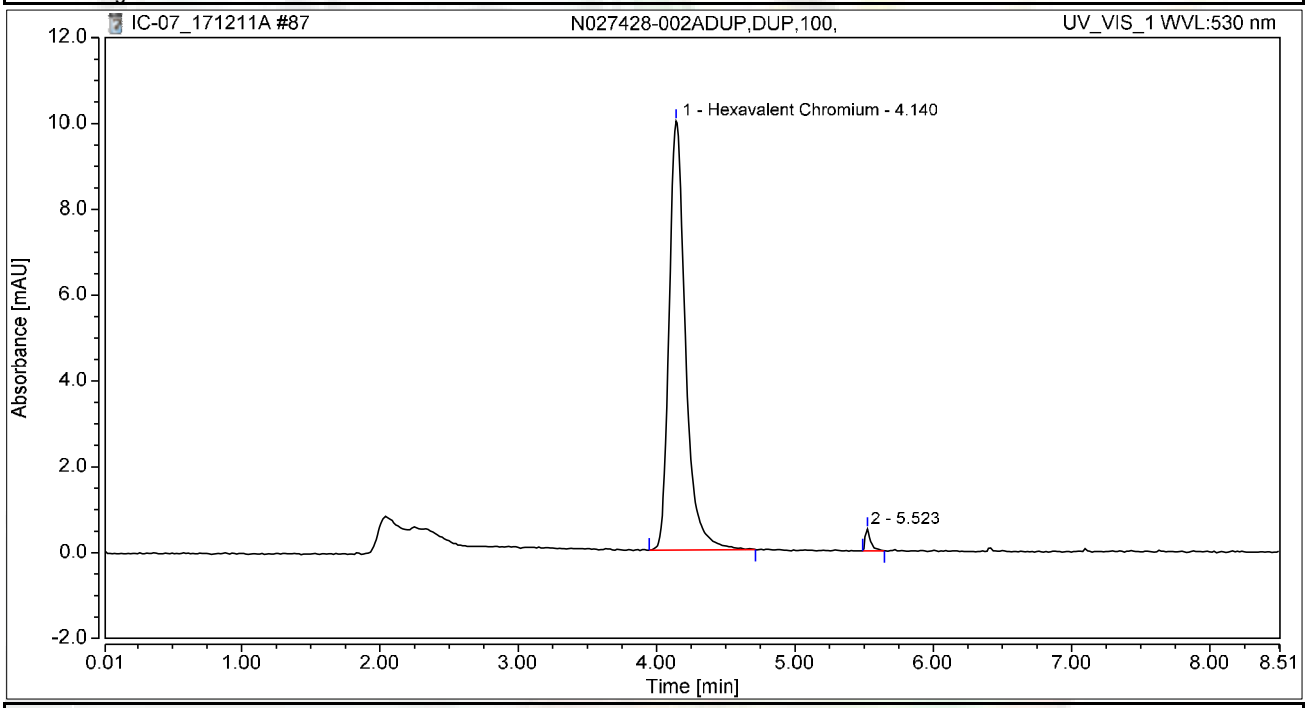
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027428-002ADUP,DUP,100,**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

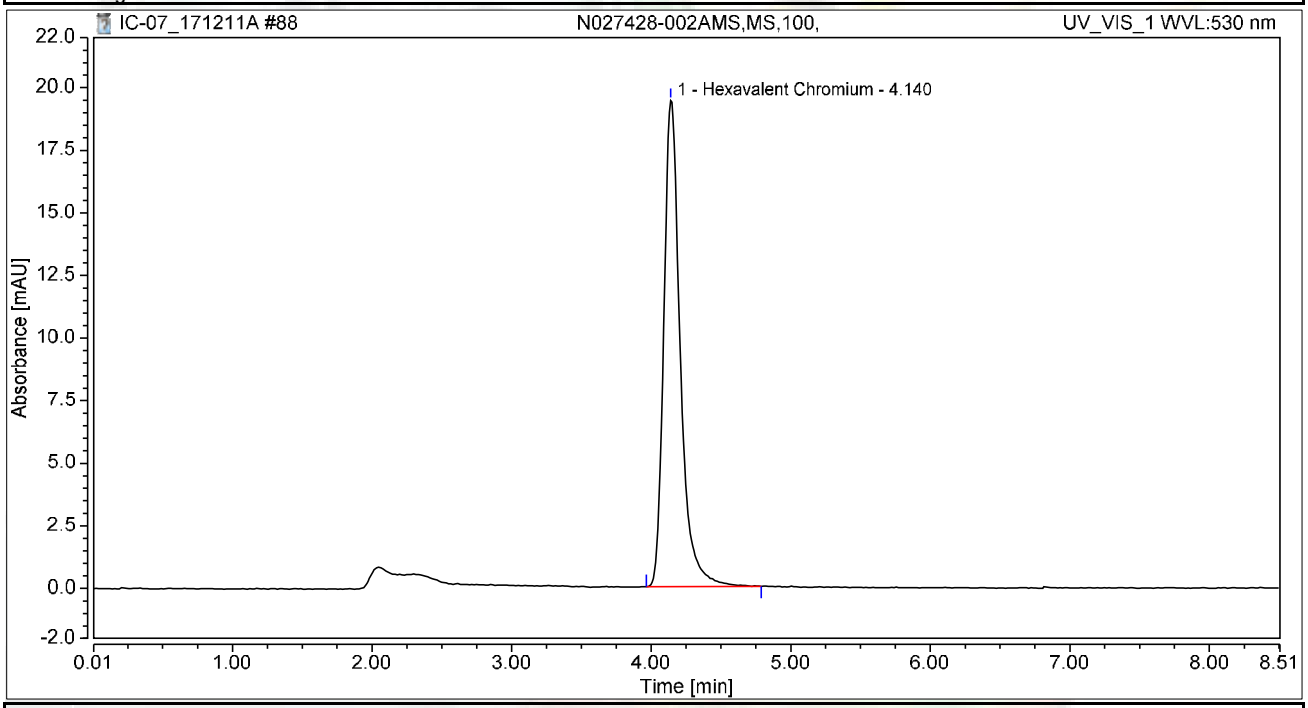
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.373	9.989	98.33	95.21	5.4689
2		5.523	0.023	0.502	1.67	4.79	n.a.
Total:			**1.397**	**10.491**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027428-002AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

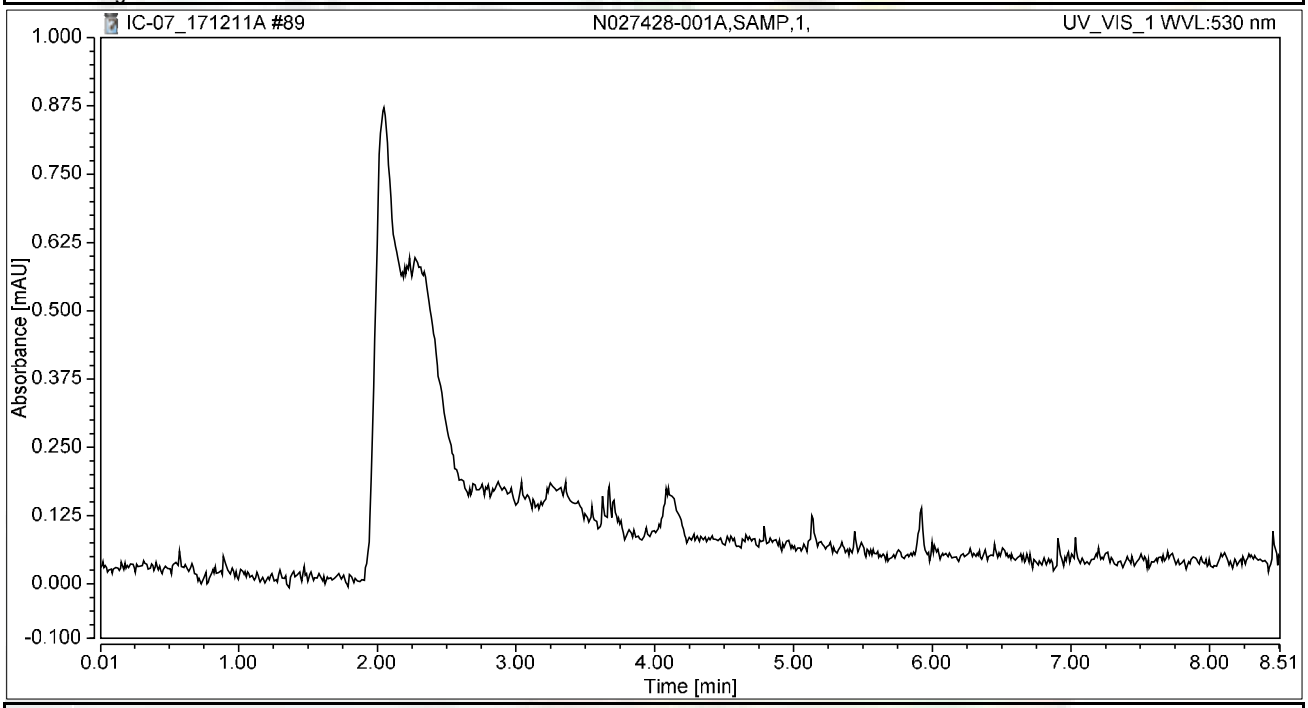
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.661	19.412	100.00	100.00	10.5980
Total:			**2.661**	**19.412**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027428-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

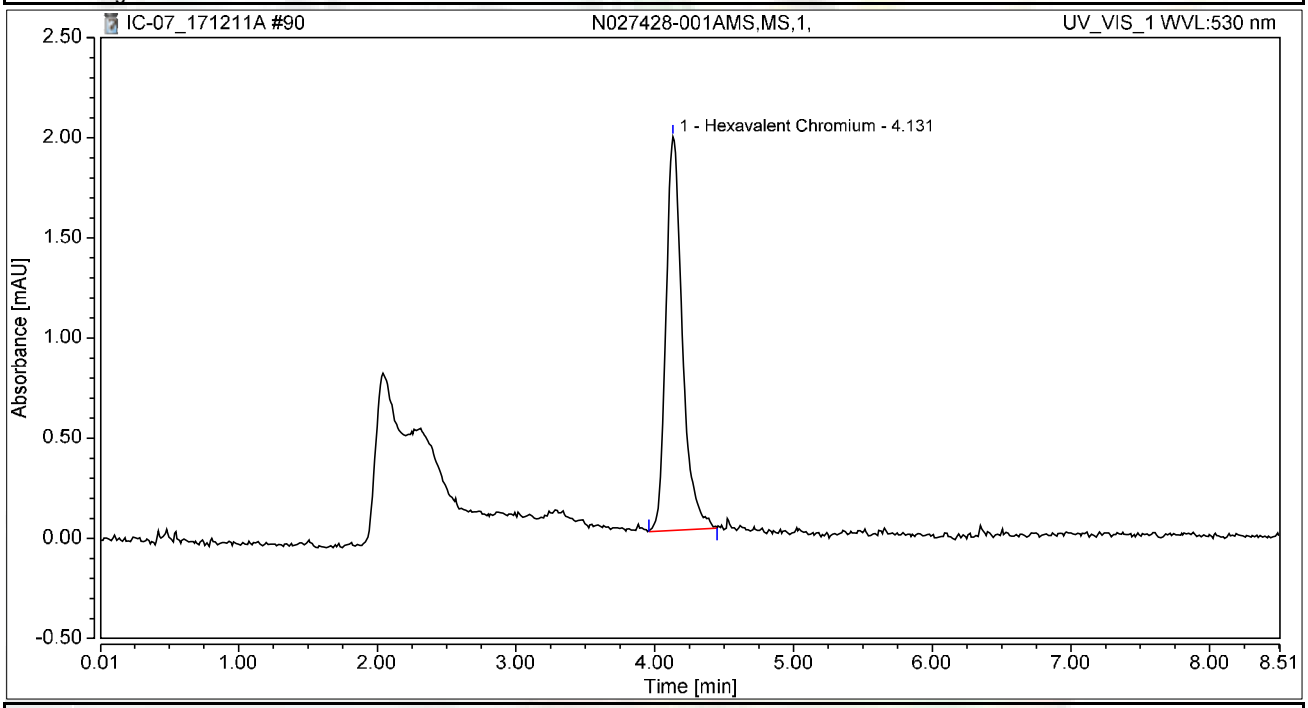
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027428-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

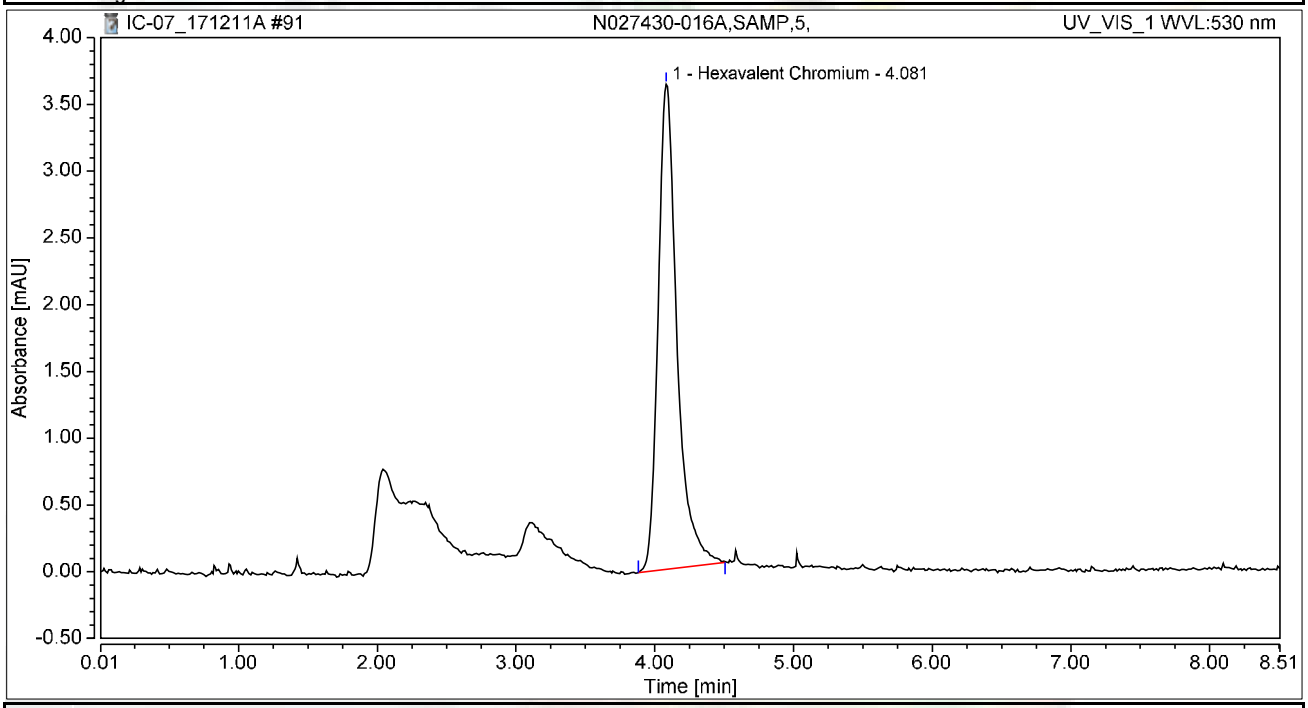
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.271	1.965	100.00	100.00	1.0787
Total:			**0.271**	**1.965**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-016A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

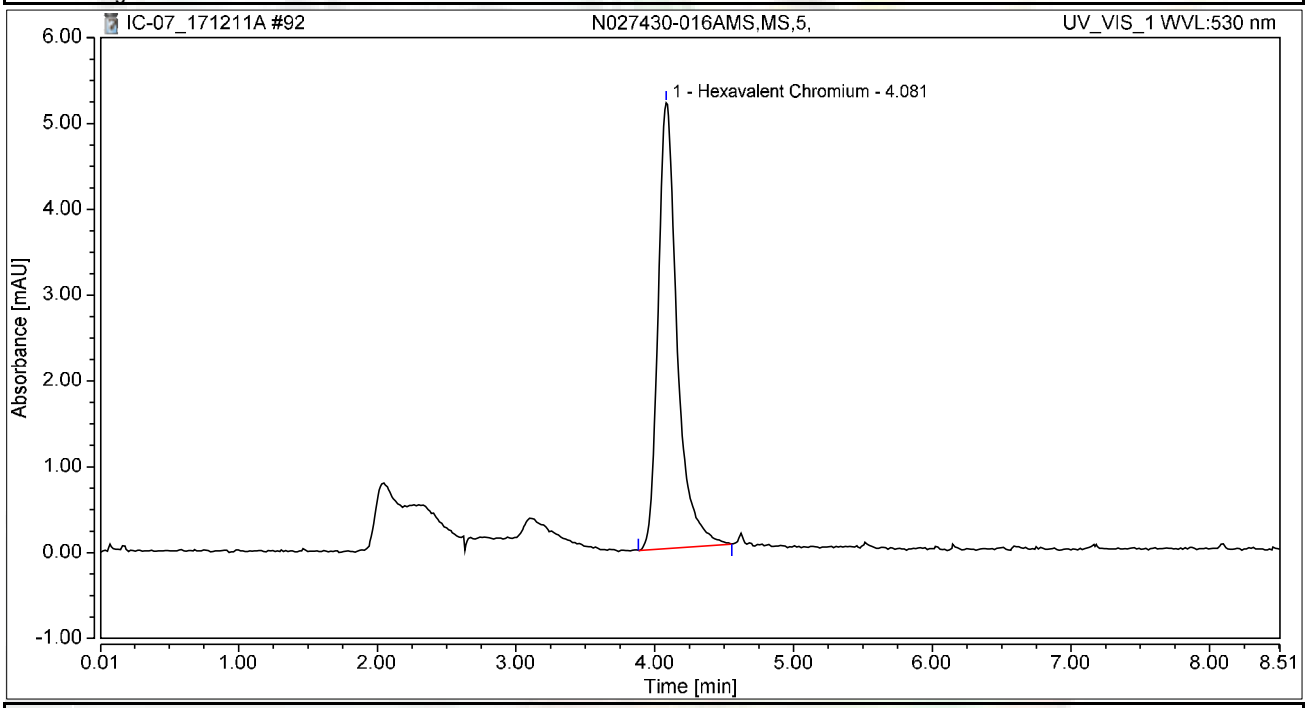
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.575	3.632	100.00	100.00	2.2917
Total:			**0.575**	**3.632**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-016AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

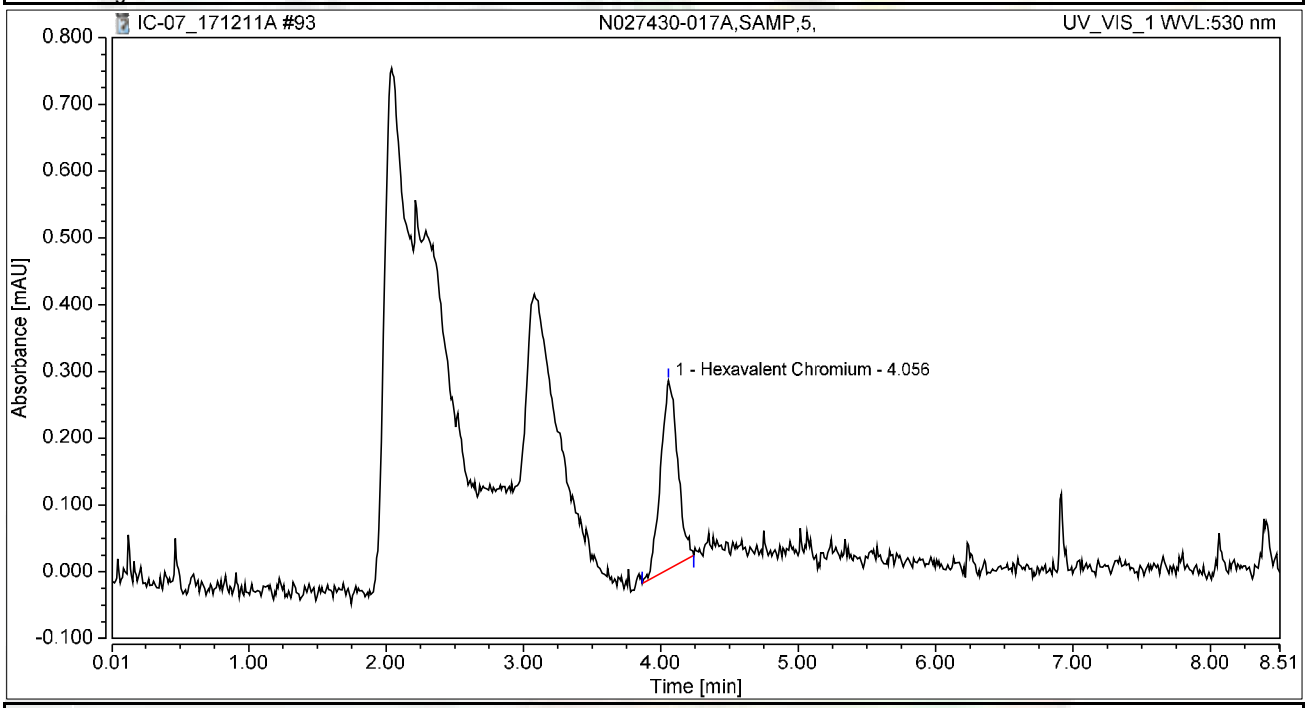
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.832	5.194	100.00	100.00	3.3146
Total:			**0.832**	**5.194**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-017A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

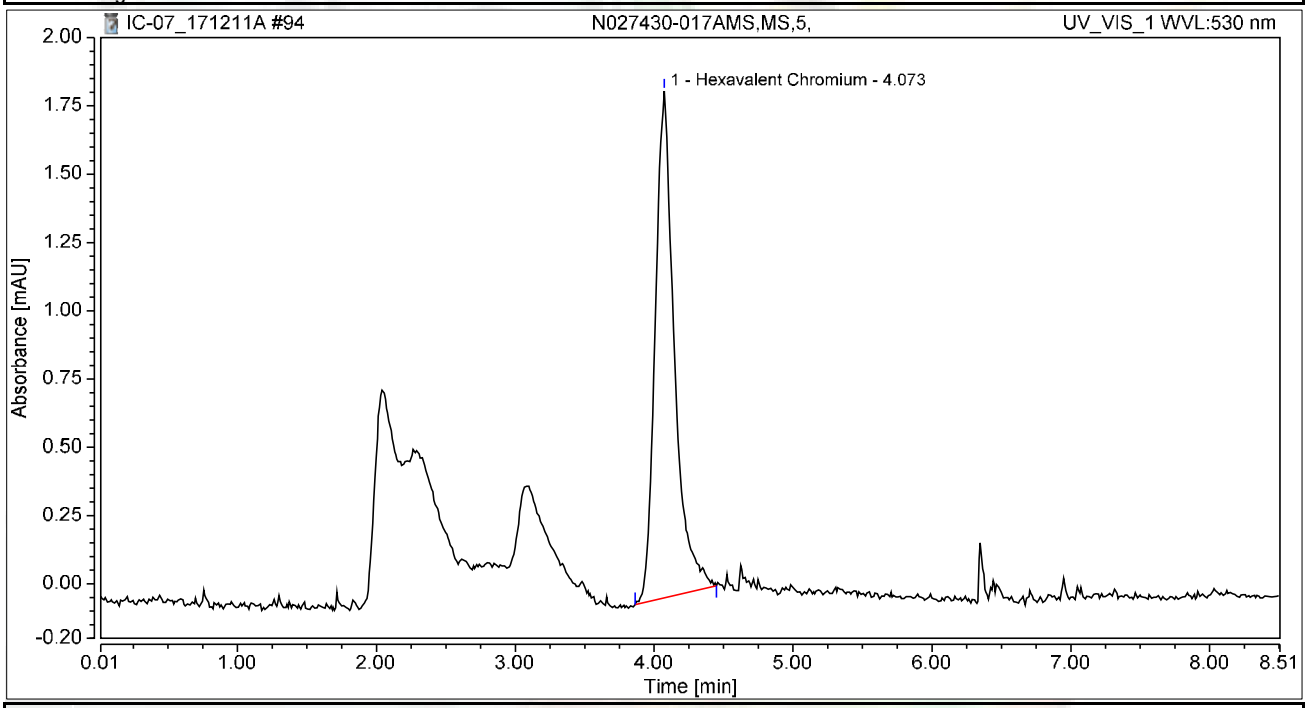
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.041	0.283	100.00	100.00	0.1618
Total:			**0.041**	**0.283**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-017AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

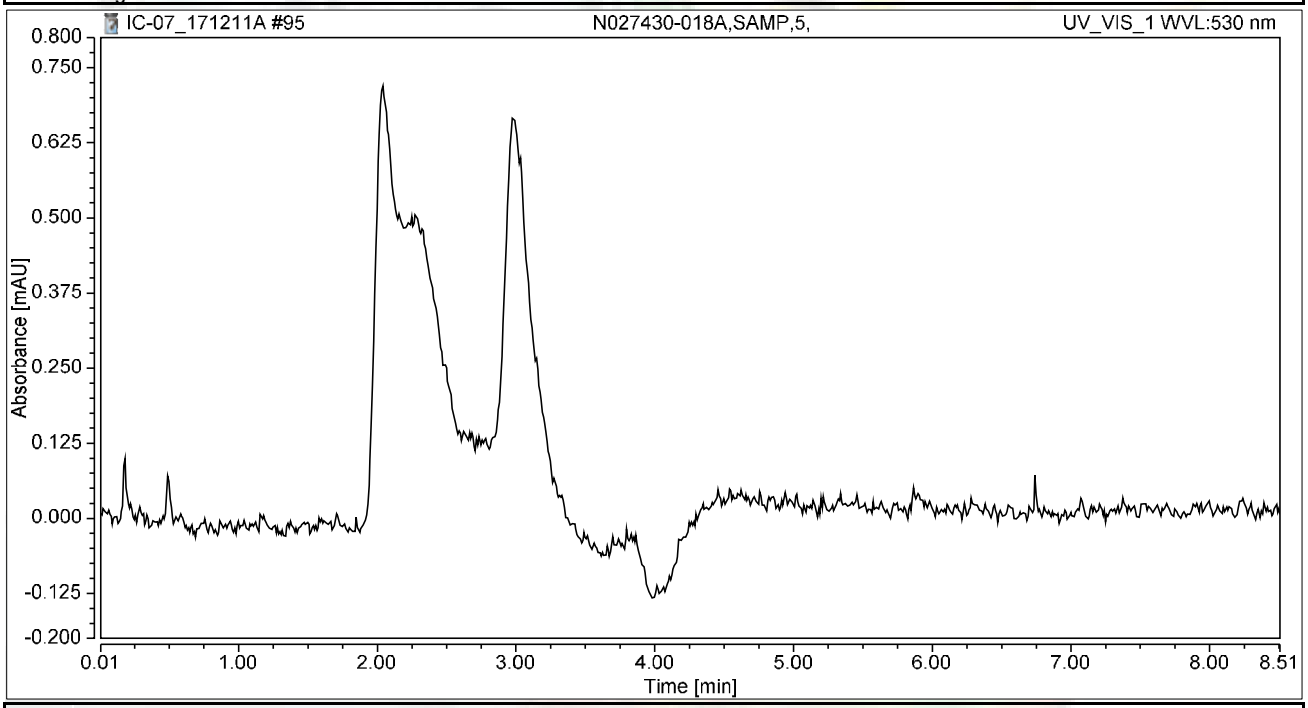
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	0.296	1.856	100.00	100.00	1.1798
Total:			**0.296**	**1.856**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-018A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

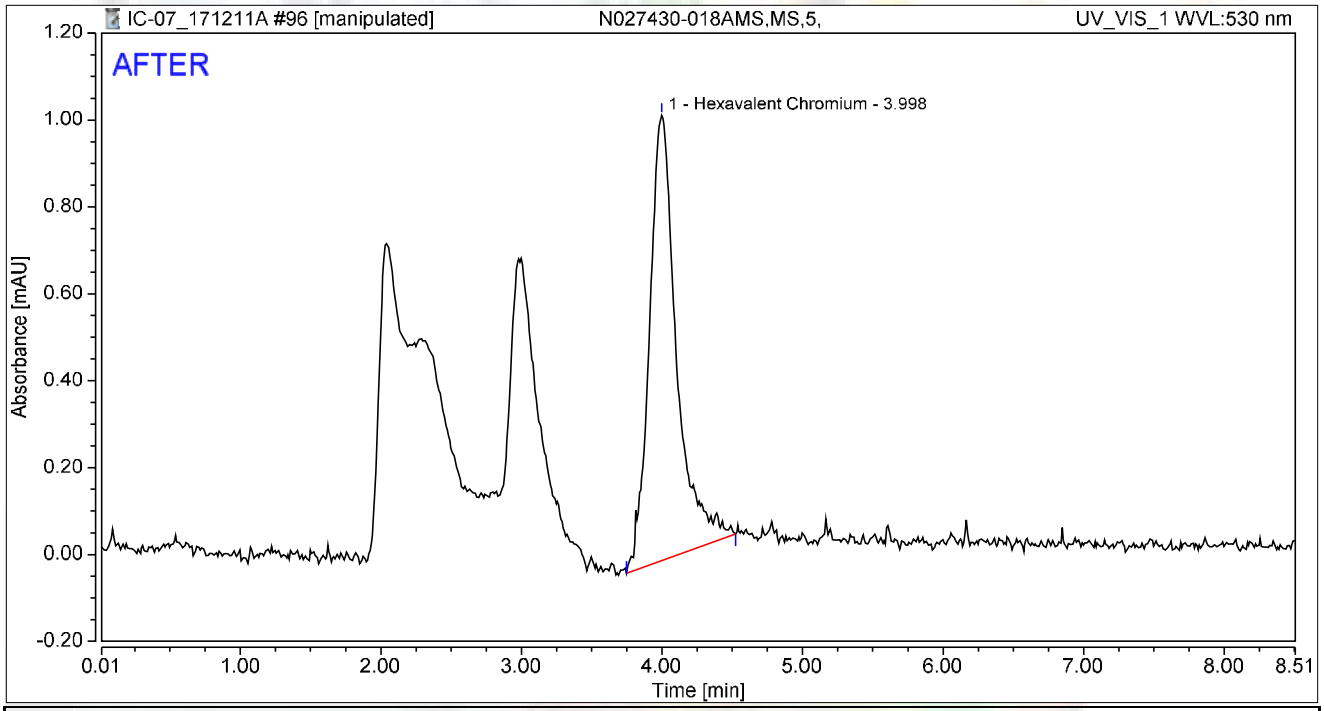
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-018AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.998	0.230	1.025	100.00	100.00	0.9160
Total:			**0.230**	**1.025**	**100.00**	**100.00**	

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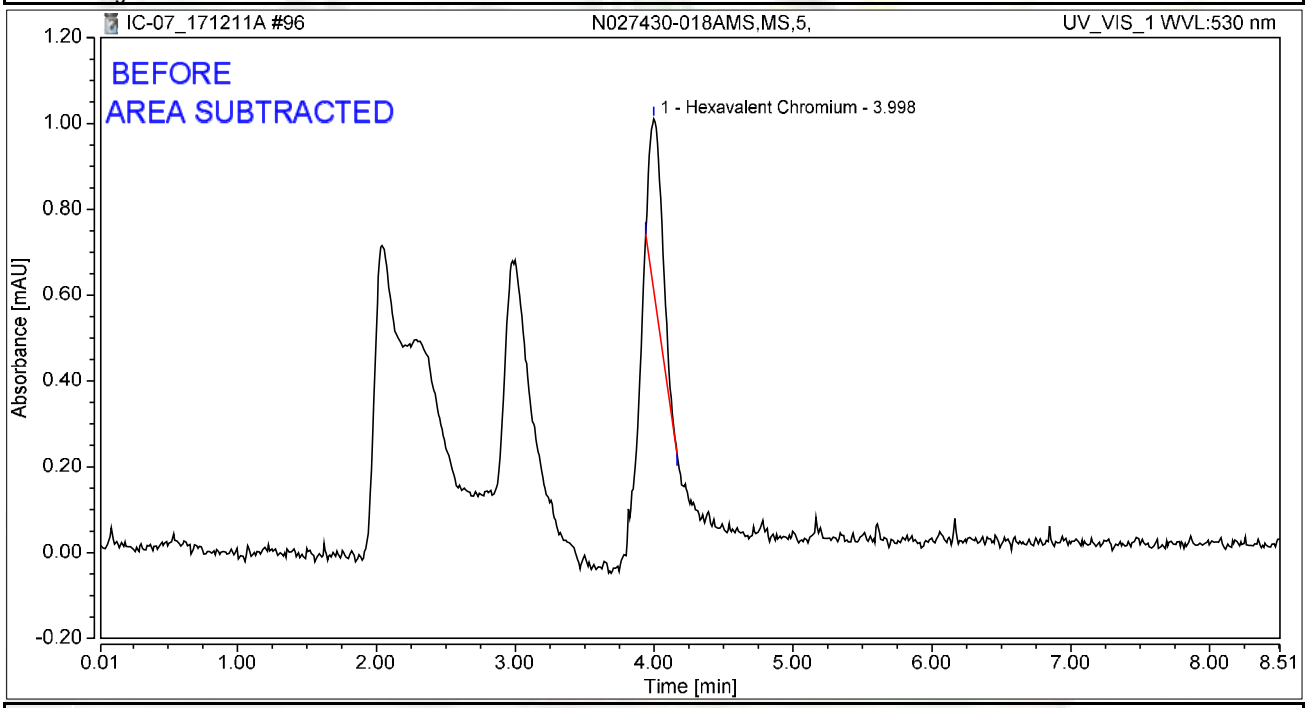
Chromatogram and Results

Injection Details

Injection Name:	**N027430-018AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.998	0.045	0.401	100.00	100.00	0.1811
Total:			**0.045**	**0.401**	**100.00**	**100.00**	

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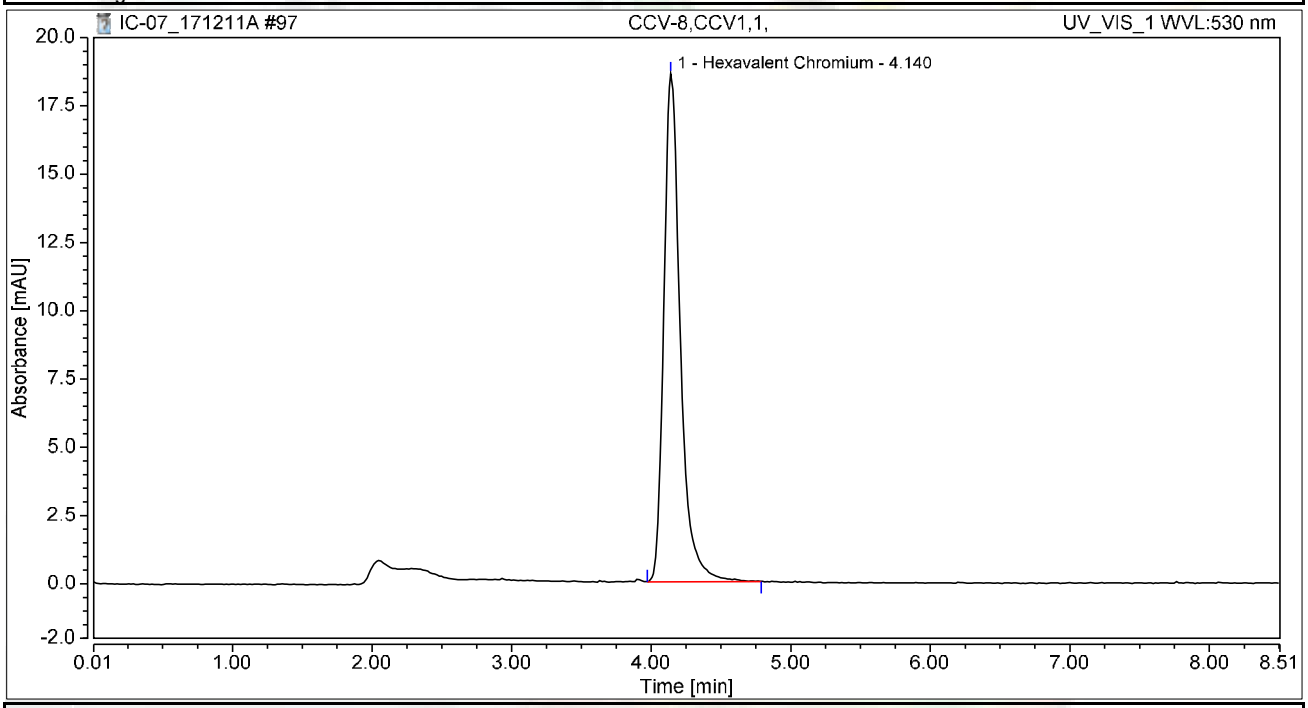
Chromatogram and Results

Injection Details

Injection Name:	**CCV-8,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

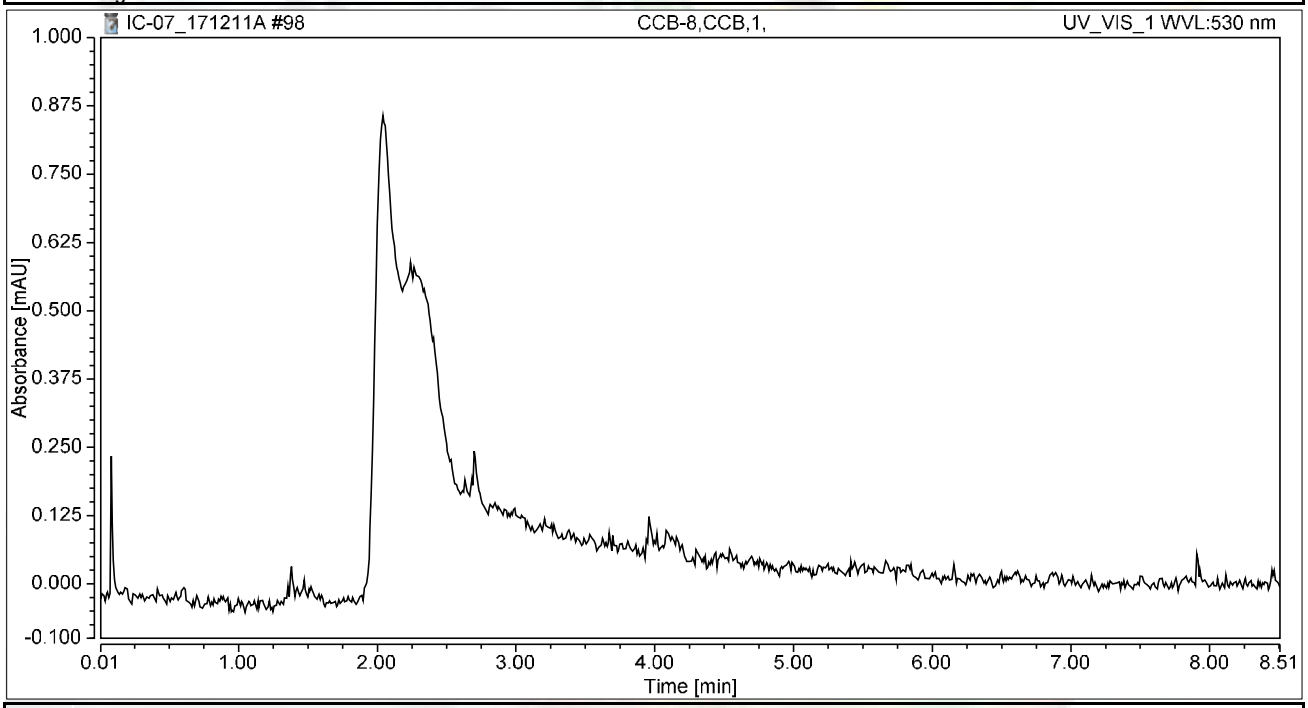
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.551	18.593	100.00	100.00	10.1602
Total:			**2.551**	**18.593**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-8,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

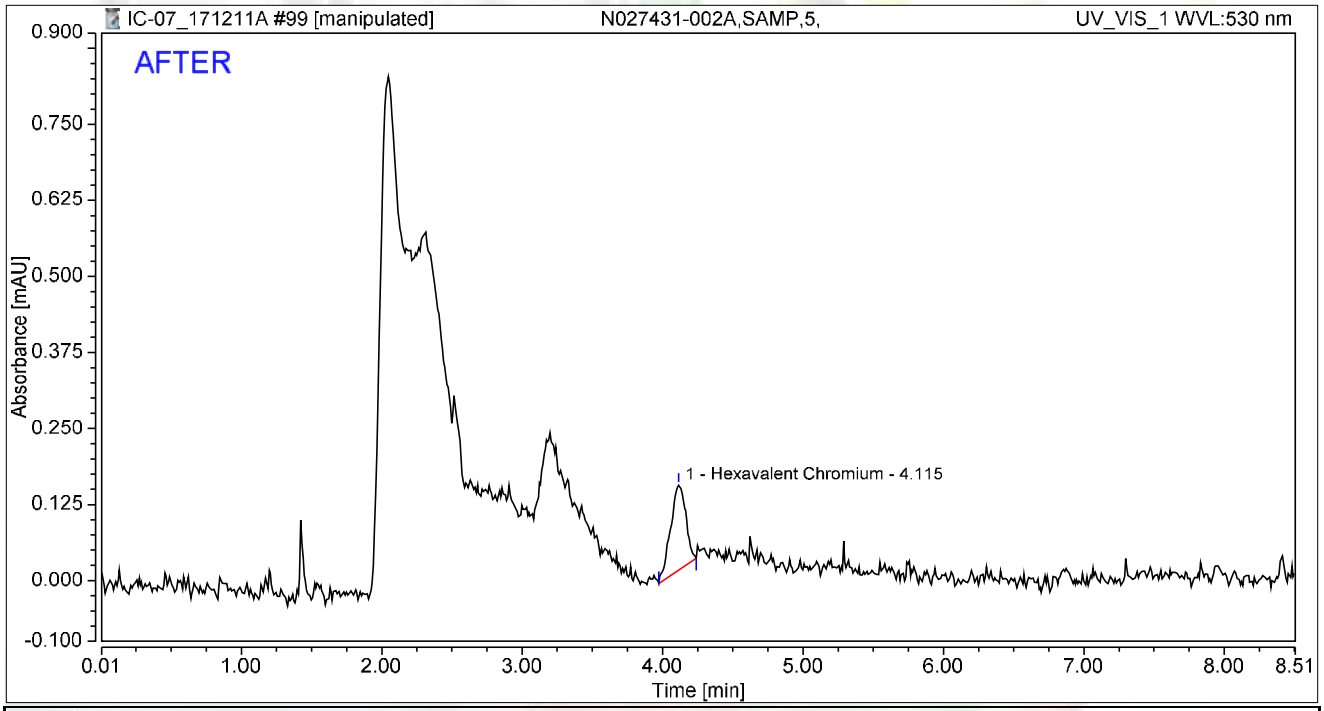
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.018	0.140	100.00	100.00	0.0709
Total:			**0.018**	**0.140**	**100.00**	**100.00**	

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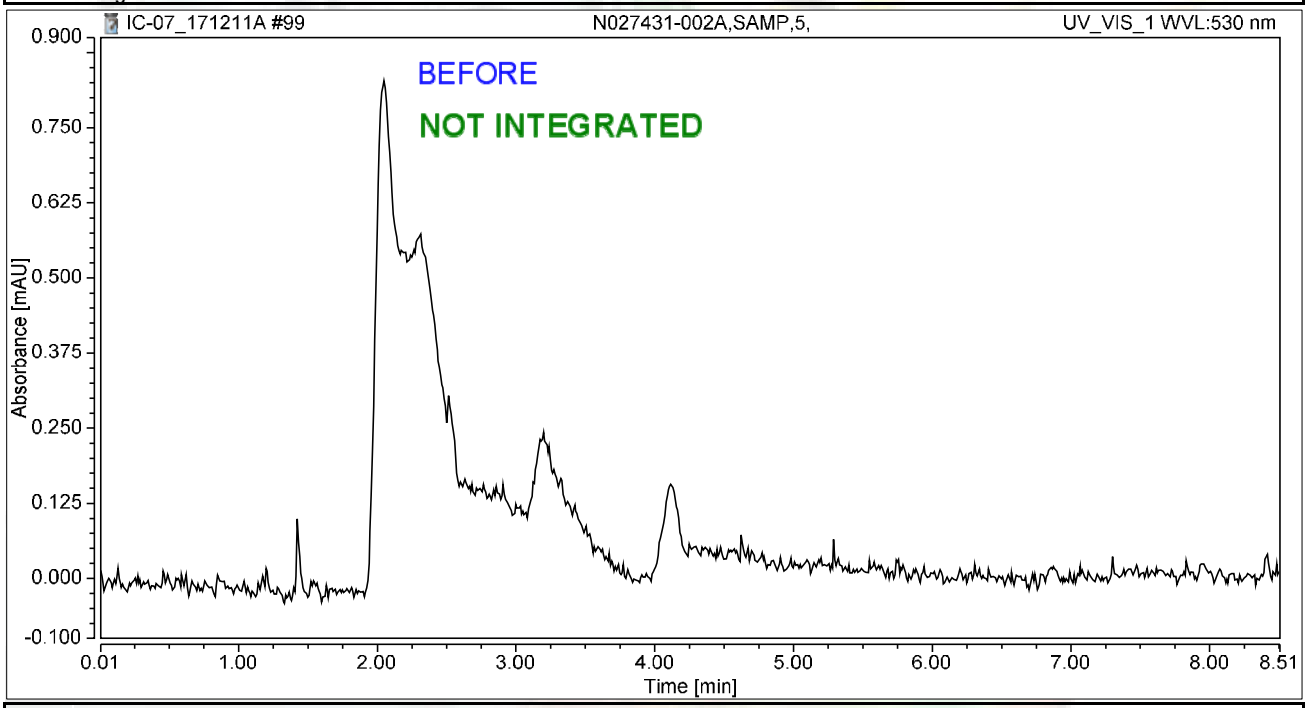
Chromatogram and Results

Injection Details

Injection Name:	**N027431-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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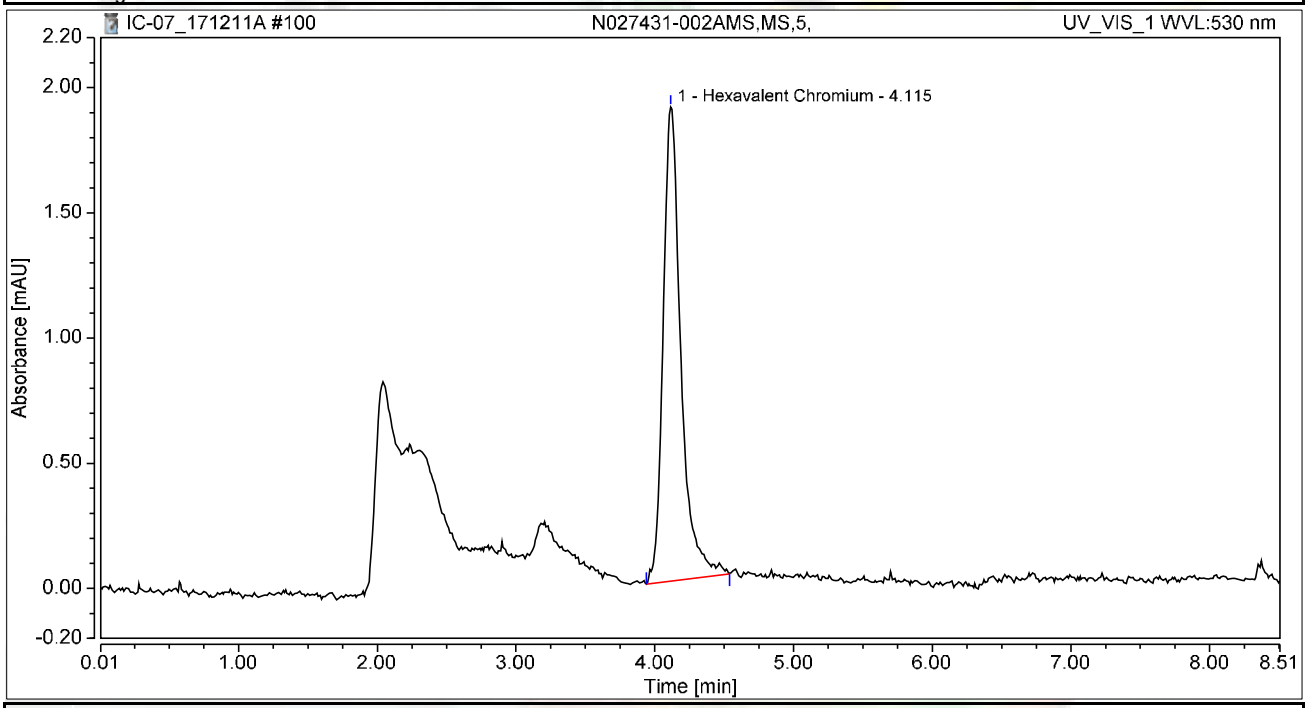
Chromatogram and Results

Injection Details

Injection Name:	**N027431-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

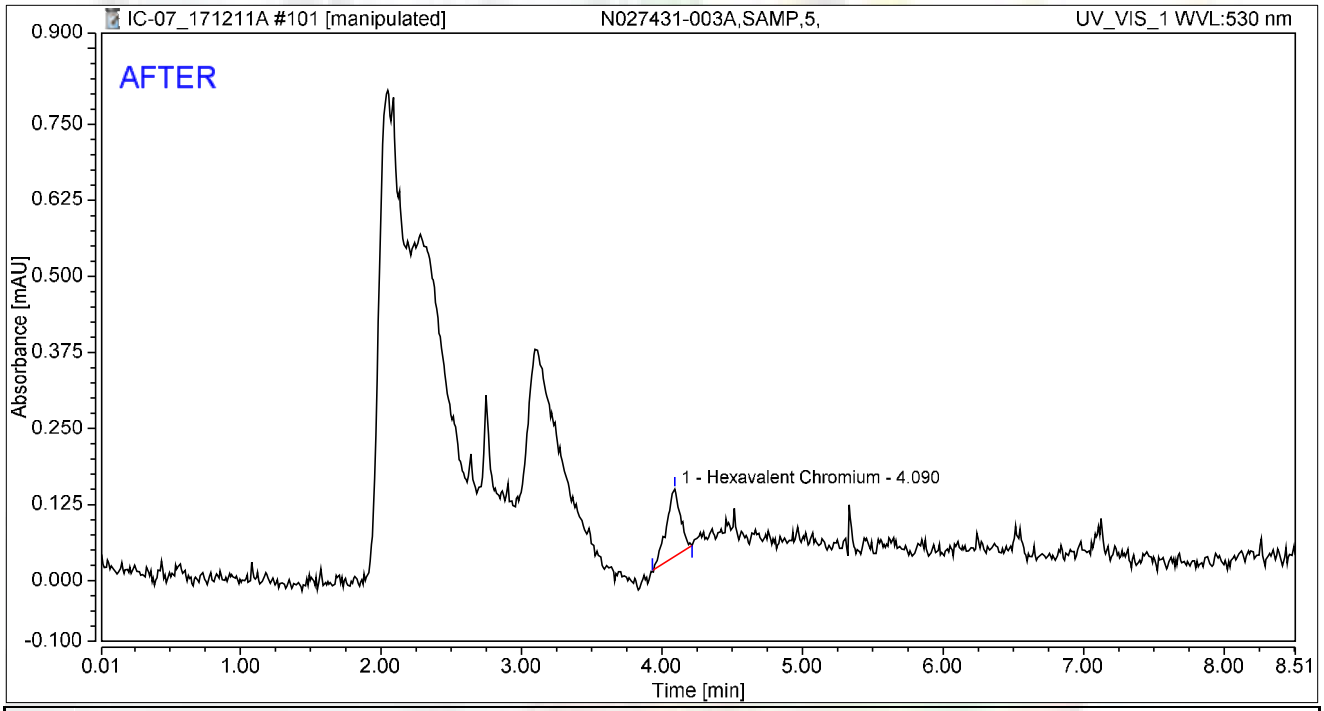
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.283	1.894	100.00	100.00	1.1274
Total:			**0.283**	**1.894**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-003A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.013	0.111	100.00	100.00	0.0510
Total:			**0.013**	**0.111**	**100.00**	**100.00**	

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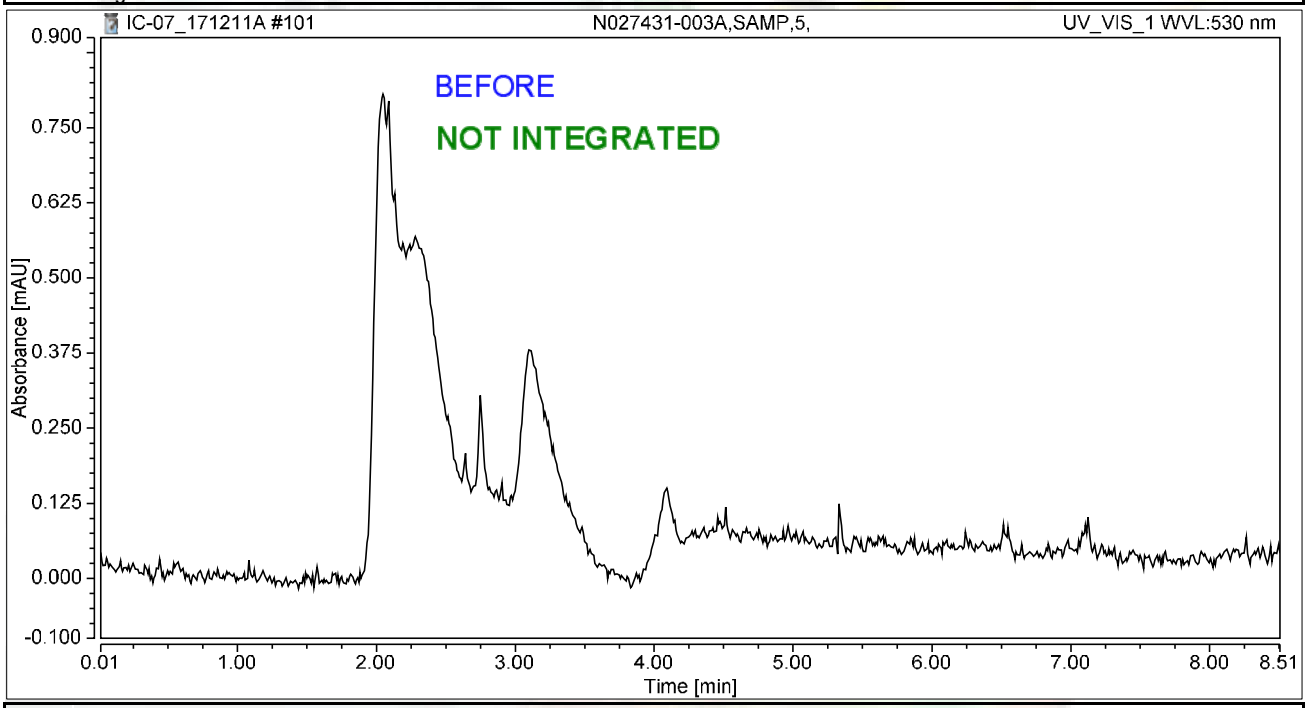
Chromatogram and Results

Injection Details

Injection Name:	**N027431-003A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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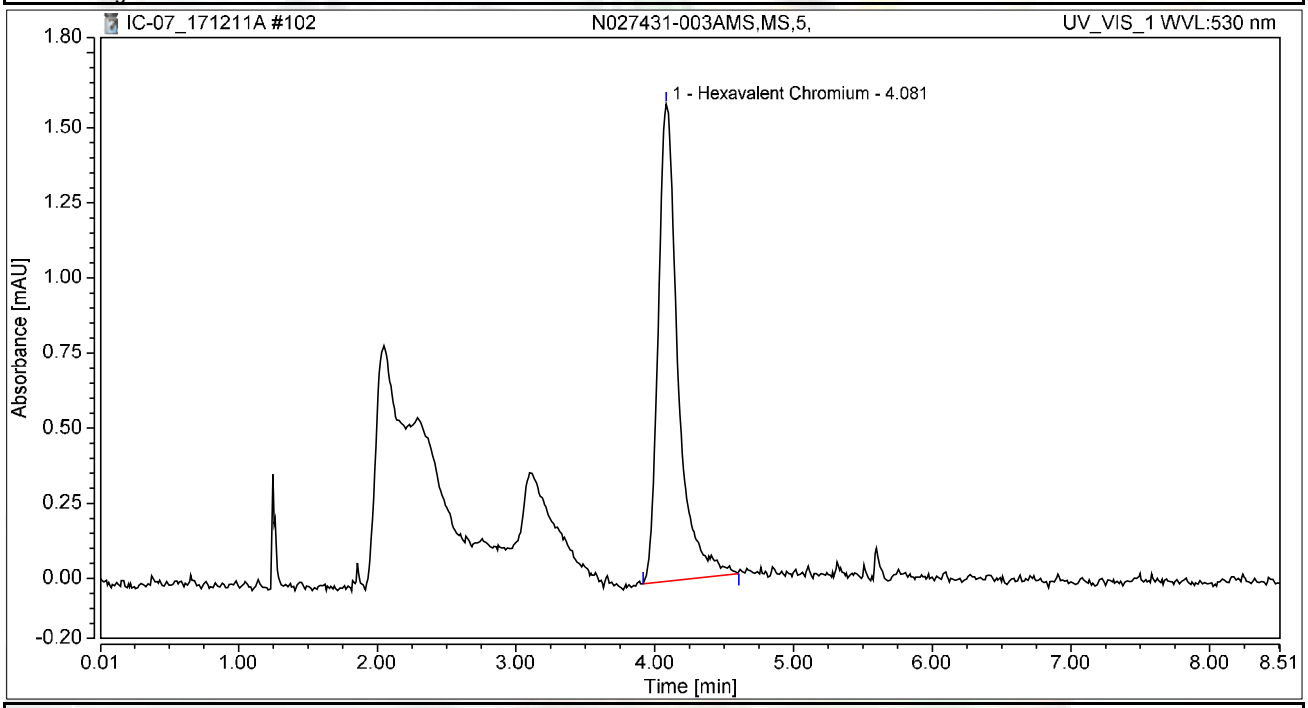
Chromatogram and Results

Injection Details

Injection Name:	**N027431-003AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

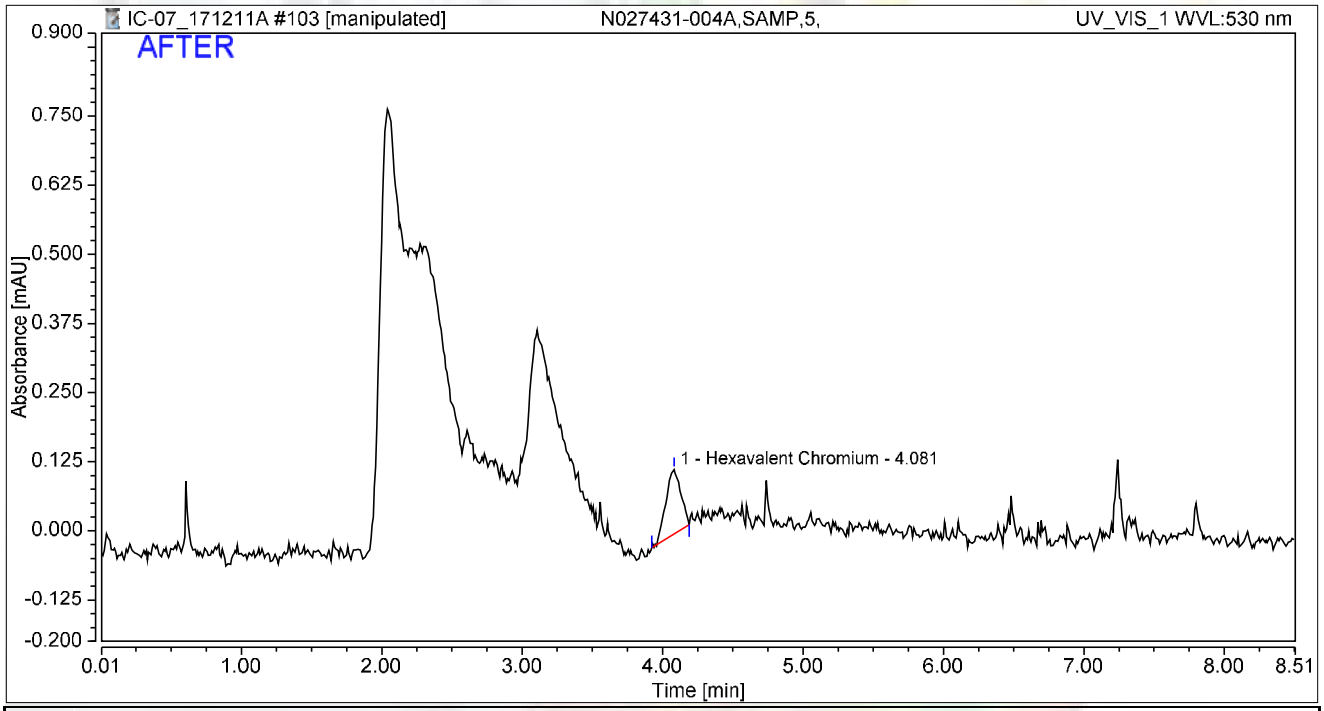
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.264	1.589	100.00	100.00	1.0512
Total:			**0.264**	**1.589**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.014	0.117	100.00	100.00	0.0571
Total:			**0.014**	**0.117**	**100.00**	**100.00**	

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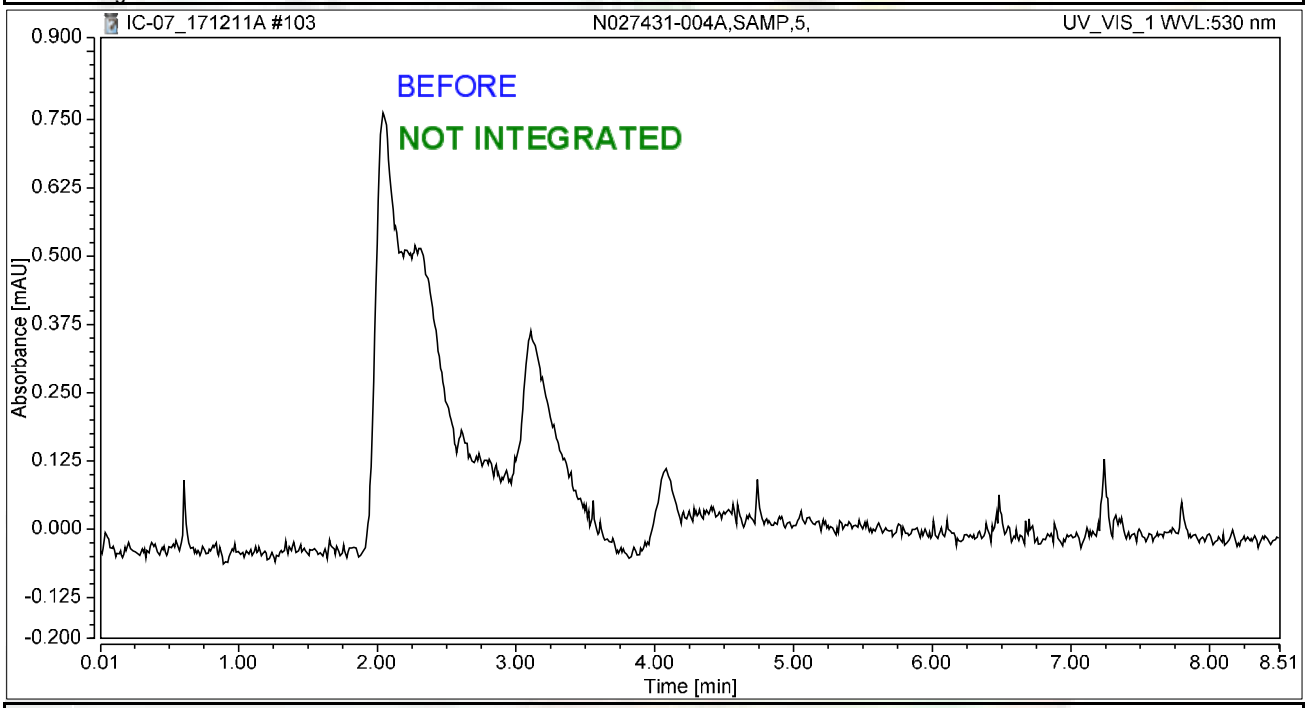
Chromatogram and Results

Injection Details

Injection Name:	**N027431-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

rba 12/16/2017

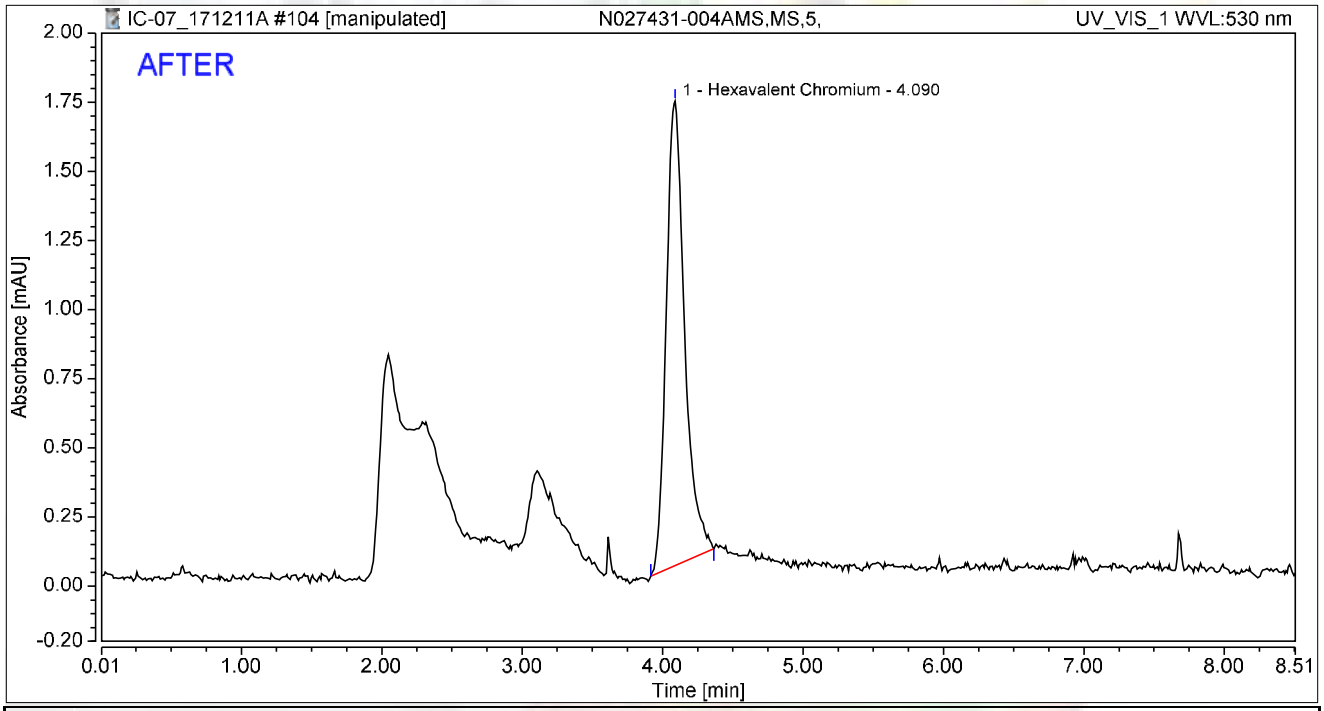
12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027431-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.256	1.679	100.00	100.00	1.0207
Total:			**0.256**	**1.679**	**100.00**	**100.00**	

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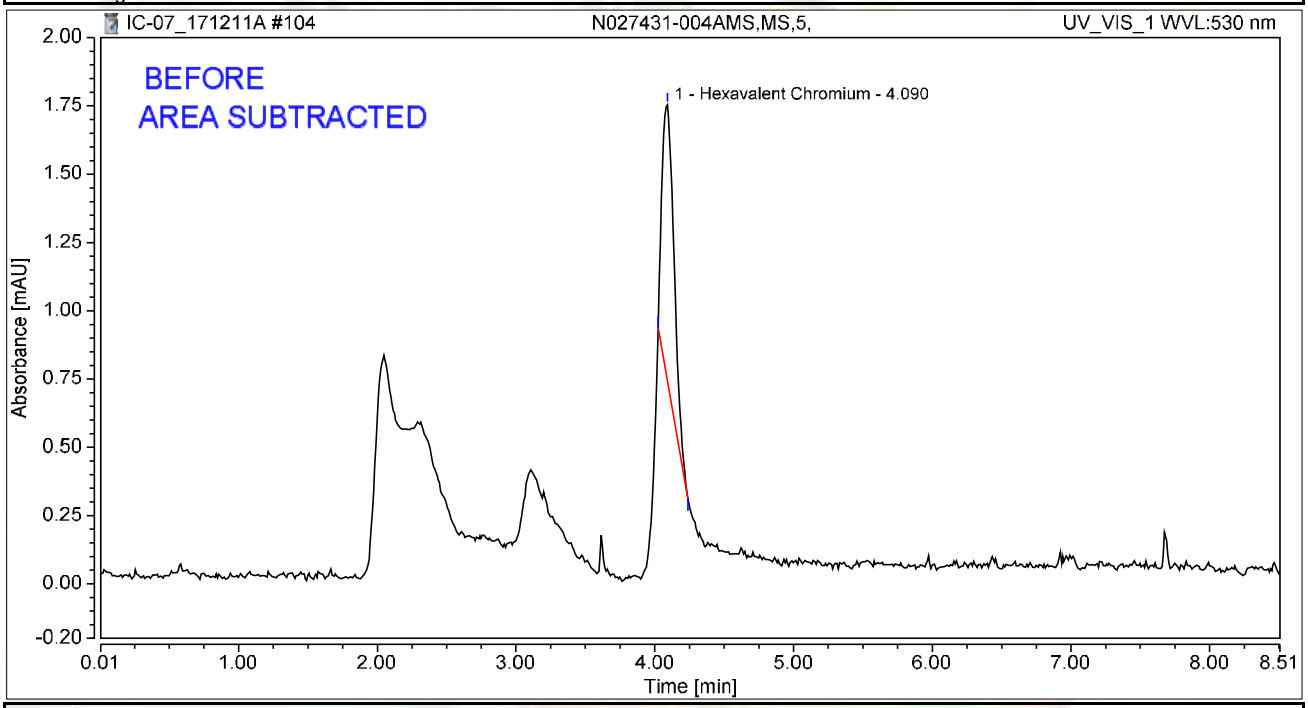
RB 12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027431-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.101	1.009	100.00	100.00	0.4041
Total:			**0.101**	**1.009**	**100.00**	**100.00**	

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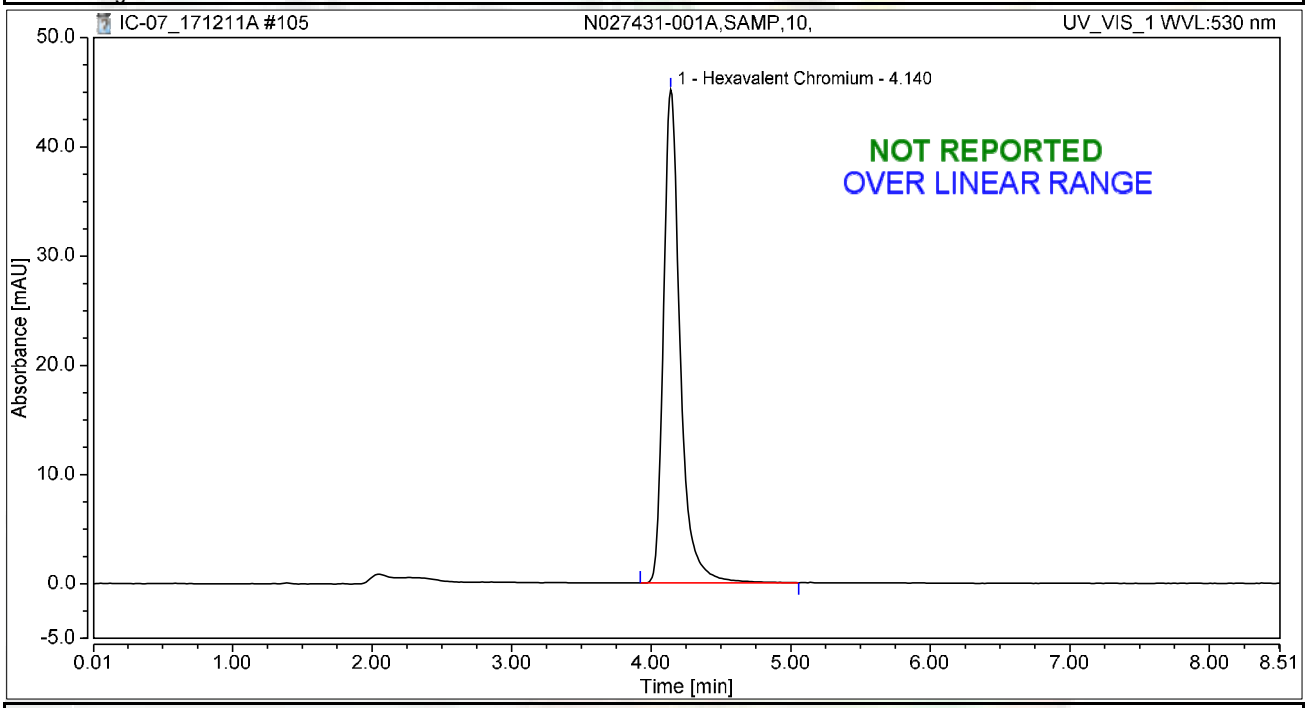
12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027431-001A,SAMP,10,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 00:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	6.271	45.157	100.00	100.00	24.9758
Total:			**6.271**	**45.157**	**100.00**	**100.00**	

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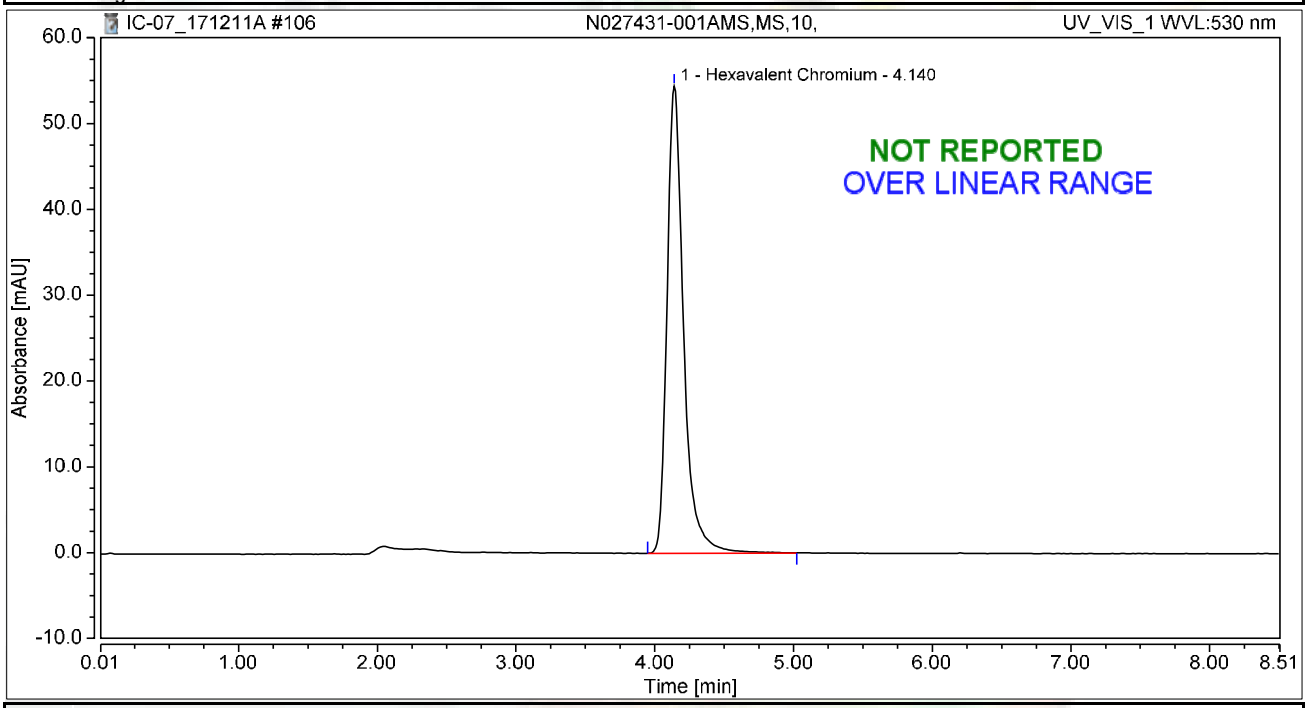
Chromatogram and Results

Injection Details

Injection Name:	**N027431-001AMS,MS,10,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 00:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	7.562	54.427	100.00	100.00	30.1165
Total:			**7.562**	**54.427**	**100.00**	**100.00**	

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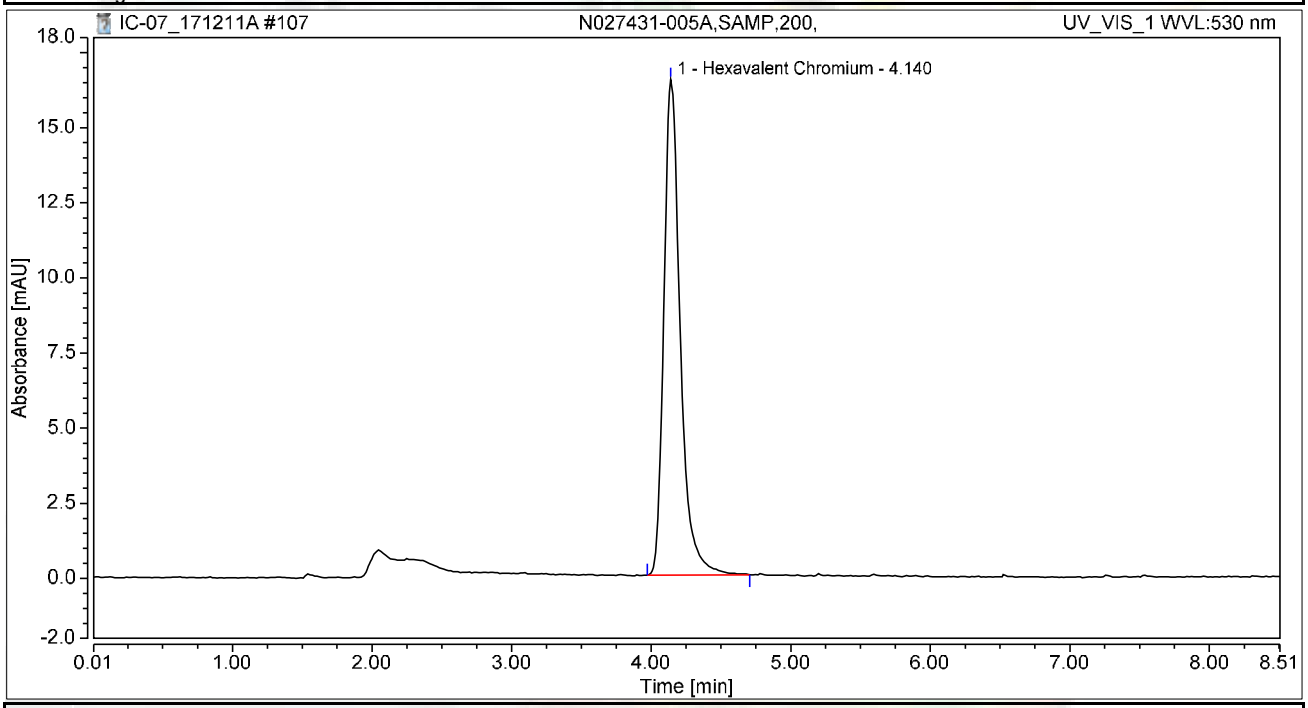
Chromatogram and Results

Injection Details

Injection Name:	**N027431-005A,SAMP,200,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 00:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

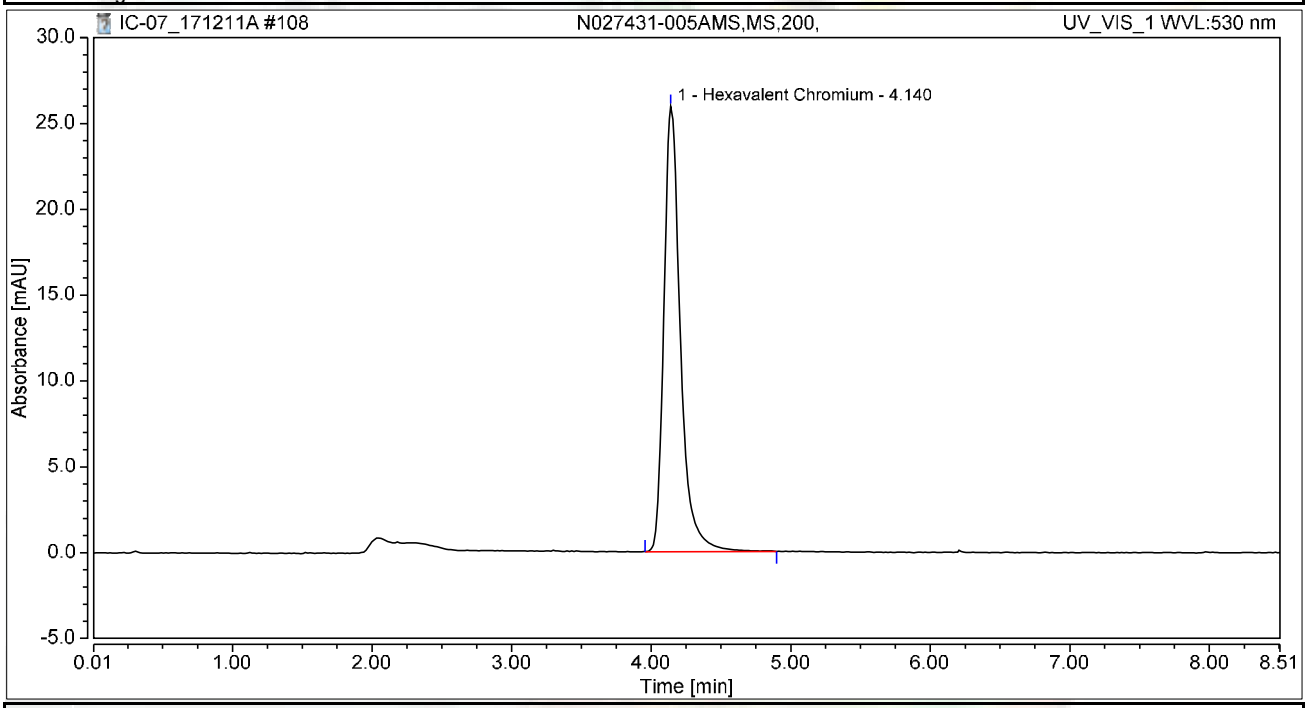
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.258	16.507	100.00	100.00	8.9923
Total:			**2.258**	**16.507**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-005AMS,MS,200,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 00:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

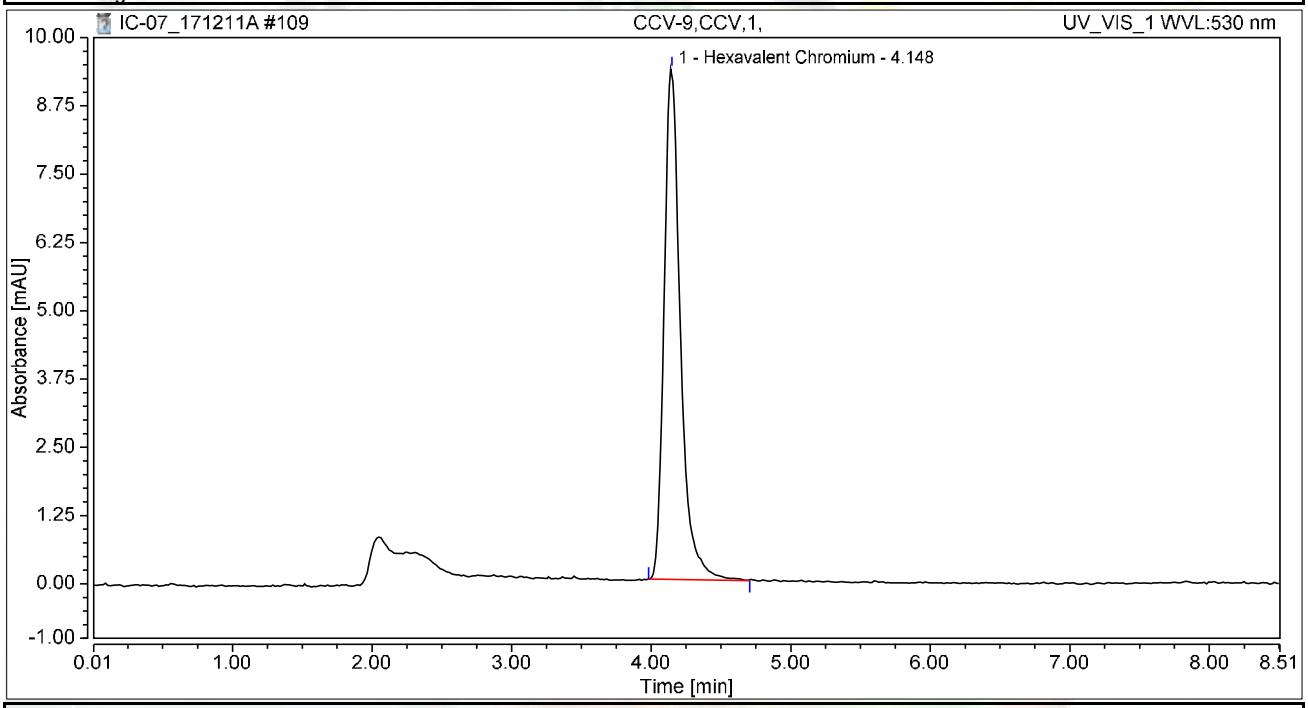
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	3.571	25.942	100.00	100.00	14.2232
Total:			**3.571**	**25.942**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-9,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 00:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

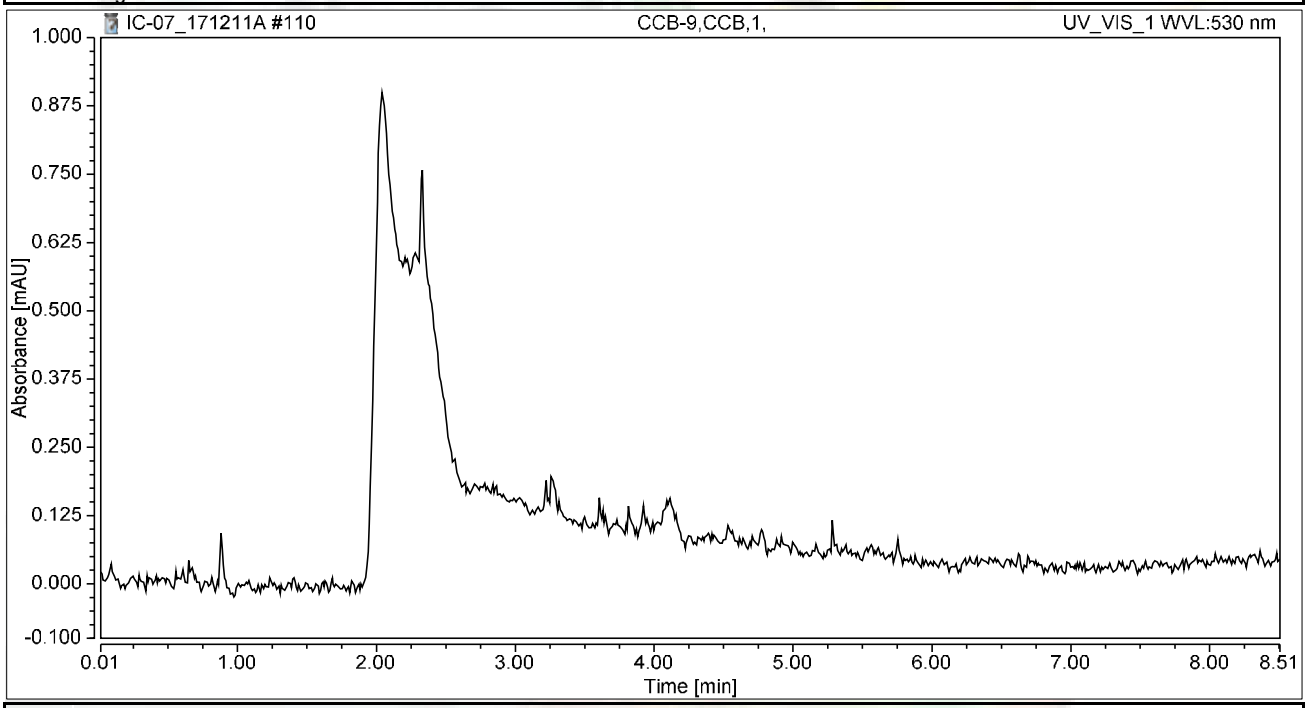
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.274	9.350	100.00	100.00	5.0724
Total:			**1.274**	**9.350**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-9,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 00:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120785 **Analyst:** LSR

ASSET #: N027428 **Date Analyzed:** 12/13/2017

Method: EPA 2320

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X			X		
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 12/20/2017

2nd Level Reviewer: RLB 12/22/2017 Date:

SAMPLE CALCULATION

Sample ID: **N027428-001B @ pH 7.87**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (12.45 mL)

= **0.02008 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (12.40) (0.02008 N) (1) * 1000

= 248.9920 mg**/L**

Reporting results in two significant figures,

= **250 mg/L** as CaCO3

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C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02008 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (12.40 mL) (0.02008) (1) * 1000

= 248.9920 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 248.9920 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **250 mg/L**

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LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.53	50	0.00	0.050	MBLK
LCS-1	8.51	50	0.05	4.95	LCS
N027405-014D	8.16	50	0.00	9.20	SAMP
N027422-001A	8.28	50	0.00	14.80	SAMP
N027422-002A	10.27	50	5.60	7.90	SAMP
N027422-003A	10.22	50	5.00	7.20	SAMP
N027428-001B	7.87	50	0.00	12.40	SAMP
N027428-002B	7.78	50	0.00	7.70	SAMP
N027429-005D	7.72	50	0.00	1.50	SAMP
N027429-006D	7.85	50	0.00	1.50	SAMP
N027429-007D	8.20	50	0.00	8.60	SAMP
N027429-008D	8.20	50	0.00	8.35	SAMP
N027429-009D	7.67	50	0.00	2.10	SAMP
N027429-010D	7.34	50	0.00	4.25	SAMP
N027429-012D	7.90	50	0.00	6.25	SAMP
N027429-013D	7.83	50	0.00	5.80	SAMP
N027429-014D	7.31	50	0.00	5.10	SAMP
N027429-015D	7.71	50	0.00	4.60	SAMP
N027429-016D	7.74	50	0.00	3.40	SAMP
N027429-017D	7.66	50	0.00	3.40	SAMP
N027429-018D	7.58	50	0.00	2.80	SAMP
N027429-020D	7.77	50	0.00	3.10	SAMP
N027429-005DDUP	7.69	50	0.00	1.50	DUP
N027429-014DMS	8.12	50	0.00	10.20	MS
N027429-014DMSD	8.14	50	0.00	10.10	MSD

Standardization:

Spike amt:	**5**	ml
Titrant used:	**12.45**	ml
N H2SO4	**0.02008**	Normal
Date Analyzed:	**12/13/17**	
Time:	**8:30 AM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-161205A**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R171211A**	

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Date Analyzed:	12/13/17		Reagents:					Standardization:					P = 0
Time Started:	8:30 AM			Sodium Carbonate:		CINV-161205A			Spike amt:	5	mL		P < 1/2 T
Analyzed By:	LSR			Hydrochloric Acid:		0			Titrant used:	12.45	mL		P = 1/2 T
				Sulfuric Acid:		R171211A							P > 1/2 T
									N H2SO4	0.02008	N		P = T

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.53				0.02008	0.00	0.05	0.05	1	0.00	1.00	
LCS-1	50	8.51				0.02008	0.05	4.90	4.95	1	1.00	99.40	
N027405-014D	50	8.16				0.02008	0.00	9.20	9.20	1	0.00	184.74	
N027422-001A	50	8.28				0.02008	0.00	14.80	14.80	1	0.00	297.19	
N027422-002A	50	10.27				0.02008	5.60	2.30	7.90	1	112.45	158.63	
N027422-003A	50	10.22				0.02008	5.00	2.20	7.20	1	100.40	144.58	
N027428-001B	50	7.87				0.02008	0.00	12.40	12.40	1	0.00	249.00	
N027428-002B	50	7.78				0.02008	0.00	7.70	7.70	1	0.00	154.62	
N027429-005D	50	7.72				0.02008	0.00	1.50	1.50	1	0.00	30.12	
N027429-006D	50	7.85				0.02008	0.00	1.50	1.50	1	0.00	30.12	
N027429-007D	50	8.2				0.02008	0.00	8.60	8.60	1	0.00	172.69	
N027429-008D	50	8.2				0.02008	0.00	8.35	8.35	1	0.00	167.67	
N027429-009D	50	7.67				0.02008	0.00	2.10	2.10	1	0.00	42.17	
N027429-010D	50	7.34				0.02008	0.00	4.25	4.25	1	0.00	85.34	
N027429-012D	50	7.9				0.02008	0.00	6.25	6.25	1	0.00	125.50	
N027429-013D	50	7.83				0.02008	0.00	5.80	5.80	1	0.00	116.47	
N027429-014D	50	7.31				0.02008	0.00	5.10	5.10	1	0.00	102.41	
N027429-015D	50	7.71				0.02008	0.00	4.60	4.60	1	0.00	92.37	
N027429-016D	50	7.74				0.02008	0.00	3.40	3.40	1	0.00	68.27	
N027429-017D	50	7.66				0.02008	0.00	3.40	3.40	1	0.00	68.27	
N027429-018D	50	7.58				0.02008	0.00	2.80	2.80	1	0.00	56.22	
N027429-020D	50	7.77				0.02008	0.00	3.10	3.10	1	0.00	62.25	
N027429-005DDU	50	7.69				0.02008	0.00	1.50	1.50	1	0.00	30.12	
N027429-014DMS	50	8.12				0.02008	0.00	10.20	10.20	1	0.00	204.82	
N027429-014DMS	50	8.14				0.02008	0.00	10.10	10.10	1	0.00	202.81	

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Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	12/13/17
Time:	8:30 AM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.00	1.00	1.00		P = 0
LCS-1	0.00	2.01	97.39	99.40	99.40		P < 1/2 T
N027405-014D	0.00	0.00	184.74	184.74	184.74		P = 0
N027422-001A	0.00	0.00	297.19	297.19	297.19		P = 0
N027422-002A	66.27	92.37	0.00	158.63	158.63		P > 1/2 T
N027422-003A	56.22	88.35	0.00	144.58	144.58		P > 1/2 T
N027428-001B	0.00	0.00	249.00	249.00	249.00		P = 0
N027428-002B	0.00	0.00	154.62	154.62	154.62		P = 0
N027429-005D	0.00	0.00	30.12	30.12	30.12		P = 0
N027429-006D	0.00	0.00	30.12	30.12	30.12		P = 0
N027429-007D	0.00	0.00	172.69	172.69	172.69		P = 0
N027429-008D	0.00	0.00	167.67	167.67	167.67		P = 0
N027429-009D	0.00	0.00	42.17	42.17	42.17		P = 0
N027429-010D	0.00	0.00	85.34	85.34	85.34		P = 0
N027429-012D	0.00	0.00	125.50	125.50	125.50		P = 0
N027429-013D	0.00	0.00	116.47	116.47	116.47		P = 0
N027429-014D	0.00	0.00	102.41	102.41	102.41		P = 0
N027429-015D	0.00	0.00	92.37	92.37	92.37		P = 0
N027429-016D	0.00	0.00	68.27	68.27	68.27		P = 0
N027429-017D	0.00	0.00	68.27	68.27	68.27		P = 0
N027429-018D	0.00	0.00	56.22	56.22	56.22		P = 0
N027429-020D	0.00	0.00	62.25	62.25	62.25		P = 0
N027429-005DDUP	0.00	0.00	30.12	30.12	30.12		P = 0
N027429-014DMS	0.00	0.00	204.82	204.82	204.82		P = 0
N027429-014DMSD	0.00	0.00	202.81	202.81	202.81		P = 0

Silvia Ramit 12/20/2017

RB 12/22/2017

Alkalinity Preparation and Runlog

Book #6

Matrix: H2O

Date Extracted: 12/13/17
Time Extracted: 12/13/17
Extracted By: LSR

Date Analyzed: 12/13/17
Time Analyzed: 830
Analyzed By: LSR

Reagent Lot # / Reagent ID
Sodium Carbonate: CMV161206A
Hydrochloric Acid:
Sulfuric Acid: D171211A
Sodium Bicarbonate: CMV150601A

pH meter Calibration:
SLOPE: 97.8%
pH 7 - 7.02 CMV170615F
4 - 4.0 170615E
10 - 10.02 170822B

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARD DILUTION											
	#1	50mL	10.66	1WST171211A	5mL	0.05N	-	-	12.50	50/50	$N_{H_2SO_4} = \frac{(2.65 g/L)(5mL)}{(53)(V_{titrant})}$	- 0.0200000
	#2		10.67				-	-	12.40			= 0.02016129
1)	MBLK	50 mL	5.53	-	-	-	0.02008	0	0.050	50/50		Ave: 0.02008
2)	LCS		8.51	1WST171211B	1mL	0.05N		0.05	4.95			
3)	N027405-14D		8.16					0	9.20			
4)	N027422-1A		8.28					0	14.80			
5)	2A		10.27					5.60	7.90			
6)	3A		10.22					5.00	7.20			
7)	N027428-1B		7.87					0	12.40			
8)	2B		7.78					0	7.70			
9)	N027429-5D		7.72					0	1.50			
10)	6D		7.85					0	1.50		$P = \frac{(V_{pH\ 8.3})(N_{H_2SO_4})(50,000)}{V_{sx}}$	
11)	7D		8.20					0	8.60			
12)	8D		8.20					0	8.35			
13)	9D		7.67					0	2.10		$T = \frac{(V_{pH\ 4.5})(N_{H_2SO_4})(50,000)}{V_{sx}}$	
14)	10D		7.34					0	4.25			
15)	12D		7.90					0	6.25			
16)	13D		7.83					0	5.80			
17)	14D		7.31					0	5.10			
18)	15D		7.71					0	4.60			
19)	16D		7.74					0	3.40			
20)	17D		7.66					0	3.40			
MS	18D		7.58					0	2.80			
MSD	20D		7.77					0	3.10			
LCS	50DUP		7.69					0	1.50			
	14D MS		8.12	1WST171211B	1mL	0.05N		0	10.20			
	14D MSD		8.44					0	10.10			

Julia Ramit 12/20/2017
RB 12/22/2017

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120764
ASSET #: N027405 / N027428

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/11/2017

Method:

[X] EPA 300.0
[ ] EPA 7199

[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/17/2017

2nd Level Reviewer: RB 12/22/2017 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Chloride concentration, in mg/L, in the orignal sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N027428-001B** concentration in mg/L is calculated as follows:

Chloride, mg/L = 5.9825 * 200

= 1196.5

Reporting result in two significant values,

Chloride, mg/L = 1200

rba 12/20/2017

12/22/2017

ANALYSIS RUN LOG

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 25
Created: 11/29/2017 9:35:17 AM by IC-05
Last Update: 11/30/2017 12:33:04 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	ICV,ICV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	ICB,ICB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	N027210-002A,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027232-001A,SAMP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027210-002A,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027210-002ADUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027210-002AMS,MS,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027210-002AMSD,MSD,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027232-001AMS,MS,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027232-001AMSD,MSD,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	N027232-001ADUP,DUP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished



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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 25
Created: 11/29/2017 9:35:17 AM by IC-05
Last Update: 11/30/2017 12:33:04 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	ICV,ICV,1	11/29/2017 12:22:10 PM	ICV
10	ICB,ICB,1	11/29/2017 12:37:28 PM	ICB
11	MB-H2O,MBLK,1	11/29/2017 12:52:47 PM	METHOD BLANK
12	LCS-H2O,LCS,1	11/29/2017 1:08:05 PM	LCS
13	N027210-002A,SAMP,10	11/29/2017 1:23:23 PM	SAMP,1>10mL
14	N027232-001A,SAMP,2	11/29/2017 1:38:41 PM	SAMP,5>10mL
15	N027210-002A,SAMP,50	11/29/2017 2:44:14 PM	SAMP,0.2>10mL
16	N027210-002ADUP,DUP,50	11/29/2017 2:59:31 PM	DUP,0.2>10mL
17	N027210-002AMS,MS,10	11/29/2017 3:14:50 PM	MS,0.2>10mL
18	N027210-002AMSD,MSD,10	11/29/2017 3:30:07 PM	MSD,0.2>10mL
19	N027232-001AMS,MS,2	11/29/2017 3:45:25 PM	MS,5>10mL
20	N027232-001AMSD,MSD,2	11/29/2017 4:00:43 PM	MSD,5>10mL
21	CCV-1,CCV,1	11/29/2017 4:16:01 PM	CCV
22	CCB-1,CCB,1	11/29/2017 4:31:19 PM	CCB
23	N027232-001ADUP,DUP,2	11/29/2017 4:46:38 PM	DUP,5>10mL
24	CCV-2,CCV,1	11/29/2017 5:01:56 PM	CCV
25	CCB-2,CCB,1	11/29/2017 5:17:14 PM	CCB

Chromeleon © Dionex Corporation, Version 6.80 SR10 Build 2818 (166959)

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 93
Created: 12/11/2017 8:29:57 AM by IC-05
Last Update: 12/11/2017 11:39:29 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027404-003D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027404-003D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027404-005D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027404-005D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027404-010D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027404-010DMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027404-007D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	N027404-007DDUP,DUP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	N027404-002C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	N027404-002CMS,MS,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
26	N027404-002CMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
27	N027404-006C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
28	N027404-009D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
29	N027404-011D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
30	N027404-013D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
31	N027404-015D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
32	N027404-015D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
33	N027404-016D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
34	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
35	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
36	N027404-016D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
37	N027404-017D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
38	N027404-017D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
39	N027404-018C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
40	N027404-020C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
41	N027404-020C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 93
Created: 12/11/2017 8:29:57 AM by IC-05
Last Update: 12/11/2017 11:39:29 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	BLANK,BLANK,1	12/11/2017 8:30:18 AM	BLANK
10	CCV-1,CCV,1	12/11/2017 8:45:36 AM	CCV
11	CCB-1,CCB,1	12/11/2017 9:00:54 AM	CCB
12	MB-H2O,MBLK,1	12/11/2017 9:16:12 AM	METHOD BLANK
13	LCS-H2O,LCS,1	12/11/2017 9:31:30 AM	LCS
14	N027404-003D,SAMP,1000	12/11/2017 9:55:32 AM	SAMP,0.01>10mL
15	N027404-003D,SAMP,200	12/11/2017 10:10:50 AM	SAMP,0.05>10mL
16	N027404-005D,SAMP,1000	12/11/2017 10:26:08 AM	SAMP,0.01>10mL
17	N027404-005D,SAMP,100	12/11/2017 10:41:26 AM	SAMP,0.1>10mL
18	N027404-010D,SAMP,20	12/11/2017 10:56:44 AM	SAMP,0.5>10mL
19	N027404-010DMS,MS,20	12/11/2017 11:12:01 AM	MS,0.5>10mL
20	N027404-007D,SAMP,20	12/11/2017 11:27:19 AM	SAMP,0.5>10mL
21	N027404-007DDUP,DUP,20	12/11/2017 11:42:37 AM	DUP,0.5>10mL
22	CCV-2,CCV,1	12/11/2017 11:57:55 AM	CCV
23	CCB-2,CCB,1	12/11/2017 12:13:13 PM	CCB
24	N027404-002C,SAMP,50	12/11/2017 12:28:30 PM	SAMP,0.2>10mL
25	N027404-002CMS,MS,50	12/11/2017 12:43:48 PM	MS,0.2>10mL
26	N027404-002CMSD,MSD,50	12/11/2017 12:59:06 PM	MSD,0.2>10mL
27	N027404-006C,SAMP,200	12/11/2017 1:14:24 PM	SAMP,0.05>10mL
28	N027404-009D,SAMP,500	12/11/2017 1:29:42 PM	SAMP,0.02>10mL
29	N027404-011D,SAMP,20	12/11/2017 1:45:00 PM	SAMP,0.5>10mL
30	N027404-013D,SAMP,20	12/11/2017 2:00:18 PM	SAMP,0.5>10mL
31	N027404-015D,SAMP,1000	12/11/2017 2:15:36 PM	SAMP,0.01>10mL
32	N027404-015D,SAMP,100	12/11/2017 2:30:54 PM	SAMP,0.1>10mL
33	N027404-016D,SAMP,1000	12/11/2017 2:46:12 PM	SAMP,0.01>10mL
34	CCV-3,CCV,1	12/11/2017 3:01:30 PM	CCV
35	CCB-3,CCB,1	12/11/2017 3:16:48 PM	CCB
36	N027404-016D,SAMP,100	12/11/2017 3:32:05 PM	SAMP,0.1>10mL
37	N027404-017D,SAMP,2000	12/11/2017 3:47:23 PM	SAMP,0.005>10mL
38	N027404-017D,SAMP,100	12/11/2017 4:02:41 PM	SAMP,0.1>10mL
39	N027404-018C,SAMP,20	12/11/2017 4:17:59 PM	SAMP,0.5>10mL
40	N027404-020C,SAMP,2000	12/11/2017 4:33:17 PM	SAMP,0.005>10mL
41	N027404-020C,SAMP,200	12/11/2017 4:48:34 PM	SAMP,0.05>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 93
Created: 12/11/2017 8:29:57 AM by IC-05
Last Update: 12/11/2017 11:39:29 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027405-001D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
43	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
44	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
45	N027405-004C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
46	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
47	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
48	N027405-004CDUP,DUP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
49	N027405-004CMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
50	N027405-004CMSD,MSD,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
51	N027405-002E,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
52	N027405-002EMS,MS,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
53	N027405-014D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
54	N027405-014DMS,MS,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
55	N027405-003E,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
56	N027405-003E,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
57	N027405-002E,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
58	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
59	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
60	N027405-006D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
61	N027405-006D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
62	N027405-007D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
63	N027405-007D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
64	N027405-008D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
65	N027405-008D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
66	N027405-009D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
67	N027405-009D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
68	N027405-011D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
69	N027405-011D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
70	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
71	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
72	N027405-012D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
73	N027405-012D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
74	N027405-013D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
75	N027405-013D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
76	N027405-014D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
77	N027428-001B,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
78	N027428-001B,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
79	N027428-002B,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
80	N027428-002B,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
81	N027405-001D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
82	CCV-7,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 93
Created: 12/11/2017 8:29:57 AM by IC-05
Last Update: 12/11/2017 11:39:29 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027405-001D,SAMP,1	12/11/2017 5:03:52 PM	SAMP,10mL
43	LCS-2,LCS,1	12/11/2017 5:19:10 PM	LCS
44	MB-2,MBLK,1	12/11/2017 5:34:28 PM	METHOD BLANK
45	N027405-004C,SAMP,20	12/11/2017 5:49:46 PM	SAMP,0.5>10mL
46	CCV-4,CCV,1	12/11/2017 6:05:04 PM	CCV
47	CCB-4,CCB,1	12/11/2017 6:20:22 PM	CCB
48	N027405-004CDUP,DUP,20	12/11/2017 6:35:41 PM	DUP,0.5>10mL
49	N027405-004CMS,MS,20	12/11/2017 6:50:59 PM	MS,0.5>10mL
50	N027405-004CMSD,MSD,20	12/11/2017 7:06:17 PM	MSD,0.5>10mL
51	N027405-002E,SAMP,500	12/11/2017 7:21:35 PM	SAMP,0.02>10mL
52	N027405-002EMS,MS,500	12/11/2017 7:36:53 PM	MS,0.02>10mL
53	N027405-014D,SAMP,10	12/11/2017 7:52:11 PM	SAMP,1>10mL
54	N027405-014DMS,MS,10	12/11/2017 8:07:30 PM	MS,1>10mL
55	N027405-003E,SAMP,500	12/11/2017 8:22:48 PM	SAMP,0.02>10mL
56	N027405-003E,SAMP,100	12/11/2017 8:38:05 PM	SAMP,0.1>10mL
57	N027405-002E,SAMP,100	12/11/2017 8:53:23 PM	SAMP,0.1>10mL
58	CCV-5,CCV,1	12/11/2017 9:08:41 PM	CCV
59	CCB-5,CCB,1	12/11/2017 9:23:59 PM	CCB
60	N027405-006D,SAMP,2000	12/11/2017 9:39:17 PM	SAMP,0.005>10mL
61	N027405-006D,SAMP,100	12/11/2017 9:54:35 PM	SAMP,0.1>10mL
62	N027405-007D,SAMP,2000	12/11/2017 10:09:53 PM	SAMP,0.005>10mL
63	N027405-007D,SAMP,100	12/11/2017 10:25:11 PM	SAMP,0.1>10mL
64	N027405-008D,SAMP,2000	12/11/2017 10:40:29 PM	SAMP,0.005>10mL
65	N027405-008D,SAMP,100	12/11/2017 10:55:46 PM	SAMP,0.1>10mL
66	N027405-009D,SAMP,500	12/11/2017 11:11:04 PM	SAMP,0.02>10mL
67	N027405-009D,SAMP,50	12/11/2017 11:26:22 PM	SAMP,0.2>10mL
68	N027405-011D,SAMP,1000	12/11/2017 11:41:40 PM	SAMP,0.01>10mL
69	N027405-011D,SAMP,50	12/11/2017 11:56:58 PM	SAMP,0.2>10mL
70	CCV-6,CCV,1	12/12/2017 12:12:16 AM	CCV
71	CCB-6,CCB,1	12/12/2017 12:27:34 AM	CCB
72	N027405-012D,SAMP,1000	12/12/2017 12:42:52 AM	SAMP,0.01>10mL
73	N027405-012D,SAMP,50	12/12/2017 12:58:11 AM	SAMP,0.2>10mL
74	N027405-013D,SAMP,1000	12/12/2017 1:13:28 AM	SAMP,0.01>10mL
75	N027405-013D,SAMP,50	12/12/2017 1:28:47 AM	SAMP,0.2>10mL
76	N027405-014D,SAMP,50	12/12/2017 1:44:05 AM	SAMP,0.2>10mL
77	N027428-001B,SAMP,200	12/12/2017 1:59:23 AM	SAMP,0.05>10mL
78	N027428-001B,SAMP,50	12/12/2017 2:14:41 AM	SAMP,0.2>10mL
79	N027428-002B,SAMP,500	12/12/2017 2:29:59 AM	SAMP,0.02>10mL
80	N027428-002B,SAMP,50	12/12/2017 2:45:16 AM	SAMP,0.2>10mL
81	N027405-001D,SAMP,500	12/12/2017 3:00:34 AM	SAMP,0.02>10mL
82	CCV-7,CCV,1	12/12/2017 3:15:52 AM	CCV

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 93
Created: 12/11/2017 8:29:57 AM by IC-05
Last Update: 12/11/2017 11:39:29 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
83	CCB-7,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
84	N027405-001D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
85	N027397-001A,SAMP,5	Unknown	1000.0	Anions Default2	Anions_171129	Finished
86	N027397-002A,SAMP,5	Unknown	1000.0	Anions Default2	Anions_171129	Finished
87	N027397-002AMS,MS,5	Unknown	1000.0	Anions Default2	Anions_171129	Finished
88	N027397-002AMSD,MSD,5	Unknown	1000.0	Anions Default2	Anions_171129	Finished
89	N027397-003A,SAMP,5	Unknown	1000.0	Anions Default2	Anions_171129	Finished
90	N027397-003ADUP,DUP,5	Unknown	1000.0	Anions Default2	Anions_171129	Finished
91	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
92	CCV-8,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
93	CCB-8,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 93
Created: 12/11/2017 8:29:57 AM by IC-05
Last Update: 12/11/2017 11:39:29 PM by IC-05

No.	Name	Inj. Date/Time	Comment
83	CCB-7,CCB,1	12/12/2017 3:31:10 AM	CCB
84	N027405-001D,SAMP,50	12/12/2017 3:46:27 AM	SAMP,0.2>10mL
85	N027397-001A,SAMP,5	12/12/2017 4:01:45 AM	SAMP,2>10mL
86	N027397-002A,SAMP,5	12/12/2017 4:24:03 AM	SAMP,2>10mL
87	N027397-002AMS,MS,5	12/12/2017 4:46:21 AM	MS,2>10mL
88	N027397-002AMSD,MSD,5	12/12/2017 5:08:40 AM	MSD,2>10mL
89	N027397-003A,SAMP,5	12/12/2017 5:30:58 AM	SAMP,2>10mL
90	N027397-003ADUP,DUP,5	12/12/2017 5:53:15 AM	DUP,2>10mL
91	BLANK,BLANK,1	12/12/2017 6:15:33 AM	BLANK
92	CCV-8,CCV,1	12/12/2017 6:30:51 AM	CCV
93	CCB-8,CCB,1	12/12/2017 6:46:09 AM	CCB

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INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0532	0.2181	0.4423	1.1375	2.3683	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RLB 12/22/2017

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0709	0.1410	0.2824	0.7275	1.5389	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RLB 12/22/2017

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **ICV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2861491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.042	0.50	2.000	0	102	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.984	0.50	2.000	0	99.2	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.985	0.50	2.000	0	99.3	90	110				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.989	0.50	2.000	0	99.5	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861537**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.982	0.50	2.000	0	99.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861545**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.989	0.50	2.000	0	99.4	90	110				

Sample ID **CCV-8**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.991	0.50	2.000	0	99.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **ICV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2861555**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.936	0.50	4.000	0	98.4	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.857	0.50	4.000	0	96.4	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861586**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.884	0.50	4.000	0	97.1	90	110				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861595**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.855	0.50	4.000	0	96.4	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.922	0.50	4.000	0	98.1	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861608**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.852	0.50	4.000	0	96.3	90	110				

Sample ID **CCV-8**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCV**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.900	0.50	4.000	0	97.5	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
ICB	**ICB**	**300_W_CLP**	**mg/L**		**120764**
Client ID: **ICB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2861492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB-3	**CCB**	**300_W_CLP**	**mg/L**		**120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB-4	**CCB**	**300_W_CLP**	**mg/L**		**120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB-5	**CCB**	**300_W_CLP**	**mg/L**		**120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861531**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB-6	**CCB**	**300_W_CLP**	**mg/L**		**120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861538**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861546**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861554**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **ICB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2861556**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861578**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861587**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/11/2017**	SeqNo: **2861596**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861603**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861609**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120764**
Client ID: **CCB**	Batch ID: **R120764**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2861612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name		Retention Time	Evaluation
CCV-3	Sulfate	7.577	
CCV-4	Sulfate	7.563	
CCV-5	Sulfate	7.564	
CCV-6	Sulfate	7.557	
CCV-7	Sulfate	7.520	
CCV-8	Sulfate	7.557	
	Average	7.556	
	Applied RT Window	7.356 - 7.756	
LCS-R120764_SO4	Sulfate	7.577	PASS
MB-R120764_SO4	Sulfate	N.A.	N.A.
N027405-004CDUP	Sulfate	7.564	PASS
N027405-004CMS	Sulfate	7.563	PASS
N027405-004CMSD	Sulfate	7.567	PASS
N027405-014DMS	Sulfate	7.570	PASS
N027428-001B	Sulfate	7.524	PASS
N027428-002B	Sulfate	7.524	PASS

rba 12/20/2017

12/22/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name		Retention Time	Evaluation
CCV-3	Chloride	3.794	
CCV-4	Chloride	3.790	
CCV-5	Chloride	3.790	
CCV-6	Chloride	3.787	
CCV-7	Chloride	3.773	
CCV-8	Chloride	3.790	
	Average	3.787	
	Applied RT Window	3.587 - 3.987	
LCS-RR120764_CL	Chloride	3.790	PASS
MB-R120764_CL	Chloride	N.A.	N.A.
N027405-004CDUP	Chloride	3.790	PASS
N027405-004CMS	Chloride	3.790	PASS
N027405-004CMSD	Chloride	3.794	PASS
N027405-002EMS	Chloride	3.794	PASS
N027428-001B	Chloride	3.774	PASS
N027428-002B	Chloride	3.774	PASS

rba 12/20/2017

12/22/2017

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 5/23/2017 ; 5/24/2017; 5/25/2017
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Datafile	170523A D36	170523A D37	170523A D38	170524A D17	170524A D18	170525A D45	170525A D46					
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**MDL**	**LOD**	**PQL**
Fluoride	0.020	0.022	0.021	0.020	0.023	0.026	0.024	0.020	0.0021	**0.0065**	0.020	0.10
Chloride	0.133	0.136	0.136	0.133	0.141	0.133	0.136	0.025	0.0029	**0.0091**	0.020	0.50
Nitrite	0.030	0.028	0.027	0.028	0.028	0.027	0.027	0.020	0.0010	**0.0030**	0.010	0.05
Bromide	0.037	0.042	0.043	0.038	0.040	0.032	0.025	0.040	0.0062	**0.0196**	0.040	0.20
Nitrate	0.035	0.034	0.033	0.033	0.033	0.031	0.030	0.020	0.0016	**0.0050**	0.010	0.05
Phosphate	0.047	0.051	0.049	0.046	0.052	0.047	0.059	0.040	0.0043	**0.0135**	0.030	0.10
Sulfate	0.213	0.199	0.208	0.216	0.199	0.201	0.198	0.050	0.0073	**0.0229**	0.050	0.50

MDL/LOD & PQL Verification 2017

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)** Matrix: **WATER**
Method Number: EPA Method 300.0 Unit: mg/L
Analysis Date(s): 5/26/2017
Analyst: Ria Abes

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0065**	0.020	0.024	0.10	0.0906	**91**
Chloride	**0.0091**	0.020	0.130	0.50	0.5635	**113**
Nitrite	**0.0030**	0.010	0.023	0.05	0.0581	**116**
Bromide	**0.0196**	0.040	0.048	0.20	0.194	**97**
Nitrate	**0.0050**	0.010	0.023	0.05	0.0599	**120**
Phosphate	**0.0135**	0.030	0.043	0.10	0.1111	**111**
Sulfate	**0.0229**	0.050	0.195	0.50	0.6178	**124**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120949 **Analyst:** QBM

ASSET #: N027405, N027428, N027429 **Date Analyzed:** 12/19/2017

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 12/22/2017

2nd Level Reviewer RLB 12/22/2017 Date:

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120963 **Analyst:** QBM

ASSET #: N027405, N027428, N027429 **Date Analyzed:** 12/20/2017

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented		X			X	
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

RPD of Nitrate/Nitrite as N in N027405-006CDUP @1x failed.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 12/22/2017

2nd Level Reviewer RJB 12/22/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N027428-002C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.5615	*	5
	=	2.8075	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 2.8 mg/L

RLB 12/22/2017

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

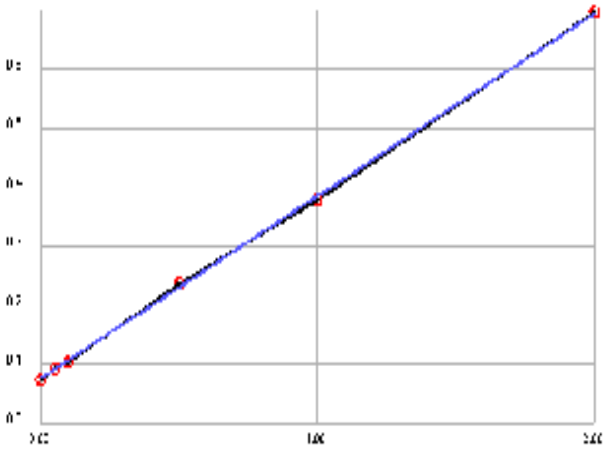
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.3095x + 0.0753
Correlation	.999797

Calibrant	Energy	Set	Conc
1	0.0745	0.0000	-0.0026
2	0.0927	0.0500	0.0562
3	0.1042	0.1000	0.0934
4	0.2365	0.5000	0.5208
5	0.3769	1.0000	0.9745
6	0.6967	2.0000	2.0077

Notes:

12/22/2017

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

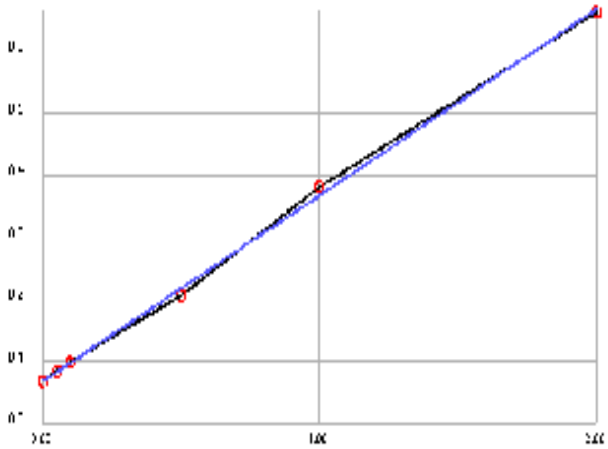
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2996x + 0.0679
Correlation	.999415

Calibrant	Energy	Set	Conc
1	0.0674	0.0000	-0.0018
2	0.0838	0.0500	0.0529
3	0.0988	0.1000	0.1030
4	0.2071	0.5000	0.4645
5	0.3812	1.0000	1.0456
6	0.6629	2.0000	1.9859

Notes:

12/22/2017

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **ICV**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.484	0.050	0.5000	0	96.8	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCV**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.461	0.050	0.5000	0	92.1	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCV**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.475	0.050	0.5000	0	95.1	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCV**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.471	0.050	0.5000	0	94.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **ICV**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873450**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.507	0.050	0.5000	0	101	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **CCV**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873461**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.493	0.050	0.5000	0	98.6	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **CCV**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.498	0.050	0.5000	0	99.5	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **CCV**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.511	0.050	0.5000	0	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **ICB**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCB**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873088**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCB**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCB**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027428
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **ICB**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **CCB**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **CCB**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

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3151 W. Post Rd.
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702-307-2691
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Time start: 12-19-2017 16:35
Time end: 12-19-2017 19:38

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	18:55:00	0.0016		0.0758
2	<BLANK>	18:55:53	0.0035		0.0764
3	<CAL1>	18:56:55	-0.0026	[0]	0.0745
4	<CAL2>	18:57:50	0.0562	[0.05]	0.0927
5	<CAL3>	18:58:52	0.0934	[0.1]	0.1042
6	<CAL4>	18:59:46	0.5208	[0.5]	0.2365
7	<CAL5>	19:00:41	0.9745	[1]	0.3769
8	<CAL6>	19:01:37	2.0077	[2]	0.6967
9	,BLANK,BLANK,1, NOT REPORTED	19:02:37	0.0336		0.0857
10	,ICV,ICV,1,	19:03:32	0.4840		0.2251
11	,ICB,ICB,1,	19:04:34	0.0087		0.0780
12	,MB-H2O,MBLK,1,	19:05:29	-0.0007		0.0751
13	,LCS-H2O,LCS,1,	19:06:23	0.4911		0.2273
14	,N027405-009C,SAMP,10,	19:07:25	0.4488		0.2142
15	,N027405-009CMS,MS,10,	19:08:21	0.9451		0.3678
16	,N027405-009CMSD,MSD,10,	19:09:15	0.9018		0.3544
17	,N027405-012C,SAMP,5,	19:10:17	0.8045		0.3243
18	,N027405-012CDUP,DUP,5,	19:11:12	0.6940		0.2901
19	,N027405-011C,SAMP,1, NOT REPORTED	19:12:08	0.2588		0.1554
20	,N027405-013C,SAMP,5,	19:13:08	0.5454		0.2441
21	,BLANK, NOT REPORTED	19:14:04	0.0032		0.0763
22	,CCV-1,CCV,1,	19:14:59	0.4607		0.2179
23	,CCB-1,CCB,1,	19:15:59	-0.0029		0.0744
24	,N027405-002D,SAMP,1, NOT REPORTED	19:16:55	0.1451		0.1202
25	,N027405-003D,SAMP,1,	19:17:56	0.3764		0.1918
26	,N027405-006C,SAMP,1,	19:18:52	0.5486		0.2451

RLB 12/22/2017 **342**

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N027405-007C,SAMP,1, NOT REPORTED	19:19:46	0.1980		0.1366
28	,N027405-008C,SAMP,1,	19:20:47	0.2594		0.1556
29	,N027405-014C,SAMP,1,	19:21:43	0.1066		0.1083
30	,N027429-001C,SAMP,1,	19:22:31	0.0333		0.0856
31	,N027429-002C,SAMP,1,	19:23:14	0.0281		0.0840
32	,N027428-002C,SAMP,5,	19:24:04	0.5615		0.2491
33	,CCV-2,CCV,1, NOT REPORTED	19:24:46	0.4543		0.2159
34	,CCV-2,CCV,1,	19:25:29	0.4753		0.2224
35	,CCB-2,CCB,1,	19:26:17	-0.0084		0.0727
36	,N027429-003C,SAMP,2, NOT REPORTED	19:27:00	0.8307		0.3324
37	,N027429-005C,SAMP,1,	19:27:48	0.0413		0.0881
38	,N027429-006C,SAMP,1,	19:28:32	0.0504		0.0909
39	,N027406-001A,SAMP,5,	19:29:14	0.5738		0.2529
40	,N027406-002A,SAMP,5,	19:30:03	0.7402		0.3044
41	,N027406-003A,SAMP,5,	19:30:47	0.6846		0.2872
42	,N027406-004A,SAMP,1,	19:31:29	0.0110		0.0787
43	,BLANK, NOT REPORTED	19:32:18	-0.0252		0.0675
44	,BLANK,	19:33:00	-0.0281		0.0666
45	,BLANK,	19:33:43	-0.0259		0.0673
46	,CCV-3,CCV,1,	19:34:31	0.4333		0.2094
47	,CCV-3,CCV,1,	19:35:15	0.4714		0.2212
48	,CCB-3,CCB,1,	19:35:58	-0.0133		0.0712

RLB 12/22/2017

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 12/19/2017
Time Analyzed:4:31 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171201B
Color reagent: R171201C
2% Copper Sulfate: R171201D
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027405-002D		8.40							
N027405-003D		8.48							
N027405-006C		8.49							
N027405-007C		8.65							
N027405-008C		8.42							
N027405-009C		8.15							
N027405-011C		8.09							
N027405-012C		8.33							
N027405-013C		8.16							
N027405-014C		6.64							
N027406-001A		7.59							
N027406-002A		8.68							
N027406-003A		8.40							
N027406-004A		7.92							
N027428-002C		8.38							
N027429-001C		6.91							
N027429-002C		8.13							
N027429-003C		6.9							
N027429-005C		8.33							
N027429-006C		8.17							

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RLB 12/22/2017

Advanced Technology Laboratories, Inc.

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Time start: 12-20-2017 15:49
Time end: 12-20-2017 17:58

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	17:30:12	-0.0045		0.0666
2	<BLANK>	17:31:07	0.0008		0.0682
3	<CAL1>	17:32:07	-0.0018	[0]	0.0674
4	<CAL2>	17:33:02	0.0529	[0.05]	0.0838
5	<CAL3>	17:34:03	0.1030	[0.1]	0.0988
6	<CAL4>	17:34:59	0.4645	[0.5]	0.2071
7	<CAL5>	17:35:53	1.0456	[1]	0.3812
8	<CAL6>	17:36:54	1.9859	[2]	0.6629
9	,BLANK,BLANK,1, NOT REPORTED	17:37:49	0.0436		0.0810
10	,ICV,ICV,1,	17:38:51	0.5065		0.2197
11	,ICB,ICB,1,	17:39:45	0.0085		0.0705
12	,MB-H2O,MBLK,1,	17:40:40	0.0062		0.0698
13	,LCS-H2O,LCS,1,	17:41:35	0.4815		0.2122
14	,N027429-003C,SAMP,2,	17:42:36	0.8283		0.3161
15	,N027429-003CMS,MS,2,	17:43:19	1.3186		0.4630
16	,N027429-003CMSD,MSD,2,	17:44:08	1.3323		0.4671
17	,N027405-006C,SAMP,1,	17:44:57	0.1567		0.1149
18	,N027405-006CDUP,DUP,1,	17:45:40	0.1240		0.1051
19	,N027405-002D,SAMP,1,	17:46:22	0.0242		0.0752
20	,N027405-003D,SAMP,1,	17:47:11	0.0175		0.0732
21	,BLANK, NOT REPORTED	17:47:53	0.0008		0.0682
22	,CCV-1,CCV,1,	17:48:36	0.4928		0.2156
23	,CCB-1,CCB,1,	17:49:25	0.0012		0.0683
24	,N027405-007C,SAMP,1,	17:50:07	0.0202		0.0740
25	,N027405-008C,SAMP,1,	17:50:51	0.0623		0.0866
26	,N027405-011C,SAMP,1,	17:51:38	0.0038		0.0691

RLB 12/22/2017

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N027405-014C,SAMP,1,	17:52:22	0.0422		0.0806
28	,N027428-001C,SAMP,1,	17:53:10	0.0062		0.0698
29	,BLANK, NOT REPORTED	17:53:53	-0.0092		0.0652
30	,BLANK, NOT REPORTED	17:54:35	-0.0148		0.0635
31	,CCV-2,CCV,1, NOT REPORTED	17:55:24	0.4975		0.2170
32	,CCV-2,CCV,1,	17:56:08	0.5105		0.2209
33	,CCB-2,CCB,1,	17:56:49	-0.0022		0.0673

12/22/2017

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 12/20/2017
Time Analyzed:3:45 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171220B
Color reagent: R171220C
2% Copper Sulfate: R171220A
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027405-002D		7.77							
N027405-003D		8.35							
N027405-006C		8.46							
N027405-007C		8.09							
N027405-008C		7.87							
N027405-011C		7.65							
N027405-014C		8.24							
N027428-001C		8.19							
N027429-003C		8.26							

Advanced Technology Laboratories, Inc.
Book # 1

RB 12/22/2017

January 03, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027429

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 07, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburcao for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Subcontracted Analyses:

Oxygen/Deuterium was subcontracted to Zymax- Pittsburg,PA.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (2.7 ug/L) and hexavalent chromium (0 ug/L) for sample N027429-001 (MW-24A-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (8.7 ug/L) and hexavalent chromium (0 ug/L) for sample N027429-002 (MW-906-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 300.0:

Dilution was necessary for most of the samples due to precipitation upon the addition of eluent.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Bromide in QC samples N027429-007DMS, N027429-007DMSD and N027429-012DMS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC

samples N027405-001C-MS1 and N027405-001C-MSD1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N027405-002C-MS2, N027429-012B-MS2 and N027429-012B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (2.7 ug/L) and hexavalent chromium (0 ug/L) for sample N027429-001 (MW-24A-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 2.0 and 1.1 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (8.7 ug/L) and hexavalent chromium (0 ug/L) for sample N027429-002 (MW-906-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 9.0 and 5.0 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Cadmium in QC samples N027429-001B-MS and N027429-001B-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary on some analytes for samples N027429-001, -003, -005, -006, -009, -010, -016, -017, -018 and -020 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027429
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027429-001A	MW-24A-Q417	Groundwater	12/7/2017 9:15:00 AM	12/7/2017	1/3/2018
N027429-001B	MW-24A-Q417	Groundwater	12/7/2017 9:15:00 AM	12/7/2017	1/3/2018
N027429-001C	MW-24A-Q417	Groundwater	12/7/2017 9:15:00 AM	12/7/2017	1/3/2018
N027429-001D	MW-24A-Q417	Groundwater	12/7/2017 9:15:00 AM	12/7/2017	1/3/2018
N027429-002A	MW-906-Q417	Groundwater	12/7/2017 9:25:00 AM	12/7/2017	1/3/2018
N027429-002B	MW-906-Q417	Groundwater	12/7/2017 9:25:00 AM	12/7/2017	1/3/2018
N027429-002C	MW-906-Q417	Groundwater	12/7/2017 9:25:00 AM	12/7/2017	1/3/2018
N027429-002D	MW-906-Q417	Groundwater	12/7/2017 9:25:00 AM	12/7/2017	1/3/2018
N027429-003A	MW-24B-Q417	Groundwater	12/7/2017 10:33:00 AM	12/7/2017	1/3/2018
N027429-003B	MW-24B-Q417	Groundwater	12/7/2017 10:33:00 AM	12/7/2017	1/3/2018
N027429-003C	MW-24B-Q417	Groundwater	12/7/2017 10:33:00 AM	12/7/2017	1/3/2018
N027429-003D	MW-24B-Q417	Groundwater	12/7/2017 10:33:00 AM	12/7/2017	1/3/2018
N027429-004A	MW-721-Q417	Groundwater	12/7/2017 3:30:00 PM	12/7/2017	1/3/2018
N027429-005A	MW-38D-Q417	Groundwater	12/7/2017 1:02:00 PM	12/7/2017	1/3/2018
N027429-005B	MW-38D-Q417	Groundwater	12/7/2017 1:02:00 PM	12/7/2017	1/3/2018
N027429-005C	MW-38D-Q417	Groundwater	12/7/2017 1:02:00 PM	12/7/2017	1/3/2018
N027429-005D	MW-38D-Q417	Groundwater	12/7/2017 1:02:00 PM	12/7/2017	1/3/2018
N027429-006A	MW-38D-SMT-Q417	Groundwater	12/7/2017 12:30:00 PM	12/7/2017	1/3/2018
N027429-006B	MW-38D-SMT-Q417	Groundwater	12/7/2017 12:30:00 PM	12/7/2017	1/3/2018
N027429-006C	MW-38D-SMT-Q417	Groundwater	12/7/2017 12:30:00 PM	12/7/2017	1/3/2018
N027429-006D	MW-38D-SMT-Q417	Groundwater	12/7/2017 12:30:00 PM	12/7/2017	1/3/2018
N027429-007A	MW-38S-Q417	Groundwater	12/7/2017 11:47:00 AM	12/7/2017	1/3/2018
N027429-007B	MW-38S-Q417	Groundwater	12/7/2017 11:47:00 AM	12/7/2017	1/3/2018
N027429-007C	MW-38S-Q417	Groundwater	12/7/2017 11:47:00 AM	12/7/2017	1/3/2018
N027429-007D	MW-38S-Q417	Groundwater	12/7/2017 11:47:00 AM	12/7/2017	1/3/2018
N027429-008A	MW-38S-SMT-Q417	Groundwater	12/7/2017 11:31:00 AM	12/7/2017	1/3/2018
N027429-008B	MW-38S-SMT-Q417	Groundwater	12/7/2017 11:31:00 AM	12/7/2017	1/3/2018
N027429-008C	MW-38S-SMT-Q417	Groundwater	12/7/2017 11:31:00 AM	12/7/2017	1/3/2018
N027429-008D	MW-38S-SMT-Q417	Groundwater	12/7/2017 11:31:00 AM	12/7/2017	1/3/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027429
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027429-009A	MW-72-080-Q417	Groundwater	12/7/2017 2:24:00 PM	12/7/2017	1/3/2018
N027429-009B	MW-72-080-Q417	Groundwater	12/7/2017 2:24:00 PM	12/7/2017	1/3/2018
N027429-009C	MW-72-080-Q417	Groundwater	12/7/2017 2:24:00 PM	12/7/2017	1/3/2018
N027429-009D	MW-72-080-Q417	Groundwater	12/7/2017 2:24:00 PM	12/7/2017	1/3/2018
N027429-010A	MW-59-100-Q417	Groundwater	12/7/2017 2:18:00 PM	12/7/2017	1/3/2018
N027429-010B	MW-59-100-Q417	Groundwater	12/7/2017 2:18:00 PM	12/7/2017	1/3/2018
N027429-010C	MW-59-100-Q417	Groundwater	12/7/2017 2:18:00 PM	12/7/2017	1/3/2018
N027429-010D	MW-59-100-Q417	Groundwater	12/7/2017 2:18:00 PM	12/7/2017	1/3/2018
N027429-011A	MW-49-365-EB-Q417	Groundwater	12/7/2017 12:30:00 PM	12/7/2017	1/3/2018
N027429-012A	MW-09-Q417	Groundwater	12/7/2017 12:53:00 PM	12/7/2017	1/3/2018
N027429-012B	MW-09-Q417	Groundwater	12/7/2017 12:53:00 PM	12/7/2017	1/3/2018
N027429-012C	MW-09-Q417	Groundwater	12/7/2017 12:53:00 PM	12/7/2017	1/3/2018
N027429-012D	MW-09-Q417	Groundwater	12/7/2017 12:53:00 PM	12/7/2017	1/3/2018
N027429-013A	MW-10-Q417	Groundwater	12/7/2017 10:20:00 AM	12/7/2017	1/3/2018
N027429-013B	MW-10-Q417	Groundwater	12/7/2017 10:20:00 AM	12/7/2017	1/3/2018
N027429-013C	MW-10-Q417	Groundwater	12/7/2017 10:20:00 AM	12/7/2017	1/3/2018
N027429-013D	MW-10-Q417	Groundwater	12/7/2017 10:20:00 AM	12/7/2017	1/3/2018
N027429-014A	MW-904-Q417	Groundwater	12/7/2017 10:30:00 AM	12/7/2017	1/3/2018
N027429-014B	MW-904-Q417	Groundwater	12/7/2017 10:30:00 AM	12/7/2017	1/3/2018
N027429-014C	MW-904-Q417	Groundwater	12/7/2017 10:30:00 AM	12/7/2017	1/3/2018
N027429-014D	MW-904-Q417	Groundwater	12/7/2017 10:30:00 AM	12/7/2017	1/3/2018
N027429-015A	MW-11-Q417	Groundwater	12/7/2017 11:48:00 AM	12/7/2017	1/3/2018
N027429-015B	MW-11-Q417	Groundwater	12/7/2017 11:48:00 AM	12/7/2017	1/3/2018
N027429-015C	MW-11-Q417	Groundwater	12/7/2017 11:48:00 AM	12/7/2017	1/3/2018
N027429-015D	MW-11-Q417	Groundwater	12/7/2017 11:48:00 AM	12/7/2017	1/3/2018
N027429-016A	MW-47-055-Q417	Groundwater	12/7/2017 3:10:00 PM	12/7/2017	1/3/2018
N027429-016B	MW-47-055-Q417	Groundwater	12/7/2017 3:10:00 PM	12/7/2017	1/3/2018
N027429-016C	MW-47-055-Q417	Groundwater	12/7/2017 3:10:00 PM	12/7/2017	1/3/2018
N027429-016D	MW-47-055-Q417	Groundwater	12/7/2017 3:10:00 PM	12/7/2017	1/3/2018
N027429-017A	MW-914-Q417	Groundwater	12/7/2017 3:20:00 PM	12/7/2017	1/3/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027429
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027429-017B	MW-914-Q417	Groundwater	12/7/2017 3:20:00 PM	12/7/2017	1/3/2018
N027429-017C	MW-914-Q417	Groundwater	12/7/2017 3:20:00 PM	12/7/2017	1/3/2018
N027429-017D	MW-914-Q417	Groundwater	12/7/2017 3:20:00 PM	12/7/2017	1/3/2018
N027429-018A	MW-47-115-Q417	Groundwater	12/7/2017 3:10:00 PM	12/7/2017	1/3/2018
N027429-018B	MW-47-115-Q417	Groundwater	12/7/2017 3:10:00 PM	12/7/2017	1/3/2018
N027429-018C	MW-47-115-Q417	Groundwater	12/7/2017 3:10:00 PM	12/7/2017	1/3/2018
N027429-018D	MW-47-115-Q417	Groundwater	12/7/2017 3:10:00 PM	12/7/2017	1/3/2018
N027429-019A	MW-49-135-EB-Q417	Groundwater	12/7/2017 1:20:00 PM	12/7/2017	1/3/2018
N027429-020A	MW-49-135-Q417	Groundwater	12/7/2017 2:12:00 PM	12/7/2017	1/3/2018
N027429-020B	MW-49-135-Q417	Groundwater	12/7/2017 2:12:00 PM	12/7/2017	1/3/2018
N027429-020C	MW-49-135-Q417	Groundwater	12/7/2017 2:12:00 PM	12/7/2017	1/3/2018
N027429-020D	MW-49-135-Q417	Groundwater	12/7/2017 2:12:00 PM	12/7/2017	1/3/2018

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-001

Client Sample ID: MW-24A-Q417
Collection Date: 12/7/2017 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	1400	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 9:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	1400	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24B-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 10:33:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 1:02:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-SMT-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 12:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 11:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	1400	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 11:31:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	1400	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 2:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-59-100-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 2:18:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 12:53:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	2500	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-013

Client Sample ID: MW-10-Q417
Collection Date: 12/7/2017 10:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	2000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-014

Client Sample ID: MW-904-Q417
Collection Date: 12/7/2017 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	2000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-015

Client Sample ID: MW-11-Q417
Collection Date: 12/7/2017 11:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	2000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-016

Client Sample ID: MW-47-055-Q417
Collection Date: 12/7/2017 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	3600	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-914-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 3:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	3600	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-47-115-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 3:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-020

Client Sample ID: MW-49-135-Q417
Collection Date: 12/7/2017 2:12:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	**N027429-005DDUP**	SampType:	**DUP**	TestCode:	**120.1_WPGE**	Units:	**umhos/cm**	Prep Date:		RunNo:	**120747**
Client ID:	**ZZZZZZ**	Batch ID:	**R120747**	TestNo:	**EPA 120.1**			Analysis Date:	**12/8/2017**	SeqNo:	**2860676**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	15840.000	0.10						15870	0.189	10	

Sample ID	**N027430-002CDUP**	SampType:	**DUP**	TestCode:	**120.1_WPGE**	Units:	**umhos/cm**	Prep Date:		RunNo:	**120747**
Client ID:	**ZZZZZZ**	Batch ID:	**R120747**	TestNo:	**EPA 120.1**			Analysis Date:	**12/8/2017**	SeqNo:	**2860691**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	17930.000	0.10						17890	0.223	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 1:02:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171211E**	QC Batch: **66003**				PrepDate	**12/11/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	13000	100	100		mg/L	1	12/11/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-SMT-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 12:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212E**	QC Batch: **66024**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	12000	100	100		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 11:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212E**	QC Batch: **66024**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	890	10	10		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 11:31:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212E**	QC Batch: **66024**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	870	10	10		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 2:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212E**	QC Batch: **66024**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	8700	100	100		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-59-100-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 2:18:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212E**	QC Batch: **66024**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	7800	100	100		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 12:53:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212E**	QC Batch: **66024**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1700	20	20		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 10:20:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212E**	QC Batch: **66024**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1400	13	13		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 10:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212E**	QC Batch: **66024**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1400	13	13		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-015

Client Sample ID: MW-11-Q417
Collection Date: 12/7/2017 11:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212E**	QC Batch: **66024**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1300	13	13		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-47-055-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 3:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212E**	QC Batch: **66024**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2200	25	25		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-914-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 3:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2600	25	25		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-47-115-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 3:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**			PrepDate	**12/12/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	8000	100	100		mg/L	1	12/12/2017 12:55 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-135-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 2:12:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**			PrepDate	**12/12/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	7400	100	100		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-66003	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/11/2017	RunNo:	120759
Client ID:	LCSW	Batch ID:	66003	TestNo:	SM2540C			Analysis Date:	12/11/2017	SeqNo:	2861054

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	959.000	10	1000	0	95.9	80	120				

Sample ID	MB-66003	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/11/2017	RunNo:	120759
Client ID:	PBW	Batch ID:	66003	TestNo:	SM2540C			Analysis Date:	12/11/2017	SeqNo:	2861055

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N027429-005DDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/11/2017	RunNo:	120759
Client ID:	ZZZZZZ	Batch ID:	66003	TestNo:	SM2540C			Analysis Date:	12/11/2017	SeqNo:	2861066

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	12040.000	100						12550	4.15	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66024** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/12/2017** RunNo: **120817**
Client ID: **LCSW** Batch ID: **66024** TestNo: **SM2540C** Analysis Date: **12/12/2017** SeqNo: **2865308**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	946.000	10	1000	0	94.6	80	120				

Sample ID **MB-66024** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/12/2017** RunNo: **120817**
Client ID: **PBW** Batch ID: **66024** TestNo: **SM2540C** Analysis Date: **12/12/2017** SeqNo: **2865309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N027429-009DDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/12/2017** RunNo: **120817**
Client ID: **ZZZZZZ** Batch ID: **66024** TestNo: **SM2540C** Analysis Date: **12/12/2017** SeqNo: **2865314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	8960.000	100						8690	3.06	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-66025	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/12/2017	RunNo:	120818
Client ID:	LCSW	Batch ID:	66025	TestNo:	SM2540C			Analysis Date:	12/12/2017	SeqNo:	2865479

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	936.000	10	1000	0	93.6	80	120				

Sample ID	MB-66025	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/12/2017	RunNo:	120818
Client ID:	PBW	Batch ID:	66025	TestNo:	SM2540C			Analysis Date:	12/12/2017	SeqNo:	2865480

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N027430-002CDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/12/2017	RunNo:	120818
Client ID:	ZZZZZZ	Batch ID:	66025	TestNo:	SM2540C			Analysis Date:	12/12/2017	SeqNo:	2865485

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	14560.000	100						13930	4.42	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-001

Client Sample ID: MW-24A-Q417
Collection Date: 12/7/2017 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171212A** QC Batch: **R120835**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/12/2017 02:54 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	2.7	0.019	1.0		µg/L	1	12/20/2017 06:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 9:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_171212A** QC Batch: **R120835** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/12/2017 03:32 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_171220A** QC Batch: **65978** PrepDate **12/8/2017**							Analyst: **CEI**
Chromium	8.7	0.019	1.0		µg/L	1	12/20/2017 05:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-003

Client Sample ID: MW-24B-Q417
Collection Date: 12/7/2017 10:33:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171212A**	QC Batch: **R120835**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	250	1.7	10		µg/L	50	12/12/2017 03:50 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	250	0.096	5.0		µg/L	5	12/20/2017 06:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-721-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171212A**	QC Batch: **R120835**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/12/2017 04:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-005

Client Sample ID: MW-38D-Q417
Collection Date: 12/7/2017 1:02:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171212A** QC Batch: **R120835**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	21	0.17	1.0		µg/L	5	12/12/2017 04:28 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	18	0.019	1.0		µg/L	1	12/20/2017 07:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-006

Client Sample ID: MW-38D-SMT-Q417
Collection Date: 12/7/2017 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171212A** QC Batch: **R120835**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	20	0.17	1.0		µg/L	5	12/12/2017 04:47 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	18	0.019	1.0		µg/L	1	12/20/2017 07:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-007

Client Sample ID: MW-38S-Q417
Collection Date: 12/7/2017 11:47:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171212A** QC Batch: **R120835**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	2.9	0.033	0.20		µg/L	1	12/12/2017 05:25 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	3.1	0.019	1.0		µg/L	1	12/20/2017 07:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-008

Client Sample ID: MW-38S-SMT-Q417
Collection Date: 12/7/2017 11:31:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171212A** QC Batch: **R120835**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	2.3	0.033	0.20		µg/L	1	12/12/2017 05:44 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	2.5	0.019	1.0		µg/L	1	12/20/2017 08:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-009

Client Sample ID: MW-72-080-Q417
Collection Date: 12/7/2017 2:24:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171212A** QC Batch: **R120835**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	94	0.66	4.0		µg/L	20	12/12/2017 02:25 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	95	0.096	5.0		µg/L	5	12/20/2017 08:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-010

Client Sample ID: MW-59-100-Q417
Collection Date: 12/7/2017 2:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171212A**	QC Batch: **R120835**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	3600	33	200		µg/L	1000	12/12/2017 06:03 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180102A**	QC Batch: **65978**			PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	3900	0.48	25		µg/L	25	1/2/2018 03:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-365-EB-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 12:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171213A**	QC Batch: **R120837**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/13/2017 09:39 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-012

Client Sample ID: MW-09-Q417
Collection Date: 12/7/2017 12:53:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171213A** QC Batch: **R120837**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	150	0.66	4.0		µg/L	20	12/13/2017 11:04 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	140	0.019	1.0		µg/L	1	12/20/2017 08:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-013

Client Sample ID: MW-10-Q417
Collection Date: 12/7/2017 10:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171213A** QC Batch: **R120837**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	130	0.66	4.0		µg/L	20	12/13/2017 11:23 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A	**EPA 6020**			
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	130	0.019	1.0		µg/L	1	12/20/2017 06:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-014

Client Sample ID: MW-904-Q417
Collection Date: 12/7/2017 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171213A** QC Batch: **R120837**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	130	0.66	4.0		µg/L	20	12/13/2017 11:42 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	120	0.019	1.0		µg/L	1	12/20/2017 06:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-015

Client Sample ID: MW-11-Q417
Collection Date: 12/7/2017 11:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171213A** QC Batch: **R120837**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	64	0.33	2.0		µg/L	10	12/13/2017 12:01 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	61	0.019	1.0		µg/L	1	12/20/2017 08:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-016

Client Sample ID: MW-47-055-Q417
Collection Date: 12/7/2017 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171213A** QC Batch: **R120837**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	18	0.17	1.0		µg/L	5	12/13/2017 01:07 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	20	0.019	1.0		µg/L	1	12/20/2017 09:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-017

Client Sample ID: MW-914-Q417
Collection Date: 12/7/2017 3:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171213A** QC Batch: **R120837**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	19	0.17	1.0		µg/L	5	12/13/2017 01:26 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	20	0.019	1.0		µg/L	1	12/20/2017 09:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-018

Client Sample ID: MW-47-115-Q417
Collection Date: 12/7/2017 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171213A** QC Batch: **R120837**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	18	0.17	1.0		µg/L	5	12/13/2017 01:45 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	16	0.019	1.0		µg/L	1	12/20/2017 09:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-135-EB-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 1:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171213A**	QC Batch: **R120837**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/13/2017 09:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-020

Client Sample ID: MW-49-135-Q417
Collection Date: 12/7/2017 2:12:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171213A** QC Batch: **R120837**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	2.9	0.17	1.0		µg/L	5	12/13/2017 12:20 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	2.7	0.019	1.0		µg/L	1	12/20/2017 09:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R120835**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **PBW**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R120835**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **LCSW**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866105**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.211	0.20	5.000	0	104	90	110				

Sample ID **N027465-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.043	0.20	1.000	0	104	90	110				

Sample ID **N027465-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.097	0.20	1.000	0.05640	104	90	110				

Sample ID **N027465-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.081	0.20	1.000	0	108	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027431-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866117**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	505.875	10	250.0	249.8	102	90	110				

Sample ID **N027431-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	248.115	10						249.8	0.693	20	

Sample ID **N027429-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866120**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	199.672	4.0	100.0	94.25	105	90	110				

Sample ID **N027429-009AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866121**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	198.092	4.0	100.0	94.25	104	90	110	199.7	0.794	20	

Sample ID **N027429-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.081	0.20	1.000	0	108	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027429-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120835
Client ID:	ZZZZZZ	Batch ID:	R120835	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866127

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.132	0.20	1.000	0.07800	105	90	110				

Sample ID	N027429-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120835
Client ID:	ZZZZZZ	Batch ID:	R120835	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866129

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	512.690	10	250.0	248.5	106	90	110				

Sample ID	N027429-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120835
Client ID:	ZZZZZZ	Batch ID:	R120835	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866131

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.033	0.20	1.000	0	103	90	110				

Sample ID	N027429-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120835
Client ID:	ZZZZZZ	Batch ID:	R120835	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866133

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	46.073	1.0	25.00	20.60	102	90	110				

Sample ID	N027429-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120835
Client ID:	ZZZZZZ	Batch ID:	R120835	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866135

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.442	1.0	25.00	20.10	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027429-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120835
Client ID:	ZZZZZZ	Batch ID:	R120835	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866139

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.171	0.20	5.000	2.945	105	90	110				

Sample ID	N027429-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120835
Client ID:	ZZZZZZ	Batch ID:	R120835	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866141

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.530	0.20	5.000	2.266	105	90	110				

Sample ID	N027429-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120835
Client ID:	ZZZZZZ	Batch ID:	R120835	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866143

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8927.300	200	5000	3603	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R120837	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120837
Client ID:	PBW	Batch ID:	R120837	TestNo:	EPA 218.6			Analysis Date:	12/13/2017	SeqNo:	2866488

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	LCS-R120837	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120837
Client ID:	LCSW	Batch ID:	R120837	TestNo:	EPA 218.6			Analysis Date:	12/13/2017	SeqNo:	2866489

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.224	0.20	5.000	0	104	90	110				

Sample ID	N027429-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120837
Client ID:	ZZZZZZ	Batch ID:	R120837	TestNo:	EPA 218.6			Analysis Date:	12/13/2017	SeqNo:	2866492

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.086	0.20	1.000	0	109	90	110				

Sample ID	N027429-019AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120837
Client ID:	ZZZZZZ	Batch ID:	R120837	TestNo:	EPA 218.6			Analysis Date:	12/13/2017	SeqNo:	2866494

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.049	0.20	1.000	0	105	90	110				

Sample ID	N027429-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120837
Client ID:	ZZZZZZ	Batch ID:	R120837	TestNo:	EPA 218.6			Analysis Date:	12/13/2017	SeqNo:	2866499

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	249.882	4.0	100.0	146.0	104	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027429-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120837**
Client ID: **ZZZZZZ**	Batch ID: **R120837**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2017**	SeqNo: **2866501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	236.978	4.0	100.0	131.8	105	90	110				

Sample ID **N027429-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120837**
Client ID: **ZZZZZZ**	Batch ID: **R120837**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2017**	SeqNo: **2866503**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	236.250	4.0	100.0	130.6	106	90	110				

Sample ID **N027429-015AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120837**
Client ID: **ZZZZZZ**	Batch ID: **R120837**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2017**	SeqNo: **2866505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	116.314	2.0	50.00	63.53	106	90	110				

Sample ID **N027429-020AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120837**
Client ID: **ZZZZZZ**	Batch ID: **R120837**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2017**	SeqNo: **2866507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.231	1.0	5.000	2.921	106	90	110				

Sample ID **N027429-016AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120837**
Client ID: **ZZZZZZ**	Batch ID: **R120837**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2017**	SeqNo: **2866511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.181	1.0	25.00	18.27	108	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027429-017AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120837**
Client ID: **ZZZZZZ** Batch ID: **R120837** TestNo: **EPA 218.6** Analysis Date: **12/13/2017** SeqNo: **2866513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.040	1.0	25.00	18.75	105	90	110				

Sample ID **N027429-018AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120837**
Client ID: **ZZZZZZ** Batch ID: **R120837** TestNo: **EPA 218.6** Analysis Date: **12/13/2017** SeqNo: **2866515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	44.123	1.0	25.00	18.31	103	90	110				

Sample ID **N027456-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120837**
Client ID: **ZZZZZZ** Batch ID: **R120837** TestNo: **EPA 218.6** Analysis Date: **12/13/2017** SeqNo: **2866516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	320.130	20						318.4	0.526	20	

Sample ID **N027429-013AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120837**
Client ID: **ZZZZZZ** Batch ID: **R120837** TestNo: **EPA 218.6** Analysis Date: **12/13/2017** SeqNo: **2866517**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	236.376	4.0	100.0	131.8	105	90	110	237.0	0.254	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-65978	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120980
Client ID:	PBW	Batch ID:	65978	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874676

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.032	1.0									

Sample ID	LCS-65978	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120980
Client ID:	LCSW	Batch ID:	65978	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874677

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.871	1.0	10.00	0	98.7	85	115				

Sample ID	N027429-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120980
Client ID:	ZZZZZZ	Batch ID:	65978	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874683

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.906	1.0	10.00	2.748	91.6	75	125				

Sample ID	N027429-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120980
Client ID:	ZZZZZZ	Batch ID:	65978	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874685

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.807	1.0	10.00	2.748	90.6	75	125	11.91	0.831	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 1:02:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	30	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-SMT-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 12:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	30	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 11:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	170	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 11:31:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	170	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 2:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	42	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-59-100-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 2:18:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	85	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-012

Client Sample ID: MW-09-Q417
Collection Date: 12/7/2017 12:53:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	130	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 10:20:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	120	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 10:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	100	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-015

Client Sample ID: MW-11-Q417
Collection Date: 12/7/2017 11:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	92	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-47-055-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 3:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	68	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-914-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 3:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	68	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-47-115-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 3:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	56	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-135-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 2:12:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	62	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R120785**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120785**
Client ID: **LCSW**	Batch ID: **R120785**	TestNo: **SM 2320 B**		Analysis Date: **12/13/2017**	SeqNo: **2863164**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	99.398	5.0	100.0	0	99.4	85	115				

Sample ID **MB-R120785**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120785**
Client ID: **PBW**	Batch ID: **R120785**	TestNo: **SM 2320 B**		Analysis Date: **12/13/2017**	SeqNo: **2863165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N027429-005DDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120785**
Client ID: **ZZZZZZ**	Batch ID: **R120785**	TestNo: **SM 2320 B**		Analysis Date: **12/13/2017**	SeqNo: **2863173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	30.120	5.0						30.12	0	30	

Sample ID **N027429-014DMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120785**
Client ID: **ZZZZZZ**	Batch ID: **R120785**	TestNo: **SM 2320 B**		Analysis Date: **12/13/2017**	SeqNo: **2863182**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	204.819	5.0	100.0	102.4	102	75	125				

Sample ID **N027429-014DMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120785**
Client ID: **ZZZZZZ**	Batch ID: **R120785**	TestNo: **SM 2320 B**		Analysis Date: **12/13/2017**	SeqNo: **2863183**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	202.811	5.0	100.0	102.4	100	75	125	204.8	0.985	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-005

Client Sample ID: MW-38D-Q417
Collection Date: 12/7/2017 1:02:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/12/2017 06:02 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Chloride	7500	18	1000		mg/L	2000	12/14/2017 10:12 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Sulfate	720	2.3	50		mg/L	100	12/14/2017 10:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-006

Client Sample ID: MW-38D-SMT-Q417
Collection Date: 12/7/2017 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/12/2017 06:17 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Chloride	7500	18	1000		mg/L	2000	12/14/2017 10:43 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Sulfate	730	2.3	50		mg/L	100	12/14/2017 10:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-007

Client Sample ID: MW-38S-Q417
Collection Date: 12/7/2017 11:47:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**			PrepDate				Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/12/2017 04:09 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Chloride	300	0.91	50		mg/L	100	12/14/2017 11:13 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Sulfate	160	0.46	10		mg/L	20	12/14/2017 11:29 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-008

Client Sample ID: MW-38S-SMT-Q417
Collection Date: 12/7/2017 11:31:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/12/2017 05:46 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Chloride	300	0.91	50		mg/L	100	12/14/2017 11:44 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Sulfate	160	0.46	10		mg/L	20	12/14/2017 11:59 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-009

Client Sample ID: MW-72-080-Q417
Collection Date: 12/7/2017 2:24:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/12/2017 07:03 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Chloride	5900	18	1000		mg/L	2000	12/14/2017 02:52 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Sulfate	700	2.3	50		mg/L	100	12/14/2017 03:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-010

Client Sample ID: MW-59-100-Q417
Collection Date: 12/7/2017 2:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**				PrepDate			Analyst: **RAB**
Bromide	ND	0.20	5.0		mg/L	10	12/12/2017 07:18 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Chloride	4700	9.1	500		mg/L	1000	12/14/2017 03:53 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Sulfate	720	2.3	50		mg/L	100	12/14/2017 04:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-012

Client Sample ID: MW-09-Q417
Collection Date: 12/7/2017 12:53:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**				PrepDate			Analyst: **RAB**
Bromide	ND	0.039	1.0		mg/L	2	12/12/2017 04:24 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Chloride	770	1.8	100		mg/L	200	12/14/2017 04:24 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Sulfate	230	0.46	10		mg/L	20	12/14/2017 04:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-013

Client Sample ID: MW-10-Q417
Collection Date: 12/7/2017 10:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/12/2017 07:34 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Chloride	520	0.91	50		mg/L	100	12/14/2017 01:20 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Sulfate	250	0.46	10		mg/L	20	12/14/2017 02:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-014

Client Sample ID: MW-904-Q417
Collection Date: 12/7/2017 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/12/2017 07:49 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Chloride	520	0.91	50		mg/L	100	12/14/2017 04:56 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Sulfate	260	0.46	10		mg/L	20	12/14/2017 05:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-015

Client Sample ID: MW-11-Q417
Collection Date: 12/7/2017 11:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/12/2017 08:04 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Chloride	600	1.8	100		mg/L	200	12/14/2017 05:27 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Sulfate	190	0.46	10		mg/L	20	12/14/2017 05:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-016

Client Sample ID: MW-47-055-Q417
Collection Date: 12/7/2017 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/12/2017 08:19 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Chloride	1400	4.6	250		mg/L	500	12/14/2017 05:57 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Sulfate	240	0.46	10		mg/L	20	12/14/2017 06:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-017

Client Sample ID: MW-914-Q417
Collection Date: 12/7/2017 3:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/12/2017 08:35 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Chloride	1300	4.6	250		mg/L	500	12/14/2017 07:29 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Sulfate	240	0.46	10		mg/L	20	12/14/2017 07:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-018

Client Sample ID: MW-47-115-Q417
Collection Date: 12/7/2017 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/12/2017 08:50 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Chloride	4300	9.1	500		mg/L	1000	12/14/2017 08:00 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Sulfate	770	2.3	50		mg/L	100	12/14/2017 08:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-020

Client Sample ID: MW-49-135-Q417
Collection Date: 12/7/2017 2:12:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/12/2017 09:05 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Chloride	4200	9.1	500		mg/L	1000	12/14/2017 08:30 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Sulfate	820	2.3	50		mg/L	100	12/14/2017 08:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	MB-R120770_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770		
Client ID:	PBW	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862144		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide	ND	0.50											

Sample ID	LCS-R120770_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770		
Client ID:	LCSW	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862145		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide	1.272	0.50	1.250	0	102	90	110						

Sample ID	N027429-007DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770		
Client ID:	ZZZZZZ	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862153		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide	0.920	0.50	1.250	0	73.6	80	120				S		

Sample ID	N027429-007DMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770		
Client ID:	ZZZZZZ	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862154		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide	0.990	0.50	1.250	0	79.2	80	120	0.9202	7.33	20	S		

Sample ID	N027429-012DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770		
Client ID:	ZZZZZZ	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862155		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide	1.273	1.0	2.500	0	50.9	80	120				S		

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	N027429-007DDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770
Client ID:	ZZZZZZ	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862156

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50						0	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R120853_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	PBW	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868189

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R120853_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	LCSW	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868190

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.973	0.50	2.000	0	98.6	90	110				

Sample ID	N027429-008DMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868197

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	510.320	50	200.0	296.9	107	80	120				

Sample ID	N027429-013DMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868199

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	728.160	50	200.0	518.5	105	80	120				

Sample ID	N027429-013DMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868200

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	736.410	50	200.0	518.5	109	80	120	728.2	1.13	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N027429-015DDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868211

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	592.540	100						597.0	0.753	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R120853_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	PBW	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868229

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R120853_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	LCSW	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868230

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.773	0.50	4.000	0	94.3	90	110				

Sample ID	N027429-008DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868237

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	236.256	10	80.00	156.1	100	80	120				

Sample ID	N027429-013DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868239

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	328.584	10	80.00	245.8	103	80	120				

Sample ID	N027429-013DMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868240

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	327.796	10	80.00	245.8	103	80	120	328.6	0.240	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N027429-015DDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868251

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	188.270	10						187.5	0.425	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24A-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 9:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171219B**	QC Batch: **R120949**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 9:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION				**SM4500-NO3F**			
RunID: **NV00922-WC_171219B**	QC Batch: **R120949**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24B-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 10:33:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171220C**	QC Batch: **R120963**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.7	0.044	0.10		mg/L	2	12/20/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 1:02:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171219B**	QC Batch: **R120949**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-SMT-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 12:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171219B**	QC Batch: **R120949**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.050	0.022	0.050		mg/L	1	12/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 11:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	2.8	0.11	0.25		mg/L	5	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-008

Client Sample ID: MW-38S-SMT-Q417
Collection Date: 12/7/2017 11:31:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	3.0	0.11	0.25		mg/L	5	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 2:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.75	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-59-100-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 2:18:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	2.3	0.11	0.25		mg/L	5	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 12:53:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B** QC Batch: **R121010**			PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	11	0.22	0.50		mg/L	10	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 10:20:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	13	0.22	0.50		mg/L	10	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-014

Client Sample ID: MW-904-Q417
Collection Date: 12/7/2017 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	12	0.22	0.50		mg/L	10	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 11:48:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	6.0	0.22	0.50		mg/L	10	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R120949	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120949
Client ID:	PBW	Batch ID:	R120949	TestNo:	SM4500-NO3			Analysis Date:	12/19/2017	SeqNo:	2873078

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R120949	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120949
Client ID:	LCSW	Batch ID:	R120949	TestNo:	SM4500-NO3			Analysis Date:	12/19/2017	SeqNo:	2873079

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.491	0.050	0.5000	0	98.2	85	115				

Sample ID	N027405-009CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120949
Client ID:	ZZZZZZ	Batch ID:	R120949	TestNo:	SM4500-NO3			Analysis Date:	12/19/2017	SeqNo:	2873081

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.451	0.50	5.000	4.488	99.3	75	125				

Sample ID	N027405-009CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120949
Client ID:	ZZZZZZ	Batch ID:	R120949	TestNo:	SM4500-NO3			Analysis Date:	12/19/2017	SeqNo:	2873082

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.018	0.50	5.000	4.488	90.6	75	125	9.451	4.69	20	

Sample ID	N027405-012CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120949
Client ID:	ZZZZZZ	Batch ID:	R120949	TestNo:	SM4500-NO3			Analysis Date:	12/19/2017	SeqNo:	2873084

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.470	0.25						4.022	14.7	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R120963	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120963
Client ID:	PBW	Batch ID:	R120963	TestNo:	SM4500-NO3			Analysis Date:	12/20/2017	SeqNo:	2873452

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R120963	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120963
Client ID:	LCSW	Batch ID:	R120963	TestNo:	SM4500-NO3			Analysis Date:	12/20/2017	SeqNo:	2873453

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.482	0.050	0.5000	0	96.3	85	115				

Sample ID	N027429-003CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120963
Client ID:	ZZZZZZ	Batch ID:	R120963	TestNo:	SM4500-NO3			Analysis Date:	12/20/2017	SeqNo:	2873455

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.637	0.10	1.000	1.657	98.1	75	125				

Sample ID	N027429-003CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120963
Client ID:	ZZZZZZ	Batch ID:	R120963	TestNo:	SM4500-NO3			Analysis Date:	12/20/2017	SeqNo:	2873456

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.665	0.10	1.000	1.657	101	75	125	2.637	1.03	20	

Sample ID	N027405-006CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	120963
Client ID:	ZZZZZZ	Batch ID:	R120963	TestNo:	SM4500-NO3			Analysis Date:	12/20/2017	SeqNo:	2873458

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.124	0.050						0.1567	23.3	20	R

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R121010	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121010
Client ID:	PBW	Batch ID:	R121010	TestNo:	SM4500-NO3			Analysis Date:	12/21/2017	SeqNo:	2876073

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R121010	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121010
Client ID:	LCSW	Batch ID:	R121010	TestNo:	SM4500-NO3			Analysis Date:	12/21/2017	SeqNo:	2876074

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.526	0.050	0.5000	0	105	85	115				

Sample ID	N027429-007CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121010
Client ID:	ZZZZZZ	Batch ID:	R121010	TestNo:	SM4500-NO3			Analysis Date:	12/21/2017	SeqNo:	2876076

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.621	0.25	2.500	2.809	112	75	125				

Sample ID	N027429-007CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121010
Client ID:	ZZZZZZ	Batch ID:	R121010	TestNo:	SM4500-NO3			Analysis Date:	12/21/2017	SeqNo:	2876077

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.484	0.25	2.500	2.809	107	75	125	5.621	2.47	20	

Sample ID	N027429-008CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121010
Client ID:	ZZZZZZ	Batch ID:	R121010	TestNo:	SM4500-NO3			Analysis Date:	12/21/2017	SeqNo:	2876079

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.177	0.25						2.951	7.36	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-005

Client Sample ID: MW-38D-Q417
Collection Date: 12/7/2017 1:02:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Boron	1900	38	100		ug/L	1	12/16/2017 04:06 PM
Calcium	330000	28	500		ug/L	1	12/16/2017 04:06 PM
Iron	ND	1.8	20		ug/L	1	12/16/2017 04:06 PM
Magnesium	4400	4.4	100		ug/L	1	12/16/2017 04:06 PM
Sodium	4700000	6600	120000		ug/L	250	12/18/2017 07:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-SMT-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 12:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**				PrepDate	**12/8/2017**	Analyst: **CEI**
Boron	2000	38	100		ug/L	1	12/16/2017 04:14 PM
Calcium	350000	28	500		ug/L	1	12/16/2017 04:14 PM
Iron	ND	1.8	20		ug/L	1	12/16/2017 04:14 PM
Magnesium	4300	4.4	100		ug/L	1	12/16/2017 04:14 PM
Sodium	4800000	6600	120000		ug/L	250	12/18/2017 07:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-007

Client Sample ID: MW-38S-Q417
Collection Date: 12/7/2017 11:47:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Boron	770	38	100		ug/L	1	12/16/2017 05:51 PM
Calcium	23000	28	500		ug/L	1	12/16/2017 05:51 PM
Iron	ND	1.8	20		ug/L	1	12/16/2017 05:51 PM
Magnesium	4200	4.4	100		ug/L	1	12/16/2017 05:51 PM
Sodium	310000	660	12000		ug/L	25	12/18/2017 07:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 11:31:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**		Analyst: **CEI**
Boron	760	38	100		ug/L	1	12/16/2017 05:56 PM
Calcium	23000	28	500		ug/L	1	12/16/2017 05:56 PM
Iron	ND	1.8	20		ug/L	1	12/16/2017 05:56 PM
Magnesium	4200	4.4	100		ug/L	1	12/16/2017 05:56 PM
Sodium	290000	660	12000		ug/L	25	12/18/2017 07:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-009

Client Sample ID: MW-72-080-Q417
Collection Date: 12/7/2017 2:24:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Boron	2000	38	100		ug/L	1	12/16/2017 06:01 PM
Calcium	360000	28	500		ug/L	1	12/16/2017 06:01 PM
Iron	ND	1.8	20		ug/L	1	12/16/2017 06:01 PM
Magnesium	7400	4.4	100		ug/L	1	12/16/2017 06:01 PM
Sodium	3400000	6600	120000		ug/L	250	12/18/2017 07:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-59-100-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 2:18:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_171218B**	QC Batch: **65992**				PrepDate	**12/11/2017**	Analyst: **CEI**
Boron	1400	38	100		ug/L	1	12/19/2017 12:14 AM
Calcium	770000	140	2500		ug/L	5	12/19/2017 07:17 AM
Iron	78	1.8	20		ug/L	1	12/19/2017 12:14 AM
Magnesium	24000	4.4	100		ug/L	1	12/19/2017 12:14 AM
Sodium	1900000	2600	50000		ug/L	100	12/18/2017 08:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-012

Client Sample ID: MW-09-Q417
Collection Date: 12/7/2017 12:53:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65992**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	620	38	100		ug/L	1	12/19/2017 12:21 AM
Calcium	110000	28	500		ug/L	1	12/19/2017 12:21 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 12:21 AM
Magnesium	29000	4.4	100		ug/L	1	12/19/2017 12:21 AM
Sodium	390000	660	12000		ug/L	25	12/18/2017 08:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-013

Client Sample ID: MW-10-Q417
Collection Date: 12/7/2017 10:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65992**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	620	38	100		ug/L	1	12/19/2017 12:28 AM
Calcium	120000	28	500		ug/L	1	12/19/2017 12:28 AM
Iron	26	1.8	20		ug/L	1	12/19/2017 12:28 AM
Magnesium	17000	4.4	100		ug/L	1	12/19/2017 12:28 AM
Sodium	300000	660	12000		ug/L	25	12/18/2017 08:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-014

Client Sample ID: MW-904-Q417
Collection Date: 12/7/2017 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65992**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	660	38	100		ug/L	1	12/19/2017 12:35 AM
Calcium	130000	28	500		ug/L	1	12/19/2017 12:35 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 12:35 AM
Magnesium	19000	4.4	100		ug/L	1	12/19/2017 12:35 AM
Sodium	310000	660	12000		ug/L	25	12/18/2017 08:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-015

Client Sample ID: MW-11-Q417
Collection Date: 12/7/2017 11:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65992**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	440	38	100		ug/L	1	12/19/2017 12:42 AM
Calcium	120000	28	500		ug/L	1	12/19/2017 12:42 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 12:42 AM
Magnesium	21000	4.4	100		ug/L	1	12/19/2017 12:42 AM
Sodium	300000	660	12000		ug/L	25	12/18/2017 08:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-016

Client Sample ID: MW-47-055-Q417
Collection Date: 12/7/2017 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65992**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	570	38	100		ug/L	1	12/19/2017 12:49 AM
Calcium	170000	28	500		ug/L	1	12/19/2017 12:49 AM
Iron	80	1.8	20		ug/L	1	12/19/2017 12:49 AM
Magnesium	27000	4.4	100		ug/L	1	12/19/2017 12:49 AM
Sodium	670000	660	12000		ug/L	25	12/18/2017 08:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-914-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 3:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-017		

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_171218B** QC Batch: **65992** PrepDate **12/11/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	560	38	100		ug/L	1	12/19/2017 12:56 AM
Calcium	170000	28	500		ug/L	1	12/19/2017 12:56 AM
Iron	70	1.8	20		ug/L	1	12/19/2017 12:56 AM
Magnesium	26000	4.4	100		ug/L	1	12/19/2017 12:56 AM
Sodium	670000	660	12000		ug/L	25	12/18/2017 08:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-018

Client Sample ID: MW-47-115-Q417
Collection Date: 12/7/2017 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65992**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1100	38	100		ug/L	1	12/19/2017 01:02 AM
Calcium	320000	28	500		ug/L	1	12/19/2017 01:02 AM
Iron	63	1.8	20		ug/L	1	12/19/2017 01:02 AM
Magnesium	29000	4.4	100		ug/L	1	12/19/2017 01:02 AM
Sodium	2600000	2600	50000		ug/L	100	12/18/2017 08:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-020

Client Sample ID: MW-49-135-Q417
Collection Date: 12/7/2017 2:12:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65992**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	830	38	100		ug/L	1	12/19/2017 01:21 AM
Calcium	290000	28	500		ug/L	1	12/19/2017 01:21 AM
Iron	34	1.8	20		ug/L	1	12/19/2017 01:21 AM
Magnesium	27000	4.4	100		ug/L	1	12/19/2017 01:21 AM
Sodium	2700000	2600	50000		ug/L	100	12/18/2017 08:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-65964**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120897**
Client ID: **PBW**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-65964**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120897**
Client ID: **LCSW**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4730.665	100	5000	0	94.6	85	115				
Calcium	9706.269	500	10000	0	97.1	85	115				
Iron	109.838	20	100.0	0	110	85	115				
Magnesium	9640.945	100	10000	0	96.4	85	115				

Sample ID **N027405-001C-MS1**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120897**
Client ID: **ZZZZZZ**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870020**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5424.089	100	5000	726.2	94.0	75	125				
Calcium	121412.864	500	10000	107700	137	75	125				S
Iron	110.283	20	100.0	14.04	96.2	75	125				
Magnesium	28521.567	100	10000	18850	96.7	75	125				

Sample ID **N027405-001C-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120897**
Client ID: **ZZZZZZ**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5448.513	100	5000	726.2	94.4	75	125	5424	0.449	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027405-001C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/8/2017	RunNo:	120897	
Client ID:	ZZZZZZ	Batch ID:	65964	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870021	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Calcium	121647.419	500	10000	107700	140	75	125	121400	0.193	20	S	
Iron	109.351	20	100.0	14.04	95.3	75	125	110.3	0.849	20		
Magnesium	28589.254	100	10000	18850	97.4	75	125	28520	0.237	20		

Sample ID	MB-65964	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/8/2017	RunNo:	120915	
Client ID:	PBW	Batch ID:	65964	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/18/2017	SeqNo:	2871270	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium	ND	500										

Sample ID	LCS2-65964	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/8/2017	RunNo:	120915	
Client ID:	LCSW	Batch ID:	65964	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/18/2017	SeqNo:	2871271	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium	20922.885	500	20000	0	105	85	115					

Sample ID	N027405-002C-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/8/2017	RunNo:	120915	
Client ID:	ZZZZZZ	Batch ID:	65964	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/18/2017	SeqNo:	2871278	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium	1604471.596	50000	20000	1554000	252	75	125				S	

Sample ID	N027405-002C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/8/2017	RunNo:	120915	
Client ID:	ZZZZZZ	Batch ID:	65964	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/18/2017	SeqNo:	2871279	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium	1569386.145	50000	20000	1554000	76.9	75	125	1604000	2.21	20		

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-65992	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120915
Client ID:	PBW	Batch ID:	65992	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/18/2017	SeqNo:	2871305

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID	LCS2-65992	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120915
Client ID:	LCSW	Batch ID:	65992	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/18/2017	SeqNo:	2871306

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20245.091	500	20000	0	101	85	115				

Sample ID	N027429-012B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120915
Client ID:	ZZZZZZ	Batch ID:	65992	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/18/2017	SeqNo:	2871313

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	450303.405	12000	20000	389300	305	75	125				S

Sample ID	N027429-012B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120915
Client ID:	ZZZZZZ	Batch ID:	65992	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/18/2017	SeqNo:	2871314

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	453924.740	12000	20000	389300	323	75	125	450300	0.801	20	S

Sample ID	MB-65992	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120920
Client ID:	PBW	Batch ID:	65992	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2871582

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	ND	500									
Iron	5.018	20									
Magnesium	8.267	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	LCS1-65992	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120920
Client ID:	LCSW	Batch ID:	65992	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2871583

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4686.857	100	5000	0	93.7	85	115				
Calcium	9676.269	500	10000	0	96.8	85	115				
Iron	111.742	20	100.0	0	112	85	115				
Magnesium	9578.594	100	10000	0	95.8	85	115				

Sample ID	N027437-002BMS1	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120920
Client ID:	ZZZZZZ	Batch ID:	65992	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2871599

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5745.710	100	5000	1269	89.5	75	125				
Calcium	46886.546	500	10000	37380	95.0	75	125				
Iron	101.475	20	100.0	11.75	89.7	75	125				
Magnesium	29655.347	100	10000	20940	87.2	75	125				

Sample ID	N027437-002BMSD1	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120920
Client ID:	ZZZZZZ	Batch ID:	65992	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2871600

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5831.952	100	5000	1269	91.3	75	125	5746	1.49	20	
Calcium	47439.180	500	10000	37380	101	75	125	46890	1.17	20	
Iron	102.716	20	100.0	11.75	91.0	75	125	101.5	1.22	20	
Magnesium	30158.195	100	10000	20940	92.2	75	125	29660	1.68	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-001

Client Sample ID: MW-24A-Q417
Collection Date: 12/7/2017 9:15:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_171220A** QC Batch: **65978** PrepDate **12/8/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.16	2.5		µg/L	5	12/20/2017 04:48 PM
Arsenic	0.14	0.025	0.10		µg/L	1	12/20/2017 06:58 PM
Barium	23	0.070	1.0		µg/L	1	12/20/2017 06:58 PM
Beryllium	ND	0.043	0.50		µg/L	1	12/20/2017 06:58 PM
Cadmium	ND	0.24	2.5		µg/L	5	12/20/2017 04:48 PM
Cobalt	ND	0.026	0.50		µg/L	1	12/20/2017 06:58 PM
Copper	ND	0.26	1.0		µg/L	1	12/20/2017 06:58 PM
Lead	ND	0.18	5.0		µg/L	5	12/20/2017 04:48 PM
Manganese	19	0.056	0.50		µg/L	1	12/20/2017 06:58 PM
Molybdenum	140	0.039	0.50		µg/L	1	12/20/2017 06:58 PM
Nickel	1.2	0.040	1.0		µg/L	1	12/20/2017 06:58 PM
Selenium	ND	0.028	0.50		µg/L	1	12/20/2017 06:58 PM
Silver	ND	0.30	2.5		µg/L	5	12/20/2017 04:48 PM
Thallium	ND	0.15	2.5		µg/L	5	12/20/2017 04:48 PM
Vanadium	ND	0.021	1.0		µg/L	1	12/20/2017 06:58 PM
Zinc	ND	0.27	10		µg/L	1	12/20/2017 06:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-002

Client Sample ID: MW-906-Q417
Collection Date: 12/7/2017 9:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Antimony	ND	0.031	0.50		µg/L	1	12/20/2017 05:43 PM
Arsenic	0.22	0.025	0.10		µg/L	1	1/2/2018 03:23 PM
Barium	23	0.070	1.0		µg/L	1	12/20/2017 05:43 PM
Beryllium	ND	0.043	0.50		µg/L	1	12/20/2017 05:43 PM
Cadmium	ND	0.047	0.50		µg/L	1	12/20/2017 05:43 PM
Cobalt	ND	0.026	0.50		µg/L	1	12/20/2017 05:43 PM
Copper	ND	0.26	1.0		µg/L	1	12/20/2017 05:43 PM
Lead	ND	0.037	1.0		µg/L	1	12/20/2017 05:43 PM
Manganese	21	0.056	0.50		µg/L	1	12/20/2017 05:43 PM
Molybdenum	140	0.039	0.50		µg/L	1	12/20/2017 05:43 PM
Nickel	1.3	0.040	1.0		µg/L	1	12/20/2017 05:43 PM
Selenium	ND	0.028	0.50		µg/L	1	12/20/2017 05:43 PM
Silver	ND	0.059	0.50		µg/L	1	12/20/2017 05:43 PM
Thallium	ND	0.030	0.50		µg/L	1	12/20/2017 05:43 PM
Vanadium	ND	0.021	1.0		µg/L	1	12/20/2017 05:43 PM
Zinc	ND	0.27	10		µg/L	1	12/20/2017 05:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-003

Client Sample ID: MW-24B-Q417
Collection Date: 12/7/2017 10:33:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_171220A** QC Batch: **65978** PrepDate **12/8/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.16	2.5		µg/L	5	12/20/2017 06:00 PM
Arsenic	3.1	0.12	0.50		µg/L	5	12/20/2017 06:00 PM
Barium	64	0.35	5.0		µg/L	5	12/20/2017 06:00 PM
Beryllium	ND	0.22	2.5		µg/L	5	12/20/2017 06:00 PM
Cadmium	ND	0.24	2.5		µg/L	5	12/20/2017 06:00 PM
Cobalt	ND	0.026	0.50		µg/L	1	12/20/2017 05:54 PM
Copper	ND	1.3	5.0		µg/L	5	12/20/2017 06:00 PM
Lead	ND	0.18	5.0		µg/L	5	12/20/2017 06:00 PM
Manganese	98	0.056	0.50		µg/L	1	12/20/2017 05:54 PM
Molybdenum	63	0.19	2.5		µg/L	5	12/20/2017 06:00 PM
Nickel	ND	0.20	5.0		µg/L	5	12/20/2017 06:00 PM
Selenium	ND	0.14	2.5		µg/L	5	12/20/2017 06:00 PM
Silver	ND	0.30	2.5		µg/L	5	12/20/2017 06:00 PM
Thallium	ND	0.15	2.5		µg/L	5	12/20/2017 06:00 PM
Vanadium	3.7	0.021	1.0		µg/L	1	12/20/2017 05:54 PM
Zinc	ND	1.3	50		µg/L	5	12/20/2017 06:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 1:02:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**				PrepDate	**12/8/2017**	Analyst: **CEI**
Arsenic	7.0	0.12	0.50		µg/L	5	12/20/2017 07:09 PM
Manganese	22	0.056	0.50		µg/L	1	12/20/2017 07:04 PM
Molybdenum	87	0.19	2.5		µg/L	5	12/20/2017 07:09 PM
Selenium	ND	0.14	2.5		µg/L	5	12/20/2017 07:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-SMT-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 12:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180102A**	QC Batch: **65978**				PrepDate	**12/8/2017**	Analyst: **CEI**
Arsenic	7.3	0.12	0.50		µg/L	5	1/2/2018 03:29 PM
Manganese	21	0.056	0.50		µg/L	1	12/20/2017 07:15 PM
Molybdenum	89	0.19	2.5		µg/L	5	12/22/2017 05:17 PM
Selenium	ND	0.14	2.5		µg/L	5	1/2/2018 03:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 11:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**		Analyst: **CEI**
Arsenic	7.3	0.025	0.10		µg/L	1	12/20/2017 07:54 PM
Manganese	70	0.056	0.50		µg/L	1	12/20/2017 07:54 PM
Molybdenum	38	0.039	0.50		µg/L	1	12/20/2017 07:54 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/2/2018 03:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-008

Client Sample ID: MW-38S-SMT-Q417
Collection Date: 12/7/2017 11:31:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**		Analyst: **CEI**
Arsenic	7.1	0.025	0.10		µg/L	1	12/20/2017 08:05 PM
Manganese	68	0.056	0.50		µg/L	1	12/20/2017 08:05 PM
Molybdenum	38	0.039	0.50		µg/L	1	12/20/2017 08:05 PM
Selenium	1.4	0.028	0.50		µg/L	1	12/20/2017 08:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-009

Client Sample ID: MW-72-080-Q417
Collection Date: 12/7/2017 2:24:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	11	0.12	0.50		µg/L	5	12/20/2017 08:21 PM
Manganese	46	0.28	2.5		µg/L	5	12/20/2017 08:21 PM
Molybdenum	78	0.19	2.5		µg/L	5	12/20/2017 08:21 PM
Selenium	ND	0.14	2.5		µg/L	5	12/20/2017 08:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-010

Client Sample ID: MW-59-100-Q417
Collection Date: 12/7/2017 2:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Antimony	ND	0.031	0.50		µg/L	1	12/20/2017 06:05 PM
Arsenic	1.8	0.025	0.10		µg/L	1	12/20/2017 06:05 PM
Barium	72	0.070	1.0		µg/L	1	12/20/2017 06:05 PM
Beryllium	ND	0.22	2.5		µg/L	5	12/20/2017 06:53 PM
Cadmium	ND	0.047	0.50		µg/L	1	12/20/2017 06:05 PM
Cobalt	ND	0.026	0.50		µg/L	1	12/20/2017 06:05 PM
Copper	ND	0.26	1.0		µg/L	1	12/20/2017 06:05 PM
Lead	ND	0.18	5.0		µg/L	5	12/20/2017 06:53 PM
Manganese	7.3	0.056	0.50		µg/L	1	12/20/2017 06:05 PM
Molybdenum	7.1	0.19	2.5		µg/L	5	12/20/2017 06:53 PM
Nickel	2.9	0.040	1.0		µg/L	1	12/20/2017 06:05 PM
Selenium	2.4	0.028	0.50		µg/L	1	12/20/2017 06:05 PM
Silver	ND	0.30	2.5		µg/L	5	12/20/2017 06:53 PM
Thallium	ND	0.15	2.5		µg/L	5	12/20/2017 06:53 PM
Vanadium	ND	0.021	1.0		µg/L	1	12/20/2017 06:05 PM
Zinc	ND	0.27	10		µg/L	1	12/20/2017 06:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-012

Client Sample ID: MW-09-Q417
Collection Date: 12/7/2017 12:53:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	1.5	0.025	0.10		µg/L	1	12/20/2017 08:27 PM
Manganese	ND	0.056	0.50		µg/L	1	12/20/2017 08:27 PM
Molybdenum	4.2	0.039	0.50		µg/L	1	12/20/2017 08:27 PM
Selenium	5.3	0.028	0.50		µg/L	1	12/20/2017 08:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-013

Client Sample ID: MW-10-Q417
Collection Date: 12/7/2017 10:20:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_171220A** QC Batch: **65978** PrepDate **12/8/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.031	0.50		µg/L	1	12/20/2017 06:17 PM
Arsenic	2.6	0.025	0.10		µg/L	1	12/20/2017 06:17 PM
Barium	51	0.070	1.0		µg/L	1	12/20/2017 06:17 PM
Beryllium	ND	0.043	0.50		µg/L	1	12/20/2017 06:17 PM
Cadmium	ND	0.047	0.50		µg/L	1	12/20/2017 06:17 PM
Cobalt	0.54	0.026	0.50		µg/L	1	12/20/2017 06:17 PM
Copper	ND	0.26	1.0		µg/L	1	12/20/2017 06:17 PM
Lead	ND	0.037	1.0		µg/L	1	12/20/2017 06:17 PM
Manganese	0.53	0.056	0.50		µg/L	1	12/20/2017 06:17 PM
Molybdenum	19	0.039	0.50		µg/L	1	12/20/2017 06:17 PM
Nickel	4.5	0.040	1.0		µg/L	1	12/20/2017 06:17 PM
Selenium	5.9	0.028	0.50		µg/L	1	12/20/2017 06:17 PM
Silver	ND	0.059	0.50		µg/L	1	12/20/2017 06:17 PM
Thallium	ND	0.030	0.50		µg/L	1	12/20/2017 06:17 PM
Vanadium	16	0.021	1.0		µg/L	1	12/20/2017 06:17 PM
Zinc	ND	0.27	10		µg/L	1	12/20/2017 06:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-014

Client Sample ID: MW-904-Q417
Collection Date: 12/7/2017 10:30:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_171220A** QC Batch: **65978** PrepDate **12/8/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.031	0.50		µg/L	1	12/20/2017 06:28 PM
Arsenic	2.5	0.025	0.10		µg/L	1	12/20/2017 06:28 PM
Barium	49	0.070	1.0		µg/L	1	12/20/2017 06:28 PM
Beryllium	ND	0.043	0.50		µg/L	1	12/20/2017 06:28 PM
Cadmium	ND	0.047	0.50		µg/L	1	12/20/2017 06:28 PM
Cobalt	0.52	0.026	0.50		µg/L	1	12/20/2017 06:28 PM
Copper	ND	0.26	1.0		µg/L	1	12/20/2017 06:28 PM
Lead	ND	0.037	1.0		µg/L	1	12/20/2017 06:28 PM
Manganese	0.58	0.056	0.50		µg/L	1	12/20/2017 06:28 PM
Molybdenum	19	0.039	0.50		µg/L	1	12/20/2017 06:28 PM
Nickel	4.4	0.040	1.0		µg/L	1	12/20/2017 06:28 PM
Selenium	5.5	0.028	0.50		µg/L	1	12/20/2017 06:28 PM
Silver	ND	0.059	0.50		µg/L	1	12/20/2017 06:28 PM
Thallium	ND	0.030	0.50		µg/L	1	12/20/2017 06:28 PM
Vanadium	15	0.021	1.0		µg/L	1	12/20/2017 06:28 PM
Zinc	ND	0.27	10		µg/L	1	12/20/2017 06:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-015

Client Sample ID: MW-11-Q417
Collection Date: 12/7/2017 11:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	1.3	0.025	0.10		µg/L	1	12/20/2017 08:38 PM
Manganese	2.6	0.056	0.50		µg/L	1	12/20/2017 08:38 PM
Molybdenum	7.0	0.039	0.50		µg/L	1	12/20/2017 08:38 PM
Selenium	4.6	0.028	0.50		µg/L	1	12/20/2017 08:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-47-055-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 3:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**				PrepDate	**12/8/2017**	Analyst: **CEI**
Arsenic	1.2	0.12	0.50		µg/L	5	12/20/2017 09:06 PM
Manganese	2.0	0.056	0.50		µg/L	1	12/20/2017 09:00 PM
Molybdenum	8.0	0.19	2.5		µg/L	5	12/20/2017 09:06 PM
Selenium	ND	0.14	2.5		µg/L	5	12/20/2017 09:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-017

Client Sample ID: MW-914-Q417
Collection Date: 12/7/2017 3:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**		Analyst: **CEI**
Arsenic	1.2	0.025	0.10		µg/L	1	12/20/2017 09:12 PM
Manganese	1.4	0.056	0.50		µg/L	1	12/20/2017 09:12 PM
Molybdenum	8.1	0.19	2.5		µg/L	5	12/20/2017 09:17 PM
Selenium	0.99	0.028	0.50		µg/L	1	12/20/2017 09:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-018

Client Sample ID: MW-47-115-Q417
Collection Date: 12/7/2017 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Manganese	4.3	0.056	0.50		µg/L	1	12/20/2017 09:23 PM
Molybdenum	21	0.19	2.5		µg/L	5	12/20/2017 09:28 PM
Selenium	ND	0.14	2.5		µg/L	5	12/20/2017 09:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-020

Client Sample ID: MW-49-135-Q417
Collection Date: 12/7/2017 2:12:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	1.8	0.12	0.50		µg/L	5	12/20/2017 09:39 PM
Manganese	260	0.28	2.5		µg/L	5	12/20/2017 09:39 PM
Molybdenum	38	0.19	2.5		µg/L	5	12/20/2017 09:39 PM
Selenium	ND	0.14	2.5		µg/L	5	12/20/2017 09:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-65978**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120980**
Client ID: **PBW**	Batch ID: **65978**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2874745**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Nickel	0.068	1.0									
Selenium	0.036	0.50									
Silver	0.076	0.50									
Thallium	ND	0.50									
Vanadium	0.067	1.0									
Zinc	ND	10									

Sample ID **LCS-65978**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120980**
Client ID: **LCSW**	Batch ID: **65978**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2874746**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.552	0.50	10.00	0	95.5	85	115				
Arsenic	9.839	0.10	10.00	0	98.4	85	115				
Barium	9.735	1.0	10.00	0	97.3	85	115				
Beryllium	9.922	0.50	10.00	0	99.2	85	115				
Cadmium	9.782	0.50	10.00	0	97.8	85	115				
Cobalt	9.640	0.50	10.00	0	96.4	85	115				
Copper	9.907	1.0	10.00	0	99.1	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	LCS-65978	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120980
Client ID:	LCSW	Batch ID:	65978	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874746

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	9.889	1.0	10.00	0	98.9	85	115				
Manganese	99.022	0.50	100.0	0	99.0	85	115				
Molybdenum	9.830	0.50	10.00	0	98.3	85	115				
Nickel	10.363	1.0	10.00	0	104	85	115				
Selenium	9.999	0.50	10.00	0	100	85	115				
Silver	9.342	0.50	10.00	0	93.4	85	115				
Thallium	10.364	0.50	10.00	0	104	85	115				
Vanadium	10.170	1.0	10.00	0	102	85	115				
Zinc	100.247	10	100.0	0	100	85	115				

Sample ID	N027429-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120980
Client ID:	ZZZZZZ	Batch ID:	65978	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874752

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.902	0.10	10.00	0.1372	97.6	75	125				
Barium	32.183	1.0	10.00	22.77	94.2	75	125				
Beryllium	8.205	0.50	10.00	0	82.0	75	125				
Cobalt	9.107	0.50	10.00	0.1037	90.0	75	125				
Copper	8.646	1.0	10.00	0	86.5	75	125				
Manganese	114.492	0.50	100.0	19.42	95.1	75	125				
Molybdenum	151.294	0.50	10.00	139.6	117	75	125				
Nickel	11.085	1.0	10.00	1.203	98.8	75	125				
Selenium	9.372	0.50	10.00	0.4148	89.6	75	125				
Vanadium	10.168	1.0	10.00	0	102	75	125				
Zinc	114.488	10	100.0	0.6060	114	75	125				

Sample ID	N027429-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120980
Client ID:	ZZZZZZ	Batch ID:	65978	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874753

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027429-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120980
Client ID:	ZZZZZZ	Batch ID:	65978	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874753

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.230	2.5	10.00	0	102	75	125				
Cadmium	1.210	2.5	10.00	0	12.1	75	125				S
Lead	9.121	5.0	10.00	0	91.2	75	125				
Silver	11.491	2.5	10.00	0.5036	110	75	125				
Thallium	10.469	2.5	10.00	0.1721	103	75	125				

Sample ID	N027429-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120980
Client ID:	ZZZZZZ	Batch ID:	65978	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874754

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.716	0.10	10.00	0.1372	95.8	75	125	9.902	1.89	20	
Barium	32.047	1.0	10.00	22.77	92.8	75	125	32.18	0.424	20	
Beryllium	9.093	0.50	10.00	0	90.9	75	125	8.205	10.3	20	
Cobalt	9.013	0.50	10.00	0.1037	89.1	75	125	9.107	1.03	20	
Copper	8.704	1.0	10.00	0	87.0	75	125	8.646	0.668	20	
Manganese	112.396	0.50	100.0	19.42	93.0	75	125	114.5	1.85	20	
Molybdenum	150.933	0.50	10.00	139.6	114	75	125	151.3	0.239	20	
Nickel	11.230	1.0	10.00	1.203	100	75	125	11.08	1.30	20	
Selenium	9.548	0.50	10.00	0.4148	91.3	75	125	9.372	1.86	20	
Vanadium	9.967	1.0	10.00	0	99.7	75	125	10.17	2.00	20	
Zinc	114.745	10	100.0	0.6060	114	75	125	114.5	0.225	20	

Sample ID	N027429-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120980
Client ID:	ZZZZZZ	Batch ID:	65978	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874757

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.229	2.5	10.00	0	102	75	125	10.23	0.0191	20	
Cadmium	1.460	2.5	10.00	0	14.6	75	125	1.210	0	20	S
Lead	9.250	5.0	10.00	0	92.5	75	125	9.121	1.40	20	
Silver	10.489	2.5	10.00	0.5036	99.9	75	125	11.49	9.12	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027429-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120980
Client ID:	ZZZZZZ	Batch ID:	65978	TestNo:	EPA 6020		EPA 3010A	Analysis Date:	12/20/2017	SeqNo:	2874757

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	10.447	2.5	10.00	0.1721	103	75	125	10.47	0.209	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24A-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 9:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **NV00922-AA1_171208B** QC Batch: **65961** PrepDate **12/8/2017** Analyst: **MG**							
Mercury	ND	0.087	0.20		µg/L	1	12/8/2017 01:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 9:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **NV00922-AA1_171208B** QC Batch: **65961** PrepDate **12/8/2017** Analyst: **MG**							
Mercury	ND	0.087	0.20		µg/L	1	12/8/2017 01:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24B-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 10:33:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **NV00922-AA1_171208B**	QC Batch: **65961**			PrepDate	**12/8/2017**		Analyst: **MG**
Mercury	ND	0.087	0.20		µg/L	1	12/8/2017 02:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-59-100-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 2:18:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **NV00922-AA1_171208B** QC Batch: **65961** PrepDate **12/8/2017** Analyst: **MG**							
Mercury	ND	0.087	0.20		µg/L	1	12/8/2017 02:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 10:20:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **NV00922-AA1_171208B** QC Batch: **65961**				PrepDate	**12/8/2017**		Analyst: **MG**
Mercury	ND	0.087	0.20		µg/L	1	12/8/2017 02:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 10:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **NV00922-AA1_171208B** QC Batch: **65961** PrepDate **12/8/2017** Analyst: **MG**							
Mercury	ND	0.087	0.20		µg/L	1	12/8/2017 02:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID	MB-65961	SampType:	MBLK	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120675
Client ID:	PBW	Batch ID:	65961	TestNo:	EPA 7470A			Analysis Date:	12/8/2017	SeqNo:	2856730

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID	LCS-65961	SampType:	LCS	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120675
Client ID:	LCSW	Batch ID:	65961	TestNo:	EPA 7470A			Analysis Date:	12/8/2017	SeqNo:	2856731

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.822	0.20	5.000	0	96.4	85	115				

Sample ID	N027406-001D-MS	SampType:	MS	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120675
Client ID:	ZZZZZZ	Batch ID:	65961	TestNo:	EPA 7470A			Analysis Date:	12/8/2017	SeqNo:	2856732

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.751	0.20	5.000	0	95.0	75	125				

Sample ID	N027406-001D-MSD	SampType:	MSD	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120675
Client ID:	ZZZZZZ	Batch ID:	65961	TestNo:	EPA 7470A			Analysis Date:	12/8/2017	SeqNo:	2856733

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.806	0.20	5.000	0	96.1	75	125	4.751	1.13	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker	RWQCB ✓	1. Chilled
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec	CalTrans	2. Headspace
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	Others ✓	LEVEL III	3. Container Intact
Title: Geologist II	Phone: 916-786-3302 Fax:		Specify: RWQCB	LEVEL IV	4. Seal Present
Signature: Date: 12/7/2017	Sampled By: Gantt Jeffers		Global ID:	Regulatory	5. IR number 2
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*			Specify State:	6. Method of Cooling: ice
Project Name: PG&E Topock - GMP	Signature: Date: 12/7/2017				Sample Temp: 2.6c/2.9c
Project Number: RC000753.801B					Courier: Tracking No.:

Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2. SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2. SO4, NH4, OH (2x250 mL poly)	Oxygen and Deuterium Stable Isotopes SFIRM (250 mL poly)	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) Potassium; HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3 (500 mL poly)	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 (500 mL poly)	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3 (500 mL poly)	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3 (500 mL poly)	Mercury, Dissolved (EPA 7470A); HNO3 (500 mL poly)	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4 (250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM2540C) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027429-01	MW-24A-Q417	12/7/2017	9:15		X								X	X	X	X		X				E	4	P	BNS	
2	-02	MW-906-Q417	12/7/2017	9:25		X								X	X	X	X		X				E	4	P	BNS	
3	-03	MW-24B-Q417	12/7/2017	10:33		X								X	X	X	X		X				E	4	P	BNS	
4	-04	MW-721-Q417	12/7/2017	15:30		X																	E	1	P	B	
5	-05	MW-38D-Q417	12/7/2017	13:02		X			X		X						X	X	X	X	X		E	4	P	BNS	
6	-06	MW-38D-SMT-Q417	12/7/2017	12:30		X			X		X						X	X	X	X	X		E	4	P	BNS	
7	-07	MW-38S-Q417	12/7/2017	11:47		X			X		X						X	X	X	X	X		E	4	P	BNS	
8	-08	MW-38S-SMT-Q417	12/7/2017	11:31		X			X		X						X	X	X	X	X		E	4	P	BNS	
9	-09	MW-72-080-Q417	12/7/2017	14:24		X			X		X						X	X	X	X	X		E	4	P	BNS	
10	-10	MW-59-100-Q417	12/7/2017	14:18		X						X	X			X	X	X	X	X	X		E	4	P	BNS	

Relinquished by (Signature and Printed Name):	Date/Time:	Received by (Signature and Printed Name):	Date/Time:
G. Jeffers	12.7.17 1620		
			12/7/17 1626
	12/7/17 1842		12/7/17 1842

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B = $(NH4)2SO4/NH4OH$			M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Others ✓ (Specify: RWQCB)
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RWQCB ✓
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition: 1. Chilled ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	2. Headspace
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	3. Container Intact
Title: Geologist II	Phone: 916-786-3302 Fax:	Global ID:	4. Seal Present
Signature: Date: 12/7/2017	Sampled By: Gantt Jeffers		5. IR number: 2
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*		6. Method of Cooling: ice
Project Name: PG&E Topock - GMP	Signature: Date: 12/7/2017		Sample Temp: 3.1°C / 3.6°C
Project Number: RC000753.801B			Courier: Tracking No.:

Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Oxygen and Deuterium Stable Isotopes SFIRM (250 mL poly)	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) Potassium; HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3 (500 mL poly)	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 (500 mL poly)	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3 (500 mL poly)	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3 (500 mL poly)	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3 (500 mL poly)	Mercury, Dissolved (EPA 7470A); HNO3 (500 mL poly)	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4 (250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM2540C) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027429-11	MW-49-365-EB-Q417	12/7/2017	12:30		X																		E	1	P	B	
2	-12	MW-09-Q417	12/7/2017	12:53		X			X		X								X	X	X	X		E	4	P	BNS	
3	-13	MW-10-Q417	12/7/2017	10:20		X						X	X				X	X	X	X	X	X		E	4	P	BNS	
4	-14	MW-904-Q417	12/7/2017	10:30		X						X	X				X	X	X	X	X	X		E	4	P	BNS	
5	-15	MW-11-Q417	12/7/2017	11:48		X			X		X							X	X	X	X	X		E	4	P	BNS	
6	-16	MW-47-055-Q417	12/7/2017	15:10		X		X	X		X								X	X	X	X		E	4	P	BNS	
7	-17	MW-914-Q417	12/7/2017	15:20		X		X	X		X								X	X	X	X		E	4	P	BNS	
8	-18	MW-47-115-Q417	12/7/2017	15:10		X		X			X						X		X	X	X	X		E	4	P	BN	
9	-19	MW-49-135-EB-Q417	12/7/2017	13:20		X																		E	1	P	B	
10	-20	MW-49-135-Q417	12/7/2017	14:12			X	X	X		X								X	X	X	X		E	5	P	BN	

Reliquished by (Signature and Printed Name): G. Jeffers	Date/Time: 12.7.17 1630	Reliquished by (Signature and Printed Name):	Date/Time: 12/7/17 1635
Reliquished by (Signature and Printed Name):	Date/Time: 12/7/17 1842	Reliquished by (Signature and Printed Name):	Date/Time: 12/7/17 1842
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B = $(NH4)2SO4/NH4OH$			M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/7/2017	Workorder:	N027429
Rep sample Temp (Deg C):	2.6/2.9/3.1/3.6	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: N/A Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 12/21/2017

Reviewed By: 12/21/2017

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (760) 781 3338
FAX: (805) 544-8226
Acct #:

Field Sampler: Gantt Jeffers

11-Dec-17

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**OXY_DEUT**		
N027429-016B / MW-47-055-Q417	Groundwater	12/7/2017 3:10:00 PM	8OZP	1		
N027429-017B / MW-914-Q417	Groundwater	12/7/2017 3:20:00 PM	8OZP	1		
N027429-018B / MW-47-115-Q417	Groundwater	12/7/2017 3:10:00 PM	8OZP	1		
N027429-020B / MW-49-135-Q417	Groundwater	12/7/2017 2:12:00 PM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N27429A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Oxygen and Deuterium Stable Isotopes SFIRM. EDD Requirement Labspec7 edata.

Fedex #: 770961567484

	Date/Time		Date/Time
Relinquished by:	12/11/2017 16:00	**Received by:**	
Relinquished by:		**Received by:**	

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027429

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027429-001A	MW-24A-Q417	12/7/2017 9:15:00 AM	12/21/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-001B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017			DISSOLVED MERCURY PREP	☐	☐	☐	WW
			12/21/2017		EPA 7470A	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N027429-001C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-001D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N027429-002A	MW-906-Q417	12/7/2017 9:25:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-002B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017			DISSOLVED MERCURY PREP	☐	☐	☐	WW
			12/21/2017		EPA 7470A	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N027429-002C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-002D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N027429-003A	MW-24B-Q417	12/7/2017 10:33:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027429

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027429-003B	MW-24B-Q417	12/7/2017 10:33:00 AM	12/21/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017			DISSOLVED MERCURY PREP	☐	☐	☐	WW
			12/21/2017		EPA 7470A	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N027429-003C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-003D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N027429-004A	MW-721-Q417	12/7/2017 3:30:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-005A	MW-38D-Q417	12/7/2017 1:02:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-005B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027429-005C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-005D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027429

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027429-005D	MW-38D-Q417	12/7/2017 1:02:00 PM	12/21/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-006A	MW-38D-SMT-Q417	12/7/2017 12:30:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-006B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027429-006C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-006D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-007A	MW-38S-Q417	12/7/2017 11:47:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-007B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027429

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027429-007B	MW-38S-Q417	12/7/2017 11:47:00 AM	12/21/2017	Groundwater	EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027429-007C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-007D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-008A	MW-38S-SMT-Q417	12/7/2017 11:31:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-008B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027429-008C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-008D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027429

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027429-008D	MW-38S-SMT-Q417	12/7/2017 11:31:00 AM	12/21/2017	Groundwater		Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-009A	MW-72-080-Q417	12/7/2017 2:24:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-009B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027429-009C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-009D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-010A	MW-59-100-Q417	12/7/2017 2:18:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027429

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027429-010B	MW-59-100-Q417	12/7/2017 2:18:00 PM	12/21/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017			DISSOLVED MERCURY PREP	☐	☐	☐	WW
			12/21/2017		EPA 7470A	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N027429-010C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-010D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-011A	MW-49-365-EB-Q417	12/7/2017 12:30:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-012A	MW-09-Q417	12/7/2017 12:53:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-012B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027429

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027429-012B	MW-09-Q417	12/7/2017 12:53:00 PM	12/21/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027429-012C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-012D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-013A	MW-10-Q417	12/7/2017 10:20:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-013B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017			DISSOLVED MERCURY PREP	☐	☐	☐	WW
			12/21/2017		EPA 7470A	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N027429-013C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-013D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027429

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027429-013D	MW-10-Q417	12/7/2017 10:20:00 AM	12/21/2017	Groundwater	SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-014A	MW-904-Q417	12/7/2017 10:30:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-014B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017			DISSOLVED MERCURY PREP	☐	☐	☐	WW
			12/21/2017		EPA 7470A	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N027429-014C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-014D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027429

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027429-014D	MW-904-Q417	12/7/2017 10:30:00 AM	12/21/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-015A	MW-11-Q417	12/7/2017 11:48:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-015B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027429-015C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-015D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-016A	MW-47-055-Q417	12/7/2017 3:10:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-016B			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027429-016C			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027429

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027429-016C	MW-47-055-Q417	12/7/2017 3:10:00 PM	12/21/2017	Groundwater	EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027429-016D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-017A	MW-914-Q417	12/7/2017 3:20:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-017B			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027429-017C			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027429-017D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027429

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027429-017D	MW-914-Q417	12/7/2017 3:20:00 PM	12/21/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-018A	MW-47-115-Q417	12/7/2017 3:10:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-018B			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027429-018C			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027429-018D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027429-019A	MW-49-135-EB-Q417	12/7/2017 1:20:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-020A	MW-49-135-Q417	12/7/2017 2:12:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-020B			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027429-020C			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027429

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027429-020C	MW-49-135-Q417	12/7/2017 2:12:00 PM	12/21/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027429-020D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-021A	FOLDER	12/21/2017	12/21/2017		EDD	RWQCB	☐	☐	☐	LAB
			12/21/2017		Folder	Folder	☐	☐	☐	LAB
			12/21/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP

Project No.: RC000753.801B

ASSET Laboratories Work Order:

N027429

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

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January 03, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027429

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 07, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburcao for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Subcontracted Analyses:

Oxygen/Deuterium was subcontracted to Zymax- Pittsburg,PA.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (2.7 ug/L) and hexavalent chromium (0 ug/L) for sample N027429-001 (MW-24A-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (8.7 ug/L) and hexavalent chromium (0 ug/L) for sample N027429-002 (MW-906-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 300.0:

Dilution was necessary for most of the samples due to precipitation upon the addition of eluent.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Bromide in QC samples N027429-007DMS, N027429-007DMSD and N027429-012DMS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC

samples N027405-001C-MS1 and N027405-001C-MSD1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N027405-002C-MS2, N027429-012B-MS2 and N027429-012B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (2.7 ug/L) and hexavalent chromium (0 ug/L) for sample N027429-001 (MW-24A-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 2.0 and 1.1 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (8.7 ug/L) and hexavalent chromium (0 ug/L) for sample N027429-002 (MW-906-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 9.0 and 5.0 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Cadmium in QC samples N027429-001B-MS and N027429-001B-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary on some analytes for samples N027429-001, -003, -005, -006, -009, -010, -016, -017, -018 and -020 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

ASSET Laboratories

Date: *03-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027429
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027429-001A	MW-24A-Q417	Groundwater	12/7/2017 9:15:00 AM	12/7/2017	1/3/2018
N027429-001B	MW-24A-Q417	Groundwater	12/7/2017 9:15:00 AM	12/7/2017	1/3/2018
N027429-001C	MW-24A-Q417	Groundwater	12/7/2017 9:15:00 AM	12/7/2017	1/3/2018
N027429-001D	MW-24A-Q417	Groundwater	12/7/2017 9:15:00 AM	12/7/2017	1/3/2018
N027429-002A	MW-906-Q417	Groundwater	12/7/2017 9:25:00 AM	12/7/2017	1/3/2018
N027429-002B	MW-906-Q417	Groundwater	12/7/2017 9:25:00 AM	12/7/2017	1/3/2018
N027429-002C	MW-906-Q417	Groundwater	12/7/2017 9:25:00 AM	12/7/2017	1/3/2018
N027429-002D	MW-906-Q417	Groundwater	12/7/2017 9:25:00 AM	12/7/2017	1/3/2018
N027429-003A	MW-24B-Q417	Groundwater	12/7/2017 10:33:00 AM	12/7/2017	1/3/2018
N027429-003B	MW-24B-Q417	Groundwater	12/7/2017 10:33:00 AM	12/7/2017	1/3/2018
N027429-003C	MW-24B-Q417	Groundwater	12/7/2017 10:33:00 AM	12/7/2017	1/3/2018
N027429-003D	MW-24B-Q417	Groundwater	12/7/2017 10:33:00 AM	12/7/2017	1/3/2018
N027429-004A	MW-721-Q417	Groundwater	12/7/2017 3:30:00 PM	12/7/2017	1/3/2018
N027429-005A	MW-38D-Q417	Groundwater	12/7/2017 1:02:00 PM	12/7/2017	1/3/2018
N027429-005B	MW-38D-Q417	Groundwater	12/7/2017 1:02:00 PM	12/7/2017	1/3/2018
N027429-005C	MW-38D-Q417	Groundwater	12/7/2017 1:02:00 PM	12/7/2017	1/3/2018
N027429-005D	MW-38D-Q417	Groundwater	12/7/2017 1:02:00 PM	12/7/2017	1/3/2018
N027429-006A	MW-38D-SMT-Q417	Groundwater	12/7/2017 12:30:00 PM	12/7/2017	1/3/2018
N027429-006B	MW-38D-SMT-Q417	Groundwater	12/7/2017 12:30:00 PM	12/7/2017	1/3/2018
N027429-006C	MW-38D-SMT-Q417	Groundwater	12/7/2017 12:30:00 PM	12/7/2017	1/3/2018
N027429-006D	MW-38D-SMT-Q417	Groundwater	12/7/2017 12:30:00 PM	12/7/2017	1/3/2018
N027429-007A	MW-38S-Q417	Groundwater	12/7/2017 11:47:00 AM	12/7/2017	1/3/2018
N027429-007B	MW-38S-Q417	Groundwater	12/7/2017 11:47:00 AM	12/7/2017	1/3/2018
N027429-007C	MW-38S-Q417	Groundwater	12/7/2017 11:47:00 AM	12/7/2017	1/3/2018
N027429-007D	MW-38S-Q417	Groundwater	12/7/2017 11:47:00 AM	12/7/2017	1/3/2018
N027429-008A	MW-38S-SMT-Q417	Groundwater	12/7/2017 11:31:00 AM	12/7/2017	1/3/2018
N027429-008B	MW-38S-SMT-Q417	Groundwater	12/7/2017 11:31:00 AM	12/7/2017	1/3/2018
N027429-008C	MW-38S-SMT-Q417	Groundwater	12/7/2017 11:31:00 AM	12/7/2017	1/3/2018
N027429-008D	MW-38S-SMT-Q417	Groundwater	12/7/2017 11:31:00 AM	12/7/2017	1/3/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027429
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027429-009A	MW-72-080-Q417	Groundwater	12/7/2017 2:24:00 PM	12/7/2017	1/3/2018
N027429-009B	MW-72-080-Q417	Groundwater	12/7/2017 2:24:00 PM	12/7/2017	1/3/2018
N027429-009C	MW-72-080-Q417	Groundwater	12/7/2017 2:24:00 PM	12/7/2017	1/3/2018
N027429-009D	MW-72-080-Q417	Groundwater	12/7/2017 2:24:00 PM	12/7/2017	1/3/2018
N027429-010A	MW-59-100-Q417	Groundwater	12/7/2017 2:18:00 PM	12/7/2017	1/3/2018
N027429-010B	MW-59-100-Q417	Groundwater	12/7/2017 2:18:00 PM	12/7/2017	1/3/2018
N027429-010C	MW-59-100-Q417	Groundwater	12/7/2017 2:18:00 PM	12/7/2017	1/3/2018
N027429-010D	MW-59-100-Q417	Groundwater	12/7/2017 2:18:00 PM	12/7/2017	1/3/2018
N027429-011A	MW-49-365-EB-Q417	Groundwater	12/7/2017 12:30:00 PM	12/7/2017	1/3/2018
N027429-012A	MW-09-Q417	Groundwater	12/7/2017 12:53:00 PM	12/7/2017	1/3/2018
N027429-012B	MW-09-Q417	Groundwater	12/7/2017 12:53:00 PM	12/7/2017	1/3/2018
N027429-012C	MW-09-Q417	Groundwater	12/7/2017 12:53:00 PM	12/7/2017	1/3/2018
N027429-012D	MW-09-Q417	Groundwater	12/7/2017 12:53:00 PM	12/7/2017	1/3/2018
N027429-013A	MW-10-Q417	Groundwater	12/7/2017 10:20:00 AM	12/7/2017	1/3/2018
N027429-013B	MW-10-Q417	Groundwater	12/7/2017 10:20:00 AM	12/7/2017	1/3/2018
N027429-013C	MW-10-Q417	Groundwater	12/7/2017 10:20:00 AM	12/7/2017	1/3/2018
N027429-013D	MW-10-Q417	Groundwater	12/7/2017 10:20:00 AM	12/7/2017	1/3/2018
N027429-014A	MW-904-Q417	Groundwater	12/7/2017 10:30:00 AM	12/7/2017	1/3/2018
N027429-014B	MW-904-Q417	Groundwater	12/7/2017 10:30:00 AM	12/7/2017	1/3/2018
N027429-014C	MW-904-Q417	Groundwater	12/7/2017 10:30:00 AM	12/7/2017	1/3/2018
N027429-014D	MW-904-Q417	Groundwater	12/7/2017 10:30:00 AM	12/7/2017	1/3/2018
N027429-015A	MW-11-Q417	Groundwater	12/7/2017 11:48:00 AM	12/7/2017	1/3/2018
N027429-015B	MW-11-Q417	Groundwater	12/7/2017 11:48:00 AM	12/7/2017	1/3/2018
N027429-015C	MW-11-Q417	Groundwater	12/7/2017 11:48:00 AM	12/7/2017	1/3/2018
N027429-015D	MW-11-Q417	Groundwater	12/7/2017 11:48:00 AM	12/7/2017	1/3/2018
N027429-016A	MW-47-055-Q417	Groundwater	12/7/2017 3:10:00 PM	12/7/2017	1/3/2018
N027429-016B	MW-47-055-Q417	Groundwater	12/7/2017 3:10:00 PM	12/7/2017	1/3/2018
N027429-016C	MW-47-055-Q417	Groundwater	12/7/2017 3:10:00 PM	12/7/2017	1/3/2018
N027429-016D	MW-47-055-Q417	Groundwater	12/7/2017 3:10:00 PM	12/7/2017	1/3/2018
N027429-017A	MW-914-Q417	Groundwater	12/7/2017 3:20:00 PM	12/7/2017	1/3/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027429
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027429-017B	MW-914-Q417	Groundwater	12/7/2017 3:20:00 PM	12/7/2017	1/3/2018
N027429-017C	MW-914-Q417	Groundwater	12/7/2017 3:20:00 PM	12/7/2017	1/3/2018
N027429-017D	MW-914-Q417	Groundwater	12/7/2017 3:20:00 PM	12/7/2017	1/3/2018
N027429-018A	MW-47-115-Q417	Groundwater	12/7/2017 3:10:00 PM	12/7/2017	1/3/2018
N027429-018B	MW-47-115-Q417	Groundwater	12/7/2017 3:10:00 PM	12/7/2017	1/3/2018
N027429-018C	MW-47-115-Q417	Groundwater	12/7/2017 3:10:00 PM	12/7/2017	1/3/2018
N027429-018D	MW-47-115-Q417	Groundwater	12/7/2017 3:10:00 PM	12/7/2017	1/3/2018
N027429-019A	MW-49-135-EB-Q417	Groundwater	12/7/2017 1:20:00 PM	12/7/2017	1/3/2018
N027429-020A	MW-49-135-Q417	Groundwater	12/7/2017 2:12:00 PM	12/7/2017	1/3/2018
N027429-020B	MW-49-135-Q417	Groundwater	12/7/2017 2:12:00 PM	12/7/2017	1/3/2018
N027429-020C	MW-49-135-Q417	Groundwater	12/7/2017 2:12:00 PM	12/7/2017	1/3/2018
N027429-020D	MW-49-135-Q417	Groundwater	12/7/2017 2:12:00 PM	12/7/2017	1/3/2018

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-001

Client Sample ID: MW-24A-Q417
Collection Date: 12/7/2017 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	1400	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-002

Client Sample ID: MW-906-Q417
Collection Date: 12/7/2017 9:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	1400	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-003

Client Sample ID: MW-24B-Q417
Collection Date: 12/7/2017 10:33:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-005

Client Sample ID: MW-38D-Q417
Collection Date: 12/7/2017 1:02:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-SMT-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 12:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 11:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	1400	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 11:31:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	1400	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-009

Client Sample ID: MW-72-080-Q417
Collection Date: 12/7/2017 2:24:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-010

Client Sample ID: MW-59-100-Q417
Collection Date: 12/7/2017 2:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-012

Client Sample ID: MW-09-Q417
Collection Date: 12/7/2017 12:53:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	2500	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-013

Client Sample ID: MW-10-Q417
Collection Date: 12/7/2017 10:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	2000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-014

Client Sample ID: MW-904-Q417
Collection Date: 12/7/2017 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	2000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-015

Client Sample ID: MW-11-Q417
Collection Date: 12/7/2017 11:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	2000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-016

Client Sample ID: MW-47-055-Q417
Collection Date: 12/7/2017 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	3600	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-017

Client Sample ID: MW-914-Q417
Collection Date: 12/7/2017 3:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	3600	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-018

Client Sample ID: MW-47-115-Q417
Collection Date: 12/7/2017 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-020

Client Sample ID: MW-49-135-Q417
Collection Date: 12/7/2017 2:12:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N027429-005DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120747
Client ID:	ZZZZZZ	Batch ID:	R120747	TestNo:	EPA 120.1			Analysis Date:	12/8/2017	SeqNo:	2860676

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	15840.000	0.10						15870	0.189	10	

Sample ID	N027430-002CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120747
Client ID:	ZZZZZZ	Batch ID:	R120747	TestNo:	EPA 120.1			Analysis Date:	12/8/2017	SeqNo:	2860691

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	17930.000	0.10						17890	0.223	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 1:02:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171211E**	QC Batch: **66003**				PrepDate	**12/11/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	13000	100	100		mg/L	1	12/11/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-SMT-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 12:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212E**	QC Batch: **66024**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	12000	100	100		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 11:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212E**	QC Batch: **66024**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	890	10	10		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 11:31:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212E**	QC Batch: **66024**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	870	10	10		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-009

Client Sample ID: MW-72-080-Q417
Collection Date: 12/7/2017 2:24:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212E**	QC Batch: **66024**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	8700	100	100		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-59-100-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 2:18:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212E**	QC Batch: **66024**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	7800	100	100		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 12:53:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212E**	QC Batch: **66024**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1700	20	20		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 10:20:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212E**	QC Batch: **66024**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1400	13	13		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-014

Client Sample ID: MW-904-Q417
Collection Date: 12/7/2017 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212E**	QC Batch: **66024**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1400	13	13		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-015

Client Sample ID: MW-11-Q417
Collection Date: 12/7/2017 11:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212E**	QC Batch: **66024**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1300	13	13		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-016

Client Sample ID: MW-47-055-Q417
Collection Date: 12/7/2017 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212E**	QC Batch: **66024**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2200	25	25		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-017

Client Sample ID: MW-914-Q417
Collection Date: 12/7/2017 3:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2600	25	25		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-47-115-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 3:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**			PrepDate	**12/12/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	8000	100	100		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-135-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 2:12:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**			PrepDate	**12/12/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	7400	100	100		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-66003	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/11/2017	RunNo:	120759
Client ID:	LCSW	Batch ID:	66003	TestNo:	SM2540C			Analysis Date:	12/11/2017	SeqNo:	2861054

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	959.000	10	1000	0	95.9	80	120				

Sample ID	MB-66003	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/11/2017	RunNo:	120759
Client ID:	PBW	Batch ID:	66003	TestNo:	SM2540C			Analysis Date:	12/11/2017	SeqNo:	2861055

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N027429-005DDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/11/2017	RunNo:	120759
Client ID:	ZZZZZZ	Batch ID:	66003	TestNo:	SM2540C			Analysis Date:	12/11/2017	SeqNo:	2861066

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	12040.000	100						12550	4.15	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66024**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/12/2017**	RunNo: **120817**
Client ID: **LCSW**	Batch ID: **66024**	TestNo: **SM2540C**		Analysis Date: **12/12/2017**	SeqNo: **2865308**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	946.000	10	1000	0	94.6	80	120				

Sample ID **MB-66024**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/12/2017**	RunNo: **120817**
Client ID: **PBW**	Batch ID: **66024**	TestNo: **SM2540C**		Analysis Date: **12/12/2017**	SeqNo: **2865309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N027429-009DDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/12/2017**	RunNo: **120817**
Client ID: **ZZZZZZ**	Batch ID: **66024**	TestNo: **SM2540C**		Analysis Date: **12/12/2017**	SeqNo: **2865314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	8960.000	100						8690	3.06	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-66025	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/12/2017	RunNo:	120818
Client ID:	LCSW	Batch ID:	66025	TestNo:	SM2540C			Analysis Date:	12/12/2017	SeqNo:	2865479

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	936.000	10	1000	0	93.6	80	120				

Sample ID	MB-66025	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/12/2017	RunNo:	120818
Client ID:	PBW	Batch ID:	66025	TestNo:	SM2540C			Analysis Date:	12/12/2017	SeqNo:	2865480

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N027430-002CDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/12/2017	RunNo:	120818
Client ID:	ZZZZZZ	Batch ID:	66025	TestNo:	SM2540C			Analysis Date:	12/12/2017	SeqNo:	2865485

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	14560.000	100						13930	4.42	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-001

Client Sample ID: MW-24A-Q417
Collection Date: 12/7/2017 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171212A** QC Batch: **R120835**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/12/2017 02:54 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	2.7	0.019	1.0		µg/L	1	12/20/2017 06:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-002

Client Sample ID: MW-906-Q417
Collection Date: 12/7/2017 9:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171212A** QC Batch: **R120835**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/12/2017 03:32 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	8.7	0.019	1.0		µg/L	1	12/20/2017 05:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-003

Client Sample ID: MW-24B-Q417
Collection Date: 12/7/2017 10:33:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171212A**	QC Batch: **R120835**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	250	1.7	10		µg/L	50	12/12/2017 03:50 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	250	0.096	5.0		µg/L	5	12/20/2017 06:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-004

Client Sample ID: MW-721-Q417
Collection Date: 12/7/2017 3:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171212A**	QC Batch: **R120835**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/12/2017 04:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-005

Client Sample ID: MW-38D-Q417
Collection Date: 12/7/2017 1:02:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171212A** QC Batch: **R120835**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	21	0.17	1.0		µg/L	5	12/12/2017 04:28 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	18	0.019	1.0		µg/L	1	12/20/2017 07:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-006

Client Sample ID: MW-38D-SMT-Q417
Collection Date: 12/7/2017 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171212A** QC Batch: **R120835**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	20	0.17	1.0		µg/L	5	12/12/2017 04:47 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	18	0.019	1.0		µg/L	1	12/20/2017 07:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-007

Client Sample ID: MW-38S-Q417
Collection Date: 12/7/2017 11:47:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171212A** QC Batch: **R120835**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	2.9	0.033	0.20		µg/L	1	12/12/2017 05:25 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	3.1	0.019	1.0		µg/L	1	12/20/2017 07:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-008

Client Sample ID: MW-38S-SMT-Q417
Collection Date: 12/7/2017 11:31:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171212A** QC Batch: **R120835**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	2.3	0.033	0.20		µg/L	1	12/12/2017 05:44 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate **12/8/2017**			Analyst: **CEI**
Chromium	2.5	0.019	1.0		µg/L	1	12/20/2017 08:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-009

Client Sample ID: MW-72-080-Q417
Collection Date: 12/7/2017 2:24:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171212A** QC Batch: **R120835**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	94	0.66	4.0		µg/L	20	12/12/2017 02:25 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	95	0.096	5.0		µg/L	5	12/20/2017 08:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-010

Client Sample ID: MW-59-100-Q417
Collection Date: 12/7/2017 2:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171212A**	QC Batch: **R120835**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	3600	33	200		µg/L	1000	12/12/2017 06:03 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180102A**	QC Batch: **65978**			PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	3900	0.48	25		µg/L	25	1/2/2018 03:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-365-EB-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 12:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171213A**	QC Batch: **R120837**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/13/2017 09:39 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-012

Client Sample ID: MW-09-Q417
Collection Date: 12/7/2017 12:53:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171213A** QC Batch: **R120837**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	150	0.66	4.0		µg/L	20	12/13/2017 11:04 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	140	0.019	1.0		µg/L	1	12/20/2017 08:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-013

Client Sample ID: MW-10-Q417
Collection Date: 12/7/2017 10:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171213A**	QC Batch: **R120837**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	130	0.66	4.0		µg/L	20	12/13/2017 11:23 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	130	0.019	1.0		µg/L	1	12/20/2017 06:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-014

Client Sample ID: MW-904-Q417
Collection Date: 12/7/2017 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171213A** QC Batch: **R120837**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	130	0.66	4.0		µg/L	20	12/13/2017 11:42 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A	**EPA 6020**			
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	120	0.019	1.0		µg/L	1	12/20/2017 06:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-015

Client Sample ID: MW-11-Q417
Collection Date: 12/7/2017 11:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171213A** QC Batch: **R120837**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	64	0.33	2.0		µg/L	10	12/13/2017 12:01 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A	**EPA 6020**			
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	61	0.019	1.0		µg/L	1	12/20/2017 08:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-016

Client Sample ID: MW-47-055-Q417
Collection Date: 12/7/2017 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171213A** QC Batch: **R120837**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	18	0.17	1.0		µg/L	5	12/13/2017 01:07 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	20	0.019	1.0		µg/L	1	12/20/2017 09:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-017

Client Sample ID: MW-914-Q417
Collection Date: 12/7/2017 3:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171213A** QC Batch: **R120837**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	19	0.17	1.0		µg/L	5	12/13/2017 01:26 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	20	0.019	1.0		µg/L	1	12/20/2017 09:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-018

Client Sample ID: MW-47-115-Q417
Collection Date: 12/7/2017 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171213A** QC Batch: **R120837**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	18	0.17	1.0		µg/L	5	12/13/2017 01:45 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	16	0.019	1.0		µg/L	1	12/20/2017 09:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-135-EB-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 1:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171213A**	QC Batch: **R120837**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/13/2017 09:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-020

Client Sample ID: MW-49-135-Q417
Collection Date: 12/7/2017 2:12:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171213A** QC Batch: **R120837**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	2.9	0.17	1.0		µg/L	5	12/13/2017 12:20 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A	**EPA 6020**			
RunID: **NV00922-ICP7_171220A** QC Batch: **65978**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	2.7	0.019	1.0		µg/L	1	12/20/2017 09:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R120835**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **PBW**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R120835**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **LCSW**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866105**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.211	0.20	5.000	0	104	90	110				

Sample ID **N027465-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.043	0.20	1.000	0	104	90	110				

Sample ID **N027465-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.097	0.20	1.000	0.05640	104	90	110				

Sample ID **N027465-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.081	0.20	1.000	0	108	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027431-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120835**
Client ID: **ZZZZZZ** Batch ID: **R120835** TestNo: **EPA 218.6** Analysis Date: **12/12/2017** SeqNo: **2866117**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	505.875	10	250.0	249.8	102	90	110				

Sample ID **N027431-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120835**
Client ID: **ZZZZZZ** Batch ID: **R120835** TestNo: **EPA 218.6** Analysis Date: **12/12/2017** SeqNo: **2866118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	248.115	10						249.8	0.693	20	

Sample ID **N027429-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120835**
Client ID: **ZZZZZZ** Batch ID: **R120835** TestNo: **EPA 218.6** Analysis Date: **12/12/2017** SeqNo: **2866120**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	199.672	4.0	100.0	94.25	105	90	110				

Sample ID **N027429-009AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120835**
Client ID: **ZZZZZZ** Batch ID: **R120835** TestNo: **EPA 218.6** Analysis Date: **12/12/2017** SeqNo: **2866121**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	198.092	4.0	100.0	94.25	104	90	110	199.7	0.794	20	

Sample ID **N027429-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120835**
Client ID: **ZZZZZZ** Batch ID: **R120835** TestNo: **EPA 218.6** Analysis Date: **12/12/2017** SeqNo: **2866123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.081	0.20	1.000	0	108	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027429-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.132	0.20	1.000	0.07800	105	90	110				

Sample ID **N027429-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	512.690	10	250.0	248.5	106	90	110				

Sample ID **N027429-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.033	0.20	1.000	0	103	90	110				

Sample ID **N027429-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866133**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	46.073	1.0	25.00	20.60	102	90	110				

Sample ID **N027429-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.442	1.0	25.00	20.10	101	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027429-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120835
Client ID:	ZZZZZZ	Batch ID:	R120835	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866139

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.171	0.20	5.000	2.945	105	90	110				

Sample ID	N027429-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120835
Client ID:	ZZZZZZ	Batch ID:	R120835	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866141

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.530	0.20	5.000	2.266	105	90	110				

Sample ID	N027429-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120835
Client ID:	ZZZZZZ	Batch ID:	R120835	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866143

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8927.300	200	5000	3603	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R120837	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120837	
Client ID:	PBW	Batch ID:	R120837	TestNo:	EPA 218.6			Analysis Date:	12/13/2017	SeqNo:	2866488	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		ND	0.20									

Sample ID	LCS-R120837	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120837	
Client ID:	LCSW	Batch ID:	R120837	TestNo:	EPA 218.6			Analysis Date:	12/13/2017	SeqNo:	2866489	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		5.224	0.20	5.000	0	104	90	110				

Sample ID	N027429-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120837	
Client ID:	ZZZZZZ	Batch ID:	R120837	TestNo:	EPA 218.6			Analysis Date:	12/13/2017	SeqNo:	2866492	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		1.086	0.20	1.000	0	109	90	110				

Sample ID	N027429-019AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120837	
Client ID:	ZZZZZZ	Batch ID:	R120837	TestNo:	EPA 218.6			Analysis Date:	12/13/2017	SeqNo:	2866494	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		1.049	0.20	1.000	0	105	90	110				

Sample ID	N027429-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120837	
Client ID:	ZZZZZZ	Batch ID:	R120837	TestNo:	EPA 218.6			Analysis Date:	12/13/2017	SeqNo:	2866499	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		249.882	4.0	100.0	146.0	104	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027429-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120837**
Client ID: **ZZZZZZ**	Batch ID: **R120837**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2017**	SeqNo: **2866501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	236.978	4.0	100.0	131.8	105	90	110				

Sample ID **N027429-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120837**
Client ID: **ZZZZZZ**	Batch ID: **R120837**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2017**	SeqNo: **2866503**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	236.250	4.0	100.0	130.6	106	90	110				

Sample ID **N027429-015AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120837**
Client ID: **ZZZZZZ**	Batch ID: **R120837**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2017**	SeqNo: **2866505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	116.314	2.0	50.00	63.53	106	90	110				

Sample ID **N027429-020AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120837**
Client ID: **ZZZZZZ**	Batch ID: **R120837**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2017**	SeqNo: **2866507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.231	1.0	5.000	2.921	106	90	110				

Sample ID **N027429-016AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120837**
Client ID: **ZZZZZZ**	Batch ID: **R120837**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2017**	SeqNo: **2866511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.181	1.0	25.00	18.27	108	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027429-017AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:			RunNo:	120837	
Client ID:	ZZZZZZ	Batch ID:	R120837	TestNo:	EPA 218.6			Analysis Date:	12/13/2017		SeqNo:	2866513	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	45.040	1.0	25.00	18.75	105	90	110						

Sample ID	N027429-018AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:			RunNo:	120837	
Client ID:	ZZZZZZ	Batch ID:	R120837	TestNo:	EPA 218.6			Analysis Date:	12/13/2017		SeqNo:	2866515	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	44.123	1.0	25.00	18.31	103	90	110						

Sample ID	N027456-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:			RunNo:	120837	
Client ID:	ZZZZZZ	Batch ID:	R120837	TestNo:	EPA 218.6			Analysis Date:	12/13/2017		SeqNo:	2866516	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	320.130	20						318.4	0.526	20			

Sample ID	N027429-013AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:			RunNo:	120837	
Client ID:	ZZZZZZ	Batch ID:	R120837	TestNo:	EPA 218.6			Analysis Date:	12/13/2017		SeqNo:	2866517	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	236.376	4.0	100.0	131.8	105	90	110	237.0	0.254	20			

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-65978	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120980
Client ID:	PBW	Batch ID:	65978	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874676

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.032	1.0									

Sample ID	LCS-65978	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120980
Client ID:	LCSW	Batch ID:	65978	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874677

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.871	1.0	10.00	0	98.7	85	115				

Sample ID	N027429-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120980
Client ID:	ZZZZZZ	Batch ID:	65978	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874683

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.906	1.0	10.00	2.748	91.6	75	125				

Sample ID	N027429-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120980
Client ID:	ZZZZZZ	Batch ID:	65978	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874685

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.807	1.0	10.00	2.748	90.6	75	125	11.91	0.831	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-005

Client Sample ID: MW-38D-Q417
Collection Date: 12/7/2017 1:02:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	30	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-SMT-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 12:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	30	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-007

Client Sample ID: MW-38S-Q417
Collection Date: 12/7/2017 11:47:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	170	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 11:31:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	170	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-009

Client Sample ID: MW-72-080-Q417
Collection Date: 12/7/2017 2:24:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	42	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-010

Client Sample ID: MW-59-100-Q417
Collection Date: 12/7/2017 2:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	85	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-012

Client Sample ID: MW-09-Q417
Collection Date: 12/7/2017 12:53:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	130	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-013

Client Sample ID: MW-10-Q417
Collection Date: 12/7/2017 10:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	120	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-014

Client Sample ID: MW-904-Q417
Collection Date: 12/7/2017 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	100	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-015

Client Sample ID: MW-11-Q417
Collection Date: 12/7/2017 11:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	92	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-016

Client Sample ID: MW-47-055-Q417
Collection Date: 12/7/2017 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	68	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-017

Client Sample ID: MW-914-Q417
Collection Date: 12/7/2017 3:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	68	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-018

Client Sample ID: MW-47-115-Q417
Collection Date: 12/7/2017 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	56	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-020

Client Sample ID: MW-49-135-Q417
Collection Date: 12/7/2017 2:12:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171213A**	QC Batch: **R120785**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	62	1.2	5.0		mg/L	1	12/13/2017 08:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R120785**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120785**
Client ID: **LCSW**	Batch ID: **R120785**	TestNo: **SM 2320 B**		Analysis Date: **12/13/2017**	SeqNo: **2863164**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	99.398	5.0	100.0	0	99.4	85	115				

Sample ID **MB-R120785**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120785**
Client ID: **PBW**	Batch ID: **R120785**	TestNo: **SM 2320 B**		Analysis Date: **12/13/2017**	SeqNo: **2863165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N027429-005DDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120785**
Client ID: **ZZZZZZ**	Batch ID: **R120785**	TestNo: **SM 2320 B**		Analysis Date: **12/13/2017**	SeqNo: **2863173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	30.120	5.0						30.12	0	30	

Sample ID **N027429-014DMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120785**
Client ID: **ZZZZZZ**	Batch ID: **R120785**	TestNo: **SM 2320 B**		Analysis Date: **12/13/2017**	SeqNo: **2863182**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	204.819	5.0	100.0	102.4	102	75	125				

Sample ID **N027429-014DMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120785**
Client ID: **ZZZZZZ**	Batch ID: **R120785**	TestNo: **SM 2320 B**		Analysis Date: **12/13/2017**	SeqNo: **2863183**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	202.811	5.0	100.0	102.4	100	75	125	204.8	0.985	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-005

Client Sample ID: MW-38D-Q417
Collection Date: 12/7/2017 1:02:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/12/2017 06:02 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Chloride	7500	18	1000		mg/L	2000	12/14/2017 10:12 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Sulfate	720	2.3	50		mg/L	100	12/14/2017 10:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-006

Client Sample ID: MW-38D-SMT-Q417
Collection Date: 12/7/2017 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/12/2017 06:17 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Chloride	7500	18	1000		mg/L	2000	12/14/2017 10:43 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Sulfate	730	2.3	50		mg/L	100	12/14/2017 10:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-007

Client Sample ID: MW-38S-Q417
Collection Date: 12/7/2017 11:47:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**			PrepDate				Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/12/2017 04:09 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Chloride	300	0.91	50		mg/L	100	12/14/2017 11:13 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Sulfate	160	0.46	10		mg/L	20	12/14/2017 11:29 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-008

Client Sample ID: MW-38S-SMT-Q417
Collection Date: 12/7/2017 11:31:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/12/2017 05:46 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Chloride	300	0.91	50		mg/L	100	12/14/2017 11:44 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Sulfate	160	0.46	10		mg/L	20	12/14/2017 11:59 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-009

Client Sample ID: MW-72-080-Q417
Collection Date: 12/7/2017 2:24:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/12/2017 07:03 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Chloride	5900	18	1000		mg/L	2000	12/14/2017 02:52 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Sulfate	700	2.3	50		mg/L	100	12/14/2017 03:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-010

Client Sample ID: MW-59-100-Q417
Collection Date: 12/7/2017 2:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**				PrepDate			Analyst: **RAB**
Bromide	ND	0.20	5.0		mg/L	10	12/12/2017 07:18 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Chloride	4700	9.1	500		mg/L	1000	12/14/2017 03:53 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Sulfate	720	2.3	50		mg/L	100	12/14/2017 04:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-012

Client Sample ID: MW-09-Q417
Collection Date: 12/7/2017 12:53:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**			PrepDate				Analyst: **RAB**
Bromide	ND	0.039	1.0		mg/L	2	12/12/2017 04:24 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Chloride	770	1.8	100		mg/L	200	12/14/2017 04:24 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Sulfate	230	0.46	10		mg/L	20	12/14/2017 04:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-013

Client Sample ID: MW-10-Q417
Collection Date: 12/7/2017 10:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/12/2017 07:34 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Chloride	520	0.91	50		mg/L	100	12/14/2017 01:20 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Sulfate	250	0.46	10		mg/L	20	12/14/2017 02:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-014

Client Sample ID: MW-904-Q417
Collection Date: 12/7/2017 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/12/2017 07:49 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Chloride	520	0.91	50		mg/L	100	12/14/2017 04:56 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Sulfate	260	0.46	10		mg/L	20	12/14/2017 05:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-015

Client Sample ID: MW-11-Q417
Collection Date: 12/7/2017 11:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/12/2017 08:04 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Chloride	600	1.8	100		mg/L	200	12/14/2017 05:27 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Sulfate	190	0.46	10		mg/L	20	12/14/2017 05:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-016

Client Sample ID: MW-47-055-Q417
Collection Date: 12/7/2017 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/12/2017 08:19 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Chloride	1400	4.6	250		mg/L	500	12/14/2017 05:57 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Sulfate	240	0.46	10		mg/L	20	12/14/2017 06:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-017

Client Sample ID: MW-914-Q417
Collection Date: 12/7/2017 3:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/12/2017 08:35 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Chloride	1300	4.6	250		mg/L	500	12/14/2017 07:29 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Sulfate	240	0.46	10		mg/L	20	12/14/2017 07:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-018

Client Sample ID: MW-47-115-Q417
Collection Date: 12/7/2017 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/12/2017 08:50 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Chloride	4300	9.1	500		mg/L	1000	12/14/2017 08:00 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Sulfate	770	2.3	50		mg/L	100	12/14/2017 08:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-020

Client Sample ID: MW-49-135-Q417
Collection Date: 12/7/2017 2:12:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212A** QC Batch: **R120770**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/12/2017 09:05 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Chloride	4200	9.1	500		mg/L	1000	12/14/2017 08:30 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Sulfate	820	2.3	50		mg/L	100	12/14/2017 08:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	MB-R120770_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770
Client ID:	PBW	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862144

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	LCS-R120770_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770
Client ID:	LCSW	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862145

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.272	0.50	1.250	0	102	90	110				

Sample ID	N027429-007DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770
Client ID:	ZZZZZZ	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862153

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.920	0.50	1.250	0	73.6	80	120				S

Sample ID	N027429-007DMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770
Client ID:	ZZZZZZ	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862154

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.990	0.50	1.250	0	79.2	80	120	0.9202	7.33	20	S

Sample ID	N027429-012DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770
Client ID:	ZZZZZZ	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862155

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.273	1.0	2.500	0	50.9	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	N027429-007DDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120770
Client ID:	ZZZZZZ	Batch ID:	R120770	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2862156

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50						0	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R120853_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	PBW	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868189

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R120853_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	LCSW	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868190

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.973	0.50	2.000	0	98.6	90	110				

Sample ID	N027429-008DMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868197

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	510.320	50	200.0	296.9	107	80	120				

Sample ID	N027429-013DMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868199

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	728.160	50	200.0	518.5	105	80	120				

Sample ID	N027429-013DMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868200

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	736.410	50	200.0	518.5	109	80	120	728.2	1.13	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N027429-015DDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868211

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	592.540	100						597.0	0.753	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R120853_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	PBW	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868229

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R120853_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	LCSW	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868230

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.773	0.50	4.000	0	94.3	90	110				

Sample ID	N027429-008DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868237

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	236.256	10	80.00	156.1	100	80	120				

Sample ID	N027429-013DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868239

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	328.584	10	80.00	245.8	103	80	120				

Sample ID	N027429-013DMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868240

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	327.796	10	80.00	245.8	103	80	120	328.6	0.240	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N027429-015DDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868251

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	188.270	10						187.5	0.425	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-001

Client Sample ID: MW-24A-Q417
Collection Date: 12/7/2017 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171219B**	QC Batch: **R120949**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-002

Client Sample ID: MW-906-Q417
Collection Date: 12/7/2017 9:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171219B**	QC Batch: **R120949**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-003

Client Sample ID: MW-24B-Q417
Collection Date: 12/7/2017 10:33:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171220C**	QC Batch: **R120963**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.7	0.044	0.10		mg/L	2	12/20/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-005

Client Sample ID: MW-38D-Q417
Collection Date: 12/7/2017 1:02:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171219B**	QC Batch: **R120949**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-SMT-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 12:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171219B**	QC Batch: **R120949**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.050	0.022	0.050		mg/L	1	12/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-007

Client Sample ID: MW-38S-Q417
Collection Date: 12/7/2017 11:47:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	2.8	0.11	0.25		mg/L	5	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-008

Client Sample ID: MW-38S-SMT-Q417
Collection Date: 12/7/2017 11:31:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	3.0	0.11	0.25		mg/L	5	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 2:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.75	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-010

Client Sample ID: MW-59-100-Q417
Collection Date: 12/7/2017 2:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	2.3	0.11	0.25		mg/L	5	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-012

Client Sample ID: MW-09-Q417
Collection Date: 12/7/2017 12:53:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	11	0.22	0.50		mg/L	10	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-013

Client Sample ID: MW-10-Q417
Collection Date: 12/7/2017 10:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	13	0.22	0.50		mg/L	10	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-014

Client Sample ID: MW-904-Q417
Collection Date: 12/7/2017 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	12	0.22	0.50		mg/L	10	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-015

Client Sample ID: MW-11-Q417
Collection Date: 12/7/2017 11:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	6.0	0.22	0.50		mg/L	10	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R120949	**MBLK**	**4500N03F_W**	**mg/L**		**120949**
Client ID: **PBW**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873078**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-R120949	**LCS**	**4500N03F_W**	**mg/L**		**120949**
Client ID: **LCSW**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.491	0.050	0.5000	0	98.2	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027405-009CMS	**MS**	**4500N03F_W**	**mg/L**		**120949**
Client ID: **ZZZZZZ**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873081**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.451	0.50	5.000	4.488	99.3	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027405-009CMSD	**MSD**	**4500N03F_W**	**mg/L**		**120949**
Client ID: **ZZZZZZ**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873082**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.018	0.50	5.000	4.488	90.6	75	125	9.451	4.69	20	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027405-012CDUP	**DUP**	**4500N03F_W**	**mg/L**		**120949**
Client ID: **ZZZZZZ**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.470	0.25						4.022	14.7	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R120963**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **PBW**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R120963**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **LCSW**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.482	0.050	0.5000	0	96.3	85	115				

Sample ID **N027429-003CMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **ZZZZZZ**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.637	0.10	1.000	1.657	98.1	75	125				

Sample ID **N027429-003CMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **ZZZZZZ**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873456**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.665	0.10	1.000	1.657	101	75	125	2.637	1.03	20	

Sample ID **N027405-006CDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **ZZZZZZ**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873458**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.124	0.050						0.1567	23.3	20	R

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R121010	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121010
Client ID:	PBW	Batch ID:	R121010	TestNo:	SM4500-NO3			Analysis Date:	12/21/2017	SeqNo:	2876073

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R121010	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121010
Client ID:	LCSW	Batch ID:	R121010	TestNo:	SM4500-NO3			Analysis Date:	12/21/2017	SeqNo:	2876074

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.526	0.050	0.5000	0	105	85	115				

Sample ID	N027429-007CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121010
Client ID:	ZZZZZZ	Batch ID:	R121010	TestNo:	SM4500-NO3			Analysis Date:	12/21/2017	SeqNo:	2876076

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.621	0.25	2.500	2.809	112	75	125				

Sample ID	N027429-007CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121010
Client ID:	ZZZZZZ	Batch ID:	R121010	TestNo:	SM4500-NO3			Analysis Date:	12/21/2017	SeqNo:	2876077

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.484	0.25	2.500	2.809	107	75	125	5.621	2.47	20	

Sample ID	N027429-008CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121010
Client ID:	ZZZZZZ	Batch ID:	R121010	TestNo:	SM4500-NO3			Analysis Date:	12/21/2017	SeqNo:	2876079

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.177	0.25						2.951	7.36	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-005

Client Sample ID: MW-38D-Q417
Collection Date: 12/7/2017 1:02:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Boron	1900	38	100		ug/L	1	12/16/2017 04:06 PM
Calcium	330000	28	500		ug/L	1	12/16/2017 04:06 PM
Iron	ND	1.8	20		ug/L	1	12/16/2017 04:06 PM
Magnesium	4400	4.4	100		ug/L	1	12/16/2017 04:06 PM
Sodium	4700000	6600	120000		ug/L	250	12/18/2017 07:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-006

Client Sample ID: MW-38D-SMT-Q417
Collection Date: 12/7/2017 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Boron	2000	38	100		ug/L	1	12/16/2017 04:14 PM
Calcium	350000	28	500		ug/L	1	12/16/2017 04:14 PM
Iron	ND	1.8	20		ug/L	1	12/16/2017 04:14 PM
Magnesium	4300	4.4	100		ug/L	1	12/16/2017 04:14 PM
Sodium	4800000	6600	120000		ug/L	250	12/18/2017 07:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-007

Client Sample ID: MW-38S-Q417
Collection Date: 12/7/2017 11:47:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Boron	770	38	100		ug/L	1	12/16/2017 05:51 PM
Calcium	23000	28	500		ug/L	1	12/16/2017 05:51 PM
Iron	ND	1.8	20		ug/L	1	12/16/2017 05:51 PM
Magnesium	4200	4.4	100		ug/L	1	12/16/2017 05:51 PM
Sodium	310000	660	12000		ug/L	25	12/18/2017 07:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-008

Client Sample ID: MW-38S-SMT-Q417
Collection Date: 12/7/2017 11:31:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Boron	760	38	100		ug/L	1	12/16/2017 05:56 PM
Calcium	23000	28	500		ug/L	1	12/16/2017 05:56 PM
Iron	ND	1.8	20		ug/L	1	12/16/2017 05:56 PM
Magnesium	4200	4.4	100		ug/L	1	12/16/2017 05:56 PM
Sodium	290000	660	12000		ug/L	25	12/18/2017 07:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-009

Client Sample ID: MW-72-080-Q417
Collection Date: 12/7/2017 2:24:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171216G**	QC Batch: **65964**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Boron	2000	38	100		ug/L	1	12/16/2017 06:01 PM
Calcium	360000	28	500		ug/L	1	12/16/2017 06:01 PM
Iron	ND	1.8	20		ug/L	1	12/16/2017 06:01 PM
Magnesium	7400	4.4	100		ug/L	1	12/16/2017 06:01 PM
Sodium	3400000	6600	120000		ug/L	250	12/18/2017 07:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-010

Client Sample ID: MW-59-100-Q417
Collection Date: 12/7/2017 2:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65992**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1400	38	100		ug/L	1	12/19/2017 12:14 AM
Calcium	770000	140	2500		ug/L	5	12/19/2017 07:17 AM
Iron	78	1.8	20		ug/L	1	12/19/2017 12:14 AM
Magnesium	24000	4.4	100		ug/L	1	12/19/2017 12:14 AM
Sodium	1900000	2600	50000		ug/L	100	12/18/2017 08:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-012

Client Sample ID: MW-09-Q417
Collection Date: 12/7/2017 12:53:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65992**			PrepDate	**12/11/2017**	Analyst: **CEI**	
Boron	620	38	100		ug/L	1	12/19/2017 12:21 AM
Calcium	110000	28	500		ug/L	1	12/19/2017 12:21 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 12:21 AM
Magnesium	29000	4.4	100		ug/L	1	12/19/2017 12:21 AM
Sodium	390000	660	12000		ug/L	25	12/18/2017 08:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-013

Client Sample ID: MW-10-Q417
Collection Date: 12/7/2017 10:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65992**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	620	38	100		ug/L	1	12/19/2017 12:28 AM
Calcium	120000	28	500		ug/L	1	12/19/2017 12:28 AM
Iron	26	1.8	20		ug/L	1	12/19/2017 12:28 AM
Magnesium	17000	4.4	100		ug/L	1	12/19/2017 12:28 AM
Sodium	300000	660	12000		ug/L	25	12/18/2017 08:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-014

Client Sample ID: MW-904-Q417
Collection Date: 12/7/2017 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65992**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	660	38	100		ug/L	1	12/19/2017 12:35 AM
Calcium	130000	28	500		ug/L	1	12/19/2017 12:35 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 12:35 AM
Magnesium	19000	4.4	100		ug/L	1	12/19/2017 12:35 AM
Sodium	310000	660	12000		ug/L	25	12/18/2017 08:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-015

Client Sample ID: MW-11-Q417
Collection Date: 12/7/2017 11:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65992**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	440	38	100		ug/L	1	12/19/2017 12:42 AM
Calcium	120000	28	500		ug/L	1	12/19/2017 12:42 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 12:42 AM
Magnesium	21000	4.4	100		ug/L	1	12/19/2017 12:42 AM
Sodium	300000	660	12000		ug/L	25	12/18/2017 08:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-016

Client Sample ID: MW-47-055-Q417
Collection Date: 12/7/2017 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65992**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	570	38	100		ug/L	1	12/19/2017 12:49 AM
Calcium	170000	28	500		ug/L	1	12/19/2017 12:49 AM
Iron	80	1.8	20		ug/L	1	12/19/2017 12:49 AM
Magnesium	27000	4.4	100		ug/L	1	12/19/2017 12:49 AM
Sodium	670000	660	12000		ug/L	25	12/18/2017 08:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-017

Client Sample ID: MW-914-Q417
Collection Date: 12/7/2017 3:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65992**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	560	38	100		ug/L	1	12/19/2017 12:56 AM
Calcium	170000	28	500		ug/L	1	12/19/2017 12:56 AM
Iron	70	1.8	20		ug/L	1	12/19/2017 12:56 AM
Magnesium	26000	4.4	100		ug/L	1	12/19/2017 12:56 AM
Sodium	670000	660	12000		ug/L	25	12/18/2017 08:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-018

Client Sample ID: MW-47-115-Q417
Collection Date: 12/7/2017 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65992**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1100	38	100		ug/L	1	12/19/2017 01:02 AM
Calcium	320000	28	500		ug/L	1	12/19/2017 01:02 AM
Iron	63	1.8	20		ug/L	1	12/19/2017 01:02 AM
Magnesium	29000	4.4	100		ug/L	1	12/19/2017 01:02 AM
Sodium	2600000	2600	50000		ug/L	100	12/18/2017 08:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-020

Client Sample ID: MW-49-135-Q417
Collection Date: 12/7/2017 2:12:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65992**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	830	38	100		ug/L	1	12/19/2017 01:21 AM
Calcium	290000	28	500		ug/L	1	12/19/2017 01:21 AM
Iron	34	1.8	20		ug/L	1	12/19/2017 01:21 AM
Magnesium	27000	4.4	100		ug/L	1	12/19/2017 01:21 AM
Sodium	2700000	2600	50000		ug/L	100	12/18/2017 08:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-65964	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/8/2017	RunNo:	120897
Client ID:	PBW	Batch ID:	65964	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870013

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID	LCS1-65964	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/8/2017	RunNo:	120897
Client ID:	LCSW	Batch ID:	65964	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870014

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4730.665	100	5000	0	94.6	85	115				
Calcium	9706.269	500	10000	0	97.1	85	115				
Iron	109.838	20	100.0	0	110	85	115				
Magnesium	9640.945	100	10000	0	96.4	85	115				

Sample ID	N027405-001C-MS1	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/8/2017	RunNo:	120897
Client ID:	ZZZZZZ	Batch ID:	65964	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870020

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5424.089	100	5000	726.2	94.0	75	125				
Calcium	121412.864	500	10000	107700	137	75	125				S
Iron	110.283	20	100.0	14.04	96.2	75	125				
Magnesium	28521.567	100	10000	18850	96.7	75	125				

Sample ID	N027405-001C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/8/2017	RunNo:	120897
Client ID:	ZZZZZZ	Batch ID:	65964	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870021

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5448.513	100	5000	726.2	94.4	75	125	5424	0.449	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N027405-001C-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120897**
Client ID: **ZZZZZZ**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	121647.419	500	10000	107700	140	75	125	121400	0.193	20	S
Iron	109.351	20	100.0	14.04	95.3	75	125	110.3	0.849	20	
Magnesium	28589.254	100	10000	18850	97.4	75	125	28520	0.237	20	

Sample ID **MB-65964**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120915**
Client ID: **PBW**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/18/2017**	SeqNo: **2871270**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID **LCS2-65964**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120915**
Client ID: **LCSW**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/18/2017**	SeqNo: **2871271**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20922.885	500	20000	0	105	85	115				

Sample ID **N027405-002C-MS2**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120915**
Client ID: **ZZZZZZ**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/18/2017**	SeqNo: **2871278**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1604471.596	50000	20000	1554000	252	75	125				S

Sample ID **N027405-002C-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/8/2017**	RunNo: **120915**
Client ID: **ZZZZZZ**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/18/2017**	SeqNo: **2871279**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1569386.145	50000	20000	1554000	76.9	75	125	1604000	2.21	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-65992**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120915**
Client ID: **PBW**	Batch ID: **65992**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/18/2017**	SeqNo: **2871305**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID **LCS2-65992**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120915**
Client ID: **LCSW**	Batch ID: **65992**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/18/2017**	SeqNo: **2871306**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20245.091	500	20000	0	101	85	115				

Sample ID **N027429-012B-MS2**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120915**
Client ID: **ZZZZZZ**	Batch ID: **65992**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/18/2017**	SeqNo: **2871313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	450303.405	12000	20000	389300	305	75	125				S

Sample ID **N027429-012B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120915**
Client ID: **ZZZZZZ**	Batch ID: **65992**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/18/2017**	SeqNo: **2871314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	453924.740	12000	20000	389300	323	75	125	450300	0.801	20	S

Sample ID **MB-65992**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **PBW**	Batch ID: **65992**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871582**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	ND	500									
Iron	5.018	20									
Magnesium	8.267	100									

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	LCS1-65992	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120920
Client ID:	LCSW	Batch ID:	65992	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2871583

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4686.857	100	5000	0	93.7	85	115				
Calcium	9676.269	500	10000	0	96.8	85	115				
Iron	111.742	20	100.0	0	112	85	115				
Magnesium	9578.594	100	10000	0	95.8	85	115				

Sample ID	N027437-002BMS1	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120920
Client ID:	ZZZZZZ	Batch ID:	65992	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2871599

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5745.710	100	5000	1269	89.5	75	125				
Calcium	46886.546	500	10000	37380	95.0	75	125				
Iron	101.475	20	100.0	11.75	89.7	75	125				
Magnesium	29655.347	100	10000	20940	87.2	75	125				

Sample ID	N027437-002BMSD1	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120920
Client ID:	ZZZZZZ	Batch ID:	65992	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2871600

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5831.952	100	5000	1269	91.3	75	125	5746	1.49	20	
Calcium	47439.180	500	10000	37380	101	75	125	46890	1.17	20	
Iron	102.716	20	100.0	11.75	91.0	75	125	101.5	1.22	20	
Magnesium	30158.195	100	10000	20940	92.2	75	125	29660	1.68	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-001

Client Sample ID: MW-24A-Q417
Collection Date: 12/7/2017 9:15:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_171220A** QC Batch: **65978** PrepDate **12/8/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.16	2.5		µg/L	5	12/20/2017 04:48 PM
Arsenic	0.14	0.025	0.10		µg/L	1	12/20/2017 06:58 PM
Barium	23	0.070	1.0		µg/L	1	12/20/2017 06:58 PM
Beryllium	ND	0.043	0.50		µg/L	1	12/20/2017 06:58 PM
Cadmium	ND	0.24	2.5		µg/L	5	12/20/2017 04:48 PM
Cobalt	ND	0.026	0.50		µg/L	1	12/20/2017 06:58 PM
Copper	ND	0.26	1.0		µg/L	1	12/20/2017 06:58 PM
Lead	ND	0.18	5.0		µg/L	5	12/20/2017 04:48 PM
Manganese	19	0.056	0.50		µg/L	1	12/20/2017 06:58 PM
Molybdenum	140	0.039	0.50		µg/L	1	12/20/2017 06:58 PM
Nickel	1.2	0.040	1.0		µg/L	1	12/20/2017 06:58 PM
Selenium	ND	0.028	0.50		µg/L	1	12/20/2017 06:58 PM
Silver	ND	0.30	2.5		µg/L	5	12/20/2017 04:48 PM
Thallium	ND	0.15	2.5		µg/L	5	12/20/2017 04:48 PM
Vanadium	ND	0.021	1.0		µg/L	1	12/20/2017 06:58 PM
Zinc	ND	0.27	10		µg/L	1	12/20/2017 06:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-002

Client Sample ID: MW-906-Q417
Collection Date: 12/7/2017 9:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**		Analyst: **CEI**
Antimony	ND	0.031	0.50		µg/L	1	12/20/2017 05:43 PM
Arsenic	0.22	0.025	0.10		µg/L	1	1/2/2018 03:23 PM
Barium	23	0.070	1.0		µg/L	1	12/20/2017 05:43 PM
Beryllium	ND	0.043	0.50		µg/L	1	12/20/2017 05:43 PM
Cadmium	ND	0.047	0.50		µg/L	1	12/20/2017 05:43 PM
Cobalt	ND	0.026	0.50		µg/L	1	12/20/2017 05:43 PM
Copper	ND	0.26	1.0		µg/L	1	12/20/2017 05:43 PM
Lead	ND	0.037	1.0		µg/L	1	12/20/2017 05:43 PM
Manganese	21	0.056	0.50		µg/L	1	12/20/2017 05:43 PM
Molybdenum	140	0.039	0.50		µg/L	1	12/20/2017 05:43 PM
Nickel	1.3	0.040	1.0		µg/L	1	12/20/2017 05:43 PM
Selenium	ND	0.028	0.50		µg/L	1	12/20/2017 05:43 PM
Silver	ND	0.059	0.50		µg/L	1	12/20/2017 05:43 PM
Thallium	ND	0.030	0.50		µg/L	1	12/20/2017 05:43 PM
Vanadium	ND	0.021	1.0		µg/L	1	12/20/2017 05:43 PM
Zinc	ND	0.27	10		µg/L	1	12/20/2017 05:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-003

Client Sample ID: MW-24B-Q417
Collection Date: 12/7/2017 10:33:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_171220A** QC Batch: **65978** PrepDate **12/8/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.16	2.5		µg/L	5	12/20/2017 06:00 PM
Arsenic	3.1	0.12	0.50		µg/L	5	12/20/2017 06:00 PM
Barium	64	0.35	5.0		µg/L	5	12/20/2017 06:00 PM
Beryllium	ND	0.22	2.5		µg/L	5	12/20/2017 06:00 PM
Cadmium	ND	0.24	2.5		µg/L	5	12/20/2017 06:00 PM
Cobalt	ND	0.026	0.50		µg/L	1	12/20/2017 05:54 PM
Copper	ND	1.3	5.0		µg/L	5	12/20/2017 06:00 PM
Lead	ND	0.18	5.0		µg/L	5	12/20/2017 06:00 PM
Manganese	98	0.056	0.50		µg/L	1	12/20/2017 05:54 PM
Molybdenum	63	0.19	2.5		µg/L	5	12/20/2017 06:00 PM
Nickel	ND	0.20	5.0		µg/L	5	12/20/2017 06:00 PM
Selenium	ND	0.14	2.5		µg/L	5	12/20/2017 06:00 PM
Silver	ND	0.30	2.5		µg/L	5	12/20/2017 06:00 PM
Thallium	ND	0.15	2.5		µg/L	5	12/20/2017 06:00 PM
Vanadium	3.7	0.021	1.0		µg/L	1	12/20/2017 05:54 PM
Zinc	ND	1.3	50		µg/L	5	12/20/2017 06:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-005

Client Sample ID: MW-38D-Q417
Collection Date: 12/7/2017 1:02:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	7.0	0.12	0.50		µg/L	5	12/20/2017 07:09 PM
Manganese	22	0.056	0.50		µg/L	1	12/20/2017 07:04 PM
Molybdenum	87	0.19	2.5		µg/L	5	12/20/2017 07:09 PM
Selenium	ND	0.14	2.5		µg/L	5	12/20/2017 07:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-006

Client Sample ID: MW-38D-SMT-Q417
Collection Date: 12/7/2017 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180102A**	QC Batch: **65978**			PrepDate	**12/8/2017**		Analyst: **CEI**
Arsenic	7.3	0.12	0.50		µg/L	5	1/2/2018 03:29 PM
Manganese	21	0.056	0.50		µg/L	1	12/20/2017 07:15 PM
Molybdenum	89	0.19	2.5		µg/L	5	12/22/2017 05:17 PM
Selenium	ND	0.14	2.5		µg/L	5	1/2/2018 03:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-007

Client Sample ID: MW-38S-Q417
Collection Date: 12/7/2017 11:47:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	7.3	0.025	0.10		µg/L	1	12/20/2017 07:54 PM
Manganese	70	0.056	0.50		µg/L	1	12/20/2017 07:54 PM
Molybdenum	38	0.039	0.50		µg/L	1	12/20/2017 07:54 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/2/2018 03:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-008

Client Sample ID: MW-38S-SMT-Q417
Collection Date: 12/7/2017 11:31:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**		Analyst: **CEI**
Arsenic	7.1	0.025	0.10		µg/L	1	12/20/2017 08:05 PM
Manganese	68	0.056	0.50		µg/L	1	12/20/2017 08:05 PM
Molybdenum	38	0.039	0.50		µg/L	1	12/20/2017 08:05 PM
Selenium	1.4	0.028	0.50		µg/L	1	12/20/2017 08:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-009

Client Sample ID: MW-72-080-Q417
Collection Date: 12/7/2017 2:24:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	11	0.12	0.50		µg/L	5	12/20/2017 08:21 PM
Manganese	46	0.28	2.5		µg/L	5	12/20/2017 08:21 PM
Molybdenum	78	0.19	2.5		µg/L	5	12/20/2017 08:21 PM
Selenium	ND	0.14	2.5		µg/L	5	12/20/2017 08:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-010

Client Sample ID: MW-59-100-Q417
Collection Date: 12/7/2017 2:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Antimony	ND	0.031	0.50		µg/L	1	12/20/2017 06:05 PM
Arsenic	1.8	0.025	0.10		µg/L	1	12/20/2017 06:05 PM
Barium	72	0.070	1.0		µg/L	1	12/20/2017 06:05 PM
Beryllium	ND	0.22	2.5		µg/L	5	12/20/2017 06:53 PM
Cadmium	ND	0.047	0.50		µg/L	1	12/20/2017 06:05 PM
Cobalt	ND	0.026	0.50		µg/L	1	12/20/2017 06:05 PM
Copper	ND	0.26	1.0		µg/L	1	12/20/2017 06:05 PM
Lead	ND	0.18	5.0		µg/L	5	12/20/2017 06:53 PM
Manganese	7.3	0.056	0.50		µg/L	1	12/20/2017 06:05 PM
Molybdenum	7.1	0.19	2.5		µg/L	5	12/20/2017 06:53 PM
Nickel	2.9	0.040	1.0		µg/L	1	12/20/2017 06:05 PM
Selenium	2.4	0.028	0.50		µg/L	1	12/20/2017 06:05 PM
Silver	ND	0.30	2.5		µg/L	5	12/20/2017 06:53 PM
Thallium	ND	0.15	2.5		µg/L	5	12/20/2017 06:53 PM
Vanadium	ND	0.021	1.0		µg/L	1	12/20/2017 06:05 PM
Zinc	ND	0.27	10		µg/L	1	12/20/2017 06:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-012

Client Sample ID: MW-09-Q417
Collection Date: 12/7/2017 12:53:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	1.5	0.025	0.10		µg/L	1	12/20/2017 08:27 PM
Manganese	ND	0.056	0.50		µg/L	1	12/20/2017 08:27 PM
Molybdenum	4.2	0.039	0.50		µg/L	1	12/20/2017 08:27 PM
Selenium	5.3	0.028	0.50		µg/L	1	12/20/2017 08:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-013

Client Sample ID: MW-10-Q417
Collection Date: 12/7/2017 10:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Antimony	ND	0.031	0.50		µg/L	1	12/20/2017 06:17 PM
Arsenic	2.6	0.025	0.10		µg/L	1	12/20/2017 06:17 PM
Barium	51	0.070	1.0		µg/L	1	12/20/2017 06:17 PM
Beryllium	ND	0.043	0.50		µg/L	1	12/20/2017 06:17 PM
Cadmium	ND	0.047	0.50		µg/L	1	12/20/2017 06:17 PM
Cobalt	0.54	0.026	0.50		µg/L	1	12/20/2017 06:17 PM
Copper	ND	0.26	1.0		µg/L	1	12/20/2017 06:17 PM
Lead	ND	0.037	1.0		µg/L	1	12/20/2017 06:17 PM
Manganese	0.53	0.056	0.50		µg/L	1	12/20/2017 06:17 PM
Molybdenum	19	0.039	0.50		µg/L	1	12/20/2017 06:17 PM
Nickel	4.5	0.040	1.0		µg/L	1	12/20/2017 06:17 PM
Selenium	5.9	0.028	0.50		µg/L	1	12/20/2017 06:17 PM
Silver	ND	0.059	0.50		µg/L	1	12/20/2017 06:17 PM
Thallium	ND	0.030	0.50		µg/L	1	12/20/2017 06:17 PM
Vanadium	16	0.021	1.0		µg/L	1	12/20/2017 06:17 PM
Zinc	ND	0.27	10		µg/L	1	12/20/2017 06:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-014

Client Sample ID: MW-904-Q417
Collection Date: 12/7/2017 10:30:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_171220A** QC Batch: **65978** PrepDate **12/8/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.031	0.50		µg/L	1	12/20/2017 06:28 PM
Arsenic	2.5	0.025	0.10		µg/L	1	12/20/2017 06:28 PM
Barium	49	0.070	1.0		µg/L	1	12/20/2017 06:28 PM
Beryllium	ND	0.043	0.50		µg/L	1	12/20/2017 06:28 PM
Cadmium	ND	0.047	0.50		µg/L	1	12/20/2017 06:28 PM
Cobalt	0.52	0.026	0.50		µg/L	1	12/20/2017 06:28 PM
Copper	ND	0.26	1.0		µg/L	1	12/20/2017 06:28 PM
Lead	ND	0.037	1.0		µg/L	1	12/20/2017 06:28 PM
Manganese	0.58	0.056	0.50		µg/L	1	12/20/2017 06:28 PM
Molybdenum	19	0.039	0.50		µg/L	1	12/20/2017 06:28 PM
Nickel	4.4	0.040	1.0		µg/L	1	12/20/2017 06:28 PM
Selenium	5.5	0.028	0.50		µg/L	1	12/20/2017 06:28 PM
Silver	ND	0.059	0.50		µg/L	1	12/20/2017 06:28 PM
Thallium	ND	0.030	0.50		µg/L	1	12/20/2017 06:28 PM
Vanadium	15	0.021	1.0		µg/L	1	12/20/2017 06:28 PM
Zinc	ND	0.27	10		µg/L	1	12/20/2017 06:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-015

Client Sample ID: MW-11-Q417
Collection Date: 12/7/2017 11:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	1.3	0.025	0.10		µg/L	1	12/20/2017 08:38 PM
Manganese	2.6	0.056	0.50		µg/L	1	12/20/2017 08:38 PM
Molybdenum	7.0	0.039	0.50		µg/L	1	12/20/2017 08:38 PM
Selenium	4.6	0.028	0.50		µg/L	1	12/20/2017 08:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-016

Client Sample ID: MW-47-055-Q417
Collection Date: 12/7/2017 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	1.2	0.12	0.50		µg/L	5	12/20/2017 09:06 PM
Manganese	2.0	0.056	0.50		µg/L	1	12/20/2017 09:00 PM
Molybdenum	8.0	0.19	2.5		µg/L	5	12/20/2017 09:06 PM
Selenium	ND	0.14	2.5		µg/L	5	12/20/2017 09:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-017

Client Sample ID: MW-914-Q417
Collection Date: 12/7/2017 3:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**		Analyst: **CEI**
Arsenic	1.2	0.025	0.10		µg/L	1	12/20/2017 09:12 PM
Manganese	1.4	0.056	0.50		µg/L	1	12/20/2017 09:12 PM
Molybdenum	8.1	0.19	2.5		µg/L	5	12/20/2017 09:17 PM
Selenium	0.99	0.028	0.50		µg/L	1	12/20/2017 09:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-018

Client Sample ID: MW-47-115-Q417
Collection Date: 12/7/2017 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Manganese	4.3	0.056	0.50		µg/L	1	12/20/2017 09:23 PM
Molybdenum	21	0.19	2.5		µg/L	5	12/20/2017 09:28 PM
Selenium	ND	0.14	2.5		µg/L	5	12/20/2017 09:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-020

Client Sample ID: MW-49-135-Q417
Collection Date: 12/7/2017 2:12:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220A**	QC Batch: **65978**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	1.8	0.12	0.50		µg/L	5	12/20/2017 09:39 PM
Manganese	260	0.28	2.5		µg/L	5	12/20/2017 09:39 PM
Molybdenum	38	0.19	2.5		µg/L	5	12/20/2017 09:39 PM
Selenium	ND	0.14	2.5		µg/L	5	12/20/2017 09:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-65978**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120980**
Client ID: **PBW**	Batch ID: **65978**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2874745**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Nickel	0.068	1.0									
Selenium	0.036	0.50									
Silver	0.076	0.50									
Thallium	ND	0.50									
Vanadium	0.067	1.0									
Zinc	ND	10									

Sample ID **LCS-65978**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120980**
Client ID: **LCSW**	Batch ID: **65978**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2874746**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.552	0.50	10.00	0	95.5	85	115				
Arsenic	9.839	0.10	10.00	0	98.4	85	115				
Barium	9.735	1.0	10.00	0	97.3	85	115				
Beryllium	9.922	0.50	10.00	0	99.2	85	115				
Cadmium	9.782	0.50	10.00	0	97.8	85	115				
Cobalt	9.640	0.50	10.00	0	96.4	85	115				
Copper	9.907	1.0	10.00	0	99.1	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	LCS-65978	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120980
Client ID:	LCSW	Batch ID:	65978	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874746

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	9.889	1.0	10.00	0	98.9	85	115				
Manganese	99.022	0.50	100.0	0	99.0	85	115				
Molybdenum	9.830	0.50	10.00	0	98.3	85	115				
Nickel	10.363	1.0	10.00	0	104	85	115				
Selenium	9.999	0.50	10.00	0	100	85	115				
Silver	9.342	0.50	10.00	0	93.4	85	115				
Thallium	10.364	0.50	10.00	0	104	85	115				
Vanadium	10.170	1.0	10.00	0	102	85	115				
Zinc	100.247	10	100.0	0	100	85	115				

Sample ID	N027429-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120980
Client ID:	ZZZZZZ	Batch ID:	65978	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874752

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.902	0.10	10.00	0.1372	97.6	75	125				
Barium	32.183	1.0	10.00	22.77	94.2	75	125				
Beryllium	8.205	0.50	10.00	0	82.0	75	125				
Cobalt	9.107	0.50	10.00	0.1037	90.0	75	125				
Copper	8.646	1.0	10.00	0	86.5	75	125				
Manganese	114.492	0.50	100.0	19.42	95.1	75	125				
Molybdenum	151.294	0.50	10.00	139.6	117	75	125				
Nickel	11.085	1.0	10.00	1.203	98.8	75	125				
Selenium	9.372	0.50	10.00	0.4148	89.6	75	125				
Vanadium	10.168	1.0	10.00	0	102	75	125				
Zinc	114.488	10	100.0	0.6060	114	75	125				

Sample ID	N027429-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120980
Client ID:	ZZZZZZ	Batch ID:	65978	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874753

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027429-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120980
Client ID:	ZZZZZZ	Batch ID:	65978	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874753

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.230	2.5	10.00	0	102	75	125				
Cadmium	1.210	2.5	10.00	0	12.1	75	125				S
Lead	9.121	5.0	10.00	0	91.2	75	125				
Silver	11.491	2.5	10.00	0.5036	110	75	125				
Thallium	10.469	2.5	10.00	0.1721	103	75	125				

Sample ID	N027429-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120980
Client ID:	ZZZZZZ	Batch ID:	65978	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874754

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.716	0.10	10.00	0.1372	95.8	75	125	9.902	1.89	20	
Barium	32.047	1.0	10.00	22.77	92.8	75	125	32.18	0.424	20	
Beryllium	9.093	0.50	10.00	0	90.9	75	125	8.205	10.3	20	
Cobalt	9.013	0.50	10.00	0.1037	89.1	75	125	9.107	1.03	20	
Copper	8.704	1.0	10.00	0	87.0	75	125	8.646	0.668	20	
Manganese	112.396	0.50	100.0	19.42	93.0	75	125	114.5	1.85	20	
Molybdenum	150.933	0.50	10.00	139.6	114	75	125	151.3	0.239	20	
Nickel	11.230	1.0	10.00	1.203	100	75	125	11.08	1.30	20	
Selenium	9.548	0.50	10.00	0.4148	91.3	75	125	9.372	1.86	20	
Vanadium	9.967	1.0	10.00	0	99.7	75	125	10.17	2.00	20	
Zinc	114.745	10	100.0	0.6060	114	75	125	114.5	0.225	20	

Sample ID	N027429-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120980
Client ID:	ZZZZZZ	Batch ID:	65978	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874757

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.229	2.5	10.00	0	102	75	125	10.23	0.0191	20	
Cadmium	1.460	2.5	10.00	0	14.6	75	125	1.210	0	20	S
Lead	9.250	5.0	10.00	0	92.5	75	125	9.121	1.40	20	
Silver	10.489	2.5	10.00	0.5036	99.9	75	125	11.49	9.12	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027429-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120980
Client ID:	ZZZZZZ	Batch ID:	65978	TestNo:	EPA 6020		EPA 3010A	Analysis Date:	12/20/2017	SeqNo:	2874757

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	10.447	2.5	10.00	0.1721	103	75	125	10.47	0.209	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24A-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 9:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **NV00922-AA1_171208B**	QC Batch: **65961**			PrepDate	**12/8/2017**		Analyst: **MG**
Mercury	ND	0.087	0.20		µg/L	1	12/8/2017 01:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 9:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **NV00922-AA1_171208B** QC Batch: **65961** PrepDate **12/8/2017** Analyst: **MG**							
Mercury	ND	0.087	0.20		µg/L	1	12/8/2017 01:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24B-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 10:33:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **NV00922-AA1_171208B**	QC Batch: **65961**			PrepDate	**12/8/2017**		Analyst: **MG**
Mercury	ND	0.087	0.20		µg/L	1	12/8/2017 02:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-59-100-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 2:18:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **NV00922-AA1_171208B**	QC Batch: **65961**			PrepDate	**12/8/2017**		Analyst: **MG**
Mercury	ND	0.087	0.20		µg/L	1	12/8/2017 02:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027429
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027429-013

Client Sample ID: MW-10-Q417
Collection Date: 12/7/2017 10:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **NV00922-AA1_171208B** QC Batch: **65961**				PrepDate	**12/8/2017**		Analyst: **MG**
Mercury	ND	0.087	0.20		µg/L	1	12/8/2017 02:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q417
Lab Order:	N027429	**Collection Date:**	12/7/2017 10:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027429-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **NV00922-AA1_171208B**	QC Batch: **65961**			PrepDate	**12/8/2017**		Analyst: **MG**
Mercury	ND	0.087	0.20		µg/L	1	12/8/2017 02:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID	MB-65961	SampType:	MBLK	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120675
Client ID:	PBW	Batch ID:	65961	TestNo:	EPA 7470A			Analysis Date:	12/8/2017	SeqNo:	2856730

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID	LCS-65961	SampType:	LCS	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120675
Client ID:	LCSW	Batch ID:	65961	TestNo:	EPA 7470A			Analysis Date:	12/8/2017	SeqNo:	2856731

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.822	0.20	5.000	0	96.4	85	115				

Sample ID	N027406-001D-MS	SampType:	MS	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120675
Client ID:	ZZZZZZ	Batch ID:	65961	TestNo:	EPA 7470A			Analysis Date:	12/8/2017	SeqNo:	2856732

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.751	0.20	5.000	0	95.0	75	125				

Sample ID	N027406-001D-MSD	SampType:	MSD	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120675
Client ID:	ZZZZZZ	Batch ID:	65961	TestNo:	EPA 7470A			Analysis Date:	12/8/2017	SeqNo:	2856733

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.806	0.20	5.000	0	96.1	75	125	4.751	1.13	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes		EDD Requirement	QA/QC
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:		Excel EDD	RTNE
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:		Geotracker	RWQCB ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#	Labspec	CalTrans
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200	Fax:	Others ✓	LEVEL III
Title: Geologist II	Phone: 916-786-3302 Fax:			Specify: RWQCB	LEVEL IV
Signature: Date: 12/7/2017	Sampled By: Gantt Jeffers			Global ID:	Regulatory
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*				Specify State:
Project Name: PG&E Topock - GMP	Signature: Date: 12/7/2017				
Project Number: RC000753.801B					

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	2	
6. Method of Cooling:	ice	
Sample Temp:	2.6c/2.9c	

Courier:

Tracking No.:

Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2. SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2. SO4, NH4, OH 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) 1 liter poly	Specific Conductance (EPA 120.1) 1 liter poly	Total Dissolved Solids (SM2540C) 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027429-01 ✓	MW-24A-Q417	12/7/2017	9:15		X								X	X	X	X		X				E	4	P	BNS	
2	-02 ✓	MW-906-Q417	12/7/2017	9:25		X								X	X	X	X		X				E	4	P	BNS	
3	-03 ✓	MW-24B-Q417	12/7/2017	10:33		X								X	X	X	X		X				E	4	P	BNS	
4	-04 ✓	MW-721-Q417	12/7/2017	15:30		X																	E	1	P	B	
5	-05 ✓	MW-38D-Q417	12/7/2017	13:02		X			X		X						X	X	X	X	X		E	4	P	BNS	
6	-06 ✓	MW-38D-SMT-Q417	12/7/2017	12:30		X			X		X						X	X	X	X	X		E	4	P	BNS	
7	-07 ✓	MW-38S-Q417	12/7/2017	11:47		X			X		X						X	X	X	X	X		E	4	P	BNS	
8	-08 ✓	MW-38S-SMT-Q417	12/7/2017	11:31		X			X		X						X	X	X	X	X		E	4	P	BNS	
9	-09 ✓	MW-72-080-Q417	12/7/2017	14:24		X			X		X						X	X	X	X	X		E	4	P	BNS	
10	-10 ✓	MW-59-100-Q417	12/7/2017	14:18		X						X	X			X	X	X	X	X	X		E	4	P	BNS	

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
G. Jeffers	12.7.17 1620		12/7/17 1626
	12/7/17 1842		12/7/17 1842

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	$N=HNO_3$	$S=H_2SO_4$	C=4°C	T=Tube	V=VOA	P=Pint
$Z=Zn(AC)_2$	O=NaOH	$T=Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B = $(NH4)2SO4/NH4OH$			M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker	RWQCB ✓	1. Chilled ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec	CalTrans	2. Headspace
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	Others ✓	LEVEL III	3. Container Intact
Title: Geologist II	Phone: 916-786-3302 Fax:		Specify: RWQCB	LEVEL IV	4. Seal Present
			Global ID:	Regulatory	5. IR number 2
				Specify State:	6. Method of Cooling: ice
Signature: Date: 12/7/2017	Sampled By: Gantt Jeffers				Sample Temp: 3.1°C / 3.6°C

I hereby authorize ASSET Labs to perform the tests indicated below.

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Project Name: PG&E Topock - GMP
Project Number: RC000753.801B
Signature: Date: 12/7/2017

Matrix: Ground x Sediment; Potable Soil; NPDES Other Solid; Surface

Courier:
Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Oxygen and Deuterium Stable Isotopes SFIRM (250 mL poly)	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) Potassium; HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3 (500 mL poly)	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 (500 mL poly)	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3 (500 mL poly)	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3 (500 mL poly)	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3 (500 mL poly)	Mercury, Dissolved (EPA 7470A); HNO3 (500 mL poly)	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4 (250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM2540C) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027429-11	MW-49-365-EB-Q417	12/7/2017	12:30		X			X															E	1	P	B	
2	-12	MW-09-Q417	12/7/2017	12:53		X			X		X									X	X	X	X	E	4	P	BNS	
3	-13	MW-10-Q417	12/7/2017	10:20		X						X	X					X	X	X	X	X	X	E	4	P	BNS	
4	-14	MW-904-Q417	12/7/2017	10:30		X						X	X					X	X	X	X	X	X	E	4	P	BNS	
5	-15	MW-11-Q417	12/7/2017	11:48		X			X		X								X	X	X	X	X	E	4	P	BNS	
6	-16	MW-47-055-Q417	12/7/2017	15:10		X		X	X		X									X	X	X	X	E	4	P	BNS	
7	-17	MW-914-Q417	12/7/2017	15:20		X		X	X		X									X	X	X	X	E	4	P	BNS	
8	-18	MW-47-115-Q417	12/7/2017	15:10		X		X			X						X			X	X	X	X	E	4	P	BN	
9	-19	MW-49-135-EB-Q417	12/7/2017	13:20		X																		E	1	P	B	
10	-20	MW-49-135-Q417	12/7/2017	14:12			X	X	X		X									X	X	X	X	E	5	P	BN	

Reliquished by (Signature and Printed Name): G. Jeffers	Date/Time: 12.7.17 1630	Reliquished by (Signature and Printed Name):	Date/Time: 12/7/17 1635
Reliquished by (Signature and Printed Name):	Date/Time: 12/7/17 1842	Reliquished by (Signature and Printed Name):	Date/Time: 12/7/17 1842
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B = (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/7/2017	Workorder:	N027429
Rep sample Temp (Deg C):	2.6/2.9/3.1/3.6	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: N/A Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 12/21/2017 Reviewed By: 12/21/2017

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027429

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027429-001A	MW-24A-Q417	12/7/2017 9:15:00 AM	12/21/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-001B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017			DISSOLVED MERCURY PREP	☐	☐	☐	WW
			12/21/2017		EPA 7470A	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N027429-001C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-001D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N027429-002A	MW-906-Q417	12/7/2017 9:25:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-002B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017			DISSOLVED MERCURY PREP	☐	☐	☐	WW
			12/21/2017		EPA 7470A	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N027429-002C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-002D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N027429-003A	MW-24B-Q417	12/7/2017 10:33:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027429

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027429-003B	MW-24B-Q417	12/7/2017 10:33:00 AM	12/21/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017			DISSOLVED MERCURY PREP	☐	☐	☐	WW
			12/21/2017		EPA 7470A	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N027429-003C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-003D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N027429-004A	MW-721-Q417	12/7/2017 3:30:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-005A	MW-38D-Q417	12/7/2017 1:02:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-005B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027429-005C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-005D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027429

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027429-005D	MW-38D-Q417	12/7/2017 1:02:00 PM	12/21/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-006A	MW-38D-SMT-Q417	12/7/2017 12:30:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-006B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027429-006C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-006D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-007A	MW-38S-Q417	12/7/2017 11:47:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-007B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027429

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027429-007B	MW-38S-Q417	12/7/2017 11:47:00 AM	12/21/2017	Groundwater	EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027429-007C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-007D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-008A	MW-38S-SMT-Q417	12/7/2017 11:31:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-008B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027429-008C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-008D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027429

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027429-008D	MW-38S-SMT-Q417	12/7/2017 11:31:00 AM	12/21/2017	Groundwater		Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-009A	MW-72-080-Q417	12/7/2017 2:24:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-009B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027429-009C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-009D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-010A	MW-59-100-Q417	12/7/2017 2:18:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027429

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027429-010B	MW-59-100-Q417	12/7/2017 2:18:00 PM	12/21/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017			DISSOLVED MERCURY PREP	☐	☐	☐	WW
			12/21/2017		EPA 7470A	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N027429-010C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-010D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-011A	MW-49-365-EB-Q417	12/7/2017 12:30:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-012A	MW-09-Q417	12/7/2017 12:53:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-012B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027429

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027429-012B	MW-09-Q417	12/7/2017 12:53:00 PM	12/21/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027429-012C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-012D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-013A	MW-10-Q417	12/7/2017 10:20:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-013B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017			DISSOLVED MERCURY PREP	☐	☐	☐	WW
			12/21/2017		EPA 7470A	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N027429-013C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-013D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027429

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027429-013D	MW-10-Q417	12/7/2017 10:20:00 AM	12/21/2017	Groundwater	SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-014A	MW-904-Q417	12/7/2017 10:30:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-014B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017			DISSOLVED MERCURY PREP	☐	☐	☐	WW
			12/21/2017		EPA 7470A	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N027429-014C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-014D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027429

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027429-014D	MW-904-Q417	12/7/2017 10:30:00 AM	12/21/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-015A	MW-11-Q417	12/7/2017 11:48:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-015B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027429-015C			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027429-015D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-016A	MW-47-055-Q417	12/7/2017 3:10:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-016B			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027429-016C			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027429

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027429-016C	MW-47-055-Q417	12/7/2017 3:10:00 PM	12/21/2017	Groundwater	EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027429-016D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-017A	MW-914-Q417	12/7/2017 3:20:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-017B			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027429-017C			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027429-017D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027429

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027429-017D	MW-914-Q417	12/7/2017 3:20:00 PM	12/21/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-018A	MW-47-115-Q417	12/7/2017 3:10:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-018B			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027429-018C			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027429-018D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027429-019A	MW-49-135-EB-Q417	12/7/2017 1:20:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-020A	MW-49-135-Q417	12/7/2017 2:12:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027429-020B			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027429-020C			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027429

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027429-020C	MW-49-135-Q417	12/7/2017 2:12:00 PM	12/21/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027429-020D			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027429-021A	FOLDER	12/21/2017	12/21/2017		EDD	RWQCB	☐	☐	☐	LAB
			12/21/2017		Folder	Folder	☐	☐	☐	LAB
			12/21/2017		Folder	Folder	☐	☐	☐	LAB

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (760) 781 3338
FAX: (805) 544-8226
Acct #:

Field Sampler: Gantt Jeffers

11-Dec-17

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**OXY_DEUT**		
N027429-016B / MW-47-055-Q417	Groundwater	12/7/2017 3:10:00 PM	8OZP	1		
N027429-017B / MW-914-Q417	Groundwater	12/7/2017 3:20:00 PM	8OZP	1		
N027429-018B / MW-47-115-Q417	Groundwater	12/7/2017 3:10:00 PM	8OZP	1		
N027429-020B / MW-49-135-Q417	Groundwater	12/7/2017 2:12:00 PM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N27429A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Oxygen and Deuterium Stable Isotopes SFIRM. EDD Requirement Labspec7 edata.

Fedex #: 770961567484

	Date/Time		Date/Time
Relinquished by:	12/11/2017 16:00	**Received by:**	
Relinquished by:		**Received by:**	

List of Analysts

ASSET Laboratories Work Order: N027429

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6010B_Dissolved, EPA 6020_Dissolved
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	EPA 120.1, SM 2540C, SM 2320 B
Mark Gesmundo	EPA 7470A_Dissolved

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120747 **Analyst:** LSR

ASSET #: N027429 **Date Analyzed:** 12/8/2017

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 12/21/2017

2nd Level Reviewer: RLB 12/28/2017 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 12/7/17 1710
Analyst: LSR

Standard	Std ID	Reading	Comments
9.43 µS/cm	CNW-171018A	9.65 @ 19.5°C	% Rec: (90-110%)
1410	170822C	1425 @ 19.5°C	
9986	171018B	10120 @ 19.5°C	
99672	170822E	99600 @ 19.5°C	

	Sample ID	Matrix	Reading	Comments
1	NO27412-001B	H2O	60800 @ 18.8C	
2	NO27413-001B		88700 @ 18.9C	
3	NO27414-001B		3860 @ 18.7°C	
4	NO27416-001B		93100 @ 18.4C	
5	NO27417-001B		97600 @ 18.7°C	
6	1BDUP		97300 @ 18.4C	
7				
8				
9	1413 µS/cm	CNW-170615G	1462 @ 20.9°C	
10	10000	170822F	10150 @ 21.1°C	
Dup	99672	170831B	95800 @ 21.2C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: 12/8/17 1700
Analyst: LSR

Julia Ramit 12/21/2017

RB 12/28/2017

Standard	Std ID	Reading	Comments
9.43 µS/cm	CNW-171018A	9.42 @ 21.1°C	% Rec: (90-110%)
1410	170822C	1429 @ 21.3°C	
9986	171018B	10070 @ 21.4°C	
99672	170822E	99300 @ 21.4°C	

	Sample ID	Matrix	Reading	Comments
1	NO27428-001B	H2O	3710 @ 21.1°C	
2	2B		6060 @ 20.5C	
3	NO27429-001D		13970 @ 20.4C	1413 CNW 170615G
4	2D		1396 @ 20.4°C	= 1485 @ 21.9°C
5	3D		14230 @ 20.3C	10000 CNW 170822F
6	5D		15870 @ 20.6°C	= 10150 @ 21.8C
7	6D		15730 @ 20.6°C	99672 CNW 170831B
8	7D		1374 @ 20.5C	= 98900 @ 21.8C
9	8D		1378 @ 20.0°C	
10	9D		11950 @ 20.1°C	
Dup	5D DUP		15840 @ 20.6C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 6

Conductivity Logbook

Date: 12/8/17 170V

Analyst: LSR CONTD

Standard	Std ID	Reading	Comments
9.43 us/cm	CNV - 171084	9.42 @ 21.1°C	% Rec: (90-110%)
1410	170822C	1421 @ 21.3°C	
99100	171018B	10020 @ 21.4°C	
99672	170822E	99310 @ 21.4°C	

	Sample ID	Matrix	Reading	Comments
1	WO27429-0100	H2O	10246 @ 20.2C	
2	120		2530 @ 20.2C	
3	130		1974 @ 20.3C	
4	140		1971 @ 20.3C	
5	150		1979 @ 20.3C	
6	160		3630 @ 20.3C	
7	170		3640 @ 20.4C	
8	180		10290 @ 20.6C	
9	200		10180 @ 20.7C	
10	WO27430-002C		17890 @ 20.6C	
Dup	2C DUP		17930 @ 20.5C	Accept: 10% water, 20% soil
20	Std Chk:			% Rec: (90-110%)

Julia Ramit 12/21/2017

Date: CONTD

Analyst: RB 12/28/2017

Standard	Std ID	Reading	Comments
1413 us/cm	CNV - 170615G	1414 @ 22.0°C	% Rec: (90-110%)
10000	170822F	10210 @ 22.3°C	
99672	170831B	98500 @ 22.0°C	

	Sample ID	Matrix	Reading	Comments
1	WO27430-004C	H2O	1424 @ 20.2C	
2	6C		1019 @ 20.4C	
3	8C		5430 @ 20.7°C	1413 CNV 170615G
4	12C		10930 @ 20.8C	= 1419 @ 20.7 °C
5	13C		7720 @ 21.0°C	10000 CNV 170822F
6	14C		11740 @ 21.0C	= 10260 @ 21.1°C
7	15C		13810 @ 20.8C	99672 CNV 170831B
8	16C		13970 @ 20.8C	= 99100 @ 21.3°C
9	17C		16670 @ 20.5°C	
10	18C		24700 @ 20.7°C	
Dup	18C DUP		24900 @ 20.4°C	Accept: 10% water, 20% soil
20	Std Chk:			% Rec: (90-110%)

Logbook # 6

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66003/60024/60025 **Analyst:** LSR

ASSET #: N027429 **Date Analyzed:** 12/11,12/12/17

Method: EPA 160.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Silvia Ramit Date: 12/21/2017

2nd Level Reviewer: RLB 01/03/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N027429-005D,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(49.7605 - 49.6350)*1000000}{10}$$

= 12550 mg/L

Reporting result in two significant figures,

TDS = 13000 mg/L

RLB 01/03/2018

Divia Ramit 12/21/2017

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/11/2017 1:06:33**
Prep End Date:

Reviewed/ Date: RB 01/03/2018
Initials/ Date: Lilia Ramit 12/20/2017

Prep Batch **66003** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH (conv)	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66003	Water	[WSC] 7.2 11.0	100	☐	0	0	100	1.000		
MB-66003	Water		100	☐	0	0	100	1.000		
N027405-013D	Groundwater	10.520	100 /10	☐	0	0	100	1.000		
N027405-014D	Groundwater	8.65	100	☐	0	0	100	1.000		
N027422-001A	Surface Water	7.92	100	☐	0	0	100	1.000		
N027422-002A	Surface Water	3.450	100 /40	☐	0	0	100	1.000		
N027422-003A	Surface Water	3.450	100 /40	☐	0	0	100	1.000		
N027427-001C	Groundwater	11.98	100	☐	0	0	100	1.000		
N027428-001B	Groundwater	3.710	100 /40	☐	0	0	100	1.000		
N027428-002B	Groundwater	6.060	100 /20	☐	0	0	100	1.000		
N027429-005D	Groundwater	15.870	100 /10	☐	0	0	100	1.000		
N027429-005D-DU	Groundwater	1	100 /10	☐	0	0	100	1.000		
~~N027429-006D~~	~~Groundwater~~	~~15.720~~	~~100 /10~~	☐	0	0	100	1.000		
N027416-1B		9.350	1							

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9469
9466

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/11/2017 1:06:33**
Prep End Date: **12/12/2017 11:30:0**

Reviewed/ Date: RLB 01/03/2018
Initials/ Date: Julia Ramit 12/20/2017

Prep Batch **66003** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66003	Water		100	☐	0	0	100	1.000		
MB-66003	Water		100	☐	0	0	100	1.000		
N027405-013D	Groundwater		10	☐	0	0	100	10.000		
N027405-014D	Groundwater		100	☐	0	0	100	1.000		
N027416-001B	Leachate		1	☐	0	0	100	100.000		
N027422-001A	Surface Water		100	☐	0	0	100	1.000		
N027422-002A	Surface Water		40	☐	0	0	100	2.500		
N027422-003A	Surface Water		40	☐	0	0	100	2.500		
N027427-001C	Groundwater		100	☐	0	0	100	1.000		
N027428-001B	Groundwater		40	☐	0	0	100	2.500		
N027428-002B	Groundwater		20	☐	0	0	100	5.000		
N027429-005D	Groundwater		10	☐	0	0	100	10.000		
N027429-005D-DU	Groundwater		10	☐	0	0	100	10.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9469	Glass Fiber Filter, 47mm
9666	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171211C	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Page 1 of 1

Prep Start Date: **12/12/2017 12:55:4**
Prep End Date:

Reviewed/ Date: RB 01/03/2018

Initials/ Date: Lilia Ramit 12/21/2017

Prep Batch **66024** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units
mL / mL

Sample ID	Matrix	Cond pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66024	Water	1455171211C	100	☐	0	0	100	1.000		
MB-66024	Water		100	☐	0	0	100	1.000		
N027429-007D	Groundwater	1379	100	☐	0	0	100	1.000		
N027429-008D	Groundwater	1378	100	☐	0	0	100	1.000		
N027429-009D	Groundwater	11950	100 /10	☐	0	0	100	1.000		
N027429-009D-DU	Groundwater	↓	100 /10	☐	0	0	100	1.000		
N027429-010D	Groundwater	10240	100 /10	☐	0	0	100	1.000		
N027429-012D	Groundwater	2530	100 /50	☐	0	0	100	1.000		
N027429-013D	Groundwater	1974	100 /75	☐	0	0	100	1.000		
N027429-014D	Groundwater	1971	100 /75	☐	0	0	100	1.000		
N027429-015D	Groundwater	1979	100 /75	☐	0	0	100	1.000		
N027429-016D	Groundwater	3630	100 /40	☐	0	0	100	1.000		
N027429-~~017D~~ 00D	Groundwater	15720 3640	100 /~~40~~ 10	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9666

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/12/2017 12:55:4**
Prep End Date: **12/13/2017 11:55:0**

Reviewed/ Date: RLB 01/03/2018
Initials/ Date: Lilia Ramit 12/21/2017

Prep Batch **66024** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66024	Water		100	☐	0	0	100	1.000		
MB-66024	Water		100	☐	0	0	100	1.000		
N027429-006D	Groundwater		10	☐	0	0	100	10.000		
N027429-007D	Groundwater		100	☐	0	0	100	1.000		
N027429-008D	Groundwater		100	☐	0	0	100	1.000		
N027429-009D	Groundwater		10	☐	0	0	100	10.000		
N027429-009D-DU	Groundwater		10	☐	0	0	100	10.000		
N027429-010D	Groundwater		10	☐	0	0	100	10.000		
N027429-012D	Groundwater		50	☐	0	0	100	2.000		
N027429-013D	Groundwater		75	☐	0	0	100	1.333		
N027429-014D	Groundwater		75	☐	0	0	100	1.333		
N027429-015D	Groundwater		75	☐	0	0	100	1.333		
N027429-016D	Groundwater		40	☐	0	0	100	2.500		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9666	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171211C	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/12/2017 12:55:5**
Prep End Date:

Reviewed/ Date: RB 01/03/2018
Initials/ Date: Lilia Ramit 12/21/2017

Prep Batch **66025** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66025	Water	12/17/2017	100	☐	0	0	100	1.000		
MB-66025	Water		100	☐	0	0	100	1.000		
N027429-017D	Groundwater	3640	100 /40	☐	0	0	100	1.000		
N027429-018D	Groundwater	10290	100 /10	☐	0	0	100	1.000		
N027429-020D	Groundwater	10180	100 /10	☐	0	0	100	1.000		
N027430-002C	Groundwater	17890	100 /10	☐	0	0	100	1.000		
N027430-002C-DU	Groundwater	1	100 /10	☐	0	0	100	1.000		
N027430-004C	Groundwater	1424	100	☐	0	0	100	1.000		
N027430-006C	Groundwater	1019	100	☐	0	0	100	1.000		
N027430-008C	Unknown	5430	100 /20	☐	0	0	100	1.000		
N027430-012C	Groundwater	10930	100 /10	☐	0	0	100	1.000		
N027430-013C	Groundwater	7720	100 /20	☐	0	0	100	1.000		
N027430-014C	Groundwater	11740	100 /10	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9466

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/12/2017 12:55:5**
Prep End Date: **12/13/2017 11:55:0**
Reviewed/ Date: 01/03/2018
Initials/ Date: Lilia Ramit 12/21/2017
Prep Batch **66025** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**
Prep Factor Units: **mL / mL** Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66025	Water		100	☐	0	0	100	1.000		
MB-66025	Water		100	☐	0	0	100	1.000		
N027429-017D	Groundwater		40	☐	0	0	100	2.500		
N027429-018D	Groundwater		10	☐	0	0	100	10.000		
N027429-020D	Groundwater		10	☐	0	0	100	10.000		
N027430-002C	Groundwater		10	☐	0	0	100	10.000		
N027430-002C-DU	Groundwater		10	☐	0	0	100	10.000		
N027430-004C	Groundwater		100	☐	0	0	100	1.000		
N027430-006C	Groundwater		100	☐	0	0	100	1.000		
N027430-008C	Unknown		20	☐	0	0	100	5.000		
N027430-012C	Groundwater		10	☐	0	0	100	10.000		
N027430-013C	Groundwater		20	☐	0	0	100	5.000		
N027430-014C	Groundwater		10	☐	0	0	100	10.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9666	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171211C	1000 ppm NaCl	LCS	100

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/11/17 1204 JT	MB 66003	100	67.0939 67.0942	67.0943 67.0945	
IX	LCS 66003	100	76.5929 76.5928	76.6887 76.6887	
RR	NO27405-013D	10	62.3285 62.3281	62.3905 62.3908	
KK	140	100	70.7456 70.7453	70.7964 70.7968	
EE	NO27427-001A	100	68.2223 68.2219	68.2759 68.2763	
IW	7A	40	64.0224 64.0228	64.1494 64.1498	
—	3A	40	60.5857 60.5857	60.7148 60.7152	
21	NO27427-001C	100	63.3072 63.3075	63.4058 63.4061	
10	NO27428-001A	40	71.6147 71.6146	71.7183 71.7187	
8	2B	20	53.7003 53.7007	53.7860 53.7864	

Lilia Ramit 12/20/2017

ASSET Laboratories

Logbook#8

01/03/2018

SOLIDS RAW DATA

TEST : TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/11/17 XX	N027429-005D	10	~~53.6893~~ 49.6347 49.6350 LW 12/11	49.7601 49.7605	
	5D DUP	10	48.8877 48.8877	49.0078 49.0081	
12	~~6D~~	~~10~~	~~53.6893 53.6898~~	53.8131 53.8132 LW 12/12/17	
1K	N027416-001B	1	62.4570 62.4570	62.6393 62.6393	
	Julia Ramit	12/20/2017			

closing wt: 49.9997 12/12/17 @ 1130

RB 01/03/2018

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV0
OPELAP/NELAP Cert 4046

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
12/12/2017									
MB-66003	100	67.0942	67.0945	3	1	3			MBLK
LCS-66003	100	76.5928	76.6887	959	1	959			LCS
N027405-013D	10	62.3281	62.3908	627	10	6270	10520	0.596	SAMP
N027405-014D	100	70.7453	70.7968	515	1	515	865	0.595	SAMP
N027422-001A	100	68.2219	68.2763	544	1	544	742	0.733	SAMP
N027422-002A	40	64.0228	64.1498	1270	2.5	3175	3450	0.920	SAMP
N027422-003A	40	60.5857	60.7152	1295	2.5	3237.5	3450	0.938	SAMP
N027427-001C	100	63.3075	63.4061	986	1	986	1198	0.823	SAMP
N027428-001B	40	71.6146	71.7187	1041	2.5	2602.5	3710	0.701	SAMP
N027428-002B	20	53.7007	53.7864	857	5	4285	6060	0.707	SAMP
N027429-005D	10	49.635	49.7605	1255	10	12550	15870	0.791	SAMP
N027429-005DDUP	10	48.8877	49.0081	1204	10	12040	15870	0.759	DUP
N027416-001B	1	62.457	62.6393	1823	100	182300	92500	1.971	SAMP

Sivia Ramit 12/20/2017

RB 01/03/2018

SOLIDS RAW DATA

TEST :TSS/TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/12/17 1255 LL	MB 66024	100	68.9961 68.9964	68.9965 68.9964	
CC	LCS 66024	100	70.0693 70.0696	70.1639 70.1642	
16	NO274 29-006D	10	49.3564 49.3568	49.4757 49.4759	
L1	7D	100	74.5214 74.5215	74.6099 74.6103	
L4	8D	100	76.1793 76.1789	76.2657 76.2661	
1K	9D	10	62.4421 62.4422	62.5287 62.5291	
C	9D DUP	10	50.3703 50.3705	50.4598 50.4601	
K	10D	10	61.5273 61.5271	61.6047 61.6052	
XX	12D	50	49.6348 49.6345	49.7200 49.7204	
DD	13D	75	71.6169 71.6172	71.7198 71.7196	

ASSET Laboratories Logbook#8

Julia Ramit 12/21/2017

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7151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV009
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01/03/2018
78 of 100
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SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/12/17 EE	N027429-014D	75	68.2259 68.2262	68.3293 68.3297	
15	15D	75	76.5600 76.5605	76.6597 76.6601	
15	16D	40	48.9009 48.9005	48.9875 48.9878	
Julia Ramit	12/21/2017				

RB 01/03/2018

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ELAP Cert 2676 | NV Cert NV00922

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
12/13/2017									
MB-66024	100	68.9964	68.9966	2	1	2			MBLK
LCS-66024	100	70.0696	70.1642	946	1	946			LCS
N027429-006D	10	49.3568	49.4759	1191	10	11910	15720	0.758	SAMP
N027429-007D	100	74.5215	74.6103	888	1	888	1379	0.644	SAMP
N027429-008D	100	76.1789	76.2661	872	1	872	1378	0.633	SAMP
N027429-009D	10	62.4422	62.5291	869	10	8690	11950	0.727	SAMP
N027429-009DDUP	10	50.3705	50.4601	896	10	8960	11950	0.750	DUP
N027429-010D	10	61.5271	61.6052	781	10	7810	10240	0.763	SAMP
N027429-012D	50	49.6345	49.7204	859	2	1718	2530	0.679	SAMP
N027429-013D	75	71.6172	71.7196	1024	1.33333333	1365.33333	1974	0.692	SAMP
N027429-014D	75	68.2262	68.3297	1035	1.33333333	1380	1971	0.700	SAMP
N027429-015D	75	76.5605	76.6601	996	1.33333333	1328	1979	0.671	SAMP
N027429-016D	40	48.9005	48.9878	873	2.5	2182.5	3630	0.601	SAMP

Silvia Ramit 12/21/2017

RB 01/03/2018

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/20/17 1255 FF	MB 66025	100	68.3656 68.3658	68.3656 68.3659	
KL	LCS 66025	100	70.7429 70.7432	70.8364 70.8368	
T	NO27429-017D	40	46.0434 46.0435	46.1466 46.1470	
IF	18D	10	60.6246 60.6243	60.7044 60.7047	
S	20D	10	45.7302 45.7301	45.8040 45.8041	
A	NO27430-002C	10	59.1348 59.1347	59.2741 59.2740	
M	2C dup	10	49.0617 49.0615	49.2074 49.2071	
IX	4C	100	76.5869 76.5872	76.6838 76.6839	
1S	6C	100	53.6844 53.6848	53.7631 53.7630	
31	8C	20	63.3144 63.3147	63.3933 63.3931	

Julia Ramit 12/21/2017 ASSET Laboratories Logbook#8

01/03/2018

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/12/17 RP	N027430-012C	10	62.3273 62.3277	62.4112 62.4113	
(-)	13C	20	60.5871 60.5875	60.7027 60.7022	
8	14C	10	53.6990 53.6999	53.7899 53.7891	

Julia Ramit 12/21/2017

Closing out [illegible] 01/03/2018 @ 1157

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ELAP Cert 2921
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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00977

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
12/13/2017									
MB-66025	100	68.3658	68.3659	1	1	1			MBLK
LCS-66025	100	70.7432	70.8368	936	1	936			LCS
N027429-017D	40	46.0435	46.147	1035	2.5	2587.5	3640	0.711	SAMP
N027429-018D	10	60.6243	60.7047	804	10	8040	10290	0.781	SAMP
N027429-020D	10	45.7301	45.8041	740	10	7400	10180	0.727	SAMP
N027430-002C	10	59.1347	59.274	1393	10	13930	17890	0.779	SAMP
N027430-002CDUP	10	49.0615	49.2071	1456	10	14560	17890	0.814	DUP
N027430-004C	100	76.5872	76.6839	967	1	967	1424	0.679	SAMP
N027430-006C	100	53.6848	53.763	782	1	782	1019	0.767	SAMP
N027430-008C	20	63.3147	63.3931	784	5	3920	5430	0.722	SAMP
N027430-012C	10	62.3277	62.4113	836	10	8360	10930	0.765	SAMP
N027430-013C	20	60.5875	60.7022	1147	5	5735	7720	0.743	SAMP
N027430-014C	10	53.6993	53.7891	898	10	8980	11740	0.765	SAMP

Julia Ramit 12/21/2017

RB 01/03/2018

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120835
ASSET #: N027429

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 12/12/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	~~X~~	X			X	
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?	X		~~X~~	X		
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

N027429-001A (218.6) = 0 ppb , N027429-001B (6020) = 2.7 ppb
N027429-002A (218.6) = 0.078 ppb , N027429-002B (6020) = 8.7 ppb
MS confirmation performed; recovery within criteria.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/16/2017

2nd Level Reviewer: RLB 01/03/2018 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120837
ASSET #: N027429

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 12/13/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:
Dilution was necessary in N027429-020A due to matrix interference.

SECOND LEVEL REVIEW:

	X Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba 01/03/2018 Date: 12/16/2017

2nd Level Reviewer _____ Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N027429-003A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 4.9708 * 50$$

$$Cr^{+6}, \mu g/L = 248.54$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 250}$$

rba 12/16/2017

RLB 01/03/2018

ANALYSIS RUN LOG

INJECTION LOG: 171128A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/28/17 10:57 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/28/17 11:08 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/28/17 11:17 AM	Reported
13	MB-R120468	MBLK	1	Hexavalent Chromium	11/28/17 11:27 AM	Reported
14	LCS-R120468	LCS	1	Hexavalent Chromium	11/28/17 11:36 AM	Reported
15	N027215-001A	SAMP	1	Hexavalent Chromium	11/28/17 11:47 AM	Reported
16	N027215-002A	SAMP	1	Hexavalent Chromium	11/28/17 11:59 AM	Reported
17	N027215-003A	SAMP	1	Hexavalent Chromium	11/28/17 12:08 PM	Reported
18	N027215-004A	SAMP	1	Hexavalent Chromium	11/28/17 12:18 PM	Reported
19	N027215-005A	SAMP	1	Hexavalent Chromium	11/28/17 12:27 PM	Reported
20	N027215-002ADUP	DUP	1	Hexavalent Chromium	11/28/17 12:37 PM	Reported
21	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 12:46 PM	Not Reported
22	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 12:56 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	11/28/17 1:05 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/28/17 1:14 PM	Reported
25	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:04 PM	Not Reported
26	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:16 PM	Not Reported
27	N027215-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:29 PM	Reported
28	N027215-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:41 PM	Reported
29	CCV-2	CCV	1	Hexavalent Chromium	11/28/17 2:50 PM	Reported
30	CCB-2	CCB	1	Hexavalent Chromium	11/28/17 3:00 PM	Reported



Injection Log Summary

Sequence Details

Name:	**IC-07_171128A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**28/Nov/17 15:47:35**
No. of Injections:	**33**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		11/28/2017 10:57	Finished	ICV @5ppb, IWST-171002A
11	PQL@0.2ppb,CCV2,	12	1000	Unknown		11/28/2017 11:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		11/28/2017 11:17	Finished	ICB R171114C
13	MB-H2O,MBLK,1	14	1000	Unknown		11/28/2017 11:27	Finished	MB R171114C
14	LCS-H2O,LCS,1	15	1000	Unknown		11/28/2017 11:36	Finished	LCS, IWST-171002B
15	N027215-001A,SAMP	17	1000	Unknown		11/28/2017 11:47	Finished	SAMP,10mL
16	N027215-002A,SAMP	18	1000	Unknown		11/28/2017 11:59	Finished	SAMP,10mL
17	N027215-003A,SAMP	19	1000	Unknown		11/28/2017 12:08	Finished	SAMP,10mL
18	N027215-004A,SAMP	20	1000	Unknown		11/28/2017 12:18	Finished	SAMP,10mL
19	N027215-005A,SAMP	21	1000	Unknown		11/28/2017 12:27	Finished	SAMP,10mL
20	N027215-002ADUP,D	22	1000	Unknown		11/28/2017 12:37	Finished	DUP,10mL
21	N027157-001AMS,MS	23	1000	Unknown		11/28/2017 12:46	Finished	MS (5ppb), IWST-171002B,10
22	N027157-001AMSD,M	24	1000	Unknown		11/28/2017 12:56	Finished	MSD (5ppb), IWST-171002B,1
23	CCV-1,CCV1,1,	25	1000	Unknown		11/28/2017 13:05	Finished	CCV @10ppb, IWST-171002A
24	CCB-1,CCB,1,	26	1000	Unknown		11/28/2017 13:14	Finished	CCB R171031A
25	N027157-001AMS,MS	28	1000	Unknown		11/28/2017 14:04	Finished	MS (5ppb), IWST-171002B,10
26	N027157-001AMSD,M	29	1000	Unknown		11/28/2017 14:16	Finished	MSD (5ppb), IWST-171002B,1
27	N027215-001AMS,MS	31	1000	Unknown		11/28/2017 14:29	Finished	MS (5ppb), IWST-171002B,10
28	N027215-001AMSD,M	32	1000	Unknown		11/28/2017 14:41	Finished	MSD (5ppb), IWST-171002B,1
29	CCV-2,CCV,1,	33	1000	Unknown		11/28/2017 14:50	Finished	CCV @5ppb, IWST-171002A
30	CCB-2,CCB,1,	34	1000	Unknown		11/28/2017 15:00	Finished	CCB R171031A
31	SHUTDOWN	35	1000	Unknown		11/28/2017 15:09	Finished	
32	Eluent: R171128A	36	1000	Unknown		n.a.	Finished	Eluent
33	PCR: R171128B	37	1000	Unknown		n.a.	Finished	Post-Column Reagent

rba 11/29/2017

INJECTION LOG: 171212A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/12/17 8:51 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/12/17 9:02 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/12/17 9:11 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/12/17 9:21 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/12/17 9:30 AM	Reported
15	MB-R120835	MBLK	1	Hexavalent Chromium	12/12/17 9:40 AM	Reported
16	LCS-R120835	LCS	1	Hexavalent Chromium	12/12/17 9:49 AM	Reported
17	N027430-016A	SAMP	1	Hexavalent Chromium	12/12/17 9:59 AM	Not Reported
18	N027430-016AMS	MS	1	Hexavalent Chromium	12/12/17 10:08 AM	Not Reported
19	N027430-017A	SAMP	1	Hexavalent Chromium	12/12/17 10:18 AM	Not Reported
20	N027430-017AMS	MS	1	Hexavalent Chromium	12/12/17 10:27 AM	Not Reported
21	N027430-018A	SAMP	1	Hexavalent Chromium	12/12/17 10:37 AM	Not Reported
22	N027430-018AMS	MS	1	Hexavalent Chromium	12/12/17 10:46 AM	Not Reported
23	N027431-002A	SAMP	1	Hexavalent Chromium	12/12/17 10:56 AM	Not Reported
24	N027431-002AMS	MS	1	Hexavalent Chromium	12/12/17 11:05 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/12/17 11:14 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/12/17 11:24 AM	Reported
27	N027431-003A	SAMP	1	Hexavalent Chromium	12/12/17 11:33 AM	Not Reported
28	N027431-003AMS	MS	1	Hexavalent Chromium	12/12/17 11:43 AM	Not Reported
29	N027431-004A	SAMP	1	Hexavalent Chromium	12/12/17 11:52 AM	Not Reported
30	N027431-004AMS	MS	1	Hexavalent Chromium	12/12/17 12:02 PM	Not Reported
31	N027465-001A	SAMP	1	Hexavalent Chromium	12/12/17 12:11 PM	Reported
32	N027465-001AMS	MS	1	Hexavalent Chromium	12/12/17 12:21 PM	Reported
33	N027465-002A	SAMP	1	Hexavalent Chromium	12/12/17 12:30 PM	Reported
34	N027465-002AMS	MS	1	Hexavalent Chromium	12/12/17 12:40 PM	Reported
35	N027465-003A	SAMP	1	Hexavalent Chromium	12/12/17 12:49 PM	Reported
36	N027465-003AMS	MS	1	Hexavalent Chromium	12/12/17 12:58 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/12/17 1:12 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/12/17 1:23 PM	Reported
39	N027431-001A	SAMP	50	Hexavalent Chromium	12/12/17 1:33 PM	Reported
40	N027431-001AMS	MS	50	Hexavalent Chromium	12/12/17 1:42 PM	Reported
41	N027431-001ADUP	DUP	50	Hexavalent Chromium	12/12/17 2:05 PM	Reported
42	N027431-002AMS	MS	1	Hexavalent Chromium	12/12/17 2:16 PM	Not Reported

INJECTION LOG: 171212A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027429-009A	SAMP	20	Hexavalent Chromium	12/12/17 2:25 PM	Reported
44	N027429-009AMS	MS	20	Hexavalent Chromium	12/12/17 2:35 PM	Reported
45	N027429-009AMSD	MSD	20	Hexavalent Chromium	12/12/17 2:44 PM	Reported
46	N027429-001A	SAMP	1	Hexavalent Chromium	12/12/17 2:54 PM	Reported
47	N027429-001AMS	MS	1	Hexavalent Chromium	12/12/17 3:03 PM	Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	12/12/17 3:13 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	12/12/17 3:22 PM	Reported
50	N027429-002A	SAMP	1	Hexavalent Chromium	12/12/17 3:32 PM	Reported
51	N027429-002AMS	MS	1	Hexavalent Chromium	12/12/17 3:41 PM	Reported
52	N027429-003A	SAMP	50	Hexavalent Chromium	12/12/17 3:50 PM	Reported
53	N027429-003AMS	MS	50	Hexavalent Chromium	12/12/17 4:00 PM	Reported
54	N027429-004A	SAMP	1	Hexavalent Chromium	12/12/17 4:10 PM	Reported
55	N027429-004AMS	MS	1	Hexavalent Chromium	12/12/17 4:19 PM	Reported
56	N027429-005A	SAMP	5	Hexavalent Chromium	12/12/17 4:28 PM	Reported
57	N027429-005AMS	MS	5	Hexavalent Chromium	12/12/17 4:38 PM	Reported
58	N027429-006A	SAMP	5	Hexavalent Chromium	12/12/17 4:47 PM	Reported
59	N027429-006AMS	MS	5	Hexavalent Chromium	12/12/17 4:57 PM	Reported
60	CCV-5	CCV	1	Hexavalent Chromium	12/12/17 5:06 PM	Reported
61	CCB-5	CCB	1	Hexavalent Chromium	12/12/17 5:16 PM	Reported
62	N027429-007A	SAMP	1	Hexavalent Chromium	12/12/17 5:25 PM	Reported
63	N027429-007AMS	MS	1	Hexavalent Chromium	12/12/17 5:35 PM	Reported
64	N027429-008A	SAMP	1	Hexavalent Chromium	12/12/17 5:44 PM	Reported
65	N027429-008AMS	MS	1	Hexavalent Chromium	12/12/17 5:54 PM	Reported
66	N027429-010A	SAMP	1000	Hexavalent Chromium	12/12/17 6:03 PM	Reported
67	N027429-010AMS	MS	1000	Hexavalent Chromium	12/12/17 6:12 PM	Reported
68	LCS-R120836	LCS	1	Hexavalent Chromium	12/12/17 6:24 PM	Reported
69	MB-R120836	MBLK	1	Hexavalent Chromium	12/12/17 6:35 PM	Reported
70	N027508-001A	SAMP	200	Hexavalent Chromium	12/12/17 6:45 PM	Reported
71	N027508-011A	SAMP	5	Hexavalent Chromium	12/12/17 6:54 PM	Reported
72	CCV-6	CCV1	1	Hexavalent Chromium	12/12/17 7:04 PM	Reported
73	CCB-6	CCB	1	Hexavalent Chromium	12/12/17 7:13 PM	Reported
74	N027508-003A	SAMP	200	Hexavalent Chromium	12/12/17 7:23 PM	Reported
75	N027508-001AMS	MS	200	Hexavalent Chromium	12/12/17 7:32 PM	Reported
76	N027508-001AMSD	MSD	200	Hexavalent Chromium	12/12/17 7:41 PM	Reported
77	N027508-011AMS	MS	5	Hexavalent Chromium	12/12/17 7:51 PM	Reported
78	N027508-003ADUP	DUP	200	Hexavalent Chromium	12/12/17 8:00 PM	Reported
79	N027508-004A	SAMP	500	Hexavalent Chromium	12/12/17 8:10 PM	Reported
80	N027508-005A	SAMP	2000	Hexavalent Chromium	12/12/17 8:19 PM	Reported
81	N027508-006A	SAMP	2000	Hexavalent Chromium	12/12/17 8:29 PM	Reported
82	N027508-007A	SAMP	2000	Hexavalent Chromium	12/12/17 8:38 PM	Reported
83	N027508-008A	SAMP	5	Hexavalent Chromium	12/12/17 8:48 PM	Not Reported
84	CCV-7	CCV	1	Hexavalent Chromium	12/12/17 8:57 PM	Reported

INJECTION LOG: 171212A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCB-7	CCB	1	Hexavalent Chromium	12/12/17 9:07 PM	Reported
86	N027508-009A	SAMP	5	Hexavalent Chromium	12/12/17 9:16 PM	Reported
87	N027508-010A	SAMP	1	Hexavalent Chromium	12/12/17 9:26 PM	Reported
88	N027508-012A	SAMP	20	Hexavalent Chromium	12/12/17 9:35 PM	Reported
89	N027508-013A	SAMP	50	Hexavalent Chromium	12/12/17 9:44 PM	Reported
90	N027508-014A	SAMP	50	Hexavalent Chromium	12/12/17 9:54 PM	Reported
91	N027508-015A	SAMP	100	Hexavalent Chromium	12/12/17 10:03 PM	Reported
92	N027508-002A	SAMP	200	Hexavalent Chromium	12/12/17 10:13 PM	Reported
93	CCV-8	CCV1	1	Hexavalent Chromium	12/12/17 10:22 PM	Reported
94	CCB-8	CCB	1	Hexavalent Chromium	12/12/17 10:32 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171212A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**12/Dec/17 23:02:35**
No. of Injections:	**97**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/12/2017 08:51	Finished	BLANK
11	BLANK	2	1000	Unknown		12/12/2017 09:02	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/12/2017 09:11	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/12/2017 09:21	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/12/2017 09:30	Finished	CCB R171129A
15	MB-1,MBLK,1	6	1000	Unknown		12/12/2017 09:40	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/12/2017 09:49	Finished	LCS, IWST-171002B
17	N027430-016A,SAMF	8	1000	Unknown		12/12/2017 09:59	Finished	SAMP,10mL
18	N027430-016AMS,MS	9	1000	Unknown		12/12/2017 10:08	Finished	MS (1ppb), IWST-171002B,10
19	N027430-017A,SAMF	10	1000	Unknown		12/12/2017 10:18	Finished	SAMP,10mL
20	N027430-017AMS,MS	11	1000	Unknown		12/12/2017 10:27	Finished	MS (1ppb), IWST-171002B,10
21	N027430-018A,SAMF	12	1000	Unknown		12/12/2017 10:37	Finished	SAMP,10mL
22	N027430-018AMS,MS	13	1000	Unknown		12/12/2017 10:46	Finished	MS (1ppb), IWST-171002B,10
23	N027431-002A,SAMF	14	1000	Unknown		12/12/2017 10:56	Finished	SAMP,10mL
24	N027431-002AMS,MS	15	1000	Unknown		12/12/2017 11:05	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	16	1000	Unknown		12/12/2017 11:14	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	17	1000	Unknown		12/12/2017 11:24	Finished	CCB R171129A
27	N027431-003A,SAMF	18	1000	Unknown		12/12/2017 11:33	Finished	SAMP,10mL
28	N027431-003AMS,MS	19	1000	Unknown		12/12/2017 11:43	Finished	MS (1ppb), IWST-171002B,10
29	N027431-004A,SAMF	20	1000	Unknown		12/12/2017 11:52	Finished	SAMP,10mL
30	N027431-004AMS,MS	21	1000	Unknown		12/12/2017 12:02	Finished	MS (1ppb), IWST-171002B,10
31	N027465-001A,SAMF	22	1000	Unknown		12/12/2017 12:11	Finished	SAMP,10mL
32	N027465-001AMS,MS	23	1000	Unknown		12/12/2017 12:21	Finished	MS (1ppb), IWST-171002B,10
33	N027465-002A,SAMF	24	1000	Unknown		12/12/2017 12:30	Finished	SAMP,10mL
34	N027465-002AMS,MS	25	1000	Unknown		12/12/2017 12:40	Finished	MS (1ppb), IWST-171002B,10
35	N027465-003A,SAMF	26	1000	Unknown		12/12/2017 12:49	Finished	SAMP,10mL
36	N027465-003AMS,MS	27	1000	Unknown		12/12/2017 12:58	Finished	MS (1ppb), IWST-171002B,10
37	CCV-3,CCV,1,	1	1000	Unknown		12/12/2017 13:12	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	2	1000	Unknown		12/12/2017 13:23	Finished	CCB R171129A
39	N027431-001A,SAMF	3	1000	Unknown		12/12/2017 13:33	Finished	SAMP,0.2>10mL
40	N027431-001AMS,MS	4	1000	Unknown		12/12/2017 13:42	Finished	MS (5ppb), IWST-171002B,0.2
41	N027431-001ADUP,D	1	1000	Unknown		12/12/2017 14:05	Finished	SAMP,10mL
42	N027431-002AMS,MS	2	1000	Unknown		12/12/2017 14:16	Finished	MS (1ppb), IWST-171002B,10
43	N027429-009A,SAMF	3	1000	Unknown		12/12/2017 14:25	Finished	SAMP,0.5>10mL
44	N027429-009AMS,MS	4	1000	Unknown		12/12/2017 14:35	Finished	MS (5ppb), IWST-171002B,0.5
45	N027429-009AMSD,M	5	1000	Unknown		12/12/2017 14:44	Finished	MSD (5ppb), IWST-171002B,0.
46	N027429-001A,SAMF	6	1000	Unknown		12/12/2017 14:54	Finished	SAMP,10mL
47	N027429-001AMS,MS	7	1000	Unknown		12/12/2017 15:03	Finished	MS (1ppb), IWST-171002B,10
48	CCV-4,CCV1,1,	8	1000	Unknown		12/12/2017 15:13	Finished	CCV @10ppb, IWST-171002A
49	CCB-4,CCB,1,	9	1000	Unknown		12/12/2017 15:22	Finished	CCB R171129A
50	N027429-002A,SAMF	10	1000	Unknown		12/12/2017 15:32	Finished	SAMP,10mL
51	N027429-002AMS,MS	11	1000	Unknown		12/12/2017 15:41	Finished	MS (1ppb), IWST-171002B,10
52	N027429-003A,SAMF	12	1000	Unknown		12/12/2017 15:50	Finished	SAMP,0.2>10mL
53	N027429-003AMS,MS	13	1000	Unknown		12/12/2017 16:00	Finished	MS (5ppb), IWST-171002B,0.2
54	N027429-004A,SAMF	14	1000	Unknown		12/12/2017 16:10	Finished	SAMP,10mL
55	N027429-004AMS,MS	15	1000	Unknown		12/12/2017 16:19	Finished	MS (1ppb), IWST-171002B,10
56	N027429-005A,SAMF	16	1000	Unknown		12/12/2017 16:28	Finished	SAMP,2>10mL
57	N027429-005AMS,MS	17	1000	Unknown		12/12/2017 16:38	Finished	MS (1ppb), IWST-171002B,2>1
58	N027429-006A,SAMF	18	1000	Unknown		12/12/2017 16:47	Finished	SAMP,2>10mL
59	N027429-006AMS,MS	19	1000	Unknown		12/12/2017 16:57	Finished	MS (1ppb), IWST-171002B,2>1
60	CCV-5,CCV,1,	20	1000	Unknown		12/12/2017 17:06	Finished	CCV @5ppb, IWST-171002A

61	CCB-5,CCB,1,	21	1000	Unknown		12/12/2017 17:16	Finished	CCB R171129A
62	N027429-007A,SAMF	22	1000	Unknown		12/12/2017 17:25	Finished	SAMP,10mL
63	N027429-007AMS,MS	23	1000	Unknown		12/12/2017 17:35	Finished	MS (1ppb), IWST-171002B,10
64	N027429-008A,SAMF	24	1000	Unknown		12/12/2017 17:44	Finished	SAMP,10mL
65	N027429-008AMS,MS	25	1000	Unknown		12/12/2017 17:54	Finished	MS (1ppb), IWST-171002B,10
66	N027429-010A,SAMF	26	1000	Unknown		12/12/2017 18:03	Finished	SAMP,0.01>10mL
67	N027429-010AMS,MS	27	1000	Unknown		12/12/2017 18:12	Finished	MS (5ppb), IWST-171002B,0.0
68	LCS-2,LCS,1	1	1000	Unknown		12/12/2017 18:24	Finished	LCS, IWST-171002B
69	MB-2,MBLK,1	2	1000	Unknown		12/12/2017 18:35	Finished	MB R171129A
70	N027508-001A,SAMF	3	1000	Unknown		12/12/2017 18:45	Finished	SAMP,10mL
71	N027508-011A,SAMF	4	1000	Unknown		12/12/2017 18:54	Finished	MS (1ppb), IWST-171002B,10
72	CCV-6,CCV1,1,	5	1000	Unknown		12/12/2017 19:04	Finished	CCV @10ppb, IWST-171002A
73	CCB-6,CCB,1,	6	1000	Unknown		12/12/2017 19:13	Finished	CCB R171129A
74	N027508-003A,SAMF	7	1000	Unknown		12/12/2017 19:23	Finished	SAMP,0.05>10mL
75	N027508-001AMS,MS	8	1000	Unknown		12/12/2017 19:32	Finished	MS (5ppb), IWST-171002B,0.0
76	N027508-001AMSD,M	9	1000	Unknown		12/12/2017 19:41	Finished	MSD (5ppb), IWST-171002B,0.
77	N027508-0011AMS,M	10	1000	Unknown		12/12/2017 19:51	Finished	MS (5ppb), IWST-171002B,2>1
78	N027508-003ADUP,D	11	1000	Unknown		12/12/2017 20:00	Finished	DUP,0.05>10mL
79	N027508-004A,SAMF	12	1000	Unknown		12/12/2017 20:10	Finished	SAMP,0.02>10mL
80	N027508-005A,SAMF	13	1000	Unknown		12/12/2017 20:19	Finished	SAMP,0.005>10mL
81	N027508-006A,SAMF	14	1000	Unknown		12/12/2017 20:29	Finished	SAMP,0.005>10mL
82	N027508-007A,SAMF	15	1000	Unknown		12/12/2017 20:38	Finished	SAMP,0.005>10mL
83	N027508-008A,SAMF	16	1000	Unknown		12/12/2017 20:48	Finished	SAMP,2>10mL
84	CCV-7,CCV,1,	17	1000	Unknown		12/12/2017 20:57	Finished	CCV @5ppb, IWST-171002A
85	CCB-7,CCB,1,	18	1000	Unknown		12/12/2017 21:07	Finished	CCB R171114C
86	N027508-009A,SAMF	19	1000	Unknown		12/12/2017 21:16	Finished	SAMP,2>10mL
87	N027508-010A,SAMF	20	1000	Unknown		12/12/2017 21:26	Finished	SAMP,1>10mL
88	N027508-012A,SAMF	21	1000	Unknown		12/12/2017 21:35	Finished	SAMP,0.5>10mL
89	N027508-013A,SAMF	22	1000	Unknown		12/12/2017 21:44	Finished	SAMP,0.2>10mL
90	N027508-014A,SAMF	23	1000	Unknown		12/12/2017 21:54	Finished	SAMP,0.2>10mL
91	N027508-015A,SAMF	24	1000	Unknown		12/12/2017 22:03	Finished	SAMP,0.1>10mL
92	N027508-002A,SAMF	25	1000	Unknown		12/12/2017 22:13	Finished	SAMP,0.05>10mL
93	CCV-8,CCV1,1,	26	1000	Unknown		12/12/2017 22:22	Finished	CCV @10ppb, IWST-171002A
94	CCB-8,CCB,1,	27	1000	Unknown		12/12/2017 22:32	Finished	CCB R171129A
95	SHUTDOWN	28	1000	Unknown		12/12/2017 22:41	Finished	
96	Eluent: R171212A	29	1000	Unknown		n.a.	Finished	Eluent
97	PCR: R171212B	30	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 171213A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/13/17 8:02 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/13/17 8:13 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/13/17 8:22 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/13/17 8:32 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/13/17 8:41 AM	Reported
15	MB-R120837	MBLK	1	Hexavalent Chromium	12/13/17 8:51 AM	Reported
16	LCS-R120837	LCS	1	Hexavalent Chromium	12/13/17 9:00 AM	Reported
17	N027508-008A	SAMP	20	Hexavalent Chromium	12/13/17 9:28 AM	Reported
18	N027429-011A	SAMP	1	Hexavalent Chromium	12/13/17 9:39 AM	Reported
19	N027429-011AMS	MS	1	Hexavalent Chromium	12/13/17 9:48 AM	Reported
20	N027429-019A	SAMP	1	Hexavalent Chromium	12/13/17 9:58 AM	Reported
21	N027429-019AMS	MS	1	Hexavalent Chromium	12/13/17 10:07 AM	Reported
22	N027429-020A	SAMP	1	Hexavalent Chromium	12/13/17 10:17 AM	Not Reported
23	N027429-020AMS	MS	1	Hexavalent Chromium	12/13/17 10:26 AM	Not Reported
24	N027456-001A	SAMP	100	Hexavalent Chromium	12/13/17 10:36 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/13/17 10:45 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/13/17 10:55 AM	Reported
27	N027429-012A	SAMP	20	Hexavalent Chromium	12/13/17 11:04 AM	Reported
28	N027429-012AMS	MS	20	Hexavalent Chromium	12/13/17 11:14 AM	Reported
29	N027429-013A	SAMP	20	Hexavalent Chromium	12/13/17 11:23 AM	Reported
30	N027429-013AMS	MS	20	Hexavalent Chromium	12/13/17 11:32 AM	Reported
31	N027429-014A	SAMP	20	Hexavalent Chromium	12/13/17 11:42 AM	Reported
32	N027429-014AMS	MS	20	Hexavalent Chromium	12/13/17 11:51 AM	Reported
33	N027429-015A	SAMP	10	Hexavalent Chromium	12/13/17 12:01 PM	Reported
34	N027429-015AMS	MS	10	Hexavalent Chromium	12/13/17 12:10 PM	Reported
35	N027429-020A	SAMP	5	Hexavalent Chromium	12/13/17 12:20 PM	Reported
36	N027429-020AMS	MS	5	Hexavalent Chromium	12/13/17 12:29 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/13/17 12:39 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/13/17 12:48 PM	Reported
39	N027456-002A	SAMP	10	Hexavalent Chromium	12/13/17 12:58 PM	Not Reported
40	N027429-016A	SAMP	5	Hexavalent Chromium	12/13/17 1:07 PM	Reported
41	N027429-016AMS	MS	5	Hexavalent Chromium	12/13/17 1:17 PM	Reported
42	N027429-017A	SAMP	5	Hexavalent Chromium	12/13/17 1:26 PM	Reported

INJECTION LOG: 171213A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027429-017AMS	MS	5	Hexavalent Chromium	12/13/17 1:35 PM	Reported
44	N027429-018A	SAMP	5	Hexavalent Chromium	12/13/17 1:45 PM	Reported
45	N027429-018AMS	MS	5	Hexavalent Chromium	12/13/17 1:54 PM	Reported
46	N027456-001ADUP	DUP	100	Hexavalent Chromium	12/13/17 2:04 PM	Reported
47	N027429-013AMSD	MSD	20	Hexavalent Chromium	12/13/17 2:13 PM	Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	12/13/17 2:23 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	12/13/17 2:32 PM	Reported
50	N027518-001D	SAMP	1	Hexavalent Chromium	12/13/17 2:42 PM	Reported
51	N027456-002A	SAMP	1	Hexavalent Chromium	12/13/17 2:51 PM	Reported
52	LCS-R120838	LCS	1	Hexavalent Chromium	12/13/17 3:08 PM	Reported
53	MB-R120838	MBLK	1	Hexavalent Chromium	12/13/17 3:19 PM	Reported
54	N027535-001A	SAMP	200	Hexavalent Chromium	12/13/17 3:46 PM	Reported
55	N027535-001AMS	MS	200	Hexavalent Chromium	12/13/17 3:58 PM	Reported
56	N027535-001AMSD	MSD	200	Hexavalent Chromium	12/13/17 4:07 PM	Reported
57	N027535-011A	SAMP	2000	Hexavalent Chromium	12/13/17 4:17 PM	Reported
58	N027535-011AMS	MS	2000	Hexavalent Chromium	12/13/17 4:26 PM	Reported
59	N027535-015A	SAMP	2000	Hexavalent Chromium	12/13/17 4:36 PM	Reported
60	CCV-5	CCV	1	Hexavalent Chromium	12/13/17 4:45 PM	Reported
61	CCB-5	CCB	1	Hexavalent Chromium	12/13/17 4:55 PM	Reported
62	N027535-015ADUP	DUP	2000	Hexavalent Chromium	12/13/17 5:04 PM	Reported
63	N027535-002A	SAMP	1000	Hexavalent Chromium	12/13/17 5:14 PM	Reported
64	N027535-003A	SAMP	1000	Hexavalent Chromium	12/13/17 5:23 PM	Reported
65	N027535-004A	SAMP	1000	Hexavalent Chromium	12/13/17 5:32 PM	Reported
66	N027535-005A	SAMP	1000	Hexavalent Chromium	12/13/17 5:42 PM	Reported
67	N027535-006A	SAMP	1000	Hexavalent Chromium	12/13/17 5:51 PM	Reported
68	N027535-007A	SAMP	2000	Hexavalent Chromium	12/13/17 6:01 PM	Reported
69	N027535-008A	SAMP	2000	Hexavalent Chromium	12/13/17 6:10 PM	Reported
70	N027535-009A	SAMP	2000	Hexavalent Chromium	12/13/17 6:20 PM	Reported
71	N027535-010A	SAMP	2000	Hexavalent Chromium	12/13/17 6:29 PM	Reported
72	CCV-6	CCV1	1	Hexavalent Chromium	12/13/17 6:39 PM	Reported
73	CCB-6	CCB	1	Hexavalent Chromium	12/13/17 6:48 PM	Reported
74	N027535-016A	SAMP	1	Hexavalent Chromium	12/13/17 6:58 PM	Reported
75	N027535-012A	SAMP	2000	Hexavalent Chromium	12/13/17 7:07 PM	Reported
76	N027535-013A	SAMP	2000	Hexavalent Chromium	12/13/17 7:17 PM	Reported
77	N027535-014A	SAMP	2000	Hexavalent Chromium	12/13/17 7:26 PM	Reported
78	N027535-017A	SAMP	1000	Hexavalent Chromium	12/13/17 7:35 PM	Reported
79	CCV-7	CCV	1	Hexavalent Chromium	12/13/17 7:45 PM	Reported
80	CCB-7	CCB	1	Hexavalent Chromium	12/13/17 7:54 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171213A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**13/Dec/17 20:25:13**
No. of Injections:	**83**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/13/2017 08:02	Finished	BLANK
11	BLANK	2	1000	Unknown		12/13/2017 08:13	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/13/2017 08:22	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	5	1000	Unknown		12/13/2017 08:32	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	6	1000	Unknown		12/13/2017 08:41	Finished	CCB R171129A
15	MB-H2O,MBLK,1	7	1000	Unknown		12/13/2017 08:51	Finished	MB R171129A
16	LCS-H2O,LCS,1	8	1000	Unknown		12/13/2017 09:00	Finished	LCS, IWST-171002B
17	N027508-008A,SAMF	1	1000	Unknown		12/13/2017 09:28	Finished	SAMP,0.5>10mL
18	N027429-011A,SAMF	2	1000	Unknown		12/13/2017 09:39	Finished	MS (1ppb), IWST-171002B,10
19	N027429-011AMS,MS	3	1000	Unknown		12/13/2017 09:48	Finished	SAMP,10mL
20	N027429-019A,SAMF	4	1000	Unknown		12/13/2017 09:58	Finished	MS (1ppb), IWST-171002B,10
21	N027429-019AMS,MS	5	1000	Unknown		12/13/2017 10:07	Finished	SAMP,10mL
22	N027429-020A,SAMF	6	1000	Unknown		12/13/2017 10:17	Finished	MS (1ppb), IWST-171002B,10
23	N027429-020AMS,MS	7	1000	Unknown		12/13/2017 10:26	Finished	SAMP,10mL
24	N027456-001A,SAMF	8	1000	Unknown		12/13/2017 10:36	Finished	SAMP,0.1>10mL
25	CCV-2,CCV1,1,	9	1000	Unknown		12/13/2017 10:45	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	10	1000	Unknown		12/13/2017 10:55	Finished	CCB R171129A
27	N027429-012A,SAMF	11	1000	Unknown		12/13/2017 11:04	Finished	SAMP,0.5>10mL
28	N027429-012AMS,MS	12	1000	Unknown		12/13/2017 11:14	Finished	MS (5ppb), IWST-171002B,0.5
29	N027429-013A,SAMF	13	1000	Unknown		12/13/2017 11:23	Finished	SAMP,0.5>10mL
30	N027429-013AMS,MS	14	1000	Unknown		12/13/2017 11:32	Finished	MS (5ppb), IWST-171002B,0.5
31	N027429-014A,SAMF	15	1000	Unknown		12/13/2017 11:42	Finished	SAMP,0.5>10mL
32	N027429-014AMS,MS	16	1000	Unknown		12/13/2017 11:51	Finished	MS (5ppb), IWST-171002B,0.5
33	N027429-015A,SAMF	17	1000	Unknown		12/13/2017 12:01	Finished	SAMP,1>10mL
34	N027429-015AMS,MS	18	1000	Unknown		12/13/2017 12:10	Finished	MS (5ppb), IWST-171002B,1>1
35	N027429-020A,SAMF	19	1000	Unknown		12/13/2017 12:20	Finished	SAMP,2>10mL
36	N027429-020AMS,MS	20	1000	Unknown		12/13/2017 12:29	Finished	MS (1ppb), IWST-171002B,2>1
37	CCV-3,CCV,1,	21	1000	Unknown		12/13/2017 12:39	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	22	1000	Unknown		12/13/2017 12:48	Finished	CCB R171129A
39	N027456-002A,SAMF	23	1000	Unknown		12/13/2017 12:58	Finished	SAMP,1>10mL
40	N027429-016A,SAMF	24	1000	Unknown		12/13/2017 13:07	Finished	SAMP,2>10mL
41	N027429-016AMS,MS	25	1000	Unknown		12/13/2017 13:17	Finished	MS (5ppb), IWST-171002B,2>1
42	N027429-017A,SAMF	26	1000	Unknown		12/13/2017 13:26	Finished	SAMP,2>10mL
43	N027429-017AMS,MS	27	1000	Unknown		12/13/2017 13:35	Finished	MS (5ppb), IWST-171002B,2>1
44	N027429-018A,SAMF	28	1000	Unknown		12/13/2017 13:45	Finished	SAMP,2>10mL
45	N027429-018AMS,MS	29	1000	Unknown		12/13/2017 13:54	Finished	MS (5ppb), IWST-171002B,2>1
46	N027456-001ADUP,D	30	1000	Unknown		12/13/2017 14:04	Finished	DUP,0.1>10mL
47	N027429-013AMSD,M	31	1000	Unknown		12/13/2017 14:13	Finished	MSD (5ppb), IWST-171002B,0.
48	CCV-4,CCV1,1,	32	1000	Unknown		12/13/2017 14:23	Finished	CCV @10ppb, IWST-171002A
49	CCB-4,CCB,1,	33	1000	Unknown		12/13/2017 14:32	Finished	CCB R171129A
50	N027518-001D,SAMF	34	1000	Unknown		12/13/2017 14:42	Finished	SAMP,10mL
51	N027456-002A,SAMF	35	1000	Unknown		12/13/2017 14:51	Finished	SAMP,10mL
52	LCS-2,LCS,1	1	1000	Unknown		12/13/2017 15:08	Finished	LCS, IWST-171002B
53	MB-2,MBLK,1	2	1000	Unknown		12/13/2017 15:19	Finished	MB R171129A
54	N027535-001A,SAMF	4	1000	Unknown		12/13/2017 15:46	Finished	SAMP,0.05>10mL
55	N027535-001AMS,MS	5	1000	Unknown		12/13/2017 15:58	Finished	MS (5ppb), IWST-171002B,0.0
56	N027535-001AMSD,M	6	1000	Unknown		12/13/2017 16:07	Finished	MSD (5ppb), IWST-171002B,0.
57	N027535-011A,SAMF	7	1000	Unknown		12/13/2017 16:17	Finished	SAMP,0.005>10mL
58	N027535-011AMS,MS	8	1000	Unknown		12/13/2017 16:26	Finished	MS (5ppb), IWST-171002B,0.0
59	N027535-015A,SAMF	9	1000	Unknown		12/13/2017 16:36	Finished	SAMP,0.005>10mL
60	CCV-5,CCV,1,	10	1000	Unknown		12/13/2017 16:45	Finished	CCV @5ppb, IWST-171002A

61	CCB-5,CCB,1,	11	1000	Unknown		12/13/2017 16:55	Finished	CCB R171129A
62	N027535-015ADUP,D	12	1000	Unknown		12/13/2017 17:04	Finished	DUP,0.005>10mL
63	N027535-002A,SAMP	13	1000	Unknown		12/13/2017 17:14	Finished	SAMP,0.01>10mL
64	N027535-003A,SAMP	14	1000	Unknown		12/13/2017 17:23	Finished	SAMP,0.01>10mL
65	N027535-004A,SAMP	15	1000	Unknown		12/13/2017 17:32	Finished	SAMP,0.01>10mL
66	N027535-005A,SAMP	16	1000	Unknown		12/13/2017 17:42	Finished	SAMP,0.01>10mL
67	N027535-006A,SAMP	17	1000	Unknown		12/13/2017 17:51	Finished	SAMP,0.01>10mL
68	N027535-007A,SAMP	18	1000	Unknown		12/13/2017 18:01	Finished	SAMP,0.005>10mL
69	N027535-008A,SAMP	19	1000	Unknown		12/13/2017 18:10	Finished	SAMP,0.005>10mL
70	N027535-009A,SAMP	20	1000	Unknown		12/13/2017 18:20	Finished	SAMP,0.005>10mL
71	N027535-010A,SAMP	21	1000	Unknown		12/13/2017 18:29	Finished	SAMP,0.005>10mL
72	CCV-6,CCV1,1,	22	1000	Unknown		12/13/2017 18:39	Finished	CCV @10ppb, IWST-171002A
73	CCB-6,CCB,1,	23	1000	Unknown		12/13/2017 18:48	Finished	CCB R171129A
74	N027535-016A,SAMP	24	1000	Unknown		12/13/2017 18:58	Finished	SAMP,10mL
75	N027535-012A,SAMP	25	1000	Unknown		12/13/2017 19:07	Finished	SAMP,0.005>10mL
76	N027535-013A,SAMP	26	1000	Unknown		12/13/2017 19:17	Finished	SAMP,0.005>10mL
77	N027535-014A,SAMP	27	1000	Unknown		12/13/2017 19:26	Finished	SAMP,0.005>10mL
78	N027535-017A,SAMP	28	1000	Unknown		12/13/2017 19:35	Finished	SAMP,0.01>10mL
79	CCV-7,CCV,1,	29	1000	Unknown		12/13/2017 19:45	Finished	CCV @5ppb, IWST-171002A
80	CCB-7,CCB,1,	30	1000	Unknown		12/13/2017 19:54	Finished	CCB R171114C
81	SHUTDOWN	31	1000	Unknown		12/13/2017 20:04	Finished	
82	Eluent: R171212A	32	1000	Unknown		n.a.	Finished	Eluent
83	PCR: R171212B	33	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 12/12/17
Time Prepared: 1320H
Prepared By: MSB

Slope: 97.72
pH 4: 4.03 @25.0°C
7: 6.98 @25.0°C
10: 9.98 @25.0°C

Reagent ID:
Sulfuric Acid: 9465
Diphenylcarbazide: CINU-170620A
NH4OH + NH4SO4 eluent: M71212A
NH4OH + NH4SO4 buffer: M71129A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M27429-001A	9.40	-	~250mL	~250mL		M71129A
2)	2A	9.35	-				
3)	3A	9.30	-				
4)	4A	9.35	-				
5)	5A	9.46	-				
6)	6A	9.40	-				
7)	7A	9.46	-				
8)	8A	9.44	-				
9)	9A	9.30	-				
10)	10A	9.35	-				
11)	11A	9.60	-				
12)	12A	9.32	-				
13)	13A	9.32	-				
14)	14A	9.31	-				
15)	15A	9.37	-				
	16A	9.33	-				

Sample Preparation

Date Prepared: 12/12/17
Time Prepared: 1320H
Prepared By: MSB

Reagent ID:
Sulfuric Acid: 9465
Diphenylcarbazide: CINU-170620A
NH4OH + NH4SO4 eluent: M71212A
NH4OH + NH4SO4 buffer: M71129A

6N NaOH: M170605A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M27429-17A	9.34	-	~250mL	~250mL		M71129A
2)	18A	9.38	-				
3)	19A	9.66	-				
4)	20A	9.38	-				1p
5)	20A	9.36	-				2p
6)	M27456-1A	9.00	9.31			1sdps NaOH	M71129A
7)	2A	9.46	-				
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 13

rba 12/16/2017

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 11/28/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0529	0.2484	1.2584	2.5328	3.7596	5.0155	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-171002A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RLB 01/03/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ICV**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866098**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.092	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.185	0.20	0.2000	0	92.6	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **CCV**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.112	0.20	5.000	0	102	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866102**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.216	0.20	0.2000	0	108	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866106**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.236	0.20	10.00	0	102	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **CCV**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.101	0.20	5.000	0	102	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.242	0.20	10.00	0	102	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **CCV**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866136**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.102	0.20	5.000	0	102	95	105				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866144**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.362	0.20	10.00	0	104	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120837**
Client ID: **ICV**	Batch ID: **R120837**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866482**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.092	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120837**
Client ID: **ZZZZZZ**	Batch ID: **R120837**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.185	0.20	0.2000	0	92.6	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120837**
Client ID: **CCV**	Batch ID: **R120837**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2017**	SeqNo: **2866485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.078	0.20	5.000	0	102	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120837**
Client ID: **ZZZZZZ**	Batch ID: **R120837**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2017**	SeqNo: **2866486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.192	0.20	0.2000	0	96.0	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120837**
Client ID: **ZZZZZZ**	Batch ID: **R120837**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2017**	SeqNo: **2866496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.268	0.20	10.00	0	103	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120837**
Client ID: **CCV**	Batch ID: **R120837**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2017**	SeqNo: **2866508**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.188	0.20	5.000	0	104	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120837**
Client ID: **ZZZZZZ**	Batch ID: **R120837**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2017**	SeqNo: **2866518**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.300	0.20	10.00	0	103	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120837**
Client ID: **CCV**	Batch ID: **R120837**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2017**	SeqNo: **2866522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.119	0.20	5.000	0	102	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ICB**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **CCB**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **CCB**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866107**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **CCB**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866115**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **CCB**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866125**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **CCB**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **CCB**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866145**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120837**
Client ID: **ICB**	Batch ID: **R120837**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120837**
Client ID: **CCB**	Batch ID: **R120837**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2017**	SeqNo: **2866487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120837**
Client ID: **CCB**	Batch ID: **R120837**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2017**	SeqNo: **2866497**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120837**
Client ID: **CCB**	Batch ID: **R120837**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2017**	SeqNo: **2866509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120837**
Client ID: **CCB**	Batch ID: **R120837**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2017**	SeqNo: **2866519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120837**
Client ID: **CCB**	Batch ID: **R120837**	TestNo: **EPA 218.6**		Analysis Date: **12/13/2017**	SeqNo: **2866523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/12/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.148	
CCV-2	4.148	
CCV-3	4.148	
CCV-4	4.148	
CCV-5	4.148	
CCV-6	4.148	
CCV-7	4.123	
CCV-8	4.123	
Average	4.142	
Actual RT Window	4.062 - 4.222	
Applied RT Window	3.942 - 4.342	
MB-R120835	N.A.	N.A.
LCS-R120835	4.148	PASS
N027430-016A	N.A.	N.A.
N027430-016AMS	N.A.	N.A.
N027430-017A	N.A.	N.A.
N027430-017AMS	N.A.	N.A.
N027430-018A	N.A.	N.A.
N027430-018AMS	N.A.	N.A.
N027431-002A	3.981	PASS
N027431-002AMS	3.965	PASS
N027431-003A	N.A.	N.A.
N027431-003AMS	N.A.	N.A.
N027431-004A	N.A.	N.A.
N027431-004AMS	N.A.	N.A.
N027465-001A	N.A.	N.A.
N027465-001AMS	4.148	PASS
N027465-002A	4.140	PASS
N027465-002AMS	4.140	PASS
N027465-003A	N.A.	N.A.
N027465-003AMS	4.148	PASS
N027431-001A	4.148	PASS

RJB 01/03/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/12/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.148	
CCV-2	4.148	
CCV-3	4.148	
CCV-4	4.148	
CCV-5	4.148	
CCV-6	4.148	
CCV-7	4.123	
CCV-8	4.123	
Average	4.142	
Actual RT Window	4.062 - 4.222	
Applied RT Window	3.942 - 4.342	
N027431-001AMS	4.148	PASS
N027431-001ADUP	4.148	PASS
N027431-002AMS	3.973	PASS
N027429-009A	4.131	PASS
N027429-009AMS	4.131	PASS
N027429-009AMSD	4.140	PASS
N027429-001A	N.A.	N.A.
N027429-001AMS	4.131	PASS
N027429-002A	4.190	PASS
N027429-002AMS	4.140	PASS
N027429-003A	4.140	PASS
N027429-003AMS	4.140	PASS
N027429-004A	N.A.	N.A.
N027429-004AMS	4.148	PASS
N027429-005A	4.073	PASS
N027429-005AMS	4.073	PASS
N027429-006A	4.073	PASS
N027429-006AMS	4.073	PASS
N027429-007A	4.131	PASS
N027429-007AMS	4.131	PASS
N027429-008A	4.131	PASS

RB 01/03/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/12/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.148	
CCV-2	4.148	
CCV-3	4.148	
CCV-4	4.148	
CCV-5	4.148	
CCV-6	4.148	
CCV-7	4.123	
CCV-8	4.123	
Average	4.142	
Actual RT Window	4.062 - 4.222	
Applied RT Window	3.942 - 4.342	
N027429-008AMS	4.131	PASS
N027429-010A	4.148	PASS
N027429-010AMS	4.148	PASS
LCS-R120836	4.148	PASS
MB-R120836	N.A.	N.A.
N027508-001A	4.148	PASS
N027508-011A	4.131	PASS
N027508-003A	4.140	PASS
N027508-001AMS	4.140	PASS
N027508-001AMSD	4.140	PASS
N027508-011AMS	4.131	PASS
N027508-003ADUP	4.140	PASS
N027508-004A	4.140	PASS
N027508-005A	4.140	PASS
N027508-006A	4.140	PASS
N027508-007A	4.140	PASS
N027508-008A	4.115	PASS
N027508-009A	4.106	PASS
N027508-010A	N.A.	N.A.
N027508-012A	4.090	PASS
N027508-013A	4.106	PASS

RLB 01/03/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/12/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.148	
CCV-2	4.148	
CCV-3	4.148	
CCV-4	4.148	
CCV-5	4.148	
CCV-6	4.148	
CCV-7	4.123	
CCV-8	4.123	
Average	4.142	
Actual RT Window	4.062 - 4.222	
Applied RT Window	3.942 - 4.342	
N027508-014A	4.106	PASS
N027508-015A	4.115	PASS
N027508-002A	4.115	PASS



01/03/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/13/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.148	
CCV-2	4.148	
CCV-3	4.148	
CCV-4	4.156	
CCV-5	4.148	
CCV-6	4.148	
CCV-7	4.148	

Average	4.149
Actual RT Window	4.069 - 4.229
Applied RT Window	3.949 - 4.349

MB-R120837	N.A.	N.A.
LCS-R120837	4.148	PASS
N027508-008A	4.140	PASS
N027429-011A	N.A.	N.A.
N027429-011AMS	4.140	PASS
N027429-019A	N.A.	N.A.
N027429-019AMS	4.140	PASS
N027429-020A	3.831	FAIL
N027429-020AMS	3.848	FAIL
N027456-001A	4.140	PASS
N027429-012A	4.148	PASS
N027429-012AMS	4.148	PASS
N027429-013A	4.148	PASS
N027429-013AMS	4.148	PASS
N027429-014A	4.148	PASS
N027429-014AMS	4.148	PASS
N027429-015A	4.148	PASS
N027429-015AMS	4.148	PASS
N027429-020A	4.115	PASS
N027429-020AMS	4.115	PASS
N027456-002A	4.131	PASS
N027429-016A	4.140	PASS

RJB 01/03/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/13/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.148	
CCV-2	4.148	
CCV-3	4.148	
CCV-4	4.156	
CCV-5	4.148	
CCV-6	4.148	
CCV-7	4.148	
Average	4.149	
Actual RT Window	4.069 - 4.229	
Applied RT Window	3.949 - 4.349	
N027429-016AMS	4.140	PASS
N027429-017A	4.140	PASS
N027429-017AMS	4.140	PASS
N027429-018A	4.106	PASS
N027429-018AMS	4.106	PASS
N027456-001ADUP	4.148	PASS
N027429-013AMSD	4.148	PASS
N027518-001D	4.123	PASS
N027456-002A	4.148	PASS
LCS-R120838	4.148	PASS
MB-R120838	N.A.	N.A.
N027535-001A	4.148	PASS
N027535-001AMS	4.140	PASS
N027535-001AMSD	4.148	PASS
N027535-011A	4.148	PASS
N027535-011AMS	4.148	PASS
N027535-015A	4.148	PASS
N027535-015ADUP	4.148	PASS
N027535-002A	4.148	PASS
N027535-003A	4.148	PASS
N027535-004A	4.148	PASS
N027535-005A	4.148	PASS

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RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/13/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.148	
CCV-2	4.148	
CCV-3	4.148	
CCV-4	4.156	
CCV-5	4.148	
CCV-6	4.148	
CCV-7	4.148	
Average	4.149	
Actual RT Window	4.069 - 4.229	
Applied RT Window	3.949 - 4.349	
N027535-006A	4.148	PASS
N027535-007A	4.148	PASS
N027535-008A	4.148	PASS
N027535-009A	4.148	PASS
N027535-010A	4.148	PASS
N027535-016A	N.A.	N.A.
N027535-012A	4.148	PASS
N027535-013A	4.148	PASS
N027535-014A	4.148	PASS
N027535-017A	4.148	PASS



01/03/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 Unit: ug/L
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

MDL/LOD & PQL Verification 2017

Method Name: **Hexavalent Chromium by IC**
Method Number: EPA Method 218.6
Analysis Date(s): 5/31/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: µg/L

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.103

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.194	**97**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 171128A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/28/17 10:57 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/28/17 11:08 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/28/17 11:17 AM	Reported
13	MB-R120468	MBLK	1	Hexavalent Chromium	11/28/17 11:27 AM	Reported
14	LCS-R120468	LCS	1	Hexavalent Chromium	11/28/17 11:36 AM	Reported
15	N027215-001A	SAMP	1	Hexavalent Chromium	11/28/17 11:47 AM	Reported
16	N027215-002A	SAMP	1	Hexavalent Chromium	11/28/17 11:59 AM	Reported
17	N027215-003A	SAMP	1	Hexavalent Chromium	11/28/17 12:08 PM	Reported
18	N027215-004A	SAMP	1	Hexavalent Chromium	11/28/17 12:18 PM	Reported
19	N027215-005A	SAMP	1	Hexavalent Chromium	11/28/17 12:27 PM	Reported
20	N027215-002ADUP	DUP	1	Hexavalent Chromium	11/28/17 12:37 PM	Reported
21	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 12:46 PM	Not Reported
22	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 12:56 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	11/28/17 1:05 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/28/17 1:14 PM	Reported
25	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:04 PM	Not Reported
26	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:16 PM	Not Reported
27	N027215-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:29 PM	Reported
28	N027215-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:41 PM	Reported
29	CCV-2	CCV	1	Hexavalent Chromium	11/28/17 2:50 PM	Reported
30	CCB-2	CCB	1	Hexavalent Chromium	11/28/17 3:00 PM	Reported

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Injection Log Summary

Sequence Details

Name:	**IC-07_171128A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**28/Nov/17 15:47:35**
No. of Injections:	**33**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		11/28/2017 10:57	Finished	ICV @5ppb, IWST-171002A
11	PQL@0.2ppb,CCV2,	12	1000	Unknown		11/28/2017 11:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		11/28/2017 11:17	Finished	ICB R171114C
13	MB-H2O,MBLK,1	14	1000	Unknown		11/28/2017 11:27	Finished	MB R171114C
14	LCS-H2O,LCS,1	15	1000	Unknown		11/28/2017 11:36	Finished	LCS, IWST-171002B
15	N027215-001A,SAMF	17	1000	Unknown		11/28/2017 11:47	Finished	SAMP,10mL
16	N027215-002A,SAMF	18	1000	Unknown		11/28/2017 11:59	Finished	SAMP,10mL
17	N027215-003A,SAMF	19	1000	Unknown		11/28/2017 12:08	Finished	SAMP,10mL
18	N027215-004A,SAMF	20	1000	Unknown		11/28/2017 12:18	Finished	SAMP,10mL
19	N027215-005A,SAMF	21	1000	Unknown		11/28/2017 12:27	Finished	SAMP,10mL
20	N027215-002ADUP,D	22	1000	Unknown		11/28/2017 12:37	Finished	DUP,10mL
21	N027157-001AMS,MS	23	1000	Unknown		11/28/2017 12:46	Finished	MS (5ppb), IWST-171002B,10
22	N027157-001AMSD,M	24	1000	Unknown		11/28/2017 12:56	Finished	MSD (5ppb), IWST-171002B,1
23	CCV-1,CCV1,1,	25	1000	Unknown		11/28/2017 13:05	Finished	CCV @10ppb, IWST-171002A
24	CCB-1,CCB,1,	26	1000	Unknown		11/28/2017 13:14	Finished	CCB R171031A
25	N027157-001AMS,MS	28	1000	Unknown		11/28/2017 14:04	Finished	MS (5ppb), IWST-171002B,10
26	N027157-001AMSD,M	29	1000	Unknown		11/28/2017 14:16	Finished	MSD (5ppb), IWST-171002B,1
27	N027215-001AMS,MS	31	1000	Unknown		11/28/2017 14:29	Finished	MS (5ppb), IWST-171002B,10
28	N027215-001AMSD,M	32	1000	Unknown		11/28/2017 14:41	Finished	MSD (5ppb), IWST-171002B,1
29	CCV-2,CCV,1,	33	1000	Unknown		11/28/2017 14:50	Finished	CCV @5ppb, IWST-171002A
30	CCB-2,CCB,1,	34	1000	Unknown		11/28/2017 15:00	Finished	CCB R171031A
31	SHUTDOWN	35	1000	Unknown		11/28/2017 15:09	Finished	
32	Eluent: R171128A	36	1000	Unknown		n.a.	Finished	Eluent
33	PCR: R171128B	37	1000	Unknown		n.a.	Finished	Post-Column Reagent

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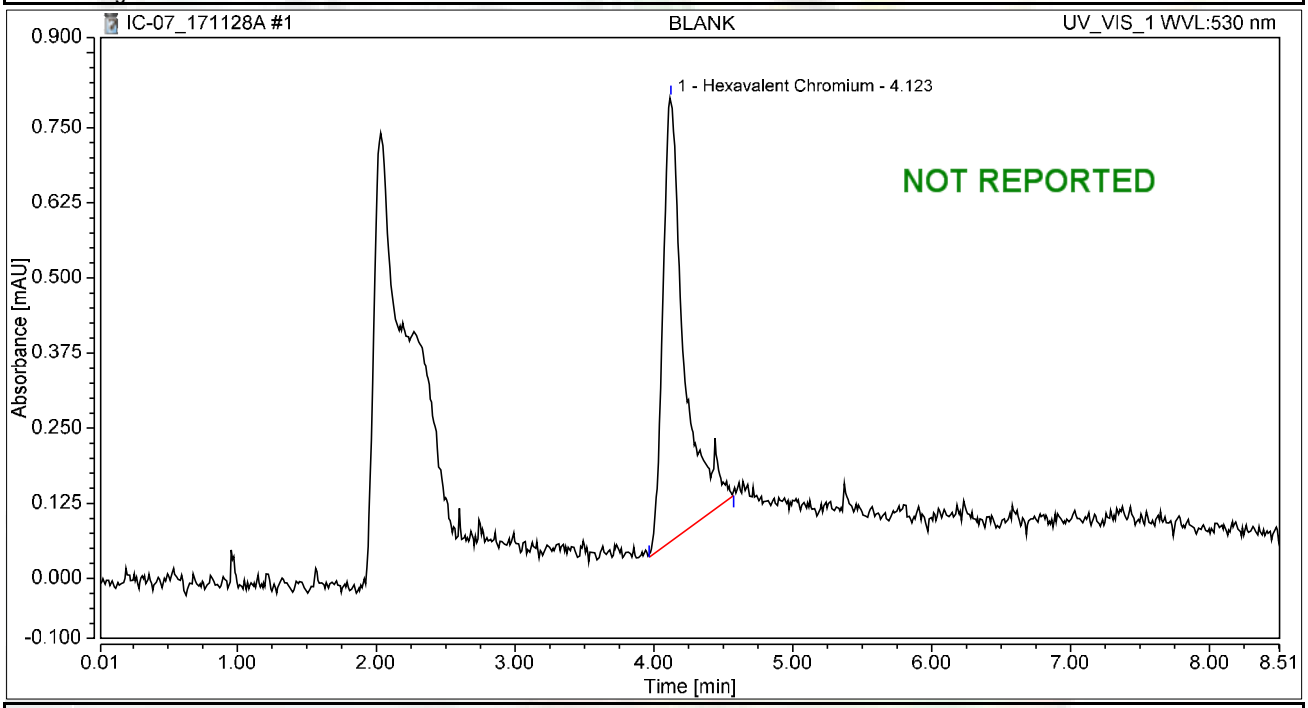
Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

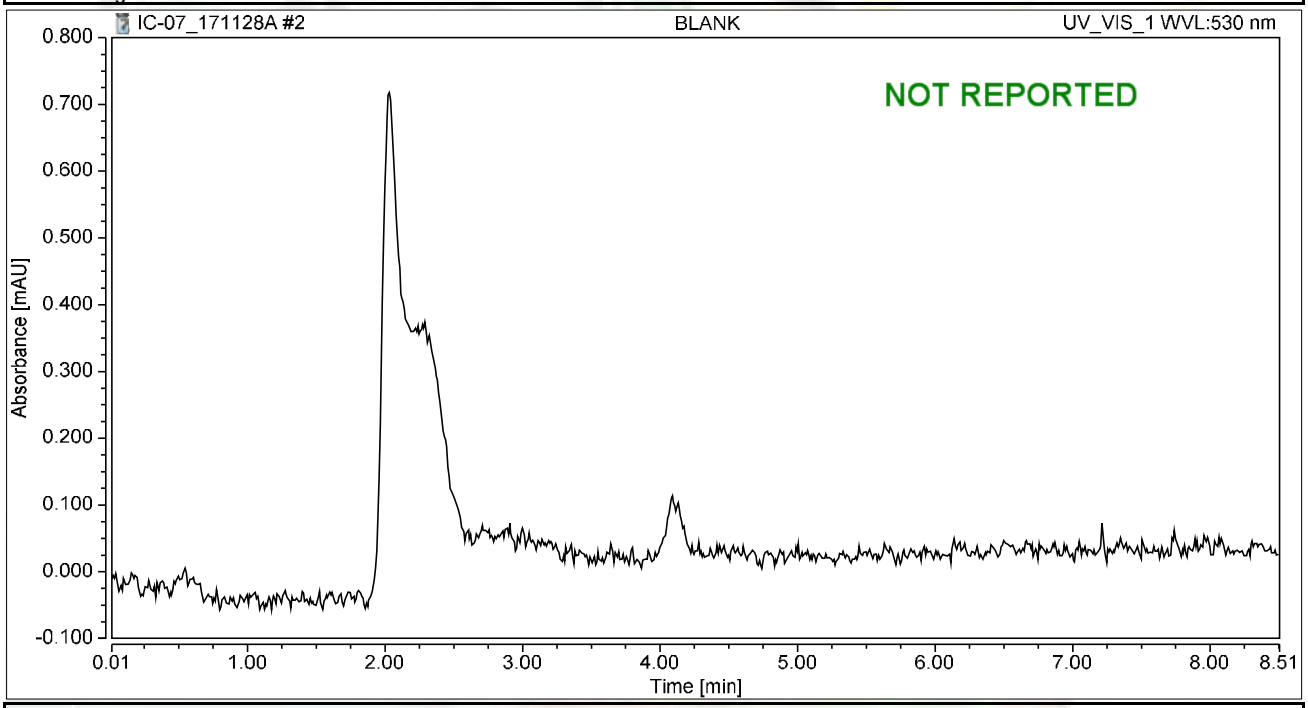
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.130	0.738	100.00	100.00	0.5193
Total:			**0.130**	**0.738**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

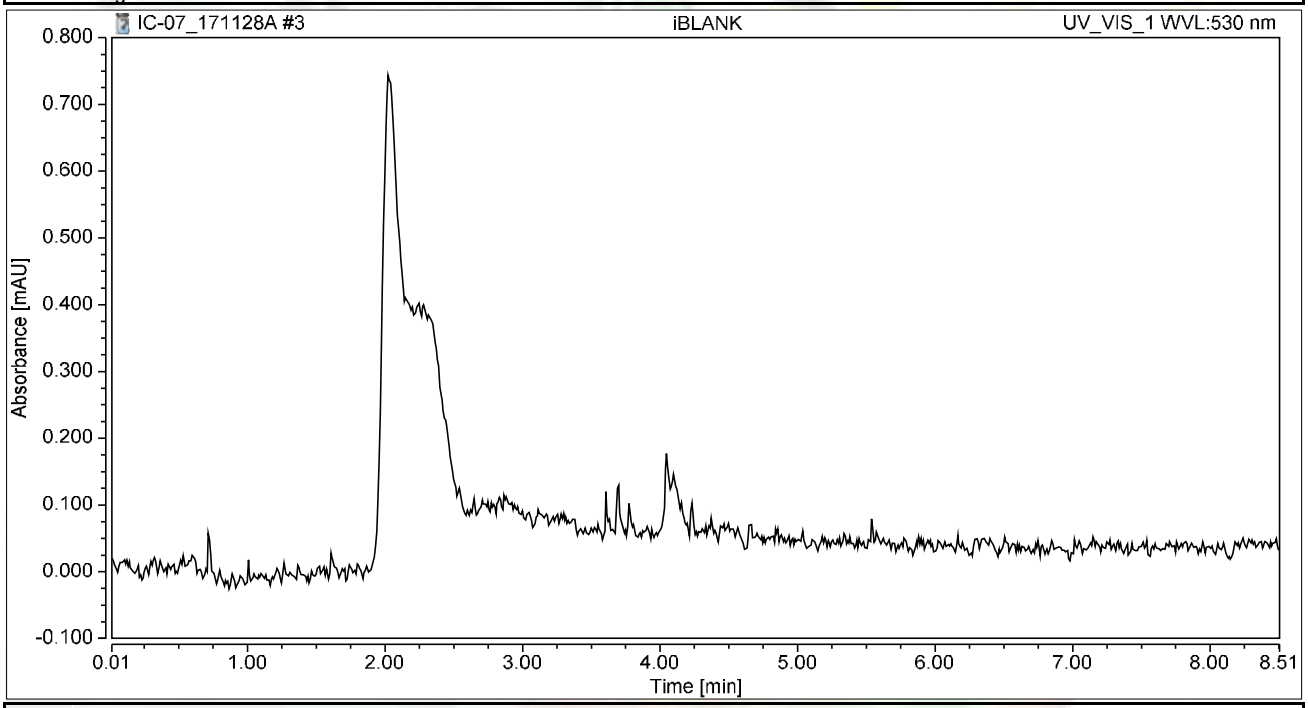
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

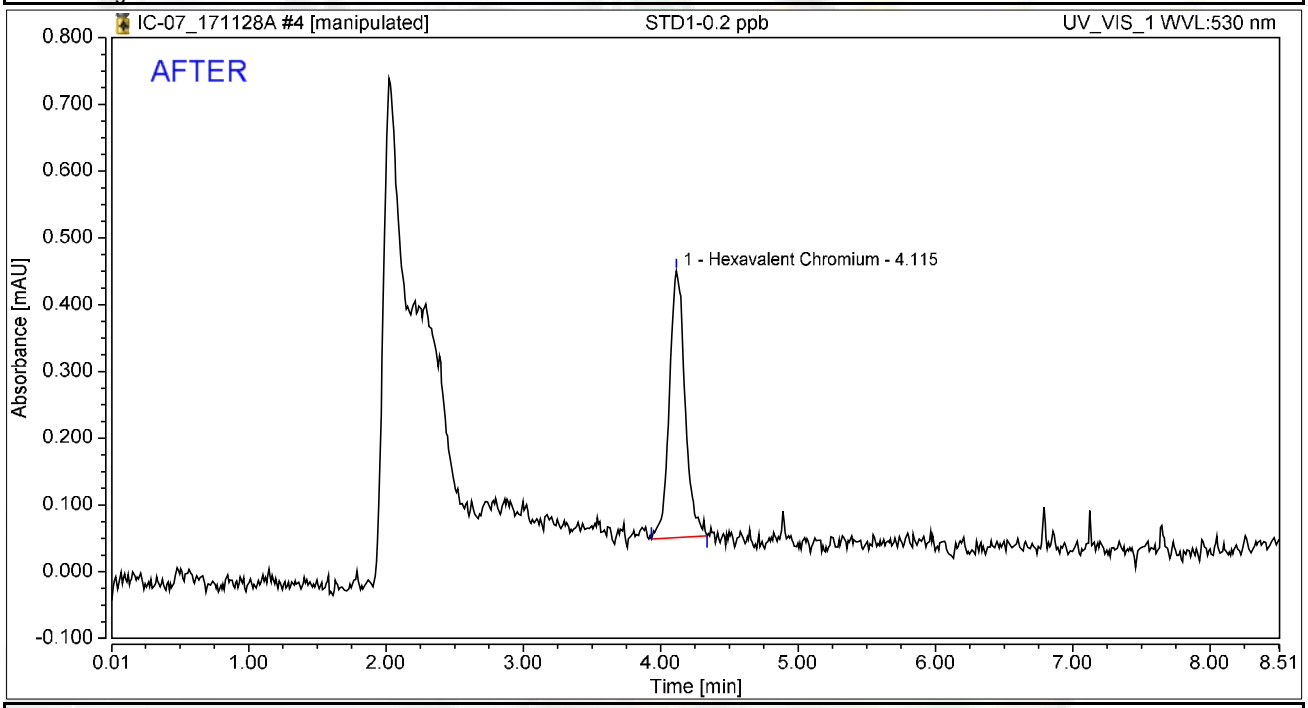
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.053	0.400	100.00	100.00	0.2108
Total:			**0.053**	**0.400**	**100.00**	**100.00**	

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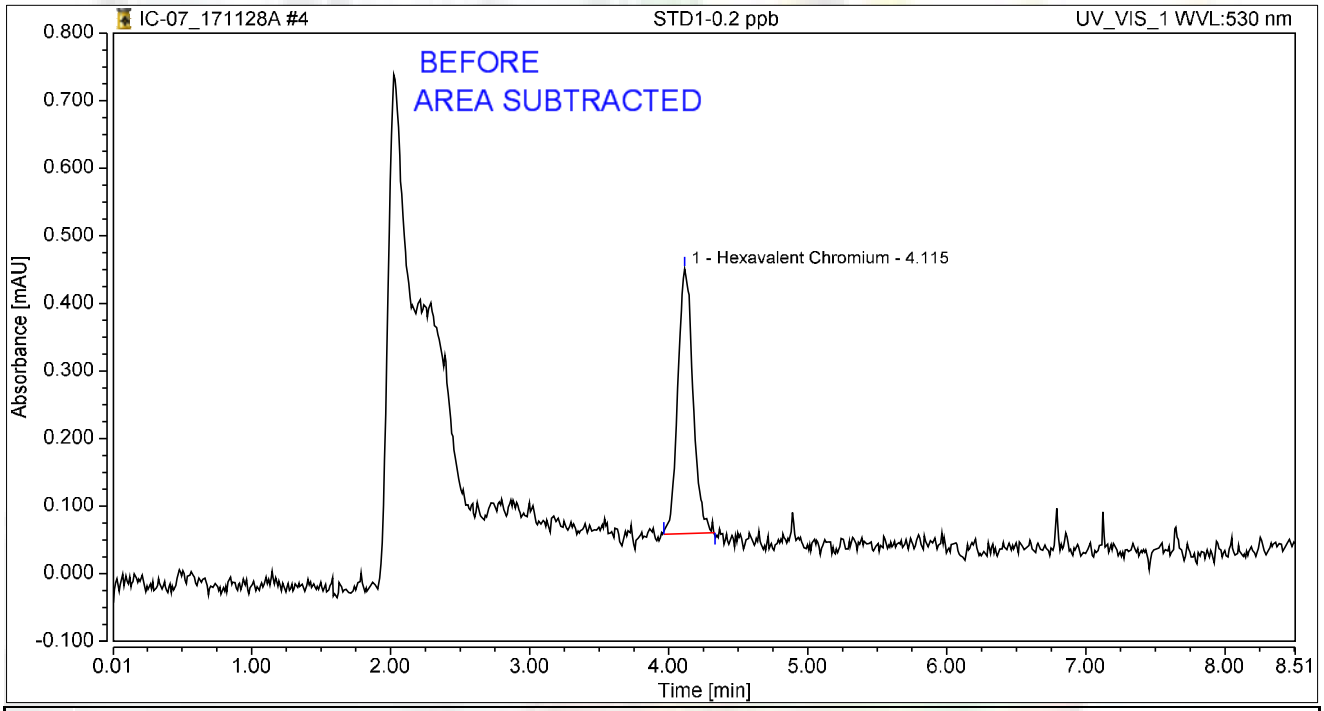
Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.050	0.391	100.00	100.00	0.1957
Total:			**0.050**	**0.391**	**100.00**	**100.00**	

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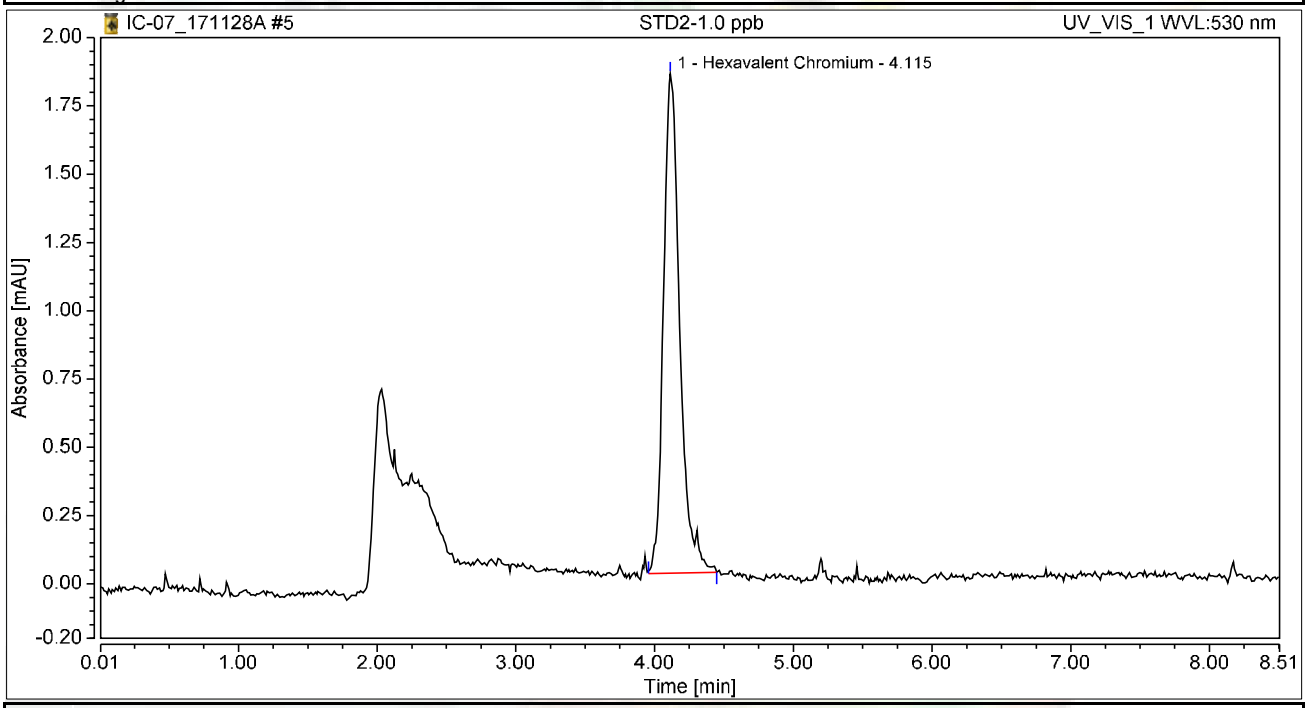
Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

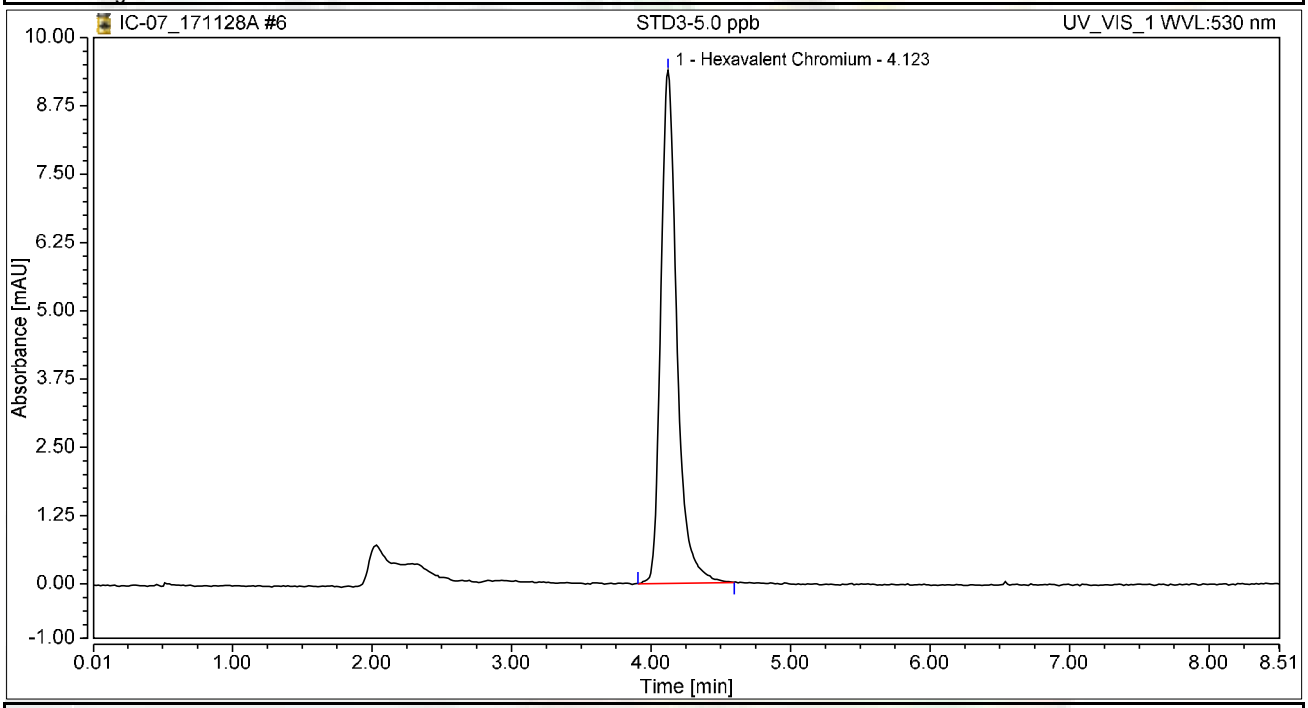
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.248	1.827	100.00	100.00	0.9892
Total:			**0.248**	**1.827**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

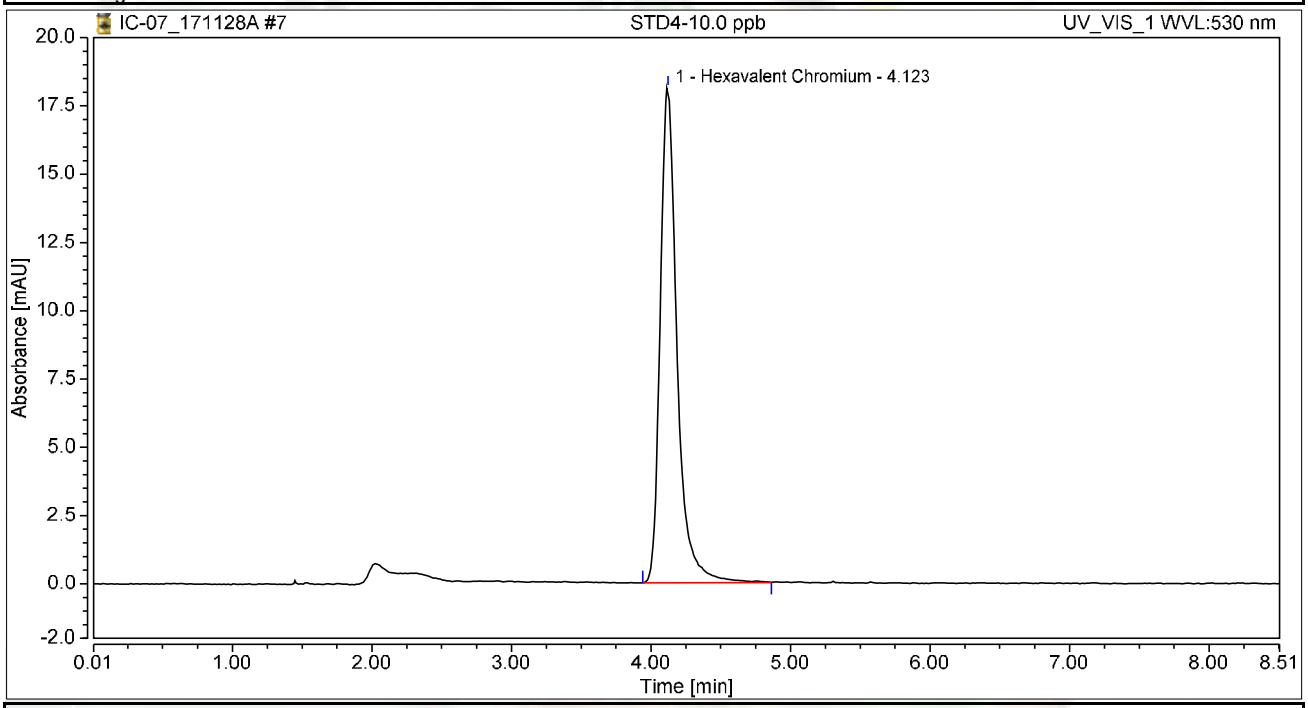
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.258	9.388	100.00	100.00	5.0118
Total:			**1.258**	**9.388**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

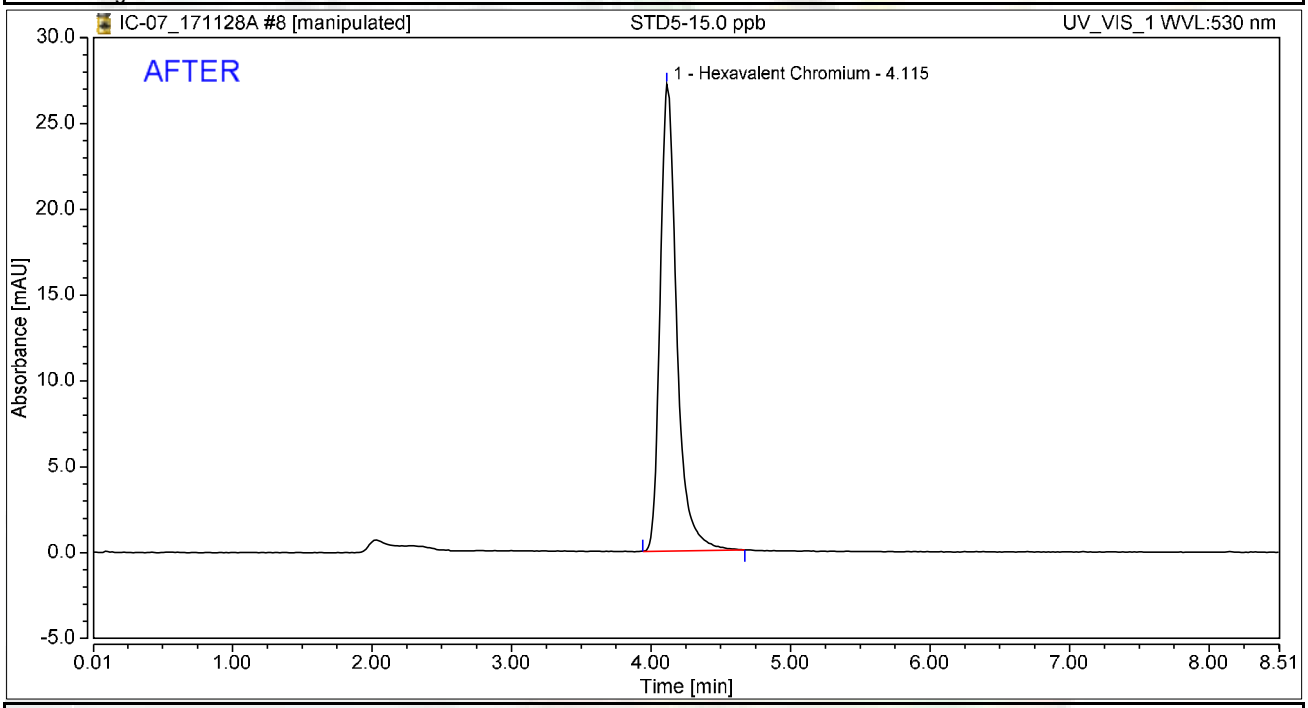
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	2.533	18.115	100.00	100.00	10.0869
Total:			**2.533**	**18.115**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	3.760	27.183	100.00	100.00	14.9728
Total:			**3.760**	**27.183**	**100.00**	**100.00**	

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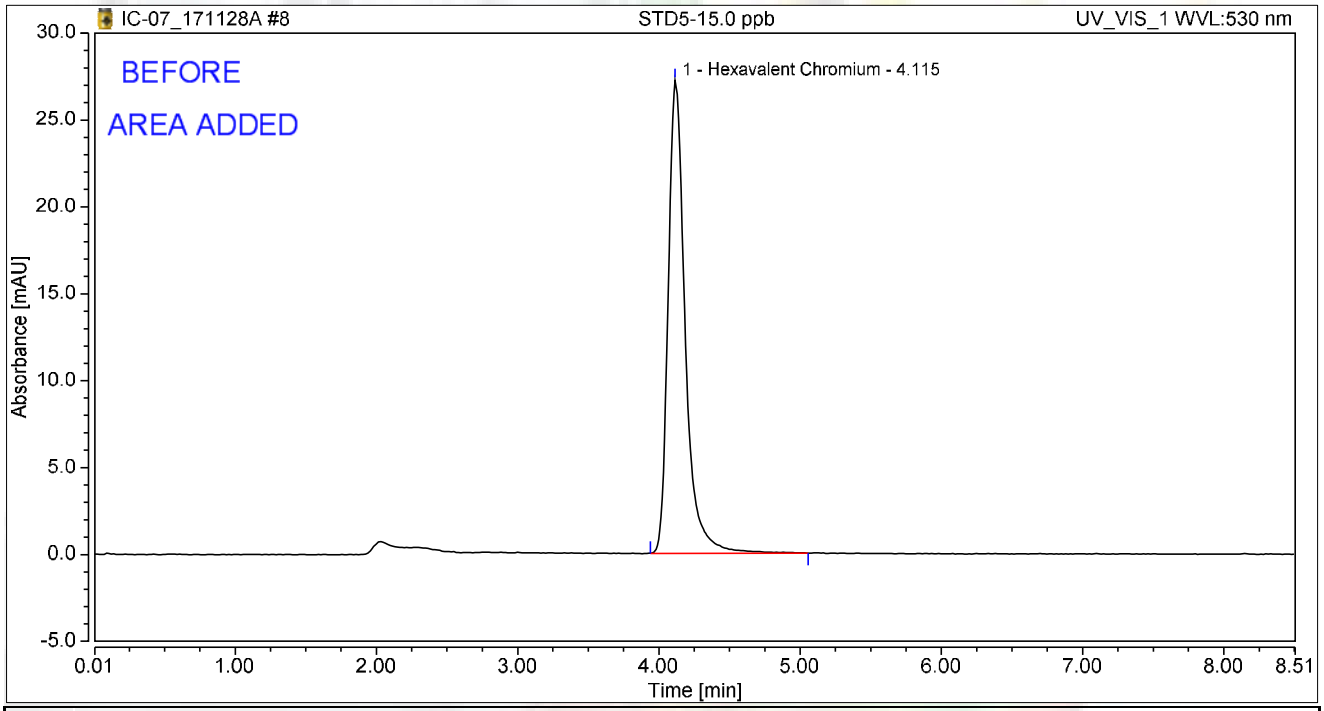
Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	3.807	27.204	100.00	100.00	14.9839
Total:			**3.807**	**27.204**	**100.00**	**100.00**	

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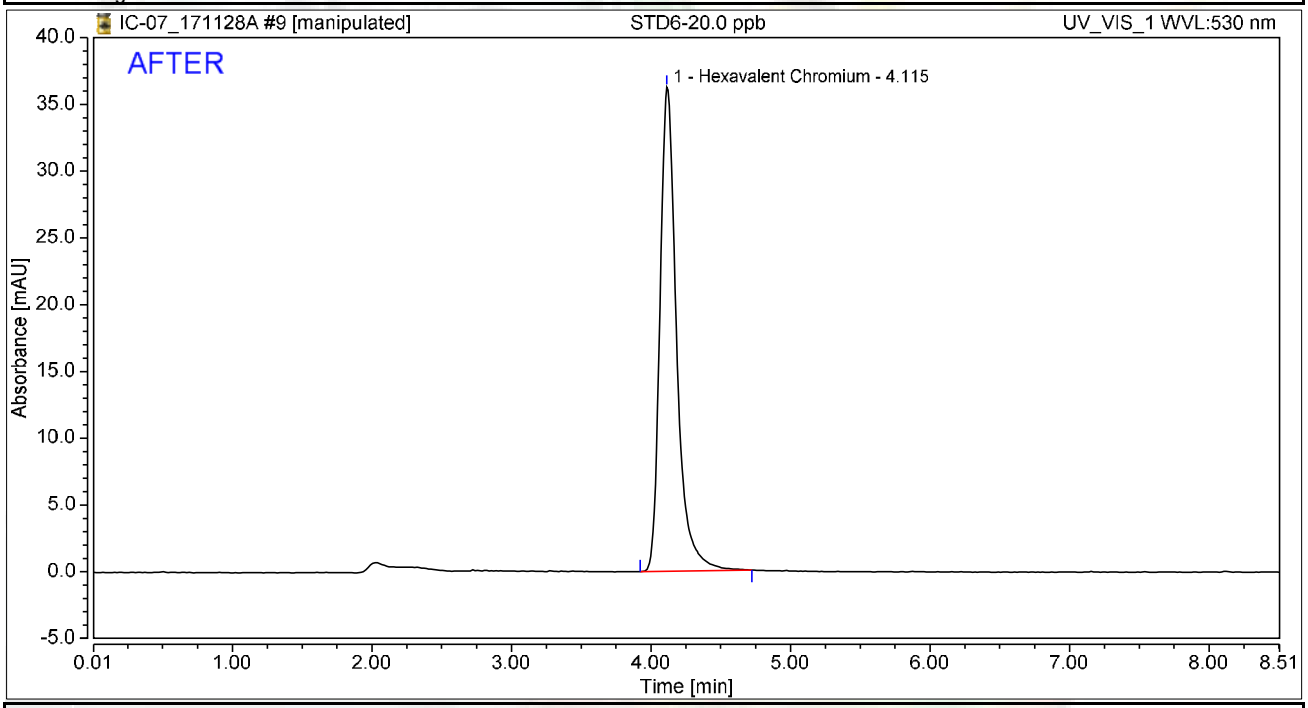
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	5.015	36.251	100.00	100.00	19.9744
Total:			**5.015**	**36.251**	**100.00**	**100.00**	

rba 11/29/2017

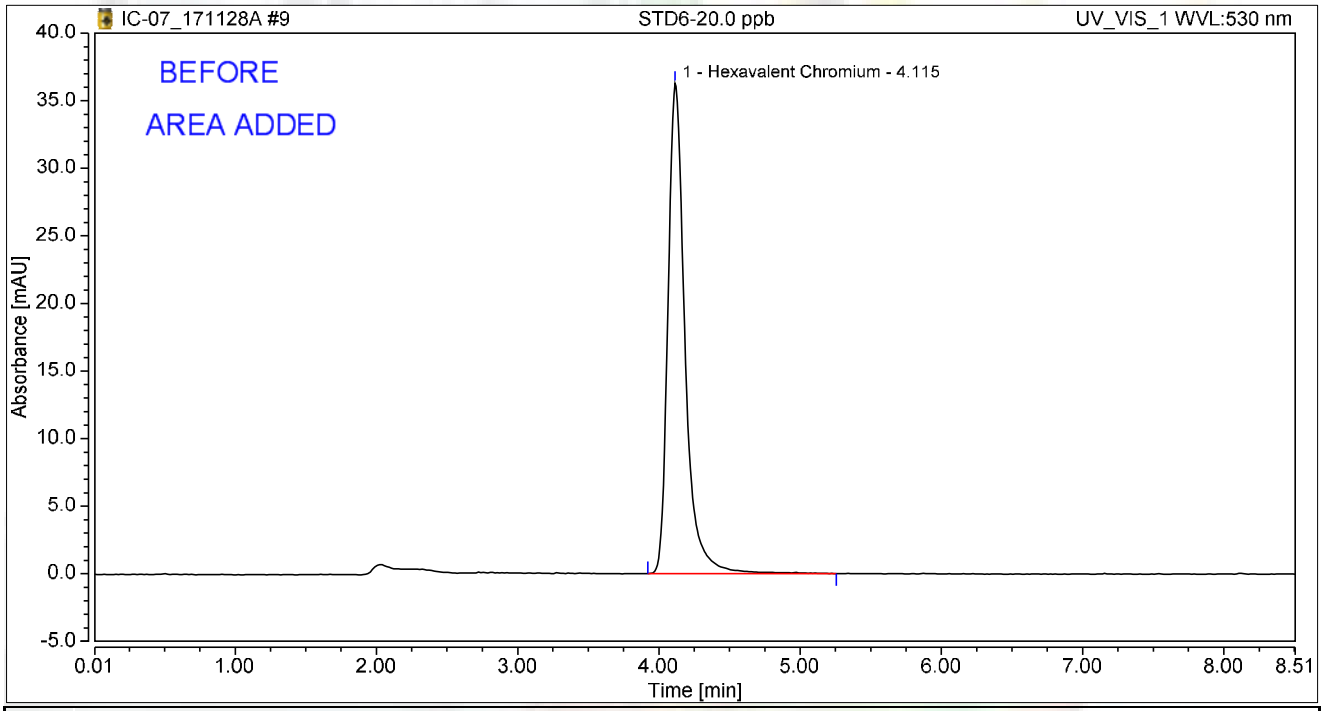
RB 12/11/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	5.092	36.279	100.00	100.00	20.0407
Total:			**5.092**	**36.279**	**100.00**	**100.00**	

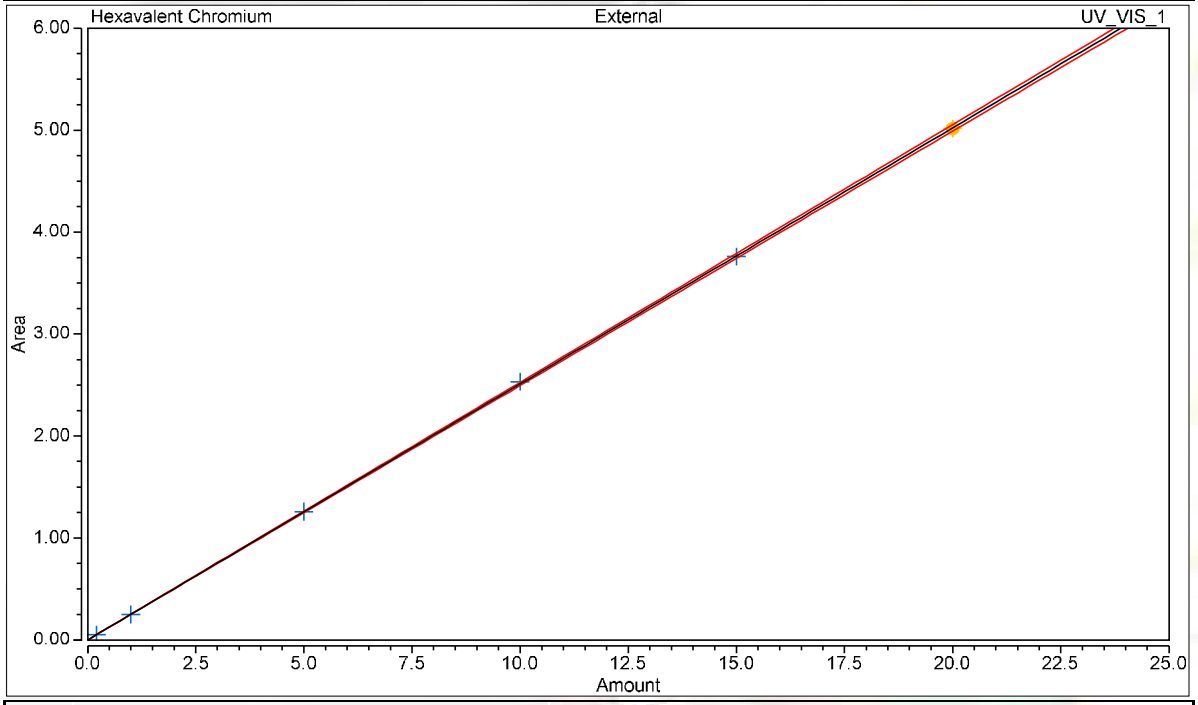
rba 11/29/2017

RB 12/11/2017

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2511
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99997

Calibration Plot — Hexavalent Chromium



Calibration Results — Hexavalent Chromium

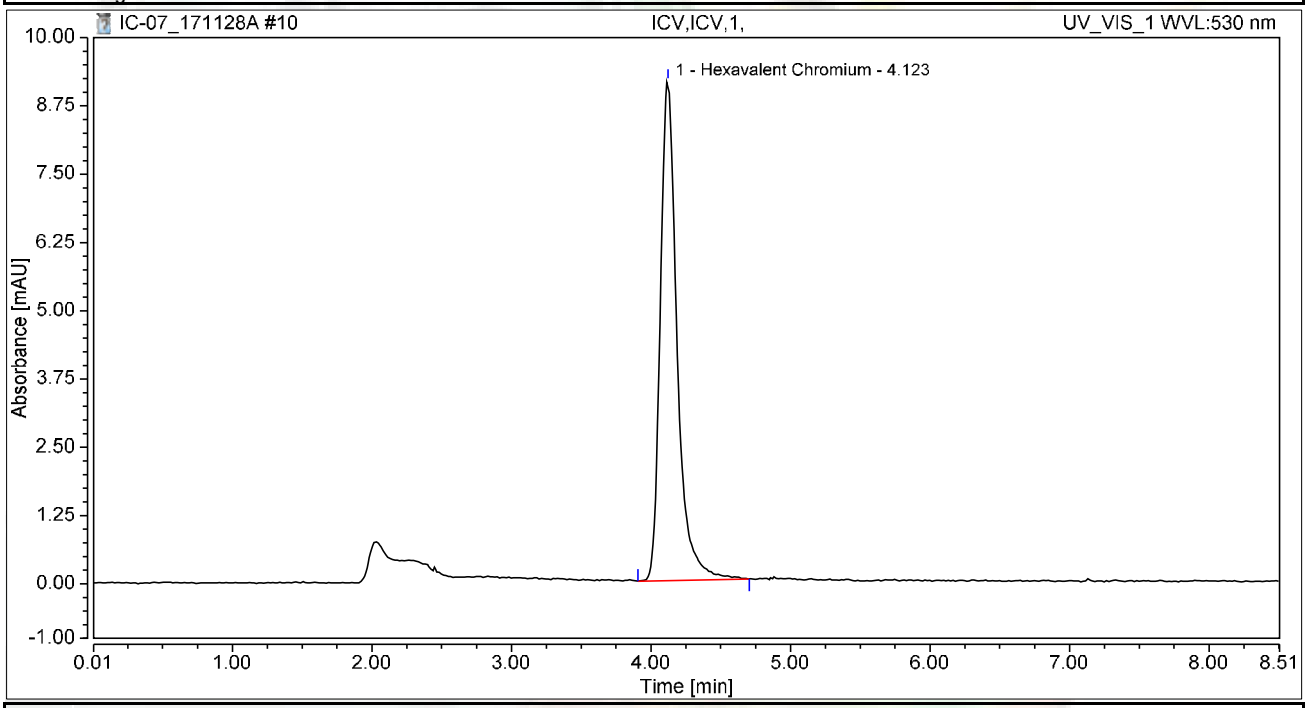
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0529	0.053	0.400
5	STD2-1.0 ppb	02	1.0000	0.2484	0.248	1.827
6	STD3-5.0 ppb	03	5.0000	1.2584	1.258	9.388
7	STD4-10.0 ppb	04	10.0000	2.5328	2.533	18.115
8	STD5-15.0 ppb	05	15.0000	3.7596	3.760	27.183
9	STD6-20.0 ppb	06	20.0000	5.0155	5.015	36.251

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

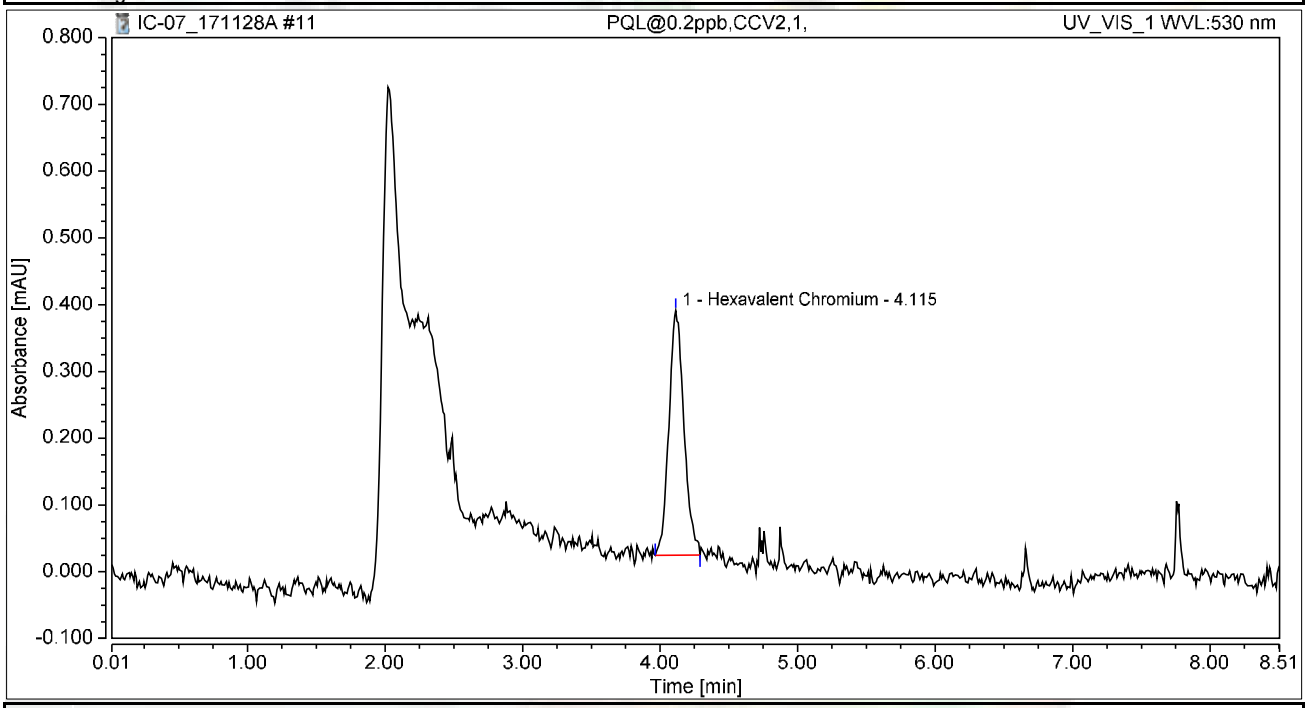
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.279	9.143	100.00	100.00	5.0922
Total:			**1.279**	**9.143**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

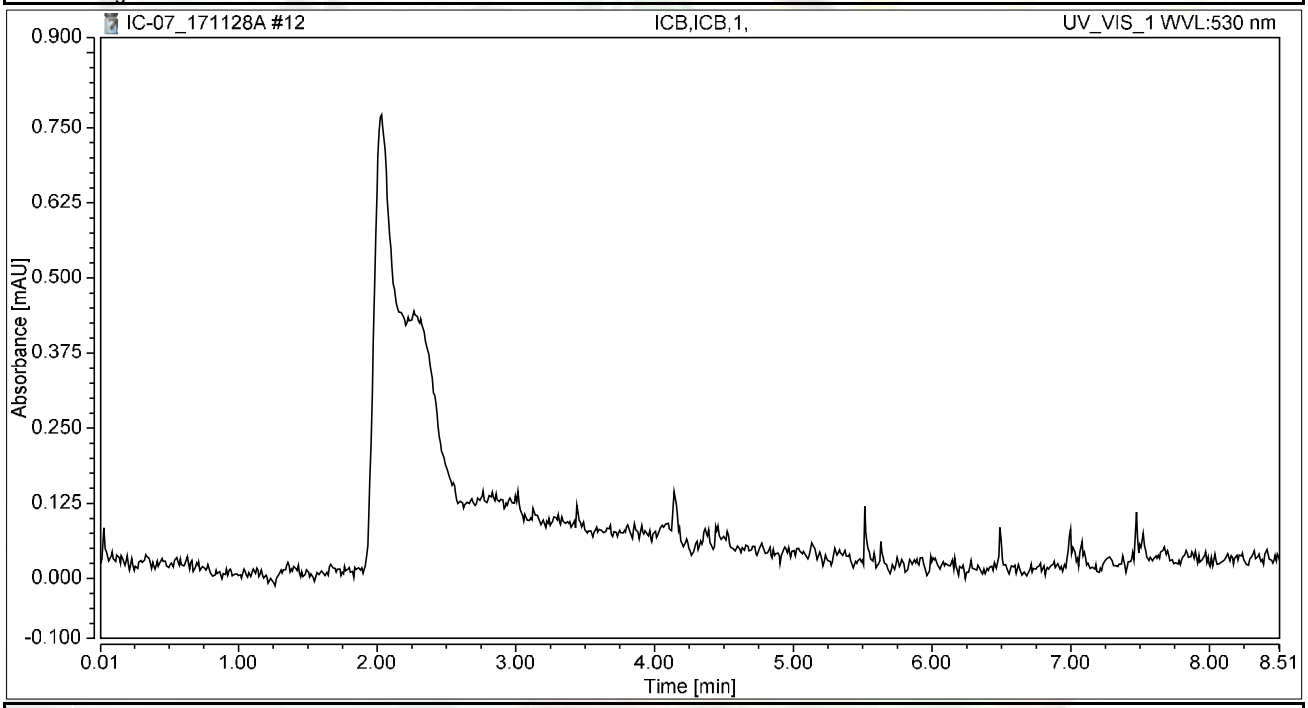
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.046	0.367	100.00	100.00	0.1851
Total:			**0.046**	**0.367**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 171212A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/12/17 8:51 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/12/17 9:02 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/12/17 9:11 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/12/17 9:21 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/12/17 9:30 AM	Reported
15	MB-R120835	MBLK	1	Hexavalent Chromium	12/12/17 9:40 AM	Reported
16	LCS-R120835	LCS	1	Hexavalent Chromium	12/12/17 9:49 AM	Reported
17	N027430-016A	SAMP	1	Hexavalent Chromium	12/12/17 9:59 AM	Not Reported
18	N027430-016AMS	MS	1	Hexavalent Chromium	12/12/17 10:08 AM	Not Reported
19	N027430-017A	SAMP	1	Hexavalent Chromium	12/12/17 10:18 AM	Not Reported
20	N027430-017AMS	MS	1	Hexavalent Chromium	12/12/17 10:27 AM	Not Reported
21	N027430-018A	SAMP	1	Hexavalent Chromium	12/12/17 10:37 AM	Not Reported
22	N027430-018AMS	MS	1	Hexavalent Chromium	12/12/17 10:46 AM	Not Reported
23	N027431-002A	SAMP	1	Hexavalent Chromium	12/12/17 10:56 AM	Not Reported
24	N027431-002AMS	MS	1	Hexavalent Chromium	12/12/17 11:05 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/12/17 11:14 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/12/17 11:24 AM	Reported
27	N027431-003A	SAMP	1	Hexavalent Chromium	12/12/17 11:33 AM	Not Reported
28	N027431-003AMS	MS	1	Hexavalent Chromium	12/12/17 11:43 AM	Not Reported
29	N027431-004A	SAMP	1	Hexavalent Chromium	12/12/17 11:52 AM	Not Reported
30	N027431-004AMS	MS	1	Hexavalent Chromium	12/12/17 12:02 PM	Not Reported
31	N027465-001A	SAMP	1	Hexavalent Chromium	12/12/17 12:11 PM	Reported
32	N027465-001AMS	MS	1	Hexavalent Chromium	12/12/17 12:21 PM	Reported
33	N027465-002A	SAMP	1	Hexavalent Chromium	12/12/17 12:30 PM	Reported
34	N027465-002AMS	MS	1	Hexavalent Chromium	12/12/17 12:40 PM	Reported
35	N027465-003A	SAMP	1	Hexavalent Chromium	12/12/17 12:49 PM	Reported
36	N027465-003AMS	MS	1	Hexavalent Chromium	12/12/17 12:58 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/12/17 1:12 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/12/17 1:23 PM	Reported
39	N027431-001A	SAMP	50	Hexavalent Chromium	12/12/17 1:33 PM	Reported
40	N027431-001AMS	MS	50	Hexavalent Chromium	12/12/17 1:42 PM	Reported
41	N027431-001ADUP	DUP	50	Hexavalent Chromium	12/12/17 2:05 PM	Reported
42	N027431-002AMS	MS	1	Hexavalent Chromium	12/12/17 2:16 PM	Not Reported

rba 12/16/2017

IC7 RBA 12/15/2017 2:21 PM

12/26/2017

INJECTION LOG: 171212A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027429-009A	SAMP	20	Hexavalent Chromium	12/12/17 2:25 PM	Reported
44	N027429-009AMS	MS	20	Hexavalent Chromium	12/12/17 2:35 PM	Reported
45	N027429-009AMSD	MSD	20	Hexavalent Chromium	12/12/17 2:44 PM	Reported
46	N027429-001A	SAMP	1	Hexavalent Chromium	12/12/17 2:54 PM	Reported
47	N027429-001AMS	MS	1	Hexavalent Chromium	12/12/17 3:03 PM	Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	12/12/17 3:13 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	12/12/17 3:22 PM	Reported
50	N027429-002A	SAMP	1	Hexavalent Chromium	12/12/17 3:32 PM	Reported
51	N027429-002AMS	MS	1	Hexavalent Chromium	12/12/17 3:41 PM	Reported
52	N027429-003A	SAMP	50	Hexavalent Chromium	12/12/17 3:50 PM	Reported
53	N027429-003AMS	MS	50	Hexavalent Chromium	12/12/17 4:00 PM	Reported
54	N027429-004A	SAMP	1	Hexavalent Chromium	12/12/17 4:10 PM	Reported
55	N027429-004AMS	MS	1	Hexavalent Chromium	12/12/17 4:19 PM	Reported
56	N027429-005A	SAMP	5	Hexavalent Chromium	12/12/17 4:28 PM	Reported
57	N027429-005AMS	MS	5	Hexavalent Chromium	12/12/17 4:38 PM	Reported
58	N027429-006A	SAMP	5	Hexavalent Chromium	12/12/17 4:47 PM	Reported
59	N027429-006AMS	MS	5	Hexavalent Chromium	12/12/17 4:57 PM	Reported
60	CCV-5	CCV	1	Hexavalent Chromium	12/12/17 5:06 PM	Reported
61	CCB-5	CCB	1	Hexavalent Chromium	12/12/17 5:16 PM	Reported
62	N027429-007A	SAMP	1	Hexavalent Chromium	12/12/17 5:25 PM	Reported
63	N027429-007AMS	MS	1	Hexavalent Chromium	12/12/17 5:35 PM	Reported
64	N027429-008A	SAMP	1	Hexavalent Chromium	12/12/17 5:44 PM	Reported
65	N027429-008AMS	MS	1	Hexavalent Chromium	12/12/17 5:54 PM	Reported
66	N027429-010A	SAMP	1000	Hexavalent Chromium	12/12/17 6:03 PM	Reported
67	N027429-010AMS	MS	1000	Hexavalent Chromium	12/12/17 6:12 PM	Reported
68	LCS-R120836	LCS	1	Hexavalent Chromium	12/12/17 6:24 PM	Reported
69	MB-R120836	MBLK	1	Hexavalent Chromium	12/12/17 6:35 PM	Reported
70	N027508-001A	SAMP	200	Hexavalent Chromium	12/12/17 6:45 PM	Reported
71	N027508-011A	SAMP	5	Hexavalent Chromium	12/12/17 6:54 PM	Reported
72	CCV-6	CCV1	1	Hexavalent Chromium	12/12/17 7:04 PM	Reported
73	CCB-6	CCB	1	Hexavalent Chromium	12/12/17 7:13 PM	Reported
74	N027508-003A	SAMP	200	Hexavalent Chromium	12/12/17 7:23 PM	Reported
75	N027508-001AMS	MS	200	Hexavalent Chromium	12/12/17 7:32 PM	Reported
76	N027508-001AMSD	MSD	200	Hexavalent Chromium	12/12/17 7:41 PM	Reported
77	N027508-011AMS	MS	5	Hexavalent Chromium	12/12/17 7:51 PM	Reported
78	N027508-003ADUP	DUP	200	Hexavalent Chromium	12/12/17 8:00 PM	Reported
79	N027508-004A	SAMP	500	Hexavalent Chromium	12/12/17 8:10 PM	Reported
80	N027508-005A	SAMP	2000	Hexavalent Chromium	12/12/17 8:19 PM	Reported
81	N027508-006A	SAMP	2000	Hexavalent Chromium	12/12/17 8:29 PM	Reported
82	N027508-007A	SAMP	2000	Hexavalent Chromium	12/12/17 8:38 PM	Reported
83	N027508-008A	SAMP	5	Hexavalent Chromium	12/12/17 8:48 PM	Not Reported
84	CCV-7	CCV	1	Hexavalent Chromium	12/12/17 8:57 PM	Reported

RLB 12/26/2017

INJECTION LOG: 171212A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCB-7	CCB	1	Hexavalent Chromium	12/12/17 9:07 PM	Reported
86	N027508-009A	SAMP	5	Hexavalent Chromium	12/12/17 9:16 PM	Reported
87	N027508-010A	SAMP	1	Hexavalent Chromium	12/12/17 9:26 PM	Reported
88	N027508-012A	SAMP	20	Hexavalent Chromium	12/12/17 9:35 PM	Reported
89	N027508-013A	SAMP	50	Hexavalent Chromium	12/12/17 9:44 PM	Reported
90	N027508-014A	SAMP	50	Hexavalent Chromium	12/12/17 9:54 PM	Reported
91	N027508-015A	SAMP	100	Hexavalent Chromium	12/12/17 10:03 PM	Reported
92	N027508-002A	SAMP	200	Hexavalent Chromium	12/12/17 10:13 PM	Reported
93	CCV-8	CCV1	1	Hexavalent Chromium	12/12/17 10:22 PM	Reported
94	CCB-8	CCB	1	Hexavalent Chromium	12/12/17 10:32 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171212A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**12/Dec/17 23:02:35**
No. of Injections:	**97**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/12/2017 08:51	Finished	BLANK
11	BLANK	2	1000	Unknown		12/12/2017 09:02	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/12/2017 09:11	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/12/2017 09:21	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/12/2017 09:30	Finished	CCB R171129A
15	MB-1,MBLK,1	6	1000	Unknown		12/12/2017 09:40	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/12/2017 09:49	Finished	LCS, IWST-171002B
17	N027430-016A,SAMF	8	1000	Unknown		12/12/2017 09:59	Finished	SAMP,10mL
18	N027430-016AMS,MS	9	1000	Unknown		12/12/2017 10:08	Finished	MS (1ppb), IWST-171002B,10
19	N027430-017A,SAMF	10	1000	Unknown		12/12/2017 10:18	Finished	SAMP,10mL
20	N027430-017AMS,MS	11	1000	Unknown		12/12/2017 10:27	Finished	MS (1ppb), IWST-171002B,10
21	N027430-018A,SAMF	12	1000	Unknown		12/12/2017 10:37	Finished	SAMP,10mL
22	N027430-018AMS,MS	13	1000	Unknown		12/12/2017 10:46	Finished	MS (1ppb), IWST-171002B,10
23	N027431-002A,SAMF	14	1000	Unknown		12/12/2017 10:56	Finished	SAMP,10mL
24	N027431-002AMS,MS	15	1000	Unknown		12/12/2017 11:05	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	16	1000	Unknown		12/12/2017 11:14	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	17	1000	Unknown		12/12/2017 11:24	Finished	CCB R171129A
27	N027431-003A,SAMF	18	1000	Unknown		12/12/2017 11:33	Finished	SAMP,10mL
28	N027431-003AMS,MS	19	1000	Unknown		12/12/2017 11:43	Finished	MS (1ppb), IWST-171002B,10
29	N027431-004A,SAMF	20	1000	Unknown		12/12/2017 11:52	Finished	SAMP,10mL
30	N027431-004AMS,MS	21	1000	Unknown		12/12/2017 12:02	Finished	MS (1ppb), IWST-171002B,10
31	N027465-001A,SAMF	22	1000	Unknown		12/12/2017 12:11	Finished	SAMP,10mL
32	N027465-001AMS,MS	23	1000	Unknown		12/12/2017 12:21	Finished	MS (1ppb), IWST-171002B,10
33	N027465-002A,SAMF	24	1000	Unknown		12/12/2017 12:30	Finished	SAMP,10mL
34	N027465-002AMS,MS	25	1000	Unknown		12/12/2017 12:40	Finished	MS (1ppb), IWST-171002B,10
35	N027465-003A,SAMF	26	1000	Unknown		12/12/2017 12:49	Finished	SAMP,10mL
36	N027465-003AMS,MS	27	1000	Unknown		12/12/2017 12:58	Finished	MS (1ppb), IWST-171002B,10
37	CCV-3,CCV,1,	1	1000	Unknown		12/12/2017 13:12	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	2	1000	Unknown		12/12/2017 13:23	Finished	CCB R171129A
39	N027431-001A,SAMF	3	1000	Unknown		12/12/2017 13:33	Finished	SAMP,0.2>10mL
40	N027431-001AMS,MS	4	1000	Unknown		12/12/2017 13:42	Finished	MS (5ppb), IWST-171002B,0.2
41	N027431-001ADUP,D	1	1000	Unknown		12/12/2017 14:05	Finished	SAMP,10mL
42	N027431-002AMS,MS	2	1000	Unknown		12/12/2017 14:16	Finished	MS (1ppb), IWST-171002B,10
43	N027429-009A,SAMF	3	1000	Unknown		12/12/2017 14:25	Finished	SAMP,0.5>10mL
44	N027429-009AMS,MS	4	1000	Unknown		12/12/2017 14:35	Finished	MS (5ppb), IWST-171002B,0.5
45	N027429-009AMSD,M	5	1000	Unknown		12/12/2017 14:44	Finished	MSD (5ppb), IWST-171002B,0.
46	N027429-001A,SAMF	6	1000	Unknown		12/12/2017 14:54	Finished	SAMP,10mL
47	N027429-001AMS,MS	7	1000	Unknown		12/12/2017 15:03	Finished	MS (1ppb), IWST-171002B,10
48	CCV-4,CCV1,1,	8	1000	Unknown		12/12/2017 15:13	Finished	CCV @10ppb, IWST-171002A
49	CCB-4,CCB,1,	9	1000	Unknown		12/12/2017 15:22	Finished	CCB R171129A
50	N027429-002A,SAMF	10	1000	Unknown		12/12/2017 15:32	Finished	SAMP,10mL
51	N027429-002AMS,MS	11	1000	Unknown		12/12/2017 15:41	Finished	MS (1ppb), IWST-171002B,10
52	N027429-003A,SAMF	12	1000	Unknown		12/12/2017 15:50	Finished	SAMP,0.2>10mL
53	N027429-003AMS,MS	13	1000	Unknown		12/12/2017 16:00	Finished	MS (5ppb), IWST-171002B,0.2
54	N027429-004A,SAMF	14	1000	Unknown		12/12/2017 16:10	Finished	SAMP,10mL
55	N027429-004AMS,MS	15	1000	Unknown		12/12/2017 16:19	Finished	MS (1ppb), IWST-171002B,10
56	N027429-005A,SAMF	16	1000	Unknown		12/12/2017 16:28	Finished	SAMP,2>10mL
57	N027429-005AMS,MS	17	1000	Unknown		12/12/2017 16:38	Finished	MS (1ppb), IWST-171002B,2>1
58	N027429-006A,SAMF	18	1000	Unknown		12/12/2017 16:47	Finished	SAMP,2>10mL
59	N027429-006AMS,MS	19	1000	Unknown		12/12/2017 16:57	Finished	MS (1ppb), IWST-171002B,2>1
60	CCV-5,CCV,1,	20	1000	Unknown		12/12/2017 17:06	Finished	CCV @5ppb, IWST-171002A

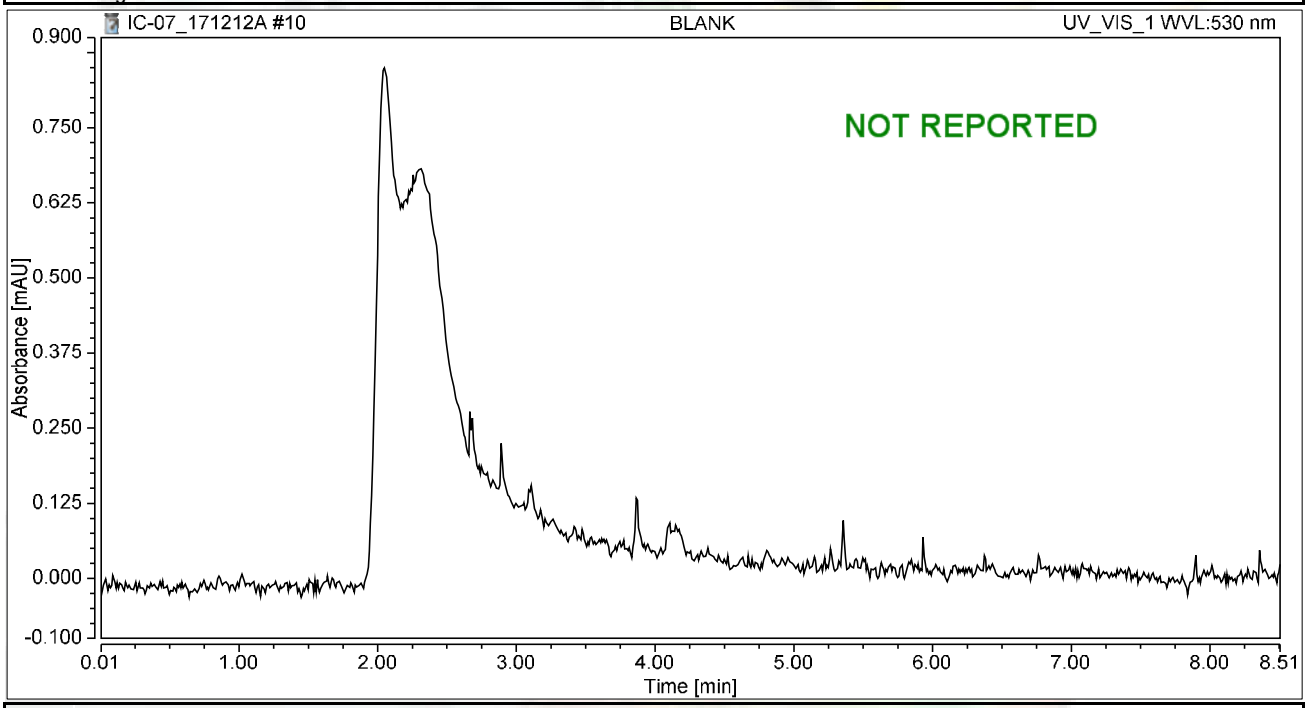
61	CCB-5,CCB,1,	21	1000	Unknown		12/12/2017 17:16	Finished	CCB R171129A
62	N027429-007A,SAMF	22	1000	Unknown		12/12/2017 17:25	Finished	SAMP,10mL
63	N027429-007AMS,MS	23	1000	Unknown		12/12/2017 17:35	Finished	MS (1ppb), IWST-171002B,10
64	N027429-008A,SAMF	24	1000	Unknown		12/12/2017 17:44	Finished	SAMP,10mL
65	N027429-008AMS,MS	25	1000	Unknown		12/12/2017 17:54	Finished	MS (1ppb), IWST-171002B,10
66	N027429-010A,SAMF	26	1000	Unknown		12/12/2017 18:03	Finished	SAMP,0.01>10mL
67	N027429-010AMS,MS	27	1000	Unknown		12/12/2017 18:12	Finished	MS (5ppb), IWST-171002B,0.0
68	LCS-2,LCS,1	1	1000	Unknown		12/12/2017 18:24	Finished	LCS, IWST-171002B
69	MB-2,MBLK,1	2	1000	Unknown		12/12/2017 18:35	Finished	MB R171129A
70	N027508-001A,SAMF	3	1000	Unknown		12/12/2017 18:45	Finished	SAMP,10mL
71	N027508-011A,SAMF	4	1000	Unknown		12/12/2017 18:54	Finished	MS (1ppb), IWST-171002B,10
72	CCV-6,CCV1,1,	5	1000	Unknown		12/12/2017 19:04	Finished	CCV @10ppb, IWST-171002A
73	CCB-6,CCB,1,	6	1000	Unknown		12/12/2017 19:13	Finished	CCB R171129A
74	N027508-003A,SAMF	7	1000	Unknown		12/12/2017 19:23	Finished	SAMP,0.05>10mL
75	N027508-001AMS,MS	8	1000	Unknown		12/12/2017 19:32	Finished	MS (5ppb), IWST-171002B,0.0
76	N027508-001AMSD,M	9	1000	Unknown		12/12/2017 19:41	Finished	MSD (5ppb), IWST-171002B,0.
77	N027508-0011AMS,M	10	1000	Unknown		12/12/2017 19:51	Finished	MS (5ppb), IWST-171002B,2>1
78	N027508-003ADUP,D	11	1000	Unknown		12/12/2017 20:00	Finished	DUP,0.05>10mL
79	N027508-004A,SAMF	12	1000	Unknown		12/12/2017 20:10	Finished	SAMP,0.02>10mL
80	N027508-005A,SAMF	13	1000	Unknown		12/12/2017 20:19	Finished	SAMP,0.005>10mL
81	N027508-006A,SAMF	14	1000	Unknown		12/12/2017 20:29	Finished	SAMP,0.005>10mL
82	N027508-007A,SAMF	15	1000	Unknown		12/12/2017 20:38	Finished	SAMP,0.005>10mL
83	N027508-008A,SAMF	16	1000	Unknown		12/12/2017 20:48	Finished	SAMP,2>10mL
84	CCV-7,CCV,1,	17	1000	Unknown		12/12/2017 20:57	Finished	CCV @5ppb, IWST-171002A
85	CCB-7,CCB,1,	18	1000	Unknown		12/12/2017 21:07	Finished	CCB R171114C
86	N027508-009A,SAMF	19	1000	Unknown		12/12/2017 21:16	Finished	SAMP,2>10mL
87	N027508-010A,SAMF	20	1000	Unknown		12/12/2017 21:26	Finished	SAMP,1>10mL
88	N027508-012A,SAMF	21	1000	Unknown		12/12/2017 21:35	Finished	SAMP,0.5>10mL
89	N027508-013A,SAMF	22	1000	Unknown		12/12/2017 21:44	Finished	SAMP,0.2>10mL
90	N027508-014A,SAMF	23	1000	Unknown		12/12/2017 21:54	Finished	SAMP,0.2>10mL
91	N027508-015A,SAMF	24	1000	Unknown		12/12/2017 22:03	Finished	SAMP,0.1>10mL
92	N027508-002A,SAMF	25	1000	Unknown		12/12/2017 22:13	Finished	SAMP,0.05>10mL
93	CCV-8,CCV1,1,	26	1000	Unknown		12/12/2017 22:22	Finished	CCV @10ppb, IWST-171002A
94	CCB-8,CCB,1,	27	1000	Unknown		12/12/2017 22:32	Finished	CCB R171129A
95	SHUTDOWN	28	1000	Unknown		12/12/2017 22:41	Finished	
96	Eluent: R171212A	29	1000	Unknown		n.a.	Finished	Eluent
97	PCR: R171212B	30	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 08:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

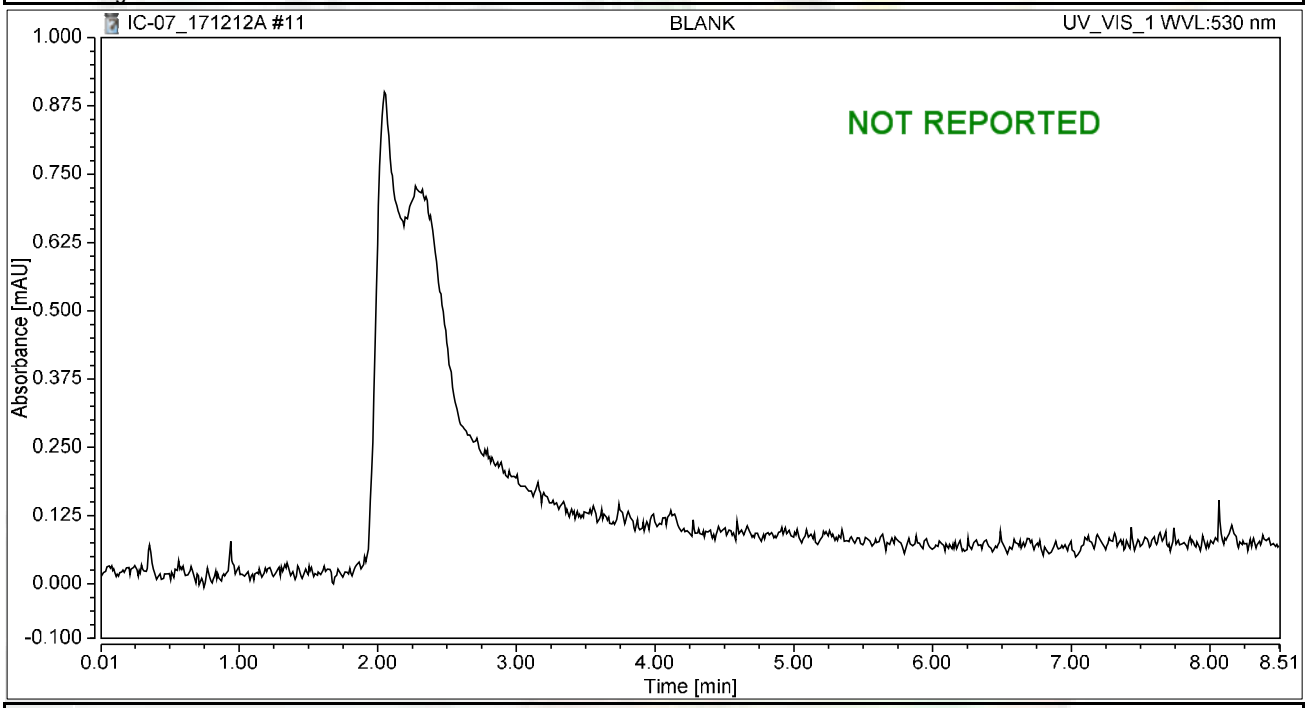
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 09:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

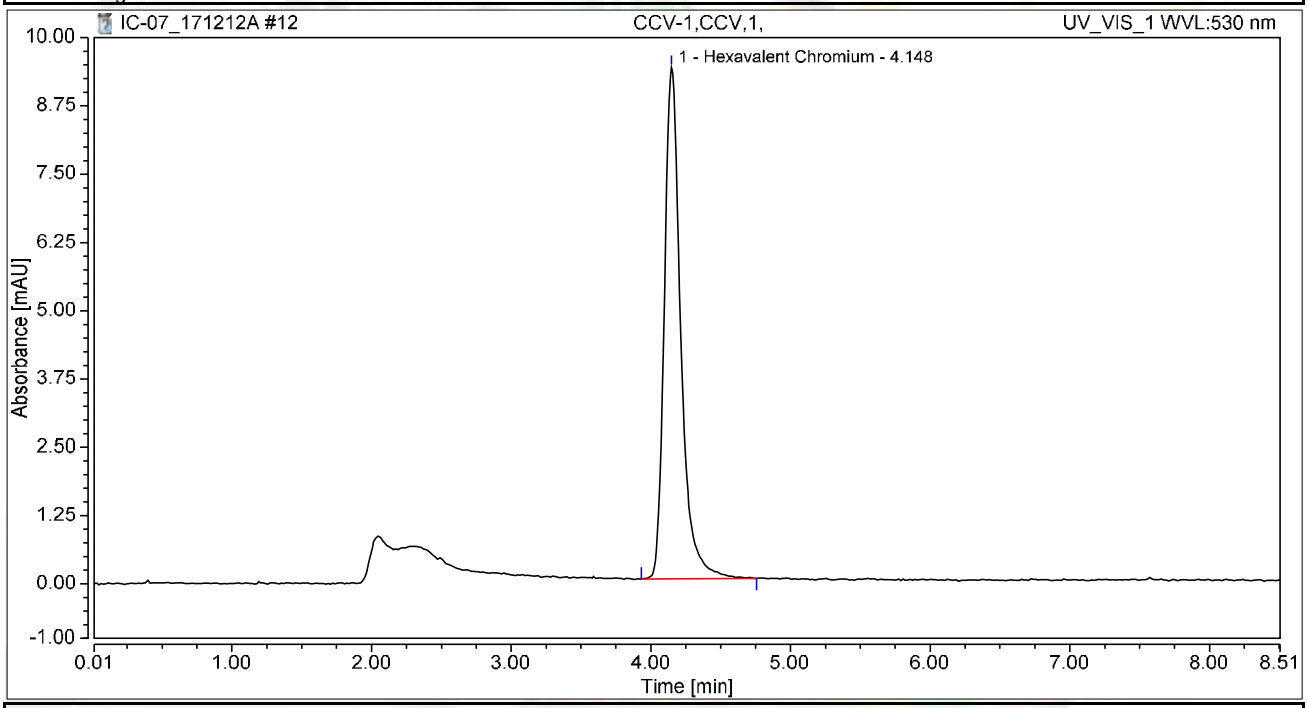
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 09:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

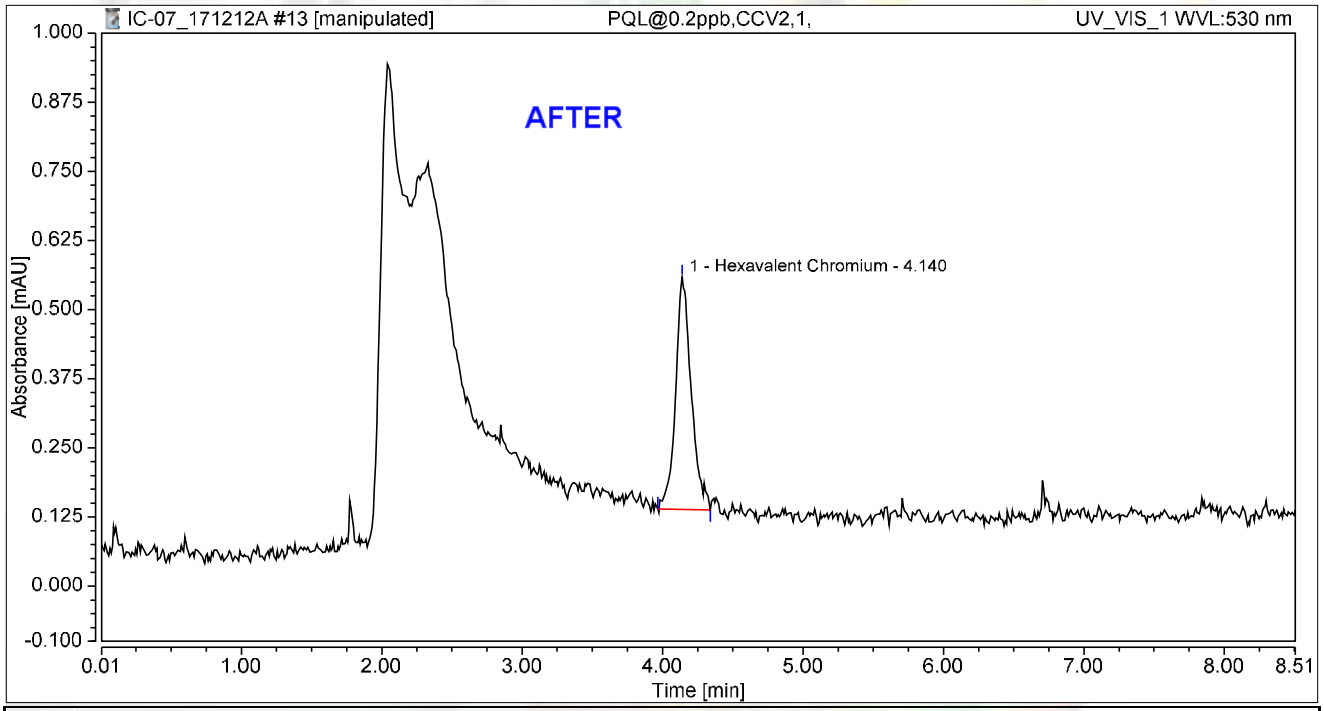
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.283	9.359	100.00	100.00	5.1115
Total:			**1.283**	**9.359**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 09:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.054	0.420	100.00	100.00	0.2156
Total:			**0.054**	**0.420**	**100.00**	**100.00**	

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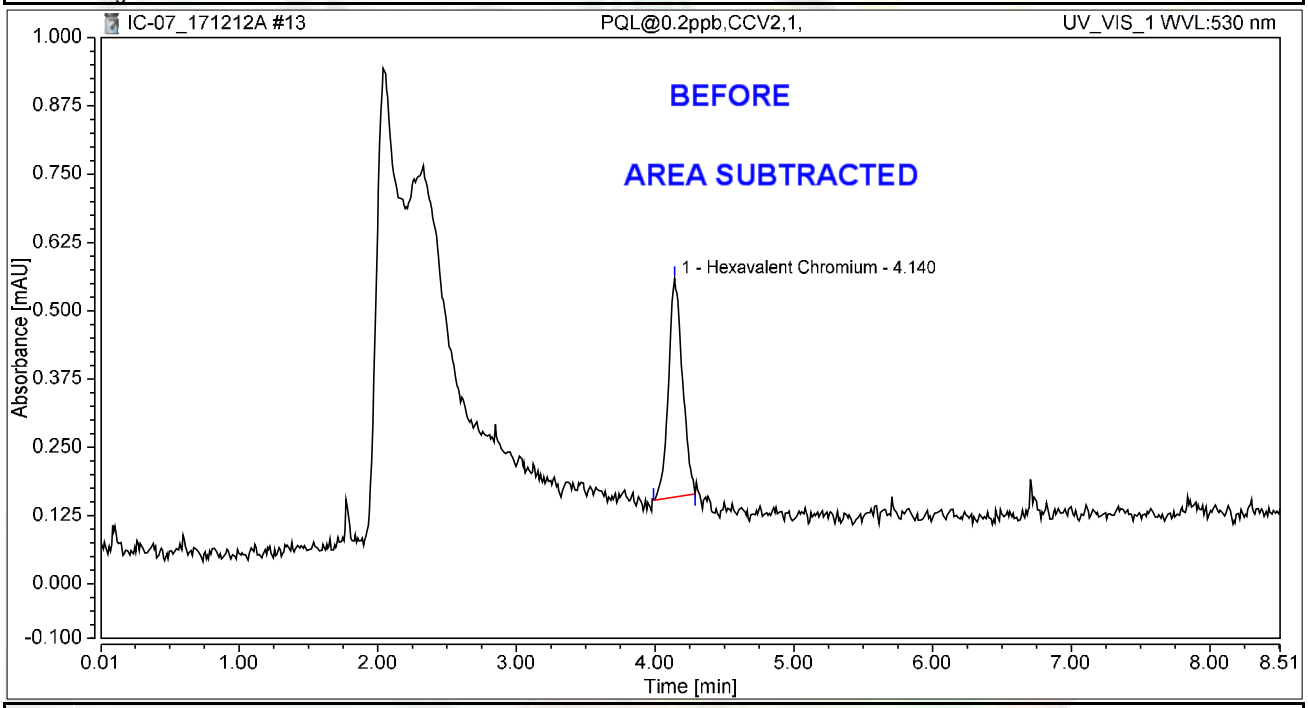
Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 09:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.047	0.400	100.00	100.00	0.1856
Total:			**0.047**	**0.400**	**100.00**	**100.00**	

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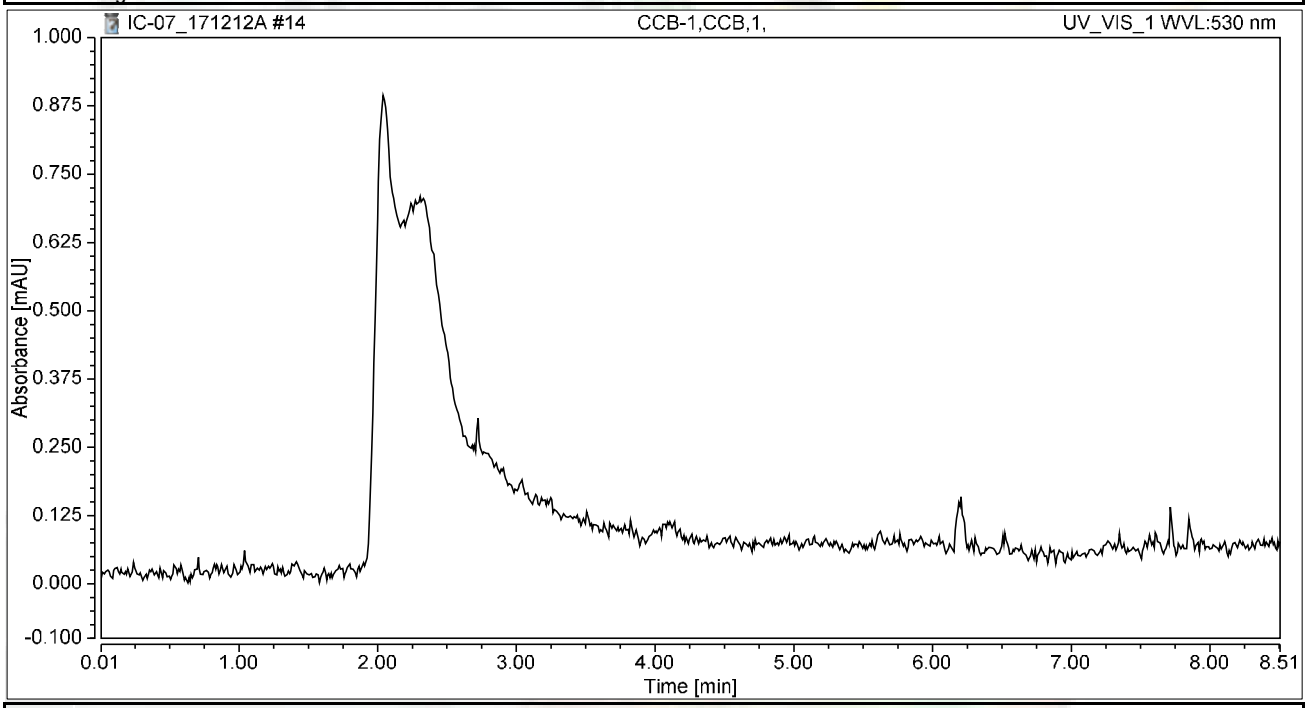
Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 09:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

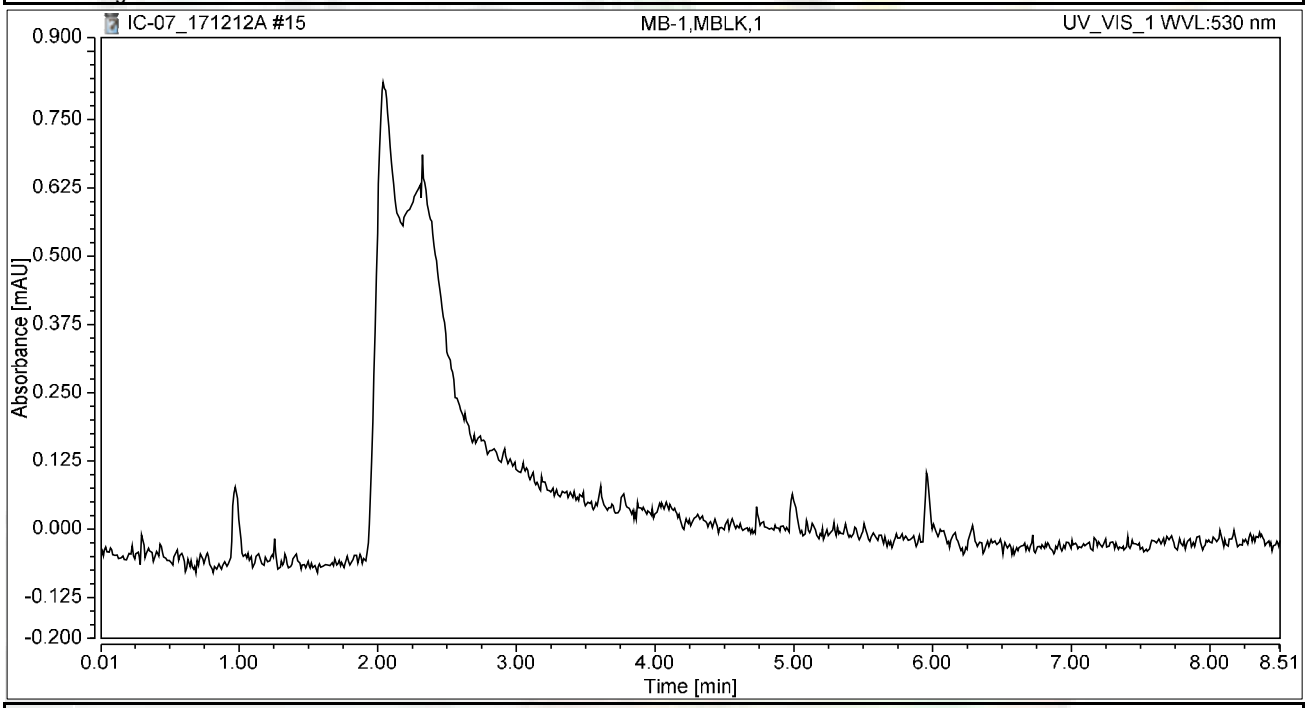
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-1,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 09:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

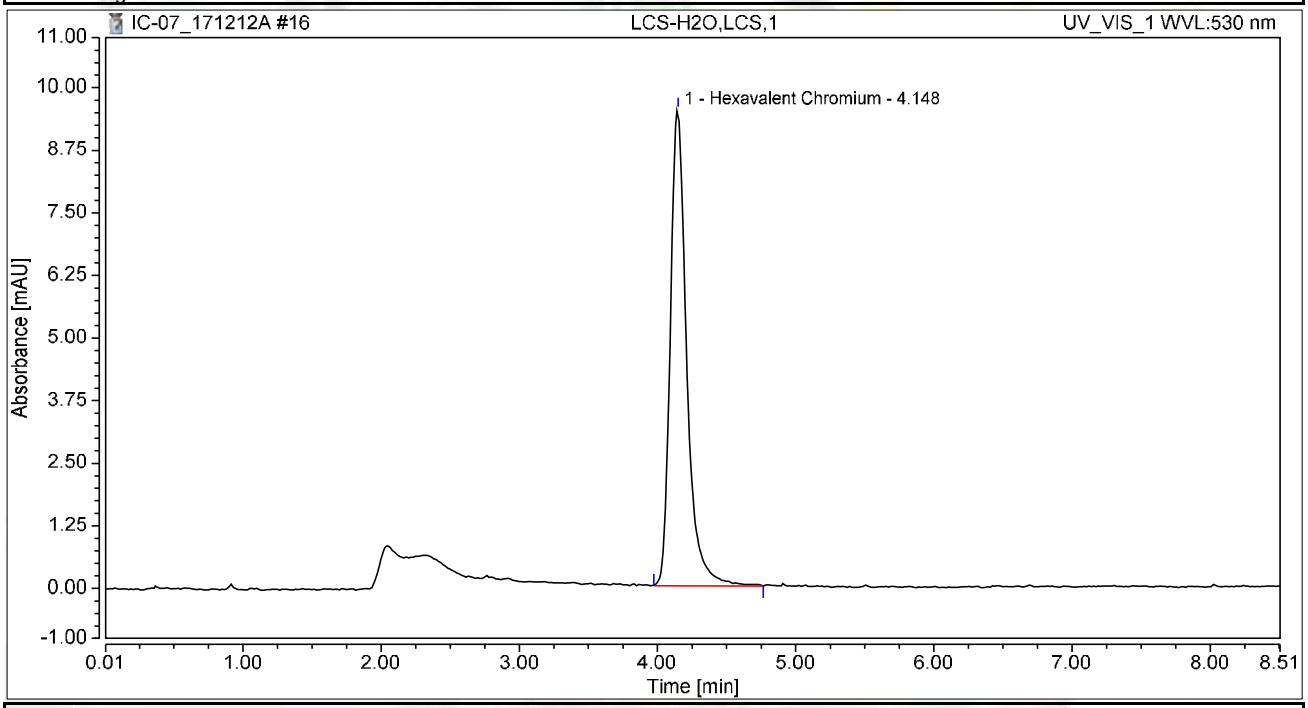
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 09:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

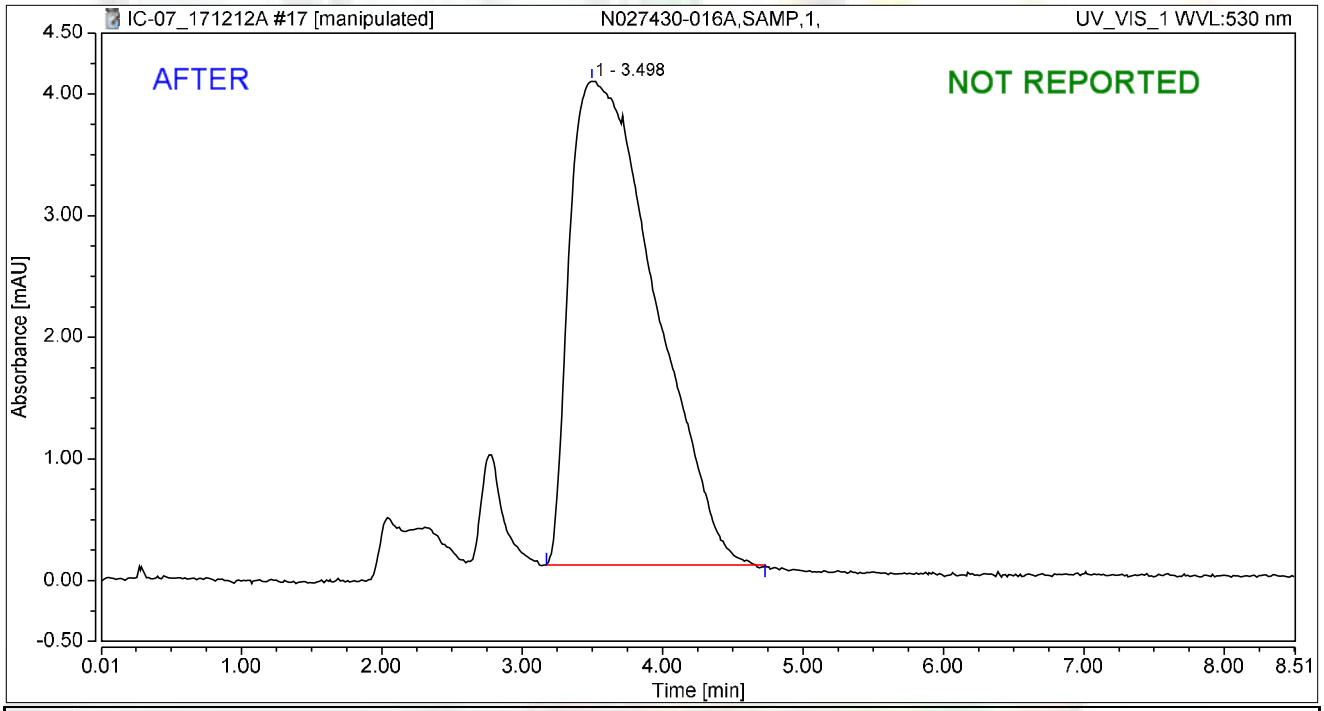
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.308	9.504	100.00	100.00	5.2106
Total:			**1.308**	**9.504**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-016A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 09:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.498	2.794	3.978	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**2.794**	**3.978**	**100.00**	**100.00**	

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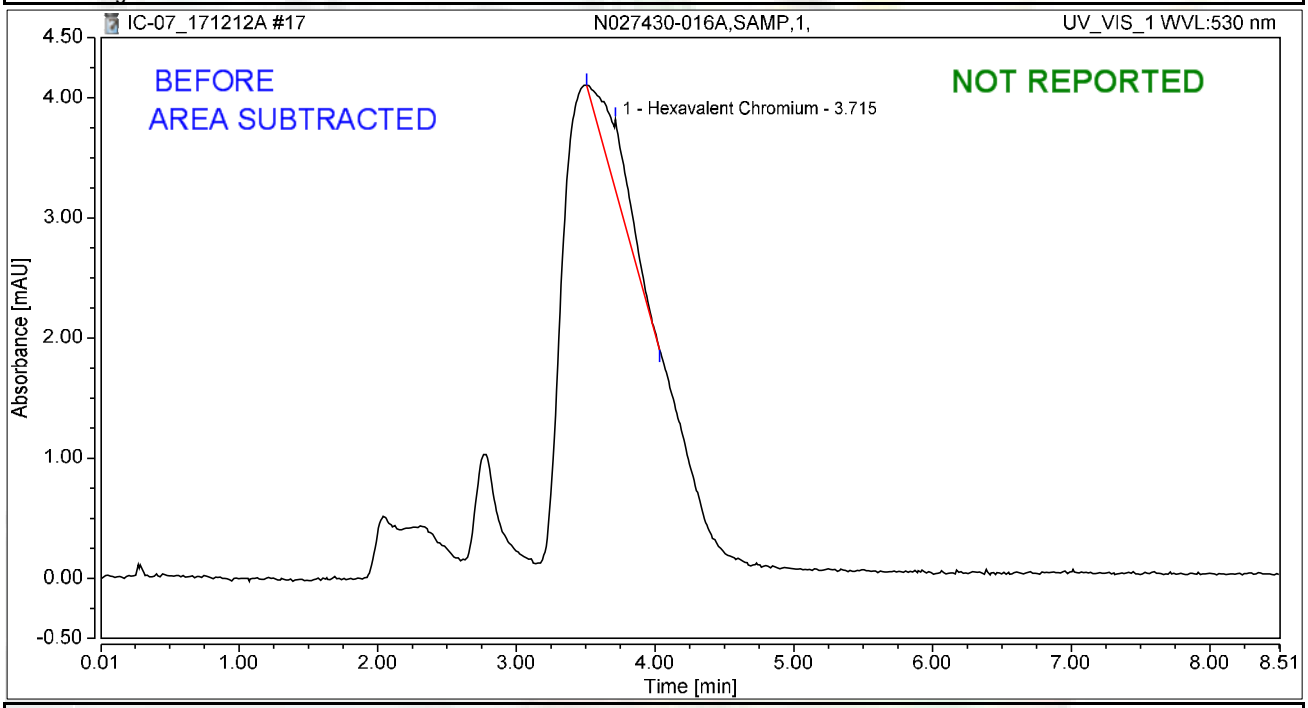
Chromatogram and Results

Injection Details

Injection Name:	**N027430-016A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 09:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.715	0.136	0.590	100.00	100.00	0.5417
Total:			**0.136**	**0.590**	**100.00**	**100.00**	

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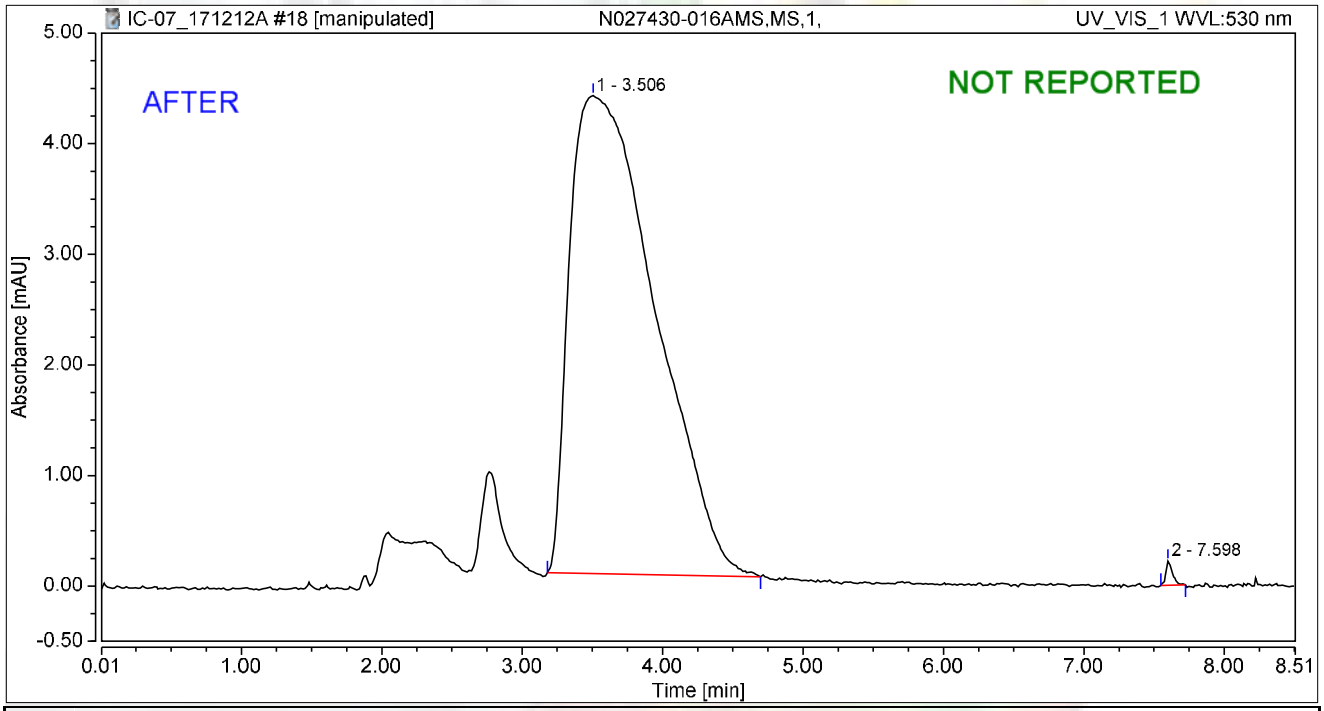
Chromatogram and Results

Injection Details

Injection Name:	**N027430-016AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 10:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.506	3.049	4.323	99.61	95.22	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2		7.598	0.012	0.217	0.39	4.78	n.a.
Total:			**3.061**	**4.540**	**100.00**	**100.00**	

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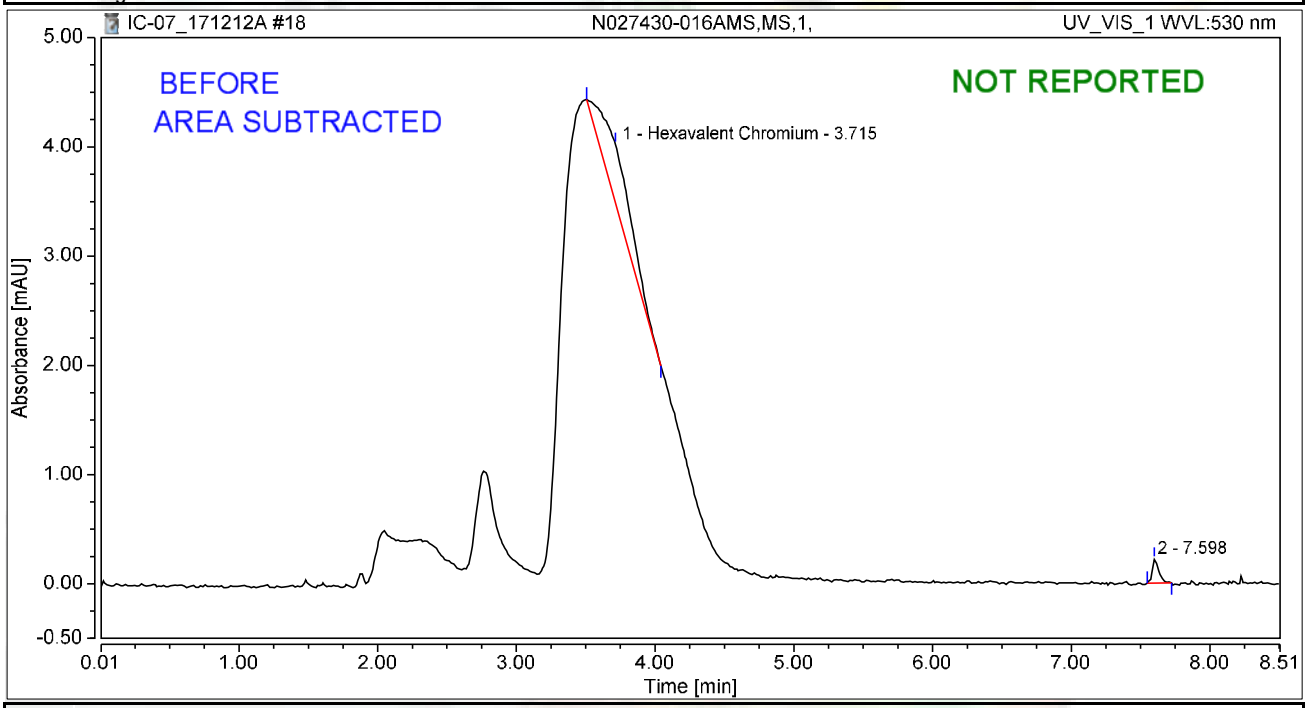
Chromatogram and Results

Injection Details

Injection Name:	**N027430-016AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 10:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.715	0.148	0.540	92.50	71.37	0.5888
2		7.598	0.012	0.217	7.50	28.63	n.a.
Total:			**0.160**	**0.757**	**100.00**	**100.00**	

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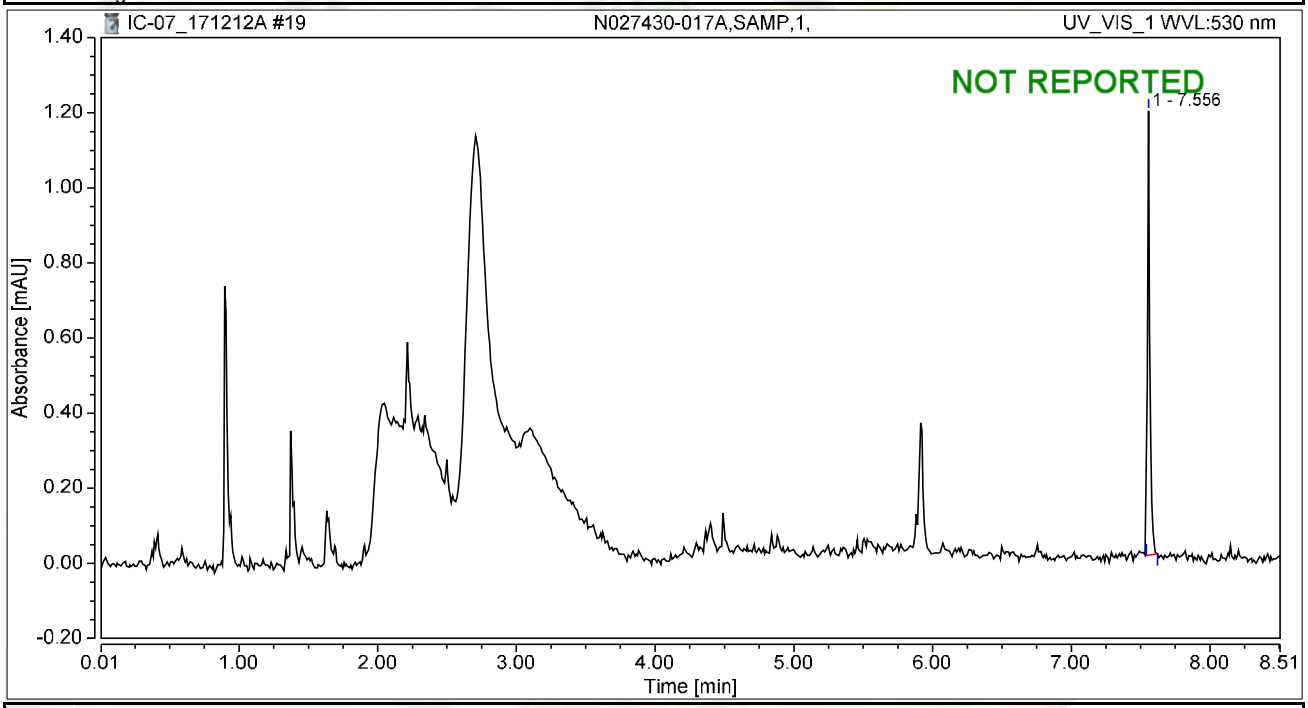
Chromatogram and Results

Injection Details

Injection Name:	**N027430-017A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

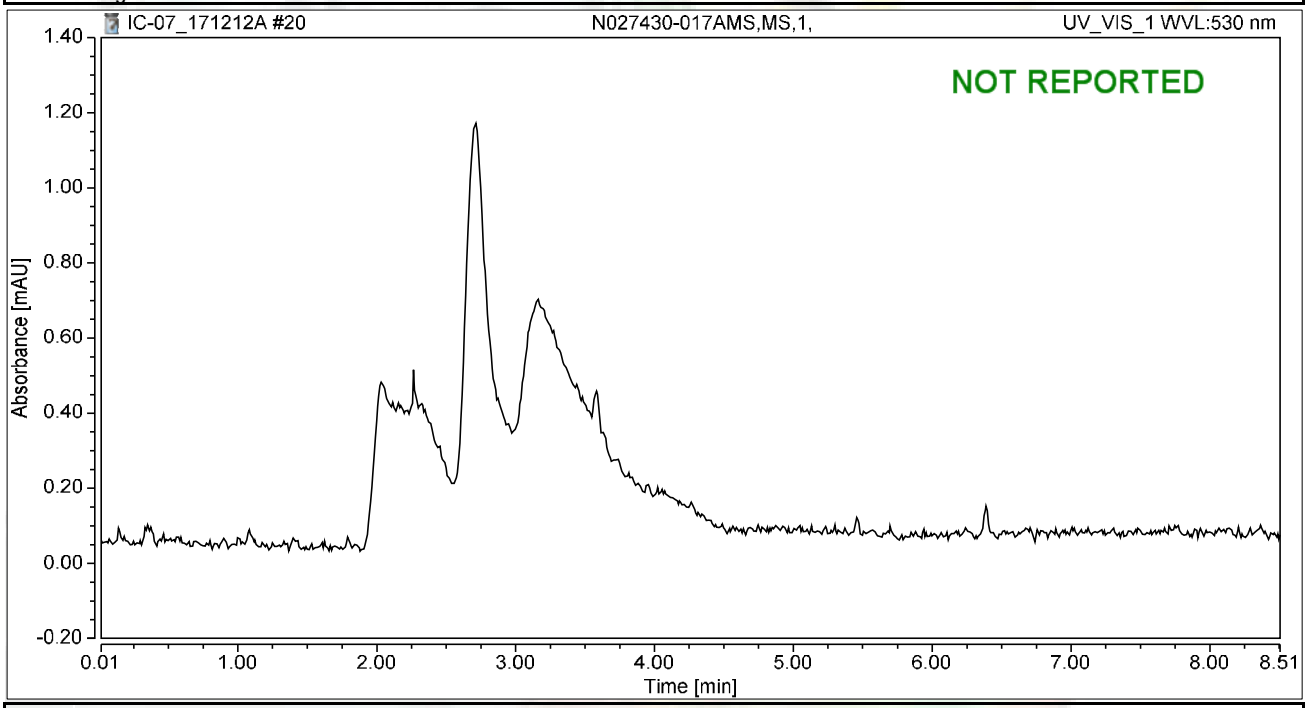
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.556	0.023	1.183	100.00	100.00	n.a.
Total:			**0.023**	**1.183**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-017AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 10:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

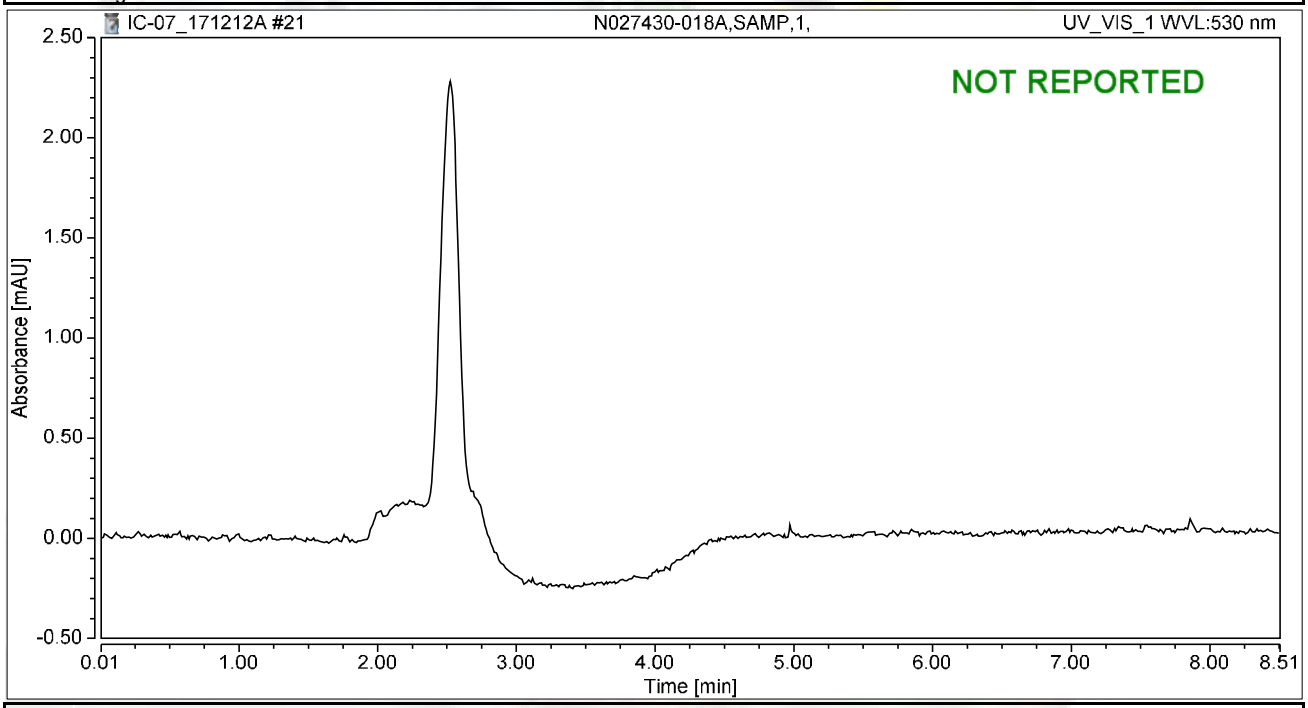
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-018A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 10:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

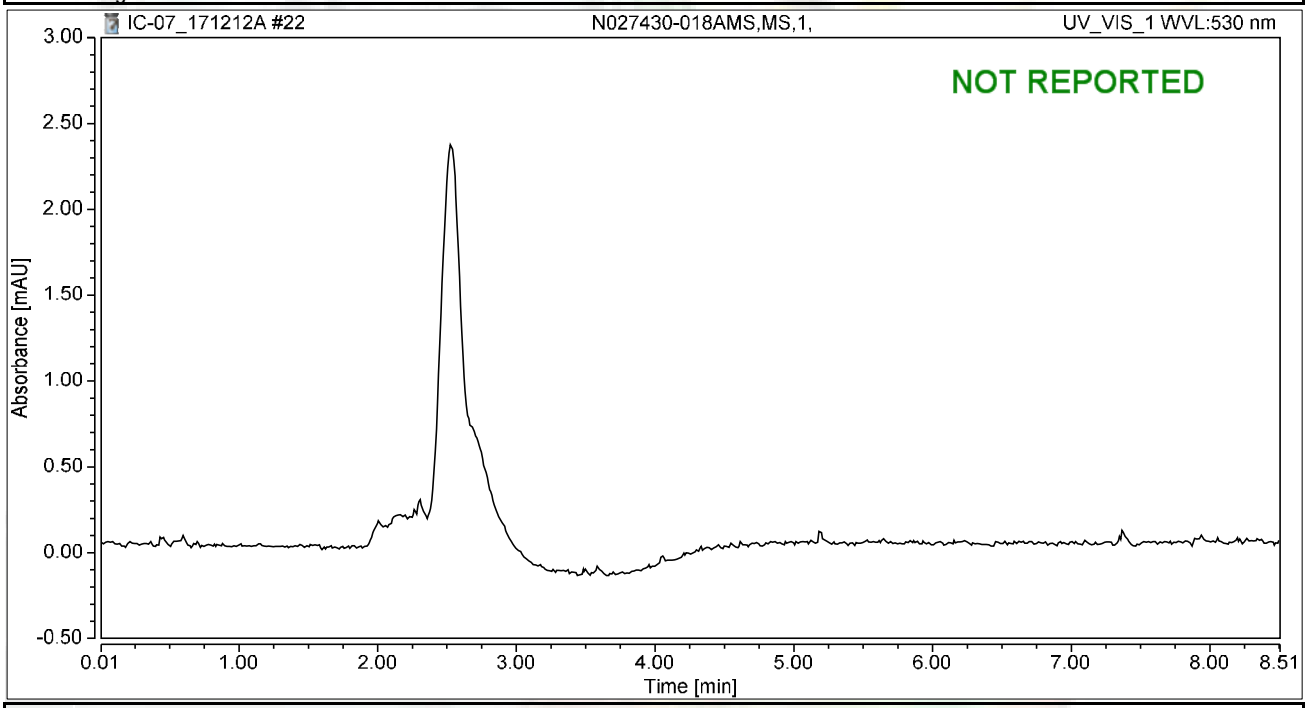
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-018AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 10:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

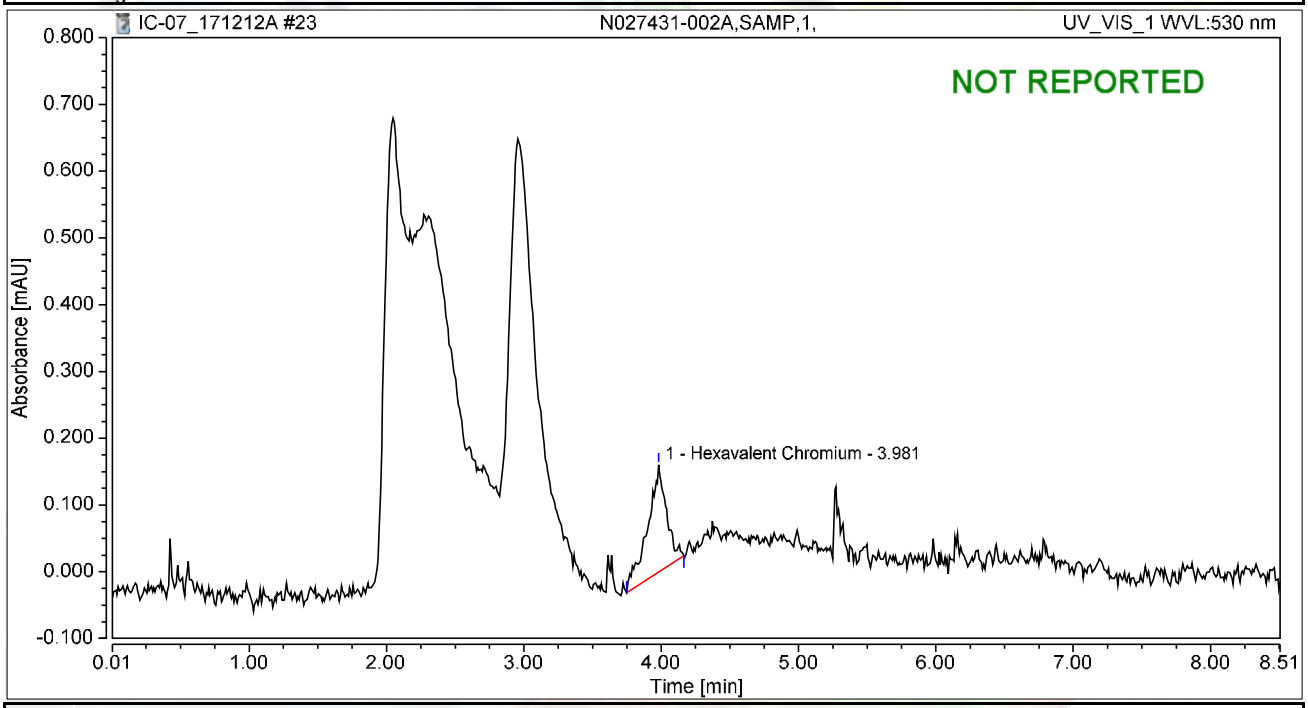
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 10:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

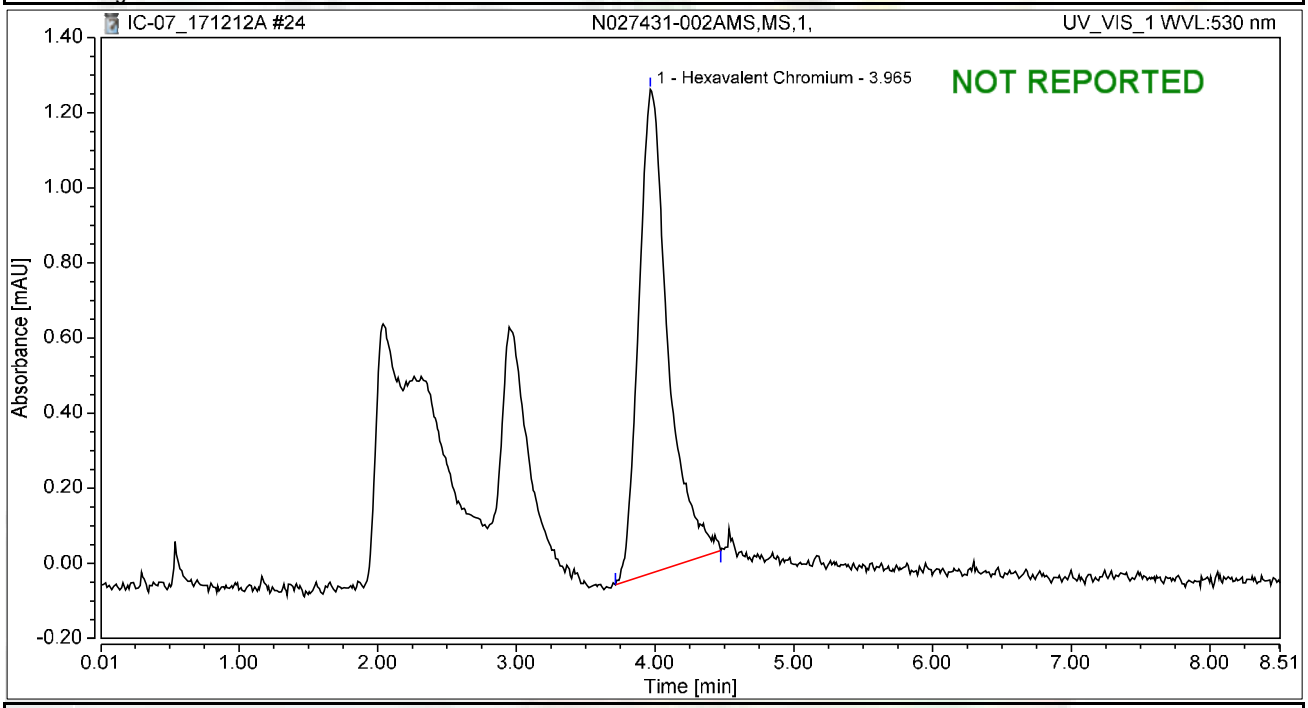
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.981	0.025	0.161	100.00	100.00	0.1015
Total:			**0.025**	**0.161**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 11:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

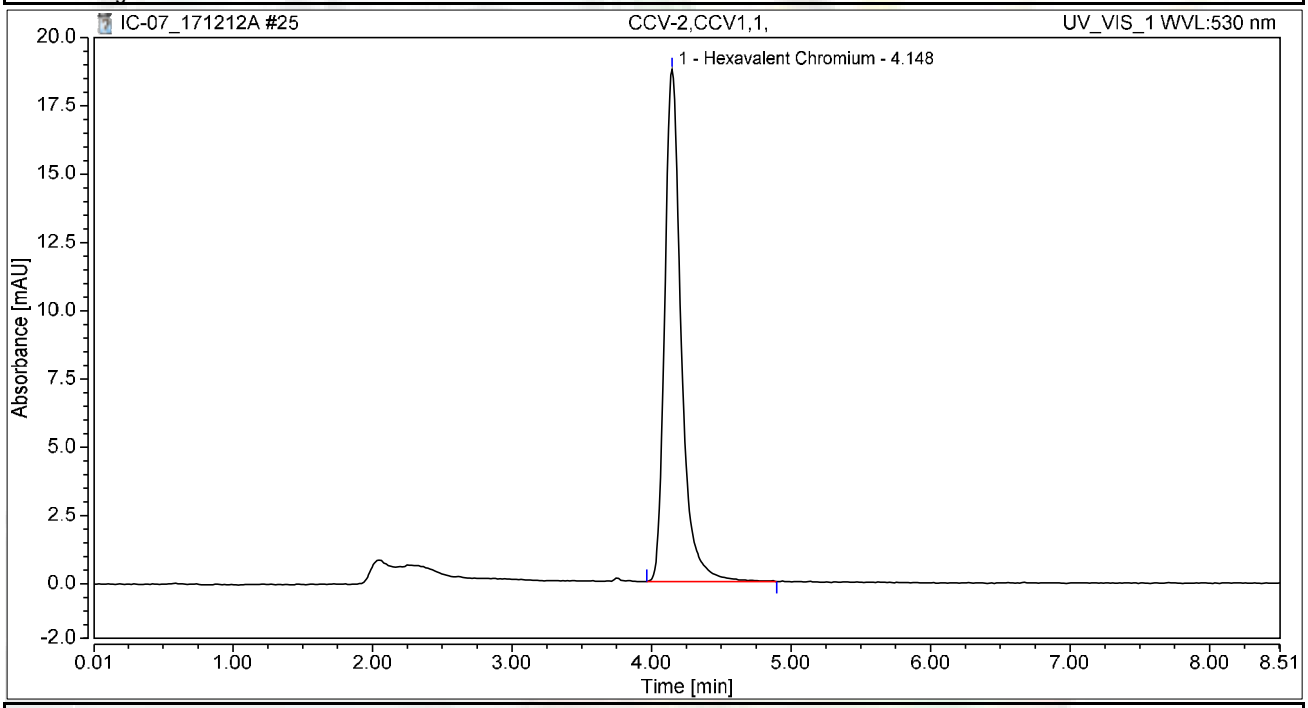
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.965	0.316	1.289	100.00	100.00	1.2583
Total:			**0.316**	**1.289**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 11:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

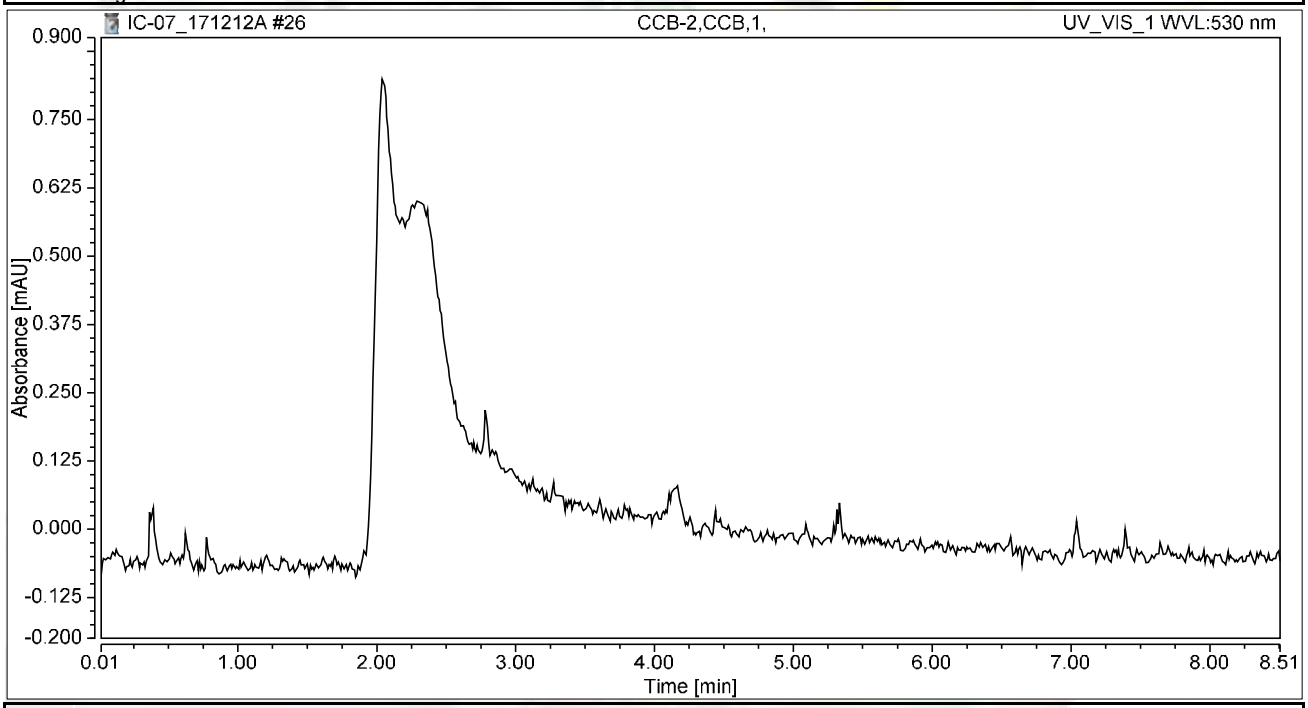
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.570	18.741	100.00	100.00	10.2355
Total:			**2.570**	**18.741**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 11:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

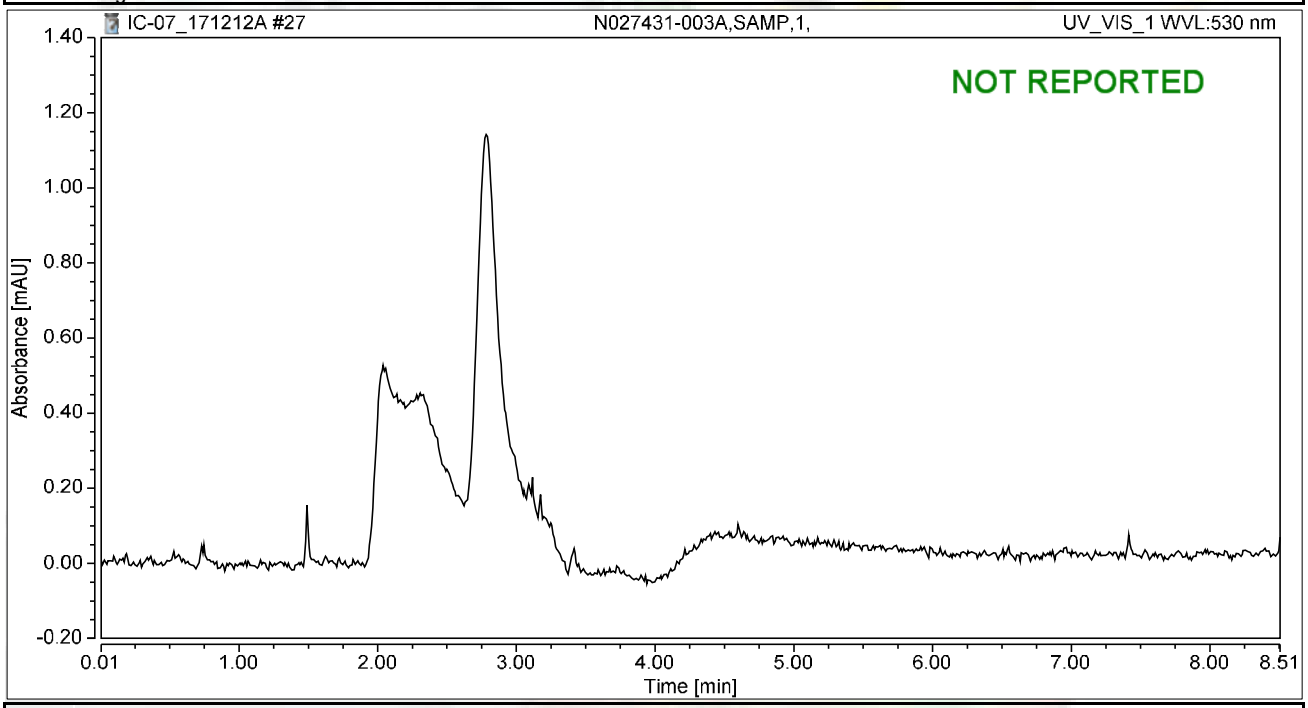
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 11:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

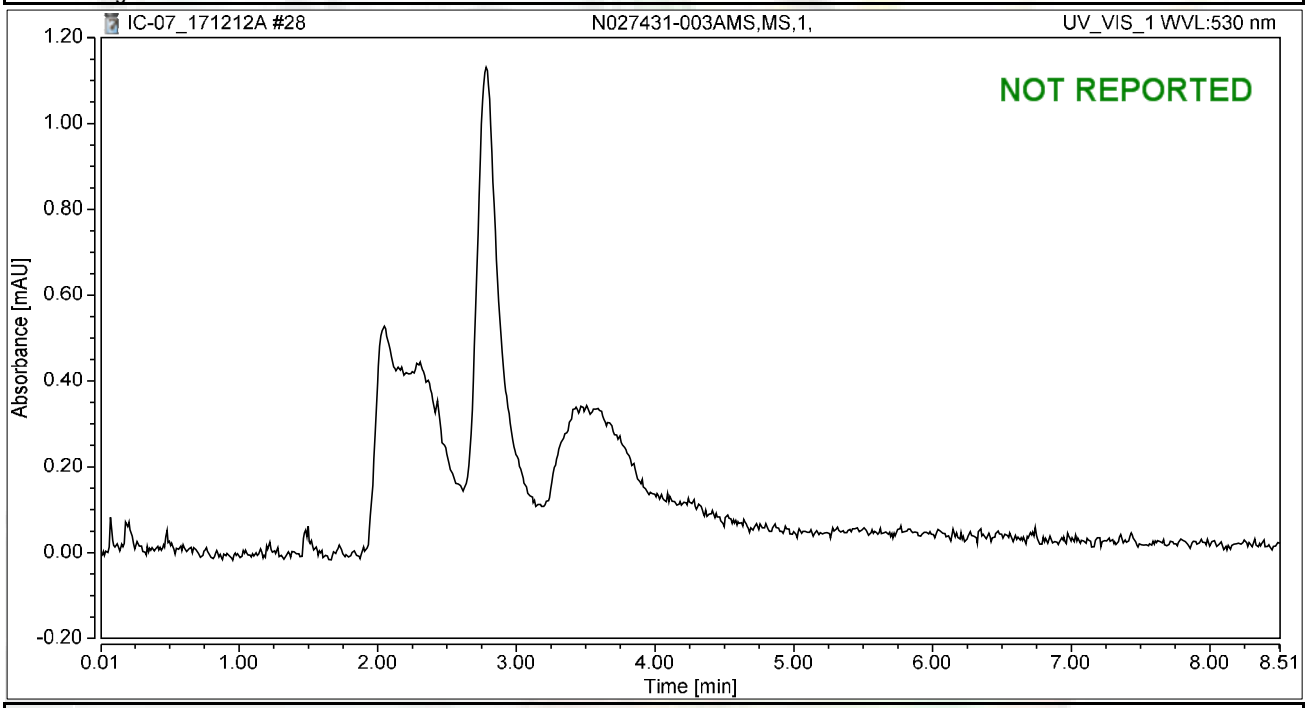
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 11:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

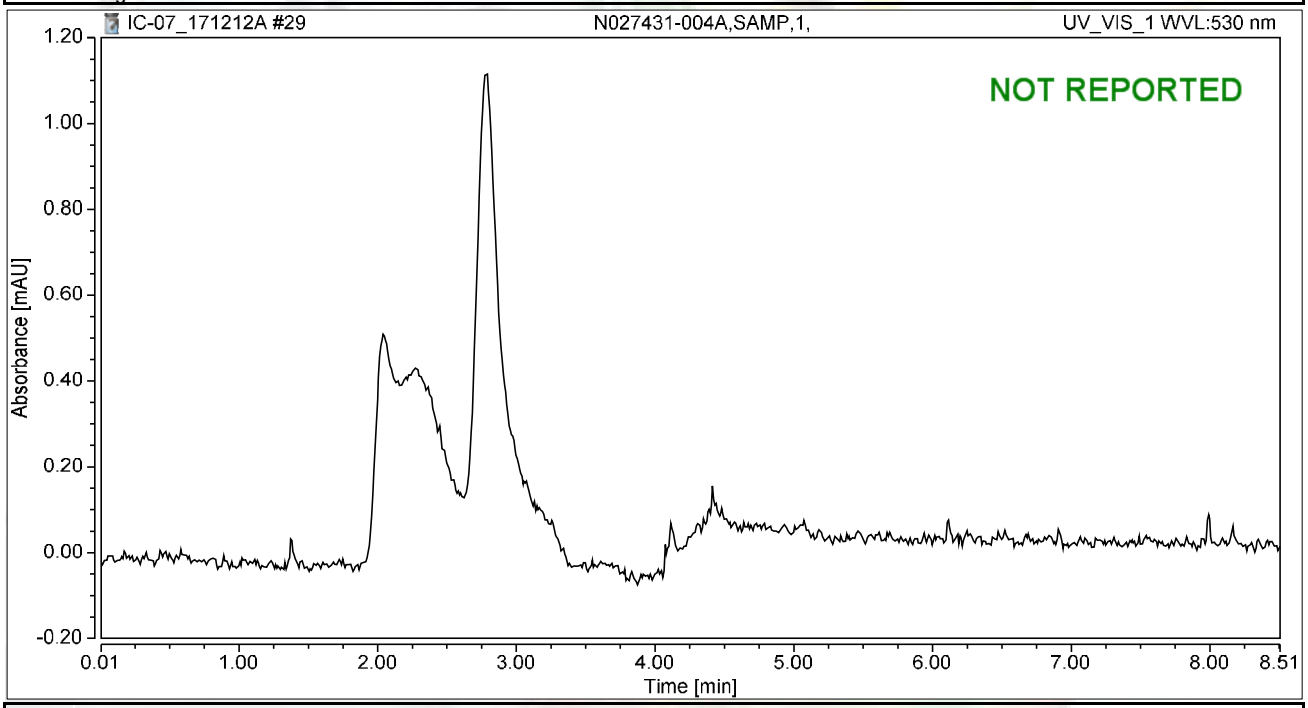
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 11:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

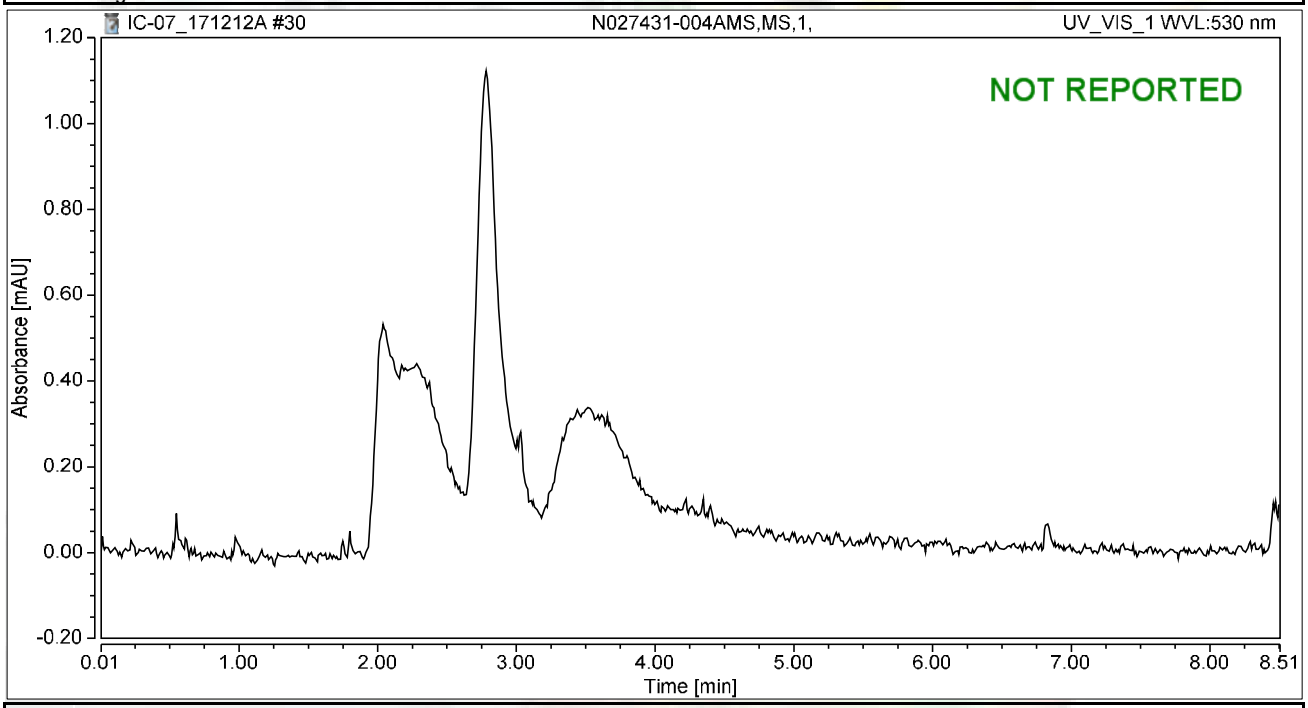
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 12:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

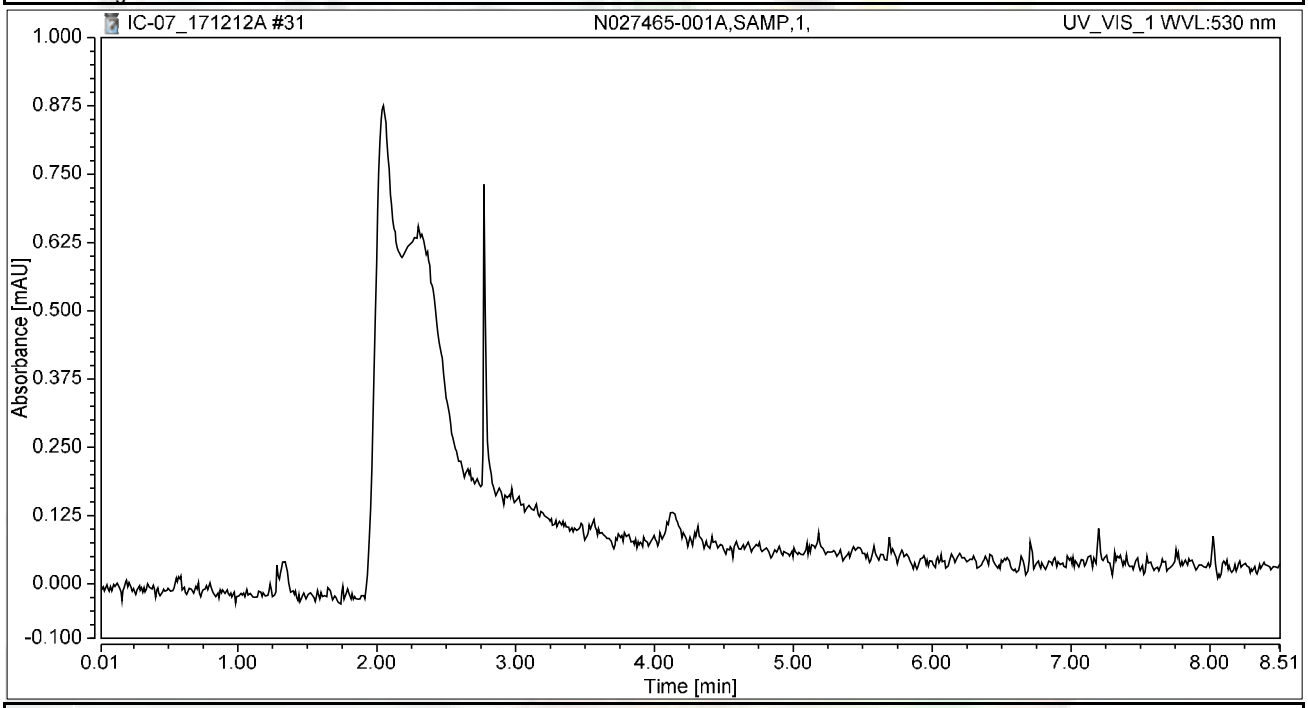
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027465-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 12:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

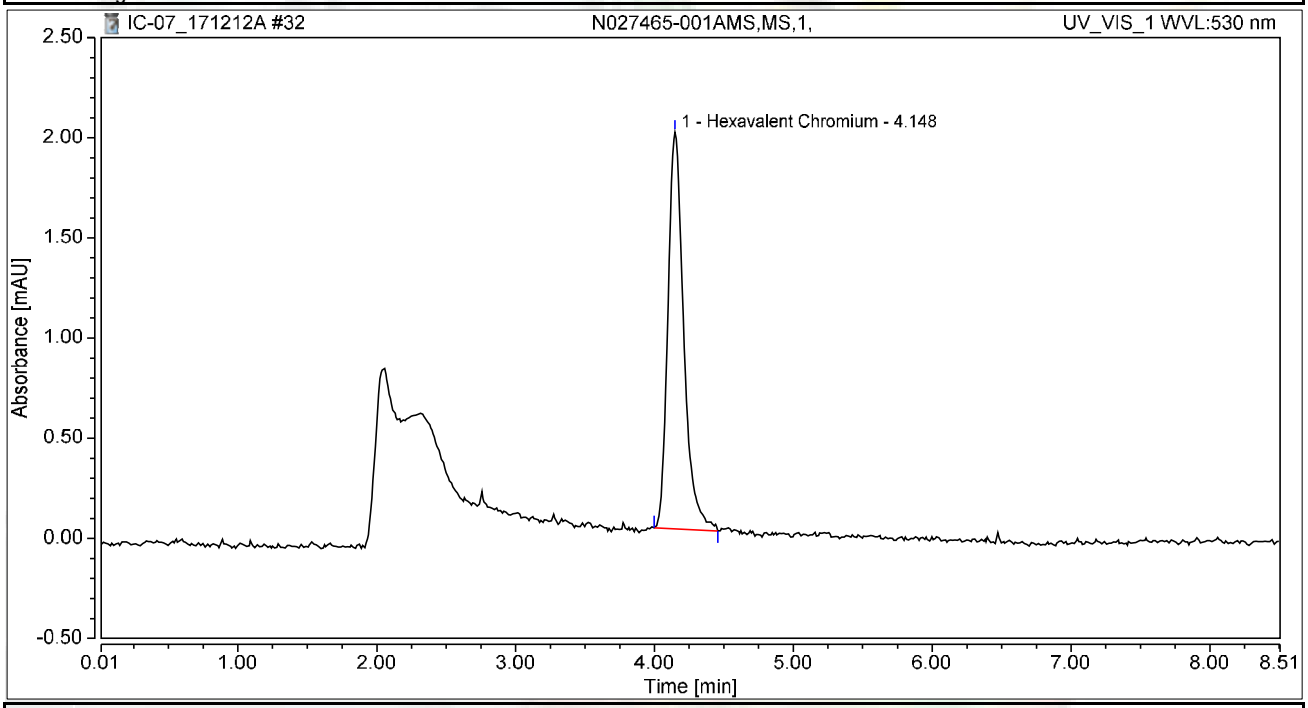
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027465-001AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 12:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

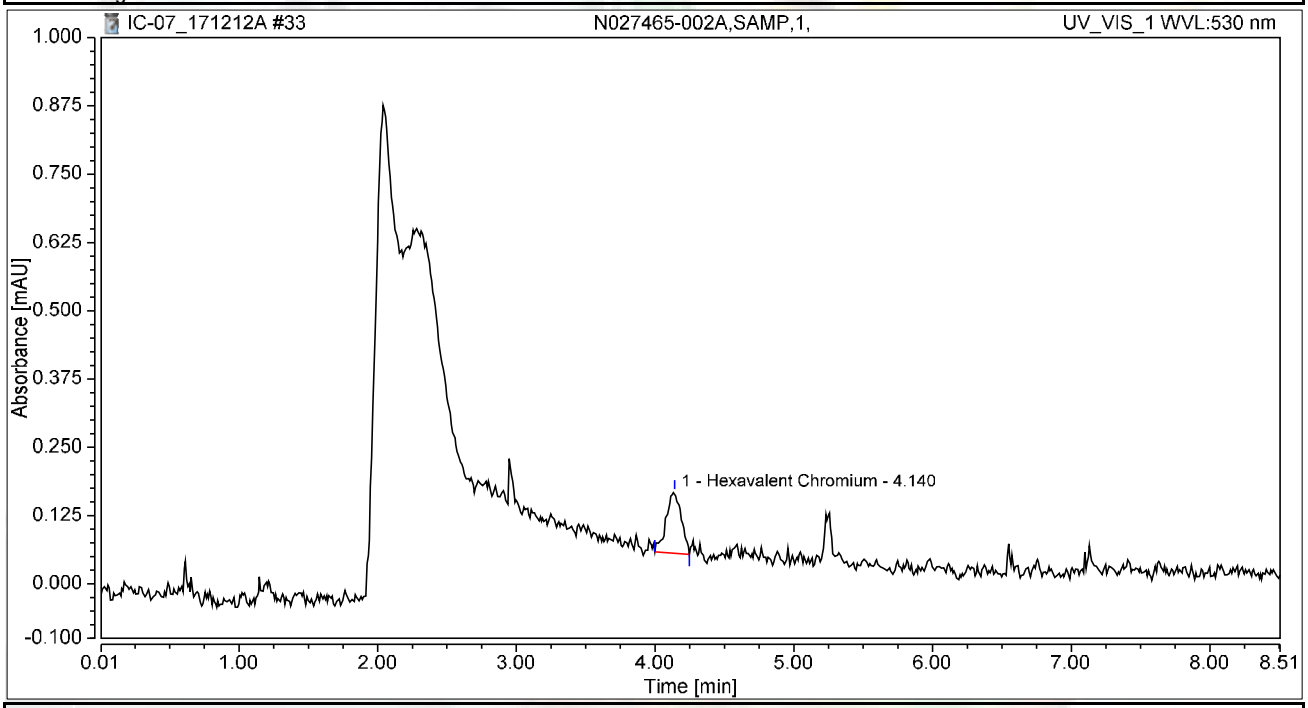
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.262	1.979	100.00	100.00	1.0426
Total:			**0.262**	**1.979**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027465-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 12:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

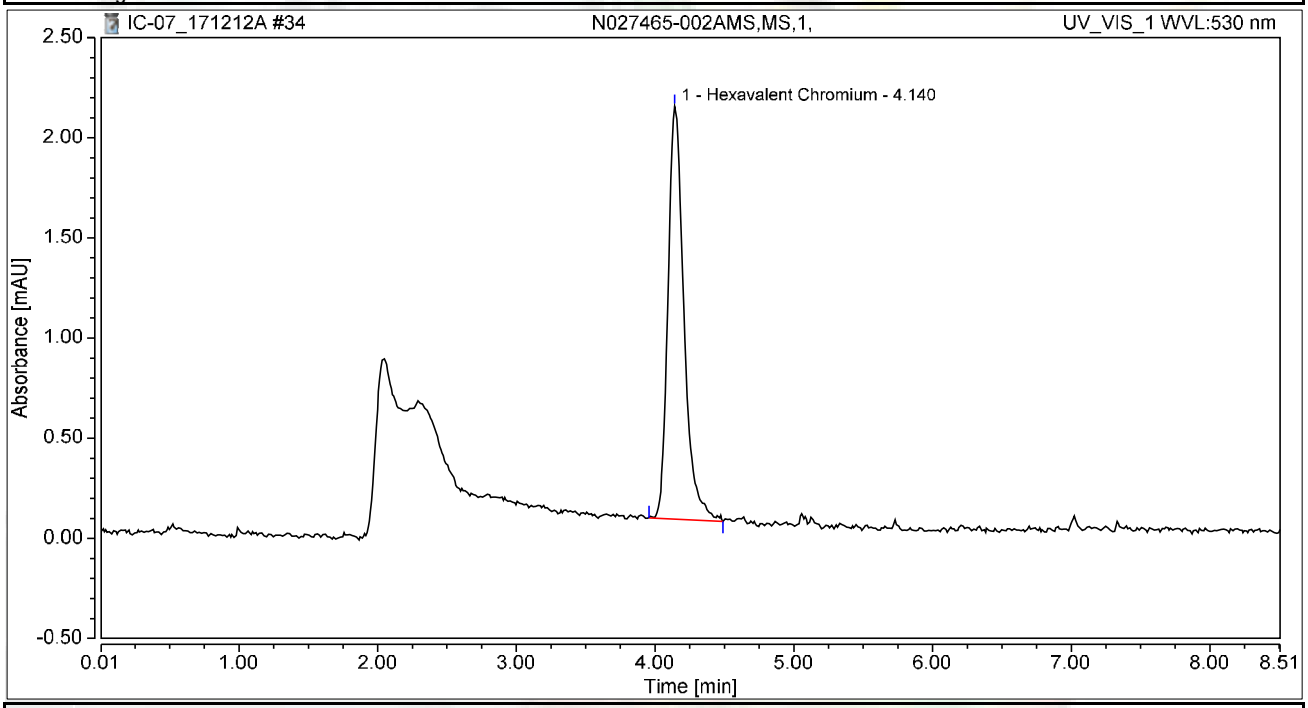
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.014	0.112	100.00	100.00	0.0564
Total:			**0.014**	**0.112**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027465-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 12:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

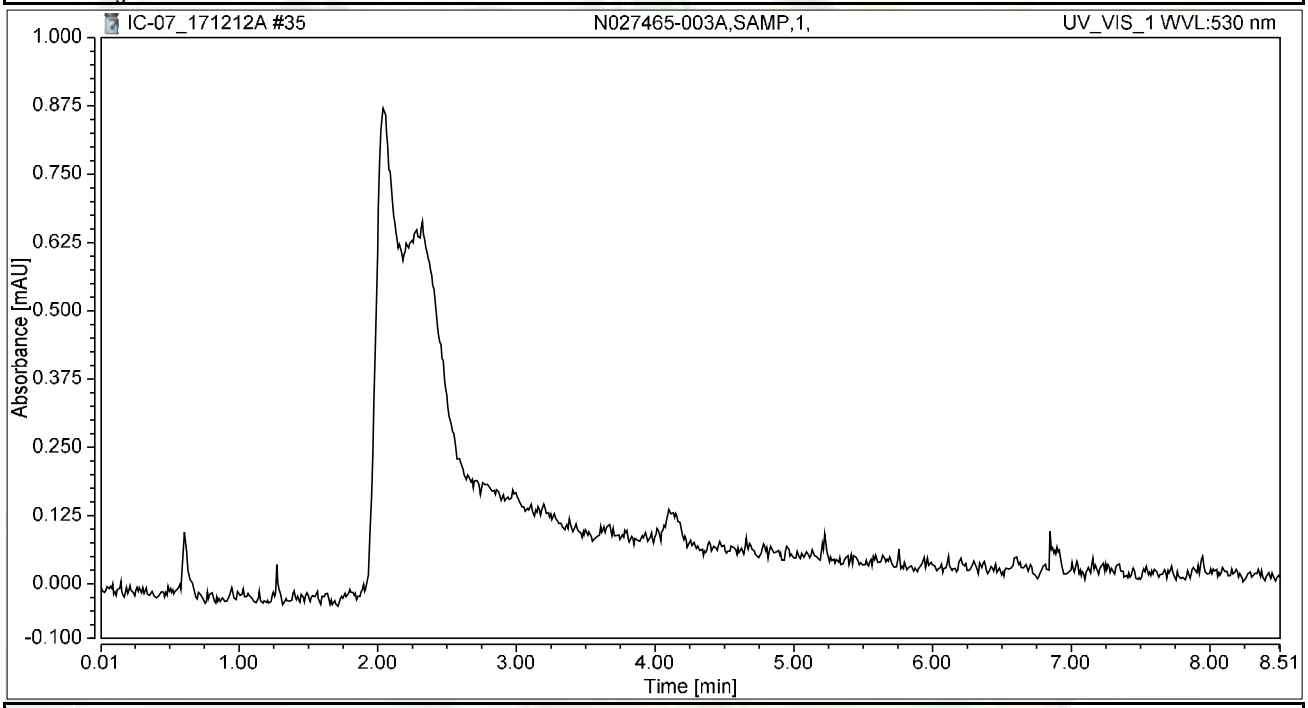
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.275	2.060	100.00	100.00	1.0970
Total:			**0.275**	**2.060**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027465-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 12:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

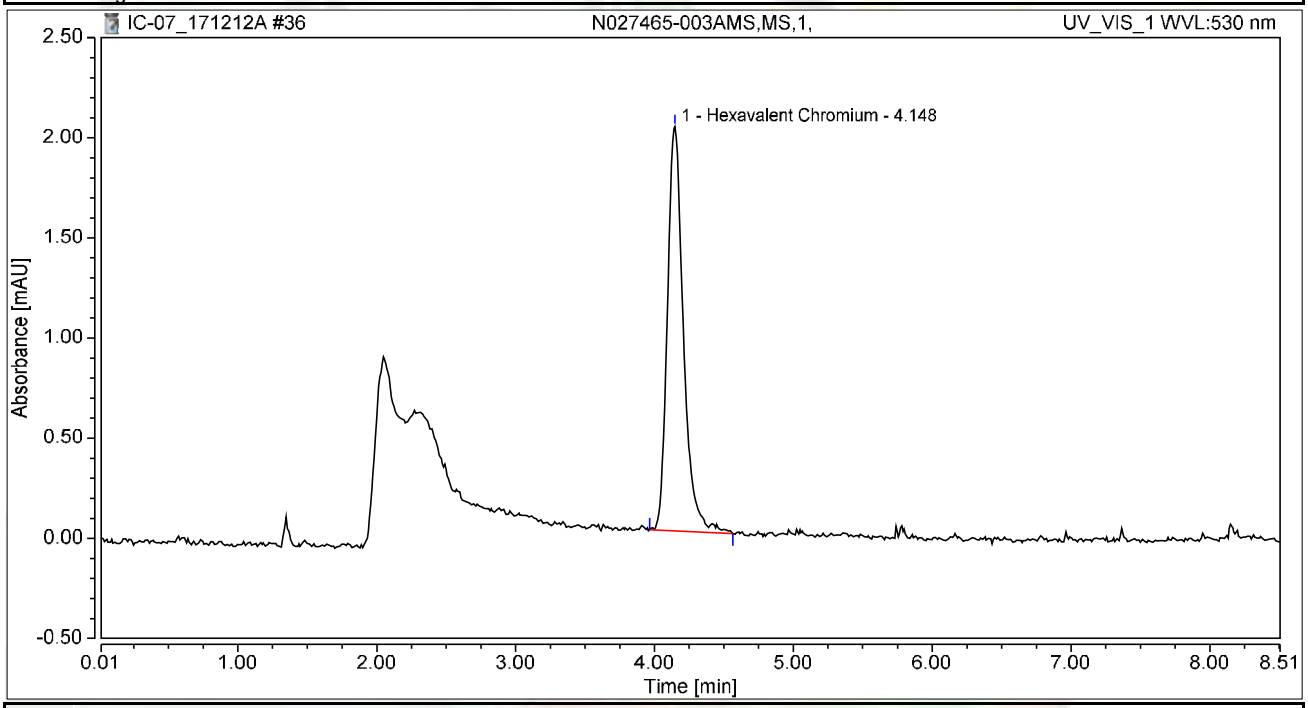
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027465-003AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 12:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

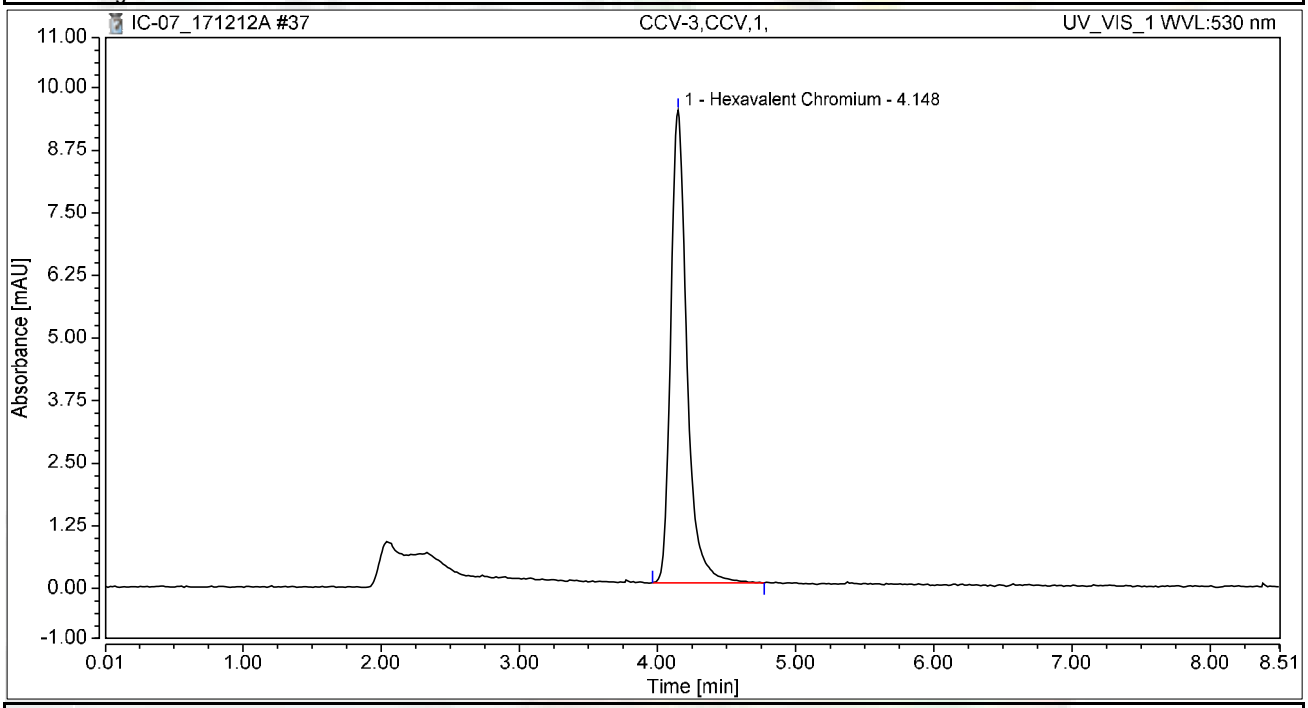
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.272	2.019	100.00	100.00	1.0814
Total:			**0.272**	**2.019**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 13:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

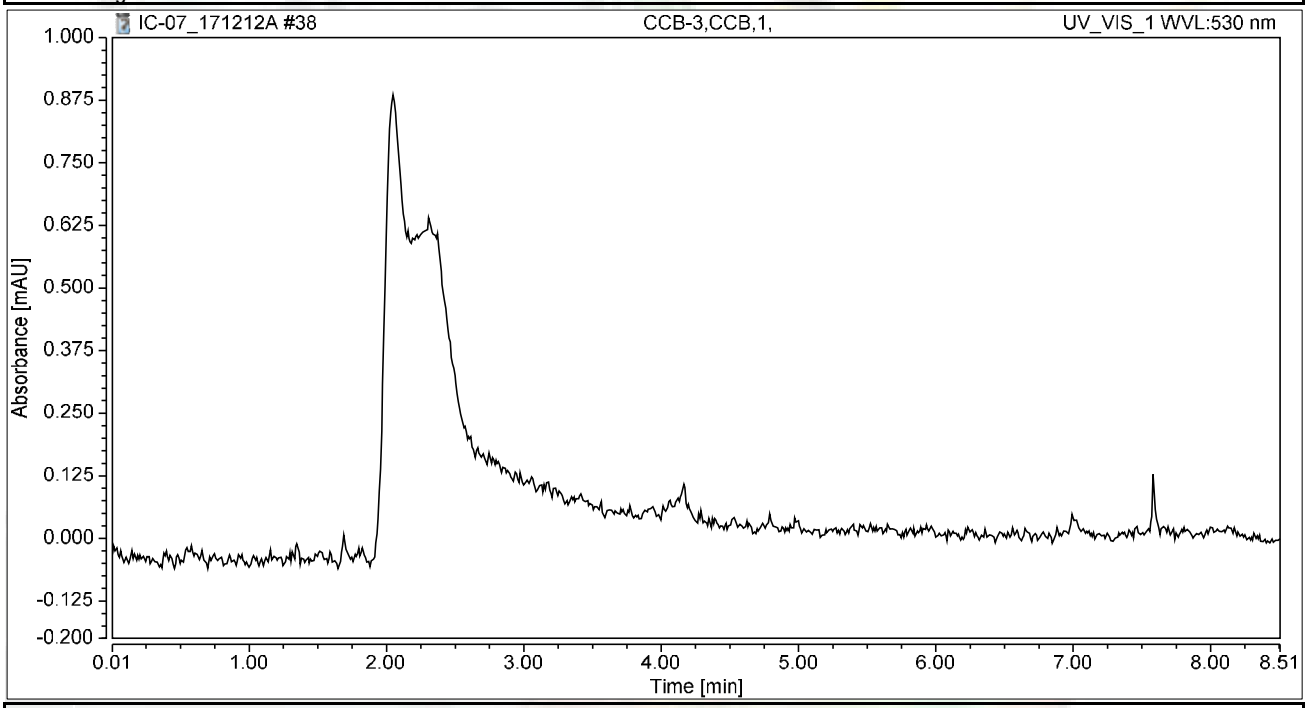
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.281	9.434	100.00	100.00	5.1007
Total:			**1.281**	**9.434**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 13:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

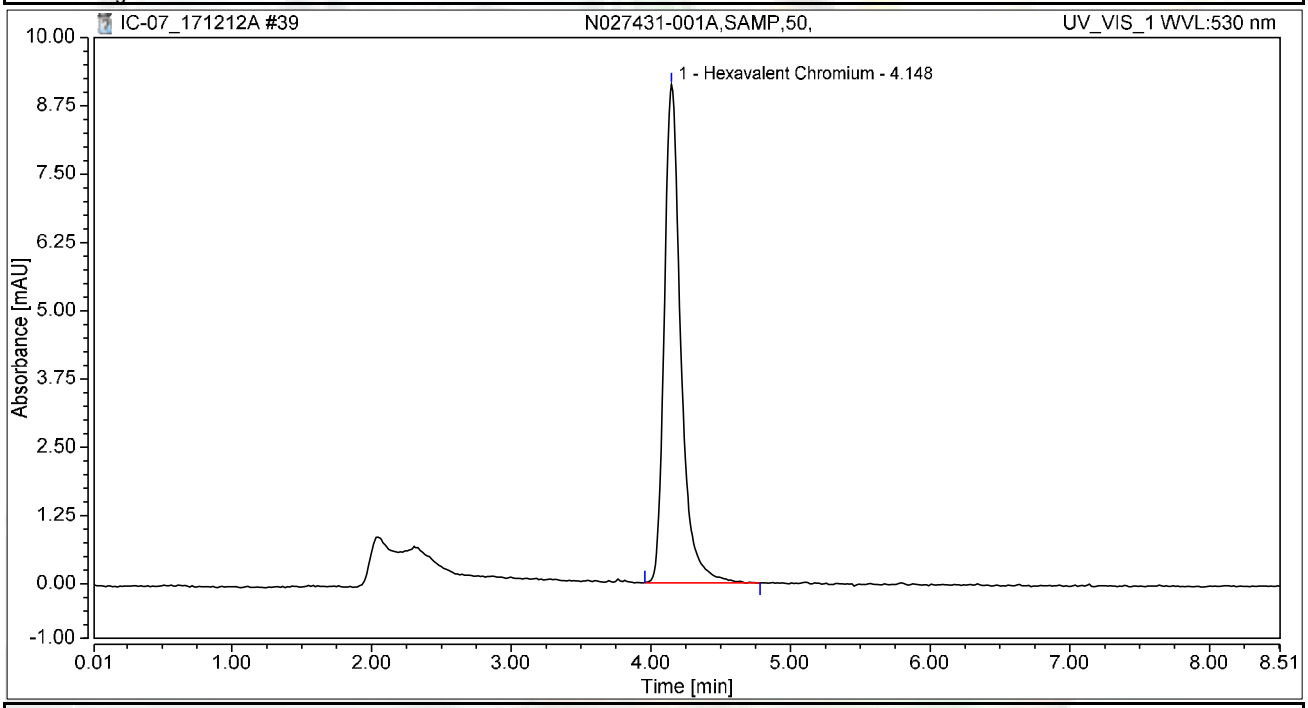
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-001A,SAMP,50,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 13:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

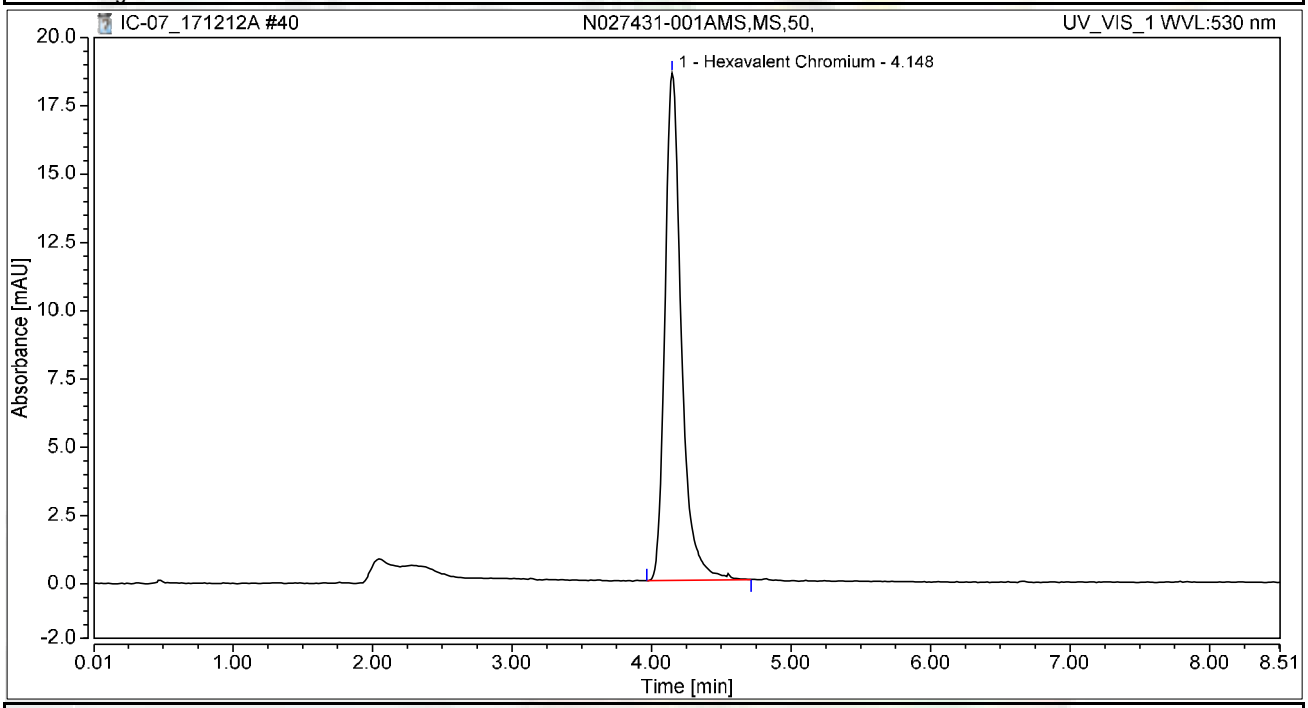
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.255	9.120	100.00	100.00	4.9968
Total:			**1.255**	**9.120**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-001AMS,MS,50,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 13:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

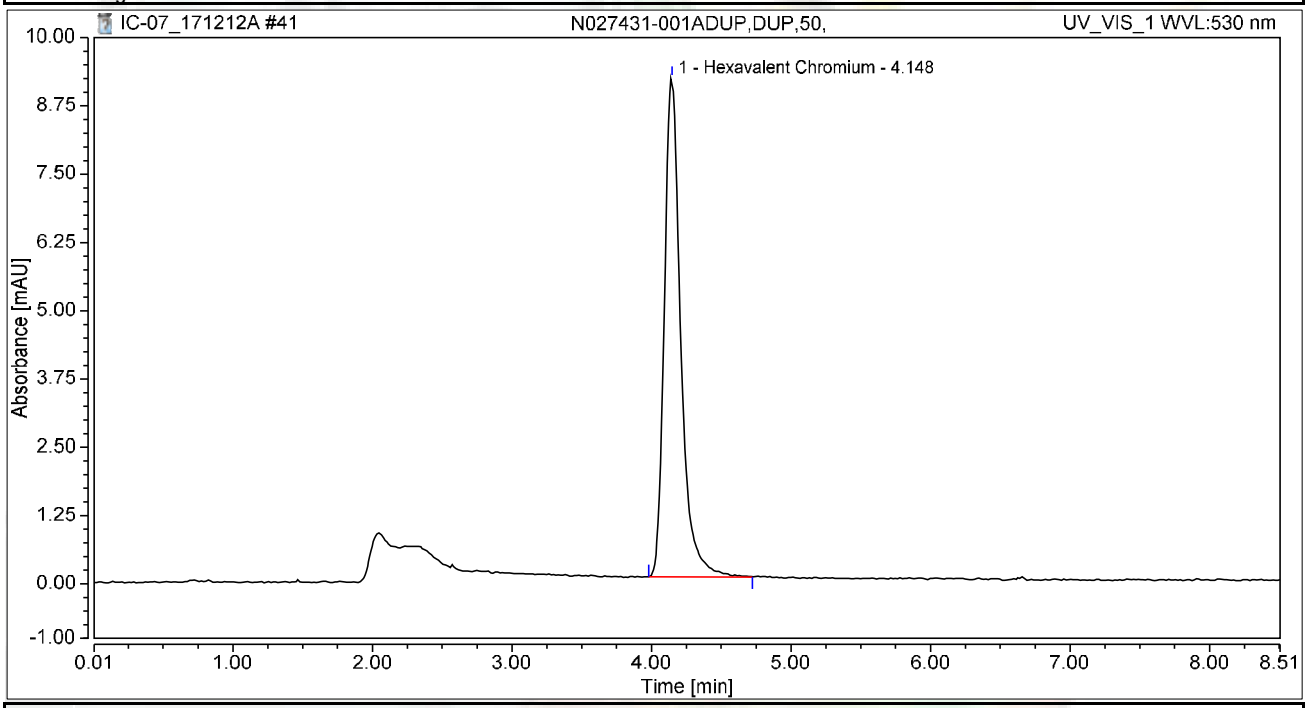
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.540	18.587	100.00	100.00	10.1175
Total:			**2.540**	**18.587**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-001ADUP,DUP,50,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 14:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

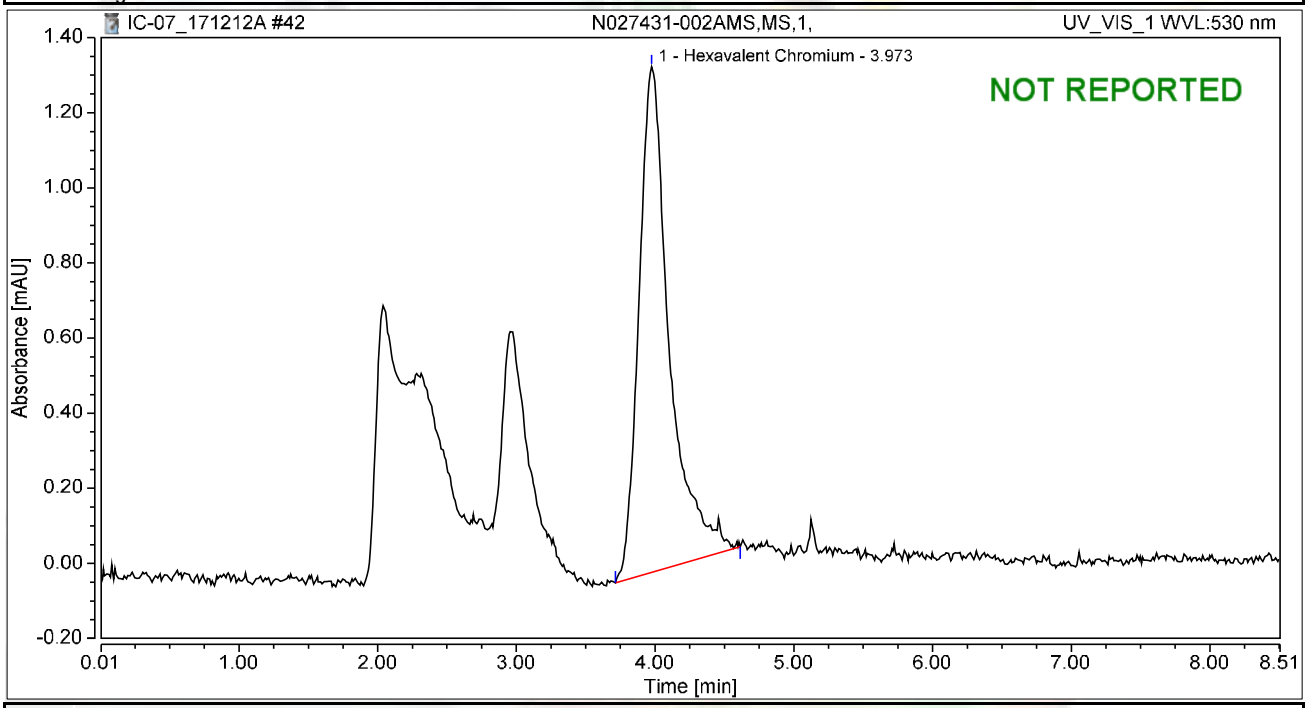
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.246	9.128	100.00	100.00	4.9623
Total:			**1.246**	**9.128**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 14:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

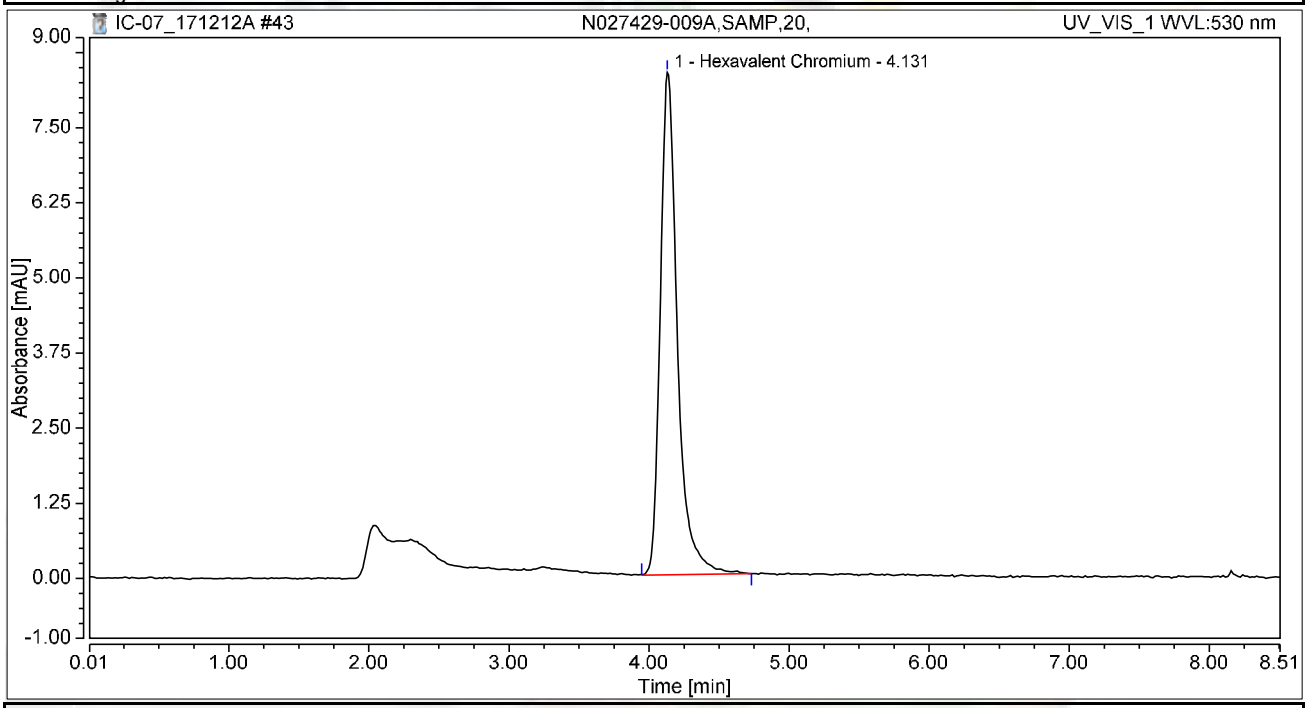
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.973	0.342	1.347	100.00	100.00	1.3626
Total:			**0.342**	**1.347**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-009A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 14:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

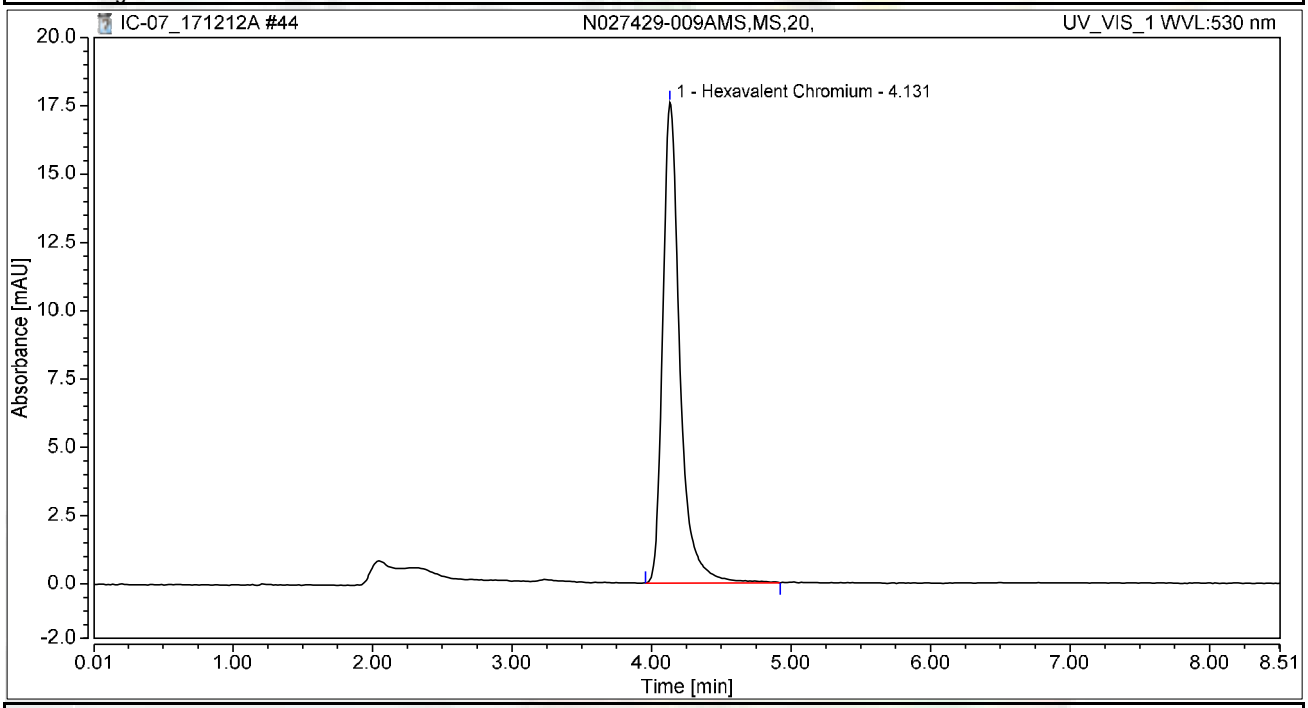
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.183	8.362	100.00	100.00	4.7126
Total:			**1.183**	**8.362**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-009AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 14:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

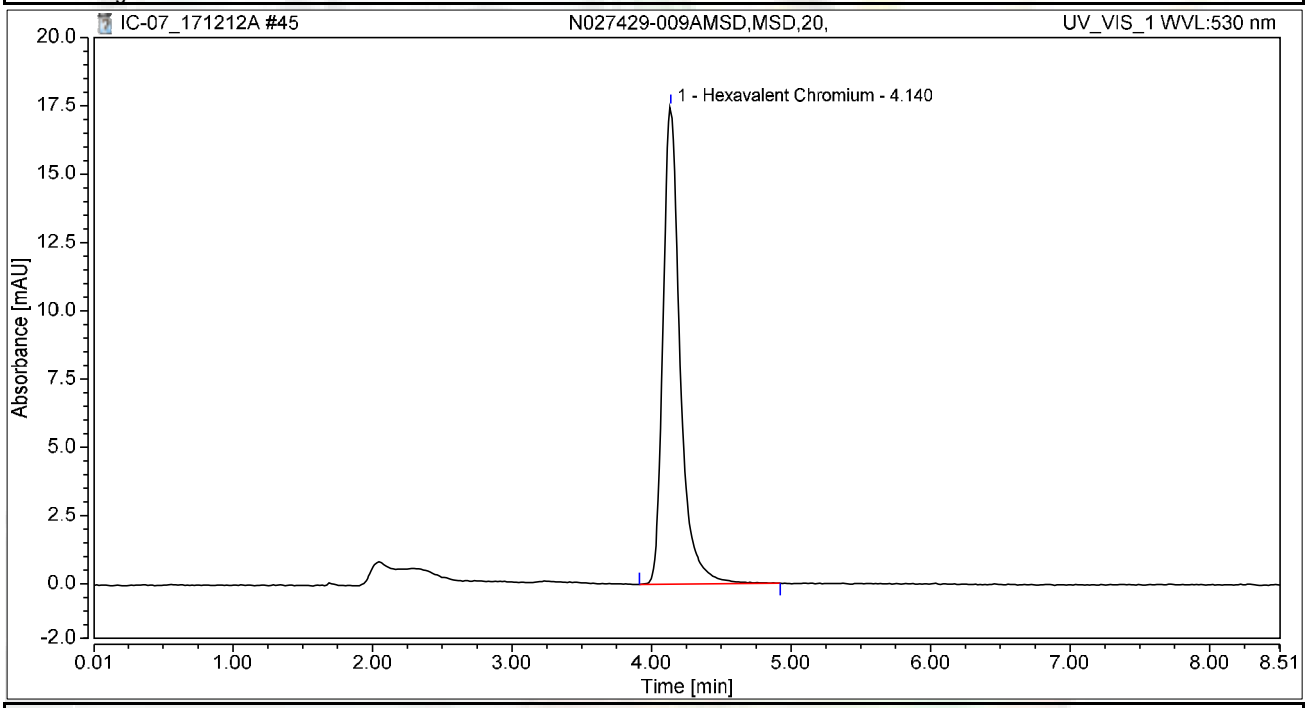
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.507	17.595	100.00	100.00	9.9836
Total:			**2.507**	**17.595**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-009AMSD,MSD,20,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 14:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

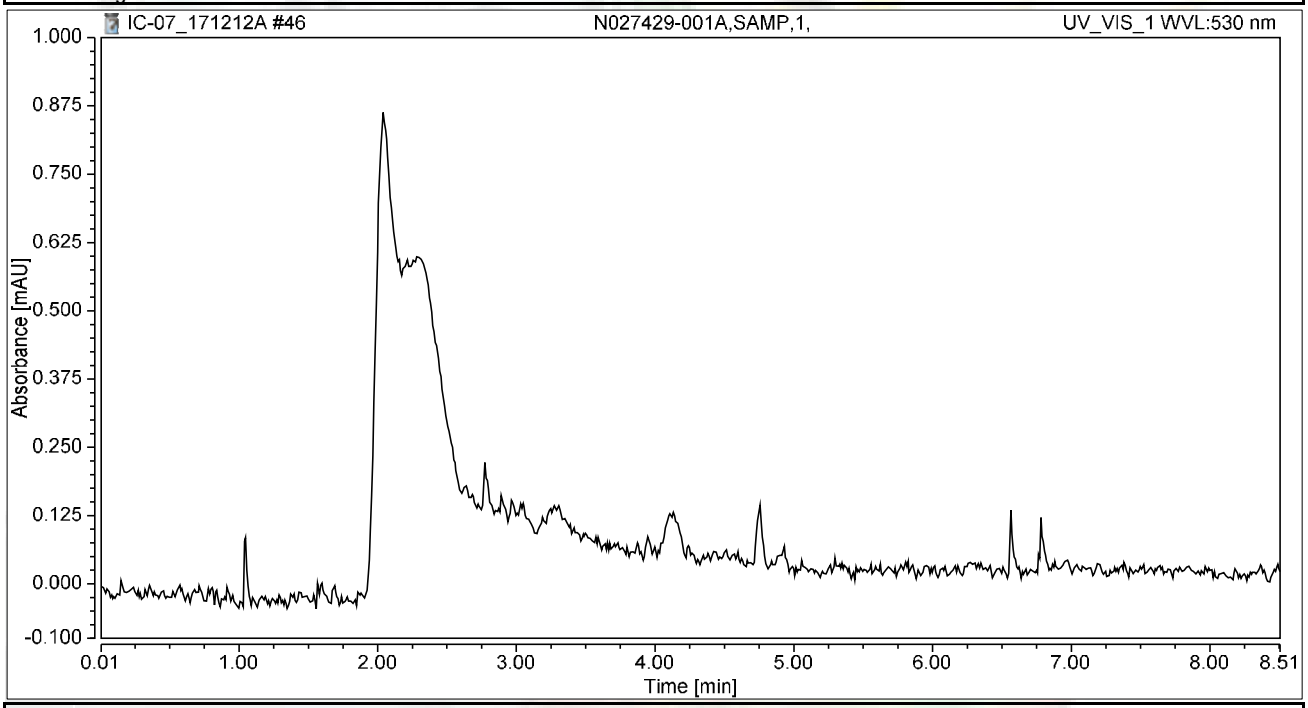
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.487	17.494	100.00	100.00	9.9046
Total:			**2.487**	**17.494**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 14:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

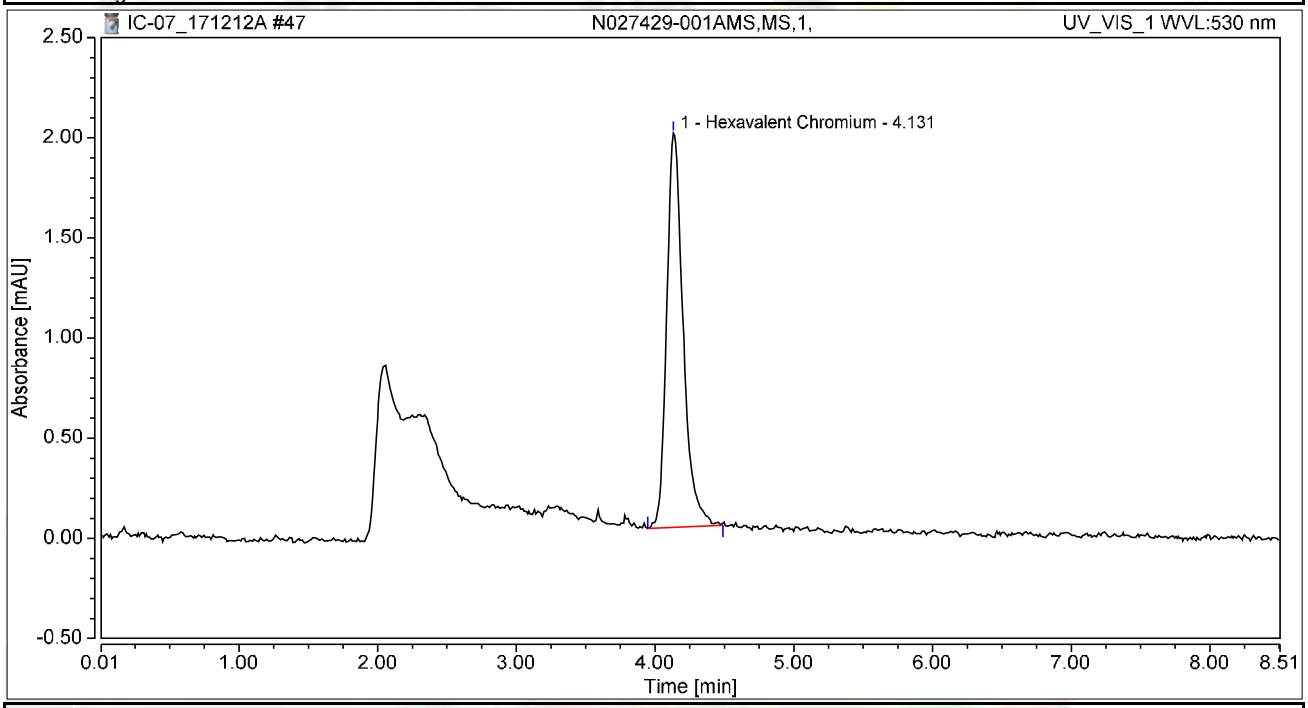
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 15:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

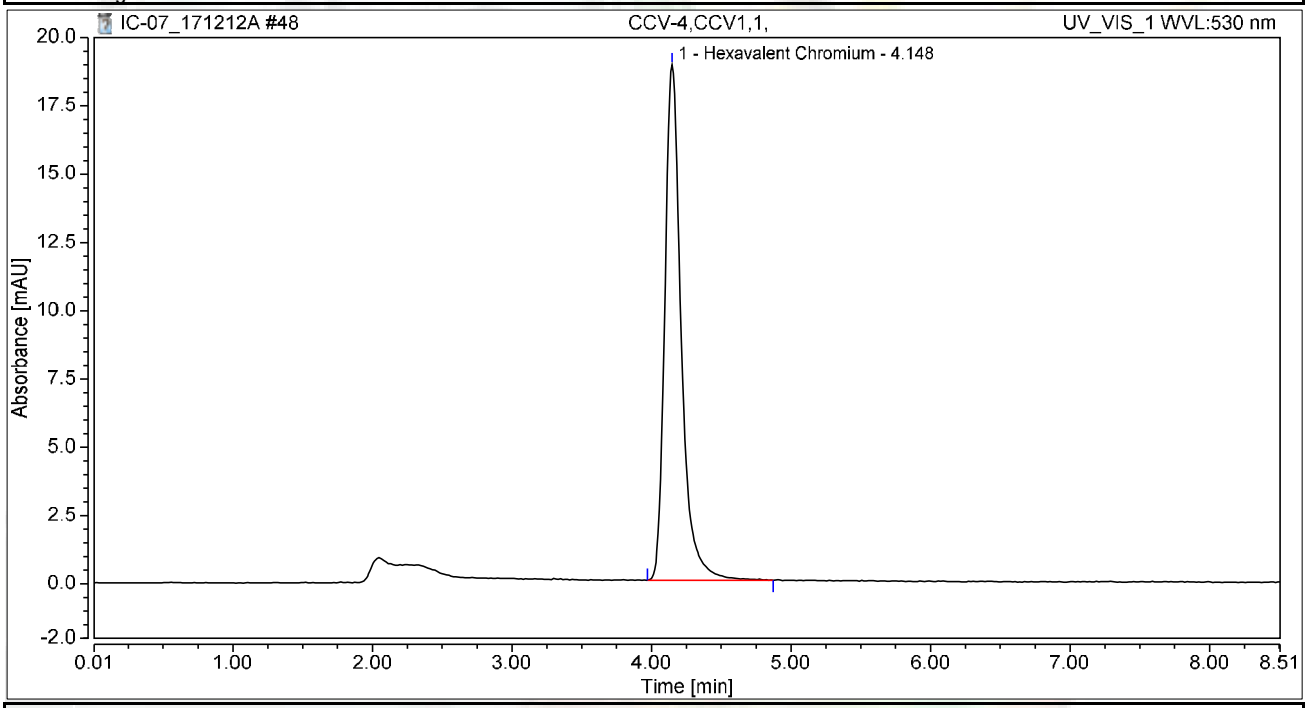
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.271	1.967	100.00	100.00	1.0807
Total:			**0.271**	**1.967**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 15:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

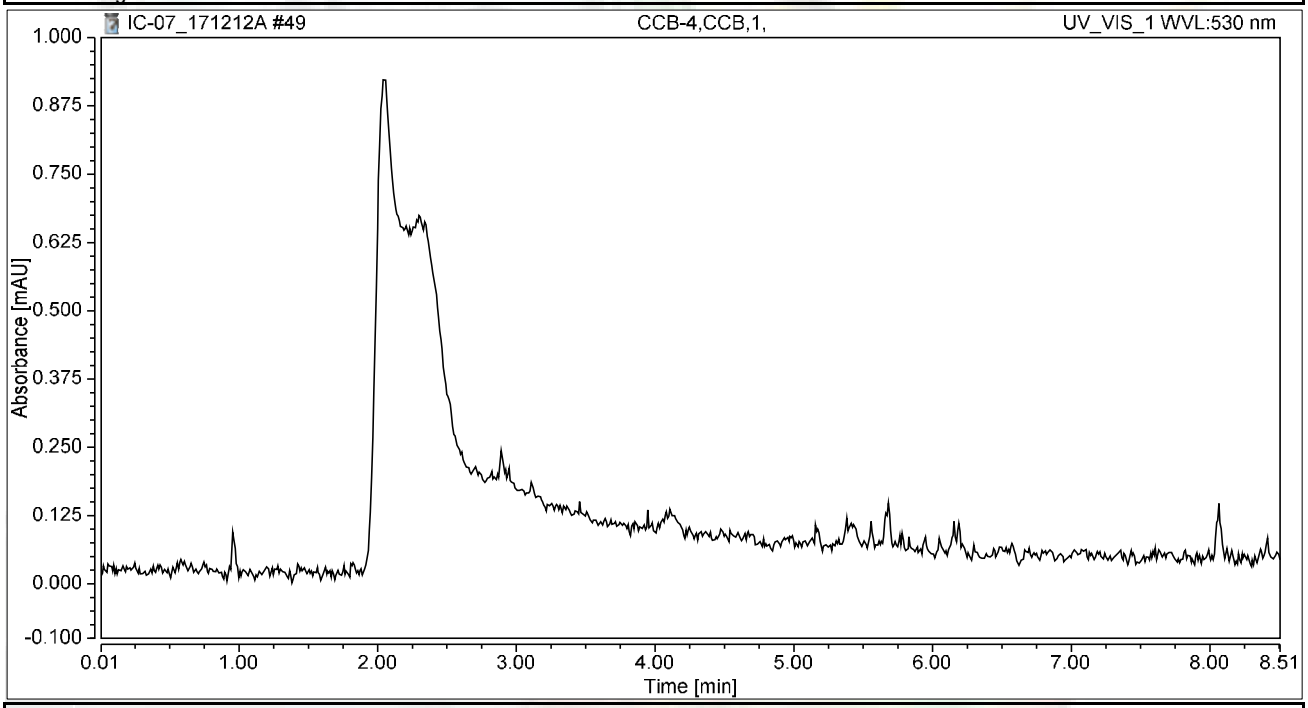
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.572	18.872	100.00	100.00	10.2418
Total:			**2.572**	**18.872**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 15:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

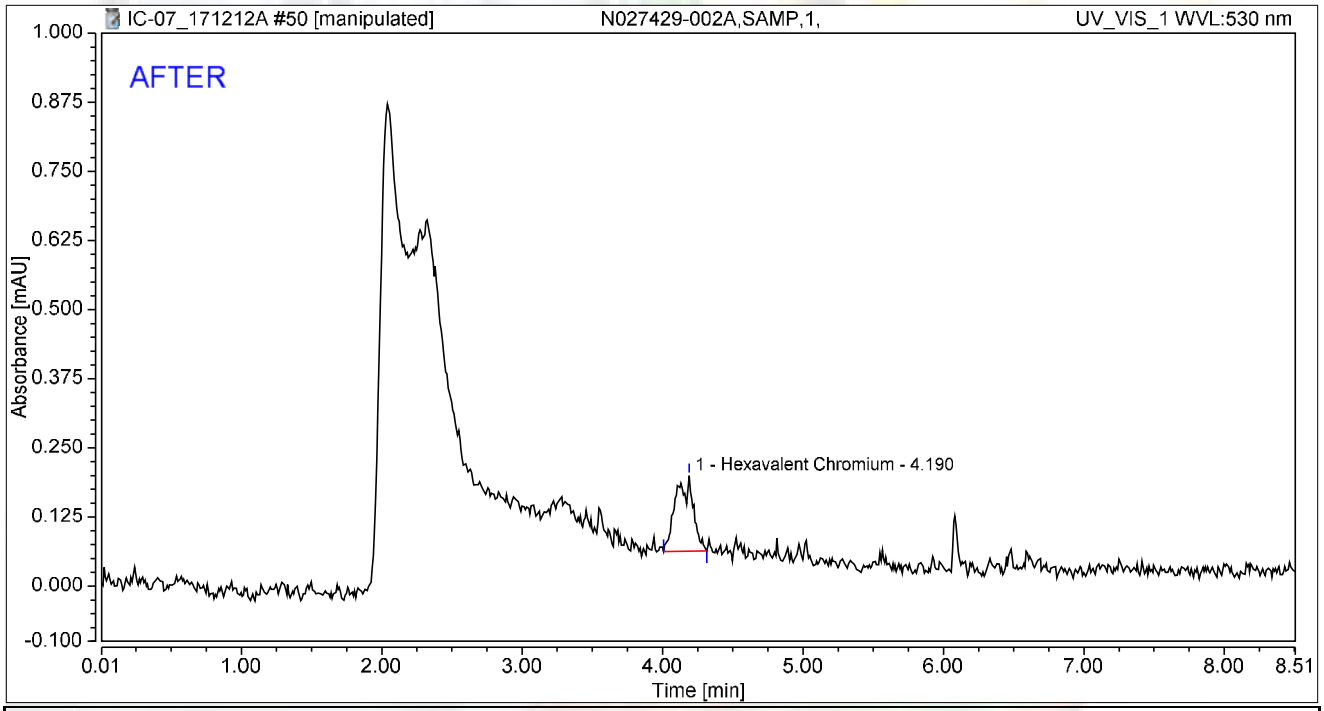
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 15:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.020	0.137	100.00	100.00	0.0780
Total:			**0.020**	**0.137**	**100.00**	**100.00**	

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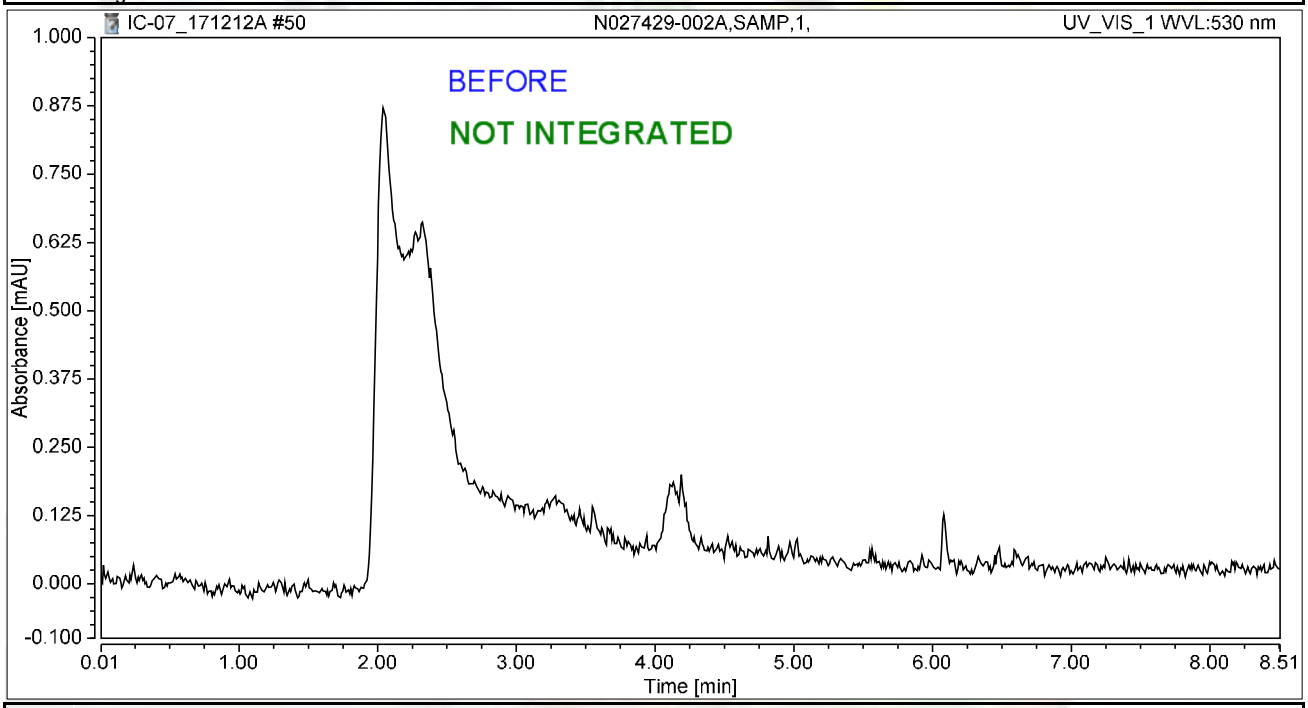
RB 12/26/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027429-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 15:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

rba 12/16/2017

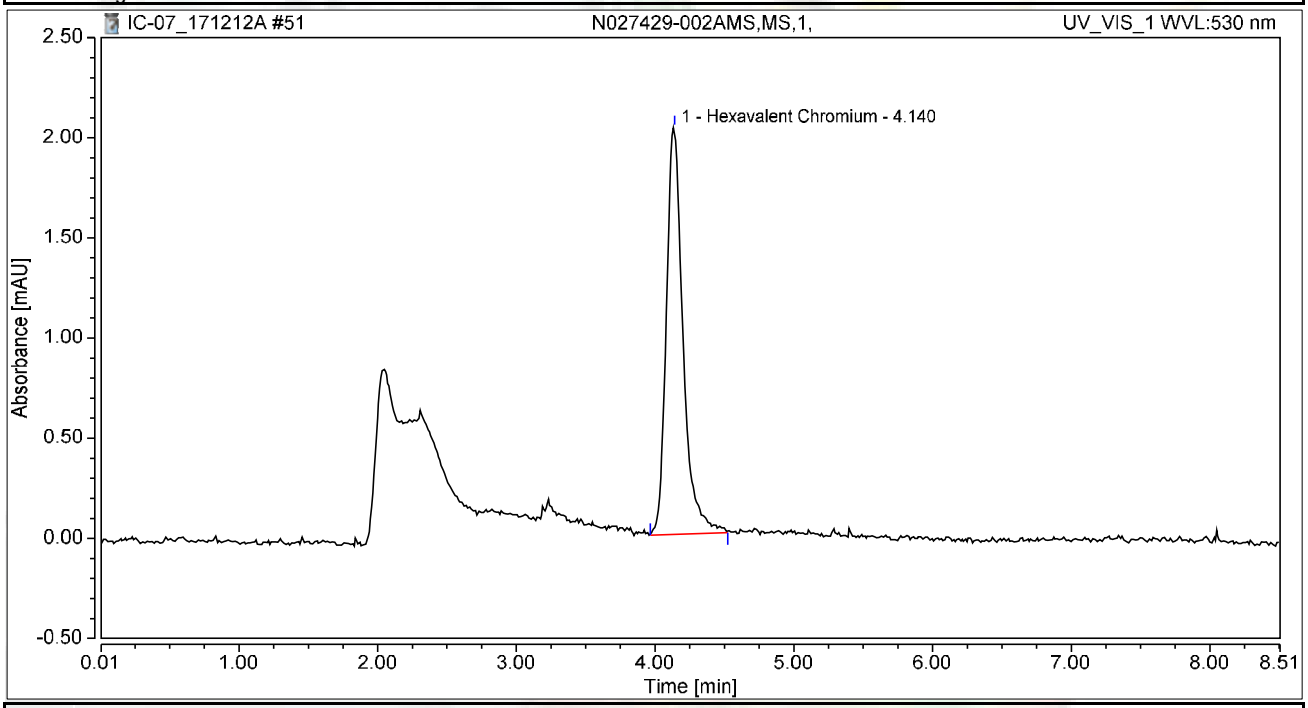
12/26/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027429-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 15:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

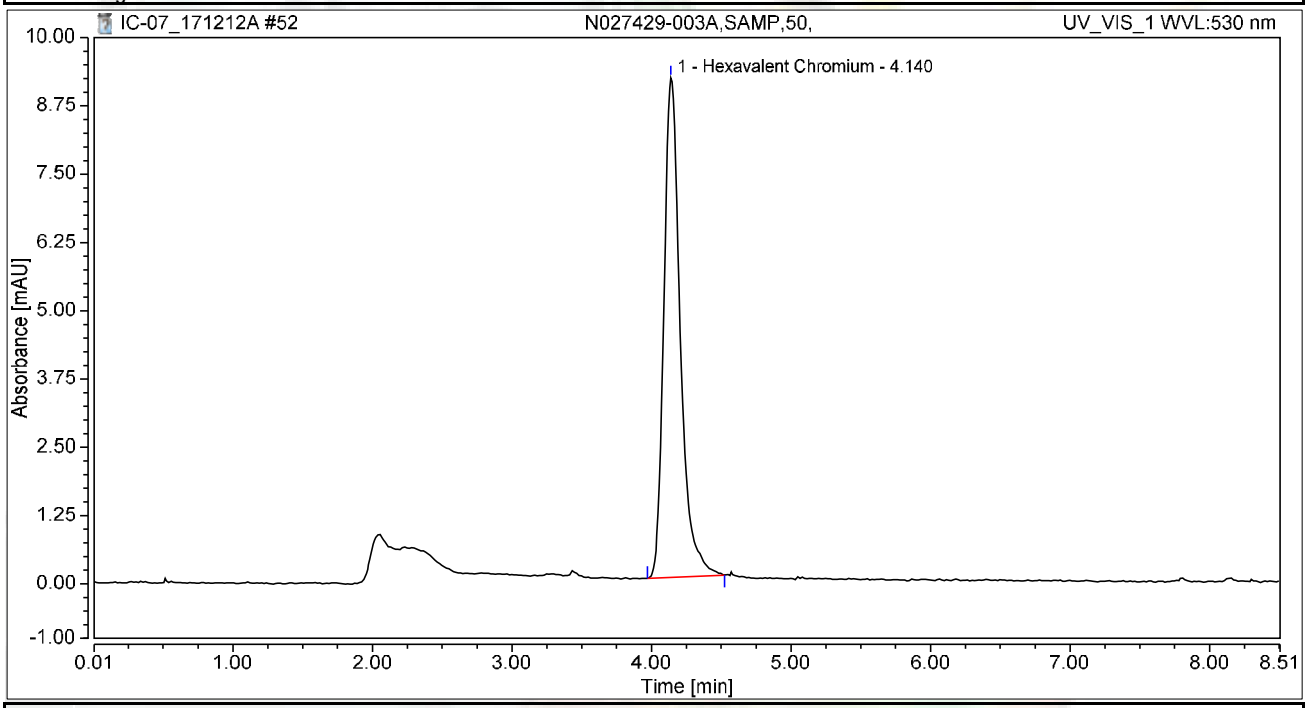
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.284	2.031	100.00	100.00	1.1317
Total:			**0.284**	**2.031**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-003A,SAMP,50,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 15:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

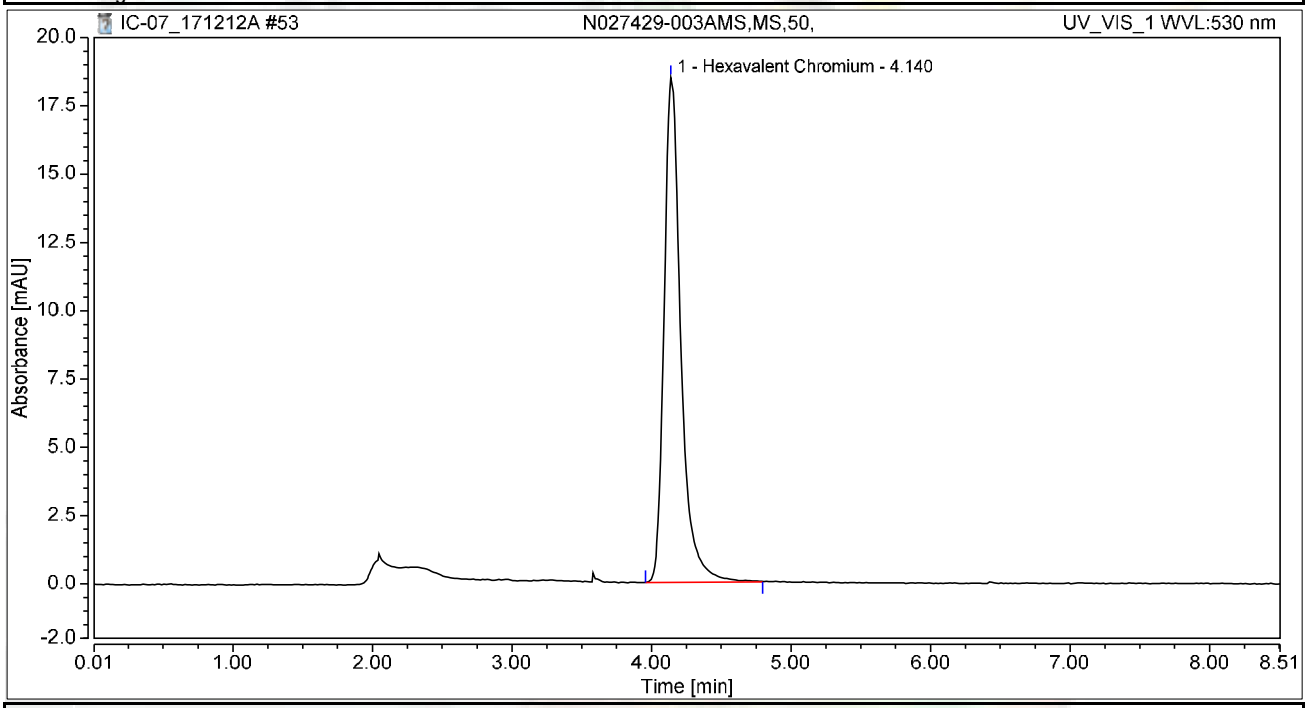
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.248	9.146	100.00	100.00	4.9708
Total:			**1.248**	**9.146**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-003AMS,MS,50,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 16:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

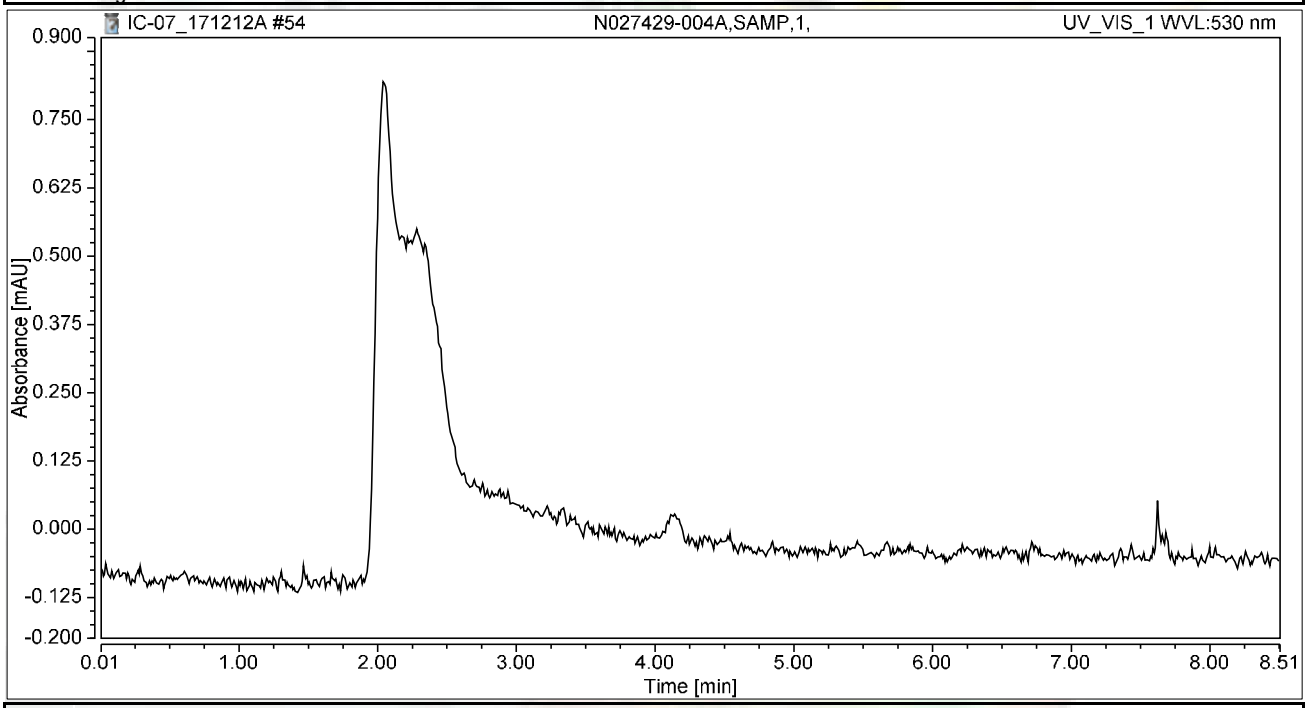
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.575	18.486	100.00	100.00	10.2538
Total:			**2.575**	**18.486**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

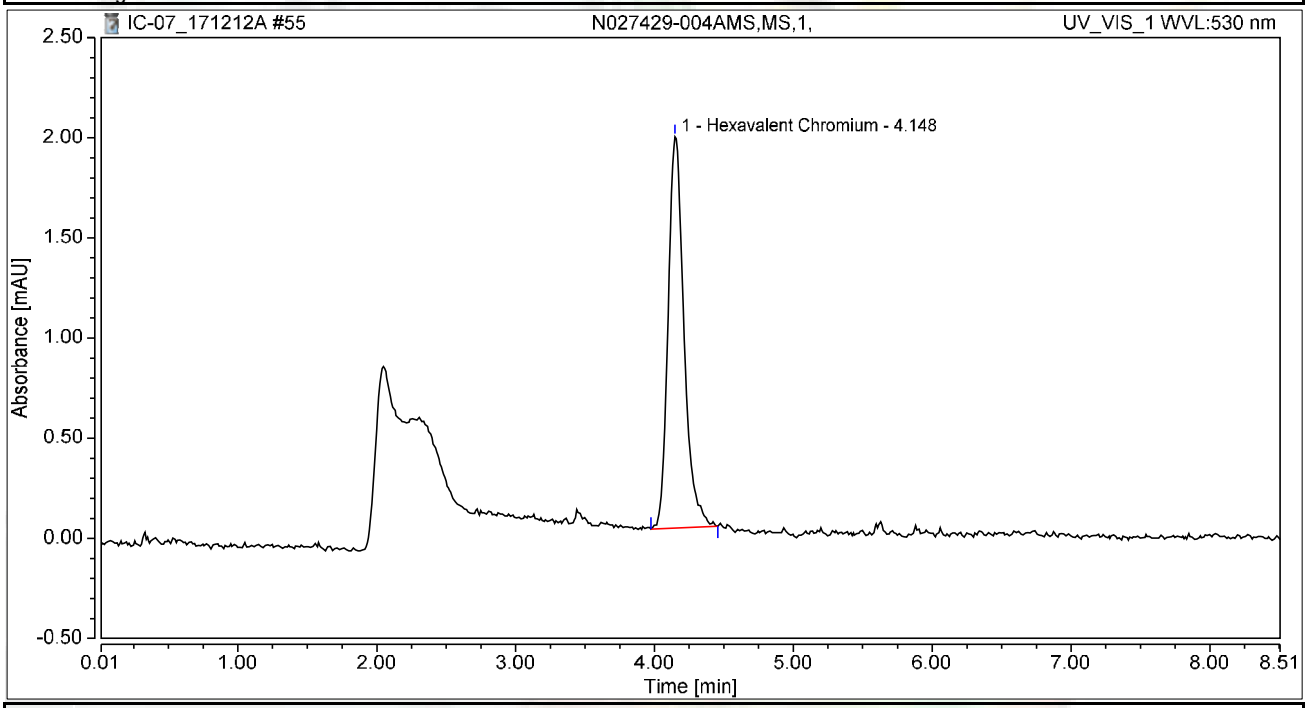
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-004AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 16:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

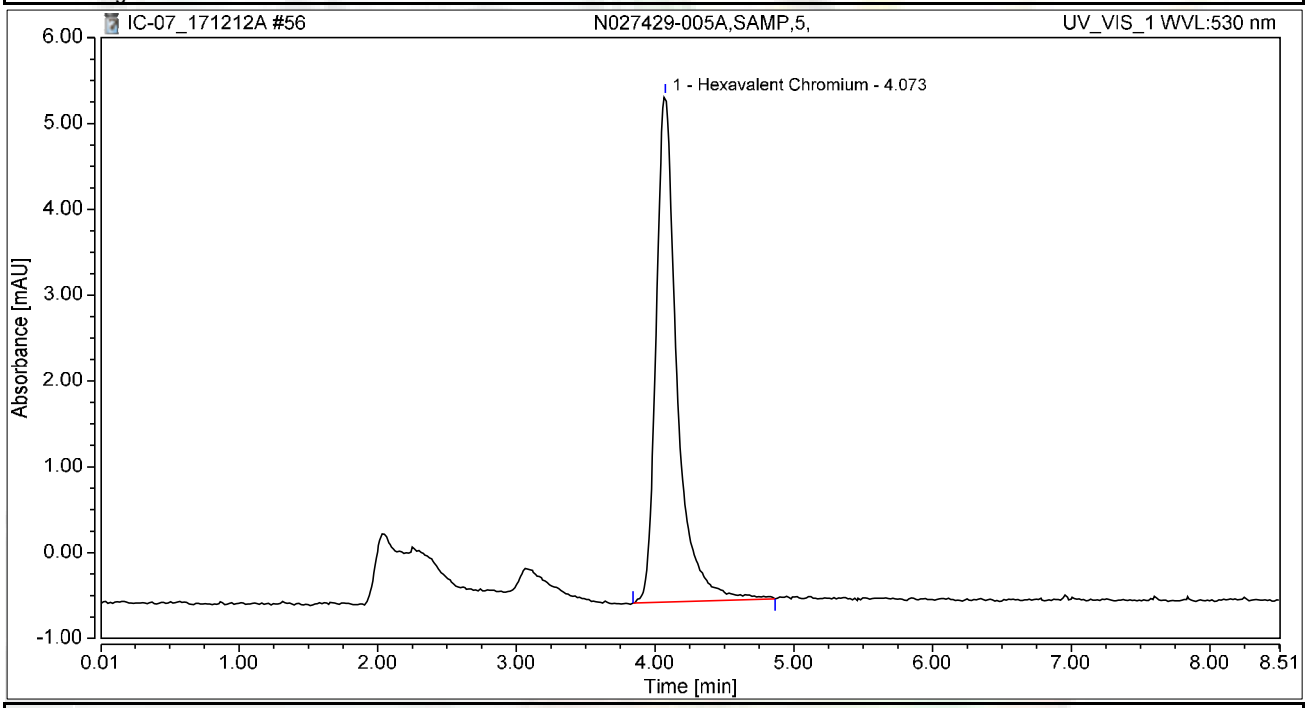
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.259	1.954	100.00	100.00	1.0327
Total:			**0.259**	**1.954**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-005A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 16:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

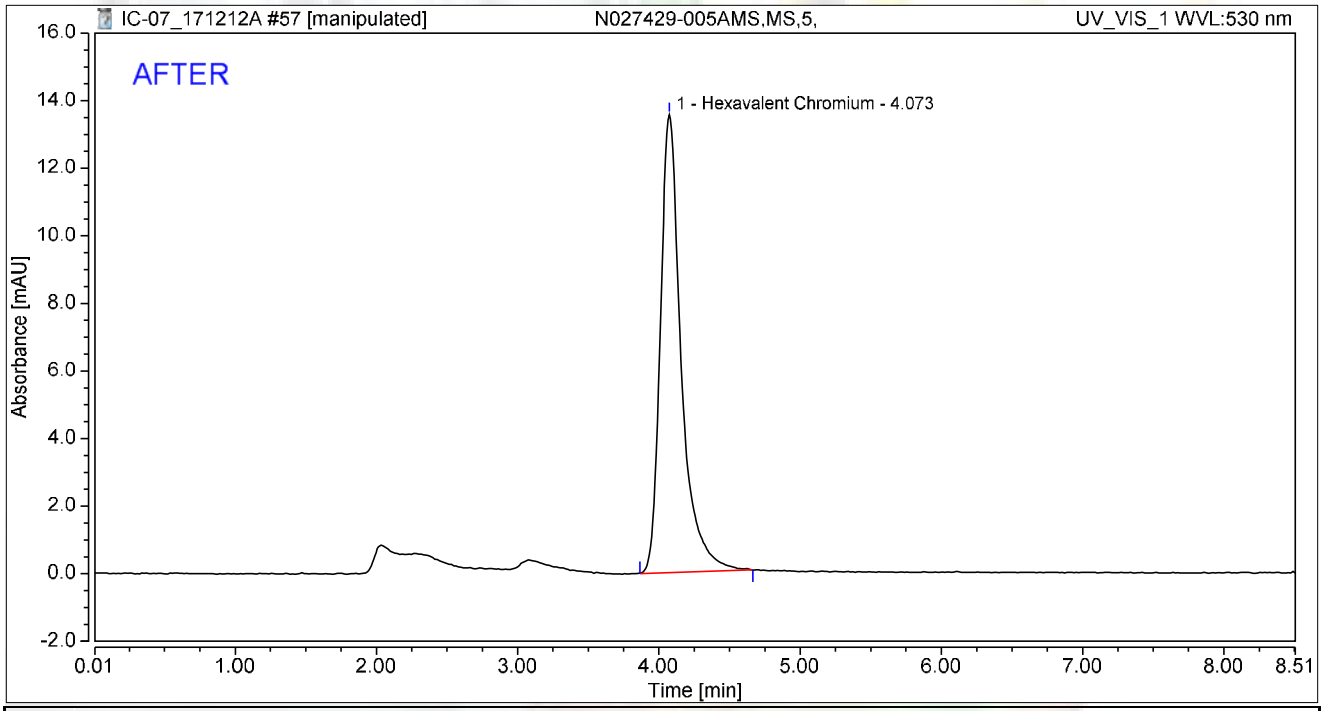
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	1.034	5.897	100.00	100.00	4.1198
Total:			**1.034**	**5.897**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 16:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	2.314	13.558	100.00	100.00	9.2145
Total:			**2.314**	**13.558**	**100.00**	**100.00**	

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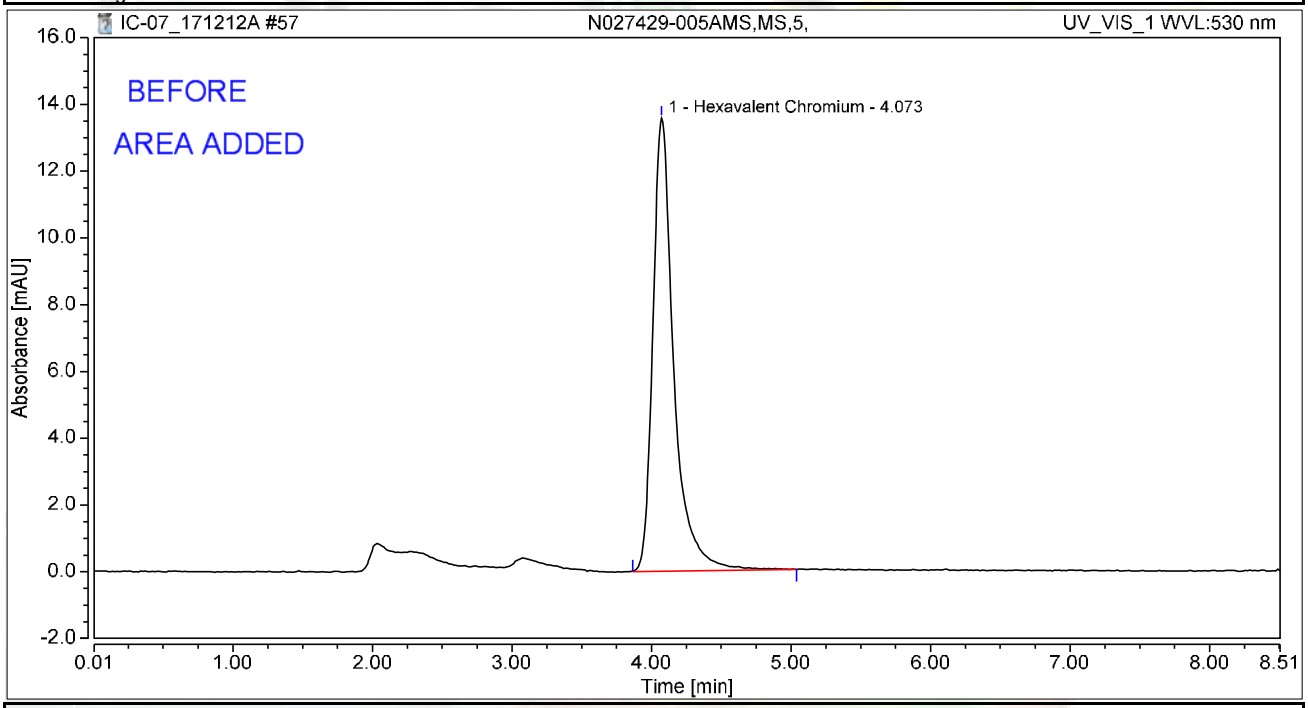
Chromatogram and Results

Injection Details

Injection Name:	**N027429-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 16:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	2.357	13.577	100.00	100.00	9.3872
Total:			**2.357**	**13.577**	**100.00**	**100.00**	

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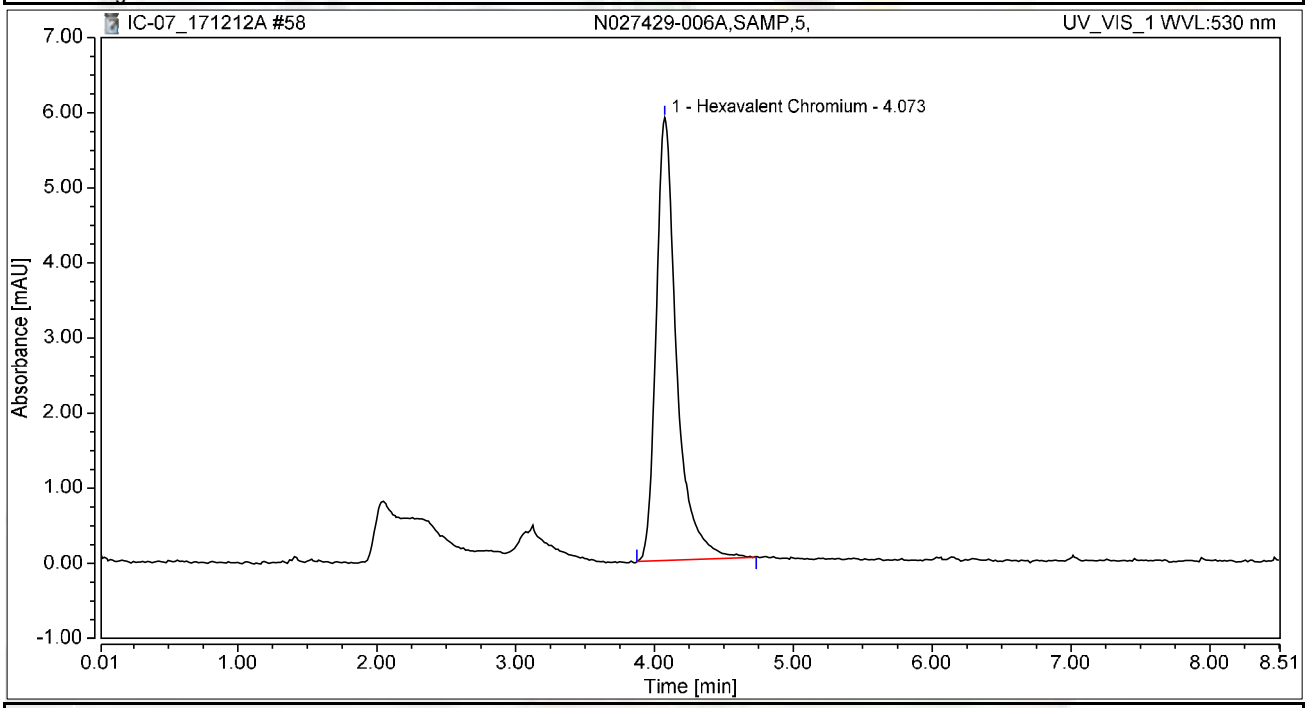
Chromatogram and Results

Injection Details

Injection Name:	**N027429-006A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 16:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

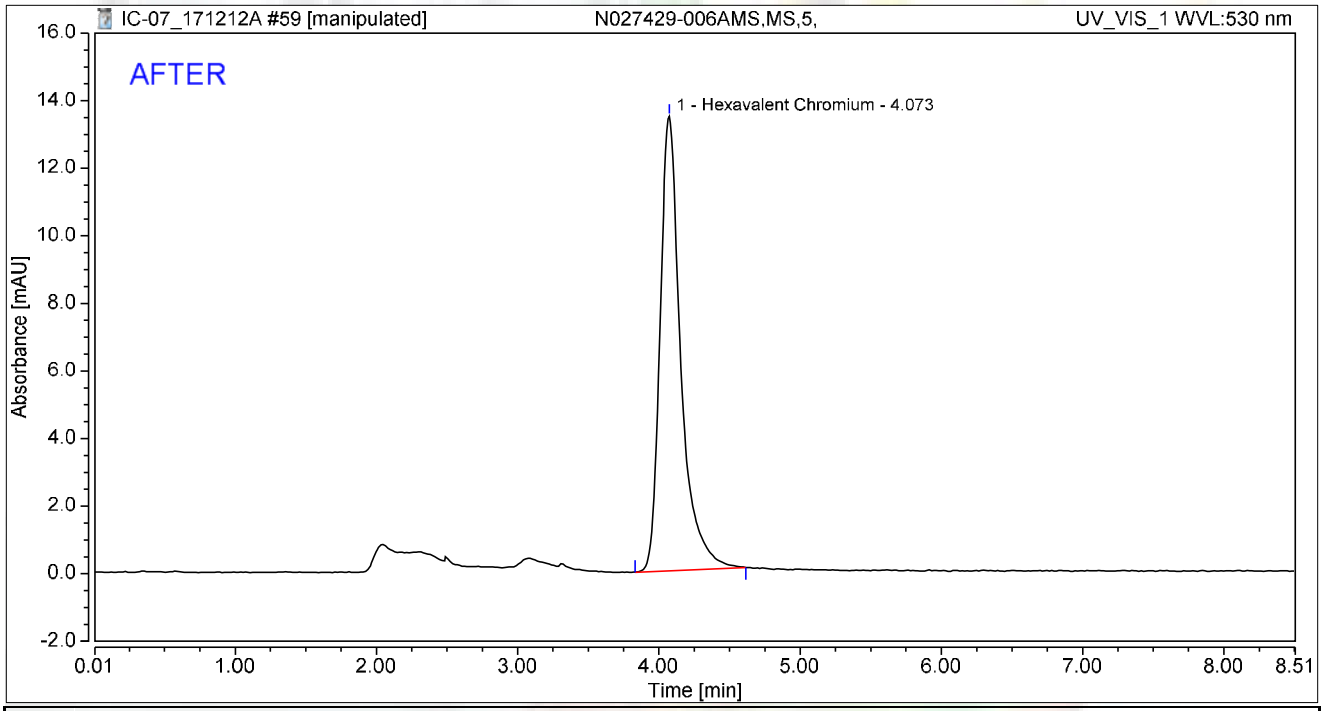
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	1.009	5.898	100.00	100.00	4.0191
Total:			**1.009**	**5.898**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-006AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 16:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	2.282	13.441	100.00	100.00	9.0883
Total:			**2.282**	**13.441**	**100.00**	**100.00**	

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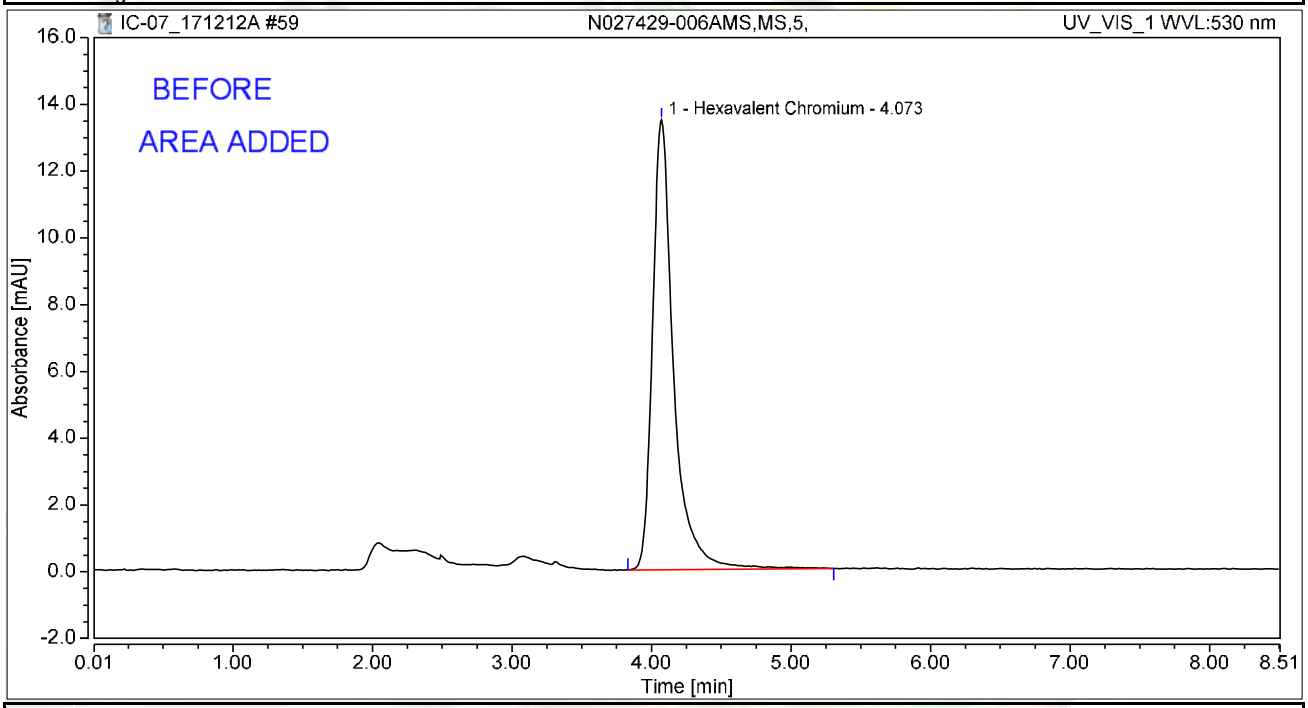
Chromatogram and Results

Injection Details

Injection Name:	**N027429-006AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 16:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	2.358	13.475	100.00	100.00	9.3923
Total:			**2.358**	**13.475**	**100.00**	**100.00**	

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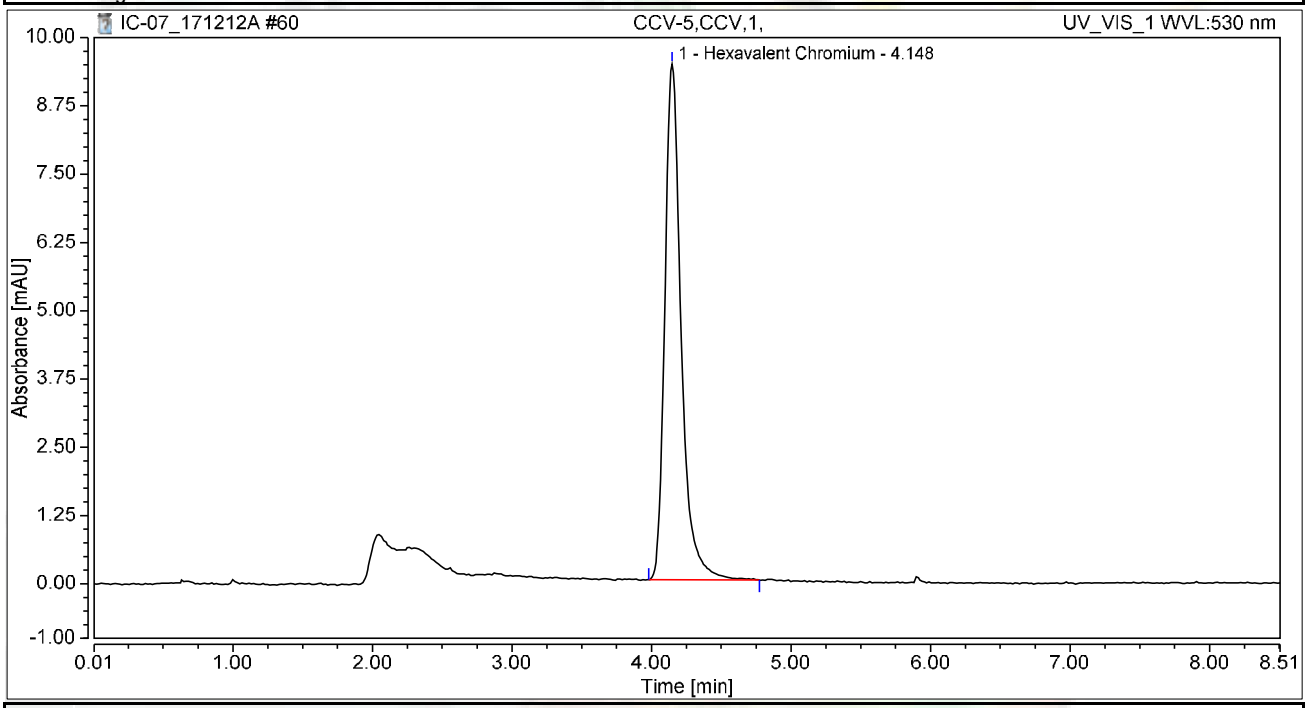
Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 17:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

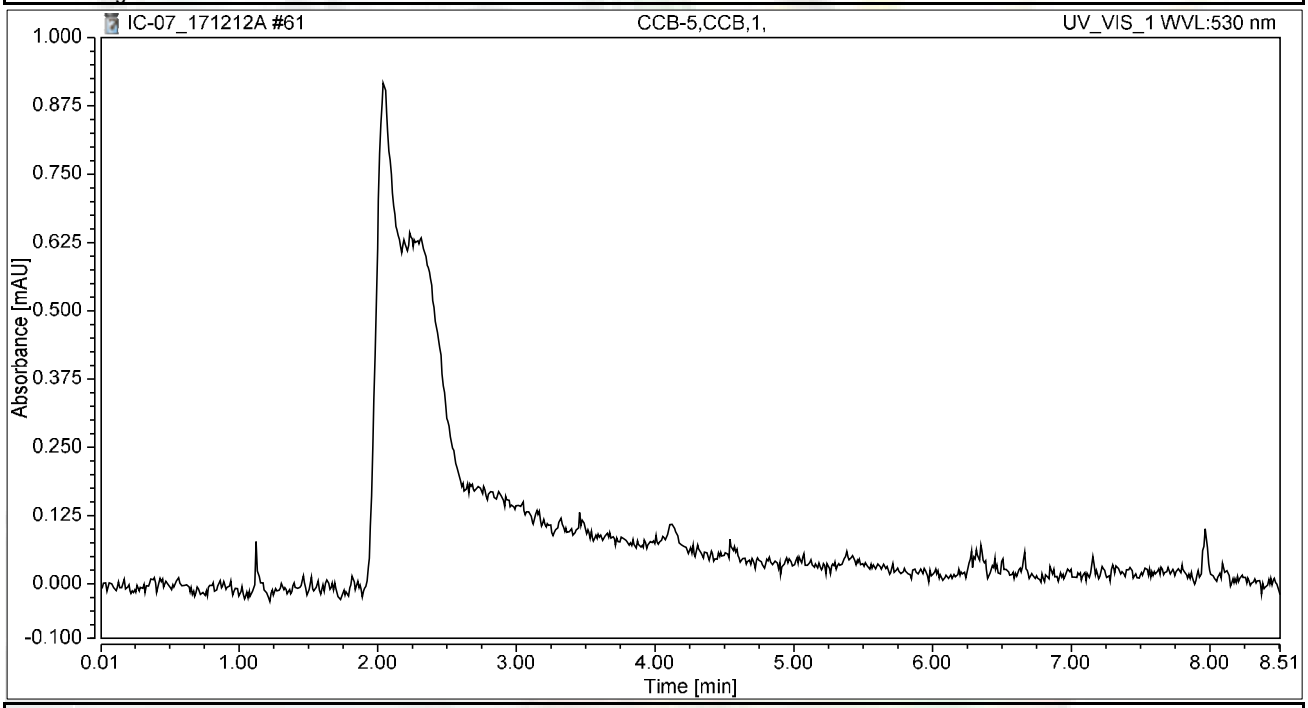
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.281	9.445	100.00	100.00	5.1023
Total:			**1.281**	**9.445**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 17:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

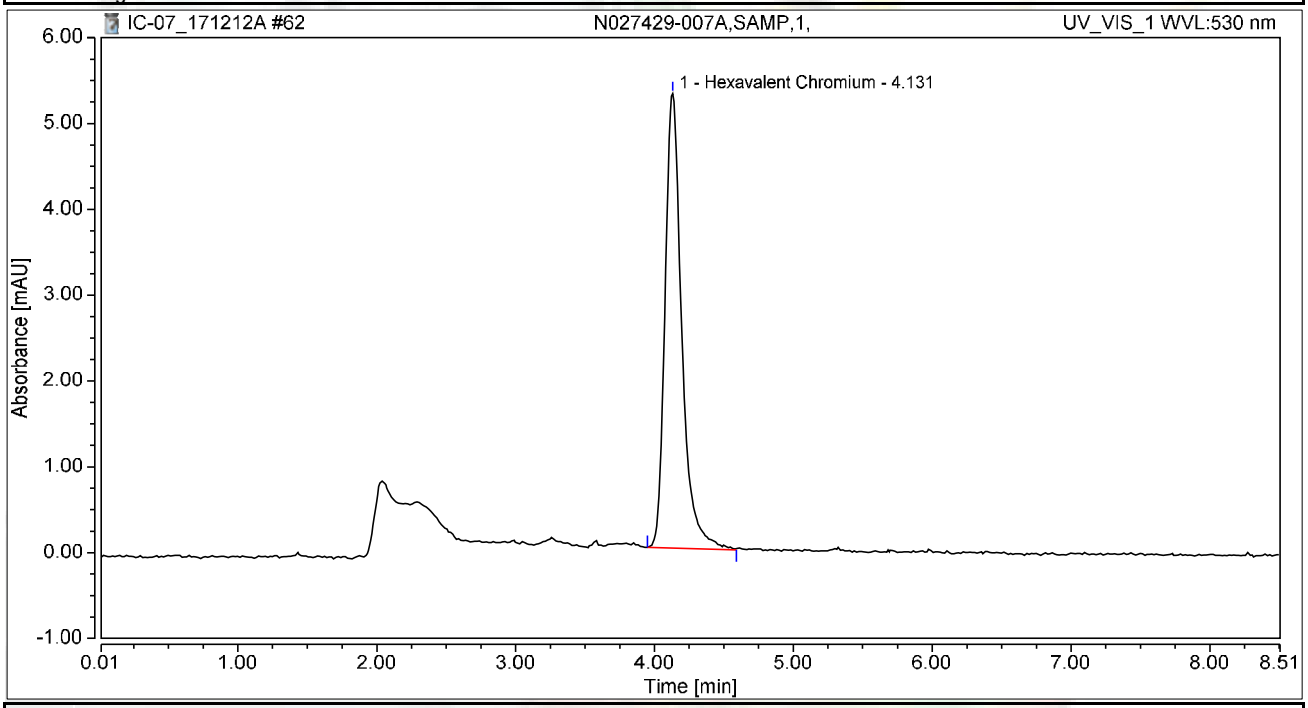
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-007A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 17:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

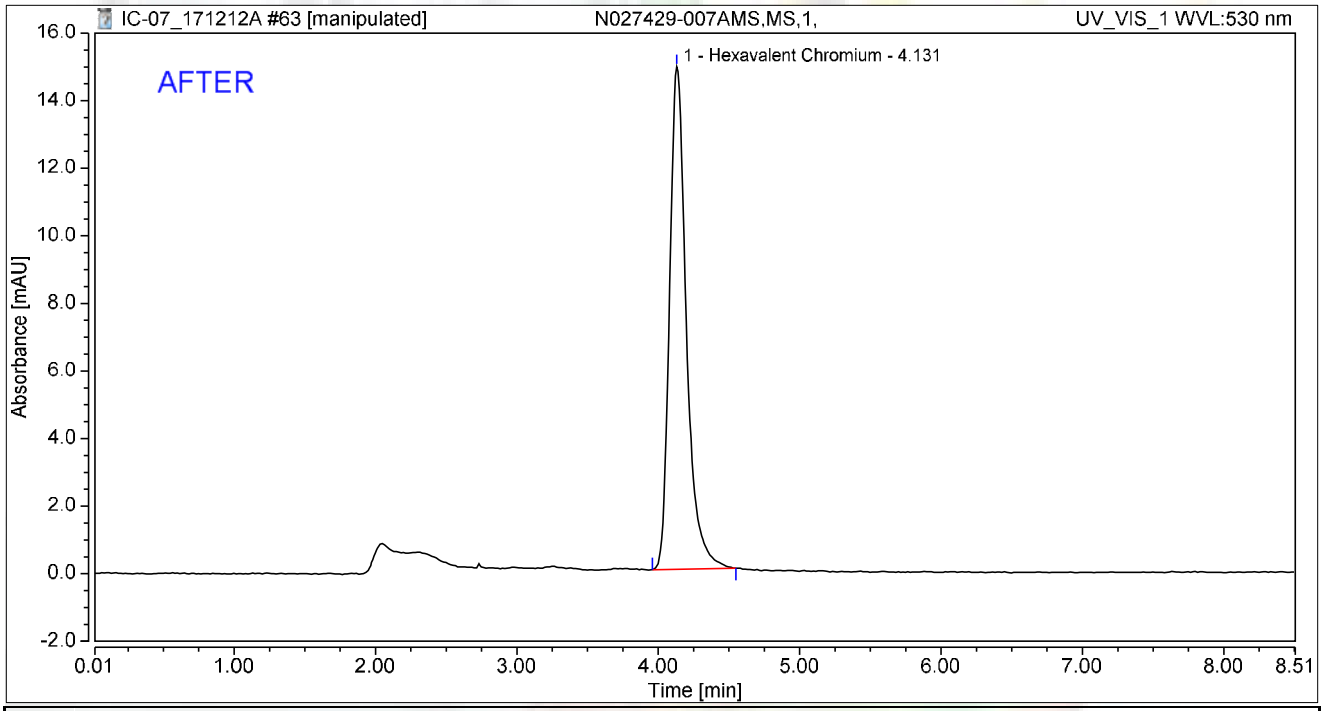
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.739	5.295	100.00	100.00	2.9449
Total:			**0.739**	**5.295**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-007AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 17:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.052	14.868	100.00	100.00	8.1706
Total:			**2.052**	**14.868**	**100.00**	**100.00**	

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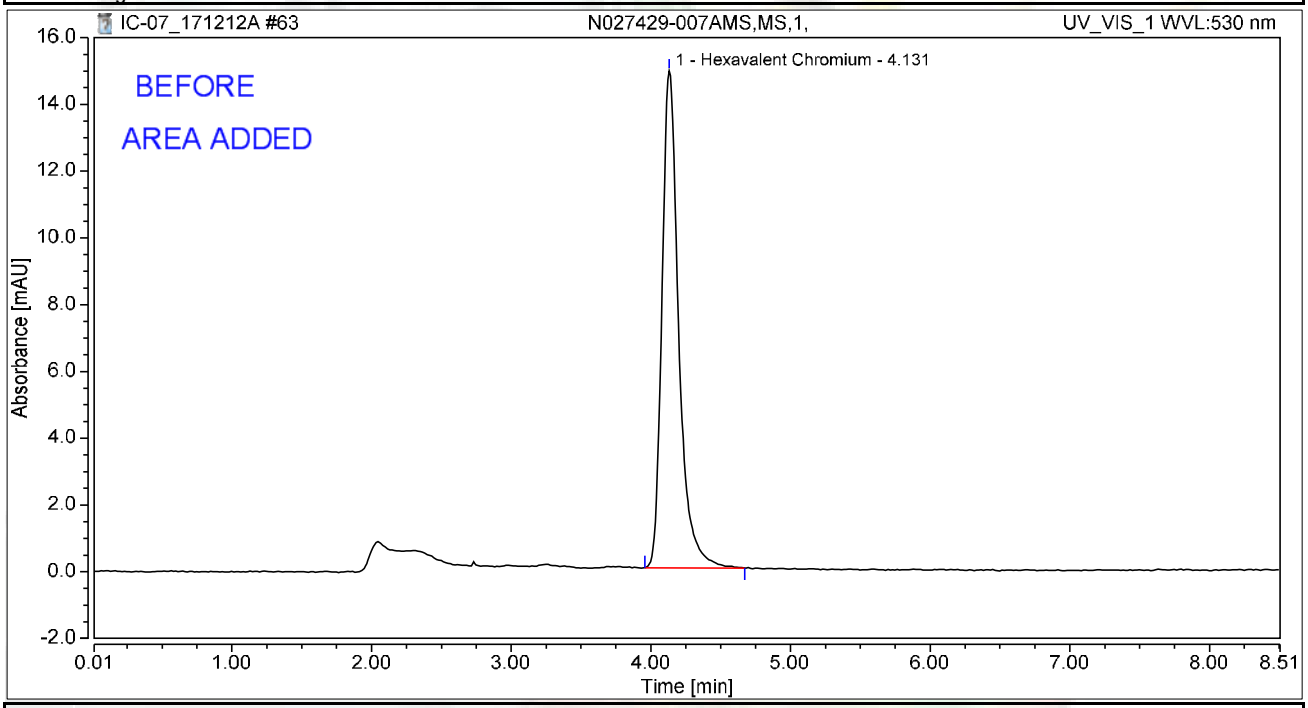
Chromatogram and Results

Injection Details

Injection Name:	**N027429-007AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 17:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.070	14.883	100.00	100.00	8.2457
Total:			**2.070**	**14.883**	**100.00**	**100.00**	

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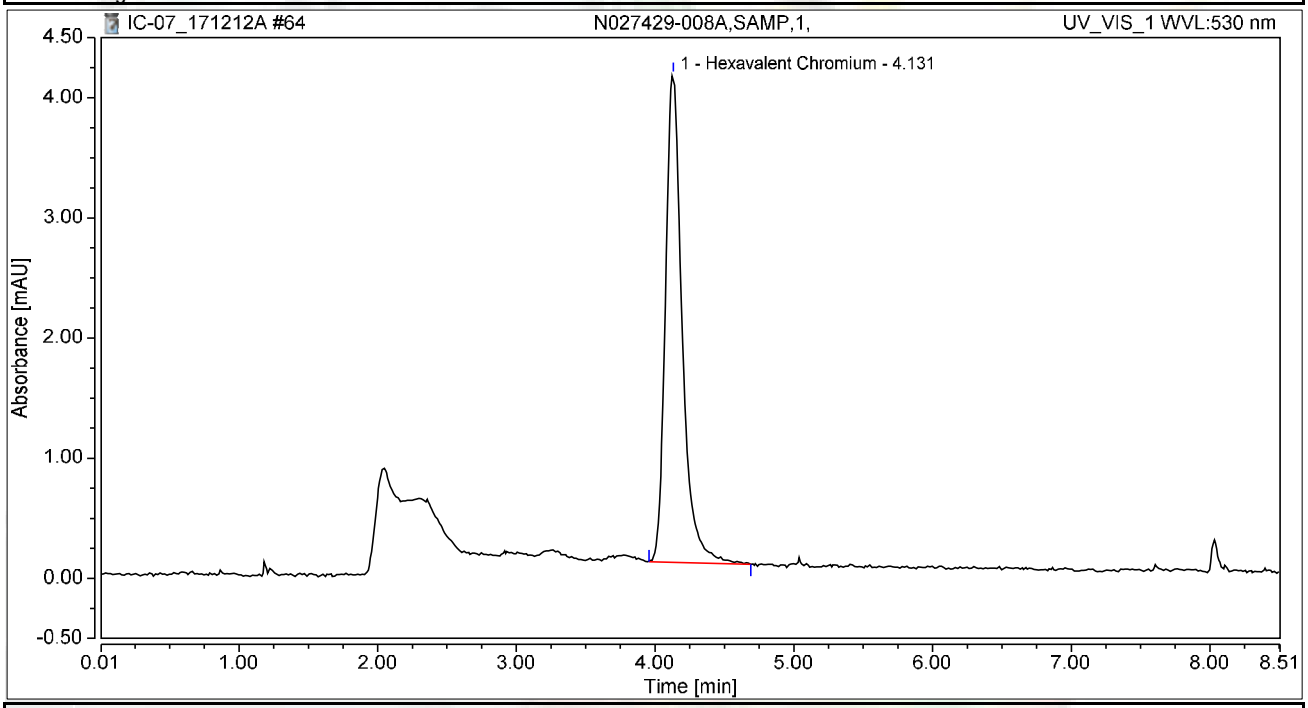
Chromatogram and Results

Injection Details

Injection Name:	**N027429-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 17:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

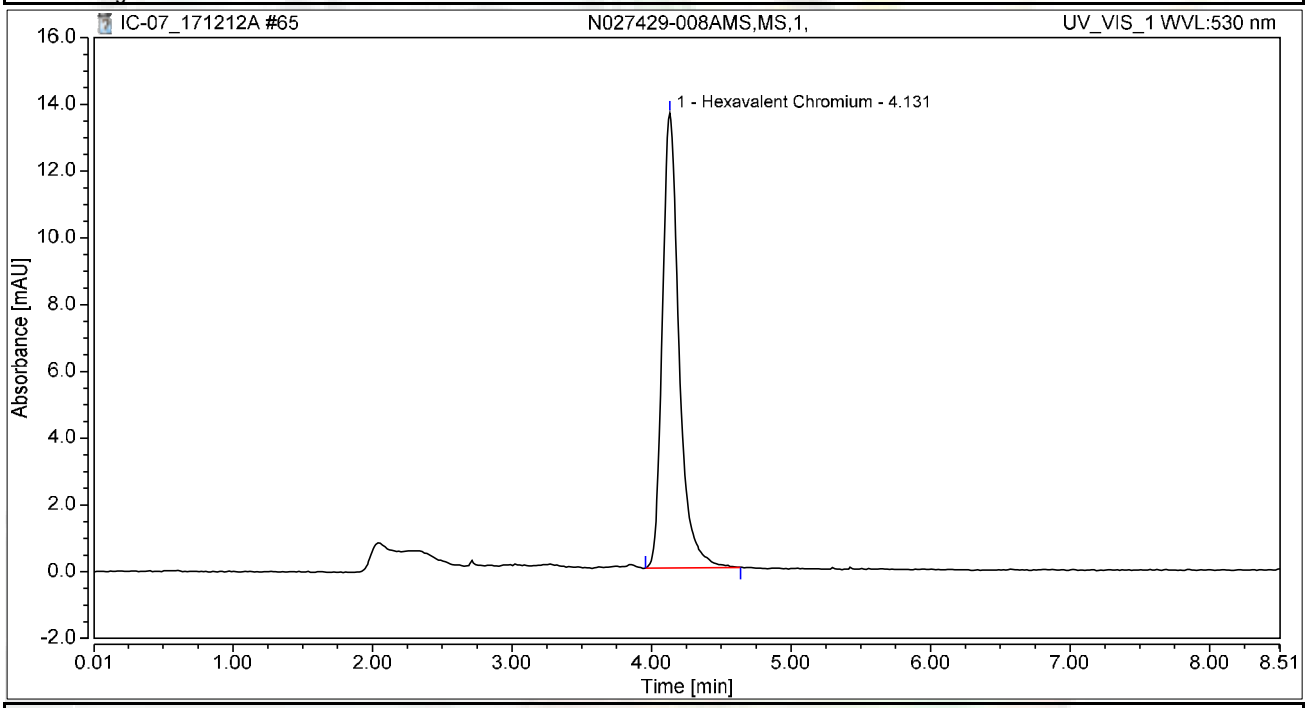
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.569	4.059	100.00	100.00	2.2658
Total:			**0.569**	**4.059**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 17:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

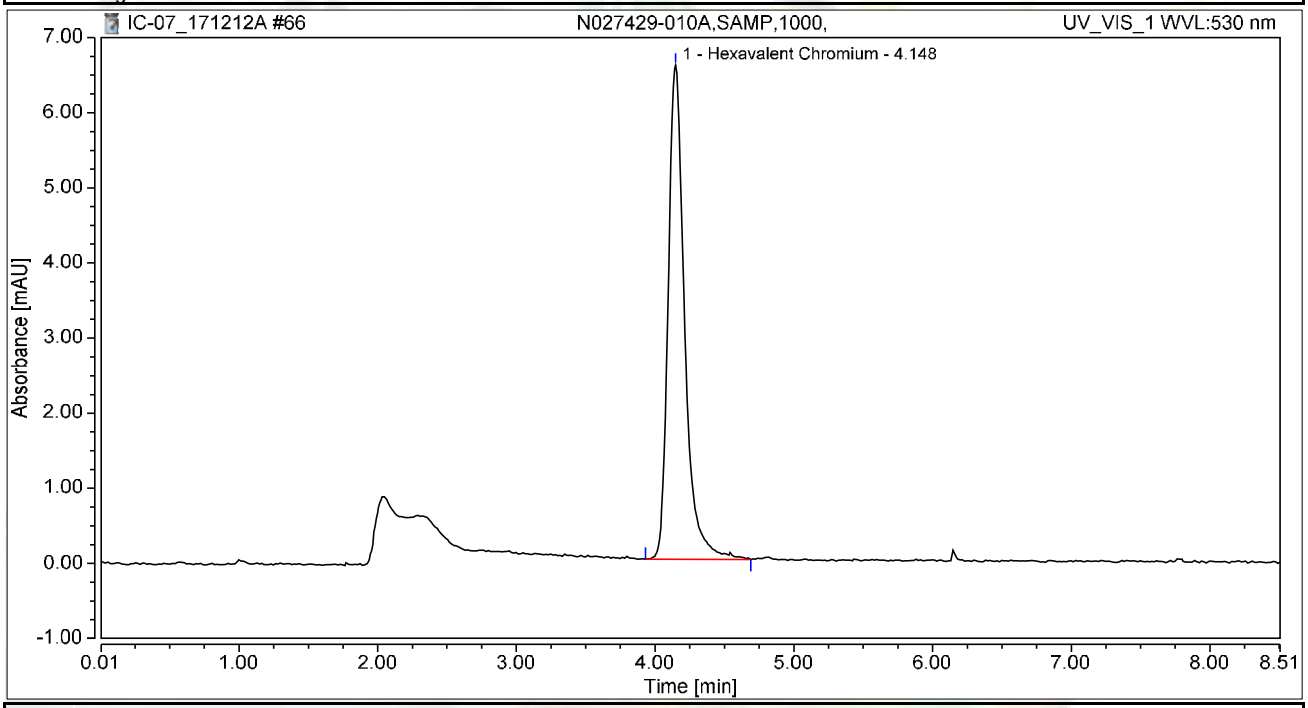
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.891	13.622	100.00	100.00	7.5297
Total:			**1.891**	**13.622**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-010A,SAMP,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 18:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

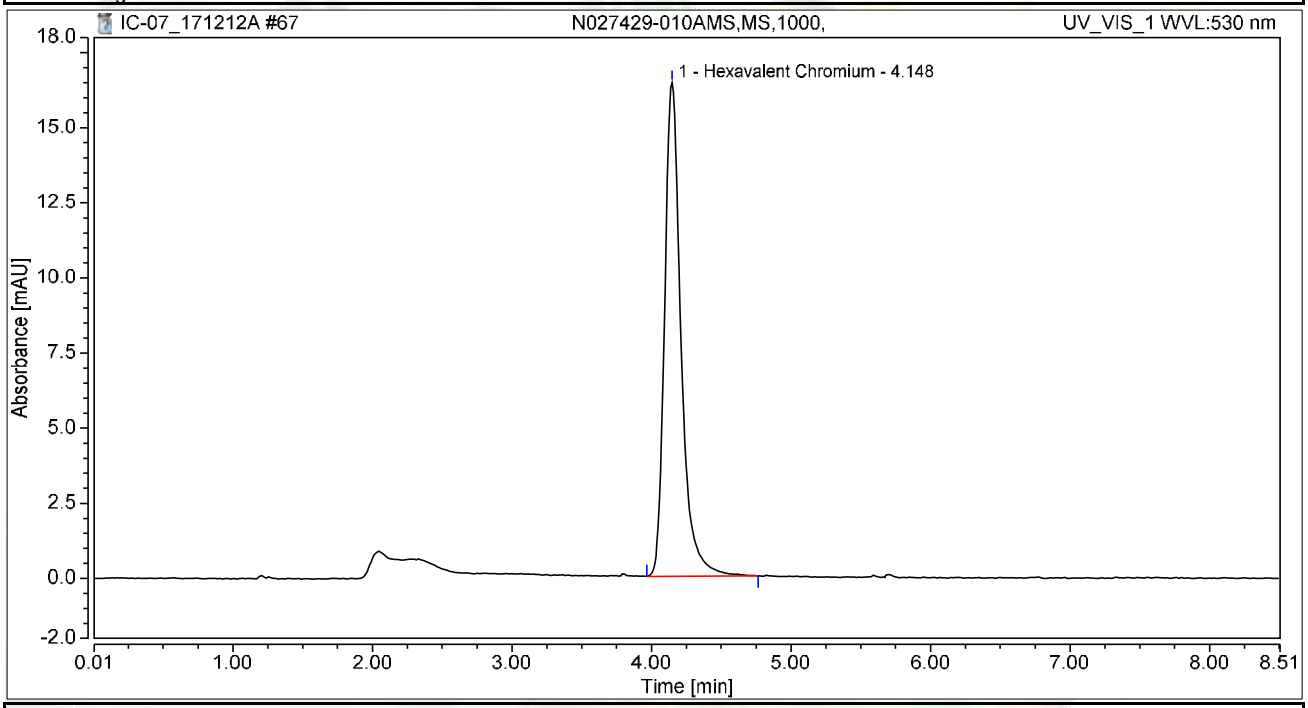
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.905	6.579	100.00	100.00	3.6031
Total:			**0.905**	**6.579**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-010AMS,MS,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 18:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

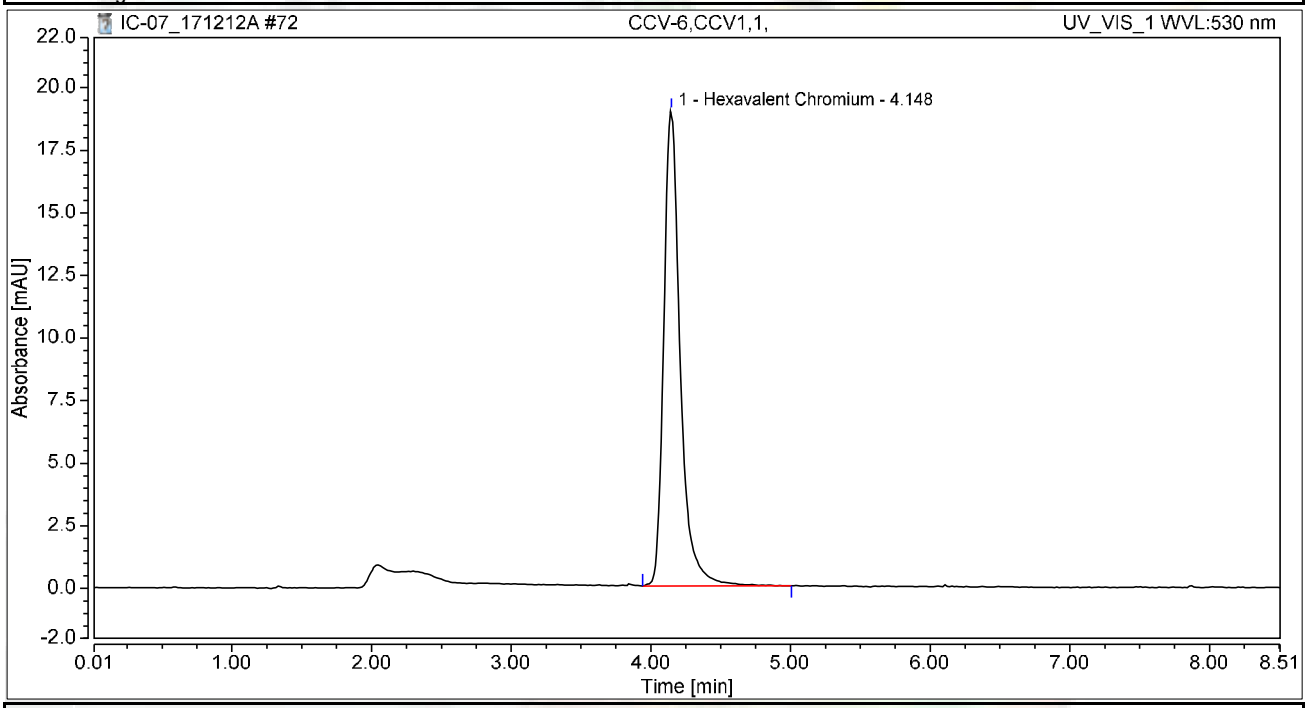
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.242	16.430	100.00	100.00	8.9273
Total:			**2.242**	**16.430**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 19:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

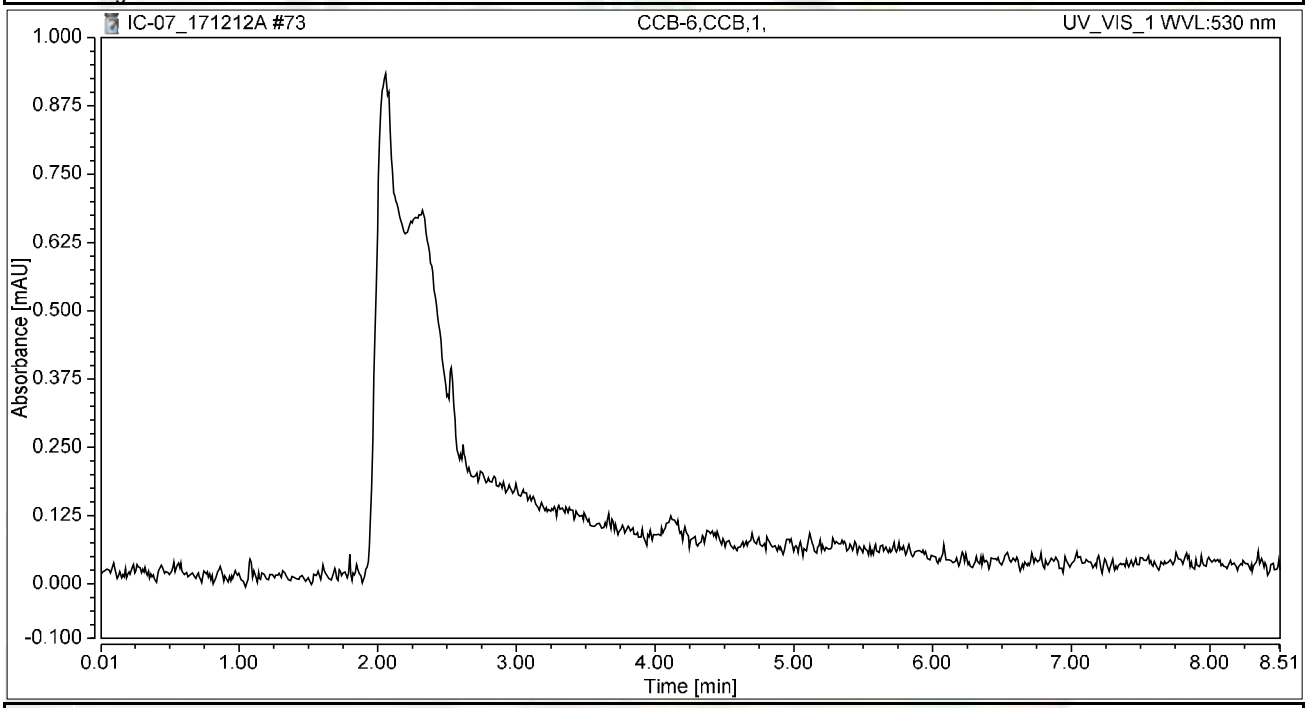
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.602	18.999	100.00	100.00	10.3617
Total:			**2.602**	**18.999**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 19:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 171213A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/13/17 8:02 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/13/17 8:13 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/13/17 8:22 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/13/17 8:32 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/13/17 8:41 AM	Reported
15	MB-R120837	MBLK	1	Hexavalent Chromium	12/13/17 8:51 AM	Reported
16	LCS-R120837	LCS	1	Hexavalent Chromium	12/13/17 9:00 AM	Reported
17	N027508-008A	SAMP	20	Hexavalent Chromium	12/13/17 9:28 AM	Reported
18	N027429-011A	SAMP	1	Hexavalent Chromium	12/13/17 9:39 AM	Reported
19	N027429-011AMS	MS	1	Hexavalent Chromium	12/13/17 9:48 AM	Reported
20	N027429-019A	SAMP	1	Hexavalent Chromium	12/13/17 9:58 AM	Reported
21	N027429-019AMS	MS	1	Hexavalent Chromium	12/13/17 10:07 AM	Reported
22	N027429-020A	SAMP	1	Hexavalent Chromium	12/13/17 10:17 AM	Not Reported
23	N027429-020AMS	MS	1	Hexavalent Chromium	12/13/17 10:26 AM	Not Reported
24	N027456-001A	SAMP	100	Hexavalent Chromium	12/13/17 10:36 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/13/17 10:45 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/13/17 10:55 AM	Reported
27	N027429-012A	SAMP	20	Hexavalent Chromium	12/13/17 11:04 AM	Reported
28	N027429-012AMS	MS	20	Hexavalent Chromium	12/13/17 11:14 AM	Reported
29	N027429-013A	SAMP	20	Hexavalent Chromium	12/13/17 11:23 AM	Reported
30	N027429-013AMS	MS	20	Hexavalent Chromium	12/13/17 11:32 AM	Reported
31	N027429-014A	SAMP	20	Hexavalent Chromium	12/13/17 11:42 AM	Reported
32	N027429-014AMS	MS	20	Hexavalent Chromium	12/13/17 11:51 AM	Reported
33	N027429-015A	SAMP	10	Hexavalent Chromium	12/13/17 12:01 PM	Reported
34	N027429-015AMS	MS	10	Hexavalent Chromium	12/13/17 12:10 PM	Reported
35	N027429-020A	SAMP	5	Hexavalent Chromium	12/13/17 12:20 PM	Reported
36	N027429-020AMS	MS	5	Hexavalent Chromium	12/13/17 12:29 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/13/17 12:39 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/13/17 12:48 PM	Reported
39	N027456-002A	SAMP	10	Hexavalent Chromium	12/13/17 12:58 PM	Not Reported
40	N027429-016A	SAMP	5	Hexavalent Chromium	12/13/17 1:07 PM	Reported
41	N027429-016AMS	MS	5	Hexavalent Chromium	12/13/17 1:17 PM	Reported
42	N027429-017A	SAMP	5	Hexavalent Chromium	12/13/17 1:26 PM	Reported

INJECTION LOG: 171213A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027429-017AMS	MS	5	Hexavalent Chromium	12/13/17 1:35 PM	Reported
44	N027429-018A	SAMP	5	Hexavalent Chromium	12/13/17 1:45 PM	Reported
45	N027429-018AMS	MS	5	Hexavalent Chromium	12/13/17 1:54 PM	Reported
46	N027456-001ADUP	DUP	100	Hexavalent Chromium	12/13/17 2:04 PM	Reported
47	N027429-013AMSD	MSD	20	Hexavalent Chromium	12/13/17 2:13 PM	Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	12/13/17 2:23 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	12/13/17 2:32 PM	Reported
50	N027518-001D	SAMP	1	Hexavalent Chromium	12/13/17 2:42 PM	Reported
51	N027456-002A	SAMP	1	Hexavalent Chromium	12/13/17 2:51 PM	Reported
52	LCS-R120838	LCS	1	Hexavalent Chromium	12/13/17 3:08 PM	Reported
53	MB-R120838	MBLK	1	Hexavalent Chromium	12/13/17 3:19 PM	Reported
54	N027535-001A	SAMP	200	Hexavalent Chromium	12/13/17 3:46 PM	Reported
55	N027535-001AMS	MS	200	Hexavalent Chromium	12/13/17 3:58 PM	Reported
56	N027535-001AMSD	MSD	200	Hexavalent Chromium	12/13/17 4:07 PM	Reported
57	N027535-011A	SAMP	2000	Hexavalent Chromium	12/13/17 4:17 PM	Reported
58	N027535-011AMS	MS	2000	Hexavalent Chromium	12/13/17 4:26 PM	Reported
59	N027535-015A	SAMP	2000	Hexavalent Chromium	12/13/17 4:36 PM	Reported
60	CCV-5	CCV	1	Hexavalent Chromium	12/13/17 4:45 PM	Reported
61	CCB-5	CCB	1	Hexavalent Chromium	12/13/17 4:55 PM	Reported
62	N027535-015ADUP	DUP	2000	Hexavalent Chromium	12/13/17 5:04 PM	Reported
63	N027535-002A	SAMP	1000	Hexavalent Chromium	12/13/17 5:14 PM	Reported
64	N027535-003A	SAMP	1000	Hexavalent Chromium	12/13/17 5:23 PM	Reported
65	N027535-004A	SAMP	1000	Hexavalent Chromium	12/13/17 5:32 PM	Reported
66	N027535-005A	SAMP	1000	Hexavalent Chromium	12/13/17 5:42 PM	Reported
67	N027535-006A	SAMP	1000	Hexavalent Chromium	12/13/17 5:51 PM	Reported
68	N027535-007A	SAMP	2000	Hexavalent Chromium	12/13/17 6:01 PM	Reported
69	N027535-008A	SAMP	2000	Hexavalent Chromium	12/13/17 6:10 PM	Reported
70	N027535-009A	SAMP	2000	Hexavalent Chromium	12/13/17 6:20 PM	Reported
71	N027535-010A	SAMP	2000	Hexavalent Chromium	12/13/17 6:29 PM	Reported
72	CCV-6	CCV1	1	Hexavalent Chromium	12/13/17 6:39 PM	Reported
73	CCB-6	CCB	1	Hexavalent Chromium	12/13/17 6:48 PM	Reported
74	N027535-016A	SAMP	1	Hexavalent Chromium	12/13/17 6:58 PM	Reported
75	N027535-012A	SAMP	2000	Hexavalent Chromium	12/13/17 7:07 PM	Reported
76	N027535-013A	SAMP	2000	Hexavalent Chromium	12/13/17 7:17 PM	Reported
77	N027535-014A	SAMP	2000	Hexavalent Chromium	12/13/17 7:26 PM	Reported
78	N027535-017A	SAMP	1000	Hexavalent Chromium	12/13/17 7:35 PM	Reported
79	CCV-7	CCV	1	Hexavalent Chromium	12/13/17 7:45 PM	Reported
80	CCB-7	CCB	1	Hexavalent Chromium	12/13/17 7:54 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171213A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**13/Dec/17 20:25:13**
No. of Injections:	**83**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/13/2017 08:02	Finished	BLANK
11	BLANK	2	1000	Unknown		12/13/2017 08:13	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/13/2017 08:22	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	5	1000	Unknown		12/13/2017 08:32	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	6	1000	Unknown		12/13/2017 08:41	Finished	CCB R171129A
15	MB-H2O,MBLK,1	7	1000	Unknown		12/13/2017 08:51	Finished	MB R171129A
16	LCS-H2O,LCS,1	8	1000	Unknown		12/13/2017 09:00	Finished	LCS, IWST-171002B
17	N027508-008A,SAMF	1	1000	Unknown		12/13/2017 09:28	Finished	SAMP,0.5>10mL
18	N027429-011A,SAMF	2	1000	Unknown		12/13/2017 09:39	Finished	MS (1ppb), IWST-171002B,10
19	N027429-011AMS,MS	3	1000	Unknown		12/13/2017 09:48	Finished	SAMP,10mL
20	N027429-019A,SAMF	4	1000	Unknown		12/13/2017 09:58	Finished	MS (1ppb), IWST-171002B,10
21	N027429-019AMS,MS	5	1000	Unknown		12/13/2017 10:07	Finished	SAMP,10mL
22	N027429-020A,SAMF	6	1000	Unknown		12/13/2017 10:17	Finished	MS (1ppb), IWST-171002B,10
23	N027429-020AMS,MS	7	1000	Unknown		12/13/2017 10:26	Finished	SAMP,10mL
24	N027456-001A,SAMF	8	1000	Unknown		12/13/2017 10:36	Finished	SAMP,0.1>10mL
25	CCV-2,CCV1,1,	9	1000	Unknown		12/13/2017 10:45	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	10	1000	Unknown		12/13/2017 10:55	Finished	CCB R171129A
27	N027429-012A,SAMF	11	1000	Unknown		12/13/2017 11:04	Finished	SAMP,0.5>10mL
28	N027429-012AMS,MS	12	1000	Unknown		12/13/2017 11:14	Finished	MS (5ppb), IWST-171002B,0.5
29	N027429-013A,SAMF	13	1000	Unknown		12/13/2017 11:23	Finished	SAMP,0.5>10mL
30	N027429-013AMS,MS	14	1000	Unknown		12/13/2017 11:32	Finished	MS (5ppb), IWST-171002B,0.5
31	N027429-014A,SAMF	15	1000	Unknown		12/13/2017 11:42	Finished	SAMP,0.5>10mL
32	N027429-014AMS,MS	16	1000	Unknown		12/13/2017 11:51	Finished	MS (5ppb), IWST-171002B,0.5
33	N027429-015A,SAMF	17	1000	Unknown		12/13/2017 12:01	Finished	SAMP,1>10mL
34	N027429-015AMS,MS	18	1000	Unknown		12/13/2017 12:10	Finished	MS (5ppb), IWST-171002B,1>1
35	N027429-020A,SAMF	19	1000	Unknown		12/13/2017 12:20	Finished	SAMP,2>10mL
36	N027429-020AMS,MS	20	1000	Unknown		12/13/2017 12:29	Finished	MS (1ppb), IWST-171002B,2>1
37	CCV-3,CCV,1,	21	1000	Unknown		12/13/2017 12:39	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	22	1000	Unknown		12/13/2017 12:48	Finished	CCB R171129A
39	N027456-002A,SAMF	23	1000	Unknown		12/13/2017 12:58	Finished	SAMP,1>10mL
40	N027429-016A,SAMF	24	1000	Unknown		12/13/2017 13:07	Finished	SAMP,2>10mL
41	N027429-016AMS,MS	25	1000	Unknown		12/13/2017 13:17	Finished	MS (5ppb), IWST-171002B,2>1
42	N027429-017A,SAMF	26	1000	Unknown		12/13/2017 13:26	Finished	SAMP,2>10mL
43	N027429-017AMS,MS	27	1000	Unknown		12/13/2017 13:35	Finished	MS (5ppb), IWST-171002B,2>1
44	N027429-018A,SAMF	28	1000	Unknown		12/13/2017 13:45	Finished	SAMP,2>10mL
45	N027429-018AMS,MS	29	1000	Unknown		12/13/2017 13:54	Finished	MS (5ppb), IWST-171002B,2>1
46	N027456-001ADUP,D	30	1000	Unknown		12/13/2017 14:04	Finished	DUP,0.1>10mL
47	N027429-013AMSD,M	31	1000	Unknown		12/13/2017 14:13	Finished	MSD (5ppb), IWST-171002B,0.
48	CCV-4,CCV1,1,	32	1000	Unknown		12/13/2017 14:23	Finished	CCV @10ppb, IWST-171002A
49	CCB-4,CCB,1,	33	1000	Unknown		12/13/2017 14:32	Finished	CCB R171129A
50	N027518-001D,SAMF	34	1000	Unknown		12/13/2017 14:42	Finished	SAMP,10mL
51	N027456-002A,SAMF	35	1000	Unknown		12/13/2017 14:51	Finished	SAMP,10mL
52	LCS-2,LCS,1	1	1000	Unknown		12/13/2017 15:08	Finished	LCS, IWST-171002B
53	MB-2,MBLK,1	2	1000	Unknown		12/13/2017 15:19	Finished	MB R171129A
54	N027535-001A,SAMF	4	1000	Unknown		12/13/2017 15:46	Finished	SAMP,0.05>10mL
55	N027535-001AMS,MS	5	1000	Unknown		12/13/2017 15:58	Finished	MS (5ppb), IWST-171002B,0.0
56	N027535-001AMSD,M	6	1000	Unknown		12/13/2017 16:07	Finished	MSD (5ppb), IWST-171002B,0.
57	N027535-011A,SAMF	7	1000	Unknown		12/13/2017 16:17	Finished	SAMP,0.005>10mL
58	N027535-011AMS,MS	8	1000	Unknown		12/13/2017 16:26	Finished	MS (5ppb), IWST-171002B,0.0
59	N027535-015A,SAMF	9	1000	Unknown		12/13/2017 16:36	Finished	SAMP,0.005>10mL
60	CCV-5,CCV,1,	10	1000	Unknown		12/13/2017 16:45	Finished	CCV @5ppb, IWST-171002A

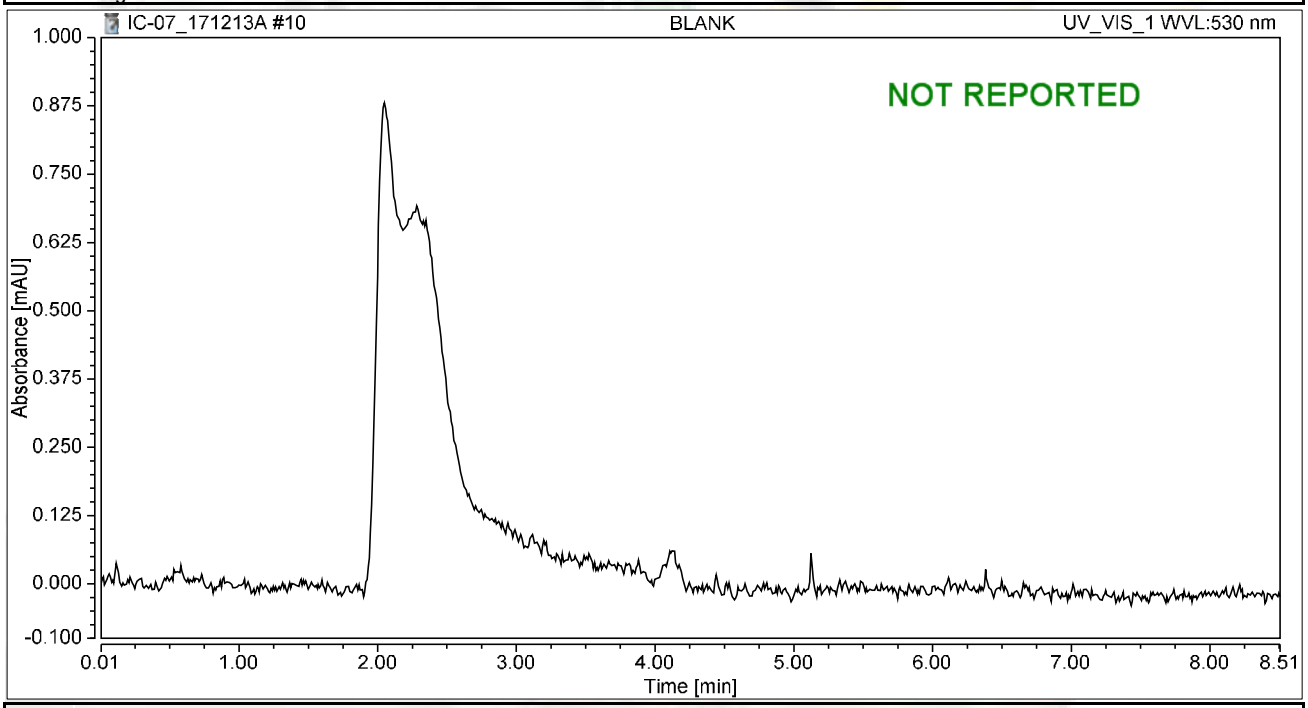
61	CCB-5,CCB,1,	11	1000	Unknown		12/13/2017 16:55	Finished	CCB R171129A
62	N027535-015ADUP,D	12	1000	Unknown		12/13/2017 17:04	Finished	DUP,0.005>10mL
63	N027535-002A,SAMP	13	1000	Unknown		12/13/2017 17:14	Finished	SAMP,0.01>10mL
64	N027535-003A,SAMP	14	1000	Unknown		12/13/2017 17:23	Finished	SAMP,0.01>10mL
65	N027535-004A,SAMP	15	1000	Unknown		12/13/2017 17:32	Finished	SAMP,0.01>10mL
66	N027535-005A,SAMP	16	1000	Unknown		12/13/2017 17:42	Finished	SAMP,0.01>10mL
67	N027535-006A,SAMP	17	1000	Unknown		12/13/2017 17:51	Finished	SAMP,0.01>10mL
68	N027535-007A,SAMP	18	1000	Unknown		12/13/2017 18:01	Finished	SAMP,0.005>10mL
69	N027535-008A,SAMP	19	1000	Unknown		12/13/2017 18:10	Finished	SAMP,0.005>10mL
70	N027535-009A,SAMP	20	1000	Unknown		12/13/2017 18:20	Finished	SAMP,0.005>10mL
71	N027535-010A,SAMP	21	1000	Unknown		12/13/2017 18:29	Finished	SAMP,0.005>10mL
72	CCV-6,CCV1,1,	22	1000	Unknown		12/13/2017 18:39	Finished	CCV @10ppb, IWST-171002A
73	CCB-6,CCB,1,	23	1000	Unknown		12/13/2017 18:48	Finished	CCB R171129A
74	N027535-016A,SAMP	24	1000	Unknown		12/13/2017 18:58	Finished	SAMP,10mL
75	N027535-012A,SAMP	25	1000	Unknown		12/13/2017 19:07	Finished	SAMP,0.005>10mL
76	N027535-013A,SAMP	26	1000	Unknown		12/13/2017 19:17	Finished	SAMP,0.005>10mL
77	N027535-014A,SAMP	27	1000	Unknown		12/13/2017 19:26	Finished	SAMP,0.005>10mL
78	N027535-017A,SAMP	28	1000	Unknown		12/13/2017 19:35	Finished	SAMP,0.01>10mL
79	CCV-7,CCV,1,	29	1000	Unknown		12/13/2017 19:45	Finished	CCV @5ppb, IWST-171002A
80	CCB-7,CCB,1,	30	1000	Unknown		12/13/2017 19:54	Finished	CCB R171114C
81	SHUTDOWN	31	1000	Unknown		12/13/2017 20:04	Finished	
82	Eluent: R171212A	32	1000	Unknown		n.a.	Finished	Eluent
83	PCR: R171212B	33	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 08:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

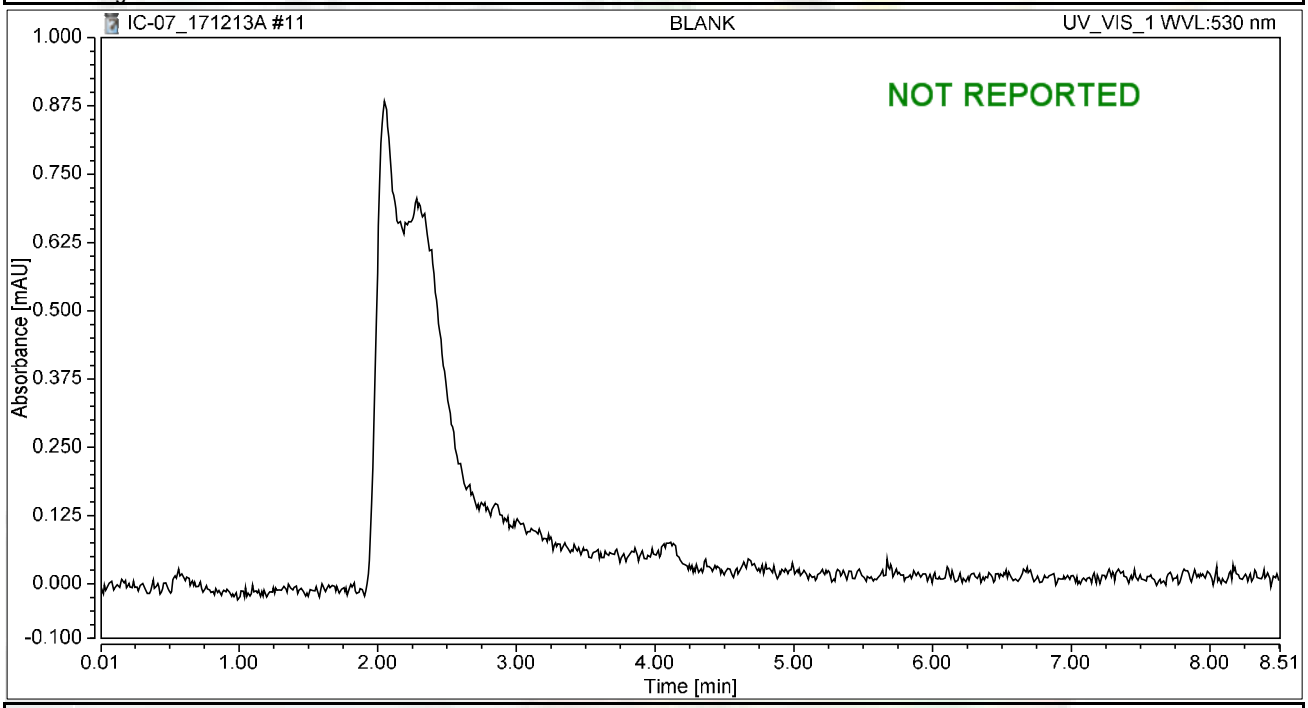
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 08:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

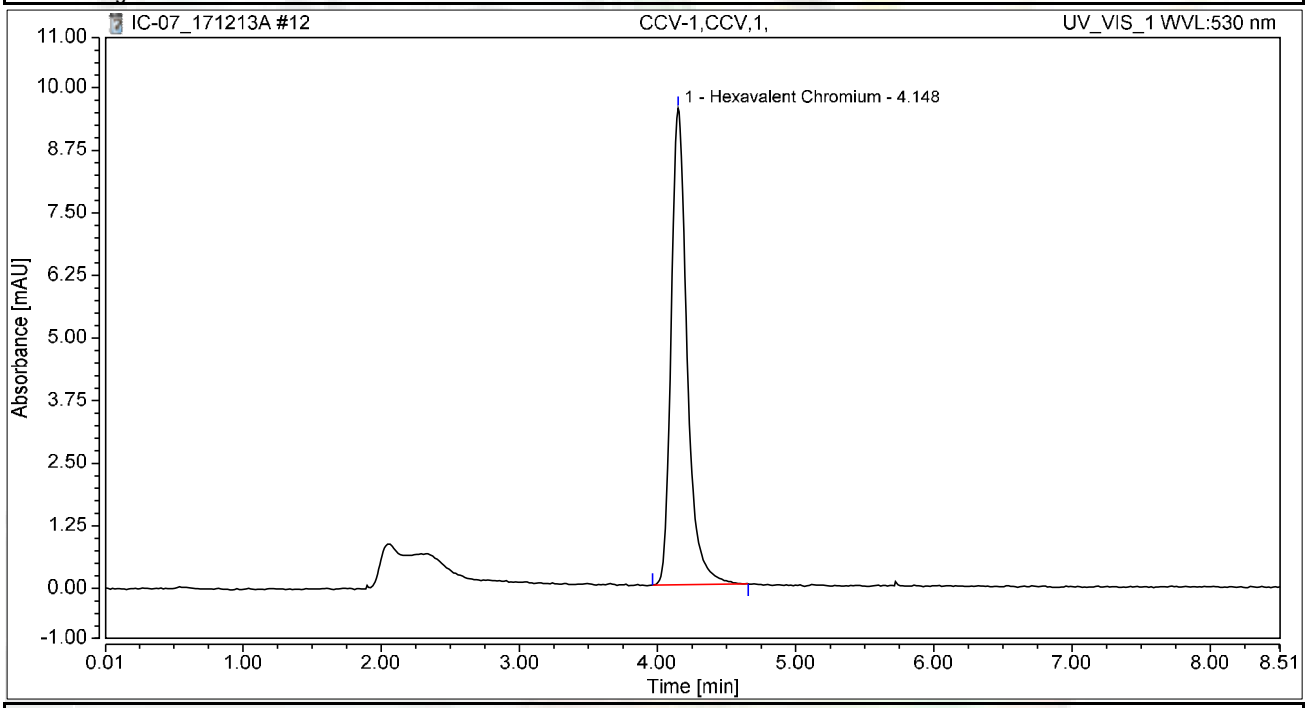
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 08:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

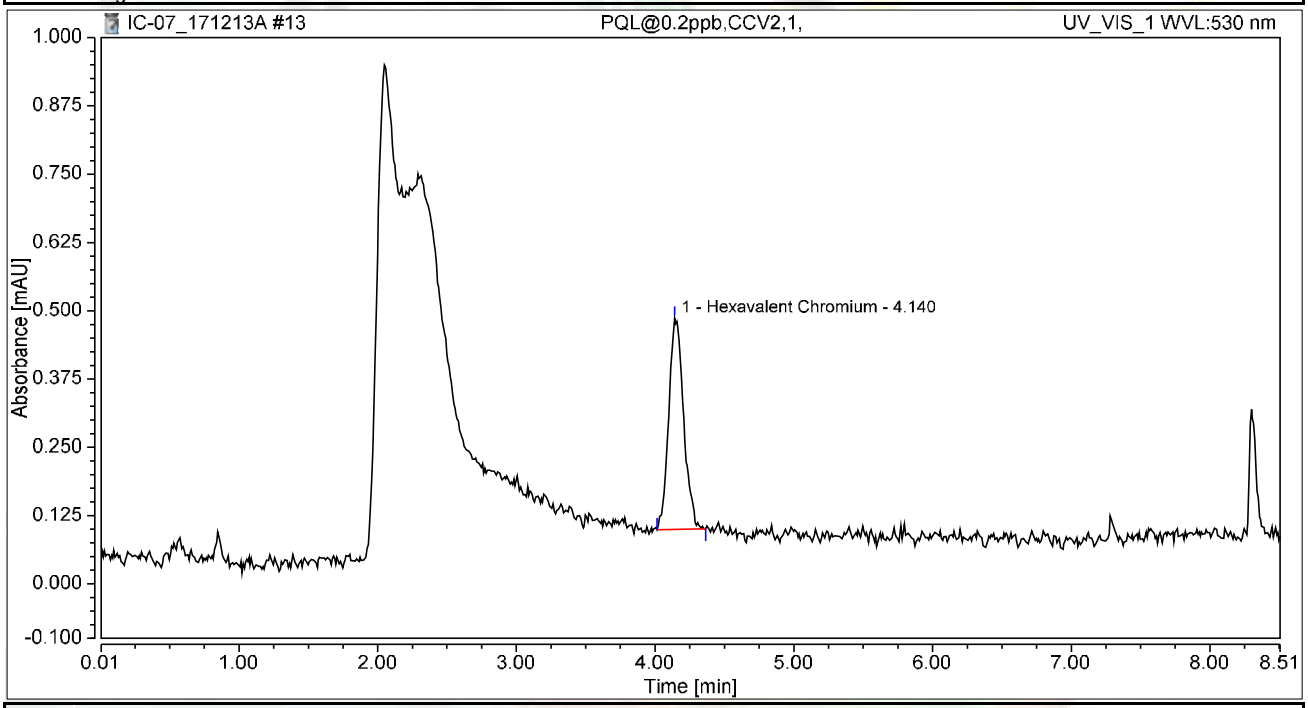
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.275	9.519	100.00	100.00	5.0784
Total:			**1.275**	**9.519**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 08:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

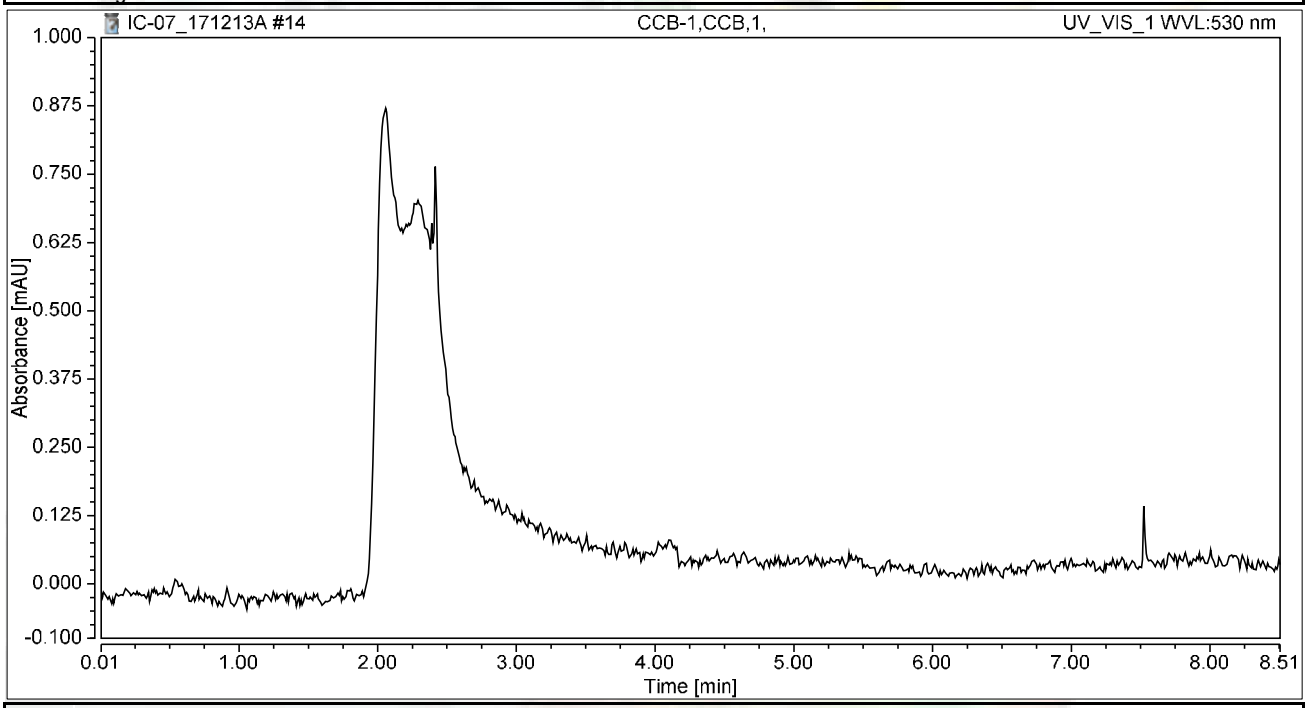
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.048	0.387	100.00	100.00	0.1919
Total:			**0.048**	**0.387**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 08:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

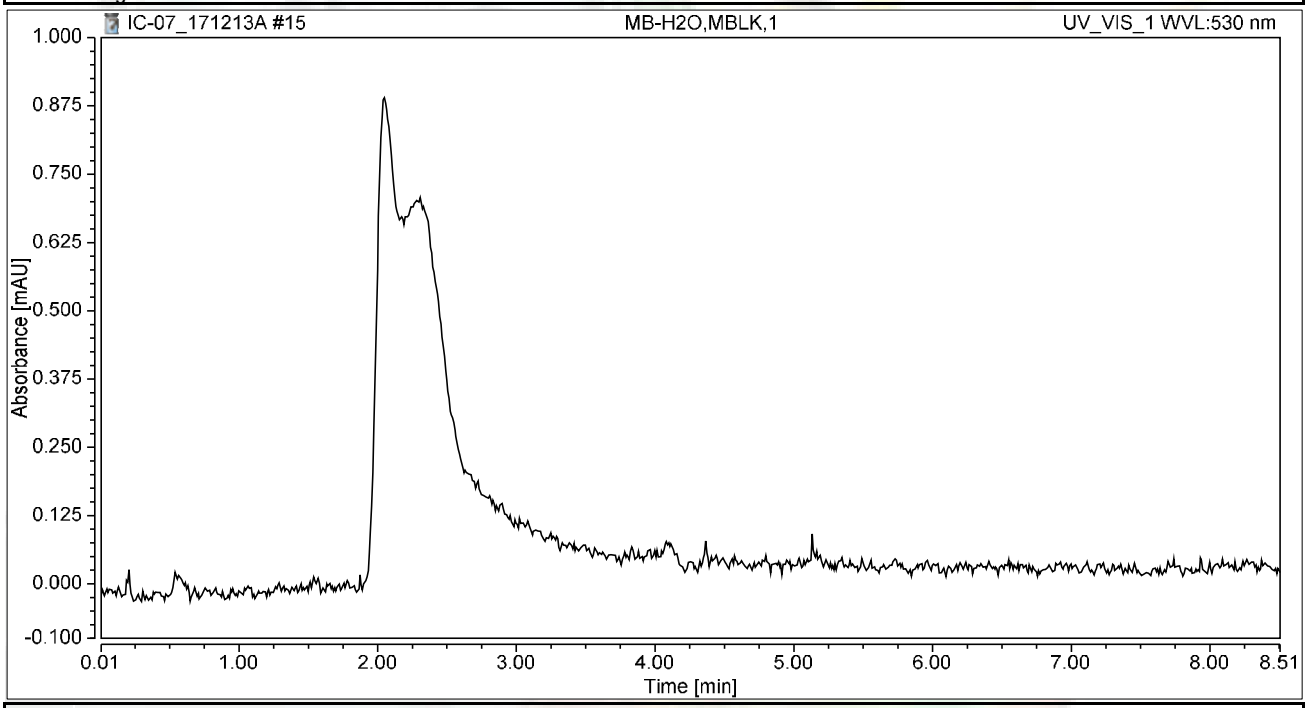
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 08:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

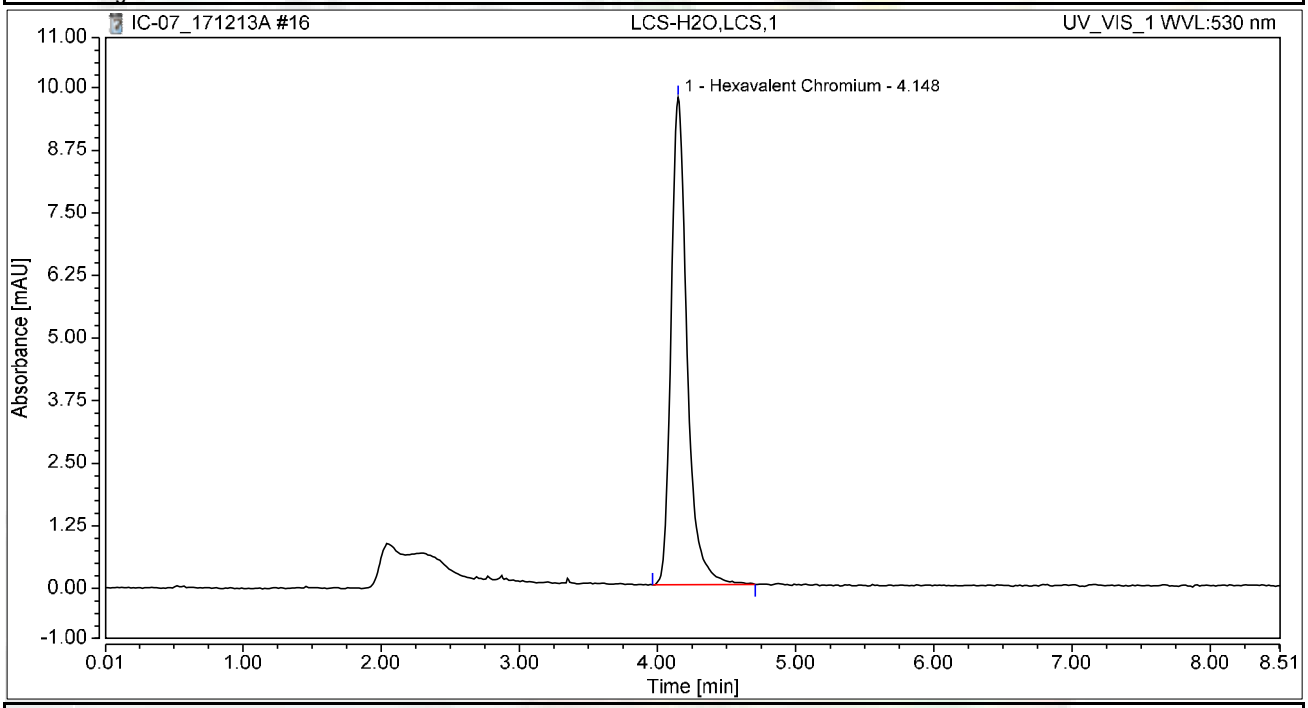
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 09:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

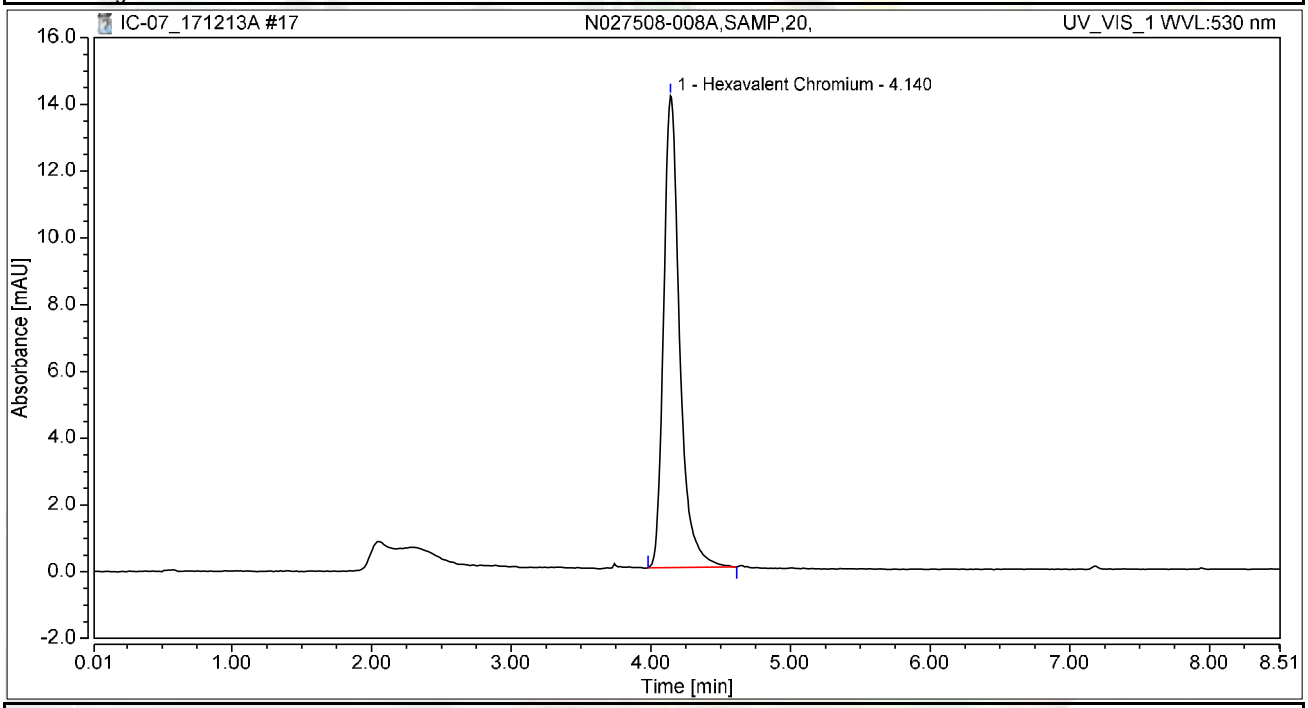
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.312	9.734	100.00	100.00	5.2244
Total:			**1.312**	**9.734**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027508-008A,SAMP,20,**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 09:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

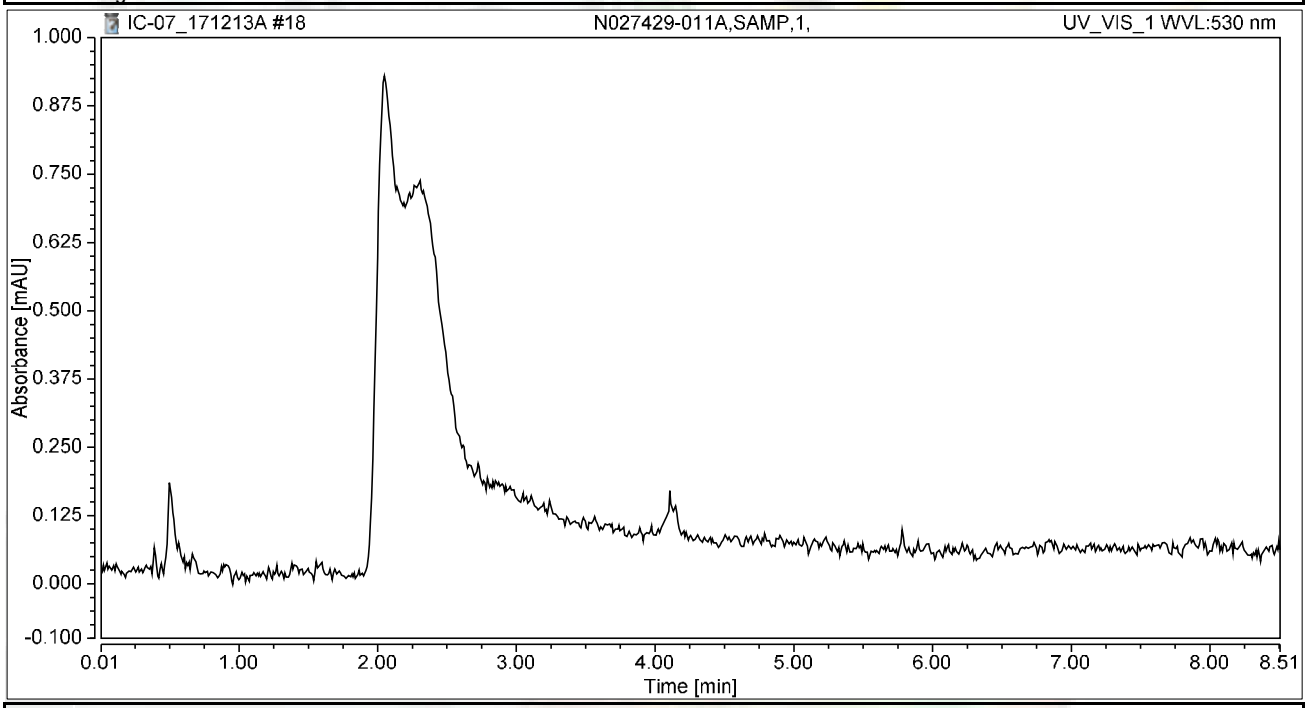
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.890	14.136	100.00	100.00	7.5275
Total:			**1.890**	**14.136**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 09:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

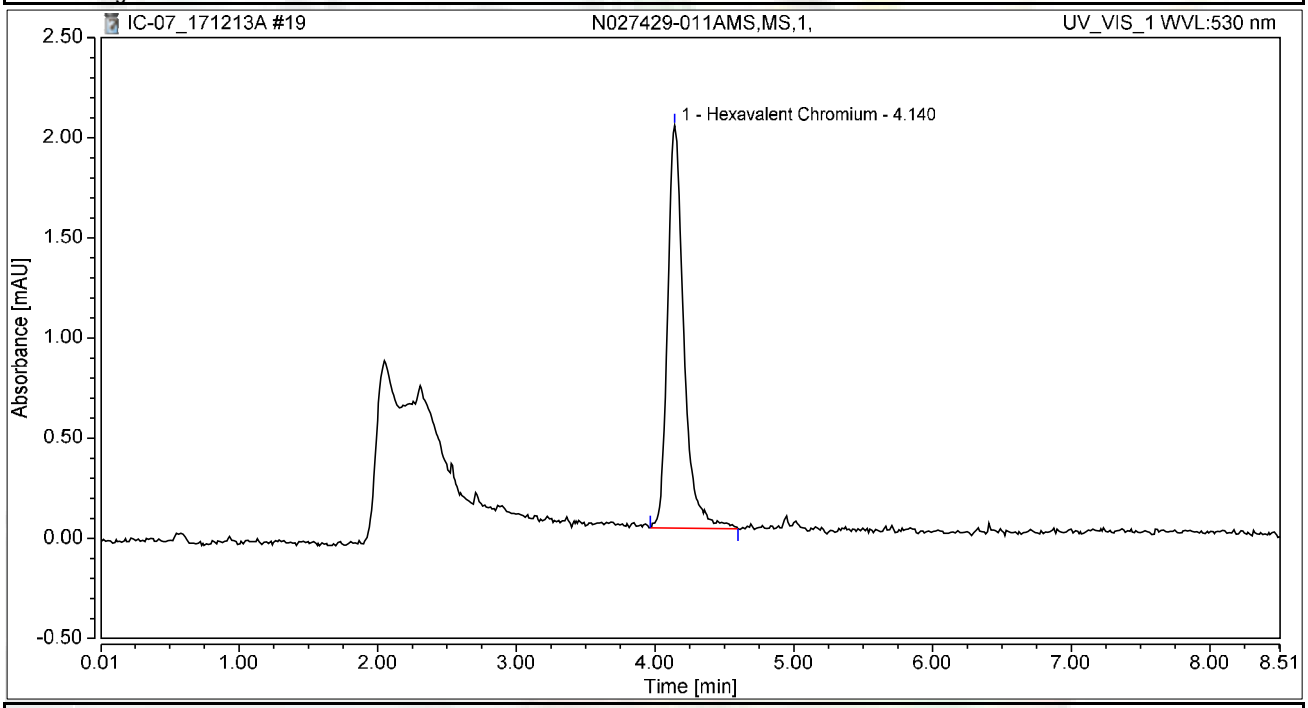
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 09:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

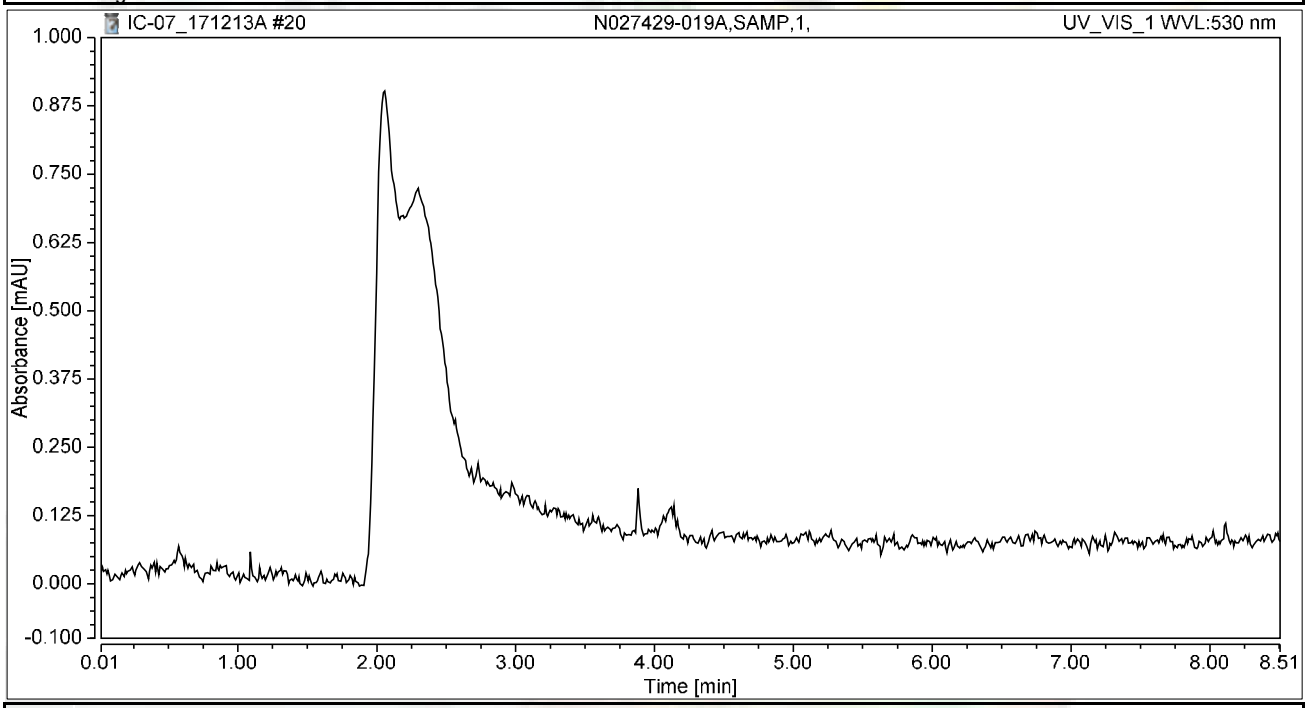
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.273	2.009	100.00	100.00	1.0861
Total:			**0.273**	**2.009**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-019A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 09:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

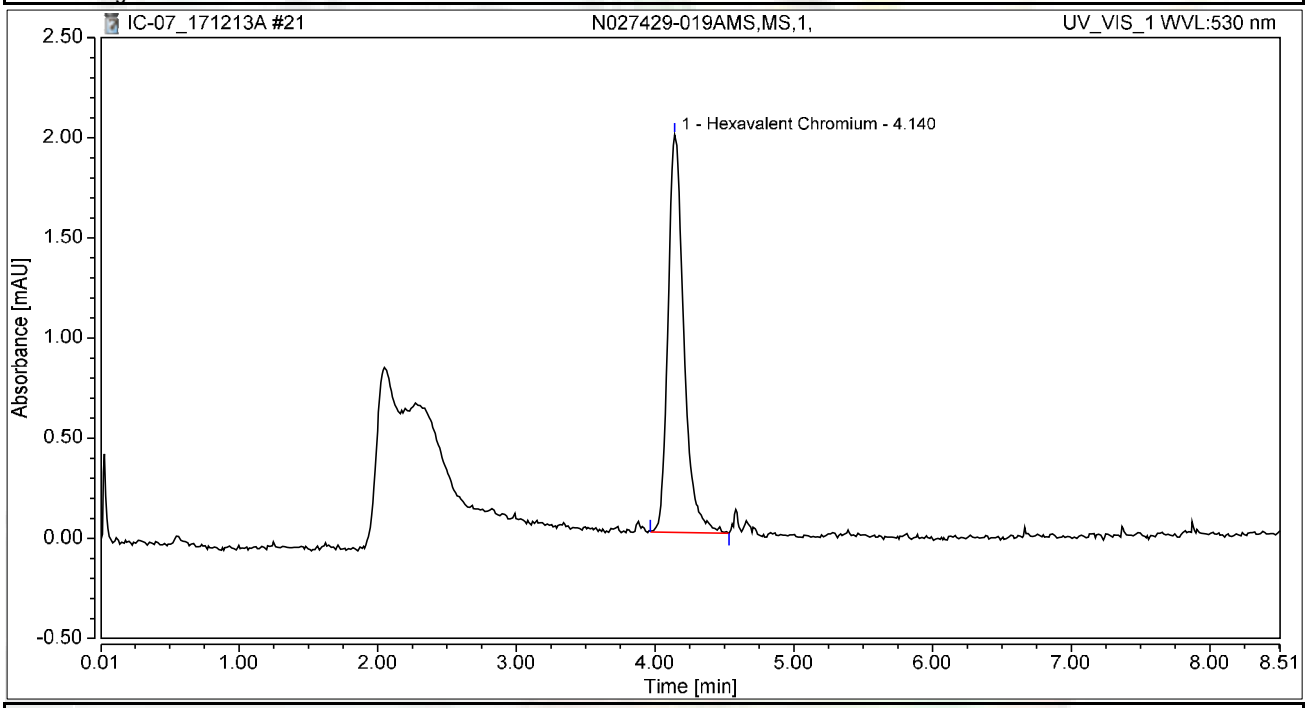
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-019AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 10:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

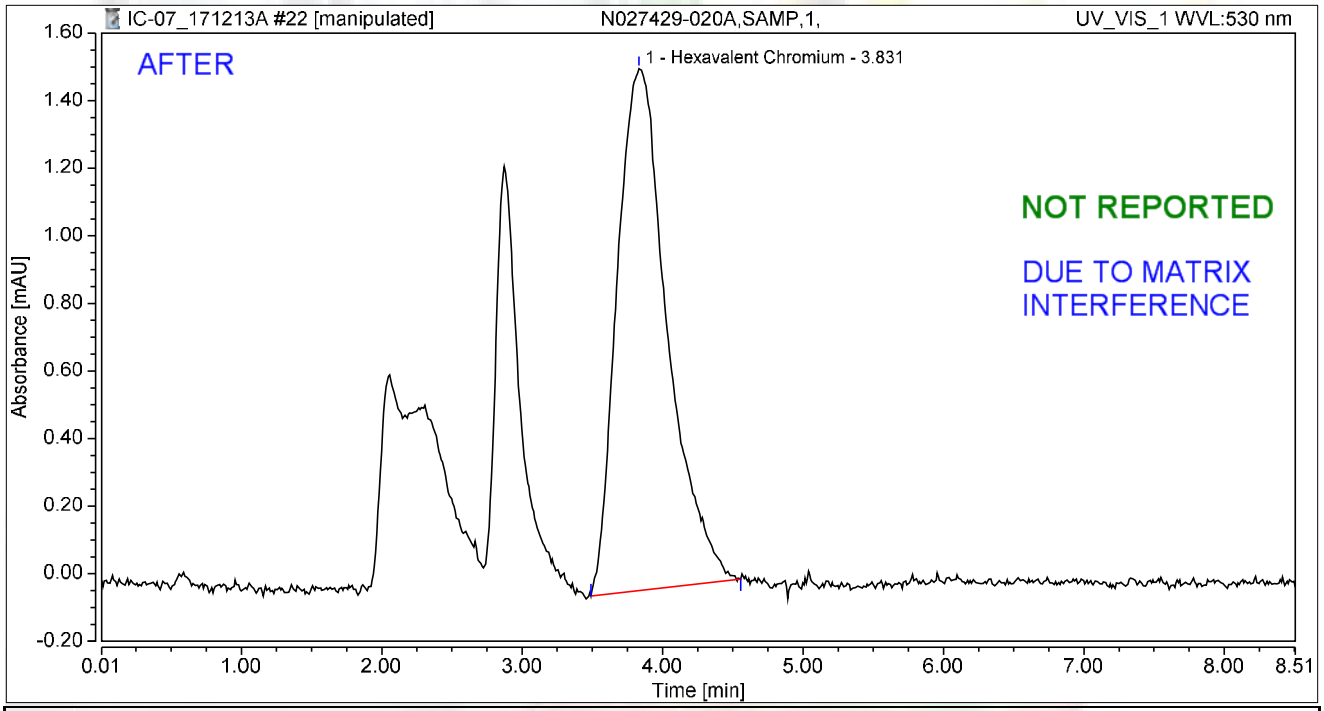
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.263	1.984	100.00	100.00	1.0491
Total:			**0.263**	**1.984**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-020A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 10:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.831	0.640	1.545	100.00	100.00	2.5476
Total:			**0.640**	**1.545**	**100.00**	**100.00**	

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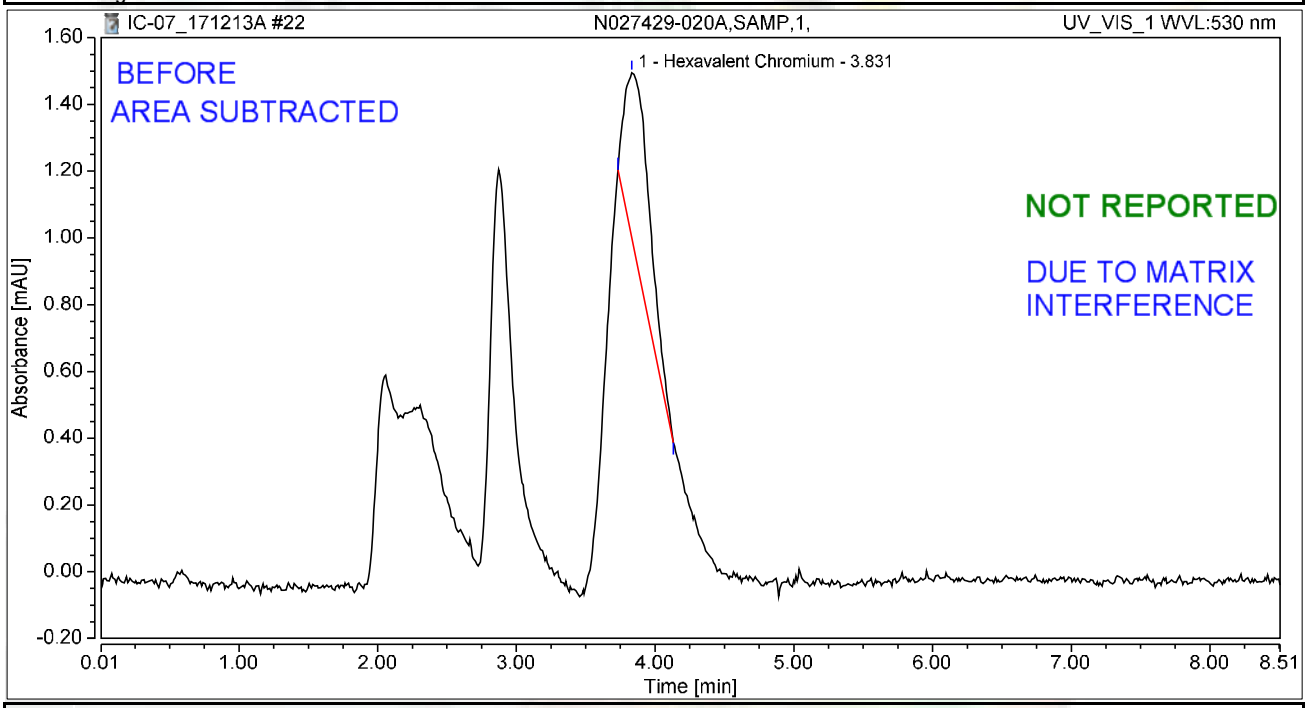
Chromatogram and Results

Injection Details

Injection Name:	**N027429-020A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 10:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.831	0.114	0.495	100.00	100.00	0.4530
Total:			**0.114**	**0.495**	**100.00**	**100.00**	

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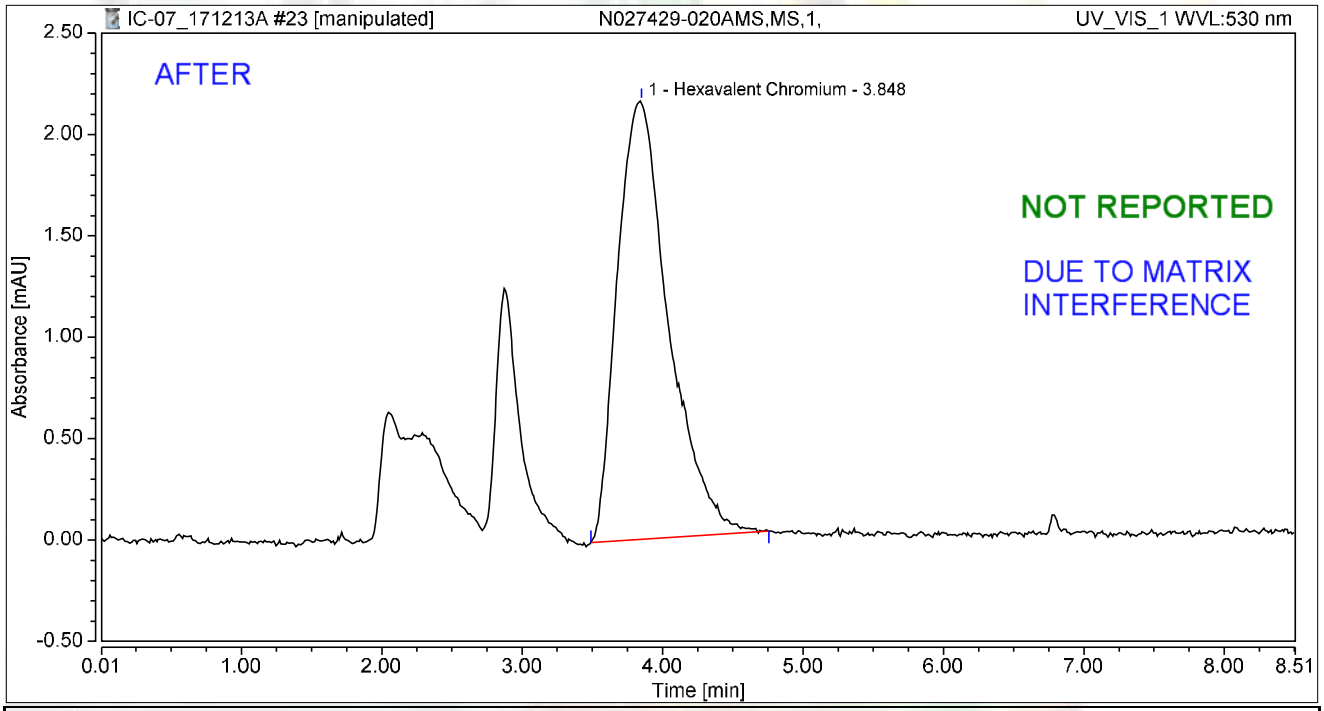
Chromatogram and Results

Injection Details

Injection Name:	**N027429-020AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 10:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.848	0.915	2.164	100.00	100.00	3.6427
Total:			**0.915**	**2.164**	**100.00**	**100.00**	

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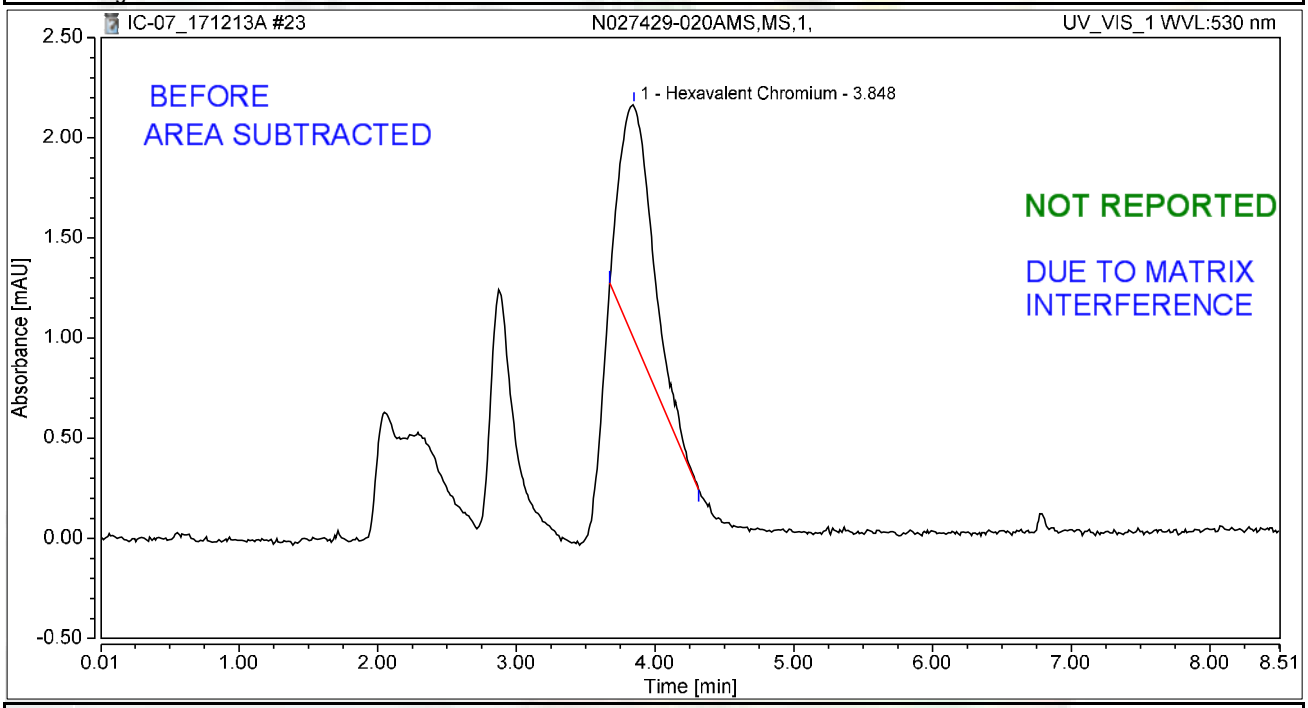
Chromatogram and Results

Injection Details

Injection Name:	**N027429-020AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 10:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.848	0.322	1.172	100.00	100.00	1.2830
Total:			**0.322**	**1.172**	**100.00**	**100.00**	

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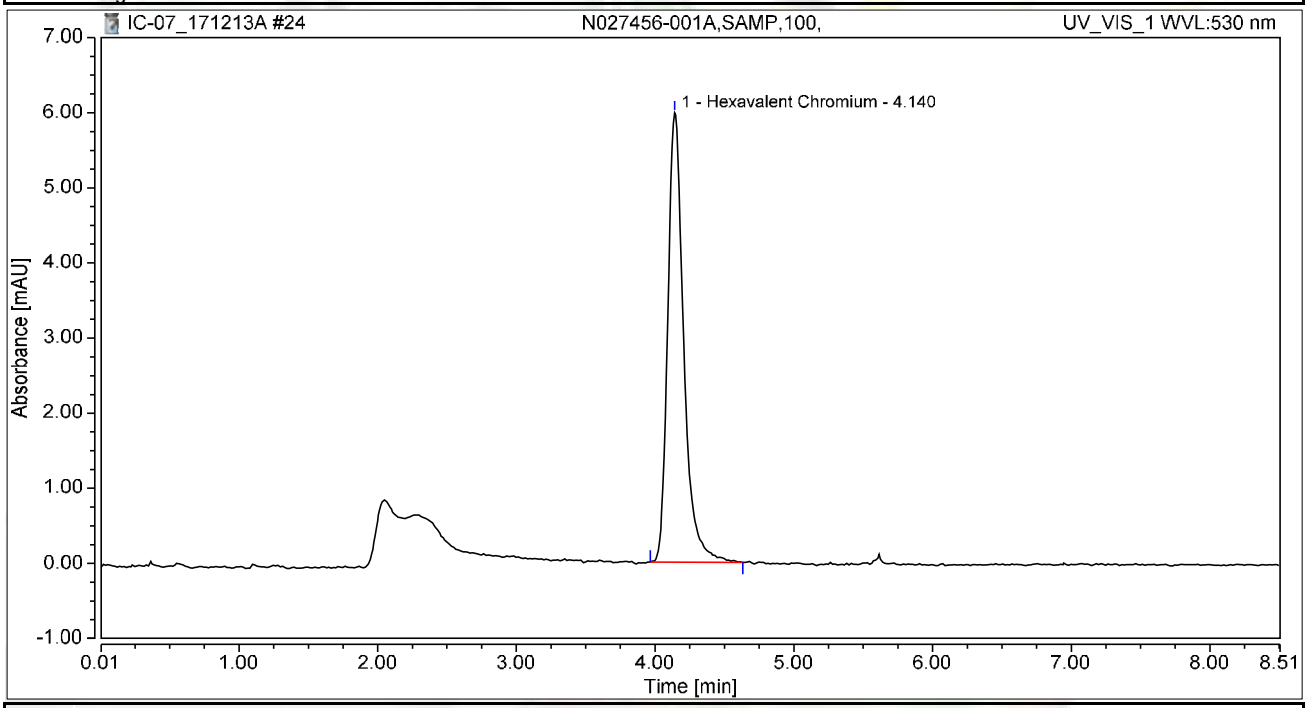
Chromatogram and Results

Injection Details

Injection Name:	**N027456-001A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 10:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

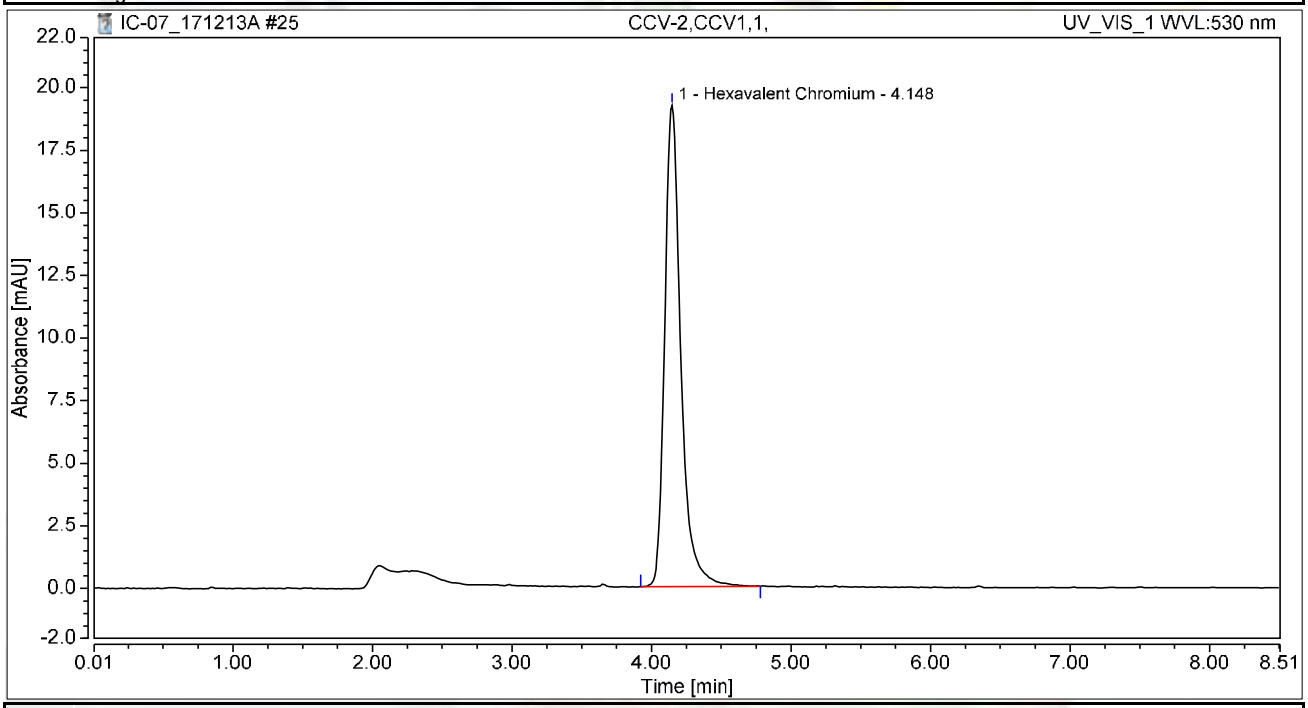
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.800	5.984	100.00	100.00	3.1845
Total:			**0.800**	**5.984**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 10:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

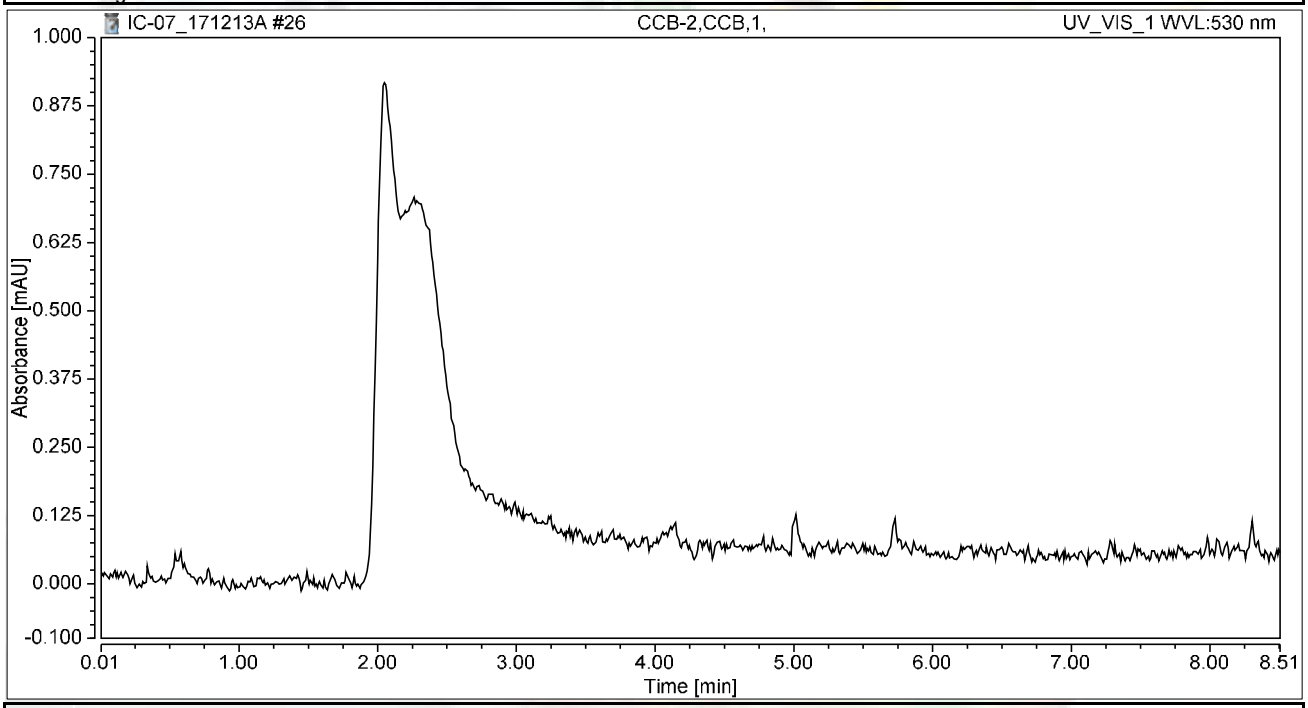
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.578	19.226	100.00	100.00	10.2678
Total:			**2.578**	**19.226**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 10:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

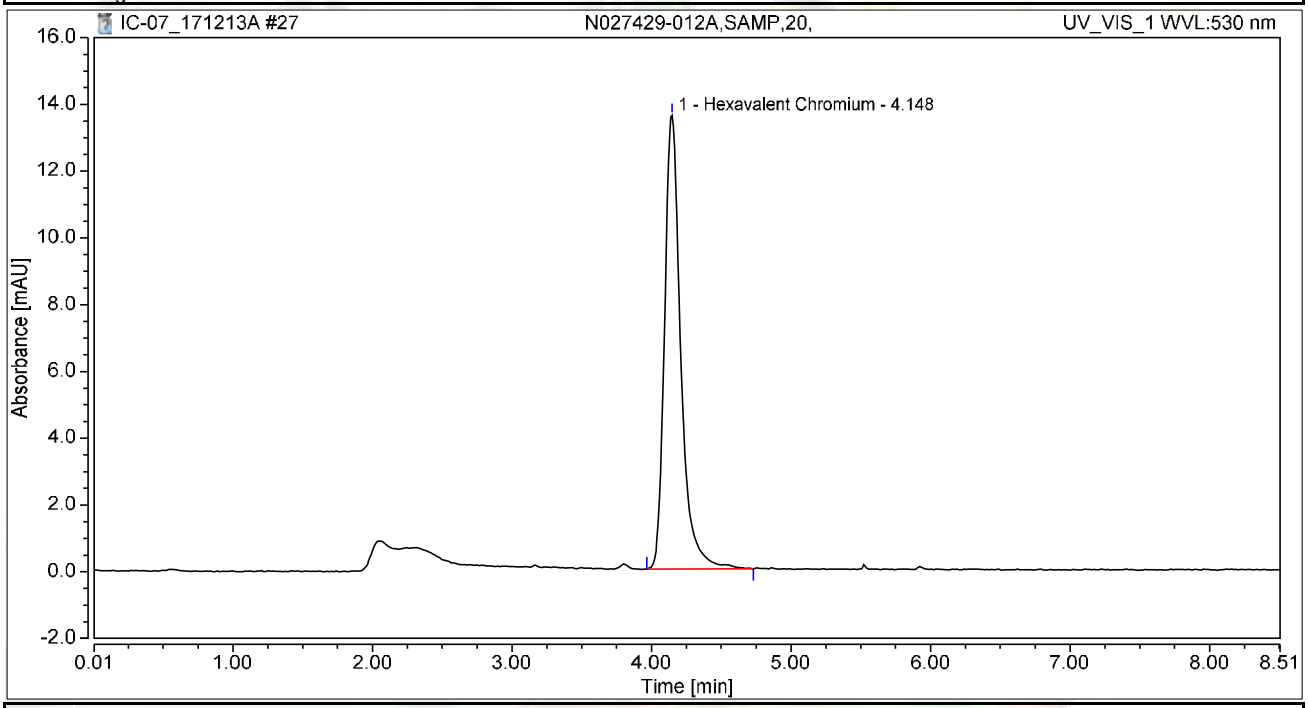
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-012A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 11:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

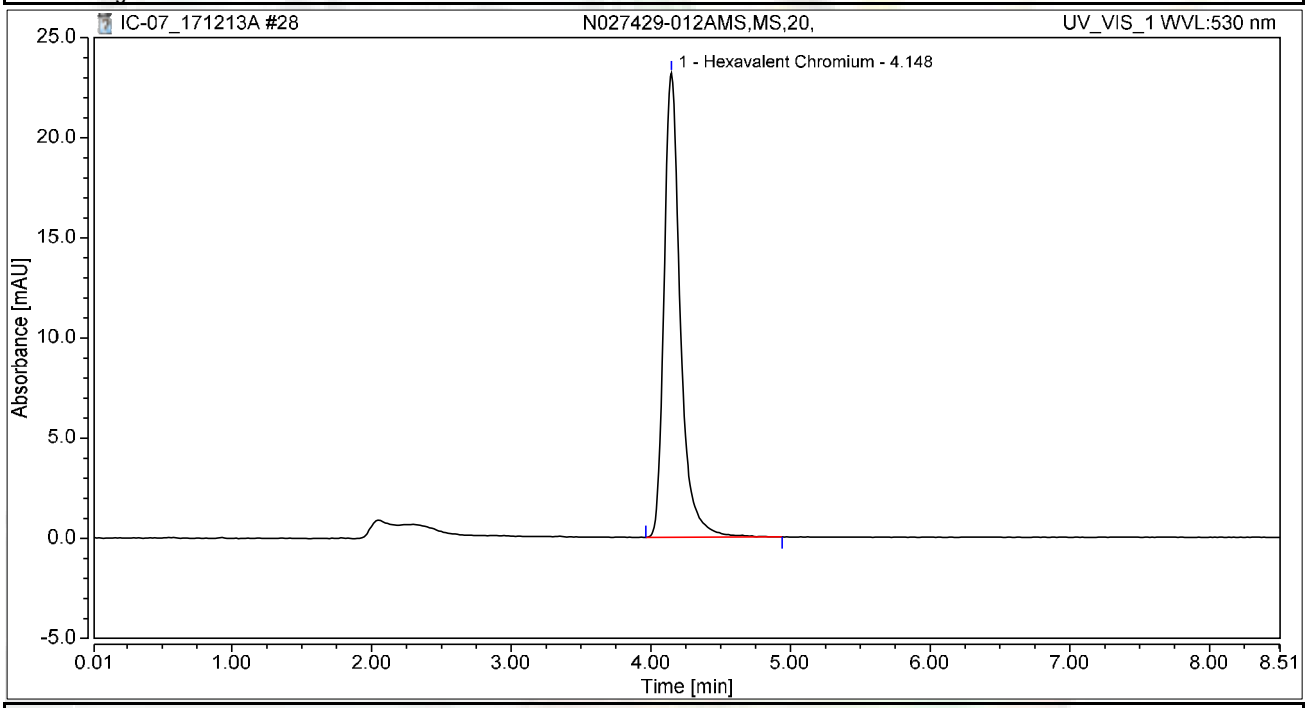
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.832	13.590	100.00	100.00	7.2978
Total:			**1.832**	**13.590**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-012AMS,MS,20,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 11:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

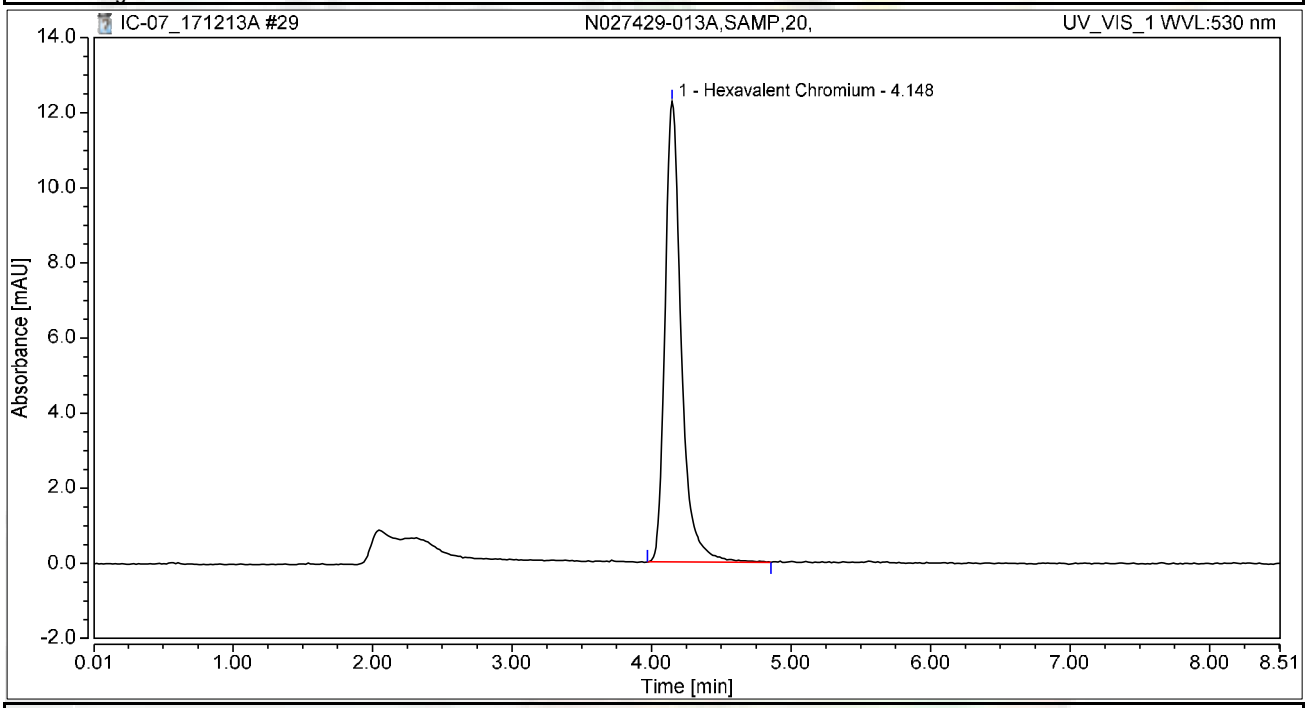
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	3.137	23.190	100.00	100.00	12.4941
Total:			**3.137**	**23.190**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-013A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 11:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

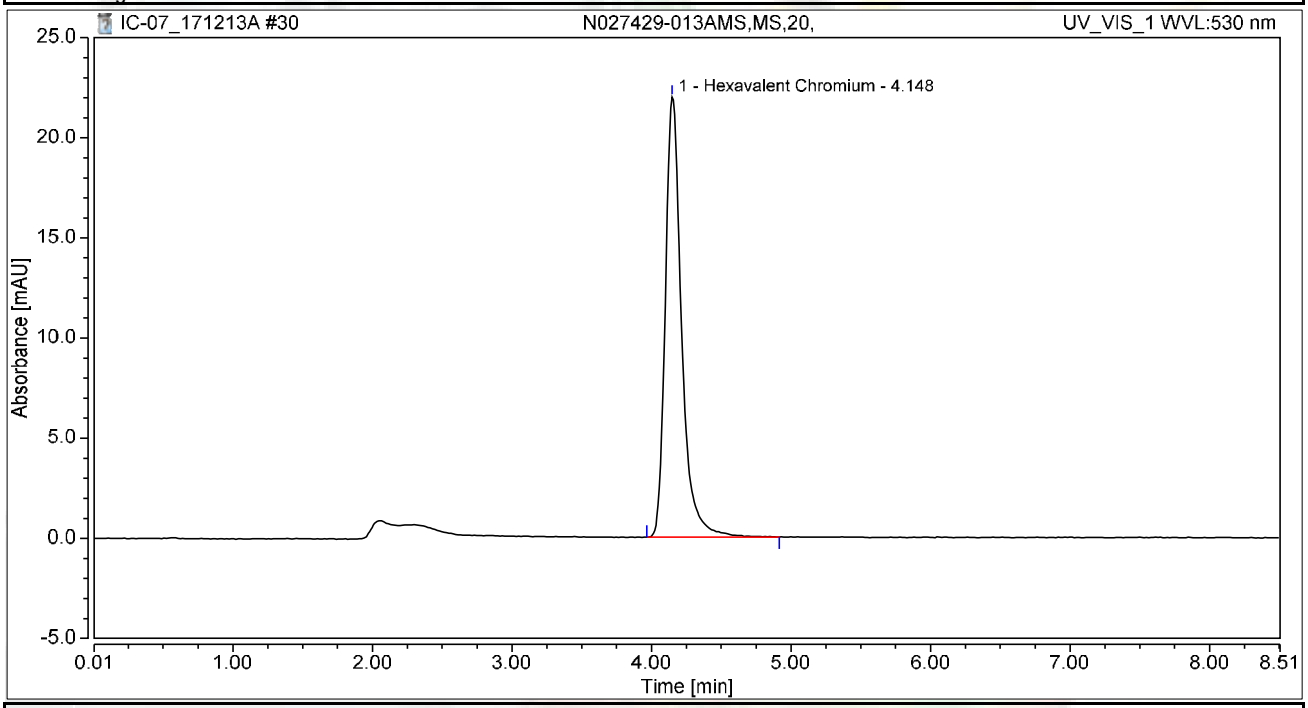
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.654	12.256	100.00	100.00	6.5883
Total:			**1.654**	**12.256**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-013AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 11:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

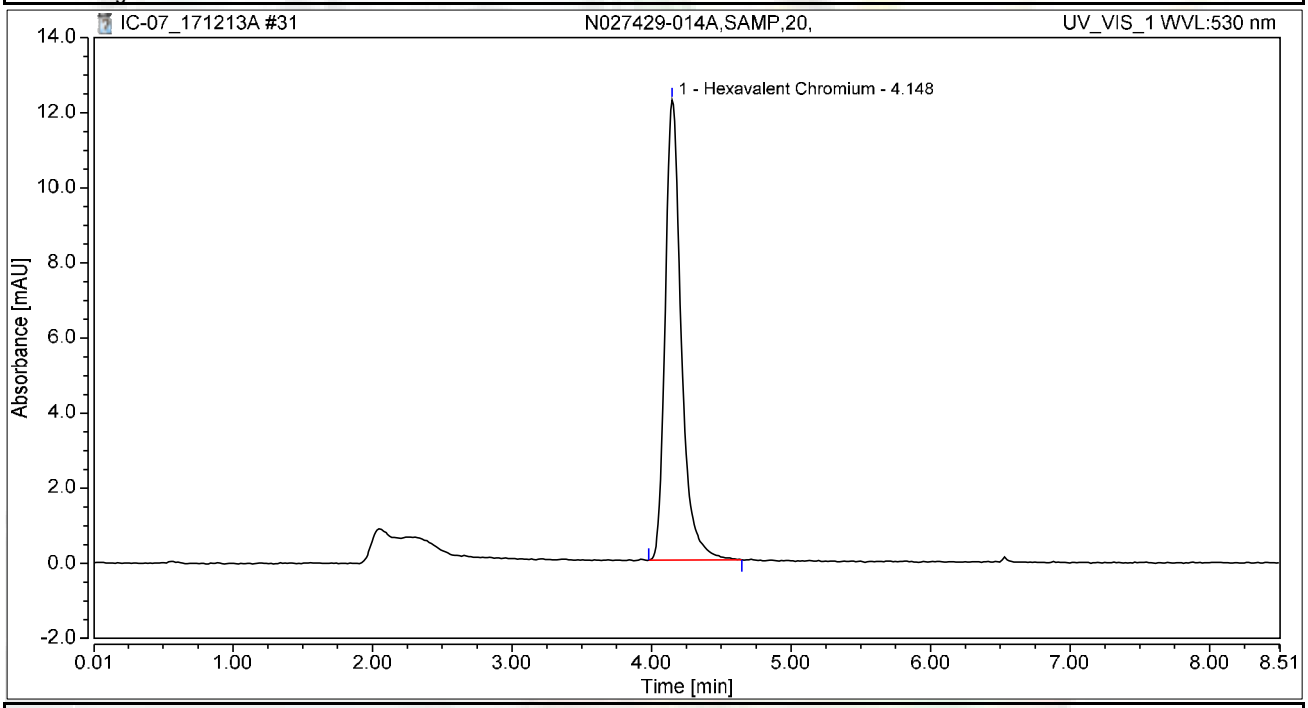
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.975	21.968	100.00	100.00	11.8489
Total:			**2.975**	**21.968**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-014A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 11:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

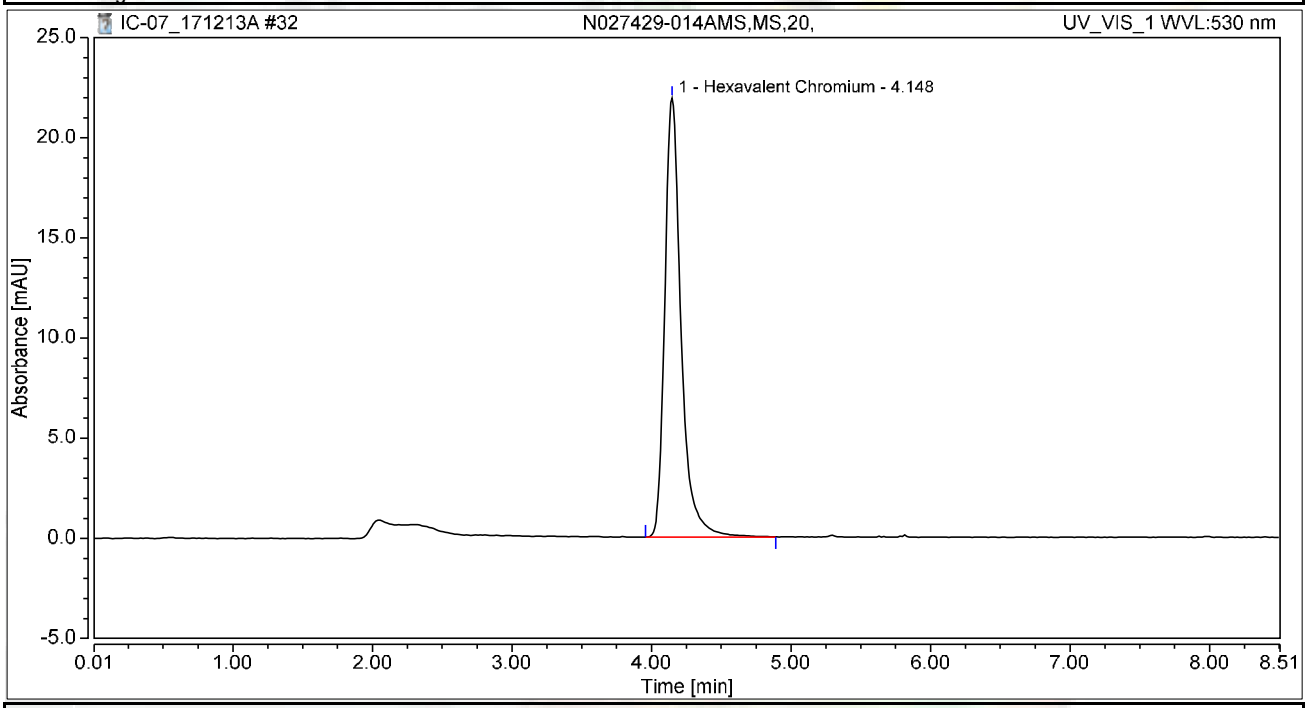
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.639	12.253	100.00	100.00	6.5283
Total:			**1.639**	**12.253**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-014AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 11:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

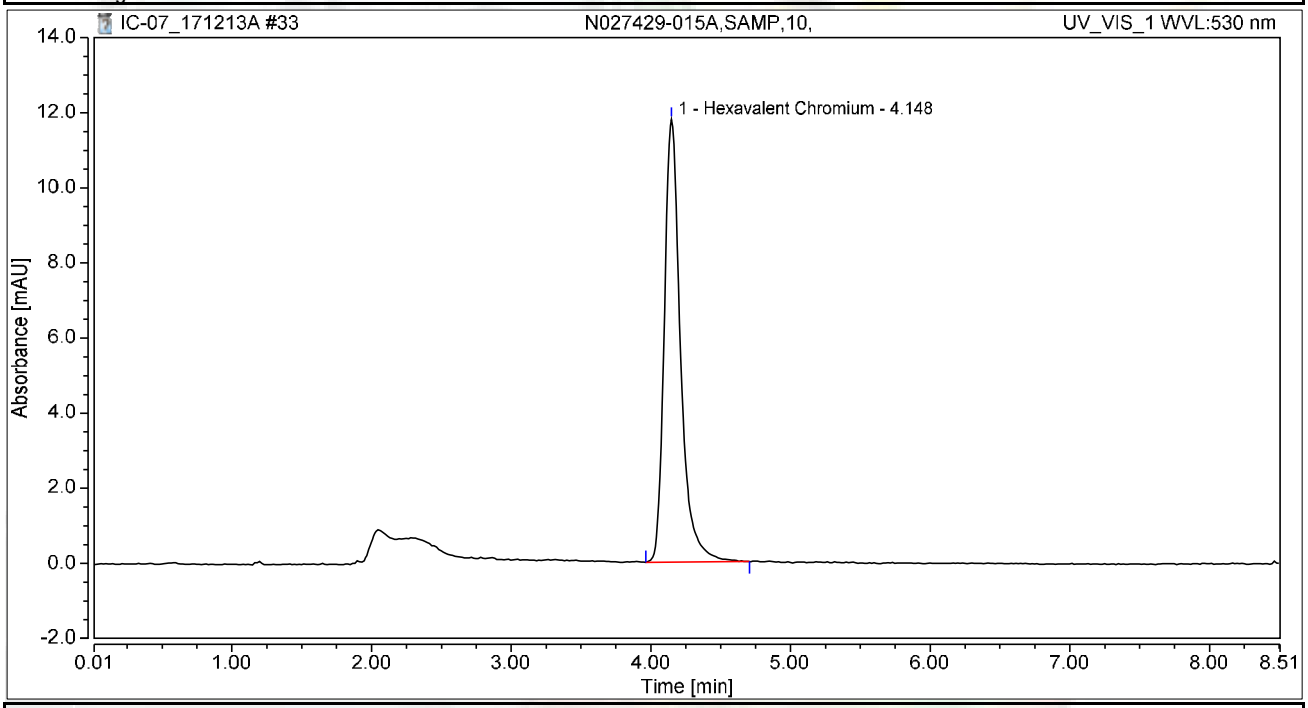
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.966	21.913	100.00	100.00	11.8125
Total:			**2.966**	**21.913**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-015A,SAMP,10,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 12:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

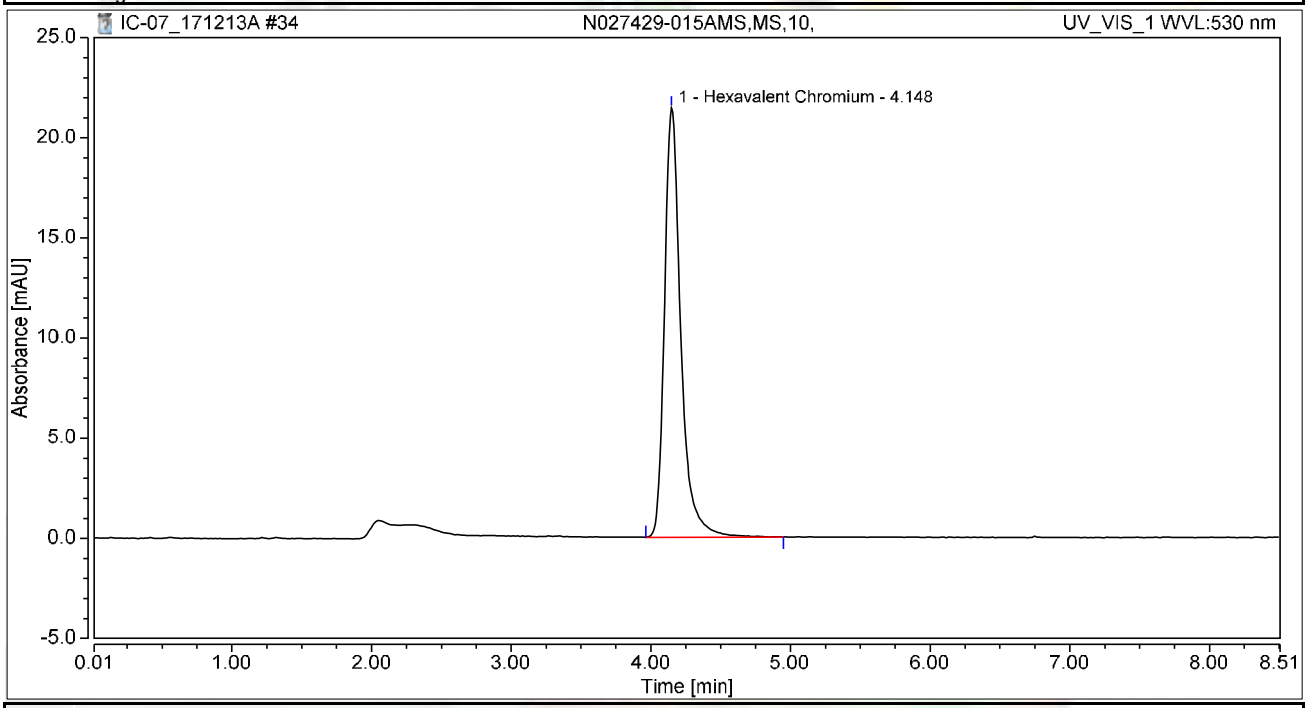
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.595	11.791	100.00	100.00	6.3533
Total:			**1.595**	**11.791**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-015AMS,MS,10,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 12:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

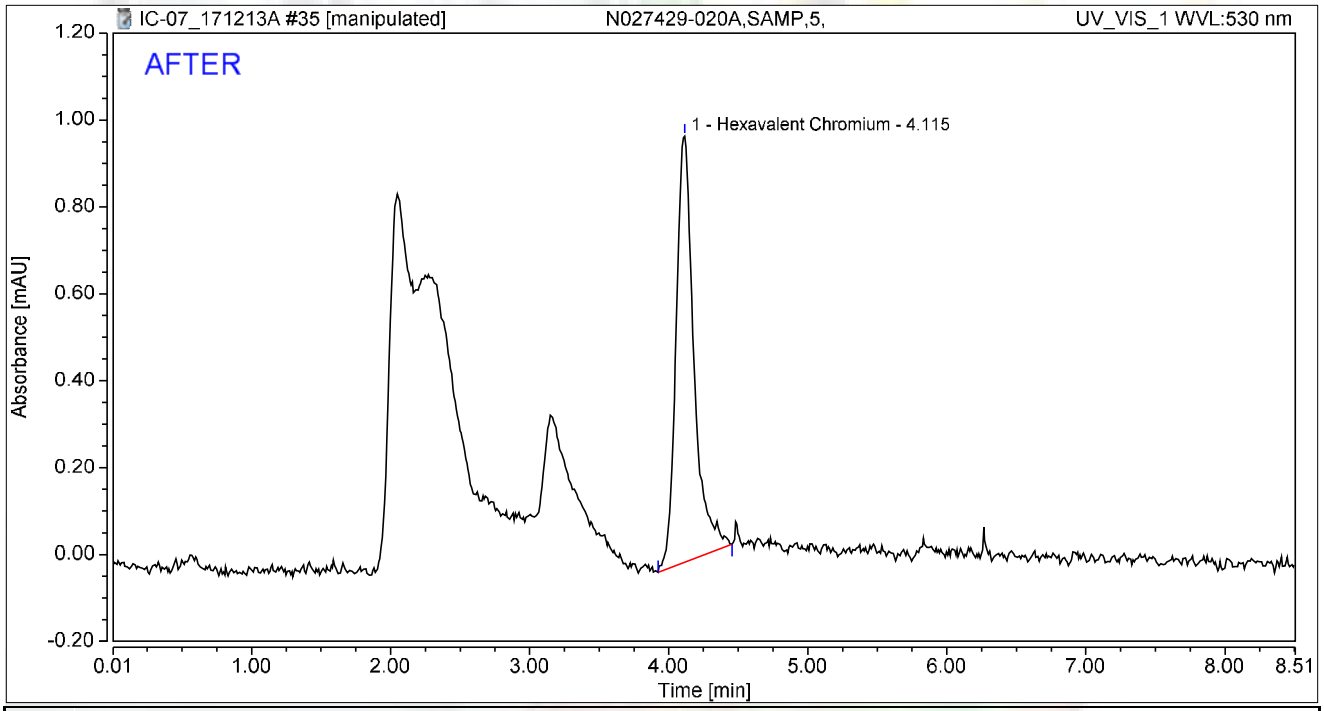
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.921	21.443	100.00	100.00	11.6314
Total:			**2.921**	**21.443**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-020A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 12:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.147	0.981	100.00	100.00	0.5841
Total:			**0.147**	**0.981**	**100.00**	**100.00**	

rba 12/16/2017

Reviewed by: 12/18/2017
My first report/integration

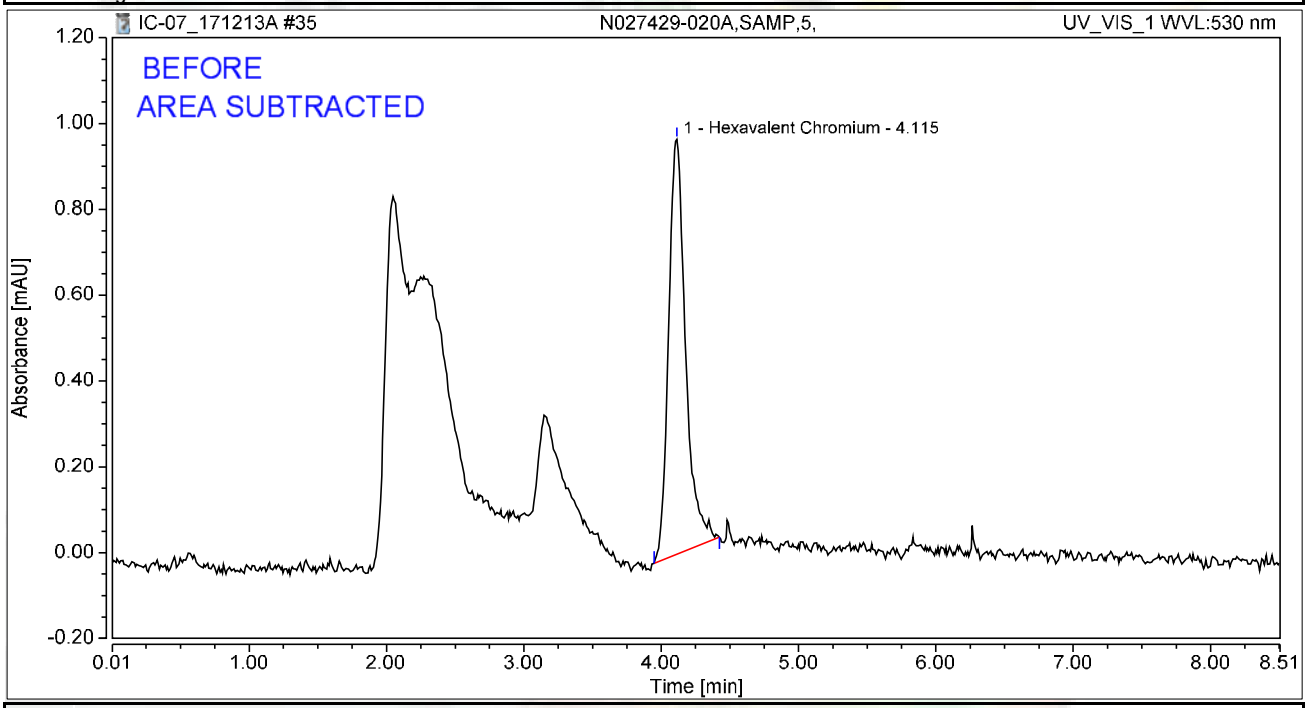
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N027429-020A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 12:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.139	0.966	100.00	100.00	0.5529
Total:			**0.139**	**0.966**	**100.00**	**100.00**	

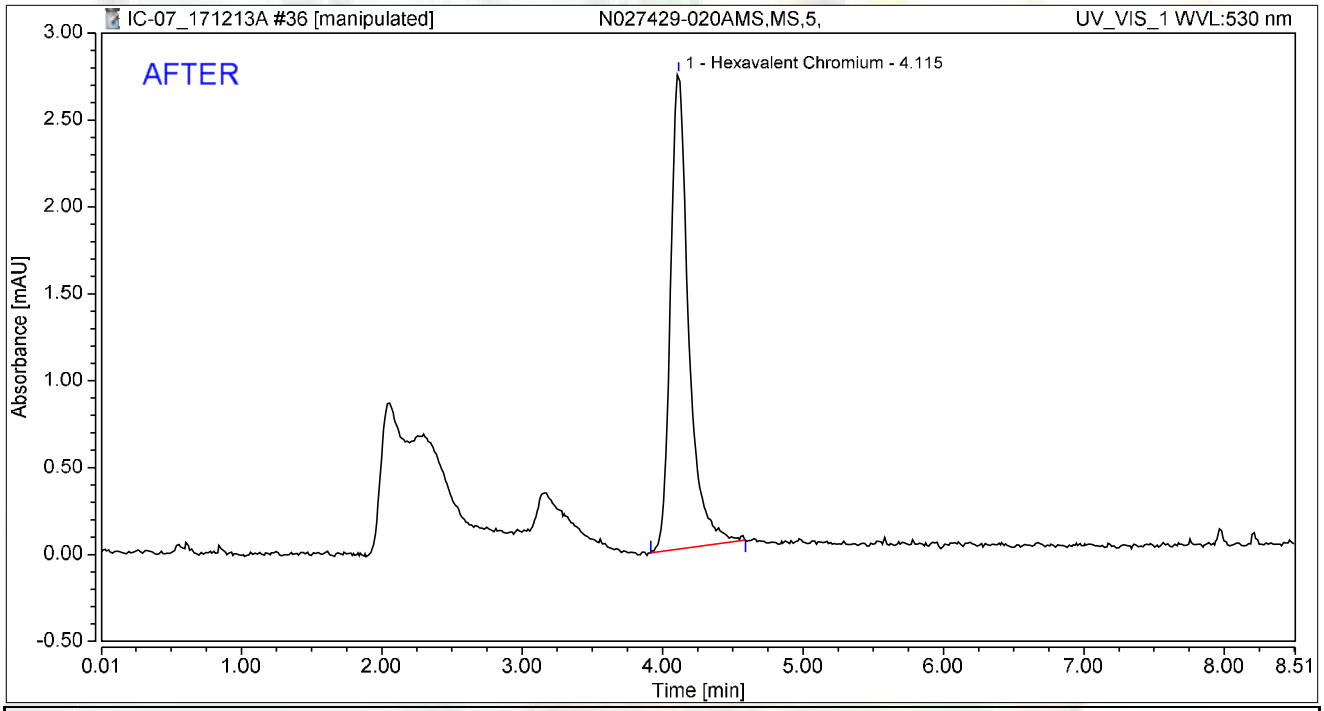
rba 12/16/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027429-020AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 12:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.413	2.732	100.00	100.00	1.6461
Total:			**0.413**	**2.732**	**100.00**	**100.00**	

rba 12/16/2017

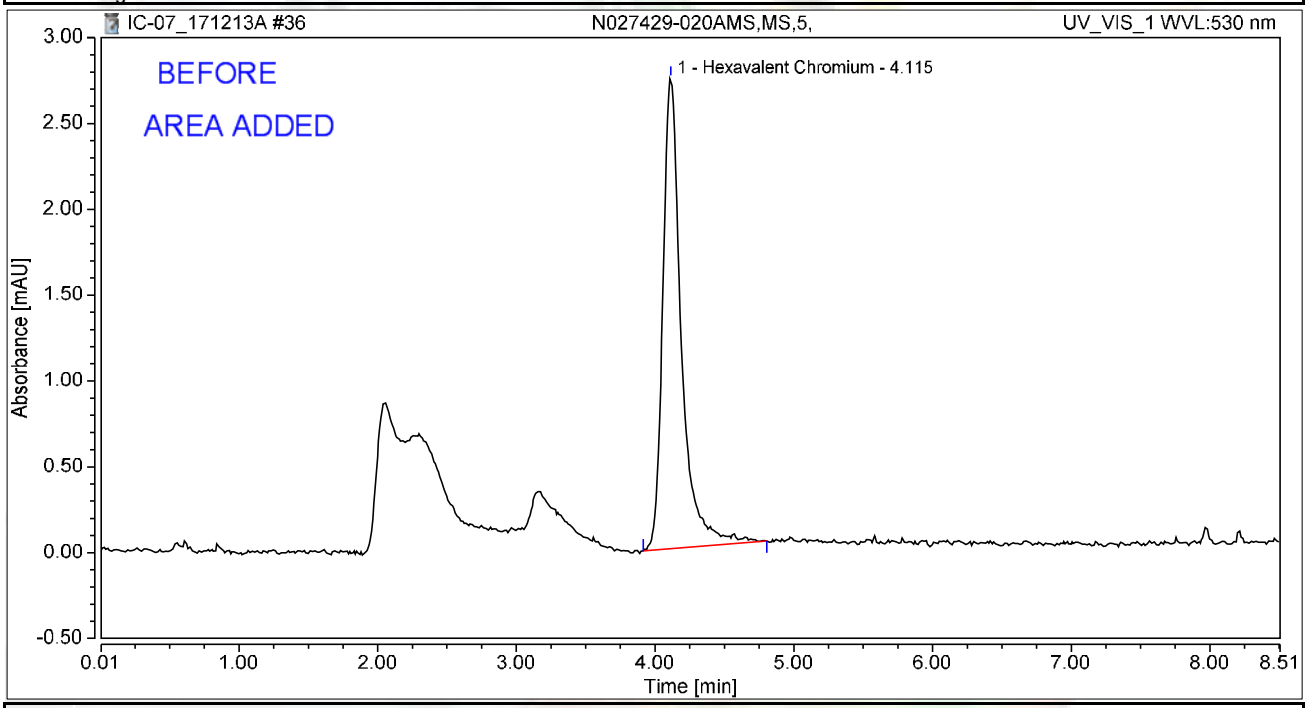
Reviewed by: Nancy 12/18/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027429-020AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 12:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.426	2.740	100.00	100.00	1.6956
Total:			**0.426**	**2.740**	**100.00**	**100.00**	

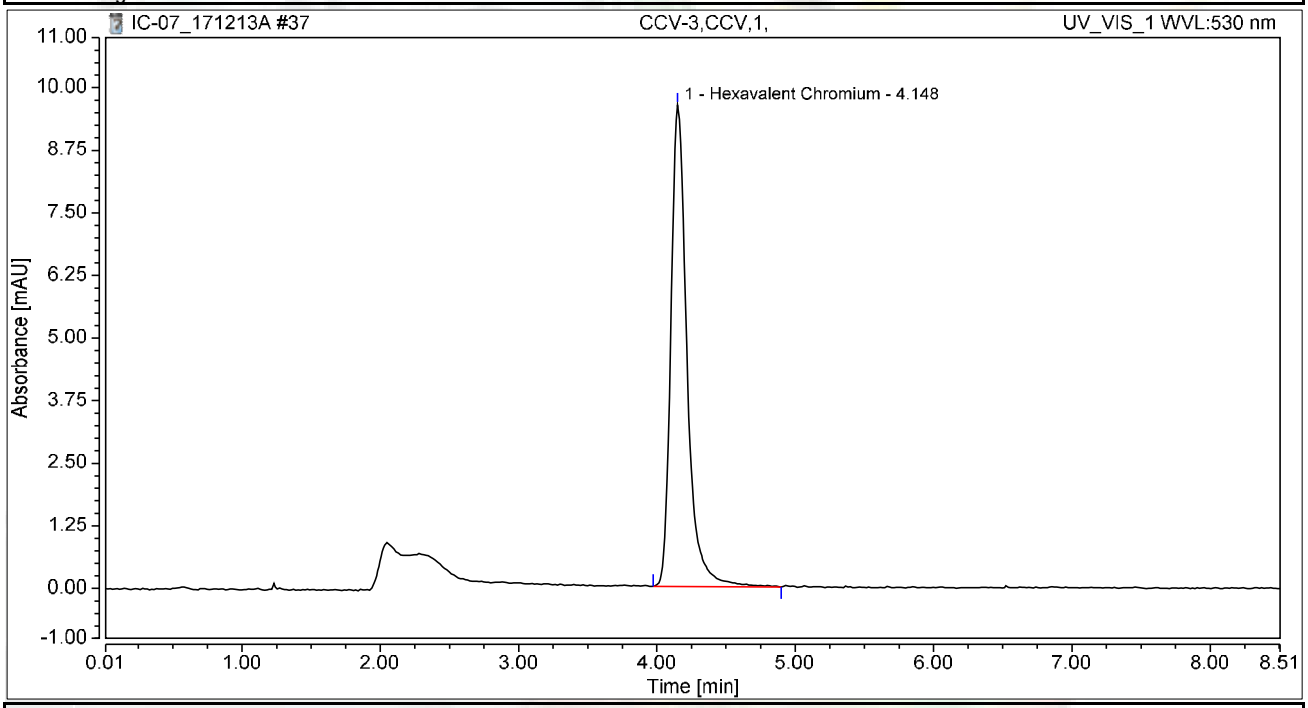
rba 12/16/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 12:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

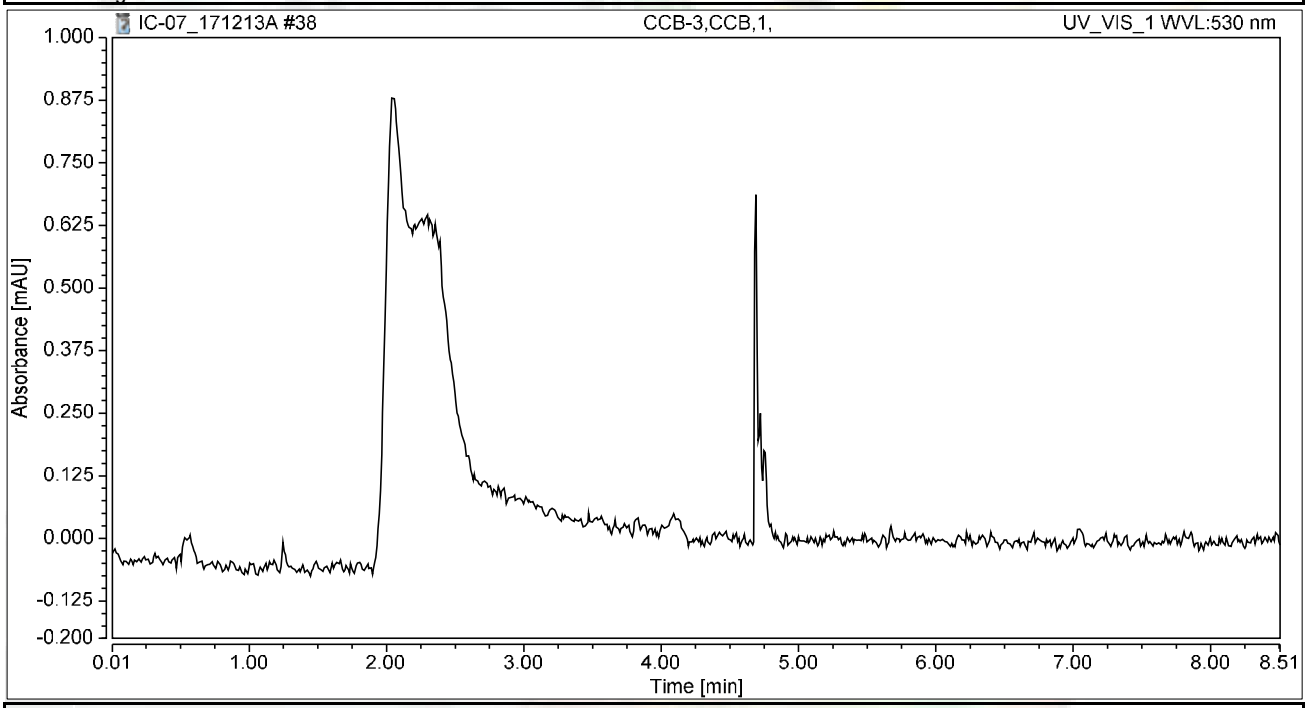
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.303	9.615	100.00	100.00	5.1875
Total:			**1.303**	**9.615**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 12:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

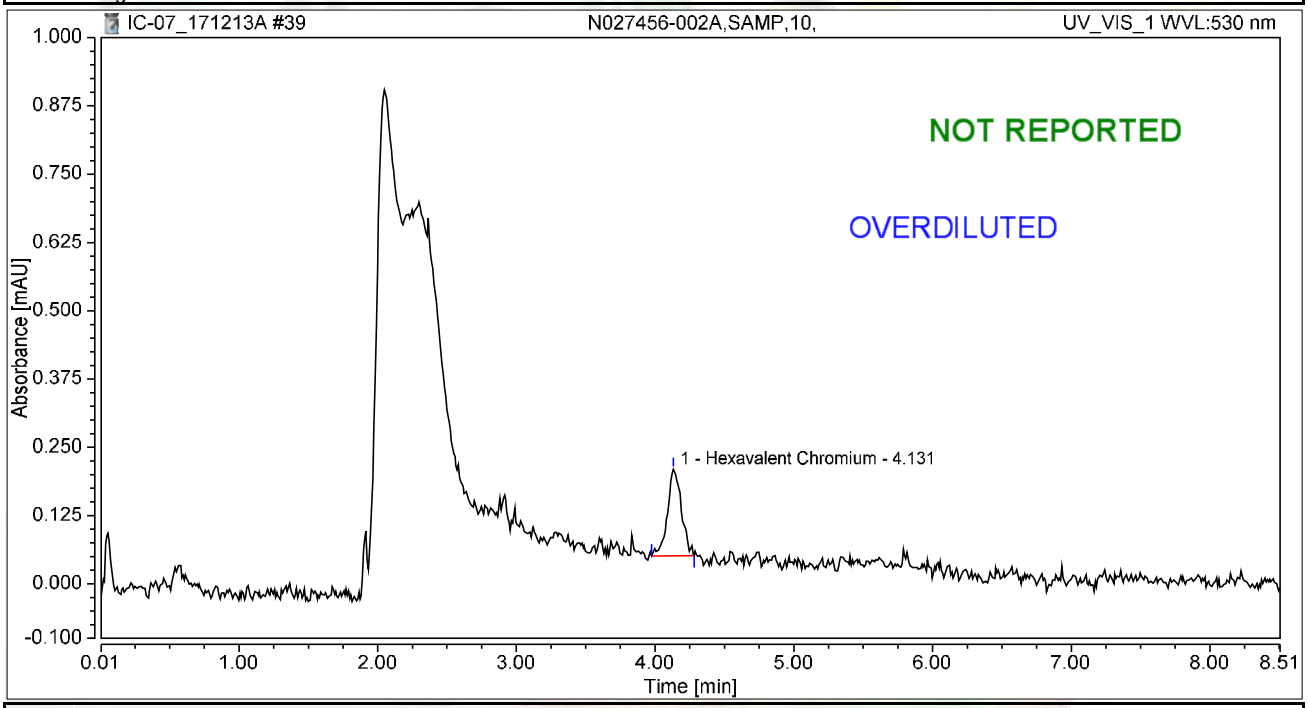
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027456-002A,SAMP,10,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 12:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

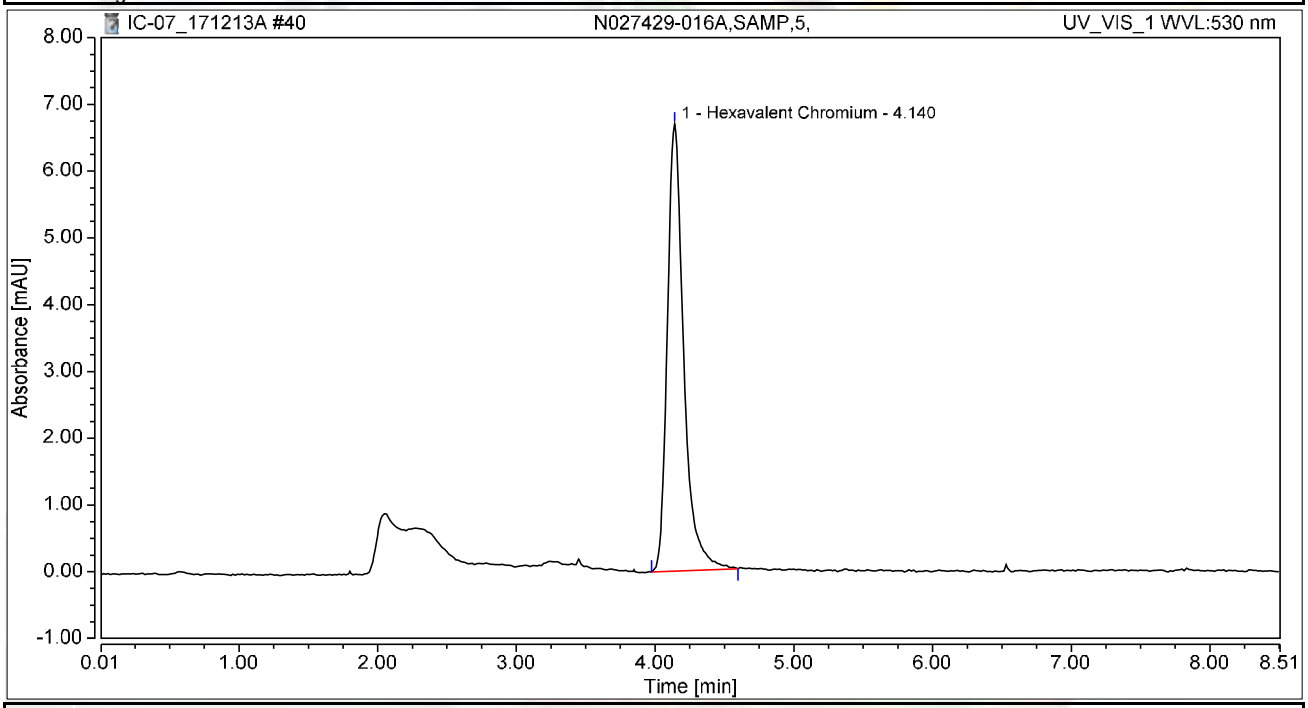
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.019	0.158	100.00	100.00	0.0737
Total:			**0.019**	**0.158**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-016A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

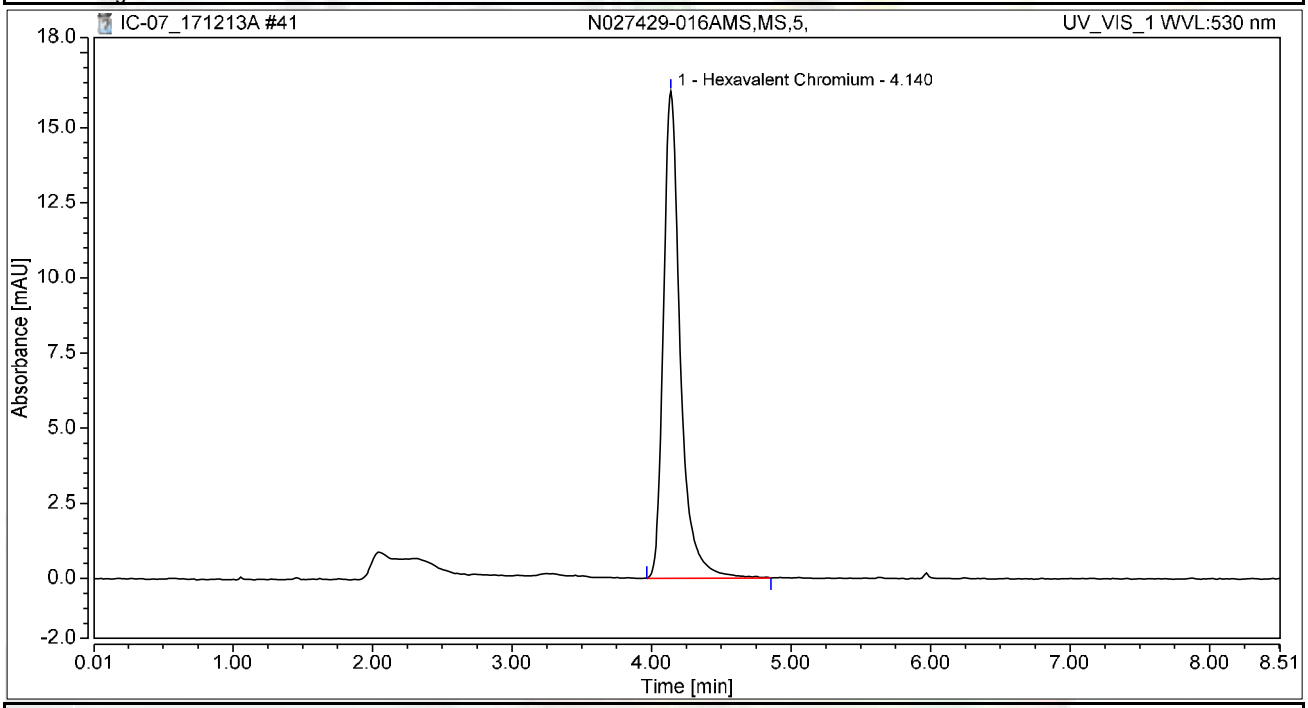
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.918	6.694	100.00	100.00	3.6541
Total:			**0.918**	**6.694**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-016AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 13:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

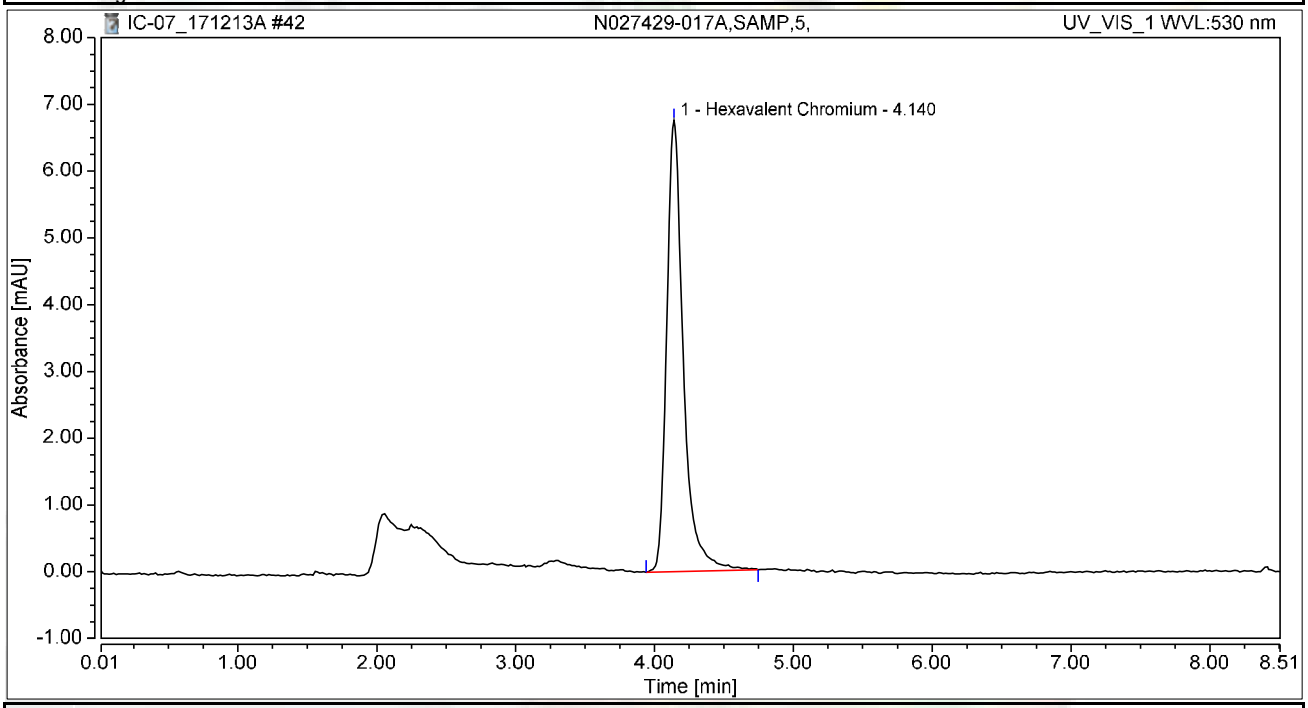
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.269	16.206	100.00	100.00	9.0361
Total:			**2.269**	**16.206**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-017A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 13:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

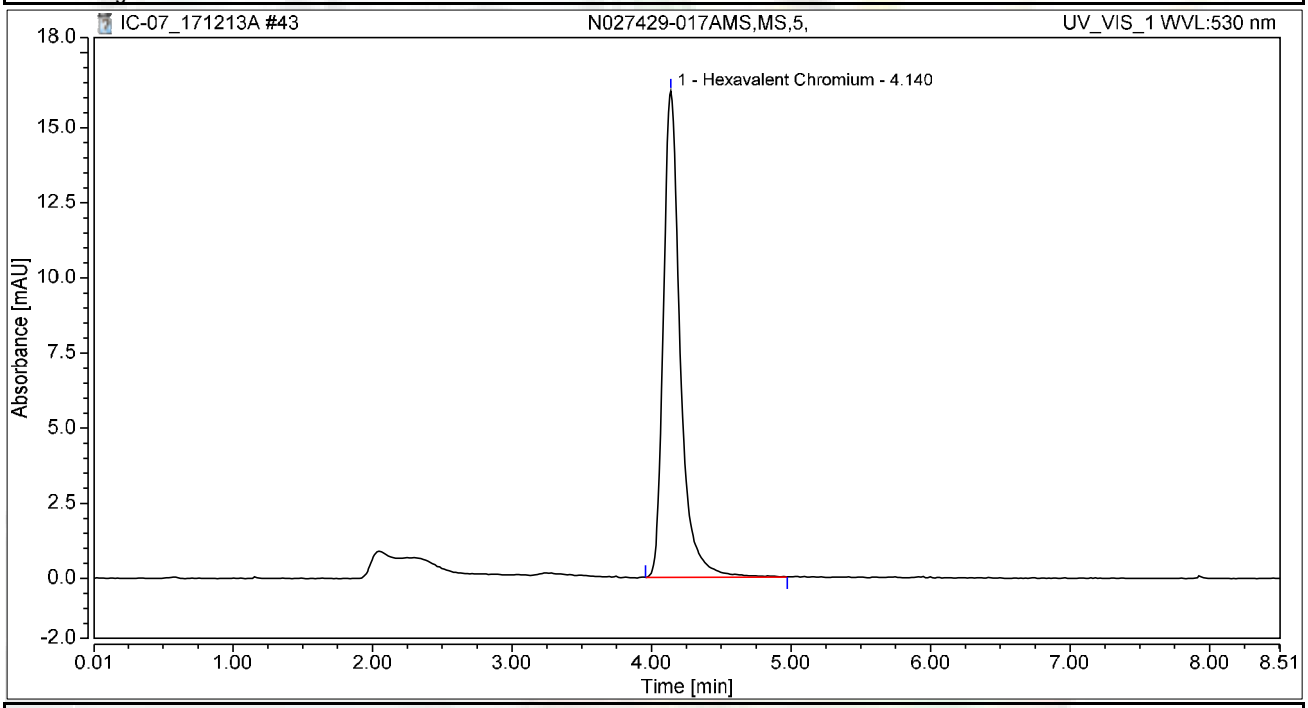
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.942	6.756	100.00	100.00	3.7502
Total:			**0.942**	**6.756**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-017AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 13:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

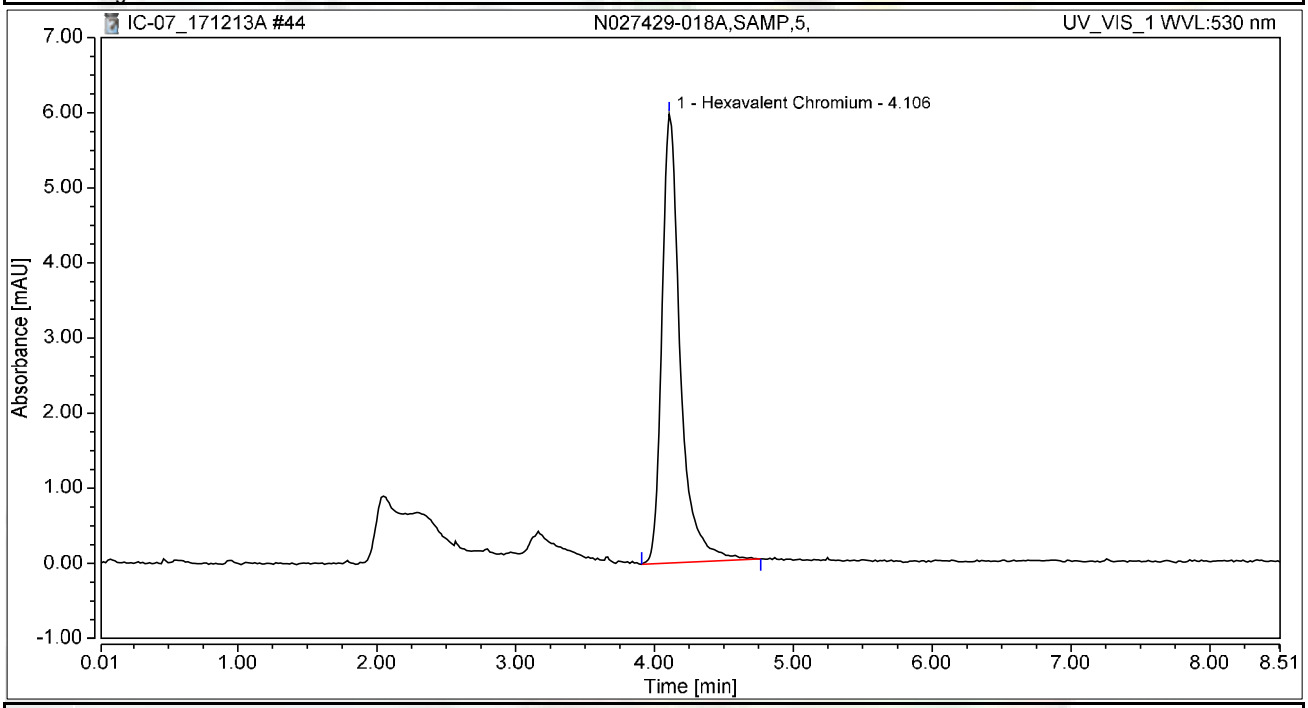
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.262	16.189	100.00	100.00	9.0079
Total:			**2.262**	**16.189**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-018A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 13:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

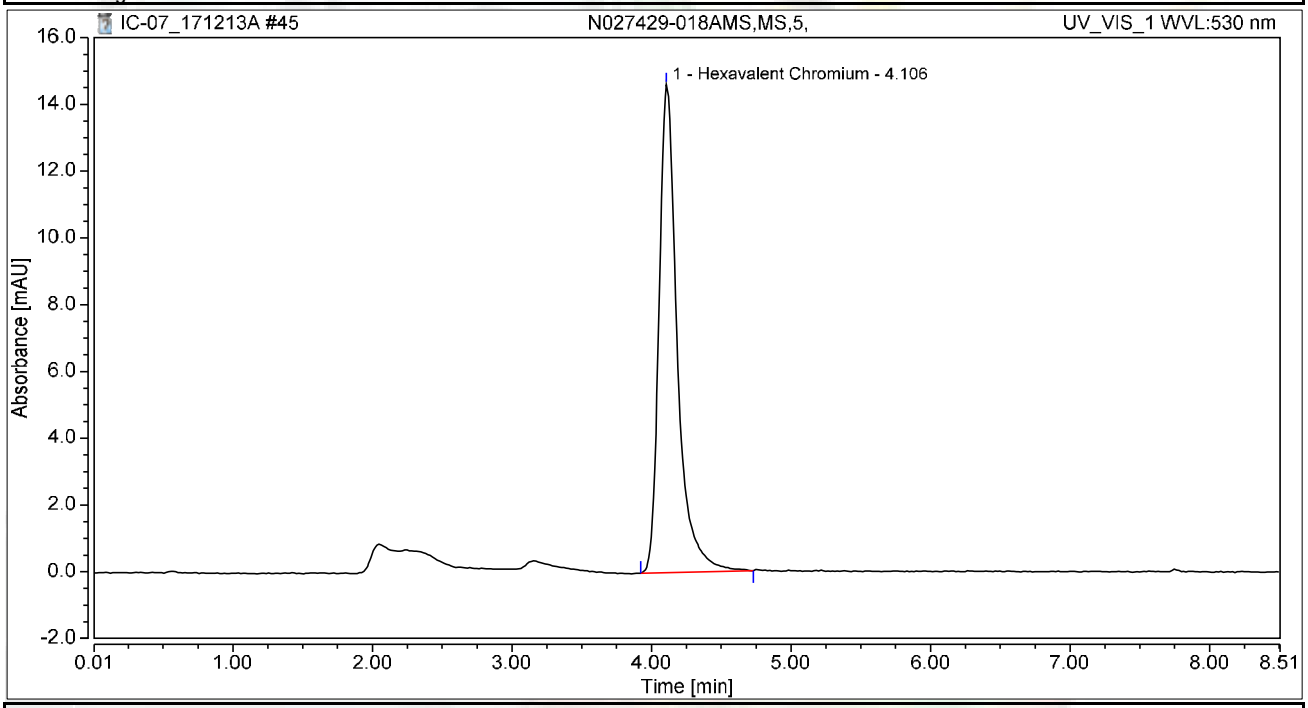
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.920	5.980	100.00	100.00	3.6629
Total:			**0.920**	**5.980**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-018AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 13:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

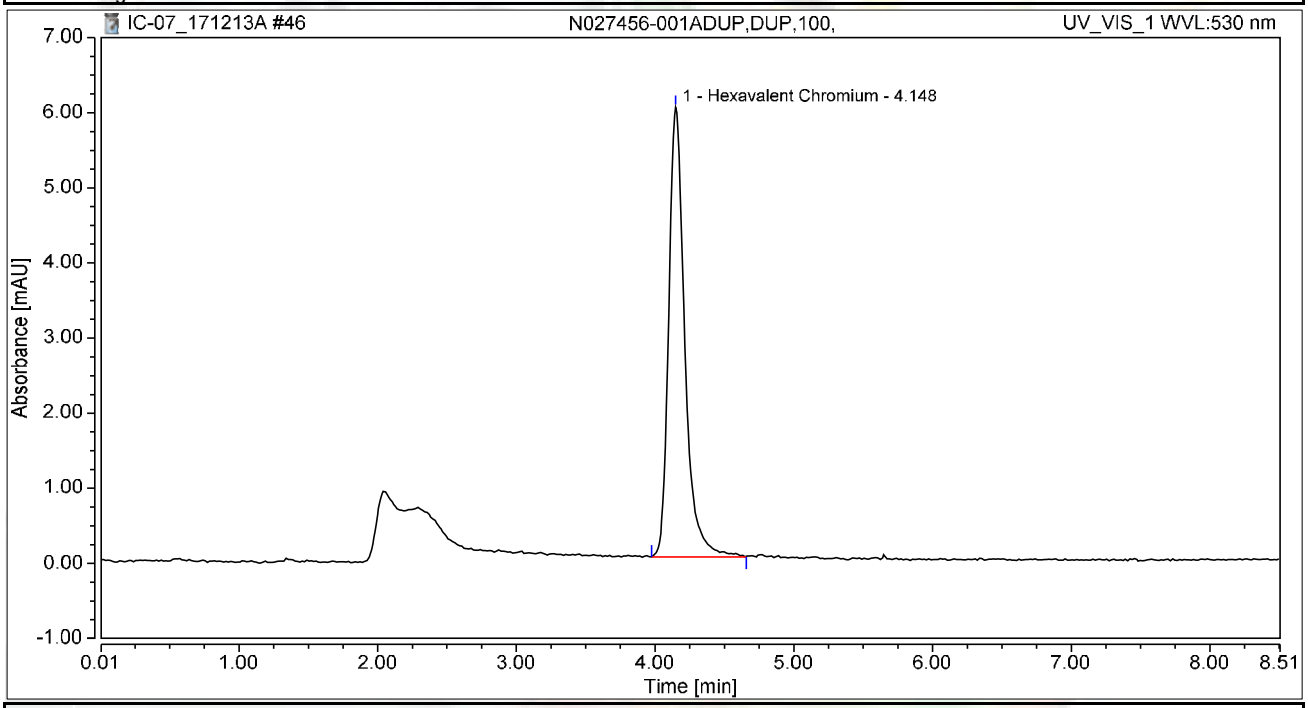
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	2.216	14.619	100.00	100.00	8.8245
Total:			**2.216**	**14.619**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027456-001ADUP,DUP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 14:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

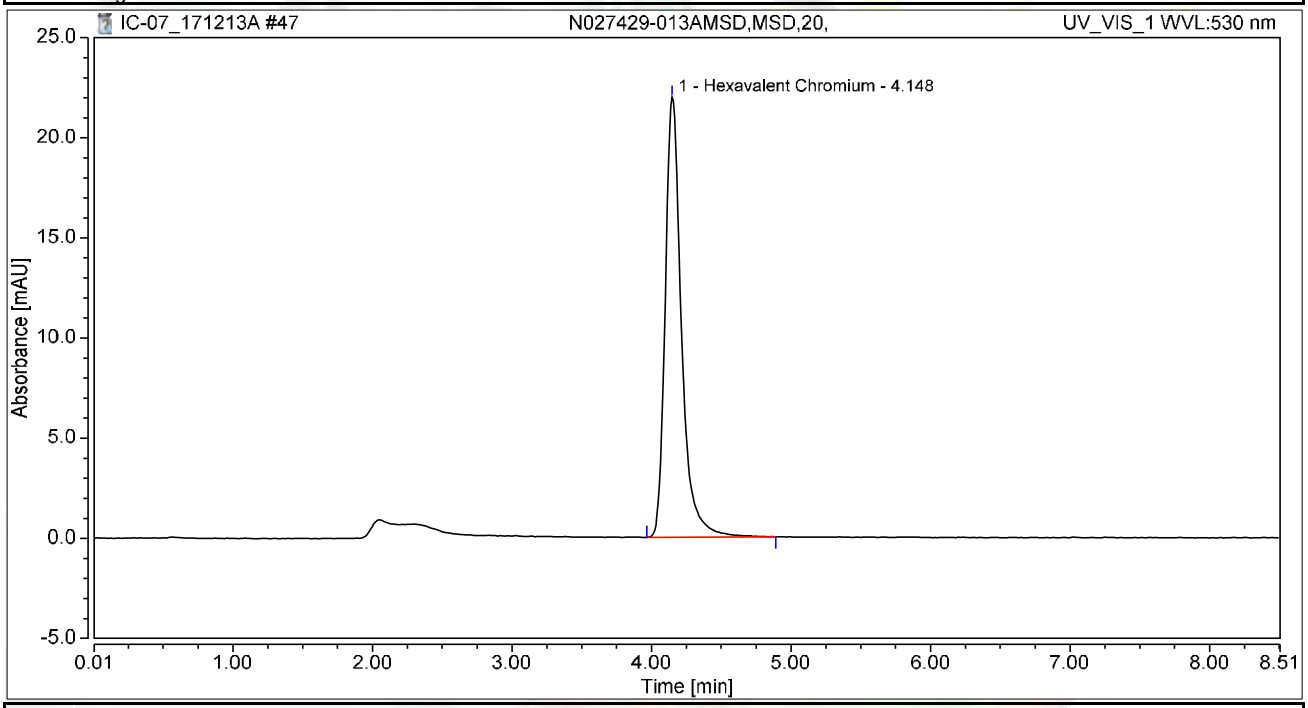
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.804	5.986	100.00	100.00	3.2013
Total:			**0.804**	**5.986**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-013AMSD,MSD,20,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 14:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

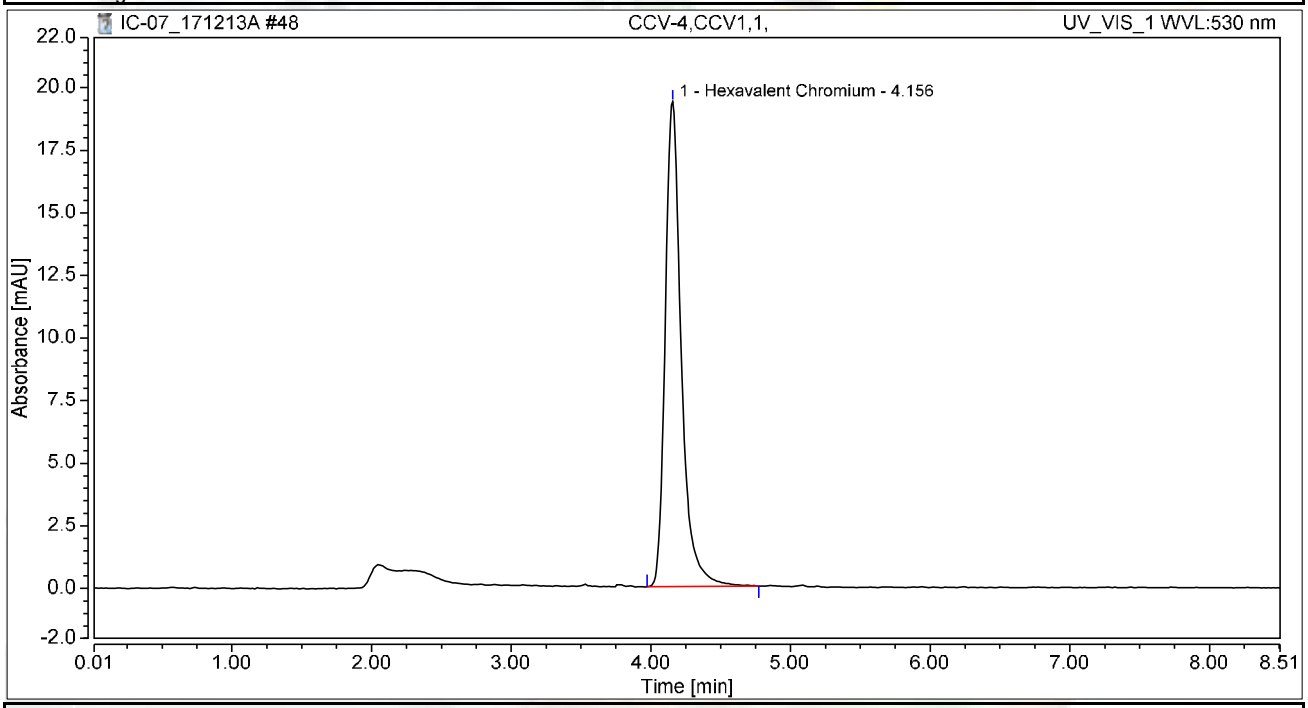
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.968	21.967	100.00	100.00	11.8188
Total:			**2.968**	**21.967**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 14:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

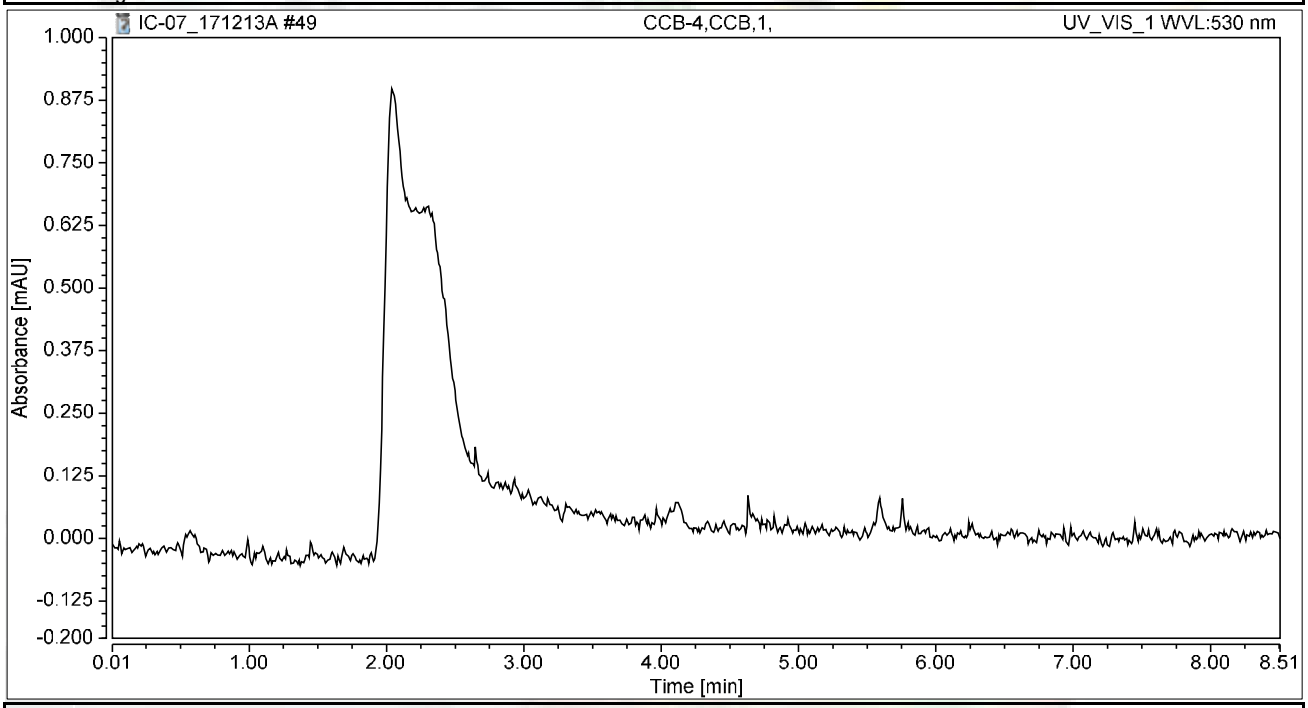
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.586	19.362	100.00	100.00	10.2999
Total:			**2.586**	**19.362**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 14:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

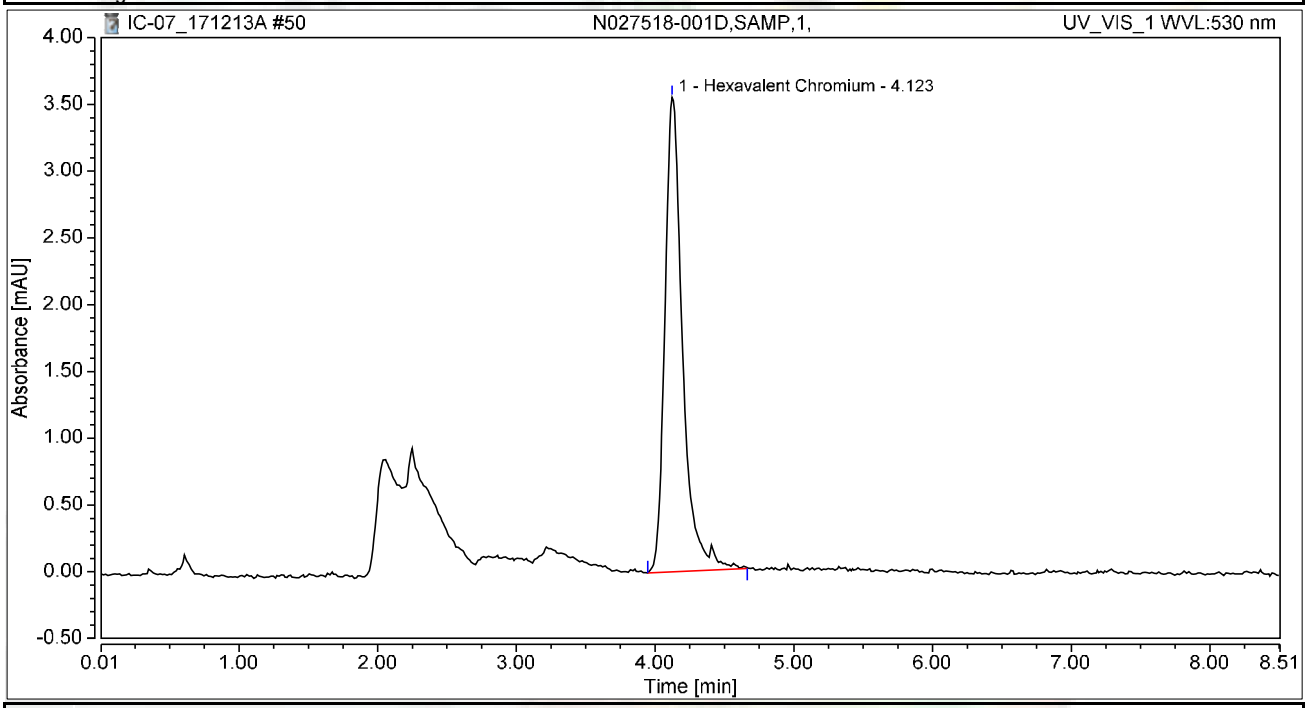
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027518-001D,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 14:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

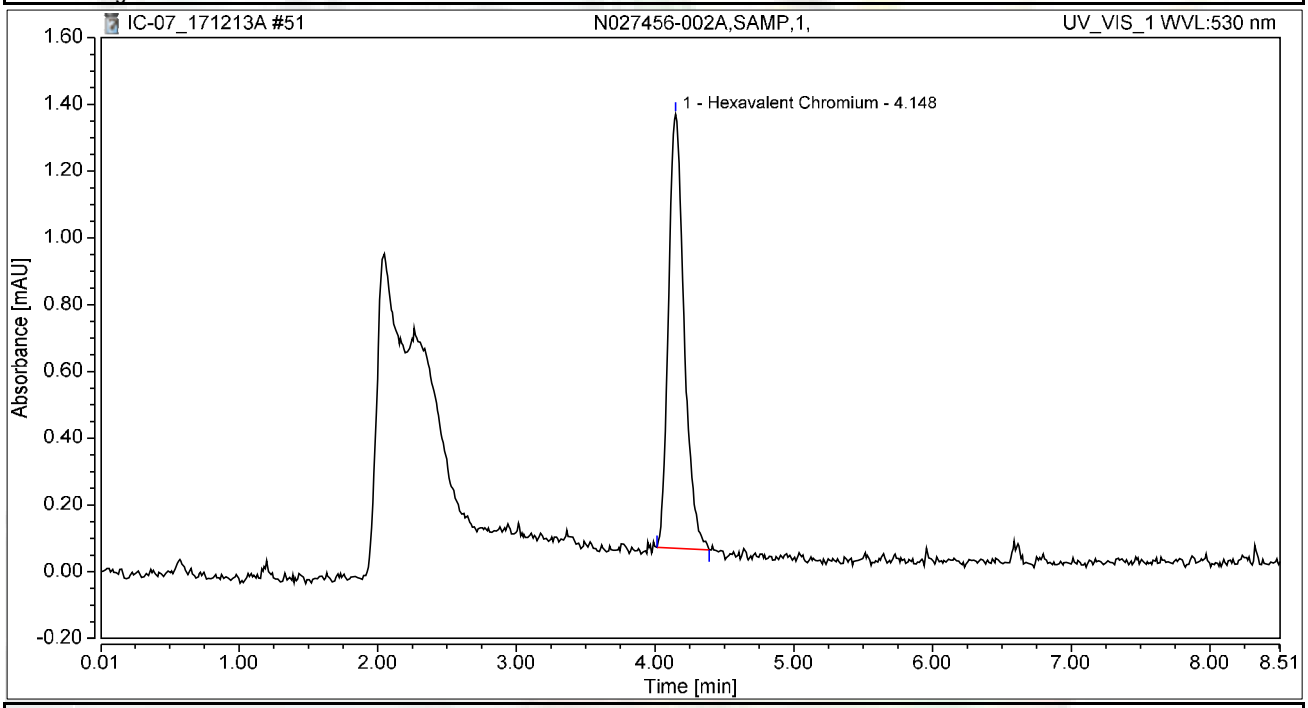
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.526	3.553	100.00	100.00	2.0950
Total:			**0.526**	**3.553**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027456-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 14:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

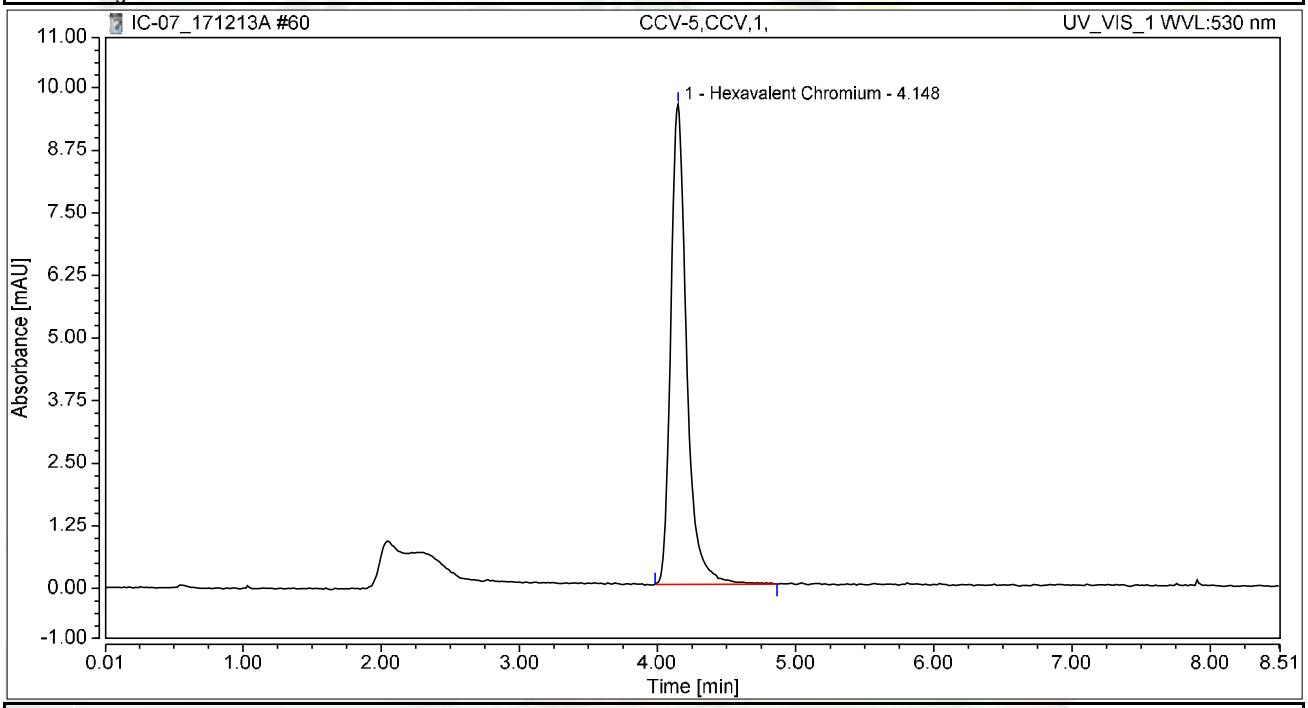
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.170	1.300	100.00	100.00	0.6786
Total:			**0.170**	**1.300**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 16:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

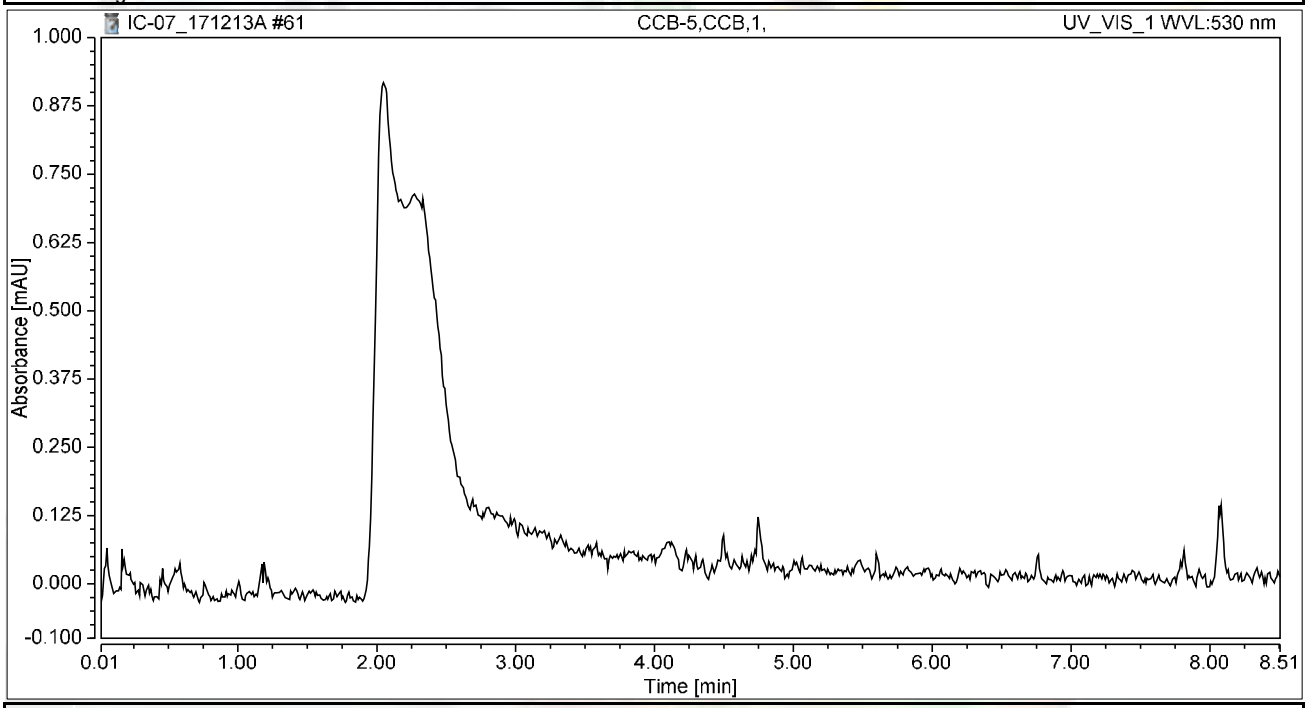
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.285	9.590	100.00	100.00	5.1187
Total:			**1.285**	**9.590**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/17 16:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

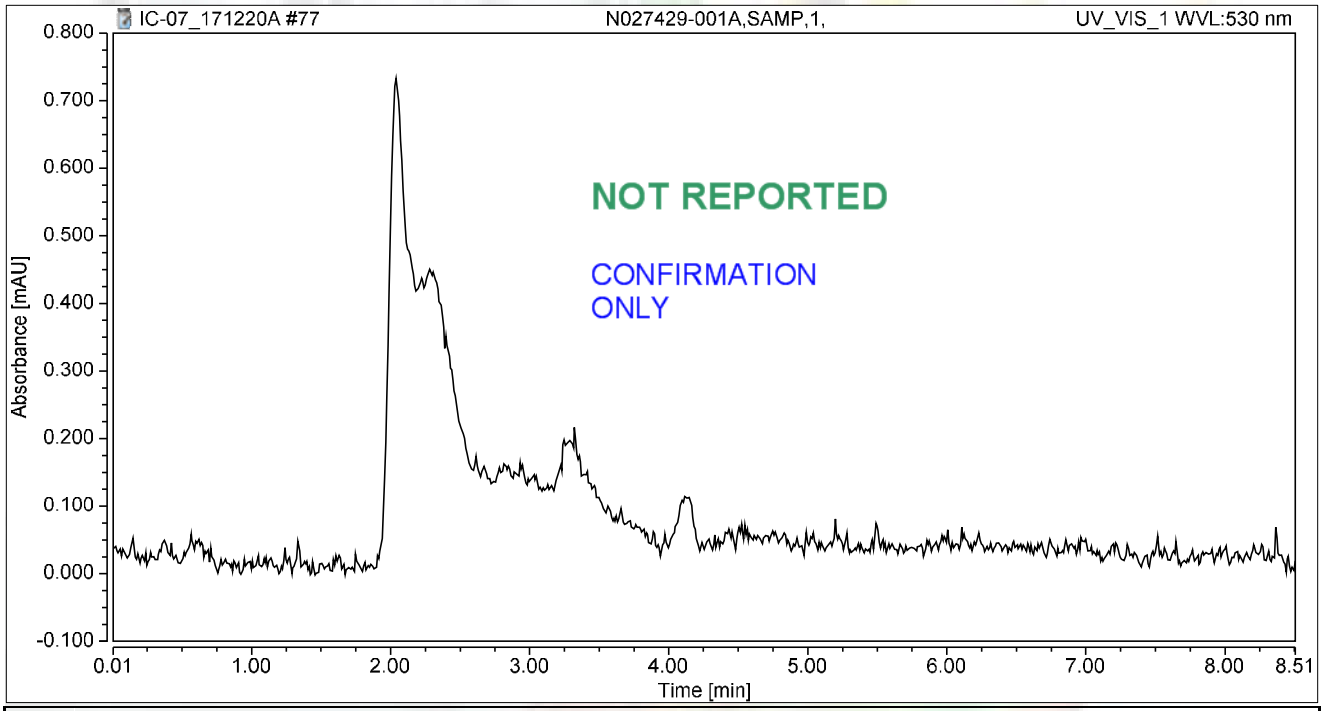
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 19:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

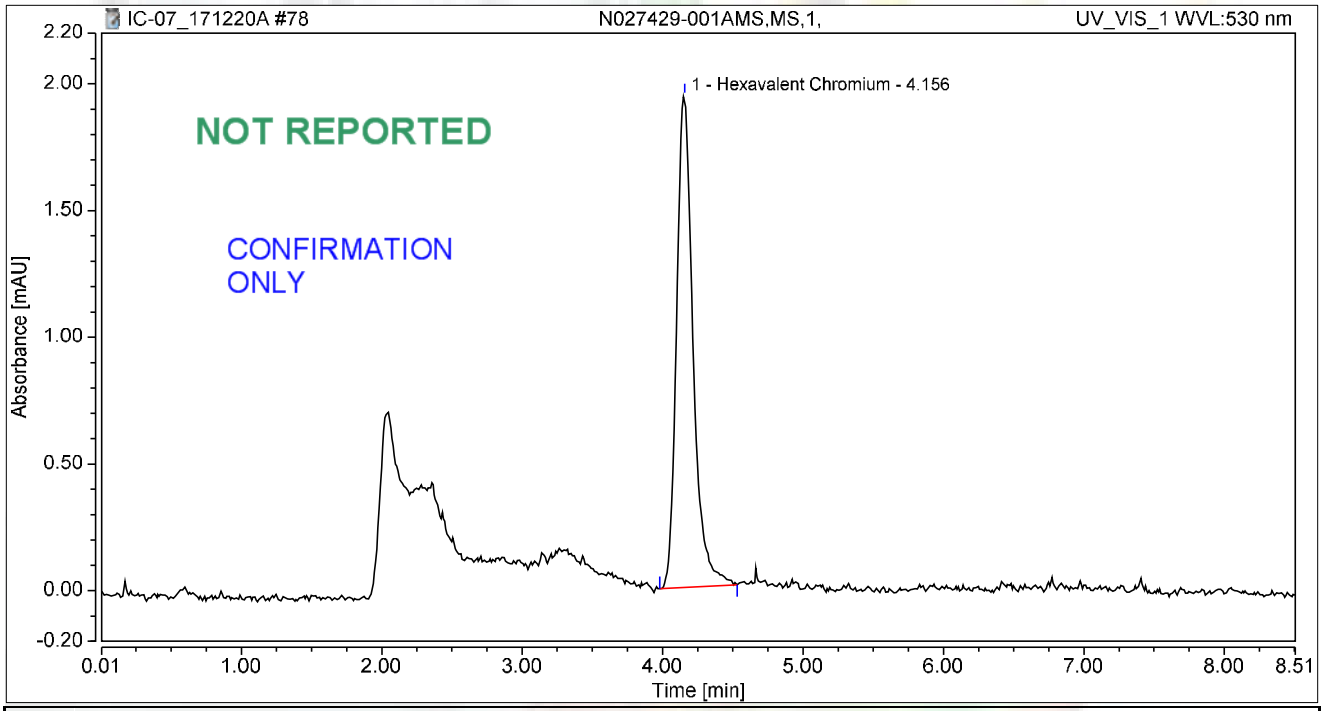
rba 12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027429-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 19:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.264	1.940	100.00	100.00	1.0510
Total:			**0.264**	**1.940**	**100.00**	**100.00**	

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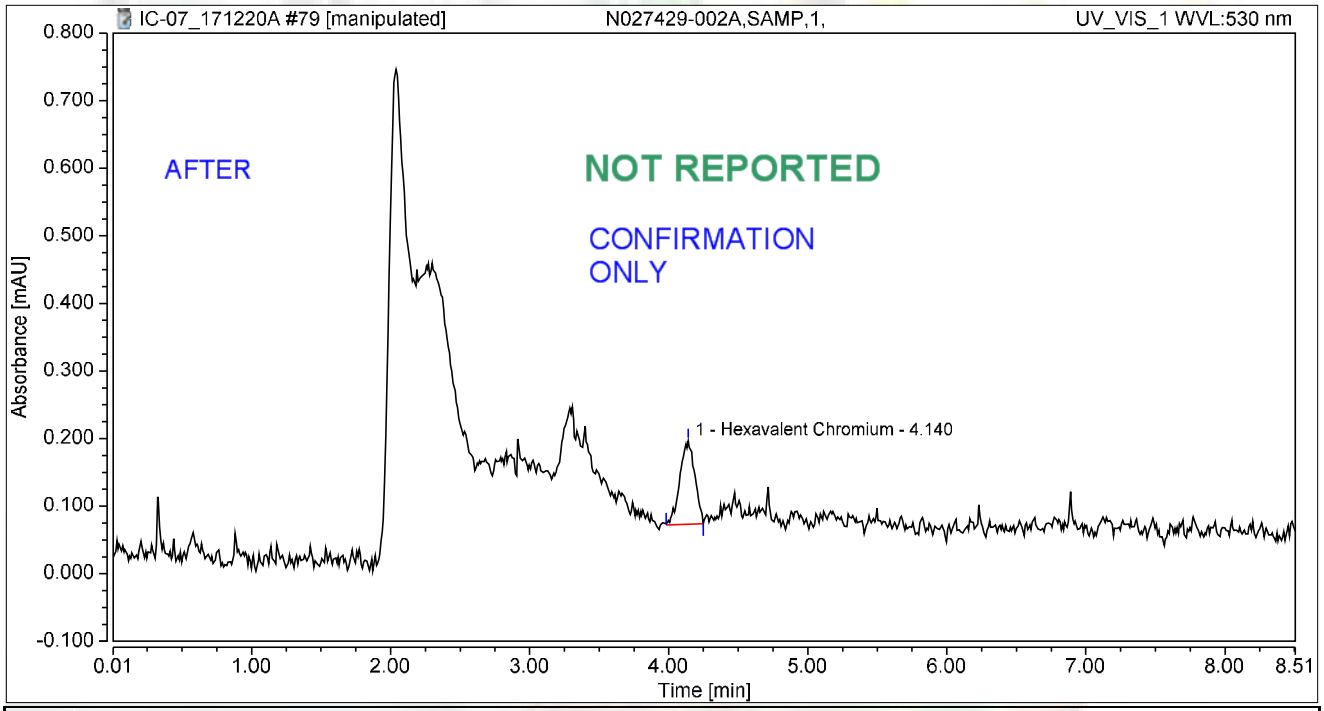
Chromatogram and Results

Injection Details

Injection Name:	**N027429-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 19:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.015	0.124	100.00	100.00	0.0608
Total:			**0.015**	**0.124**	**100.00**	**100.00**	

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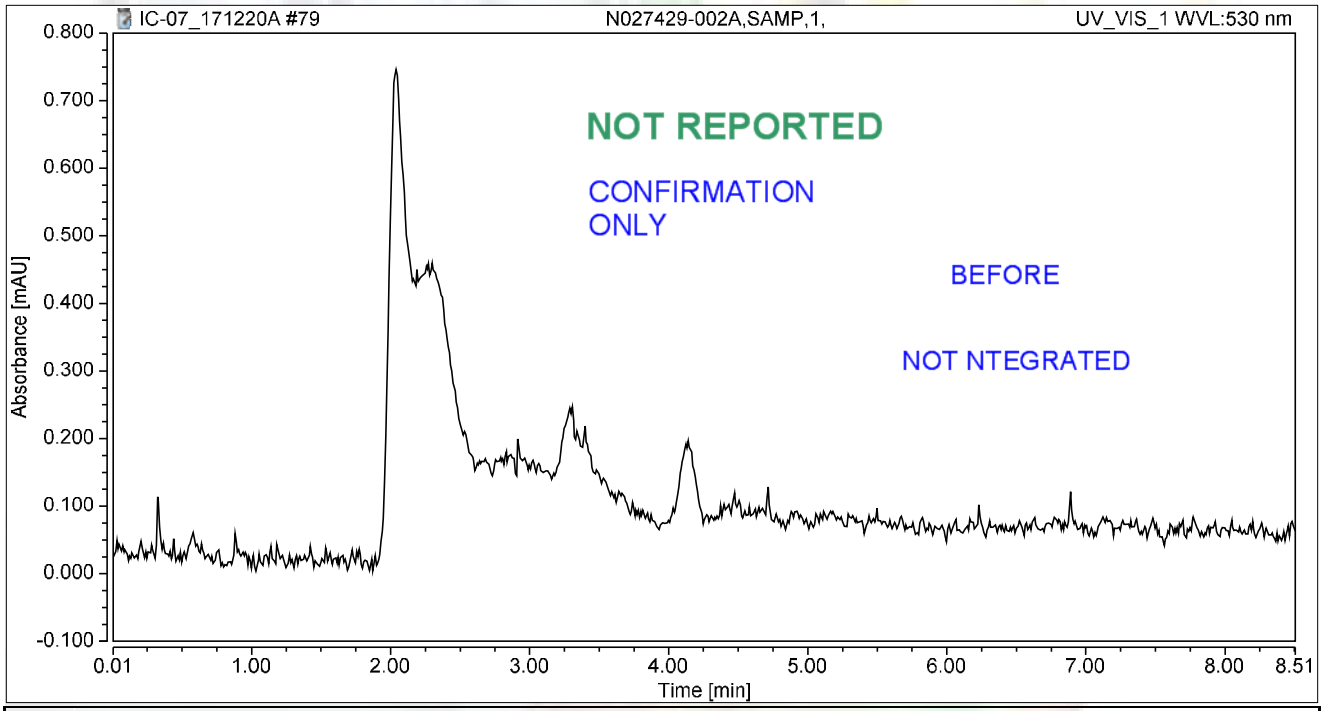
Chromatogram and Results

Injection Details

Injection Name:	**N027429-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 19:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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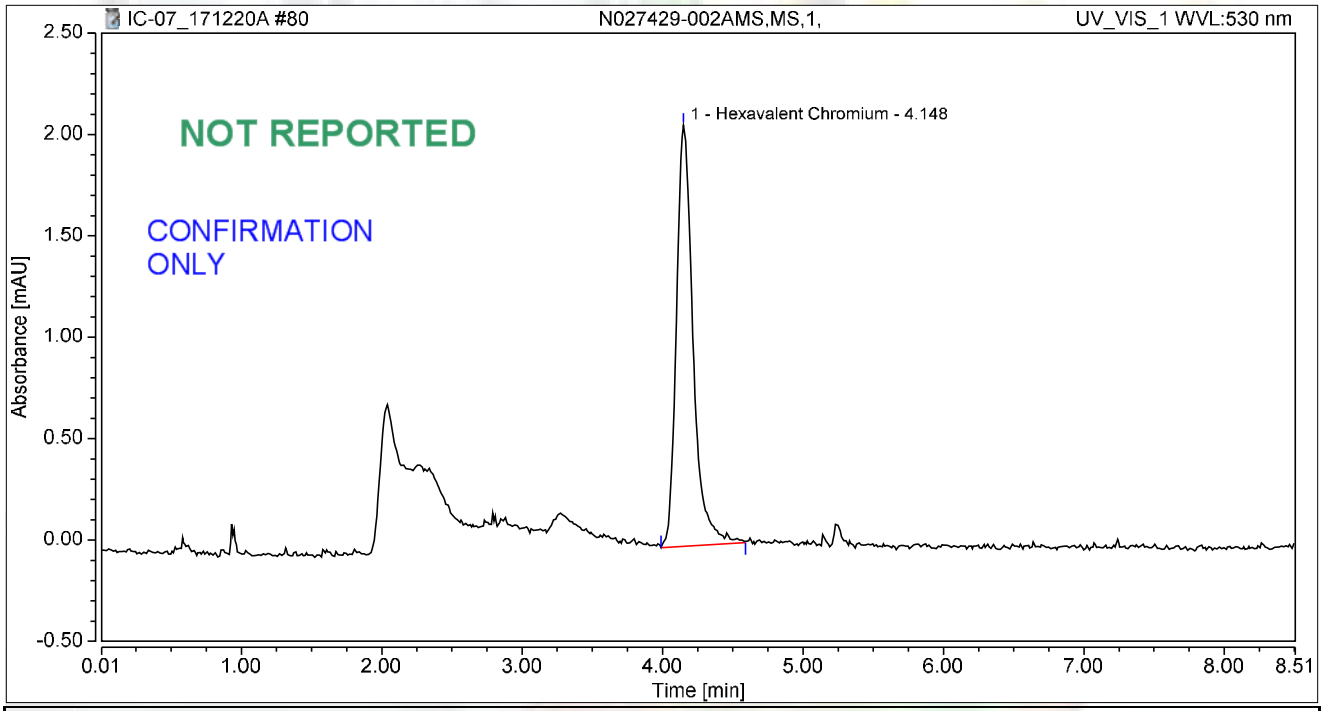
Chromatogram and Results

Injection Details

Injection Name:	**N027429-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 19:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.286	2.078	100.00	100.00	1.1399
Total:			**0.286**	**2.078**	**100.00**	**100.00**	

rba 12/21/2017

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120785 **Analyst:** LSR

ASSET #: N027429 **Date Analyzed:** 12/13/2017

Method: EPA 2320

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X			X		
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 12/20/2017

2nd Level Reviewer RB 12/28/2017 Date:

SAMPLE CALCULATION

Sample ID: **N027429-007D @ pH 8.20**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (12.45 mL)

= **0.02008 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (8.60) (0.02008 N) (1) * 1000

= 172.6880 mg**/L**

Reporting results in two significant figures,

= **170 mg/L** as CaCO3

Sujita Ramit 12/20/2017

12/28/2017

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02008 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (8.60 mL) (0.02008) (1) * 1000

= 172.6880 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 172.6880 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **170 mg/L**

Sirisha Ramit 12/20/2017
RLB 12/28/2017

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.53	50	0.00	0.050	MBLK
LCS-1	8.51	50	0.05	4.95	LCS
N027405-014D	8.16	50	0.00	9.20	SAMP
N027422-001A	8.28	50	0.00	14.80	SAMP
N027422-002A	10.27	50	5.60	7.90	SAMP
N027422-003A	10.22	50	5.00	7.20	SAMP
N027428-001B	7.87	50	0.00	12.40	SAMP
N027428-002B	7.78	50	0.00	7.70	SAMP
N027429-005D	7.72	50	0.00	1.50	SAMP
N027429-006D	7.85	50	0.00	1.50	SAMP
N027429-007D	8.20	50	0.00	8.60	SAMP
N027429-008D	8.20	50	0.00	8.35	SAMP
N027429-009D	7.67	50	0.00	2.10	SAMP
N027429-010D	7.34	50	0.00	4.25	SAMP
N027429-012D	7.90	50	0.00	6.25	SAMP
N027429-013D	7.83	50	0.00	5.80	SAMP
N027429-014D	7.31	50	0.00	5.10	SAMP
N027429-015D	7.71	50	0.00	4.60	SAMP
N027429-016D	7.74	50	0.00	3.40	SAMP
N027429-017D	7.66	50	0.00	3.40	SAMP
N027429-018D	7.58	50	0.00	2.80	SAMP
N027429-020D	7.77	50	0.00	3.10	SAMP
N027429-005DDUP	7.69	50	0.00	1.50	DUP
N027429-014DMS	8.12	50	0.00	10.20	MS
N027429-014DMSD	8.14	50	0.00	10.10	MSD

Standardization:

Spike amt:	**5**	ml
Titrant used:	**12.45**	ml
N H2SO4	**0.02008**	Normal
Date Analyzed:	**12/13/17**	
Time:	**8:30 AM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-161205A**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R171211A**	

Silvia Ramit 12/20/2017

RLB 12/28/2017

Date Analyzed:	12/13/17		Reagents:					Standardization:					P = 0
Time Started:	8:30 AM			Sodium Carbonate:		CINV-161205A			Spike amt:	5	mL		P < 1/2 T
Analyzed By:	LSR			Hydrochloric Acid:		0			Titrant used:	12.45	mL		P = 1/2 T
				Sulfuric Acid:		R171211A							P > 1/2 T
									N H2SO4	0.02008	N		P = T

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.53				0.02008	0.00	0.05	0.05	1	0.00	1.00	
LCS-1	50	8.51				0.02008	0.05	4.90	4.95	1	1.00	99.40	
N027405-014D	50	8.16				0.02008	0.00	9.20	9.20	1	0.00	184.74	
N027422-001A	50	8.28				0.02008	0.00	14.80	14.80	1	0.00	297.19	
N027422-002A	50	10.27				0.02008	5.60	2.30	7.90	1	112.45	158.63	
N027422-003A	50	10.22				0.02008	5.00	2.20	7.20	1	100.40	144.58	
N027428-001B	50	7.87				0.02008	0.00	12.40	12.40	1	0.00	249.00	
N027428-002B	50	7.78				0.02008	0.00	7.70	7.70	1	0.00	154.62	
N027429-005D	50	7.72				0.02008	0.00	1.50	1.50	1	0.00	30.12	
N027429-006D	50	7.85				0.02008	0.00	1.50	1.50	1	0.00	30.12	
N027429-007D	50	8.2				0.02008	0.00	8.60	8.60	1	0.00	172.69	
N027429-008D	50	8.2				0.02008	0.00	8.35	8.35	1	0.00	167.67	
N027429-009D	50	7.67				0.02008	0.00	2.10	2.10	1	0.00	42.17	
N027429-010D	50	7.34				0.02008	0.00	4.25	4.25	1	0.00	85.34	
N027429-012D	50	7.9				0.02008	0.00	6.25	6.25	1	0.00	125.50	
N027429-013D	50	7.83				0.02008	0.00	5.80	5.80	1	0.00	116.47	
N027429-014D	50	7.31				0.02008	0.00	5.10	5.10	1	0.00	102.41	
N027429-015D	50	7.71				0.02008	0.00	4.60	4.60	1	0.00	92.37	
N027429-016D	50	7.74				0.02008	0.00	3.40	3.40	1	0.00	68.27	
N027429-017D	50	7.66				0.02008	0.00	3.40	3.40	1	0.00	68.27	
N027429-018D	50	7.58				0.02008	0.00	2.80	2.80	1	0.00	56.22	
N027429-020D	50	7.77				0.02008	0.00	3.10	3.10	1	0.00	62.25	
N027429-005DDU	50	7.69				0.02008	0.00	1.50	1.50	1	0.00	30.12	
N027429-014DMS	50	8.12				0.02008	0.00	10.20	10.20	1	0.00	204.82	
N027429-014DMS	50	8.14				0.02008	0.00	10.10	10.10	1	0.00	202.81	

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Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	12/13/17
Time:	8:30 AM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.00	1.00	1.00		P = 0
LCS-1	0.00	2.01	97.39	99.40	99.40		P < 1/2 T
N027405-014D	0.00	0.00	184.74	184.74	184.74		P = 0
N027422-001A	0.00	0.00	297.19	297.19	297.19		P = 0
N027422-002A	66.27	92.37	0.00	158.63	158.63		P > 1/2 T
N027422-003A	56.22	88.35	0.00	144.58	144.58		P > 1/2 T
N027428-001B	0.00	0.00	249.00	249.00	249.00		P = 0
N027428-002B	0.00	0.00	154.62	154.62	154.62		P = 0
N027429-005D	0.00	0.00	30.12	30.12	30.12		P = 0
N027429-006D	0.00	0.00	30.12	30.12	30.12		P = 0
N027429-007D	0.00	0.00	172.69	172.69	172.69		P = 0
N027429-008D	0.00	0.00	167.67	167.67	167.67		P = 0
N027429-009D	0.00	0.00	42.17	42.17	42.17		P = 0
N027429-010D	0.00	0.00	85.34	85.34	85.34		P = 0
N027429-012D	0.00	0.00	125.50	125.50	125.50		P = 0
N027429-013D	0.00	0.00	116.47	116.47	116.47		P = 0
N027429-014D	0.00	0.00	102.41	102.41	102.41		P = 0
N027429-015D	0.00	0.00	92.37	92.37	92.37		P = 0
N027429-016D	0.00	0.00	68.27	68.27	68.27		P = 0
N027429-017D	0.00	0.00	68.27	68.27	68.27		P = 0
N027429-018D	0.00	0.00	56.22	56.22	56.22		P = 0
N027429-020D	0.00	0.00	62.25	62.25	62.25		P = 0
N027429-005DDUP	0.00	0.00	30.12	30.12	30.12		P = 0
N027429-014DMS	0.00	0.00	204.82	204.82	204.82		P = 0
N027429-014DMSD	0.00	0.00	202.81	202.81	202.81		P = 0

Silvia Ramit 12/20/2017

RLB 12/28/2017

Alkalinity Preparation and Runlog

Book #6

Matrix: H2O

Date Extracted: 12/13/17
Time Extracted: 12/13/17
Extracted By: LSR

Date Analyzed: 12/13/17
Time Analyzed: 830
Analyzed By: LSR

Reagent Lot # / Reagent ID
Sodium Carbonate: CMV161206A
Hydrochloric Acid:
Sulfuric Acid: D171211A
Sodium Bicarbonate: CMV150601A

pH meter Calibration:
SLOPE: 97.8%
pH 7 - 7.02 CMV170615F
4 - 4.0 170615E
10 - 10.02 170822B

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARD 12/12/17											
	#1	50mL	10.66	1WST171211A	5mL	0.05N	-	-	12.50	50/50	$N_{H_2SO_4} = \frac{(2.65 g/L)(5mL)}{(53)(V_{titrant})}$	- 0.0200000
	#2		10.67				-	-	12.40			= 0.02016129
1)	MBLK	50 mL	5.53	-	-	-	0.02008	0	0.050	50/50		Ave: 0.02008
2)	LCS		8.51	1WST171211B	1mL	0.05N		0.05	4.95			
3)	N027405-14D		8.16					0	9.20			
4)	N027422-1A		8.28					0	14.80			
5)	2A		10.27					5.60	7.90			
6)	3A		10.22					5.00	7.20			
7)	N027428-1B		7.87					0	12.40			
8)	2B		7.78					0	7.70			
9)	N027429-5D		7.72					0	1.50			
10)	6D		7.85					0	1.50		$P = \frac{(V_{pH\ 8.3})(N_{H_2SO_4})(50,000)}{V_{sx}}$	
11)	7D		8.20					0	8.60			
12)	8D		8.20					0	8.35			
13)	9D		7.67					0	2.10		$T = \frac{(V_{pH\ 4.5})(N_{H_2SO_4})(50,000)}{V_{sx}}$	
14)	10D		7.34					0	4.25			
15)	12D		7.90					0	6.25			
16)	13D		7.83					0	5.80			
17)	14D		7.31					0	5.10			
18)	15D		7.71					0	4.60			
19)	16D		7.74					0	3.40			
20)	17D		7.66					0	3.40			
MS	18D		7.58					0	2.80			
MSD	20D		7.77					0	3.10			
LCS	50DUP		7.69					0	1.50			
	14D MS		8.12	1WST171211B	1mL	0.05N		0	10.20			
	14D MSD		8.44					0	10.10			

Julia Ramit 12/20/2017
RB 12/28/2017

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120770
ASSET #: N027429 / N027405

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/12/2017

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.		X			X	
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

%Rec of Bromide in N027429-007DMS/MSD and N027429-012DMS failed. However, LCS passed criteria.
Several samples were diluted due to precipitate formed when mixed with eluent.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/17/2017

2nd Level Reviewer: RB 01/03/2018 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120853
ASSET #: N027429 / N027431

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/14/2017

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/17/2017

2nd Level Reviewer: RLB 01/03/2018 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Chloride concentration, in mg/L, in the orignal sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N027429-005D** concentration in mg/L is calculated as follows:

Chloride, mg/L = 3.7435 * 2000

= 7487

Reporting result in two significant values,

Chloride, mg/L = 7500

rba 12/20/2017

01/03/2018

ANALYSIS RUN LOG

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 25
Created: 11/29/2017 9:35:17 AM by IC-05
Last Update: 11/30/2017 12:33:04 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	ICV,ICV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	ICB,ICB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	N027210-002A,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027232-001A,SAMP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027210-002A,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027210-002ADUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027210-002AMS,MS,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027210-002AMSD,MSD,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027232-001AMS,MS,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027232-001AMSD,MSD,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	N027232-001ADUP,DUP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished



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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 25
Created: 11/29/2017 9:35:17 AM by IC-05
Last Update: 11/30/2017 12:33:04 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	ICV,ICV,1	11/29/2017 12:22:10 PM	ICV
10	ICB,ICB,1	11/29/2017 12:37:28 PM	ICB
11	MB-H2O,MBLK,1	11/29/2017 12:52:47 PM	METHOD BLANK
12	LCS-H2O,LCS,1	11/29/2017 1:08:05 PM	LCS
13	N027210-002A,SAMP,10	11/29/2017 1:23:23 PM	SAMP,1>10mL
14	N027232-001A,SAMP,2	11/29/2017 1:38:41 PM	SAMP,5>10mL
15	N027210-002A,SAMP,50	11/29/2017 2:44:14 PM	SAMP,0.2>10mL
16	N027210-002ADUP,DUP,50	11/29/2017 2:59:31 PM	DUP,0.2>10mL
17	N027210-002AMS,MS,10	11/29/2017 3:14:50 PM	MS,0.2>10mL
18	N027210-002AMSD,MSD,10	11/29/2017 3:30:07 PM	MSD,0.2>10mL
19	N027232-001AMS,MS,2	11/29/2017 3:45:25 PM	MS,5>10mL
20	N027232-001AMSD,MSD,2	11/29/2017 4:00:43 PM	MSD,5>10mL
21	CCV-1,CCV,1	11/29/2017 4:16:01 PM	CCV
22	CCB-1,CCB,1	11/29/2017 4:31:19 PM	CCB
23	N027232-001ADUP,DUP,2	11/29/2017 4:46:38 PM	DUP,5>10mL
24	CCV-2,CCV,1	11/29/2017 5:01:56 PM	CCV
25	CCB-2,CCB,1	11/29/2017 5:17:14 PM	CCB

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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 80
Created: 12/12/2017 8:35:21 AM by IC-05
Last Update: 12/13/2017 1:26:07 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027482-001A,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027482-003A,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027482-002A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027482-004A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027482-001ADUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027482-003A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027482-004AMS,MS,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	N027482-004AMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	N027482-004A,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	N027482-004ADUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
26	N027482-004AMS,MS,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
27	N027482-004AMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
28	N027482-001A,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
29	N027482-002A,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
30	N027482-003A,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
31	N027482-002A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
32	N027482-004ADUP,DUP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
33	N027482-001A,SAMP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
34	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
35	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
36	N027405-001D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
37	N027429-007D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
38	N027429-012D,SAMP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
39	N027429-007DMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
40	N027429-007DMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
41	N027429-012DMS,MS,2	Unknown	1000.0	Anions Default	Anions_171129	Finished

rba 12/17/2017

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 80
Created: 12/12/2017 8:35:21 AM by IC-05
Last Update: 12/13/2017 1:26:07 AM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	BLANK,BLANK,1	12/12/2017 8:36:15 AM	BLANK
10	CCV-1,CCV,1	12/12/2017 8:51:34 AM	CCV
11	CCB-1,CCB,1	12/12/2017 9:06:51 AM	CCB
12	MB-H2O,MBLK,1	12/12/2017 9:22:09 AM	METHOD BLANK
13	LCS-H2O,LCS,1	12/12/2017 9:37:27 AM	LCS
14	N027482-001A,SAMP,1	12/12/2017 10:04:10 AM	SAMP,10mL
15	N027482-003A,SAMP,1	12/12/2017 10:19:28 AM	SAMP,10mL
16	N027482-002A,SAMP,5	12/12/2017 10:34:46 AM	SAMP,2>10mL
17	N027482-004A,SAMP,5	12/12/2017 10:50:04 AM	SAMP,2>10mL
18	N027482-001ADUP,DUP,1	12/12/2017 11:05:22 AM	DUP,10mL
19	N027482-003A,SAMP,5	12/12/2017 11:20:40 AM	SAMP,2>10mL
20	N027482-004AMS,MS,5	12/12/2017 11:35:58 AM	MS,2>10mL
21	N027482-004AMSD,MSD,5	12/12/2017 11:51:16 AM	MSD,2>10mL
22	CCV-2,CCV,1	12/12/2017 12:06:33 PM	CCV
23	CCB-2,CCB,1	12/12/2017 12:21:52 PM	CCB
24	N027482-004A,SAMP,50	12/12/2017 12:37:11 PM	SAMP,0.2>10mL
25	N027482-004ADUP,DUP,50	12/12/2017 12:52:29 PM	DUP,0.2>10mL
26	N027482-004AMS,MS,50	12/12/2017 1:07:47 PM	MS,0.2>10mL
27	N027482-004AMSD,MSD,50	12/12/2017 1:23:05 PM	MSD,0.2>10mL
28	N027482-001A,SAMP,50	12/12/2017 1:38:23 PM	SAMP,0.2>10mL
29	N027482-002A,SAMP,100	12/12/2017 2:06:39 PM	SAMP,0.5>10mL
30	N027482-003A,SAMP,100	12/12/2017 2:21:58 PM	SAMP,0.1>10mL
31	N027482-002A,SAMP,5	12/12/2017 2:37:15 PM	SAMP,2>10mL
32	N027482-004ADUP,DUP,5	12/12/2017 2:52:33 PM	DUP,2>10mL
33	N027482-001A,SAMP,2	12/12/2017 3:07:51 PM	SAMP,5>10mL
34	CCV-3,CCV,1	12/12/2017 3:23:10 PM	CCV
35	CCB-3,CCB,1	12/12/2017 3:38:27 PM	CCB
36	N027405-001D,SAMP,1	12/12/2017 3:53:45 PM	SAMP,10mL
37	N027429-007D,SAMP,1	12/12/2017 4:09:03 PM	SAMP,10mL
38	N027429-012D,SAMP,2	12/12/2017 4:24:21 PM	SAMP,5>10mL
39	N027429-007DMS,MS,1	12/12/2017 4:45:44 PM	SAMP,0.5>10mL
40	N027429-007DMSD,MSD,1	12/12/2017 5:01:02 PM	SAMP,0.005>10mL
41	N027429-012DMS,MS,2	12/12/2017 5:16:20 PM	SAMP,0.05>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 80
Created: 12/12/2017 8:35:21 AM by IC-05
Last Update: 12/13/2017 1:26:07 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027429-007DDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
43	N027429-008D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
44	N027429-005D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
45	N027429-006D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
46	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
47	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
48	N027429-009D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
49	N027429-010D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
50	N027429-013D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
51	N027429-014D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
52	N027429-015D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
53	N027429-016D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
54	N027429-017D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
55	N027429-018D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
56	N027429-020D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
57	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
58	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
59	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
60	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
61	N027430-006C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
62	N027430-006CDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
63	N027430-006CMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
64	N027430-006CMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
65	N027430-004C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
66	N027430-004CMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
67	N027430-012C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
68	N027430-002C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
69	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
70	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
71	N027430-008C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
72	N027430-013C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
73	N027430-014C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
74	N027430-016C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
75	N027430-017C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
76	N027430-015C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
77	N027430-018C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
78	N027430-020C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
79	CCV-7,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
80	CCB-7,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 80
Created: 12/12/2017 8:35:21 AM by IC-05
Last Update: 12/13/2017 1:26:07 AM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027429-007DDUP,DUP,1	12/12/2017 5:31:38 PM	DUP,10mL
43	N027429-008D,SAMP,1	12/12/2017 5:46:56 PM	SAMP,10mL
44	N027429-005D,SAMP,5	12/12/2017 6:02:14 PM	SAMP,2>10mL
45	N027429-006D,SAMP,5	12/12/2017 6:17:32 PM	SAMP,2>10mL
46	CCV-4,CCV,1	12/12/2017 6:32:50 PM	CCV
47	CCB-4,CCB,1	12/12/2017 6:48:08 PM	CCB
48	N027429-009D,SAMP,5	12/12/2017 7:03:25 PM	SAMP,2>10mL
49	N027429-010D,SAMP,10	12/12/2017 7:18:43 PM	SAMP,1>10mL
50	N027429-013D,SAMP,5	12/12/2017 7:34:01 PM	SAMP,2>10mL
51	N027429-014D,SAMP,5	12/12/2017 7:49:19 PM	SAMP,2>10mL
52	N027429-015D,SAMP,5	12/12/2017 8:04:37 PM	SAMP,2>10mL
53	N027429-016D,SAMP,5	12/12/2017 8:19:55 PM	SAMP,2>10mL
54	N027429-017D,SAMP,5	12/12/2017 8:35:12 PM	SAMP,2>10mL
55	N027429-018D,SAMP,5	12/12/2017 8:50:31 PM	SAMP,2>10mL
56	N027429-020D,SAMP,5	12/12/2017 9:05:49 PM	SAMP,2>10mL
57	CCV-5,CCV,1	12/12/2017 9:21:06 PM	CCV
58	CCB-5,CCB,1	12/12/2017 9:36:24 PM	CCB
59	LCS-2,LCS,1	12/12/2017 9:51:42 PM	LCS
60	MB-2,MBLK,1	12/12/2017 10:07:01 PM	METHOD BLANK
61	N027430-006C,SAMP,1	12/12/2017 10:22:19 PM	SAMP,10mL
62	N027430-006CDUP,DUP,1	12/12/2017 10:37:37 PM	DUP,10mL
63	N027430-006CMS,MS,1	12/12/2017 10:52:55 PM	MS,10mL
64	N027430-006CMSD,MSD,1	12/12/2017 11:08:12 PM	MSD,10mL
65	N027430-004C,SAMP,1	12/12/2017 11:23:31 PM	SAMP,10mL
66	N027430-004CMS,MS,1	12/12/2017 11:38:48 PM	MS,10mL
67	N027430-012C,SAMP,1	12/12/2017 11:54:06 PM	SAMP,10mL
68	N027430-002C,SAMP,5	12/13/2017 12:09:24 AM	SAMP,2>10mL
69	CCV-6,CCV,1	12/13/2017 12:24:42 AM	CCV
70	CCB-6,CCB,1	12/13/2017 12:40:00 AM	CCB
71	N027430-008C,SAMP,5	12/13/2017 12:55:18 AM	SAMP,2>10mL
72	N027430-013C,SAMP,5	12/13/2017 1:10:36 AM	SAMP,2>10mL
73	N027430-014C,SAMP,5	12/13/2017 1:25:54 AM	SAMP,2>10mL
74	N027430-016C,SAMP,1	12/13/2017 1:41:11 AM	SAMP,10mL
75	N027430-017C,SAMP,1	12/13/2017 1:56:29 AM	SAMP,10mL
76	N027430-015C,SAMP,5	12/13/2017 2:11:47 AM	SAMP,2>10mL
77	N027430-018C,SAMP,5	12/13/2017 2:27:05 AM	SAMP,2>10mL
78	N027430-020C,SAMP,5	12/13/2017 2:42:23 AM	SAMP,2>10mL
79	CCV-7,CCV,1	12/13/2017 2:57:41 AM	CCV
80	CCB-7,CCB,1	12/13/2017 3:12:58 AM	CCB

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 113
Created: 12/14/2017 8:36:45 AM by IC-05
Last Update: 12/15/2017 4:10:57 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027429-005D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027429-005D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027429-006D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027429-006D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027429-007D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027429-007D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027429-008D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	N027429-008D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	N027429-008DMS,MS,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	N027429-008DMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
26	N027429-013D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
27	N027429-013DMS,MS,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
28	N027429-013DMSD,MSD,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
29	N027429-013D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
30	N027429-013DMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
31	N027429-013DMSD,MSD,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
32	N027429-009D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
33	N027429-009D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
34	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
35	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
36	N027429-010D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
37	N027429-010D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
38	N027429-012D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
39	N027429-012D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
40	N027429-014D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
41	N027429-014D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 113
Created: 12/14/2017 8:36:45 AM by IC-05
Last Update: 12/15/2017 4:10:57 AM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	BLANK,BLANK,1	12/14/2017 8:37:30 AM	BLANK
10	CCV-1,CCV,1	12/14/2017 8:52:48 AM	CCV
11	CCB-1,CCB,1	12/14/2017 9:08:06 AM	CCB
12	MB-H2O,MBLK,1	12/14/2017 9:23:24 AM	METHOD BLANK
13	LCS-H2O,LCS,1	12/14/2017 9:38:42 AM	LCS
14	N027429-005D,SAMP,2000	12/14/2017 10:12:46 AM	SAMP,0.005>>10mL
15	N027429-005D,SAMP,100	12/14/2017 10:28:05 AM	SAMP,0.1>10mL
16	N027429-006D,SAMP,2000	12/14/2017 10:43:23 AM	SAMP,0.005>>10mL
17	N027429-006D,SAMP,100	12/14/2017 10:58:41 AM	SAMP,0.1>10mL
18	N027429-007D,SAMP,100	12/14/2017 11:13:59 AM	SAMP,0.1>10mL
19	N027429-007D,SAMP,20	12/14/2017 11:29:17 AM	SAMP,0.5>10mL
20	N027429-008D,SAMP,100	12/14/2017 11:44:35 AM	SAMP,0.1>10mL
21	N027429-008D,SAMP,20	12/14/2017 11:59:52 AM	SAMP,0.5>10mL
22	CCV-2,CCV,1	12/14/2017 12:15:10 PM	CCV
23	CCB-2,CCB,1	12/14/2017 12:30:28 PM	CCB
24	N027429-008DMS,MS,100	12/14/2017 12:49:52 PM	MS,0.1>10mL
25	N027429-008DMS,MS,20	12/14/2017 1:05:10 PM	MS,0.5>10mL
26	N027429-013D,SAMP,100	12/14/2017 1:20:28 PM	SAMP,0.1>10mL
27	N027429-013DMS,MS,100	12/14/2017 1:35:46 PM	MS,0.1>10mL
28	N027429-013DMSD,MSD,100	12/14/2017 1:51:03 PM	MSD,0.1>10mL
29	N027429-013D,SAMP,20	12/14/2017 2:06:21 PM	SAMP,0.5>10mL
30	N027429-013DMS,MS,20	12/14/2017 2:21:39 PM	MS,0.5>10mL
31	N027429-013DMSD,MSD,20	12/14/2017 2:36:57 PM	MSD,0.5>10mL
32	N027429-009D,SAMP,2000	12/14/2017 2:52:15 PM	SAMP,0.005>10mL
33	N027429-009D,SAMP,100	12/14/2017 3:07:32 PM	SAMP,0.1>10mL
34	CCV-3,CCV,1	12/14/2017 3:22:50 PM	CCV
35	CCB-3,CCB,1	12/14/2017 3:38:08 PM	CCB
36	N027429-010D,SAMP,1000	12/14/2017 3:53:26 PM	SAMP,0.01>10mL
37	N027429-010D,SAMP,100	12/14/2017 4:08:44 PM	SAMP,0.1>10mL
38	N027429-012D,SAMP,200	12/14/2017 4:24:02 PM	SAMP,0.05>10mL
39	N027429-012D,SAMP,20	12/14/2017 4:39:20 PM	SAMP,05>10mL
40	N027429-014D,SAMP,100	12/14/2017 4:56:46 PM	SAMP,0.1>10mL
41	N027429-014D,SAMP,20	12/14/2017 5:12:04 PM	SAMP,0.5>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 113
Created: 12/14/2017 8:36:45 AM by IC-05
Last Update: 12/15/2017 4:10:57 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027429-015D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
43	N027429-015D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
44	N027429-016D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
45	N027429-016D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
46	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
47	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
48	N027429-015DDUP,DUP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
49	N027429-015DDUP,DUP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
50	N027429-017D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
51	N027429-017D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
52	N027429-018D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
53	N027429-018D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
54	N027429-020D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
55	N027429-020D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
56	N027431-001C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
57	N027431-001C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
58	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
59	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
60	N027431-002C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
61	N027431-002C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
62	N027431-003C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
63	N027431-003C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
64	N027431-004C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
65	N027431-004C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
66	N027431-005C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
67	N027431-005C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
68	N027431-006C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
69	N027431-006C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
70	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
71	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
72	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
73	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
74	N027430-004C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
75	N027430-004CDUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
76	N027430-004CMS,MS,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
77	N027430-004CMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
78	N027430-004C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
79	N027430-004CDUP,DUP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
80	N027430-004CMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
81	N027430-004CMSD,MSD,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
82	CCV-7,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 113
Created: 12/14/2017 8:36:45 AM by IC-05
Last Update: 12/15/2017 4:10:57 AM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027429-015D,SAMP,200	12/14/2017 5:27:22 PM	SAMP,0.05>10mL
43	N027429-015D,SAMP,20	12/14/2017 5:42:40 PM	SAMP,0.5>10mL
44	N027429-016D,SAMP,500	12/14/2017 5:57:57 PM	SAMP,0.02>10mL
45	N027429-016D,SAMP,20	12/14/2017 6:13:16 PM	SAMP,0.5>10mL
46	CCV-4,CCV,1	12/14/2017 6:28:34 PM	CCV
47	CCB-4,CCB,1	12/14/2017 6:43:51 PM	CCB
48	N027429-015DDUP,DUP,200	12/14/2017 6:59:09 PM	DUP,0.05>10mL
49	N027429-015DDUP,DUP,20	12/14/2017 7:14:27 PM	DUP,0.5>10mL
50	N027429-017D,SAMP,500	12/14/2017 7:29:45 PM	SAMP,0.02>10mL
51	N027429-017D,SAMP,20	12/14/2017 7:45:03 PM	SAMP,0.5>10mL
52	N027429-018D,SAMP,1000	12/14/2017 8:00:21 PM	SAMP,0.01>10mL
53	N027429-018D,SAMP,100	12/14/2017 8:15:39 PM	SAMP,0.1>10mL
54	N027429-020D,SAMP,1000	12/14/2017 8:30:57 PM	SAMP,0.01>10mL
55	N027429-020D,SAMP,100	12/14/2017 8:46:15 PM	SAMP,0.1>10mL
56	N027431-001C,SAMP,200	12/14/2017 9:01:34 PM	SAMP,0.05>10mL
57	N027431-001C,SAMP,20	12/14/2017 9:16:52 PM	SAMP,0.5>10mL
58	CCV-5,CCV,1	12/14/2017 9:32:10 PM	CCV
59	CCB-5,CCB,1	12/14/2017 9:47:28 PM	CCB
60	N027431-002C,SAMP,1000	12/14/2017 10:02:46 PM	SAMP,0.01>10mL
61	N027431-002C,SAMP,50	12/14/2017 10:18:04 PM	SAMP,0.2>10mL
62	N027431-003C,SAMP,2000	12/14/2017 10:33:21 PM	SAMP,0.005>10mL
63	N027431-003C,SAMP,100	12/14/2017 10:48:39 PM	SAMP,0.1>10mL
64	N027431-004C,SAMP,2000	12/14/2017 11:03:57 PM	SAMP,0.005>10mL
65	N027431-004C,SAMP,100	12/14/2017 11:19:15 PM	SAMP,0.1>10mL
66	N027431-005C,SAMP,100	12/14/2017 11:34:33 PM	SAMP,0.1>10mL
67	N027431-005C,SAMP,20	12/14/2017 11:49:51 PM	SAMP,0.5>10mL
68	N027431-006C,SAMP,1000	12/15/2017 12:05:09 AM	SAMP,0.01>10mL
69	N027431-006C,SAMP,200	12/15/2017 12:20:27 AM	SAMP,0.05>10mL
70	CCV-6,CCV,1	12/15/2017 12:35:44 AM	CCV
71	CCB-6,CCB,1	12/15/2017 12:51:02 AM	CCB
72	LCS-2,LCS,1	12/15/2017 1:06:20 AM	LCS
73	MB-2,MBLK,1	12/15/2017 1:21:38 AM	METHOD BLANK
74	N027430-004C,SAMP,50	12/15/2017 1:36:55 AM	SAMP,0.2>10mL
75	N027430-004CDUP,DUP,50	12/15/2017 1:52:13 AM	DUP,0.2>10mL
76	N027430-004CMS,MS,50	12/15/2017 2:07:31 AM	MS,0.2>10mL
77	N027430-004CMSD,MSD,50	12/15/2017 2:22:49 AM	MSD,0.2>10mL
78	N027430-004C,SAMP,20	12/15/2017 2:38:07 AM	SAMP,0.5>10mL
79	N027430-004CDUP,DUP,20	12/15/2017 2:53:25 AM	DUP,0.5>10mL
80	N027430-004CMS,MS,20	12/15/2017 3:08:43 AM	MS,0.5>10mL
81	N027430-004CMSD,MSD,20	12/15/2017 3:24:01 AM	MSD,0.5>10mL
82	CCV-7,CCV,1	12/15/2017 3:39:19 AM	CCV

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 113
Created: 12/14/2017 8:36:45 AM by IC-05
Last Update: 12/15/2017 4:10:57 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
83	CCB-7,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
84	N027430-020C,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
85	N027430-020CMS,MS,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
86	N027430-020C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
87	N027430-020CMS,MS,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
88	N027430-002C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
89	N027430-002C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
90	N027430-006C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
91	N027430-006C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
92	N027430-008C,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
93	N027430-008C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
94	CCV-8,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
95	CCB-8,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
96	N027430-012C,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
97	N027430-012C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
98	N027430-013C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
99	N027430-013C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
100	N027430-014C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
101	N027430-014C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
102	N027430-015C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
103	N027430-015C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
104	N027430-016C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
105	N027430-016C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
106	CCV-9,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
107	CCB-9,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
108	N027430-017C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
109	N027430-017C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
110	N027430-018C,SAMP,5000	Unknown	1000.0	Anions Default	Anions_171129	Finished
111	N027430-018C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
112	CCV-10,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
113	CCB-10,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 113
Created: 12/14/2017 8:36:45 AM by IC-05
Last Update: 12/15/2017 4:10:57 AM by IC-05

No.	Name	Inj. Date/Time	Comment
83	CCB-7,CCB,1	12/15/2017 3:54:37 AM	CCB
84	N027430-020C,SAMP,500	12/15/2017 4:09:54 AM	SAMP,0.02>10mL
85	N027430-020CMS,MS,500	12/15/2017 4:25:12 AM	MS,0.02>10mL
86	N027430-020C,SAMP,50	12/15/2017 4:40:30 AM	SAMP,0.2>10mL
87	N027430-020CMS,MS,50	12/15/2017 4:55:48 AM	MS,0.2>10mL
88	N027430-002C,SAMP,2000	12/15/2017 5:11:06 AM	SAMP,0.005>10mL
89	N027430-002C,SAMP,200	12/15/2017 5:26:23 AM	SAMP,0.05>10mL
90	N027430-006C,SAMP,20	12/15/2017 5:41:41 AM	SAMP,0.5>10mL
91	N027430-006C,SAMP,50	12/15/2017 5:56:59 AM	SAMP,0.2>10mL
92	N027430-008C,SAMP,500	12/15/2017 6:12:17 AM	SAMP,0.02>10mL
93	N027430-008C,SAMP,50	12/15/2017 6:27:35 AM	SAMP,0.2>10mL
94	CCV-8,CCV,1	12/15/2017 6:42:53 AM	CCV
95	CCB-8,CCB,1	12/15/2017 6:58:11 AM	CCB
96	N027430-012C,SAMP,500	12/15/2017 7:13:28 AM	SAMP,0.02>10mL
97	N027430-012C,SAMP,200	12/15/2017 7:28:46 AM	SAMP,0.05>10mL
98	N027430-013C,SAMP,1000	12/15/2017 7:44:04 AM	SAMP,0.01>10mL
99	N027430-013C,SAMP,100	12/15/2017 7:59:22 AM	SAMP,0.1>10mL
100	N027430-014C,SAMP,2000	12/15/2017 8:14:40 AM	SAMP,0.005>10mL
101	N027430-014C,SAMP,100	12/15/2017 8:29:58 AM	SAMP,0.1>10mL
102	N027430-015C,SAMP,2000	12/15/2017 8:45:15 AM	SAMP,0.005>10mL
103	N027430-015C,SAMP,100	12/15/2017 9:00:33 AM	SAMP,0.1>10mL
104	N027430-016C,SAMP,1000	12/15/2017 9:15:51 AM	SAMP,0.01>10mL
105	N027430-016C,SAMP,100	12/15/2017 9:31:09 AM	SAMP,0.1>10mL
106	CCV-9,CCV,1	12/15/2017 9:46:27 AM	CCV
107	CCB-9,CCB,1	12/15/2017 10:01:44 AM	CCB
108	N027430-017C,SAMP,1000	12/15/2017 10:17:03 AM	SAMP,0.01>10mL
109	N027430-017C,SAMP,100	12/15/2017 10:32:21 AM	SAMP,0.1>10mL
110	N027430-018C,SAMP,5000	12/15/2017 10:47:39 AM	SAMP,0.002>10mL
111	N027430-018C,SAMP,200	12/15/2017 11:02:56 AM	SAMP,0.05>10mL
112	CCV-10,CCV,1	12/15/2017 11:18:14 AM	CCV
113	CCB-10,CCB,1	12/15/2017 11:33:32 AM	CCB

INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0709	0.1410	0.2824	0.7275	1.5389	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.



01/03/2018

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Bromide	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.05	0.25	0.5	1.25	2.5	R^2
Area,mAU*min	0.0000	0.0033	0.0139	0.0287	0.0714	0.1448	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814D

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 01/03/2018

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0532	0.2181	0.4423	1.1375	2.3683	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RLB 01/03/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **ICV**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2862140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.235	0.50	1.250	0	98.8	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCV**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.276	0.50	1.250	0	102	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCV**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862146**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.272	0.50	1.250	0	102	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCV**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.274	0.50	1.250	0	102	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCV**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862160**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.267	0.50	1.250	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCV**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862171**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.263	0.50	1.250	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **ICV**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2868185**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.042	0.50	2.000	0	102	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCV**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868187**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.928	0.50	2.000	0	96.4	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCV**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.928	0.50	2.000	0	96.4	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCV**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868202**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.924	0.50	2.000	0	96.2	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCV**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868209**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.932	0.50	2.000	0	96.6	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCV**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868216**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.941	0.50	2.000	0	97.1	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCV**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2868223**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.947	0.50	2.000	0	97.4	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV** SampType: **ICV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120853**
Client ID: **ICV** Batch ID: **R120853** TestNo: **EPA 300.0** Analysis Date: **11/29/2017** SeqNo: **2868225**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.936	0.50	4.000	0	98.4	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120853**
Client ID: **CCV** Batch ID: **R120853** TestNo: **EPA 300.0** Analysis Date: **12/14/2017** SeqNo: **2868227**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.810	0.50	4.000	0	95.3	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120853**
Client ID: **CCV** Batch ID: **R120853** TestNo: **EPA 300.0** Analysis Date: **12/14/2017** SeqNo: **2868235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.776	0.50	4.000	0	94.4	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120853**
Client ID: **CCV** Batch ID: **R120853** TestNo: **EPA 300.0** Analysis Date: **12/14/2017** SeqNo: **2868242**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.747	0.50	4.000	0	93.7	90	110				

Sample ID **CCV-4** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120853**
Client ID: **CCV** Batch ID: **R120853** TestNo: **EPA 300.0** Analysis Date: **12/14/2017** SeqNo: **2868249**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.801	0.50	4.000	0	95.0	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCV**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.725	0.50	4.000	0	93.1	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCV**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2868263**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.750	0.50	4.000	0	93.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **ICB**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2862141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCB**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCB**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862147**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCB**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCB**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120770**
Client ID: **CCB**	Batch ID: **R120770**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2862172**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **ICB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2868186**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868188**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868203**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868210**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868217**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2868224**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **ICB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2868226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868228**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868243**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868250**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2868264**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/12/2017

Sample Name		Retention Time	Evaluation
CCV-1	Bromide	4.884	
CCV-2	Bromide	4.887	
CCV-3	Bromide	4.887	
CCV-4	Bromide	4.884	
CCV-5	Bromide	4.884	

Average 4.885

Applied RT Window 4.685 - 5.085

MB-R120770_BR	Bromide	N.A.	N.A.
LCS-R120770_BR	Bromide	4.884	PASS
N027429-007D	Bromide	N.A.	N.A.
N027429-012D	Bromide	N.A.	N.A.
N027429-007DMS	Bromide	4.880	PASS
N027429-007DMSD	Bromide	4.880	PASS
N027429-012DMS	Bromide	4.880	PASS
N027429-007DDUP	Bromide	N.A.	N.A.
N027429-008D	Bromide	N.A.	N.A.
N027429-005D	Bromide	N.A.	N.A.
N027429-006D	Bromide	N.A.	N.A.
N027429-009D	Bromide	N.A.	N.A.
N027429-010D	Bromide	N.A.	N.A.
N027429-013D	Bromide	N.A.	N.A.
N027429-014D	Bromide	N.A.	N.A.
N027429-015D	Bromide	N.A.	N.A.
N027429-016D	Bromide	N.A.	N.A.
N027429-017D	Bromide	N.A.	N.A.
N027429-018D	Bromide	N.A.	N.A.
N027429-020D	Bromide	N.A.	N.A.

rba 12/20/2017

01/03/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/14/2017

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	7.447	
CCV-2	Sulfate	7.454	
CCV-3	Sulfate	7.454	
CCV-4	Sulfate	7.457	
CCV-5	Sulfate	7.440	
CCV-6	Sulfate	7.430	

Average 7.447

Applied RT Window 7.247 - 7.647

MB-R120853_SO4	Sulfate	N.A.	N.A.
LCS-R120853_SO4	Sulfate	7.450	PASS
N027429-005D	Sulfate	7.453	PASS
N027429-006D	Sulfate	7.460	PASS
N027429-007D	Sulfate	7.453	PASS
N027429-008D	Sulfate	7.457	PASS
N027429-008DMS	Sulfate	7.460	PASS
N027429-013D	Sulfate	7.453	PASS
N027429-013DMS	Sulfate	7.457	PASS
N027429-013DMSD	Sulfate	7.457	PASS
N027429-009D	Sulfate	7.454	PASS
N027429-010D	Sulfate	7.450	PASS
N027429-012D	Sulfate	7.460	PASS
N027429-014D	Sulfate	7.464	PASS
N027429-015D	Sulfate	7.457	PASS
N027429-016D	Sulfate	7.460	PASS
N027429-015DDUP	Sulfate	7.457	PASS
N027429-017D	Sulfate	7.454	PASS
N027429-018D	Sulfate	7.440	PASS
N027429-020D	Sulfate	7.440	PASS

rba 12/20/2017

01/03/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/14/2017

Sample Name		Retention Time	Evaluation
CCV-1	Chloride	3.757	
CCV-2	Chloride	3.764	
CCV-3	Chloride	3.767	
CCV-4	Chloride	3.770	
CCV-5	Chloride	3.770	
CCV-6	Chloride	3.767	
	Average	3.766	
	Applied RT Window	3.566 - 3.966	
MB-R120853_CL	Chloride	N.A.	N.A.
LCS-R120853_CL	Chloride	3.757	PASS
N027429-005D	Chloride	3.760	PASS
N027429-006D	Chloride	3.760	PASS
N027429-007D	Chloride	3.760	PASS
N027429-008D	Chloride	3.760	PASS
N027429-008DMS	Chloride	3.764	PASS
N027429-013D	Chloride	3.763	PASS
N027429-013DMS	Chloride	3.767	PASS
N027429-013DMSD	Chloride	3.767	PASS
N027429-009D	Chloride	3.767	PASS
N027429-010D	Chloride	3.767	PASS
N027429-012D	Chloride	3.767	PASS
N027429-014D	Chloride	3.770	PASS
N027429-015D	Chloride	3.770	PASS
N027429-016D	Chloride	3.770	PASS
N027429-015DDUP	Chloride	3.770	PASS
N027429-017D	Chloride	3.767	PASS
N027429-018D	Chloride	3.767	PASS
N027429-020D	Chloride	3.767	PASS

rba 12/20/2017

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 5/23/2017 ; 5/24/2017; 5/25/2017
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Datafile	170523A D36	170523A D37	170523A D38	170524A D17	170524A D18	170525A D45	170525A D46					
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**MDL**	**LOD**	**PQL**
Fluoride	0.020	0.022	0.021	0.020	0.023	0.026	0.024	0.020	0.0021	**0.0065**	0.020	0.10
Chloride	0.133	0.136	0.136	0.133	0.141	0.133	0.136	0.025	0.0029	**0.0091**	0.020	0.50
Nitrite	0.030	0.028	0.027	0.028	0.028	0.027	0.027	0.020	0.0010	**0.0030**	0.010	0.05
Bromide	0.037	0.042	0.043	0.038	0.040	0.032	0.025	0.040	0.0062	**0.0196**	0.040	0.20
Nitrate	0.035	0.034	0.033	0.033	0.033	0.031	0.030	0.020	0.0016	**0.0050**	0.010	0.05
Phosphate	0.047	0.051	0.049	0.046	0.052	0.047	0.059	0.040	0.0043	**0.0135**	0.030	0.10
Sulfate	0.213	0.199	0.208	0.216	0.199	0.201	0.198	0.050	0.0073	**0.0229**	0.050	0.50

MDL/LOD & PQL Verification 2017

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)** Matrix: **WATER**
Method Number: EPA Method 300.0 Unit: mg/L
Analysis Date(s): 5/26/2017
Analyst: Ria Abes

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0065**	0.020	0.024	0.10	0.0906	**91**
Chloride	**0.0091**	0.020	0.130	0.50	0.5635	**113**
Nitrite	**0.0030**	0.010	0.023	0.05	0.0581	**116**
Bromide	**0.0196**	0.040	0.048	0.20	0.194	**97**
Nitrate	**0.0050**	0.010	0.023	0.05	0.0599	**120**
Phosphate	**0.0135**	0.030	0.043	0.10	0.1111	**111**
Sulfate	**0.0229**	0.050	0.195	0.50	0.6178	**124**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120949 **Analyst:** QBM

ASSET #: N027405, N027428, N027429 **Date Analyzed:** 12/19/2017

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 12/28/2017

2nd Level Reviewer RLB 12/28/2017 Date:

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120963 **Analyst:** QBM

ASSET #: N027405, N027428, N027429 **Date Analyzed:** 12/20/2017

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented		X			X	
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

RPD of Nitrate/Nitrite as N in N027405-006CDUP @1x failed.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 12/28/2017

2nd Level Reviewer RLB 12/28/2017 Date:

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121010 **Analyst:** QBM

ASSET #: N027429, N027430, N027431 **Date Analyzed:** 12/21/2017

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 12/28/2017

2nd Level Reviewer RLB 12/28/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N027429-015C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N = 0.5955 * 10
= 5.955 mg/L

Reporting result in two significant figures,

Nitrate/Nitrite-N = 6.0 mg/L

RLB 12/28/2017

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

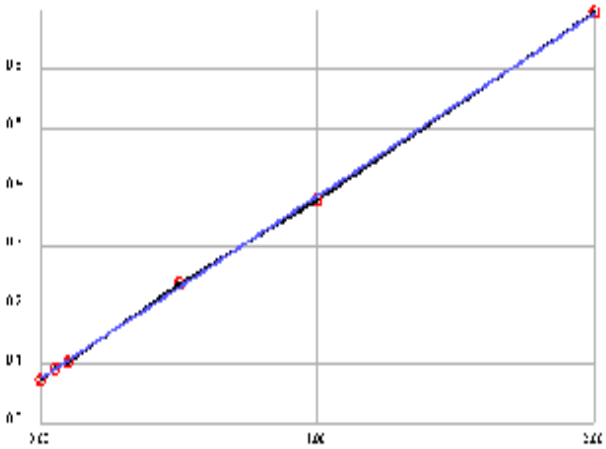
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.3095x + 0.0753
Correlation	.999797

Calibrant	Energy	Set	Conc
1	0.0745	0.0000	-0.0026
2	0.0927	0.0500	0.0562
3	0.1042	0.1000	0.0934
4	0.2365	0.5000	0.5208
5	0.3769	1.0000	0.9745
6	0.6967	2.0000	2.0077

Notes:

12/28/2017

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

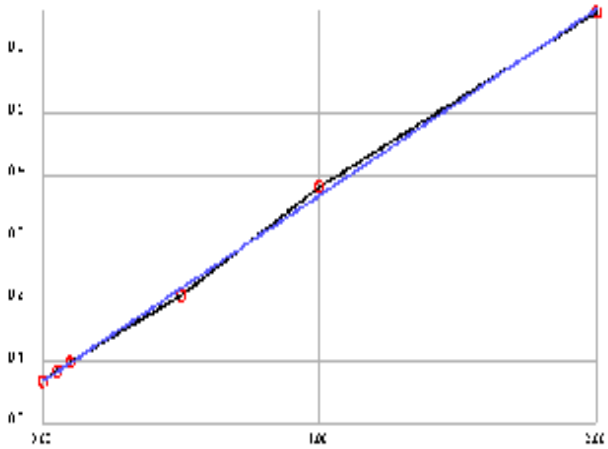
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2996x + 0.0679
Correlation	.999415

Calibrant	Energy	Set	Conc
1	0.0674	0.0000	-0.0018
2	0.0838	0.0500	0.0529
3	0.0988	0.1000	0.1030
4	0.2071	0.5000	0.4645
5	0.3812	1.0000	1.0456
6	0.6629	2.0000	1.9859

Notes:

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

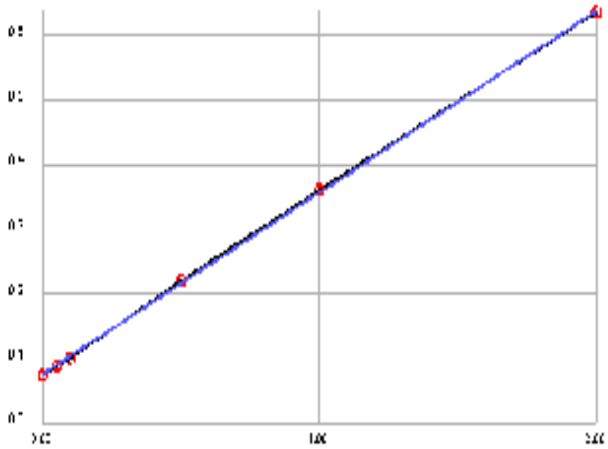
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2815x + 0.076
Correlation	.99987

Calibrant	Energy	Set	Conc
1	0.0736	0.0000	-0.0084
2	0.0899	0.0500	0.0495
3	0.1009	0.1000	0.0886
4	0.2217	0.5000	0.5177
5	0.3611	1.0000	1.0130
6	0.6360	2.0000	1.9897

Notes:

12/28/2017

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **ICV**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.484	0.050	0.5000	0	96.8	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCV**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.461	0.050	0.5000	0	92.1	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCV**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.475	0.050	0.5000	0	95.1	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCV**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.471	0.050	0.5000	0	94.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **ICV**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873450**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.507	0.050	0.5000	0	101	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **CCV**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873461**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.493	0.050	0.5000	0	98.6	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **CCV**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.511	0.050	0.5000	0	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **ICV**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.504	0.050	0.5000	0	101	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **CCV**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.512	0.050	0.5000	0	102	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **CCV**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876094**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.465	0.050	0.5000	0	93.0	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **CCV**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.474	0.050	0.5000	0	94.9	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **ICB**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCB**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873088**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCB**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120949**
Client ID: **CCB**	Batch ID: **R120949**	TestNo: **SM4500-NO3**		Analysis Date: **12/19/2017**	SeqNo: **2873110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **ICB**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **CCB**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **120963**
Client ID: **CCB**	Batch ID: **R120963**	TestNo: **SM4500-NO3**		Analysis Date: **12/20/2017**	SeqNo: **2873470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **ICB**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876072**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **CCB**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **CCB**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876095**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **CCB**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876106**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

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Time start: 12-19-2017 16:35
Time end: 12-19-2017 19:38

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	18:55:00	0.0016		0.0758
2	<BLANK>	18:55:53	0.0035		0.0764
3	<CAL1>	18:56:55	-0.0026	[0]	0.0745
4	<CAL2>	18:57:50	0.0562	[0.05]	0.0927
5	<CAL3>	18:58:52	0.0934	[0.1]	0.1042
6	<CAL4>	18:59:46	0.5208	[0.5]	0.2365
7	<CAL5>	19:00:41	0.9745	[1]	0.3769
8	<CAL6>	19:01:37	2.0077	[2]	0.6967
9	,BLANK,BLANK,1, NOT REPORTED	19:02:37	0.0336		0.0857
10	,ICV,ICV,1,	19:03:32	0.4840		0.2251
11	,ICB,ICB,1,	19:04:34	0.0087		0.0780
12	,MB-H2O,MBLK,1,	19:05:29	-0.0007		0.0751
13	,LCS-H2O,LCS,1,	19:06:23	0.4911		0.2273
14	,N027405-009C,SAMP,10,	19:07:25	0.4488		0.2142
15	,N027405-009CMS,MS,10,	19:08:21	0.9451		0.3678
16	,N027405-009CMSD,MSD,10,	19:09:15	0.9018		0.3544
17	,N027405-012C,SAMP,5,	19:10:17	0.8045		0.3243
18	,N027405-012CDUP,DUP,5,	19:11:12	0.6940		0.2901
19	,N027405-011C,SAMP,1, NOT REPORTED	19:12:08	0.2588		0.1554
20	,N027405-013C,SAMP,5,	19:13:08	0.5454		0.2441
21	,BLANK, NOT REPORTED	19:14:04	0.0032		0.0763
22	,CCV-1,CCV,1,	19:14:59	0.4607		0.2179
23	,CCB-1,CCB,1,	19:15:59	-0.0029		0.0744
24	,N027405-002D,SAMP,1, NOT REPORTED	19:16:55	0.1451		0.1202
25	,N027405-003D,SAMP,1,	19:17:56	0.3764		0.1918
26	,N027405-006C,SAMP,1,	19:18:52	0.5486		0.2451

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			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N027405-007C,SAMP,1, NOT REPORTED	19:19:46	0.1980		0.1366
28	,N027405-008C,SAMP,1,	19:20:47	0.2594		0.1556
29	,N027405-014C,SAMP,1,	19:21:43	0.1066		0.1083
30	,N027429-001C,SAMP,1,	19:22:31	0.0333		0.0856
31	,N027429-002C,SAMP,1,	19:23:14	0.0281		0.0840
32	,N027428-002C,SAMP,5,	19:24:04	0.5615		0.2491
33	,CCV-2,CCV,1, NOT REPORTED	19:24:46	0.4543		0.2159
34	,CCV-2,CCV,1,	19:25:29	0.4753		0.2224
35	,CCB-2,CCB,1,	19:26:17	-0.0084		0.0727
36	,N027429-003C,SAMP,2, NOT REPORTED	19:27:00	0.8307		0.3324
37	,N027429-005C,SAMP,1,	19:27:48	0.0413		0.0881
38	,N027429-006C,SAMP,1,	19:28:32	0.0504		0.0909
39	,N027406-001A,SAMP,5,	19:29:14	0.5738		0.2529
40	,N027406-002A,SAMP,5,	19:30:03	0.7402		0.3044
41	,N027406-003A,SAMP,5,	19:30:47	0.6846		0.2872
42	,N027406-004A,SAMP,1,	19:31:29	0.0110		0.0787
43	,BLANK, NOT REPORTED	19:32:18	-0.0252		0.0675
44	,BLANK,	19:33:00	-0.0281		0.0666
45	,BLANK,	19:33:43	-0.0259		0.0673
46	,CCV-3,CCV,1,	19:34:31	0.4333		0.2094
47	,CCV-3,CCV,1,	19:35:15	0.4714		0.2212
48	,CCB-3,CCB,1,	19:35:58	-0.0133		0.0712

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Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 12/19/2017
Time Analyzed:4:31 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171201B
Color reagent: R171201C
2% Copper Sulfate: R171201D
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027405-002D		8.40							
N027405-003D		8.48							
N027405-006C		8.49							
N027405-007C		8.65							
N027405-008C		8.42							
N027405-009C		8.15							
N027405-011C		8.09							
N027405-012C		8.33							
N027405-013C		8.16							
N027405-014C		6.64							
N027406-001A		7.59							
N027406-002A		8.68							
N027406-003A		8.40							
N027406-004A		7.92							
N027428-002C		8.38							
N027429-001C		6.91							
N027429-002C		8.13							
N027429-003C		6.9							
N027429-005C		8.33							
N027429-006C		8.17							

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Time start: 12-20-2017 15:49
Time end: 12-20-2017 17:58

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	17:30:12	-0.0045		0.0666
2	<BLANK>	17:31:07	0.0008		0.0682
3	<CAL1>	17:32:07	-0.0018	[0]	0.0674
4	<CAL2>	17:33:02	0.0529	[0.05]	0.0838
5	<CAL3>	17:34:03	0.1030	[0.1]	0.0988
6	<CAL4>	17:34:59	0.4645	[0.5]	0.2071
7	<CAL5>	17:35:53	1.0456	[1]	0.3812
8	<CAL6>	17:36:54	1.9859	[2]	0.6629
9	,BLANK,BLANK,1, NOT REPORTED	17:37:49	0.0436		0.0810
10	,ICV,ICV,1,	17:38:51	0.5065		0.2197
11	,ICB,ICB,1,	17:39:45	0.0085		0.0705
12	,MB-H2O,MBLK,1,	17:40:40	0.0062		0.0698
13	,LCS-H2O,LCS,1,	17:41:35	0.4815		0.2122
14	,N027429-003C,SAMP,2,	17:42:36	0.8283		0.3161
15	,N027429-003CMS,MS,2,	17:43:19	1.3186		0.4630
16	,N027429-003CMSD,MSD,2,	17:44:08	1.3323		0.4671
17	,N027405-006C,SAMP,1,	17:44:57	0.1567		0.1149
18	,N027405-006CDUP,DUP,1,	17:45:40	0.1240		0.1051
19	,N027405-002D,SAMP,1,	17:46:22	0.0242		0.0752
20	,N027405-003D,SAMP,1,	17:47:11	0.0175		0.0732
21	,BLANK, NOT REPORTED	17:47:53	0.0008		0.0682
22	,CCV-1,CCV,1,	17:48:36	0.4928		0.2156
23	,CCB-1,CCB,1,	17:49:25	0.0012		0.0683
24	,N027405-007C,SAMP,1,	17:50:07	0.0202		0.0740
25	,N027405-008C,SAMP,1,	17:50:51	0.0623		0.0866
26	,N027405-011C,SAMP,1,	17:51:38	0.0038		0.0691

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			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N027405-014C,SAMP,1,	17:52:22	0.0422		0.0806
28	,N027428-001C,SAMP,1,	17:53:10	0.0062		0.0698
29	,BLANK, NOT REPORTED	17:53:53	-0.0092		0.0652
30	,BLANK, NOT REPORTED	17:54:35	-0.0148		0.0635
31	,CCV-2,CCV,1, NOT REPORTED	17:55:24	0.4975		0.2170
32	,CCV-2,CCV,1,	17:56:08	0.5105		0.2209
33	,CCB-2,CCB,1,	17:56:49	-0.0022		0.0673

12/28/2017

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 12/20/2017
Time Analyzed:3:45 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171220B
Color reagent: R171220C
2% Copper Sulfate: R171220A
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027405-002D		7.77							
N027405-003D		8.35							
N027405-006C		8.46							
N027405-007C		8.09							
N027405-008C		7.87							
N027405-011C		7.65							
N027405-014C		8.24							
N027428-001C		8.19							
N027429-003C		8.26							

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Time start: 12-21-2017 16:29
Time end: 12-21-2017 19:31

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	18:48:51	0.0022		0.0766
2	<BLANK>	18:49:50	-0.0113		0.0728
3	<CAL1>	18:50:45	-0.0084	[0]	0.0736
4	<CAL2>	18:51:47	0.0495	[0.05]	0.0899
5	<CAL3>	18:52:44	0.0886	[0.1]	0.1009
6	<CAL4>	18:53:38	0.5177	[0.5]	0.2217
7	<CAL5>	18:54:33	1.0130	[1]	0.3611
8	<CAL6>	18:55:35	1.9897	[2]	0.6360
9	,BLANK,BLANK,1, NOT REPORTED	18:56:29	0.0168		0.0807
10	,ICV,ICV,1,	18:57:24	0.5035		0.2177
11	,ICB,ICB,1,	18:58:26	-0.0013		0.0756
12	,MB-H2O,MBLK,1,	18:59:21	-0.0148		0.0718
13	,LCS-H2O,LCS,1,	19:00:21	0.5263		0.2241
14	,N027429-007C,SAMP,5,	19:01:17	0.5618		0.2341
15	,N027429-007CMS,MS,5,	19:02:12	1.1242		0.3924
16	,N027429-007CMSD,MSD,5,	19:03:13	1.0968		0.3847
17	,N027429-008C,SAMP,5,	19:04:08	0.5902		0.2421
18	,N027429-008CDUP,DUP,5,	19:05:04	0.6353		0.2548
19	,N027429-009C,SAMP,1,	19:06:00	0.7494		0.2869
20	,N027429-010C,SAMP,5,	19:07:00	0.4527		0.2034
21	,CCV-1,CCV,1, NOT REPORTED	19:07:56	0.5415		0.2284
22	,CCV-1,CCV,1,	19:08:51	0.5117		0.2200
23	,CCB-1,CCB,1,	19:09:51	0.0079		0.0782
24	,N027429-012C,SAMP,10,	19:10:47	1.1313		0.3944
25	,N027429-013C,SAMP,10,	19:11:48	1.2539		0.4289
26	,N027429-014C,SAMP,10,	19:12:44	1.1579		0.4019

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			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N027429-015C,SAMP,10,	19:13:44	0.5955		0.2436
28	,N027430-004D,SAMP,1,	19:14:40	0.0211		0.0819
29	,N027430-006D,SAMP,1,	19:15:35	-0.0070		0.0740
30	,N027430-008D,SAMP,1,	19:16:23	-0.0095		0.0733
31	,N027430-012D,SAMP,1,	19:17:07	0.2968		0.1595
32	,BLANK, NOT REPORTED	19:17:56	-0.0116		0.0727
33	,CCV-2,CCV,1, NOT REPORTED	19:18:38	0.5131		0.2204
34	,CCV-2,CCV,1,	19:19:22	0.4648		0.2068
35	,CCB-2,CCB,1,	19:20:10	-0.0184		0.0708
36	,N027430-013D,SAMP,1,	19:20:53	1.1398		0.3968
37	,N027430-014D,SAMP,1,	19:21:41	1.5800		0.5207
38	,N027430-015D,SAMP,2,	19:22:24	0.8801		0.3237
39	,N027430-016D,SAMP,1,	19:23:06	1.1064		0.3874
40	,N027431-001D,SAMP,5,	19:23:56	0.9053		0.3308
41	,N027431-002D,SAMP,1,	19:24:39	0.0235		0.0826
42	,N027431-003D,SAMP,1,	19:25:21	0.0392		0.0870
43	,N027431-004D,SAMP,1,	19:26:10	0.0541		0.0912
44	,BLANK, NOT REPORTED	19:26:52	-0.0312		0.0672
45	,BLANK, NOT REPORTED	19:27:36	-0.0351		0.0661
46	,CCV-3,CCV,1,	19:28:24	0.4744		0.2095
47	,CCV-3,CCV,1, NOT REPORTED	19:29:07	0.4485		0.2022
48	,CCB-3,CCB,1,	19:29:50	-0.0287		0.0679

RLB 12/28/2017

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 12/21/2017
Time Analyzed: 4:23 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171220B
Color reagent: R171220C
2% Copper Sulfate: R171220A
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027429-007C		7.70							
N027429-008C		7.43							
N027429-009C		7.37							
N027429-010C		8.61							
N027429-012C		8.03							
N027429-013C		8.22							
N027429-014C		7.65							
N027429-015C		7.74							
N027430-004D		7.98							
N027430-006D		7.98							
N027430-008D		8.28							
N027430-012D		7.84							
N027430-013D		8.40							
N027430-014D		8.31							
N027430-015D		8.14							
N027430-016D		8.41							
N027431-001D		8.75							
N027431-002D		8.14							
N027431-003D		8.24							
N027431-004D		8.29							

Advanced Technology Laboratories, Inc.
Book # 1

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65964
ASSET #: N027429

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/16/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.		X				
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Ca in N027405-001C PS/MS/MSD failed. However LCS passed criteria.
Dilution test failed for Ca & Mg.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 01/02/2018
2nd Level Reviewer _____ Date: _____

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65964 & 65992
ASSET #: N027429
Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/18/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Na run only.
%Rec of Na in N027405-002C PS/MS & N027429-012B PS/MS/MSD However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: —

2nd Level Reviewer 01/02/2018 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65992
ASSET #: N027429

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/18/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.		X				
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For N027429-010B to 020C run only.
Dilution test failed for Mg. However PS, passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: _____

2nd Level Reviewer 01/02/2018 Date: _____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Boron concentration, in ug/L , in the original sample as follows:

Boron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N027429-005B** , the concentration ir ug/L is calculated as follows:

Boron , ug/L = 1.93567 * 1 * (25/25) * 1000

Boron , ug/L = 1935.67

Reporting results in two significant figures,

Boron , ug/L = 1900

% RSD SUMMARY

RSD SUMMARY: 171216A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	B	0	0.27	15	PASS
Standard1	ICAL	1	B	0.1	0.88	15	PASS
Standard3	ICAL	1	B	1	0.78	15	PASS
Standard4	ICAL	1	B	2.5	0.7	15	PASS
Standard5	ICAL	1	B	3.75	1	15	PASS
Standard6	ICAL	1	B	5	0.62	15	PASS
Standard7	ICAL	1	B	10	0.2	15	PASS
ICV	ICV	1	B	4.99	0.61	15	PASS
ICB	ICB	1	B	0.022	10.017	15	PASS
LLICV	CCV1	1	B	0.087	1.16	20	PASS
LLICV	CCV1	1	B	0.085	0.48	20	PASS
ICSA1	ICSA	1	B	0.085	1.72	15	PASS
ICSAB1	ICSAB	1	B	1.15	0.35	15	PASS
MB-65964	MBLK	1	B	0.014	10.95	15	PASS
LCS1-65964	MBLK	1	B	4.73	0.55	15	PASS
N027405-001C	SAMP	1	B	0.73	0.2	15	PASS
CCV1	CCV	1	B	4.9	0.63	15	PASS
CCB1	CCB	1	B	0.025	11.8	15	PASS
N027405-001C	SAMP	5	B	0.17	0.68	15	PASS
N027405-001C-PS	PS	1	B	5.46	0.64	15	PASS
N027405-001C-MS1	MS	1	B	5.42	0.51	15	PASS
N027405-001C-MSD1	MSD	1	B	5.45	0.28	15	PASS
N027405-002C	SAMP	1	B	1.029	0.3	15	PASS
N027405-003C	SAMP	1	B	1.019	0.3	15	PASS
N027405-004B	SAMP	1	B	0.18	1.036	15	PASS
N027405-006B	SAMP	1	B	2.23	0.84	15	PASS
N027405-007B	SAMP	1	B	2.15	0.44	15	PASS
N027405-008B	SAMP	1	B	2.26	0.56	15	PASS
CCV2	CCV	1	B	4.73	0.53	15	PASS
CCB2	CCB	1	B	0.022	10.14	15	PASS
N027405-009B	SAMP	1	B	0.69	0.15	15	PASS
N027405-011B	SAMP	1	B	1.51	0.38	15	PASS
N027405-012B	SAMP	1	B	0.67	0.22	15	PASS
N027405-013B	SAMP	1	B	1.014	0.58	15	PASS
N027405-014B	SAMP	1	B	0.14	0.14	15	PASS
N027429-001B	SAMP	1	B	0.82	0.89	15	PASS
N027429-002B	SAMP	1	B	0.82	0.87	15	PASS
N027429-003B	SAMP	1	B	2.0095	0.38	15	PASS
N027429-005B	SAMP	1	B	1.94	0.5	15	PASS
N027429-006B	SAMP	1	B	1.99	0.47	15	PASS
CCV3	CCV	1	B	4.2	0.67	15	PASS
CCB3	CCB	1	B	-0.014	13.53	15	PASS

RSD SUMMARY: 171216A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027429-007B	SAMP	1	B	0.66	0.5	15	PASS
CCV3	CCV	1	B	4.88	0.066	15	PASS
CCB3	CCB	1	B	0.031	6.73	15	PASS
N027429-007B	SAMP	1	B	0.77	0.3	15	PASS
N027429-008B	SAMP	1	B	0.76	0.22	15	PASS
N027429-009B	SAMP	1	B	2.031	0.55	15	PASS
CCV4	CCV	1	B	4.66	0.4	15	PASS
CCB4	CCB	1	B	0.021	10.54	15	PASS
LLCCV1	CCV2	1	B	0.08	0.92	20	PASS
ICSA2	ICSA	1	B	0.079	1.44	15	PASS
ICSAB2	ICSAB	1	B	1.098	0.22	15	PASS
CalBlk	IBLK	1	Ca	0	6.1	15	PASS
Standard1	ICAL	1	Ca	0.2	8.39	15	PASS
Standard2	ICAL	1	Ca	1	1.79	15	PASS
Standard3	ICAL	1	Ca	2	1.72	15	PASS
Standard4	ICAL	1	Ca	5	0.54	15	PASS
Standard5	ICAL	1	Ca	7.5	0.5	15	PASS
Standard6	ICAL	1	Ca	10	0.088	15	PASS
Standard7	ICAL	1	Ca	20	0.62	15	PASS
ICV	ICV	1	Ca	10.12	0.32	15	PASS
ICB	ICB	1	Ca	-0.021	111.95	15	<PQL
LLICV	CCV1	1	Ca	0.16	13.69	20	PASS
LLICV	CCV1	1	Ca	0.17	7.28	20	PASS
ICSA1	ICSA	1	Ca	485.56	0.12	15	PASS
ICSAB1	ICSAB	1	Ca	543.03	0.15	15	PASS
MB-65964	MBLK	1	Ca	-0.019	28.16	15	<PQL
LCS1-65964	MBLK	1	Ca	9.71	0.25	15	PASS
N027405-001C	SAMP	1	Ca	107.68	0.22	15	PASS
CCV1	CCV	1	Ca	10.05	0.23	15	PASS
CCB1	CCB	1	Ca	0.029	25.71	15	<PQL
N027405-001C	SAMP	5	Ca	24.065	0.47	15	PASS
N027405-001C-PS	PS	1	Ca	115.25	0.4	15	PASS
N027405-001C-MS1	MS	1	Ca	121.41	0.13	15	PASS
N027405-001C-MSD1	MSD	1	Ca	121.65	0.22	15	PASS
N027405-002C	SAMP	1	Ca	160.17	0.1	15	PASS
N027405-003C	SAMP	1	Ca	160.39	0.23	15	PASS
N027405-004B	SAMP	1	Ca	77.97	0.37	15	PASS
N027405-006B	SAMP	1	Ca	271.98	0.32	15	PASS
N027405-007B	SAMP	1	Ca	289.43	0.21	15	PASS
N027405-008B	SAMP	1	Ca	281.88	0.068	15	PASS
CCV2	CCV	1	Ca	9.84	0.48	15	PASS
CCB2	CCB	1	Ca	0.019	61.8	15	<PQL

RSD SUMMARY: 171216A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027405-009B	SAMP	1	Ca	206.05	0.18	15	PASS
N027405-011B	SAMP	1	Ca	340.39	0.13	15	PASS
N027405-012B	SAMP	1	Ca	487.77	0.04	15	PASS
N027405-013B	SAMP	1	Ca	479.08	0.19	15	PASS
N027405-014B	SAMP	1	Ca	9.99	0.49	15	PASS
N027429-001B	SAMP	1	Ca	8.24	0.49	15	PASS
N027429-002B	SAMP	1	Ca	8.31	0.78	15	PASS
N027429-003B	SAMP	1	Ca	374.83	0.3	15	PASS
N027429-005B	SAMP	1	Ca	331.21	0.16	15	PASS
N027429-006B	SAMP	1	Ca	347.98	0.28	15	PASS
CCV3	CCV	1	Ca	8.92	0.55	15	PASS
CCB3	CCB	1	Ca	0.086	20.093	15	<PQL
N027429-007B	SAMP	1	Ca	22.62	0.33	15	PASS
CCV3	CCV	1	Ca	10.008	0.29	15	PASS
CCB3	CCB	1	Ca	0.021	76.48	15	<PQL
N027429-007B	SAMP	1	Ca	22.73	0.43	15	PASS
N027429-008B	SAMP	1	Ca	22.93	0.42	15	PASS
N027429-009B	SAMP	1	Ca	355.17	0.13	15	PASS
CCV4	CCV	1	Ca	9.75	0.17	15	PASS
CCB4	CCB	1	Ca	0.024	150.027	15	<PQL
LLCCV1	CCV2	1	Ca	0.14	18.87	20	PASS
ICSA2	ICSA	1	Ca	484.36	0.16	15	PASS
ICSAB2	ICSAB	1	Ca	540.94	0.16	15	PASS
CalBlk	IBLK	1	Fe	0	3.75	15	PASS
Standard1	ICAL	1	Fe	0.02	5.85	15	PASS
Standard2	ICAL	1	Fe	0.05	0.47	15	PASS
Standard3	ICAL	1	Fe	2	0.25	15	PASS
Standard4	ICAL	1	Fe	5	0.18	15	PASS
Standard5	ICAL	1	Fe	7.5	0.48	15	PASS
Standard6	ICAL	1	Fe	10	0.3	15	PASS
Standard7	ICAL	1	Fe	20	0.19	15	PASS
ICV	ICV	1	Fe	10.37	0.27	15	PASS
ICB	ICB	1	Fe	0.00088	26.7	15	<PQL
LLICV	CCV1	1	Fe	0.017	1.79	20	PASS
LLICV	CCV1	1	Fe	0.017	2.21	20	PASS
ICSA1	ICSA	1	Fe	167.44	0.67	15	PASS
ICSAB1	ICSAB	1	Fe	181.7	0.44	15	PASS
MB-65964	MBLK	1	Fe	0.00013	160.36	15	<PQL
LCS1-65964	MBLK	1	Fe	0.11	0.61	15	PASS
N027405-001C	SAMP	1	Fe	0.014	2.54	15	PASS
CCV1	CCV	1	Fe	10.26	0.32	15	PASS
CCB1	CCB	1	Fe	0.00075	63.032	15	<PQL

RSD SUMMARY: 171216A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027405-001C	SAMP	5	Fe	0.0021	37.3	15	<PQL
N027405-001C-PS	PS	1	Fe	0.13	0.65	15	PASS
N027405-001C-MS1	MS	1	Fe	0.11	0.88	15	PASS
N027405-001C-MSD1	MSD	1	Fe	0.11	0.76	15	PASS
N027405-002C	SAMP	1	Fe	0.14	0.056	15	PASS
N027405-003C	SAMP	1	Fe	0.14	0.37	15	PASS
N027405-004B	SAMP	1	Fe	0.024	1.67	15	PASS
N027405-006B	SAMP	1	Fe	0.012	2.022	15	PASS
N027405-007B	SAMP	1	Fe	0.039	0.79	15	PASS
N027405-008B	SAMP	1	Fe	0.034	1.33	15	PASS
CCV2	CCV	1	Fe	9.64	0.097	15	PASS
CCB2	CCB	1	Fe	0.0011	28.76	15	<PQL
N027405-009B	SAMP	1	Fe	0.017	3.0022	15	PASS
N027405-011B	SAMP	1	Fe	0.33	0.43	15	PASS
N027405-012B	SAMP	1	Fe	0.23	0.52	15	PASS
N027405-013B	SAMP	1	Fe	0.14	0.18	15	PASS
N027405-014B	SAMP	1	Fe	3.26	0.46	15	PASS
N027429-001B	SAMP	1	Fe	0.034	1.67	15	PASS
N027429-002B	SAMP	1	Fe	0.098	0.55	15	PASS
N027429-003B	SAMP	1	Fe	0.032	2.097	15	PASS
N027429-005B	SAMP	1	Fe	0.0082	0.34	15	PASS
N027429-006B	SAMP	1	Fe	0.013	4.93	15	PASS
CCV3	CCV	1	Fe	8.46	0.58	15	PASS
CCB3	CCB	1	Fe	0.0014	36.049	15	<PQL
N027429-007B	SAMP	1	Fe	0.015	3.57	15	PASS
CCV3	CCV	1	Fe	10.19	0.53	15	PASS
CCB3	CCB	1	Fe	0.0012	84.98	15	<PQL
N027429-007B	SAMP	1	Fe	0.015	2.92	15	PASS
N027429-008B	SAMP	1	Fe	0.011	1.032	15	PASS
N027429-009B	SAMP	1	Fe	0.017	2.23	15	PASS
CCV4	CCV	1	Fe	9.59	0.12	15	PASS
CCB4	CCB	1	Fe	0.00057	62.53	15	<PQL
LLCCV1	CCV2	1	Fe	0.017	3.28	20	PASS
ICSA2	ICSA	1	Fe	182.66	0.31	15	PASS
ICSAB2	ICSAB	1	Fe	179.86	0.21	15	PASS
CalBlk	IBLK	1	Mg	0	3.35	15	PASS
Standard1	ICAL	1	Mg	0.1	1.23	15	PASS
Standard2	ICAL	1	Mg	1	0.57	15	PASS
Standard3	ICAL	1	Mg	2	0.086	15	PASS
Standard4	ICAL	1	Mg	5	0.087	15	PASS
Standard5	ICAL	1	Mg	7.5	0.39	15	PASS
Standard6	ICAL	1	Mg	10	0.48	15	PASS

RSD SUMMARY: 171216A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard7	ICAL	1	Mg	20	0.32	15	PASS
ICV	ICV	1	Mg	10.34	0.26	15	PASS
ICB	ICB	1	Mg	0.00047	117.039	15	<PQL
LLICV	CCV1	1	Mg	0.081	1.13	20	PASS
LLICV	CCV1	1	Mg	0.081	0.6	20	PASS
ICSA1	ICSA	1	Mg	452.65	0.74	15	PASS
ICSAB1	ICSAB	1	Mg	508.46	0.5	15	PASS
MB-65964	MBLK	1	Mg	0.0037	15.81	15	<PQL
LCS1-65964	MBLK	1	Mg	9.64	0.13	15	PASS
N027405-001C	SAMP	1	Mg	18.85	0.25	15	PASS
CCV1	CCV	1	Mg	10.25	0.29	15	PASS
CCB1	CCB	1	Mg	0.00028	98.65	15	<PQL
N027405-001C	SAMP	5	Mg	4.34	0.41	15	PASS
N027405-001C-PS	PS	1	Mg	27.19	0.099	15	PASS
N027405-001C-MS1	MS	1	Mg	28.52	0.17	15	PASS
N027405-001C-MSD1	MSD	1	Mg	28.59	0.2	15	PASS
N027405-002C	SAMP	1	Mg	27.67	0.21	15	PASS
N027405-003C	SAMP	1	Mg	27.81	0.055	15	PASS
N027405-004B	SAMP	1	Mg	16.96	0.31	15	PASS
N027405-006B	SAMP	1	Mg	2.54	0.27	15	PASS
N027405-007B	SAMP	1	Mg	3.24	0.16	15	PASS
N027405-008B	SAMP	1	Mg	2.7	0.3	15	PASS
CCV2	CCV	1	Mg	9.55	0.13	15	PASS
CCB2	CCB	1	Mg	-0.00024	97.018	15	<PQL
N027405-009B	SAMP	1	Mg	24.13	0.24	15	PASS
N027405-011B	SAMP	1	Mg	14	0.048	15	PASS
N027405-012B	SAMP	1	Mg	21.37	0.054	15	PASS
N027405-013B	SAMP	1	Mg	27.58	0.24	15	PASS
N027405-014B	SAMP	1	Mg	1.37	0.53	15	PASS
N027429-001B	SAMP	1	Mg	0.71	0.63	15	PASS
N027429-002B	SAMP	1	Mg	0.73	0.18	15	PASS
N027429-003B	SAMP	1	Mg	6.16	0.23	15	PASS
N027429-005B	SAMP	1	Mg	4.37	0.11	15	PASS
N027429-006B	SAMP	1	Mg	4.32	0.14	15	PASS
CCV3	CCV	1	Mg	8.023	0.56	15	PASS
CCB3	CCB	1	Mg	-0.0058	1.6	15	PASS
N027429-007B	SAMP	1	Mg	3.77	0.23	15	PASS
CCV3	CCV	1	Mg	10.19	0.9	15	PASS
CCB3	CCB	1	Mg	-0.0013	30.34	15	<PQL
N027429-007B	SAMP	1	Mg	4.16	0.28	15	PASS
N027429-008B	SAMP	1	Mg	4.25	0.36	15	PASS
N027429-009B	SAMP	1	Mg	7.39	0.35	15	PASS

RSD SUMMARY: 171216A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV4	CCV	1	Mg	9.51	0.056	15	PASS
CCB4	CCB	1	Mg	-0.00048	52.69	15	<PQL
LLCCV1	CCV2	1	Mg	0.077	0.98	20	PASS
ICSA2	ICSA	1	Mg	438.27	0.17	15	PASS
ICSAB2	ICSAB	1	Mg	486.37	0.48	15	PASS

RSD SUMMARY: 171218B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	1.57	15	PASS
Standard1	ICAL	1	Na	0.1	0.58	15	PASS
Standard2	ICAL	1	Na	1	0.5	15	PASS
Standard3	ICAL	1	Na	5	0.24	15	PASS
Standard4	ICAL	1	Na	10	0.22	15	PASS
Standard5	ICAL	1	Na	20	0.21	15	PASS
Standard6	ICAL	1	Na	40	0.35	15	PASS
ICV	ICV	1	Na	9.97	0.14	15	PASS
ICB	ICB	1	Na	-0.021	27.4	15	<PQL
ICSA1	ICSA	1	Na	-0.024	16.045	15	<PQL
ICSAB1	ICSAB	1	Na	10.018	0.28	15	PASS
CCV1	CCV	1	Na	17.045	0.7	15	PASS
CCV1	CCV	1	Na	9.94	0.41	15	PASS
CCB1	CCB	1	Na	-0.075	7.87	15	PASS
CCV2	CCV	1	Na	9.94	0.24	15	PASS
CCB2	CCB	1	Na	-0.083	2.89	15	PASS
MB-65964	MBLK	1	Na	-0.092	4.34	15	PASS
LCS2-65964	LCS	1	Na	20.92	0.43	15	PASS
CCV3	CCV	1	Na	10.032	0.18	15	PASS
CCB3	CCB	1	Na	-0.096	2.13	15	PASS
N027405-001C	SAMP	10	Na	106.62	0.2	15	PASS
N027405-002C	SAMP	100	Na	15.54	0.21	15	PASS
N027405-002C	SAMP	500	Na	3.11	0.19	15	PASS
N027405-002C-PS	PS	100	Na	16.019	0.085	15	PASS
N027405-002C-MS2	MS	100	Na	16.045	0.19	15	PASS
N027405-002C-MSD2	MSD	100	Na	15.69	0.14	15	PASS
N027405-003C	SAMP	100	Na	15.58	0.098	15	PASS
N027405-004B	SAMP	10	Na	10.53	0.85	15	PASS
N027405-006B	SAMP	250	Na	13.38	0.25	15	PASS
N027405-007B	SAMP	250	Na	13.68	0.19	15	PASS
CCV4	CCV	1	Na	10.044	0.21	15	PASS
CCB4	CCB	1	Na	-0.12	2.76	15	PASS
ICSA2	ICSA	1	Na	-0.12	1.77	15	PASS
ICSAB2	ICSAB	1	Na	10.09	0.18	15	PASS
N027405-008B	SAMP	250	Na	13.9	0.28	15	PASS
N027405-009B	SAMP	100	Na	11.13	0.19	15	PASS
N027405-011B	SAMP	100	Na	25.61	0.097	15	PASS
N027405-012B	SAMP	100	Na	13.9	0.058	15	PASS
N027405-013B	SAMP	100	Na	20.78	0.062	15	PASS
N027405-014B	SAMP	10	Na	15.25	0.13	15	PASS
N027429-001B	SAMP	25	Na	13.41	0.031	15	PASS
N027429-002B	SAMP	25	Na	13.45	0.14	15	PASS

RSD SUMMARY: 171218B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027429-003B	SAMP	250	Na	17.069	0.15	15	PASS
N027429-005B	SAMP	250	Na	18.62	0.32	15	PASS
CCV5	CCV	1	Na	9.99	0.079	15	PASS
CCB5	CCB	1	Na	-0.12	3.12	15	PASS
N027429-006B	SAMP	250	Na	19.11	0.045	15	PASS
N027429-007B	SAMP	25	Na	12.3	0.07	15	PASS
N027429-008B	SAMP	25	Na	11.77	0.36	15	PASS
N027429-009B	SAMP	250	Na	13.76	0.13	15	PASS
N027405-001C	SAMP	100	Na	10.27	0.34	15	PASS
MB-65992	MBLK	1	Na	-0.12	3.31	15	PASS
LCS2-65992	LCS	1	Na	20.25	0.31	15	PASS
N027429-010B	SAMP	100	Na	18.76	0.085	15	PASS
N027429-012B	SAMP	25	Na	15.57	0.18	15	PASS
N027429-012B	SAMP	125	Na	3.077	0.5	15	PASS
CCV6	CCV	1	Na	10.04	0.089	15	PASS
CCB6	CCB	1	Na	-0.12	2.26	15	PASS
N027429-012B-PS	PS	25	Na	17.8	0.32	15	PASS
N027429-012B-MS2	MS	25	Na	18.012	0.2	15	PASS
N027429-012B-MSD2	MSD	25	Na	18.16	0.39	15	PASS
N027429-013B	SAMP	25	Na	11.93	0.17	15	PASS
N027429-014B	SAMP	25	Na	12.59	0.2	15	PASS
N027429-015B	SAMP	25	Na	12	0.33	15	PASS
N027429-016C	SAMP	25	Na	26.78	0.013	15	PASS
N027429-017C	SAMP	25	Na	26.7	0.27	15	PASS
N027429-018C	SAMP	100	Na	26.003	0.13	15	PASS
N027429-020C	SAMP	100	Na	27.37	0.087	15	PASS
CCV7	CCV	1	Na	10.033	0.38	15	PASS
CCB7	CCB	1	Na	-0.12	3.43	15	PASS
ICSA3	ICSA	1	Na	-0.13	3.52	15	PASS
ICSAB3	ICSAB	1	Na	10.067	0.18	15	PASS

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	B	0	0.59	15	PASS
Standard1	ICAL	1	B	0.1	1.15	15	PASS
Standard3	ICAL	1	B	1	0.087	15	PASS
Standard4	ICAL	1	B	2.5	0.59	15	PASS
Standard5	ICAL	1	B	3.75	1.54	15	PASS
Standard6	ICAL	1	B	5	0.48	15	PASS
Standard7	ICAL	1	B	10	0.68	15	PASS
ICV	ICV	1	B	4.98	0.36	15	PASS
ICB	ICB	1	B	0.011	11.2	15	PASS
LLICV	CCV1	1	B	0.15	0.7	20	PASS
LLICV	CCV1	1	B	0.097	1.87	20	PASS
ICSA1	ICSA	1	B	0.077	3.84	15	PASS
ICSAB1	ICSAB	1	B	1.17	0.22	15	PASS
MB-65992	MBLK	1	B	-0.0049	7.87	15	PASS
LCS1-65992	LCS	1	B	4.69	0.99	15	PASS
N027429-010B	SAMP	1	B	1.38	0.68	15	PASS
N027429-012B	SAMP	1	B	0.62	0.52	15	PASS
N027429-013B	SAMP	1	B	0.62	0.4	15	PASS
N027429-014B	SAMP	1	B	0.66	0.6	15	PASS
N027429-015B	SAMP	1	B	0.44	0.65	15	PASS
N027429-016C	SAMP	1	B	0.57	0.43	15	PASS
N027429-017C	SAMP	1	B	0.56	0.4	15	PASS
N027429-018C	SAMP	1	B	1.098	0.72	15	PASS
CCV1	CCV	1	B	4.8	0.61	15	PASS
CCB1	CCB	1	B	0.017	19.94	15	<PQL
N027429-020C	SAMP	1	B	0.83	0.55	15	PASS
N027437-001B	SAMP	1	B	0.048	1.7	15	PASS
N027437-002B	SAMP	1	B	1.27	0.81	15	PASS
N027437-002B	SAMP	5	B	0.27	0.42	15	PASS
N027437-002B-PS	PS	1	B	5.94	0.47	15	PASS
N027437-002BMS1	MS	1	B	5.75	0.43	15	PASS
N027437-002BMSD1	MSD	1	B	5.83	0.4	15	PASS
N027437-003D	SAMP	1	B	0.54	0.49	15	PASS
N027437-004B	SAMP	1	B	0.052	4.27	15	PASS
N027437-005B	SAMP	1	B	0.18	0.17	15	PASS
CCV2	CCV	1	B	4.7	0.74	15	PASS
CCB2	CCB	1	B	0.019	18.28	15	<PQL
CCV3	CCV	1	B	4.68	0.68	15	PASS
CCB3	CCB	1	B	0.021	15.084	15	<PQL
CCV4	CCV	1	B	4.63	0.81	15	PASS
CCB4	CCB	1	B	0.016	20.33	15	<PQL
LLCCV1	CCV2	1	B	0.087	1.74	20	PASS

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
ICSA2	ICSA	1	B	0.078	2.16	15	PASS
ICSAB2	ICSAB	1	B	1.091	0.32	15	PASS
CCV5	CCV	1	B	4.57	0.88	15	PASS
CCB5	CCB	1	B	0.032	17.76	15	<PQL
N027429-010B	SAMP	5	B	0.3	0.4	15	PASS
CCV6	CCV	1	B	4.54	0.67	15	PASS
CCB6	CCB	1	B	0.026	8.48	15	PASS
LLCCV2	CCV2	1	B	0.097	3.16	20	PASS
ICSA3	ICSA	1	B	0.1	2.31	15	PASS
ICSAB3	ICSAB	1	B	1.077	0.35	15	PASS
CCV7	CCV	1	B	4.87	0.75	15	PASS
CCB7	CCB	1	B	0.03	2.69	15	PASS
LLCCV3	CCV2	1	B	0.1	1.79	20	PASS
ICSA4	ICSA	1	B	0.099	0.24	15	PASS
ICSAB4	ICSAB	1	B	1.17	0.46	15	PASS
CalBlk	IBLK	1	Ca	0	3.65	15	PASS
Standard1	ICAL	1	Ca	0.2	11.17	15	PASS
Standard2	ICAL	1	Ca	1	1.87	15	PASS
Standard3	ICAL	1	Ca	2	2.47	15	PASS
Standard4	ICAL	1	Ca	5	0.83	15	PASS
Standard5	ICAL	1	Ca	7.5	0.61	15	PASS
Standard6	ICAL	1	Ca	10	0.51	15	PASS
Standard7	ICAL	1	Ca	20	0.3	15	PASS
ICV	ICV	1	Ca	10.088	0.21	15	PASS
ICB	ICB	1	Ca	-0.0018	778.17	15	<PQL
LLICV	CCV1	1	Ca	0.34	5.65	20	PASS
LLICV	CCV1	1	Ca	0.2	11.79	20	PASS
ICSA1	ICSA	1	Ca	498.55	0.67	15	PASS
ICSAB1	ICSAB	1	Ca	536.96	0.1	15	PASS
MB-65992	MBLK	1	Ca	0.018	96.75	15	<PQL
LCS1-65992	LCS	1	Ca	9.68	0.3	15	PASS
N027429-010B	SAMP	1	Ca	779.77	0.0075	15	PASS
N027429-012B	SAMP	1	Ca	108.05	0.2	15	PASS
N027429-013B	SAMP	1	Ca	117.1	0.11	15	PASS
N027429-014B	SAMP	1	Ca	125.83	0.18	15	PASS
N027429-015B	SAMP	1	Ca	118.92	0.27	15	PASS
N027429-016C	SAMP	1	Ca	172.58	0.25	15	PASS
N027429-017C	SAMP	1	Ca	173.1	0.1	15	PASS
N027429-018C	SAMP	1	Ca	322.34	0.38	15	PASS
CCV1	CCV	1	Ca	9.97	0.27	15	PASS
CCB1	CCB	1	Ca	0.016	132.15	15	<PQL
N027429-020C	SAMP	1	Ca	291.53	0.071	15	PASS

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027437-001B	SAMP	1	Ca	6.022	1.04	15	PASS
N027437-002B	SAMP	1	Ca	37.38	0.29	15	PASS
N027437-002B	SAMP	5	Ca	7.94	0.14	15	PASS
N027437-002B-PS	PS	1	Ca	48.92	0.86	15	PASS
N027437-002BMS1	MS	1	Ca	46.89	0.17	15	PASS
N027437-002BMSD1	MSD	1	Ca	47.44	0.89	15	PASS
N027437-003D	SAMP	1	Ca	35.54	0.75	15	PASS
N027437-004B	SAMP	1	Ca	14.59	0.2	15	PASS
N027437-005B	SAMP	1	Ca	25.18	0.65	15	PASS
CCV2	CCV	1	Ca	9.91	0.43	15	PASS
CCB2	CCB	1	Ca	0.029	24.8	15	<PQL
CCV3	CCV	1	Ca	9.99	0.7	15	PASS
CCB3	CCB	1	Ca	-0.011	317.39	15	<PQL
CCV4	CCV	1	Ca	9.89	0.33	15	PASS
CCB4	CCB	1	Ca	-0.0036	655.17	15	<PQL
LLCCV1	CCV2	1	Ca	0.23	25.2	20	<PQL
ICSA2	ICSA	1	Ca	487.27	0.25	15	PASS
ICSAB2	ICSAB	1	Ca	537.05	0.61	15	PASS
CCV5	CCV	1	Ca	9.74	0.6	15	PASS
CCB5	CCB	1	Ca	0.015	48.034	15	<PQL
N027429-010B	SAMP	5	Ca	153.96	0.16	15	PASS
CCV6	CCV	1	Ca	9.73	0.54	15	PASS
CCB6	CCB	1	Ca	0.022	18.88	15	<PQL
LLCCV2	CCV2	1	Ca	0.24	14.45	20	PASS
ICSA3	ICSA	1	Ca	473.64	0.25	15	PASS
ICSAB3	ICSAB	1	Ca	525.29	0.57	15	PASS
CCV7	CCV	1	Ca	10.062	0.85	15	PASS
CCB7	CCB	1	Ca	0.013	111.0015	15	<PQL
LLCCV3	CCV2	1	Ca	0.22	7.62	20	PASS
ICSA4	ICSA	1	Ca	491.53	0.12	15	PASS
ICSAB4	ICSAB	1	Ca	539.93	0.17	15	PASS
CalBlk	IBLK	1	Fe	0	7.094	15	PASS
Standard1	ICAL	1	Fe	0.02	2.33	15	PASS
Standard2	ICAL	1	Fe	0.05	0.25	15	PASS
Standard3	ICAL	1	Fe	2	0.41	15	PASS
Standard4	ICAL	1	Fe	5	0.1	15	PASS
Standard5	ICAL	1	Fe	7.5	1.055	15	PASS
Standard6	ICAL	1	Fe	10	0.12	15	PASS
Standard7	ICAL	1	Fe	20	0.043	15	PASS
ICV	ICV	1	Fe	10.026	0.075	15	PASS
ICB	ICB	1	Fe	0.00024	127.55	15	<PQL
LLICV	CCV1	1	Fe	0.035	1.7	20	PASS

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
LLICV	CCV1	1	Fe	0.023	4.14	20	PASS
ICSA1	ICSA	1	Fe	179.89	0.11	15	PASS
ICSAB1	ICSAB	1	Fe	190.03	0.14	15	PASS
MB-65992	MBLK	1	Fe	0.005	9.9	15	PASS
LCS1-65992	LCS	1	Fe	0.11	1.039	15	PASS
N027429-010B	SAMP	1	Fe	0.078	1.75	15	PASS
N027429-012B	SAMP	1	Fe	0.017	3.63	15	PASS
N027429-013B	SAMP	1	Fe	0.026	3.91	15	PASS
N027429-014B	SAMP	1	Fe	0.018	2.64	15	PASS
N027429-015B	SAMP	1	Fe	0.013	2.55	15	PASS
N027429-016C	SAMP	1	Fe	0.08	1.13	15	PASS
N027429-017C	SAMP	1	Fe	0.07	1.031	15	PASS
N027429-018C	SAMP	1	Fe	0.063	1.047	15	PASS
CCV1	CCV	1	Fe	9.78	0.18	15	PASS
CCB1	CCB	1	Fe	0.00026	80.41	15	<PQL
N027429-020C	SAMP	1	Fe	0.034	0.41	15	PASS
N027437-001B	SAMP	1	Fe	2.59	0.36	15	PASS
N027437-002B	SAMP	1	Fe	0.012	7.15	15	PASS
N027437-002B	SAMP	5	Fe	0.0034	11.99	15	PASS
N027437-002B-PS	PS	1	Fe	0.11	1.18	15	PASS
N027437-002BMS1	MS	1	Fe	0.1	0.79	15	PASS
N027437-002BMSD1	MSD	1	Fe	0.1	1.28	15	PASS
N027437-003D	SAMP	1	Fe	24.87	0.15	15	PASS
N027437-004B	SAMP	1	Fe	4.55	0.31	15	PASS
N027437-005B	SAMP	1	Fe	0.0056	10.61	15	PASS
CCV2	CCV	1	Fe	9.64	0.025	15	PASS
CCB2	CCB	1	Fe	0.00052	63.31	15	<PQL
CCV3	CCV	1	Fe	9.64	0.14	15	PASS
CCB3	CCB	1	Fe	0.00084	63.96	15	<PQL
CCV4	CCV	1	Fe	9.57	0.057	15	PASS
CCB4	CCB	1	Fe	0.0017	65.66	15	<PQL
LLCCV1	CCV2	1	Fe	0.023	3.17	20	PASS
ICSA2	ICSA	1	Fe	171.22	0.055	15	PASS
ICSAB2	ICSAB	1	Fe	177.82	0.22	15	PASS
CCV5	CCV	1	Fe	9.54	0.1	15	PASS
CCB5	CCB	1	Fe	0.0016	45.74	15	<PQL
N027429-010B	SAMP	5	Fe	0.017	2.55	15	PASS
CCV6	CCV	1	Fe	9.53	0.14	15	PASS
CCB6	CCB	1	Fe	0.0022	12.11	15	PASS
LLCCV2	CCV2	1	Fe	0.023	2.84	20	PASS
ICSA3	ICSA	1	Fe	172.78	0.29	15	PASS
ICSAB3	ICSAB	1	Fe	178.26	0.14	15	PASS

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV7	CCV	1	Fe	10.079	0.16	15	PASS
CCB7	CCB	1	Fe	0.00004	522.00022	15	<PQL
LLCCV3	CCV2	1	Fe	0.023	2.21	20	PASS
ICSA4	ICSA	1	Fe	183.12	0.28	15	PASS
ICSAB4	ICSAB	1	Fe	193.13	0.029	15	PASS
CalBlk	IBLK	1	Mg	0	0.61	15	PASS
Standard1	ICAL	1	Mg	0.1	0.95	15	PASS
Standard2	ICAL	1	Mg	1	1.084	15	PASS
Standard3	ICAL	1	Mg	2	0.64	15	PASS
Standard4	ICAL	1	Mg	5	0.048	15	PASS
Standard5	ICAL	1	Mg	7.5	1.03	15	PASS
Standard6	ICAL	1	Mg	10	0.17	15	PASS
Standard7	ICAL	1	Mg	20	0.096	15	PASS
ICV	ICV	1	Mg	10	0.2	15	PASS
ICB	ICB	1	Mg	0.0014	23.22	15	<PQL
LLICV	CCV1	1	Mg	0.16	1.15	20	PASS
LLICV	CCV1	1	Mg	0.11	0.91	20	PASS
ICSA1	ICSA	1	Mg	485.04	0.27	15	PASS
ICSAB1	ICSAB	1	Mg	511.69	0.39	15	PASS
MB-65992	MBLK	1	Mg	0.0083	3.015	15	PASS
LCS1-65992	LCS	1	Mg	9.58	0.16	15	PASS
N027429-010B	SAMP	1	Mg	23.83	0.12	15	PASS
N027429-012B	SAMP	1	Mg	29.48	0.26	15	PASS
N027429-013B	SAMP	1	Mg	17.17	0.33	15	PASS
N027429-014B	SAMP	1	Mg	18.52	0.21	15	PASS
N027429-015B	SAMP	1	Mg	21.32	0.23	15	PASS
N027429-016C	SAMP	1	Mg	26.51	0.18	15	PASS
N027429-017C	SAMP	1	Mg	26.32	0.26	15	PASS
N027429-018C	SAMP	1	Mg	28.72	0.081	15	PASS
CCV1	CCV	1	Mg	9.74	0.21	15	PASS
CCB1	CCB	1	Mg	0.0017	20.16	15	<PQL
N027429-020C	SAMP	1	Mg	26.81	0.26	15	PASS
N027437-001B	SAMP	1	Mg	4.032	0.34	15	PASS
N027437-002B	SAMP	1	Mg	20.94	0.032	15	PASS
N027437-002B	SAMP	5	Mg	4.73	0.38	15	PASS
N027437-002B-PS	PS	1	Mg	30.47	0.28	15	PASS
N027437-002BMS1	MS	1	Mg	29.66	0.036	15	PASS
N027437-002BMSD1	MSD	1	Mg	30.16	0.21	15	PASS
N027437-003D	SAMP	1	Mg	18.24	0.11	15	PASS
N027437-004B	SAMP	1	Mg	7.63	0.23	15	PASS
N027437-005B	SAMP	1	Mg	10.92	0.043	15	PASS
CCV2	CCV	1	Mg	9.66	0.29	15	PASS

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB2	CCB	1	Mg	0.0024	41.23	15	<PQL
CCV3	CCV	1	Mg	9.72	0.18	15	PASS
CCB3	CCB	1	Mg	0.0014	27.16	15	<PQL
CCV4	CCV	1	Mg	9.64	0.14	15	PASS
CCB4	CCB	1	Mg	0.0011	26.28	15	<PQL
LLCCV1	CCV2	1	Mg	0.1	0.46	20	PASS
ICSA2	ICSA	1	Mg	463.52	0.1	15	PASS
ICSAB2	ICSAB	1	Mg	501.44	0.17	15	PASS
CCV5	CCV	1	Mg	9.63	0.039	15	PASS
CCB5	CCB	1	Mg	0.0019	35.79	15	<PQL
N027429-010B	SAMP	5	Mg	5.13	0.035	15	PASS
CCV6	CCV	1	Mg	9.62	0.13	15	PASS
CCB6	CCB	1	Mg	0.0011	28.96	15	<PQL
LLCCV2	CCV2	1	Mg	0.1	2.15	20	PASS
ICSA3	ICSA	1	Mg	451.31	0.71	15	PASS
ICSAB3	ICSAB	1	Mg	504.86	0.33	15	PASS
CCV7	CCV	1	Mg	10.17	0.14	15	PASS
CCB7	CCB	1	Mg	0.0017	60.33	15	<PQL
LLCCV3	CCV2	1	Mg	0.11	1.71	20	PASS
ICSA4	ICSA	1	Mg	474.19	0.6	15	PASS
ICSAB4	ICSAB	1	Mg	522.59	0.21	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 171216A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201K/MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201K/-171030G/-171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/16/2017	10:44:44 AM
2	Standard1	ICAL	1	12/16/2017	10:49:33 AM
3	Standard2	ICAL	1	12/16/2017	10:54:52 AM
11	Standard3	ICAL	1	12/16/2017	11:00:13 AM
12	Standard4	ICAL	1	12/16/2017	11:05:42 AM
6	Standard5	ICAL	1	12/16/2017	11:14:04 AM
7	Standard6	ICAL	1	12/16/2017	11:22:24 AM
8	Standard7	ICAL	1	12/16/2017	11:30:45 AM
9	ICV	ICV	1	12/16/2017	11:38:40 AM
1	ICB	ICB	1	12/16/2017	11:47:04 AM
2	LLICV	CCV1	1	12/16/2017	11:52:06 AM
2	LLICV	CCV1	1	12/16/2017	11:56:24 AM
4	ICSA1	ICSA	1	12/16/2017	12:01:43 PM
5	ICSAB1	ICSAB	1	12/16/2017	12:10:36 PM
14	N027321-001B	SAMP	5	12/16/2017	12:19:10 PM
15	N027404-013B	SAMP	5	12/16/2017	12:27:00 PM
16	N027404-015B	SAMP	1	12/16/2017	12:32:19 PM
17	N027404-016B	SAMP	1	12/16/2017	12:40:09 PM
18	N027404-017B	SAMP	1	12/16/2017	12:47:59 PM
19	N027404-018B	SAMP	1	12/16/2017	12:55:49 PM
20	N027404-020B	SAMP	1	12/16/2017	01:01:09 PM
38	MB-65964	MBLK	1	12/16/2017	01:09:32 PM
39	LCS1-65964	MBLK	1	12/16/2017	01:14:21 PM
40	N027405-001C	SAMP	1	12/16/2017	01:22:44 PM
7	CCV1	CCV	1	12/16/2017	01:30:34 PM
1	CCB1	CCB	1	12/16/2017	01:38:57 PM
41	N027405-001C	SAMP	5	12/16/2017	01:43:46 PM
42	N027405-001C-PS	PS	1	12/16/2017	01:49:07 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
43	N027405-001C-MS1	MS	1	12/16/2017	01:57:29 PM
44	N027405-001C-MSD1	MSD	1	12/16/2017	02:05:22 PM
45	N027405-002C	SAMP	1	12/16/2017	02:13:37 PM
46	N027405-003C	SAMP	1	12/16/2017	02:21:28 PM
47	N027405-004B	SAMP	1	12/16/2017	02:29:21 PM
48	N027405-006B	SAMP	1	12/16/2017	02:34:43 PM
49	N027405-007B	SAMP	1	12/16/2017	02:42:34 PM
50	N027405-008B	SAMP	1	12/16/2017	02:50:27 PM
7	CCV2	CCV	1	12/16/2017	02:58:19 PM
1	CCB2	CCB	1	12/16/2017	03:06:10 PM
51	N027405-009B	SAMP	1	12/16/2017	03:10:59 PM
52	N027405-011B	SAMP	1	12/16/2017	03:18:50 PM
53	N027405-012B	SAMP	1	12/16/2017	03:26:42 PM
54	N027405-013B	SAMP	1	12/16/2017	03:34:34 PM
55	N027405-014B	SAMP	1	12/16/2017	03:42:26 PM
56	N027429-001B	SAMP	1	12/16/2017	03:47:47 PM
57	N027429-002B	SAMP	1	12/16/2017	03:53:08 PM
58	N027429-003B	SAMP	1	12/16/2017	03:58:29 PM
59	N027429-005B	SAMP	1	12/16/2017	04:06:22 PM
60	N027429-006B	SAMP	1	12/16/2017	04:14:14 PM
7	CCV3	CCV	1	12/16/2017	04:22:06 PM
1	CCB3	CCB	1	12/16/2017	04:30:28 PM
61	N027429-007B	SAMP	1	12/16/2017	04:35:16 PM
7	CCV3	CCV	1	12/16/2017	05:38:09 PM
1	CCB3	CCB	1	12/16/2017	05:46:31 PM
61	N027429-007B	SAMP	1	12/16/2017	05:51:20 PM
62	N027429-008B	SAMP	1	12/16/2017	05:56:12 PM
63	N027429-009B	SAMP	1	12/16/2017	06:01:33 PM
64	MB-65992	MBLK	1	12/16/2017	06:09:25 PM
65	LCS1-65992	LCS	1	12/16/2017	06:14:16 PM
66	N027429-010B	SAMP	1	12/16/2017	06:22:37 PM
67	N027429-012B	SAMP	1	12/16/2017	06:30:29 PM
68	N027429-013B	SAMP	1	12/16/2017	06:38:20 PM
69	N027429-014B	SAMP	1	12/16/2017	06:46:12 PM
70	N027429-015B	SAMP	1	12/16/2017	06:54:04 PM
7	CCV4	CCV	1	12/16/2017	07:01:56 PM
1	CCB4	CCB	1	12/16/2017	07:09:47 PM
2	LLCCV1	CCV2	1	12/16/2017	07:14:36 PM
4	ICSA2	ICSA	1	12/16/2017	07:19:55 PM
5	ICSAB2	ICSAB	1	12/16/2017	07:28:28 PM
71	N027429-016C	SAMP	1	12/16/2017	07:37:01 PM
72	N027429-017C	SAMP	1	12/16/2017	07:44:53 PM
73	N027429-018C	SAMP	1	12/16/2017	07:52:44 PM
74	N027429-020C	SAMP	1	12/16/2017	08:00:37 PM
75	N027437-001B	SAMP	1	12/16/2017	08:08:29 PM
76	N027437-002B	SAMP	1	12/16/2017	08:13:50 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
77	N027437-002B	SAMP	5	12/16/2017	08:21:41 PM
78	N027437-002B-PS	PS	1	12/16/2017	08:27:02 PM
79	N027437-002BMS1	MS	1	12/16/2017	08:35:24 PM
80	N027437-002BMSD1	MSD	1	12/16/2017	08:43:16 PM
7	CCV5	CCV	1	12/16/2017	08:51:08 PM
1	CCB5	CCB	1	12/16/2017	08:59:30 PM
81	N027437-003D	SAMP	1	12/16/2017	09:05:07 PM
82	N027437-004B	SAMP	1	12/16/2017	09:09:59 PM
83	N027437-005B	SAMP	1	12/16/2017	09:15:21 PM
84	MB-65993	MBLK	1	12/16/2017	09:20:41 PM
85	LCS1-65993	LCS	1	12/16/2017	09:25:31 PM
86	N027430-002B	SAMP	1	12/16/2017	09:33:54 PM
87	N027430-002B	SAMP	5	12/16/2017	09:41:46 PM
88	N027430-002B-PS	PS	1	12/16/2017	09:46:38 PM
89	N027430-002B-MS1	MS	1	12/16/2017	09:54:30 PM
90	N027430-002B-MSD1	MSD	1	12/16/2017	10:02:23 PM
7	CCV6	CCV	1	12/16/2017	10:10:16 PM
1	CCB6	CCB	1	12/16/2017	10:18:38 PM
91	N027430-004B	SAMP	1	12/16/2017	10:23:27 PM
92	N027430-006B	SAMP	1	12/16/2017	10:28:49 PM
93	N027430-008B	SAMP	1	12/16/2017	10:33:41 PM
94	N027430-012B	SAMP	1	12/16/2017	10:41:33 PM
95	N027430-013B	SAMP	1	12/16/2017	10:49:24 PM
96	N027430-014B	SAMP	1	12/16/2017	10:57:16 PM
97	N027430-015B	SAMP	1	12/16/2017	11:05:09 PM
98	N027430-016B	SAMP	1	12/16/2017	11:13:03 PM
99	N027430-017B	SAMP	1	12/16/2017	11:20:54 PM
100	N027430-018B	SAMP	1	12/16/2017	11:28:47 PM
7	CCV7	CCV	1	12/16/2017	11:36:40 PM
1	CCB7	CCB	1	12/16/2017	11:45:02 PM
101	N027430-020B	SAMP	1	12/16/2017	11:49:50 PM
102	N027431-001B	SAMP	1	12/16/2017	11:58:04 PM
103	N027431-002B	SAMP	1	12/17/2017	12:03:27 AM
104	N027431-003B	SAMP	1	12/17/2017	12:11:20 AM
105	N027431-004B	SAMP	1	12/17/2017	12:19:13 AM
106	N027431-005B	SAMP	1	12/17/2017	12:27:06 AM
107	N027431-006B	SAMP	1	12/17/2017	12:35:29 AM
108	MB-65991	MBLK	1	12/17/2017	12:43:22 AM
109	LCS1-65991	LCS	1	12/17/2017	12:48:13 AM
110	N027437-001A	SAMP	1	12/17/2017	12:56:37 AM
7	CCV8	CCV	1	12/17/2017	01:02:00 AM
1	CCB8	CCB	1	12/17/2017	01:10:22 AM
2	LLCCV2	CCV2	1	12/17/2017	01:15:10 AM
4	ICSA3	ICSA	1	12/17/2017	01:20:29 AM
5	ICSAB3	ICSAB	1	12/17/2017	01:29:02 AM
111	N027437-002A	SAMP	1	12/17/2017	01:37:30 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
112	N027437-002A	SAMP	5	12/17/2017	01:45:23 AM
113	N027437-002A-PS	PS	1	12/17/2017	01:50:44 AM
114	N027437-002AMS1	MS	1	12/17/2017	01:58:38 AM
115	N027437-002AMSD1	MSD	1	12/17/2017	02:07:01 AM
116	N027437-003C	SAMP	1	12/17/2017	02:15:26 AM
117	N027437-004A	SAMP	1	12/17/2017	02:20:51 AM
118	N027437-005A	SAMP	1	12/17/2017	02:26:14 AM
7	CCV9	CCV	1	12/17/2017	02:31:37 AM
1	CCB9	CCB	1	12/17/2017	02:40:00 AM
2	LLCCV3	CCV2	1	12/17/2017	02:44:48 AM
4	ICSA4	ICSA	1	12/17/2017	02:50:08 AM
5	ICSAB4	ICSAB	1	12/17/2017	02:58:41 AM

INJECTION LOG: 171218B

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-170601A,0.025<50mL
Standard2	MWST-170601A,0.25<50mL
Standard3	MWST-170601A,1.25<50mL
Standard4	MWST-170601A,2.5<50mL
Standard5	MWST-170601A,5<50mL
Standard6	MWST-170601A,10<50mL
ICV	MWST-171030L
CCV	MWST-170601A,2.5<50mL
ICSA/ICSAB	MWST-170601L/MWST-170601B
Int. Std. (Sc):	MSST-171009C/B
PS Spike	MSST-130329D/E

MWST-171201R

MWST-171201R
MWST-171201P/ MWST-171201S

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/18/2017	03:00:21 PM
26	Standard1	ICAL	1	12/18/2017	03:04:09 PM
27	Standard2	ICAL	1	12/18/2017	03:11:31 PM
28	Standard3	ICAL	1	12/18/2017	03:15:20 PM
29	Standard4	ICAL	1	12/18/2017	03:19:11 PM
30	Standard5	ICAL	1	12/18/2017	03:23:05 PM
31	Standard6	ICAL	1	12/18/2017	03:27:09 PM
32	ICV	ICV	1	12/18/2017	03:31:30 PM
1	ICB	ICB	1	12/18/2017	03:35:25 PM
33	ICSA1	ICSA	1	12/18/2017	03:38:43 PM
34	ICSAB1	ICSAB	1	12/18/2017	03:42:33 PM
38	N027500-001A	SAMP	1	12/18/2017	03:46:29 PM
39	N027500-002A	SAMP	1	12/18/2017	03:50:18 PM
40	N027500-003A	SAMP	1	12/18/2017	03:54:07 PM
41	N027500-004A	SAMP	1	12/18/2017	03:57:57 PM
42	N027500-005A	SAMP	1	12/18/2017	04:01:46 PM
43	N027500-006A	SAMP	1	12/18/2017	04:05:35 PM
44	N027500-007A	SAMP	1	12/18/2017	04:09:24 PM
45	N027500-008A	SAMP	1	12/18/2017	04:13:13 PM
46	N027500-009A	SAMP	1	12/18/2017	04:17:02 PM
47	N027500-010A	SAMP	1	12/18/2017	04:20:23 PM
8	CCV1	CCV	1	12/18/2017	04:24:15 PM
29	CCV1	CCV	1	12/18/2017	04:27:52 PM
1	CCB1	CCB	1	12/18/2017	04:31:47 PM
48	N027500-011A	SAMP	1	12/18/2017	04:35:05 PM
49	N027500-012A	SAMP	1	12/18/2017	04:38:57 PM
50	N027500-013A	SAMP	1	12/18/2017	04:42:48 PM
51	N027500-014A	SAMP	1	12/18/2017	04:46:39 PM
52	N027500-015A	SAMP	1	12/18/2017	04:50:00 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
53	N027500-016A	SAMP	1	12/18/2017	04:53:51 PM
54	N027500-017A	SAMP	1	12/18/2017	04:57:12 PM
55	N027500-018A	SAMP	1	12/18/2017	05:01:02 PM
56	N027500-019A	SAMP	1	12/18/2017	05:04:51 PM
57	N027500-020A	SAMP	1	12/18/2017	05:08:12 PM
29	CCV2	CCV	1	12/18/2017	05:11:34 PM
1	CCB2	CCB	1	12/18/2017	05:15:30 PM
58	N027500-021A	SAMP	1	12/18/2017	05:19:17 PM
59	N027500-022A	SAMP	1	12/18/2017	05:22:58 PM
60	N027500-023A	SAMP	1	12/18/2017	05:26:50 PM
61	N027500-024A	SAMP	1	12/18/2017	05:30:42 PM
62	N027500-025A	SAMP	1	12/18/2017	05:34:03 PM
63	N027500-026A	SAMP	1	12/18/2017	05:37:24 PM
64	N027500-027A	SAMP	1	12/18/2017	05:40:44 PM
65	N027500-028A	SAMP	1	12/18/2017	05:44:04 PM
38	MB-65964	MBLK	1	12/18/2017	05:52:30 PM
39	LCS2-65964	LCS	1	12/18/2017	05:55:30 PM
29	CCV3	CCV	1	12/18/2017	05:59:34 PM
1	CCB3	CCB	1	12/18/2017	06:03:28 PM
40	N027405-001C	SAMP	10	12/18/2017	06:07:14 PM
41	N027405-002C	SAMP	100	12/18/2017	06:12:03 PM
42	N027405-002C	SAMP	500	12/18/2017	06:15:22 PM
43	N027405-002C-PS	PS	100	12/18/2017	06:18:41 PM
44	N027405-002C-MS2	MS	100	12/18/2017	06:22:01 PM
45	N027405-002C-MSD2	MSD	100	12/18/2017	06:25:09 PM
46	N027405-003C	SAMP	100	12/18/2017	06:28:29 PM
47	N027405-004B	SAMP	10	12/18/2017	06:31:48 PM
48	N027405-006B	SAMP	250	12/18/2017	06:35:39 PM
49	N027405-007B	SAMP	250	12/18/2017	06:38:59 PM
29	CCV4	CCV	1	12/18/2017	06:42:20 PM
1	CCB4	CCB	1	12/18/2017	06:46:15 PM
33	ICSA2	ICSA	1	12/18/2017	06:50:03 PM
34	ICSAB2	ICSAB	1	12/18/2017	06:53:52 PM
50	N027405-008B	SAMP	250	12/18/2017	06:57:49 PM
51	N027405-009B	SAMP	100	12/18/2017	07:01:07 PM
52	N027405-011B	SAMP	100	12/18/2017	07:04:28 PM
53	N027405-012B	SAMP	100	12/18/2017	07:07:46 PM
54	N027405-013B	SAMP	100	12/18/2017	07:11:05 PM
55	N027405-014B	SAMP	10	12/18/2017	07:14:25 PM
56	N027429-001B	SAMP	25	12/18/2017	07:17:45 PM
57	N027429-002B	SAMP	25	12/18/2017	07:21:04 PM
58	N027429-003B	SAMP	250	12/18/2017	07:24:24 PM
59	N027429-005B	SAMP	250	12/18/2017	07:27:44 PM
29	CCV5	CCV	1	12/18/2017	07:31:05 PM
1	CCB5	CCB	1	12/18/2017	07:34:59 PM
60	N027429-006B	SAMP	250	12/18/2017	07:38:47 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
61	N027429-007B	SAMP	25	12/18/2017	07:42:07 PM
62	N027429-008B	SAMP	25	12/18/2017	07:45:27 PM
63	N027429-009B	SAMP	250	12/18/2017	07:48:47 PM
64	N027405-001C	SAMP	100	12/18/2017	07:52:06 PM
65	MB-65992	MBLK	1	12/18/2017	07:55:26 PM
66	LCS2-65992	LCS	1	12/18/2017	07:59:16 PM
67	N027429-010B	SAMP	100	12/18/2017	08:03:23 PM
68	N027429-012B	SAMP	25	12/18/2017	08:06:43 PM
69	N027429-012B	SAMP	125	12/18/2017	08:10:03 PM
29	CCV6	CCV	1	12/18/2017	08:13:23 PM
1	CCB6	CCB	1	12/18/2017	08:17:17 PM
70	N027429-012B-PS	PS	25	12/18/2017	08:21:05 PM
71	N027429-012B-MS2	MS	25	12/18/2017	08:24:56 PM
72	N027429-012B-MSD2	MSD	25	12/18/2017	08:28:47 PM
73	N027429-013B	SAMP	25	12/18/2017	08:32:38 PM
74	N027429-014B	SAMP	25	12/18/2017	08:35:59 PM
75	N027429-015B	SAMP	25	12/18/2017	08:39:19 PM
76	N027429-016C	SAMP	25	12/18/2017	08:42:40 PM
77	N027429-017C	SAMP	25	12/18/2017	08:46:31 PM
78	N027429-018C	SAMP	100	12/18/2017	08:50:22 PM
79	N027429-020C	SAMP	100	12/18/2017	08:53:42 PM
29	CCV7	CCV	1	12/18/2017	08:57:02 PM
1	CCB7	CCB	1	12/18/2017	09:00:57 PM
33	ICSA3	ICSA	1	12/18/2017	09:04:46 PM
34	ICSAB3	ICSAB	1	12/18/2017	09:08:35 PM

INJECTION LOG: 171218C

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201K/MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201K/-171030G/-171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/18/2017	10:32:48 PM
2	Standard1	ICAL	1	12/18/2017	10:42:09 PM
3	Standard2	ICAL	1	12/18/2017	10:47:29 PM
11	Standard3	ICAL	1	12/18/2017	10:52:47 PM
12	Standard4	ICAL	1	12/18/2017	10:58:08 PM
6	Standard5	ICAL	1	12/18/2017	11:05:01 PM
7	Standard6	ICAL	1	12/18/2017	11:12:21 PM
8	Standard7	ICAL	1	12/18/2017	11:19:11 PM
9	ICV	ICV	1	12/18/2017	11:26:02 PM
1	ICB	ICB	1	12/18/2017	11:32:54 PM
2	LLICV	CCV1	1	12/18/2017	11:37:43 PM
2	LLICV	CCV1	1	12/18/2017	11:42:16 PM
4	ICSA1	ICSA	1	12/18/2017	11:47:34 PM
5	ICSAB1	ICSAB	1	12/18/2017	11:55:02 PM
64	MB-65992	MBLK	1	12/19/2017	12:02:34 AM
65	LCS1-65992	LCS	1	12/19/2017	12:07:25 AM
66	N027429-010B	SAMP	1	12/19/2017	12:14:46 AM
67	N027429-012B	SAMP	1	12/19/2017	12:21:46 AM
68	N027429-013B	SAMP	1	12/19/2017	12:28:38 AM
69	N027429-014B	SAMP	1	12/19/2017	12:35:29 AM
70	N027429-015B	SAMP	1	12/19/2017	12:42:20 AM
71	N027429-016C	SAMP	1	12/19/2017	12:49:12 AM
72	N027429-017C	SAMP	1	12/19/2017	12:56:03 AM
73	N027429-018C	SAMP	1	12/19/2017	01:02:55 AM
7	CCV1	CCV	1	12/19/2017	01:09:48 AM
1	CCB1	CCB	1	12/19/2017	01:16:38 AM
74	N027429-020C	SAMP	1	12/19/2017	01:21:27 AM
75	N027437-001B	SAMP	1	12/19/2017	01:28:19 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
76	N027437-002B	SAMP	1	12/19/2017	01:33:41 AM
77	N027437-002B	SAMP	5	12/19/2017	01:40:33 AM
78	N027437-002B-PS	PS	1	12/19/2017	01:45:55 AM
79	N027437-002BMS1	MS	1	12/19/2017	01:53:18 AM
80	N027437-002BMSD1	MSD	1	12/19/2017	02:00:10 AM
81	N027437-003D	SAMP	1	12/19/2017	02:07:02 AM
82	N027437-004B	SAMP	1	12/19/2017	02:11:55 AM
83	N027437-005B	SAMP	1	12/19/2017	02:17:17 AM
7	CCV2	CCV	1	12/19/2017	02:22:08 AM
1	CCB2	CCB	1	12/19/2017	02:28:59 AM
84	MB-65993	MBLK	1	12/19/2017	02:33:47 AM
85	LCS1-65993	LCS	1	12/19/2017	02:38:38 AM
86	N027430-002B	SAMP	1	12/19/2017	02:46:00 AM
87	N027430-002B	SAMP	5	12/19/2017	02:52:53 AM
88	N027430-002B-PS	PS	1	12/19/2017	02:57:45 AM
89	N027430-002B-MS1	MS	1	12/19/2017	03:04:37 AM
90	N027430-002B-MSD1	MSD	1	12/19/2017	03:11:30 AM
91	N027430-004B	SAMP	1	12/19/2017	03:18:23 AM
92	N027430-006B	SAMP	1	12/19/2017	03:23:16 AM
93	N027430-008B	SAMP	1	12/19/2017	03:28:09 AM
7	CCV3	CCV	1	12/19/2017	03:35:01 AM
1	CCB3	CCB	1	12/19/2017	03:41:52 AM
94	N027430-012B	SAMP	1	12/19/2017	03:46:40 AM
95	N027430-013B	SAMP	1	12/19/2017	03:53:31 AM
96	N027430-014B	SAMP	1	12/19/2017	04:00:23 AM
97	N027430-015B	SAMP	1	12/19/2017	04:07:15 AM
98	N027430-016B	SAMP	1	12/19/2017	04:14:08 AM
99	N027430-017B	SAMP	1	12/19/2017	04:20:59 AM
100	N027430-018B	SAMP	1	12/19/2017	04:27:52 AM
101	N027430-020B	SAMP	1	12/19/2017	04:34:45 AM
102	N027431-001B	SAMP	1	12/19/2017	04:41:38 AM
103	N027431-002B	SAMP	1	12/19/2017	04:46:31 AM
7	CCV4	CCV	1	12/19/2017	04:53:25 AM
1	CCB4	CCB	1	12/19/2017	05:00:16 AM
2	LLCCV1	CCV2	1	12/19/2017	05:05:04 AM
4	ICSA2	ICSA	1	12/19/2017	05:10:23 AM
5	ICSAB2	ICSAB	1	12/19/2017	05:17:50 AM
104	N027431-003B	SAMP	1	12/19/2017	05:25:19 AM
105	N027431-004B	SAMP	1	12/19/2017	05:32:11 AM
106	N027431-005B	SAMP	1	12/19/2017	05:39:05 AM
107	N027431-006B	SAMP	1	12/19/2017	05:45:58 AM
108	MB-65991	MBLK	1	12/19/2017	05:52:51 AM
109	LCS1-65991	LCS	1	12/19/2017	05:57:43 AM
110	N027437-001A	SAMP	1	12/19/2017	06:04:35 AM
111	N027437-002A	SAMP	1	12/19/2017	06:09:57 AM
112	N027437-002A	SAMP	5	12/19/2017	06:16:50 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
113	N027437-002A-PS	PS	1	12/19/2017	06:22:12 AM
7	CCV5	CCV	1	12/19/2017	06:29:05 AM
1	CCB5	CCB	1	12/19/2017	06:35:56 AM
114	N027437-002AMS1	MS	1	12/19/2017	06:41:14 AM
115	N027437-002AMSD1	MSD	1	12/19/2017	06:48:08 AM
116	N027437-003C	SAMP	1	12/19/2017	06:55:02 AM
117	N027437-004A	SAMP	1	12/19/2017	07:01:56 AM
118	N027437-005A	SAMP	1	12/19/2017	07:07:18 AM
119	N027405-013B	SAMP	5	12/19/2017	07:12:10 AM
120	N027429-010B	SAMP	5	12/19/2017	07:17:03 AM
7	CCV6	CCV	1	12/19/2017	07:23:56 AM
1	CCB6	CCB	1	12/19/2017	07:30:48 AM
2	LLCCV2	CCV2	1	12/19/2017	07:35:36 AM
4	ICSA3	ICSA	1	12/19/2017	07:40:54 AM
5	ICSAB3	ICSAB	1	12/19/2017	07:48:24 AM
121	N027405-012B	SAMP	5	12/19/2017	08:01:04 AM
38	MB-65994	MBLK	1	12/19/2017	08:07:56 AM
39	LCS1-65994	LCS	1	12/19/2017	08:12:45 AM
40	N027459-001C	SAMP	1	12/19/2017	08:20:04 AM
41	N027459-001C	SAMP	5	12/19/2017	08:26:54 AM
42	N027459-001C-PS	PS	1	12/19/2017	08:31:43 AM
43	N027459-001C-MS1	MS	1	12/19/2017	08:38:34 AM
44	N027459-001C-MSD1	MSD	1	12/19/2017	08:45:25 AM
45	N027459-002C	SAMP	1	12/19/2017	08:52:15 AM
46	N027459-003B	SAMP	1	12/19/2017	08:59:06 AM
7	CCV7	CCV	1	12/19/2017	09:07:07 AM
1	CCB7	CCB	1	12/19/2017	09:17:06 AM
2	LLCCV3	CCV2	1	12/19/2017	09:24:34 AM
4	ICSA4	ICSA	1	12/19/2017	09:34:26 AM
5	ICSAB4	ICSAB	1	12/19/2017	09:41:57 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/8/2017 1:00:00**
Prep End Date: **12/8/2017 5:00:00**
Prep Batch **65964** Prep Code: **3010_W_DISS**

Reviewed/ Date: 01/02/2018
Initials/ Date: for
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-44**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-65964	Aqueous		25	☐	0	0	25	1.000		
LCS2-65964	Aqueous		25	☐	0	0	25	1.000		
MB-65964	Aqueous		25	☐	0	0	25	1.000		
N027405-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-002C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-002C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-008B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9589	HYDROCHLORIC ACID
9601	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/8/2017 1:00:00**
Prep End Date: **12/8/2017 5:00:00**
Prep Batch **65964** Prep Code: **3010_W_DISS**

Reviewed/ Date: 01/02/2018
Initials/ Date: for
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-44**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027405-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-014B	Groundwater	<2	25	☐	0	0	25	1.000		
w/ sediments										
N027429-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-009B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9589	HYDROCHLORIC ACID
9601	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/11/2017 7:50:33**
Prep End Date: **12/11/2017 3:00:00**
Prep Batch **65992** Prep Code: **3010_W_DISS**

Reviewed/ Date: Nancy 1/4/18
Initials/ Date: for
Technician: **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-47**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-65992	Aqueous		25	☐	0	0	25	1.000		
LCS2-65992	Aqueous		25	☐	0	0	25	1.000		
MB-65992	Aqueous		25	☐	0	0	25	1.000		
N027429-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-012B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-012B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-015B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-016C	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-017C	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-018C	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-020C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9589	HYDROCHLORIC ACID
9601	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/11/2017 7:50:33**
Prep End Date: **12/11/2017 3:00:00**
Prep Batch **65992** Prep Code: **3010_W_DISS**

Reviewed/ Date: Nancy 1/4/18
Initials/ Date: for
Technician: **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-47**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027437-001B	Water	<2	25	☐	0	0	25	1.000		
N027437-002B	Water	<2	25	☐	0	0	25	1.000		
N027437-002BMS1	Water	<2	25	☐	0	0	25	1.000		
N027437-002BMS	Water	<2	25	☐	0	0	25	1.000		
N027437-003D	Water	<2	25	☐	0	0	25	1.000		
N027437-004B	Water	<2	25	☐	0	0	25	1.000		
N027437-005B	Water	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9589	HYDROCHLORIC ACID
9601	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 171216A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Boron								
CalBlk	12/16/2017	10:44:44 AM	B	249.677	5127	0.00	mg/L	
Standard1	12/16/2017	10:49:33 AM	B	249.677	3212	0.1000	mg/L	
Standard3	12/16/2017	11:00:13 AM	B	249.677	42900	1.000	mg/L	
Standard4	12/16/2017	11:05:42 AM	B	249.677	107954	2.500	mg/L	
Standard5	12/16/2017	11:14:04 AM	B	249.677	163997	3.750	mg/L	
Standard6	12/16/2017	11:22:24 AM	B	249.677	216128	5.000	mg/L	
Standard7	12/16/2017	11:30:45 AM	B	249.677	434350	10.000	mg/L	1.0000
Magnesium								
CalBlk	12/16/2017	10:44:44 AM	Mg	279.079	253	0.00	mg/L	
Standard1	12/16/2017	10:49:33 AM	Mg	279.079	1145	0.1000	mg/L	
Standard2	12/16/2017	10:54:52 AM	Mg	279.079	14200	1.000	mg/L	
Standard3	12/16/2017	11:00:13 AM	Mg	279.079	29234	2.000	mg/L	
Standard4	12/16/2017	11:05:42 AM	Mg	279.079	72373	5.000	mg/L	
Standard5	12/16/2017	11:14:04 AM	Mg	279.079	109238	7.500	mg/L	
Standard6	12/16/2017	11:22:24 AM	Mg	279.079	146675	10.000	mg/L	
Standard7	12/16/2017	11:30:45 AM	Mg	279.079	281870	20.000	mg/L	0.9999
Calcium								
CalBlk	12/16/2017	10:44:44 AM	Ca	227.546	-135	0.00	mg/L	
Standard1	12/16/2017	10:49:33 AM	Ca	227.546	58	0.2000	mg/L	
Standard2	12/16/2017	10:54:52 AM	Ca	227.546	367	1.000	mg/L	
Standard3	12/16/2017	11:00:13 AM	Ca	227.546	728	2.000	mg/L	
Standard4	12/16/2017	11:05:42 AM	Ca	227.546	1804	5.000	mg/L	
Standard5	12/16/2017	11:14:04 AM	Ca	227.546	2734	7.500	mg/L	
Standard6	12/16/2017	11:22:24 AM	Ca	227.546	3633	10.000	mg/L	
Standard7	12/16/2017	11:30:45 AM	Ca	227.546	7228	20.000	mg/L	1.0000
Iron								
CalBlk	12/16/2017	10:44:44 AM	Fe	273.953	-146	0.00	mg/L	
Standard1	12/16/2017	10:49:33 AM	Fe	273.953	401	0.0200	mg/L	
Standard2	12/16/2017	10:54:52 AM	Fe	273.953	1894	0.050	mg/L	
Standard3	12/16/2017	11:00:13 AM	Fe	273.953	49592	2.000	mg/L	
Standard4	12/16/2017	11:05:42 AM	Fe	273.953	122889	5.000	mg/L	
Standard5	12/16/2017	11:14:04 AM	Fe	273.953	185560	7.500	mg/L	
Standard6	12/16/2017	11:22:24 AM	Fe	273.953	248681	10.000	mg/L	
Standard7	12/16/2017	11:30:45 AM	Fe	273.953	476581	20.000	mg/L	0.9998

INITIAL CALIBRATION SUMMARY: 171218B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	12/18/2017	03:00:21 PM	Na	589.594	866	0.00	mg/L	
Standard1	12/18/2017	03:04:09 PM	Na	589.594	510	0.1000	mg/L	
Standard2	12/18/2017	03:11:31 PM	Na	589.594	4606	1.000	mg/L	
Standard3	12/18/2017	03:15:20 PM	Na	589.594	21822	5.000	mg/L	
Standard4	12/18/2017	03:19:11 PM	Na	589.594	43426	10.000	mg/L	
Standard5	12/18/2017	03:23:05 PM	Na	589.594	87460	20.000	mg/L	
Standard6	12/18/2017	03:27:09 PM	Na	589.594	174266	40.000	mg/L	1.0000

INITIAL CALIBRATION SUMMARY: 171218C

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Boron								
CalBlk	12/18/2017	10:32:48 PM	B	249.677	5579	0.00	mg/L	
Standard1	12/18/2017	10:42:09 PM	B	249.677	5366	0.1000	mg/L	
Standard3	12/18/2017	10:52:47 PM	B	249.677	37786	1.000	mg/L	
Standard4	12/18/2017	10:58:08 PM	B	249.677	92149	2.500	mg/L	
Standard5	12/18/2017	11:05:01 PM	B	249.677	145677	3.750	mg/L	
Standard6	12/18/2017	11:12:21 PM	B	249.677	188926	5.000	mg/L	
Standard7	12/18/2017	11:19:11 PM	B	249.677	380951	10.000	mg/L	0.9999
Magnesium								
CalBlk	12/18/2017	10:32:48 PM	Mg	279.079	227	0.00	mg/L	
Standard1	12/18/2017	10:42:09 PM	Mg	279.079	2071	0.1000	mg/L	
Standard2	12/18/2017	10:47:29 PM	Mg	279.079	12904	1.000	mg/L	
Standard3	12/18/2017	10:52:47 PM	Mg	279.079	27082	2.000	mg/L	
Standard4	12/18/2017	10:58:08 PM	Mg	279.079	64266	5.000	mg/L	
Standard5	12/18/2017	11:05:01 PM	Mg	279.079	101143	7.500	mg/L	
Standard6	12/18/2017	11:12:21 PM	Mg	279.079	129171	10.000	mg/L	
Standard7	12/18/2017	11:19:11 PM	Mg	279.079	257123	20.000	mg/L	0.9999
Calcium								
CalBlk	12/18/2017	10:32:48 PM	Ca	227.546	-142	0.00	mg/L	
Standard1	12/18/2017	10:42:09 PM	Ca	227.546	97	0.2000	mg/L	
Standard2	12/18/2017	10:47:29 PM	Ca	227.546	304	1.000	mg/L	
Standard3	12/18/2017	10:52:47 PM	Ca	227.546	661	2.000	mg/L	
Standard4	12/18/2017	10:58:08 PM	Ca	227.546	1578	5.000	mg/L	
Standard5	12/18/2017	11:05:01 PM	Ca	227.546	2445	7.500	mg/L	
Standard6	12/18/2017	11:12:21 PM	Ca	227.546	3145	10.000	mg/L	
Standard7	12/18/2017	11:19:11 PM	Ca	227.546	6220	20.000	mg/L	0.9999
Iron								
CalBlk	12/18/2017	10:32:48 PM	Fe	273.953	-156	0.00	mg/L	
Standard1	12/18/2017	10:42:09 PM	Fe	273.953	739	0.0200	mg/L	
Standard2	12/18/2017	10:47:29 PM	Fe	273.953	1640	0.050	mg/L	
Standard3	12/18/2017	10:52:47 PM	Fe	273.953	44945	2.000	mg/L	
Standard4	12/18/2017	10:58:08 PM	Fe	273.953	107029	5.000	mg/L	
Standard5	12/18/2017	11:05:01 PM	Fe	273.953	168392	7.500	mg/L	
Standard6	12/18/2017	11:12:21 PM	Fe	273.953	214592	10.000	mg/L	
Standard7	12/18/2017	11:19:11 PM	Fe	273.953	426001	20.000	mg/L	0.9999

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ICV**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4990.055	100	5000	0	99.8	90	110				
Calcium	10117.848	500	10000	0	101	90	110				
Iron	10371.783	20	10000	0	104	90	110				
Magnesium	10338.902	100	10000	0	103	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ZZZZZZ**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	84.911	100	100.0	0	84.9	80	120				
Calcium	170.621	500	200.0	0	85.3	80	120				
Iron	17.461	20	20.00	0	87.3	80	120				
Magnesium	80.716	100	100.0	0	80.7	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **CCV**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870016**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4902.229	100	5000	0	98.0	90	110				
Calcium	10049.761	500	10000	0	100	90	110				
Iron	10259.141	20	10000	0	103	90	110				
Magnesium	10254.169	100	10000	0	103	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **CCV**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4726.029	100	5000	0	94.5	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120897**
Client ID: **CCV** Batch ID: **R120897** TestNo: **EPA 6010B** Analysis Date: **12/16/2017** SeqNo: **2870028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9841.162	500	10000	0	98.4	90	110				
Iron	9640.488	20	10000	0	96.4	90	110				
Magnesium	9546.182	100	10000	0	95.5	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120897**
Client ID: **CCV** Batch ID: **R120897** TestNo: **EPA 6010B** Analysis Date: **12/16/2017** SeqNo: **2870043**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4883.393	100	5000	0	97.7	90	110				
Calcium	10007.653	500	10000	0	100	90	110				
Iron	10184.824	20	10000	0	102	90	110				
Magnesium	10189.958	100	10000	0	102	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120897**
Client ID: **CCV** Batch ID: **R120897** TestNo: **EPA 6010B** Analysis Date: **12/16/2017** SeqNo: **2870055**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4661.374	100	5000	0	93.2	90	110				
Calcium	9745.370	500	10000	0	97.5	90	110				
Iron	9589.654	20	10000	0	95.9	90	110				
Magnesium	9513.808	100	10000	0	95.1	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120897**
Client ID: **ZZZZZZ** Batch ID: **R120897** TestNo: **EPA 6010B** Analysis Date: **12/16/2017** SeqNo: **2870057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	79.523	100	100.0	0	79.5	70	130				
Calcium	142.095	500	200.0	0	71.0	70	130				
Iron	17.170	20	20.00	0	85.8	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ZZZZZZ**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	77.394	100	100.0	0	77.4	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **ICV**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9974.058	500	10000	0	99.7	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCV**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871248**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9944.620	500	10000	0	99.4	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCV**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9935.725	500	10000	0	99.4	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCV**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871272**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10032.268	500	10000	0	100	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCV**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10044.167	500	10000	0	100	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCV**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871298**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9992.954	500	10000	0	99.9	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCV**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10040.282	500	10000	0	100	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCV**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10032.687	500	10000	0	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **ICV** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/18/2017** SeqNo: **2871576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4981.624	100	5000	0	99.6	90	110				
Calcium	10088.062	500	10000	0	101	90	110				
Iron	10025.747	20	10000	0	100	90	110				
Magnesium	9999.066	100	10000	0	100	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **ZZZZZZ** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/18/2017** SeqNo: **2871579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	96.642	100	100.0	0	96.6	80	120				
Calcium	204.883	500	200.0	0	102	80	120				
Iron	23.129	20	20.00	0	116	80	120				
Magnesium	106.139	100	100.0	0	106	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **CCV** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2871592**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4800.518	100	5000	0	96.0	90	110				
Calcium	9969.207	500	10000	0	99.7	90	110				
Iron	9776.470	20	10000	0	97.8	90	110				
Magnesium	9740.502	100	10000	0	97.4	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **CCV** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2871604**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4702.076	100	5000	0	94.0	90	110				
Calcium	9908.640	500	10000	0	99.1	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871604**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9641.235	20	10000	0	96.4	90	110				
Magnesium	9655.505	100	10000	0	96.6	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4675.269	100	5000	0	93.5	90	110				
Calcium	9993.795	500	10000	0	99.9	90	110				
Iron	9644.149	20	10000	0	96.4	90	110				
Magnesium	9720.978	100	10000	0	97.2	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4627.448	100	5000	0	92.5	90	110				
Calcium	9894.698	500	10000	0	98.9	90	110				
Iron	9566.690	20	10000	0	95.7	90	110				
Magnesium	9638.896	100	10000	0	96.4	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871630**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	86.971	100	100.0	0	87.0	70	130				
Calcium	231.543	500	200.0	0	116	70	130				
Iron	23.093	20	20.00	0	115	70	130				
Magnesium	102.266	100	100.0	0	102	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV5** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **CCV** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2871643**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4565.887	100	5000	0	91.3	90	110				
Calcium	9735.929	500	10000	0	97.4	90	110				
Iron	9541.151	20	10000	0	95.4	90	110				
Magnesium	9628.434	100	10000	0	96.3	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **CCV** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2871652**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4537.337	100	5000	0	90.7	90	110				
Calcium	9734.042	500	10000	0	97.3	90	110				
Iron	9531.319	20	10000	0	95.3	90	110				
Magnesium	9621.434	100	10000	0	96.2	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **ZZZZZZ** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2871654**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	96.701	100	100.0	0	96.7	70	130				
Calcium	240.192	500	200.0	0	120	70	130				
Iron	22.875	20	20.00	0	114	70	130				
Magnesium	103.462	100	100.0	0	103	70	130				

Sample ID **CCV7** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **CCV** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2871667**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4870.263	100	5000	0	97.4	90	110				
Calcium	10062.017	500	10000	0	101	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871667**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10079.268	20	10000	0	101	90	110				
Magnesium	10170.430	100	10000	0	102	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871669**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	104.049	100	100.0	0	104	70	130				
Calcium	222.727	500	200.0	0	111	70	130				
Iron	23.158	20	20.00	0	116	70	130				
Magnesium	110.310	100	100.0	0	110	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ICB**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	21.693	100									
Calcium	-20.785609	500									
Iron	0.877	20									
Magnesium	0.466	100									
Manganese	0.028	10									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **CCB**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	24.795	100									
Calcium	29.481	500									
Iron	0.753	20									
Magnesium	0.280	100									
Manganese	-0.02487	10									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **CCB**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	22.071	100									
Calcium	19.265	500									
Iron	1.089	20									
Magnesium	-0.236916	100									
Manganese	-0.019864	10									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **CCB**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870044**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	31.063	100									
Calcium	20.512	500									
Iron	1.246	20									
Magnesium	-1.32059	100									
Manganese	-0.008535	10									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **CCB**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870056**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	20.643	100									
Calcium	23.810	500									
Iron	0.570	20									
Magnesium	-0.475308	100									
Manganese	-0.051396	10									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **ICB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-20.539383	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871249**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-75.40344	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-82.629939	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871273**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-95.927983	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-118.781508	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871299**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-118.634555	500									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871311**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-123.004033	500									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **CCB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-121.733252	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	11.230	100									
Calcium	-1.802075	500									
Iron	0.239	20									
Magnesium	1.384	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871593**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	17.004	100									
Calcium	16.292	500									
Iron	0.264	20									
Magnesium	1.657	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871605**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	18.575	100									
Calcium	29.130	500									
Iron	0.524	20									
Magnesium	2.381	100									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	20.882	100									
Calcium	-10.673498	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.841	20									
Magnesium	1.354	100									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	16.066	100									
Calcium	-3.575705	500									
Iron	1.730	20									
Magnesium	1.130	100									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	32.298	100									
Calcium	15.024	500									
Iron	1.554	20									
Magnesium	1.859	100									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871653**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	26.422	100									
Calcium	21.639	500									
Iron	2.167	20									
Magnesium	1.109	100									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCB7	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	CCB	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871668

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	30.018	100									
Calcium	13.349	500									
Iron	0.043	20									
Magnesium	1.712	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ICSA**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870004**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	489490.973	50	500000	0	97.9	80	120				
Boron	84.704	100									
Calcium	485555.577	500	500000	0	97.1	80	120				
Iron	167440.577	20	200000	0	83.7	80	120				
Magnesium	452647.155	100	500000	0	90.5	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ICSAB**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870005**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	551147.791	50	500000	0	110	80	120				
Boron	1152.559	100	1000	0	115	80	120				
Calcium	543031.842	500	500000	0	109	80	120				
Iron	181701.449	20	200000	0	90.9	80	120				
Magnesium	508463.476	100	500000	0	102	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ICSA**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870058**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	481205.244	50	500000	0	96.2	80	120				
Boron	79.102	100									
Calcium	484358.974	500	500000	0	96.9	80	120				
Iron	182658.522	20	200000	0	91.3	80	120				
Magnesium	438265.928	100	500000	0	87.7	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID: **ICSAB**	Batch ID: **R120897**	TestNo: **EPA 6010B**		Analysis Date: **12/16/2017**	SeqNo: **2870059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	540662.263	50	500000	0	108	80	120				
Boron	1097.821	100	1000	0	110	80	120				
Calcium	540942.543	500	500000	0	108	80	120				
Iron	179860.260	20	200000	0	89.9	80	120				
Magnesium	486371.735	100	500000	0	97.3	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120915
Client ID:	ICSA	Batch ID:	R120915	TestNo:	EPA 6010B			Analysis Date:	12/18/2017	SeqNo:	2871235

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-23.803815	500									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120915
Client ID:	ICSAB	Batch ID:	R120915	TestNo:	EPA 6010B			Analysis Date:	12/18/2017	SeqNo:	2871236

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10018.397	500	10000	0	100	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120915
Client ID:	ICSA	Batch ID:	R120915	TestNo:	EPA 6010B			Analysis Date:	12/18/2017	SeqNo:	2871286

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-117.541975	500									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120915
Client ID:	ICSAB	Batch ID:	R120915	TestNo:	EPA 6010B			Analysis Date:	12/18/2017	SeqNo:	2871287

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10090.050	500	10000	0	101	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120915
Client ID:	ICSA	Batch ID:	R120915	TestNo:	EPA 6010B			Analysis Date:	12/18/2017	SeqNo:	2871324

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-128.118015	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID: **ICSAB**	Batch ID: **R120915**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871325**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10066.635	500	10000	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICSA**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871580**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	499606.293	50	500000	0	99.9	80	120				
Boron	77.045	100									
Calcium	498548.809	500	500000	0	99.7	80	120				
Iron	179892.137	20	200000	0	89.9	80	120				
Magnesium	485043.587	100	500000	0	97.0	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICSAB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871581**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	549867.041	50	500000	0	110	80	120				
Boron	1174.793	100	1000	0	117	80	120				
Calcium	536964.037	500	500000	0	107	80	120				
Iron	190028.308	20	200000	0	95.0	80	120				
Magnesium	511694.882	100	500000	0	102	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICSA**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871631**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	484031.618	50	500000	0	96.8	80	120				
Boron	78.420	100									
Calcium	487269.052	500	500000	0	97.5	80	120				
Iron	171216.397	20	200000	0	85.6	80	120				
Magnesium	463520.732	100	500000	0	92.7	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	ICSAB	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871632

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	526793.741	50	500000	0	105	80	120				
Boron	1090.925	100	1000	0	109	80	120				
Calcium	537053.293	500	500000	0	107	80	120				
Iron	177822.006	20	200000	0	88.9	80	120				
Magnesium	501435.284	100	500000	0	100	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	ICSA	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871655

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	484725.819	50	500000	0	96.9	80	120				
Boron	103.973	100									
Calcium	473640.507	500	500000	0	94.7	80	120				
Iron	172781.452	20	200000	0	86.4	80	120				
Magnesium	451305.649	100	500000	0	90.3	80	120				

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	ICSAB	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871656

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	525073.791	50	500000	0	105	80	120				
Boron	1076.987	100	1000	0	108	80	120				
Calcium	525291.517	500	500000	0	105	80	120				
Iron	178260.199	20	200000	0	89.1	80	120				
Magnesium	504862.836	100	500000	0	101	80	120				

B on ICSA3 is biased high however, samples for B were closed by CCV4/CCB4/LLCCV1/ICSA2/ICSAB2.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

01/02/2018

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 171216A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.98	97.61	65-125	PASS
Standard2	ICAL	1	1.064	106.42	65-125	PASS
Standard3	ICAL	1	0.97	96.73	65-125	PASS
Standard4	ICAL	1	0.96	96.046	65-125	PASS
Standard5	ICAL	1	0.96	95.5	65-125	PASS
Standard6	ICAL	1	0.95	94.74	65-125	PASS
Standard7	ICAL	1	0.93	92.61	65-125	PASS
ICV	ICV	1	0.95	94.97	65-125	PASS
ICB	ICB	1	0.97	97.01	65-125	PASS
LLICV	CCV1	1	0.97	96.75	65-125	PASS
LLICV	CCV1	1	0.97	96.95	65-125	PASS
ICSA1	ICSA	1	0.94	94	65-125	PASS
ICSAB1	ICSAB	1	0.8	79.53	65-125	PASS
MB-65964	MBLK	1	0.98	97.56	65-125	PASS
LCS1-65964	MBLK	1	0.88	88.15	65-125	PASS
N027405-001C	SAMP	1	0.85	85.43	65-125	PASS
CCV1	CCV	1	0.96	95.64	65-125	PASS
CCB1	CCB	1	0.99	98.62	65-125	PASS
N027405-001C	SAMP	5	0.9	89.64	65-125	PASS
N027405-001C-PS	PS	1	0.86	85.67	65-125	PASS
N027405-001C-MS1	MS	1	0.87	86.53	65-125	PASS
N027405-001C-MSD1	MSD	1	0.86	86.26	65-125	PASS
N027405-002C	SAMP	1	0.84	84.049	65-125	PASS
N027405-003C	SAMP	1	0.82	81.67	65-125	PASS
N027405-004B	SAMP	1	0.95	94.76	65-125	PASS
N027405-006B	SAMP	1	0.75	75.14	65-125	PASS
N027405-007B	SAMP	1	0.79	78.81	65-125	PASS
N027405-008B	SAMP	1	0.76	76.34	65-125	PASS
CCV2	CCV	1	0.96	96.15	65-125	PASS
CCB2	CCB	1	0.97	96.98	65-125	PASS
N027405-009B	SAMP	1	0.87	87.015	65-125	PASS
N027405-011B	SAMP	1	0.79	78.51	65-125	PASS
N027405-012B	SAMP	1	0.88	87.98	65-125	PASS
N027405-013B	SAMP	1	0.82	81.91	65-125	PASS
N027405-014B	SAMP	1	0.94	94.14	65-125	PASS
N027429-001B	SAMP	1	0.94	93.86	65-125	PASS
N027429-002B	SAMP	1	0.96	96.12	65-125	PASS
N027429-003B	SAMP	1	0.78	78.28	65-125	PASS
N027429-005B	SAMP	1	0.79	79.2	65-125	PASS
N027429-006B	SAMP	1	0.78	77.84	65-125	PASS

INTERNAL STANDARD: 171216A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCV3	CCV	1	0.98	98.19	65-125	PASS
CCB3	CCB	1	1.02	101.96	65-125	PASS
N027429-007B	SAMP	1	0.98	98.085	65-125	PASS
CCV3	CCV	1	0.92	91.95	65-125	PASS
CCB3	CCB	1	0.96	95.53	65-125	PASS
N027429-007B	SAMP	1	0.93	93.48	65-125	PASS
N027429-008B	SAMP	1	0.92	91.77	65-125	PASS
N027429-009B	SAMP	1	0.75	75.29	65-125	PASS
CCV4	CCV	1	0.96	95.88	65-125	PASS
CCB4	CCB	1	0.96	96.14	65-125	PASS
LLCCV1	CCV2	1	0.96	96.036	65-125	PASS
ICSA2	ICSA	1	0.93	92.83	65-125	PASS
ICSAB2	ICSAB	1	0.79	79.056	65-125	PASS

INTERNAL STANDARD: 171218B

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	99.45	65-125	PASS
Standard2	ICAL	1	0.98	97.9	65-125	PASS
Standard3	ICAL	1	0.99	99.44	65-125	PASS
Standard4	ICAL	1	0.98	97.54	65-125	PASS
Standard5	ICAL	1	0.96	96.056	65-125	PASS
Standard6	ICAL	1	0.96	95.73	65-125	PASS
ICV	ICV	1	0.97	97.42	65-125	PASS
ICB	ICB	1	1.012	101.18	65-125	PASS
ICSA1	ICSA	1	0.99	98.9	65-125	PASS
ICSAB1	ICSAB	1	0.97	96.97	65-125	PASS
CCV1	CCV	1	1.11	110.98	65-125	PASS
CCV1	CCV	1	0.97	97.26	65-125	PASS
CCB1	CCB	1	1.015	101.51	65-125	PASS
CCV2	CCV	1	0.98	98.12	65-125	PASS
CCB2	CCB	1	0.99	99.38	65-125	PASS
MB-65964	MBLK	1	1.019	101.88	65-125	PASS
LCS2-65964	LCS	1	1.026	102.57	65-125	PASS
CCV3	CCV	1	0.98	98.1	65-125	PASS
CCB3	CCB	1	1	99.7	65-125	PASS
N027405-001C	SAMP	10	0.97	97.071	65-125	PASS
N027405-002C	SAMP	100	0.99	98.52	65-125	PASS
N027405-002C	SAMP	500	1.0037	100.37	65-125	PASS
N027405-002C-PS	PS	100	0.99	99.36	65-125	PASS
N027405-002C-MS2	MS	100	0.99	99.42	65-125	PASS
N027405-002C-MSD2	MSD	100	1.0008	100.08	65-125	PASS
N027405-003C	SAMP	100	1	99.69	65-125	PASS
N027405-004B	SAMP	10	1.0058	100.58	65-125	PASS
N027405-006B	SAMP	250	0.99	99.2	65-125	PASS
N027405-007B	SAMP	250	0.99	99.088	65-125	PASS
CCV4	CCV	1	0.98	98.31	65-125	PASS
CCB4	CCB	1	1.0085	100.85	65-125	PASS
ICSA2	ICSA	1	1.0092	100.92	65-125	PASS
ICSAB2	ICSAB	1	0.98	98.44	65-125	PASS
N027405-008B	SAMP	250	1	99.86	65-125	PASS
N027405-009B	SAMP	100	1	99.9	65-125	PASS
N027405-011B	SAMP	100	1	99.75	65-125	PASS
N027405-012B	SAMP	100	0.99	99.25	65-125	PASS
N027405-013B	SAMP	100	1	99.82	65-125	PASS
N027405-014B	SAMP	10	1.0071	100.71	65-125	PASS
N027429-001B	SAMP	25	1.0059	100.59	65-125	PASS

INTERNAL STANDARD: 171218B

Instrument ID: ICP-02

Scandium

Sample Name	Type	DF	~~Yttrium~~, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N027429-002B	SAMP	25	1.01	101.01	65-125	PASS
N027429-003B	SAMP	250	1	99.97	65-125	PASS
N027429-005B	SAMP	250	1.002	100.2	65-125	PASS
CCV5	CCV	1	0.98	98.38	65-125	PASS
CCB5	CCB	1	1.0095	100.95	65-125	PASS
N027429-006B	SAMP	250	1.0029	100.29	65-125	PASS
N027429-007B	SAMP	25	1.0048	100.48	65-125	PASS
N027429-008B	SAMP	25	1.0077	100.77	65-125	PASS
N027429-009B	SAMP	250	1.0016	100.16	65-125	PASS
N027405-001C	SAMP	100	1.0068	100.68	65-125	PASS
MB-65992	MBLK	1	1.0021	100.21	65-125	PASS
LCS2-65992	LCS	1	1.044	104.4	65-125	PASS
N027429-010B	SAMP	100	1.0032	100.32	65-125	PASS
N027429-012B	SAMP	25	1.0039	100.39	65-125	PASS
N027429-012B	SAMP	125	1.0073	100.73	65-125	PASS
CCV6	CCV	1	0.98	98.28	65-125	PASS
CCB6	CCB	1	1.014	101.35	65-125	PASS
N027429-012B-PS	PS	25	1	99.84	65-125	PASS
N027429-012B-MS2	MS	25	1.0023	100.23	65-125	PASS
N027429-012B-MSD2	MSD	25	1.0088	100.88	65-125	PASS
N027429-013B	SAMP	25	1.0077	100.77	65-125	PASS
N027429-014B	SAMP	25	1.0091	100.91	65-125	PASS
N027429-015B	SAMP	25	1.008	100.8	65-125	PASS
N027429-016C	SAMP	25	1	99.58	65-125	PASS
N027429-017C	SAMP	25	1	99.74	65-125	PASS
N027429-018C	SAMP	100	0.99	99.28	65-125	PASS
N027429-020C	SAMP	100	0.99	99.47	65-125	PASS
CCV7	CCV	1	0.98	98.22	65-125	PASS
CCB7	CCB	1	1.0074	100.74	65-125	PASS
ICSA3	ICSA	1	1	99.78	65-125	PASS
ICSAB3	ICSAB	1	0.98	98.29	65-125	PASS

INTERNAL STANDARD: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.01	101.02	65-125	PASS
Standard2	ICAL	1	1.0028	100.28	65-125	PASS
Standard3	ICAL	1	1.048	104.75	65-125	PASS
Standard4	ICAL	1	1.088	108.84	65-125	PASS
Standard5	ICAL	1	1.19	118.58	65-125	PASS
Standard6	ICAL	1	0.96	96.25	65-125	PASS
Standard7	ICAL	1	0.95	94.86	65-125	PASS
ICV	ICV	1	0.97	96.72	65-125	PASS
ICB	ICB	1	1	99.76	65-125	PASS
LLICV	CCV1	1	1.0008	100.08	65-125	PASS
LLICV	CCV1	1	1	99.79	65-125	PASS
ICSA1	ICSA	1	0.87	86.92	65-125	PASS
ICSAB1	ICSAB	1	0.79	78.77	65-125	PASS
MB-65992	MBLK	1	1.042	104.16	65-125	PASS
LCS1-65992	LCS	1	0.95	95.48	65-125	PASS
N027429-010B	SAMP	1	0.85	84.92	65-125	PASS
N027429-012B	SAMP	1	0.96	96.19	65-125	PASS
N027429-013B	SAMP	1	0.98	97.97	65-125	PASS
N027429-014B	SAMP	1	0.96	95.79	65-125	PASS
N027429-015B	SAMP	1	0.96	96.42	65-125	PASS
N027429-016C	SAMP	1	0.93	92.71	65-125	PASS
N027429-017C	SAMP	1	0.93	92.85	65-125	PASS
N027429-018C	SAMP	1	0.84	83.95	65-125	PASS
CCV1	CCV	1	0.97	96.66	65-125	PASS
CCB1	CCB	1	1.0021	100.21	65-125	PASS
N027429-020C	SAMP	1	0.88	87.63	65-125	PASS
N027437-001B	SAMP	1	1.045	104.54	65-125	PASS
N027437-002B	SAMP	1	0.99	98.68	65-125	PASS
N027437-002B	SAMP	5	1.012	101.18	65-125	PASS
N027437-002B-PS	PS	1	0.99	98.95	65-125	PASS
N027437-002BMS1	MS	1	0.99	99.31	65-125	PASS
N027437-002BMSD1	MSD	1	0.97	96.89	65-125	PASS
N027437-003D	SAMP	1	1.0054	100.54	65-125	PASS
N027437-004B	SAMP	1	1.071	107.06	65-125	PASS
N027437-005B	SAMP	1	1.057	105.68	65-125	PASS
CCV2	CCV	1	0.98	97.53	65-125	PASS
CCB2	CCB	1	1.0038	100.38	65-125	PASS
CCV3	CCV	1	0.97	96.71	65-125	PASS
CCB3	CCB	1	1	99.8	65-125	PASS
CCV4	CCV	1	0.98	97.87	65-125	PASS

INTERNAL STANDARD: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCB4	CCB	1	1	99.62	65-125	PASS
LLCCV1	CCV2	1	1.016	101.59	65-125	PASS
ICSA2	ICSA	1	0.87	86.98	65-125	PASS
ICSAB2	ICSAB	1	0.79	78.92	65-125	PASS
CCV5	CCV	1	0.98	97.84	65-125	PASS
CCB5	CCB	1	1.015	101.51	65-125	PASS
N027429-010B	SAMP	5	0.89	88.85	65-125	PASS
CCV6	CCV	1	0.98	98.036	65-125	PASS
CCB6	CCB	1	1.0083	100.83	65-125	PASS
LLCCV2	CCV2	1	1.018	101.82	65-125	PASS
ICSA3	ICSA	1	0.88	88.075	65-125	PASS
ICSAB3	ICSAB	1	0.8	79.74	65-125	PASS
CCV7	CCV	1	0.98	97.56	65-125	PASS
CCB7	CCB	1	0.99	99.13	65-125	PASS
LLCCV3	CCV2	1	1.0075	100.75	65-125	PASS
ICSA4	ICSA	1	0.87	87.1	65-125	PASS
ICSAB4	ICSAB	1	0.8	79.67	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N027429
Test Method: EPA 6010B
Analysis Date: 12/16/2017 & 12/18/2017

Matrix: Groundwater
Batch No.: 65964

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B & Fe. The calculated concentration is <25RL.
Dilution test failed for Ca & Mg. However, PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027405-001C DT 5X	Boron	ug/L	847.0434	NA	726.1909	16.64%	10
N027405-001C DT 5X	Calcium	ug/L	120322.7	FAIL	107678.2	11.74%	10
N027405-001C DT 5X	Iron	ug/L	10.4753	NA	14.04272	25.40%	10
N027405-001C DT 5X	Magnesium	ug/L	21706.29	FAIL	18849.78	15.15%	10
N027405-002C DT 500X	Sodium	ug/L	1556504	PASS	1554016	0.16%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N027429
Test Method: EPA 6010B
Analysis Date: 12/18/2017

Matrix: Groundwater
Batch No.: 65992

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B & Fe. The calculated concentration is <25RL.
Dilution test failed for Mg. However, PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027437-002B DT 5X	Boron	ug/L	1334.879	NA	1269.381	5.16%	10
N027437-002B DT 5X	Calcium	ug/L	39695.31	PASS	37382.67	6.19%	10
N027437-002B DT 5X	Iron	ug/L	17.21963	NA	11.74927	46.56%	10
N027437-002B DT 5X	Magnesium	ug/L	23656.52	FAIL	20936.23	12.99%	10
N027429-012B DT 125X	Sodium	ug/L	384602.1	PASS	389265	1.20%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**N027405-001C-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120897**
Client ID:	**ZZZZZZ**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5462.001	100	5000	726.2	94.7	80	120				
Calcium	115253.601	500	10000	107700	75.8	80	120				S
Iron	133.817	20	100.0	14.04	120	80	120				
Magnesium	27194.370	100	10000	18850	83.4	80	120				

Sample ID	**N027405-002C-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120915**
Client ID:	**ZZZZZZ**	Batch ID: **65964**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/18/2017**	SeqNo: **2871277**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1601864.762	50000	20000	1554000	239	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027429-012B-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120915
Client ID:	ZZZZZZ	Batch ID:	65992	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/18/2017	SeqNo:	2871312

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	445020.618	12000	20000	389300	279	80	120				S

Sample ID	N027437-002B-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	ZZZZZZ	Batch ID:	65992	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2871598

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5936.153	100	5000	1269	93.3	80	120				
Calcium	48923.791	500	10000	37380	115	80	120				
Iron	110.595	20	100.0	11.75	98.8	80	120				
Magnesium	30468.895	100	10000	20940	95.3	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

LOD & PQL VERIFICATION

Analytical Method: EPA 6010B / 200.7 **Matrix:** Water
Date of Analysis: 2/21/2017 **Units:** mg/L
Instrument Name: ICP2
Analyst: MI

Compound	MDL	LOD		PQL		
		Spike	Recovered	Spike	Recovered	% Recovery
Sodium	0.02621	0.10	0.08408	0.5	0.52080	104.2
Potassium	0.03815	0.10	0.13587	0.5	0.48231	96.5
Strontium	0.00545	0.02	0.02459	0.05	0.06052	121.0

Method Detection Limit

Analytical Method: EPA 6010B / 200.7
Digestion Method: EPA 3010A
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: mg/L

Analyte	1	2	3	4	5	6	7	SD	Ave	AMT SPIKED	%RSD	MDL	PQL
Potassium	0.15443	0.16201	0.14301	0.16141	0.16124	0.12965	0.14652	0.01215	0.15118	0.1000	8.0	0.03815	0.5
Sodium	0.11445	0.11459	0.11678	0.11286	0.11394	0.09515	0.10066	0.00835	0.10978	0.1000	7.6	0.02621	0.5
Strontium	0.02939	0.03046	0.0307	0.02962	0.03209	0.02708	0.02772	0.00174	0.02958	0.0250	5.9	0.00545	0.05

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65978
ASSET #: N027429

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 12/20/2017

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)		X			X	
Sample Information						
13. All samples are within linear dynamic range.		X			X	
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X			X	
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.		X			X	
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X		X	X	
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?		X			X	
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?		X			X	
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X	X		X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).		X			X	
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

Cr in N027429-010B is over linear range. For further dilution.
%RSD of As in N027429-002B & Se in N027429-007B failed > 15%. For rerun.
%Rec of IS in N027429-006B failed. As, Mo & Se for rerun.
Dilution test failed for Mn. However PS, passed criteria.
%Rec of Cd in N027429-001B PS/MS/MSD failed. However LCS passed criteria.
%Rec of Cr in LLCCV1 failed. However %Rec is within criteria 70-130%.
For Confirmation:
N027429-001B (6020) = 2.7 ug/L :confirmation: 2.0 ug/L ; N027429-001A (218.6) = <0.20 ug/L :confirmation: 1.1 ug/L
N027429-002B (6020) = 8.7 ug/L :confirmation: 9.0 ug/L ; N027429-002A (218.6) = 0.078 ug/L :confirmation: 5.0 ug/L

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/3/18
2nd Level Reviewer 01/03/2018 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65978
ASSET #: N027429

Instrument ID: ICPMS-02
Analyst: CEI

Method:

Date Analyzed: 12/22/2017

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X					X
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			X
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .			X			X
24. LCS compounds within control limits.			X			X
25. MS/MSD, RPD's are within control limits			X			X
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For Mo in N027429-006B rerun only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/3/18

2nd Level Reviewer 01/03/2018 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65978
ASSET #: N027429

Instrument ID: ICPMS-02
Analyst: CEI

Method:

Date Analyzed: 1/2/2018

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X			X	
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X					X
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			X
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .			X			X
24. LCS compounds within control limits.			X			X
25. MS/MSD, RPD's are within control limits			X			X
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For dilution of Cr in N027429-010B only.
For As, Se in N027429-002B, 006B & 007B rerun only.
%RSD of Se in LLICV & LLCCV1 failed > 20%. However %Rec of LLICV & LLCCV1 passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: CEI Date: 1/3/18

2nd Level Reviewer: 01/03/2018 Date: –

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Groundwater concentration, in ug/L , in the original sample as follows:

Groundwater , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N027429-001B** , the concentration in ug/L is calculated as follows:

Groundwater , ug/L = 2.74808 * 1 * (25/25)

Groundwater , ug/L = 2.74808

Reporting results in two significant figures,

Groundwater , ug/L = 2.7

% RSD SUMMARY

PERCENT RSD SUMMARY: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	107 Ag [3]				111 Cd [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.048	4.23	15	PASS	0.094	6.7	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.42	1.93	15	PASS	0.51	2.39	15	PASS
Std3-5/50 ppb	ICAL	1	4.81	0.054	15	PASS	4.92	1.62	15	PASS
Std4-10/100 ppb	ICAL	1	9.68	0.65	15	PASS	9.92	0.23	15	PASS
Std5-20/200 ppb	ICAL	1	19.64	0.91	15	PASS	19.71	0.48	15	PASS
Std6-40/400 ppb	ICAL	1	40.74	0.13	15	PASS	39.088	0.6	15	PASS
Std7-100/1000 ppb	ICAL	1	99.82	0.82	15	PASS	97.46	1.52	15	PASS
Std8-200/2000 ppb	ICAL	1	174.24	0.8	15	PASS	201.49	0.81	15	PASS
ICV	ICV	1	9.38	1.25	15	PASS	9.75	0.59	15	PASS
ICB	ICB	1	0.13	12.17	15	PASS	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.47	2.92	20	PASS	0.5	3.34	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	17.85	0.4	15	PASS	19.38	0.29	15	PASS
LLICV	CCV1	1	0.64	6.22	20	PASS	0.5	4.19	20	PASS
MB-65978	MBLK	1	0.076	8.58	15	PASS	<0.000	N/A	15	<PQL
LCS-65978	LCS	1	9.34	0.65	15	PASS	9.78	1.86	15	PASS
N027429-001B	SAMP	1	0.03	20.56	15	<PQL	0.17	1.32	15	PASS
N027429-001B	SAMP	5	0.1	18.9	15	<PQL	<0.000	N/A	15	<PQL
N027429-001B	SAMP	25	0.013	23.19	15	<PQL	<0.000	N/A	15	<PQL
N027429-001B-PS	PS	1	9.29	2.35	15	PASS	9.3	1.052	15	PASS
N027429-001B-PS	PS	5	2.29	1.15	15	PASS	0.31	11.25	15	PASS
N027429-001B-MS	MS	1	9.19	2.33	15	PASS	8.85	5.47	15	PASS
N027429-001B-MS	MS	5	2.3	1.2	15	PASS	0.24	15.51	15	<PQL
N027429-001B-MSD	MSD	1	9.49	0.16	15	PASS	9.3	1.86	15	PASS
CCV1	CCV	1	19.92	0.95	15	PASS	19.79	1.25	15	PASS
CCB1	CCB	1	0.26	15.26	15	<PQL	0.0035	180.13	15	<PQL
N027429-001B-MSD	MSD	5	2.098	2.38	15	PASS	0.29	2.87	15	PASS
N027429-002B	SAMP	1	<0.000	N/A	15	<PQL	0.17	6.51	15	PASS
N027429-002B	SAMP	5	0.095	17.14	15	<PQL	<0.000	N/A	15	<PQL
N027429-003B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027429-003B	SAMP	5	<0.000	N/A	15	<PQL	0.021	37.81	15	<PQL
N027429-010B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027429-010B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027429-013B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027429-013B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027429-014B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.8	0.34	15	PASS	19.66	0.7	15	PASS
CCB2	CCB	1	0.2	15.92	15	<PQL	0.015	8.87	15	PASS
N027429-014B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027429-010B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	107 Ag [3]				111 Cd [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027429-001B	SAMP	1	<0.000	N/A	15	<PQL	0.2	6.37	15	PASS
N027429-005B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027429-005B	SAMP	5	<0.000	N/A	15	<PQL	0.029	23.84	15	<PQL
N027429-006B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027429-006B	SAMP	5	<0.000	N/A	15	<PQL	0.0083	22.1	15	<PQL
CCV3	CCV	1	19.8	0.57	15	PASS	19.91	0.46	15	PASS
CCB3	CCB	1	0.2	16.46	15	<PQL	0.043	8.055	15	PASS
LLCCV1	CCV2	1	0.46	3.034	20	PASS	0.53	4.33	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	18.18	0.67	15	PASS	16.65	0.64	15	PASS
N027429-007B	SAMP	1	0.07	10.055	15	PASS	0.068	6.64	15	PASS
N027429-007B	SAMP	5	0.082	11.56	15	PASS	<0.000	N/A	15	<PQL
N027429-008B	SAMP	1	<0.000	N/A	15	<PQL	0.055	9.63	15	PASS
N027429-008B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027429-009B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027429-009B	SAMP	5	<0.000	N/A	15	<PQL	0.044	29.095	15	<PQL
N027429-012B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027429-012B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027429-015B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027429-015B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV4	CCV	1	19.64	0.29	15	PASS	19.89	0.95	15	PASS
CCB4	CCB	1	0.19	18.74	15	<PQL	0.051	36.25	15	<PQL
N027429-016C	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027429-016C	SAMP	5	<0.000	N/A	15	<PQL	0.033	17.91	15	<PQL
N027429-017C	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027429-017C	SAMP	5	<0.000	N/A	15	<PQL	0.036	12.65	15	PASS
N027429-018C	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027429-018C	SAMP	5	<0.000	N/A	15	<PQL	0.033	8.031	15	PASS
N027429-020C	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027429-020C	SAMP	5	<0.000	N/A	15	<PQL	0.045	12.45	15	PASS
N027429-010B	SAMP	25	0.0043	73.85	15	<PQL	<0.000	N/A	15	<PQL
CCV5	CCV	1	19.99	0.43	15	PASS	19.81	0.75	15	PASS
CCB5	CCB	1	0.17	15.18	15	<PQL	0.053	5.88	15	PASS
LLCCV2	CCV2	1	0.47	0.86	20	PASS	0.57	0.64	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	16.027	0.9	15	PASS	14.94	1.079	15	PASS

PERCENT RSD SUMMARY: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	121 Sb [3]				137 Ba [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.08	8.73	15	PASS	0.15	2.88	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.51	2.69	15	PASS	0.54	0.36	15	PASS
Std3-5/50 ppb	ICAL	1	4.97	0.51	15	PASS	5.21	1.24	15	PASS
Std4-10/100 ppb	ICAL	1	9.96	0.42	15	PASS	10.15	0.38	15	PASS
Std5-20/200 ppb	ICAL	1	19.7	0.04	15	PASS	19.94	1.28	15	PASS
Std6-40/400 ppb	ICAL	1	40.32	0.6	15	PASS	39.88	0.1	15	PASS
Std7-100/1000 ppb	ICAL	1	100.78	1.64	15	PASS	98.19	0.19	15	PASS
Std8-200/2000 ppb	ICAL	1	199.58	0.6	15	PASS	200.92	1.12	15	PASS
ICV	ICV	1	10.06	0.36	15	PASS	9.76	1.12	15	PASS
ICB	ICB	1	0.13	5.73	15	PASS	0.05	13.54	15	PASS
LLICV	CCV1	1	0.55	2.82	20	PASS	1.026	0.42	20	PASS
ICSA1	ICSA	1	0.038	7.23	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	18.71	0.58	15	PASS	20.34	0.62	15	PASS
LLICV	CCV1	1	0.53	3.33	20	PASS	1.047	3.38	20	PASS
MB-65978	MBLK	1	0.0082	38.16	15	<PQL	<0.000	N/A	15	<PQL
LCS-65978	LCS	1	9.55	1.42	15	PASS	9.73	0.44	15	PASS
N027429-001B	SAMP	1	0.057	3.31	15	PASS	21.59	0.57	15	PASS
N027429-001B	SAMP	5	<0.000	N/A	15	<PQL	2.9	1.44	15	PASS
N027429-001B	SAMP	25	<0.000	N/A	15	<PQL	0.58	1.047	15	PASS
N027429-001B-PS	PS	1	9.65	0.86	15	PASS	31.13	0.38	15	PASS
N027429-001B-PS	PS	5	2.031	0.46	15	PASS	5.038	1.36	15	PASS
N027429-001B-MS	MS	1	9.7	1.33	15	PASS	32.18	0.22	15	PASS
N027429-001B-MS	MS	5	2.046	0.73	15	PASS	5.057	1.97	15	PASS
N027429-001B-MSD	MSD	1	9.66	0.74	15	PASS	32.047	0.19	15	PASS
CCV1	CCV	1	19.12	0.76	15	PASS	20.067	1.37	15	PASS
CCB1	CCB	1	0.018	20.019	15	<PQL	<0.000	N/A	15	<PQL
N027429-001B-MSD	MSD	5	2.046	0.97	15	PASS	5.13	1.71	15	PASS
N027429-002B	SAMP	1	0.037	1.75	15	PASS	22.76	0.36	15	PASS
N027429-002B	SAMP	5	<0.000	N/A	15	<PQL	3.013	2.64	15	PASS
N027429-003B	SAMP	1	0.13	10.17	15	PASS	61.099	0.69	15	PASS
N027429-003B	SAMP	5	<0.000	N/A	15	<PQL	12.87	1.15	15	PASS
N027429-010B	SAMP	1	0.039	15.08	15	<PQL	72.15	0.48	15	PASS
N027429-010B	SAMP	5	<0.000	N/A	15	<PQL	14.63	0.76	15	PASS
N027429-013B	SAMP	1	0.067	5.049	15	PASS	50.86	0.3	15	PASS
N027429-013B	SAMP	5	<0.000	N/A	15	<PQL	8.83	0.85	15	PASS
N027429-014B	SAMP	1	0.081	6.22	15	PASS	49.36	0.074	15	PASS
CCV2	CCV	1	19.14	0.26	15	PASS	20.59	0.36	15	PASS
CCB2	CCB	1	0.024	9.63	15	PASS	<0.000	N/A	15	<PQL
N027429-014B	SAMP	5	0.0029	102.21	15	<PQL	8.44	0.64	15	PASS
N027429-010B	SAMP	5	<0.000	N/A	15	<PQL	14.51	1.14	15	PASS

PERCENT RSD SUMMARY: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	121 Sb [3]				137 Ba [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027429-001B	SAMP	1	0.024	15.71	15	<PQL	22.77	0.59	15	PASS
N027429-005B	SAMP	1	0.068	9.15	15	PASS	49.3	0.37	15	PASS
N027429-005B	SAMP	5	<0.000	N/A	15	<PQL	10.29	0.57	15	PASS
N027429-006B	SAMP	1	0.075	7.33	15	PASS	51.28	0.62	15	PASS
N027429-006B	SAMP	5	<0.000	N/A	15	<PQL	10.033	0.26	15	PASS
CCV3	CCV	1	19.22	0.98	15	PASS	20.69	0.46	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.47	2.93	20	PASS	1.058	1.25	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	18.72	0.2	15	PASS	18.34	0.31	15	PASS
N027429-007B	SAMP	1	0.16	0.84	15	PASS	35.9	0.72	15	PASS
N027429-007B	SAMP	5	<0.000	N/A	15	<PQL	5.96	1.22	15	PASS
N027429-008B	SAMP	1	0.14	3.14	15	PASS	36.21	0.74	15	PASS
N027429-008B	SAMP	5	<0.000	N/A	15	<PQL	5.82	0.75	15	PASS
N027429-009B	SAMP	1	0.053	4.29	15	PASS	63.25	0.34	15	PASS
N027429-009B	SAMP	5	<0.000	N/A	15	<PQL	13.011	0.67	15	PASS
N027429-012B	SAMP	1	0.024	14.99	15	PASS	52.018	0.81	15	PASS
N027429-012B	SAMP	5	<0.000	N/A	15	<PQL	8.5	0.58	15	PASS
N027429-015B	SAMP	1	0.06	6.79	15	PASS	46.67	0.25	15	PASS
N027429-015B	SAMP	5	<0.000	N/A	15	<PQL	8	0.55	15	PASS
CCV4	CCV	1	19.22	2.28	15	PASS	20.74	0.6	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027429-016C	SAMP	1	0.079	8.76	15	PASS	60.0085	0.39	15	PASS
N027429-016C	SAMP	5	<0.000	N/A	15	<PQL	12.3	0.77	15	PASS
N027429-017C	SAMP	1	0.053	11.17	15	PASS	58.85	0.75	15	PASS
N027429-017C	SAMP	5	<0.000	N/A	15	<PQL	12.061	0.097	15	PASS
N027429-018C	SAMP	1	0.17	1.24	15	PASS	41.057	0.14	15	PASS
N027429-018C	SAMP	5	<0.000	N/A	15	<PQL	8.067	0.59	15	PASS
N027429-020C	SAMP	1	0.15	2.38	15	PASS	47.42	0.23	15	PASS
N027429-020C	SAMP	5	<0.000	N/A	15	<PQL	9.64	0.61	15	PASS
N027429-010B	SAMP	25	<0.000	N/A	15	<PQL	0.88	3.68	15	PASS
CCV5	CCV	1	18.57	0.21	15	PASS	20.79	0.84	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.46	2.94	20	PASS	1.058	0.74	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	16.35	0.8	15	PASS	16.27	0.75	15	PASS

PERCENT RSD SUMMARY: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	205 Tl [3]				208 Pb [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.085	2.37	15	PASS	0.096	3.97	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.44	0.44	15	PASS	0.49	1.015	15	PASS
Std3-5/50 ppb	ICAL	1	4.9	0.59	15	PASS	4.98	0.61	15	PASS
Std4-10/100 ppb	ICAL	1	9.83	0.8	15	PASS	9.92	0.98	15	PASS
Std5-20/200 ppb	ICAL	1	20.27	0.87	15	PASS	19.85	0.83	15	PASS
Std6-40/400 ppb	ICAL	1	40.34	0.77	15	PASS	39.71	1.29	15	PASS
Std7-100/1000 ppb	ICAL	1	98.91	0.38	15	PASS	99.69	0.23	15	PASS
Std8-200/2000 ppb	ICAL	1	200.46	0.67	15	PASS	200.23	0.99	15	PASS
ICV	ICV	1	10.29	0.56	15	PASS	9.74	0.92	15	PASS
ICB	ICB	1	0.099	8.44	15	PASS	0.023	11.49	15	PASS
LLICV	CCV1	1	0.53	0.52	20	PASS	0.98	0.54	20	PASS
ICSA1	ICSA	1	0.049	2.44	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	21.68	0.55	15	PASS	19.97	0.57	15	PASS
LLICV	CCV1	1	0.51	1.69	20	PASS	1.0092	1.83	20	PASS
MB-65978	MBLK	1	0.026	13.49	15	PASS	0.0079	35.35	15	<PQL
LCS-65978	LCS	1	10.36	0.88	15	PASS	9.89	0.39	15	PASS
N027429-001B	SAMP	1	0.19	4.84	15	PASS	0.014	30.67	15	<PQL
N027429-001B	SAMP	5	0.034	6.81	15	PASS	<0.000	N/A	15	<PQL
N027429-001B	SAMP	25	0.017	8.7	15	PASS	<0.000	N/A	15	<PQL
N027429-001B-PS	PS	1	10.71	0.56	15	PASS	10.82	0.44	15	PASS
N027429-001B-PS	PS	5	2.092	0.86	15	PASS	1.85	0.13	15	PASS
N027429-001B-MS	MS	1	10.85	1.23	15	PASS	10.98	0.63	15	PASS
N027429-001B-MS	MS	5	2.094	0.76	15	PASS	1.82	1.48	15	PASS
N027429-001B-MSD	MSD	1	10.88	0.61	15	PASS	10.9	0.15	15	PASS
CCV1	CCV	1	20.21	2.96	15	PASS	19.66	1.3	15	PASS
CCB1	CCB	1	0.013	7.99	15	PASS	<0.000	N/A	15	<PQL
N027429-001B-MSD	MSD	5	2.089	0.5	15	PASS	1.85	0.66	15	PASS
N027429-002B	SAMP	1	0.022	10.012	15	PASS	0.18	2.94	15	PASS
N027429-002B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027429-003B	SAMP	1	0.1	3.19	15	PASS	<0.000	N/A	15	<PQL
N027429-003B	SAMP	5	0.013	7.71	15	PASS	<0.000	N/A	15	<PQL
N027429-010B	SAMP	1	0.027	12.83	15	PASS	<0.000	N/A	15	<PQL
N027429-010B	SAMP	5	0.0038	13.98	15	PASS	<0.000	N/A	15	<PQL
N027429-013B	SAMP	1	0.063	4.26	15	PASS	<0.000	N/A	15	<PQL
N027429-013B	SAMP	5	0.0044	18.55	15	<PQL	<0.000	N/A	15	<PQL
N027429-014B	SAMP	1	0.062	1.73	15	PASS	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.37	1.71	15	PASS	20.061	0.1	15	PASS
CCB2	CCB	1	0.0061	12.53	15	PASS	<0.000	N/A	15	<PQL
N027429-014B	SAMP	5	0.0071	13.9	15	PASS	<0.000	N/A	15	<PQL
N027429-010B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	205 Tl [3]				208 Pb [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027429-001B	SAMP	1	0.025	12.7	15	PASS	0.0053	80.87	15	<PQL
N027429-005B	SAMP	1	1.62	2.04	15	PASS	<0.000	N/A	15	<PQL
N027429-005B	SAMP	5	0.31	0.74	15	PASS	<0.000	N/A	15	<PQL
N027429-006B	SAMP	1	1.63	0.67	15	PASS	<0.000	N/A	15	<PQL
N027429-006B	SAMP	5	0.28	0.89	15	PASS	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.13	0.88	15	PASS	19.84	0.68	15	PASS
CCB3	CCB	1	0.0079	9.96	15	PASS	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.46	1.87	20	PASS	0.98	0.82	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	21.62	2.23	15	PASS	19.5	0.64	15	PASS
N027429-007B	SAMP	1	0.12	1.64	15	PASS	<0.000	N/A	15	<PQL
N027429-007B	SAMP	5	0.017	5.55	15	PASS	<0.000	N/A	15	<PQL
N027429-008B	SAMP	1	0.12	3.0086	15	PASS	<0.000	N/A	15	<PQL
N027429-008B	SAMP	5	0.013	4.79	15	PASS	<0.000	N/A	15	<PQL
N027429-009B	SAMP	1	0.25	3.22	15	PASS	<0.000	N/A	15	<PQL
N027429-009B	SAMP	5	0.039	9.04	15	PASS	<0.000	N/A	15	<PQL
N027429-012B	SAMP	1	0.059	4.68	15	PASS	<0.000	N/A	15	<PQL
N027429-012B	SAMP	5	0.0019	17.24	15	<PQL	<0.000	N/A	15	<PQL
N027429-015B	SAMP	1	0.069	3.11	15	PASS	<0.000	N/A	15	<PQL
N027429-015B	SAMP	5	0.0024	37.31	15	<PQL	<0.000	N/A	15	<PQL
CCV4	CCV	1	19.96	0.4	15	PASS	19.55	0.31	15	PASS
CCB4	CCB	1	0.0086	28.84	15	<PQL	<0.000	N/A	15	<PQL
N027429-016C	SAMP	1	0.048	7.84	15	PASS	<0.000	N/A	15	<PQL
N027429-016C	SAMP	5	0.00097	36.1	15	<PQL	<0.000	N/A	15	<PQL
N027429-017C	SAMP	1	0.039	0.74	15	PASS	<0.000	N/A	15	<PQL
N027429-017C	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027429-018C	SAMP	1	0.063	3.028	15	PASS	<0.000	N/A	15	<PQL
N027429-018C	SAMP	5	0.0022	68.25	15	<PQL	<0.000	N/A	15	<PQL
N027429-020C	SAMP	1	0.39	0.93	15	PASS	<0.000	N/A	15	<PQL
N027429-020C	SAMP	5	0.067	1.069	15	PASS	<0.000	N/A	15	<PQL
N027429-010B	SAMP	25	0.011	2.077	15	PASS	<0.000	N/A	15	<PQL
CCV5	CCV	1	20.18	0.43	15	PASS	19.8	0.66	15	PASS
CCB5	CCB	1	0.0071	21.19	15	<PQL	0.0001	1054.82	15	<PQL
LLCCV2	CCV2	1	0.47	1.25	20	PASS	0.99	0.85	20	PASS
ICSA3	ICSA	1	0.00039	403.97	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	18.42	1.35	15	PASS	17.0083	0.087	15	PASS

PERCENT RSD SUMMARY: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	51 V [2]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.09	6.5	15	PASS	0.11	8.51	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.52	3.15	15	PASS	0.52	0.99	15	PASS
Std3-5/50 ppb	ICAL	1	5.21	1.44	15	PASS	5.17	2.21	15	PASS
Std4-10/100 ppb	ICAL	1	10.36	3.8	15	PASS	10.34	1.51	15	PASS
Std5-20/200 ppb	ICAL	1	20.48	1.11	15	PASS	20.26	0.82	15	PASS
Std6-40/400 ppb	ICAL	1	40.89	1.35	15	PASS	40.73	1.77	15	PASS
Std7-100/1000 ppb	ICAL	1	102.18	2.59	15	PASS	100.81	2.35	15	PASS
Std8-200/2000 ppb	ICAL	1	198.66	1.45	15	PASS	199.4	1.9	15	PASS
ICV	ICV	1	10.035	0.98	15	PASS	9.98	1.22	15	PASS
ICB	ICB	1	0.013	83.56	15	<PQL	0.0042	178.56	15	<PQL
LLICV	CCV1	1	1.073	1.55	20	PASS	1.012	2.058	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.094	11.62	15	PASS
ICSAB1	ICSAB	1	21.19	1.49	15	PASS	21.97	2.32	15	PASS
LLICV	CCV1	1	1.077	4.12	20	PASS	1.019	0.72	20	PASS
MB-65978	MBLK	1	0.067	56.18	15	<PQL	0.032	17.12	15	<PQL
LCS-65978	LCS	1	10.17	1.75	15	PASS	9.87	1.99	15	PASS
N027429-001B	SAMP	1	0.014	61.34	15	<PQL	2.37	1.5	15	PASS
N027429-001B	SAMP	5	<0.000	N/A	15	<PQL	0.53	3.28	15	PASS
N027429-001B	SAMP	25	<0.000	N/A	15	<PQL	0.13	10.31	15	PASS
N027429-001B-PS	PS	1	10.15	2.15	15	PASS	11.92	1.51	15	PASS
N027429-001B-PS	PS	5	2.12	0.25	15	PASS	2.51	2.43	15	PASS
N027429-001B-MS	MS	1	10.17	1.033	15	PASS	11.91	0.99	15	PASS
N027429-001B-MS	MS	5	2.081	1.98	15	PASS	2.56	1.39	15	PASS
N027429-001B-MSD	MSD	1	9.97	1.025	15	PASS	11.81	2.23	15	PASS
CCV1	CCV	1	20.33	0.8	15	PASS	20.27	1.32	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0066	93.52	15	<PQL
N027429-001B-MSD	MSD	5	2.19	2.42	15	PASS	2.57	1.67	15	PASS
N027429-002B	SAMP	1	0.22	13.4	15	PASS	8.67	1.89	15	PASS
N027429-002B	SAMP	5	<0.000	N/A	15	<PQL	1.78	0.28	15	PASS
N027429-003B	SAMP	1	3.65	3.13	15	PASS	225.44	1.17	15	PASS
N027429-003B	SAMP	5	0.64	2.61	15	PASS	50.031	0.69	15	PASS
N027429-010B	SAMP	1	0.33	6.57	15	PASS	3191.5	0.86	15	PASS
N027429-010B	SAMP	5	<0.000	N/A	15	<PQL	687.06	1.38	15	PASS
N027429-013B	SAMP	1	16.13	1.14	15	PASS	128.67	0.88	15	PASS
N027429-013B	SAMP	5	3.25	0.64	15	PASS	28.28	0.92	15	PASS
N027429-014B	SAMP	1	15.32	1.64	15	PASS	121.92	0.76	15	PASS
CCV2	CCV	1	20.72	1.91	15	PASS	21.53	2.6	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.57	5.03	15	PASS
N027429-014B	SAMP	5	3.14	3.34	15	PASS	26.23	1.6	15	PASS
N027429-010B	SAMP	5	<0.000	N/A	15	<PQL	670.74	1.72	15	PASS

PERCENT RSD SUMMARY: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	51 V [2]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027429-001B	SAMP	1	<0.000	N/A	15	<PQL	2.75	1.26	15	PASS
N027429-005B	SAMP	1	5.77	1.56	15	PASS	18.48	9.057	15	PASS
N027429-005B	SAMP	5	1.16	0.97	15	PASS	4.067	2.67	15	PASS
N027429-006B	SAMP	1	6.02	2.49	15	PASS	18.12	1.041	15	PASS
N027429-006B	SAMP	5	1.14	1.14	15	PASS	3.98	4.18	15	PASS
CCV3	CCV	1	20.59	2.026	15	PASS	20.61	1.11	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.28	9.7	15	PASS
LLCCV1	CCV2	1	0.94	1.85	20	PASS	1.3	2.71	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.32	8.44	15	PASS
ICSAB2	ICSAB	1	20.65	1.74	15	PASS	20.17	1.85	15	PASS
N027429-007B	SAMP	1	17.33	1.46	15	PASS	3.078	3.56	15	PASS
N027429-007B	SAMP	5	3.57	1.72	15	PASS	0.82	5.71	15	PASS
N027429-008B	SAMP	1	18.37	1.4	15	PASS	2.49	1.41	15	PASS
N027429-008B	SAMP	5	3.76	1.15	15	PASS	0.69	4.7	15	PASS
N027429-009B	SAMP	1	2.59	1.55	15	PASS	85.48	0.89	15	PASS
N027429-009B	SAMP	5	0.42	5.66	15	PASS	19.0043	0.55	15	PASS
N027429-012B	SAMP	1	12.97	0.25	15	PASS	137.16	0.8	15	PASS
N027429-012B	SAMP	5	2.59	1.63	15	PASS	29.17	0.49	15	PASS
N027429-015B	SAMP	1	8.34	1.081	15	PASS	60.55	0.75	15	PASS
N027429-015B	SAMP	5	1.7	4.27	15	PASS	13.22	1.39	15	PASS
CCV4	CCV	1	20.39	0.86	15	PASS	20.45	0.83	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.32	6.2	15	PASS
N027429-016C	SAMP	1	2.64	1.07	15	PASS	20.48	1.64	15	PASS
N027429-016C	SAMP	5	0.47	1.74	15	PASS	4.48	0.91	15	PASS
N027429-017C	SAMP	1	2.54	2.14	15	PASS	19.87	1.0031	15	PASS
N027429-017C	SAMP	5	0.45	3.077	15	PASS	4.28	1.22	15	PASS
N027429-018C	SAMP	1	4.77	2.016	15	PASS	16	0.88	15	PASS
N027429-018C	SAMP	5	0.89	3.75	15	PASS	3.38	2.22	15	PASS
N027429-020C	SAMP	1	1.7	1.82	15	PASS	2.72	0.8	15	PASS
N027429-020C	SAMP	5	0.27	0.87	15	PASS	0.64	6.94	15	PASS
N027429-010B	SAMP	25	<0.000	N/A	15	<PQL	155.13	0.97	15	PASS
CCV5	CCV	1	20.34	0.34	15	PASS	20.11	1.22	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.095	17.021	15	<PQL
LLCCV2	CCV2	1	0.98	2.68	20	PASS	1.058	0.49	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.16	12.13	15	PASS
ICSAB3	ICSAB	1	17.83	0.53	15	PASS	17.16	0.082	15	PASS

PERCENT RSD SUMMARY: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				59 Co [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	0.61	15	PASS	0.1	3.46	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.54	6.73	15	PASS	0.51	7.55	15	PASS
Std3-5/50 ppb	ICAL	1	5.04	0.56	15	PASS	5.16	0.94	15	PASS
Std4-10/100 ppb	ICAL	1	10.3	1.23	15	PASS	10.31	1.39	15	PASS
Std5-20/200 ppb	ICAL	1	20.35	0.46	15	PASS	20.38	0.45	15	PASS
Std6-40/400 ppb	ICAL	1	40.038	1.17	15	PASS	40.81	1.33	15	PASS
Std7-100/1000 ppb	ICAL	1	99.88	2.54	15	PASS	102.6	1.3	15	PASS
Std8-200/2000 ppb	ICAL	1	193.43	1.41	15	PASS	198.48	1.45	15	PASS
ICV	ICV	1	97.83	0.37	15	PASS	9.61	1.15	15	PASS
ICB	ICB	1	0.011	99.62	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.56	8.33	20	PASS	0.51	2.25	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	23.36	1.38	15	PASS	19.74	0.94	15	PASS
LLICV	CCV1	1	0.56	5.39	20	PASS	0.5	2.65	20	PASS
MB-65978	MBLK	1	0.0047	169.48	15	<PQL	0.0028	86.73	15	<PQL
LCS-65978	LCS	1	99.022	0.79	15	PASS	9.64	1.64	15	PASS
N027429-001B	SAMP	1	19.85	1.26	15	PASS	0.099	4.38	15	PASS
N027429-001B	SAMP	5	4.19	3.66	15	PASS	0.017	8.68	15	PASS
N027429-001B	SAMP	25	0.88	2.95	15	PASS	0.0018	27.89	15	<PQL
N027429-001B-PS	PS	1	114.056	1.14	15	PASS	9.2	1.15	15	PASS
N027429-001B-PS	PS	5	24.8	0.54	15	PASS	2.00062	2.28	15	PASS
N027429-001B-MS	MS	1	114.49	0.99	15	PASS	9.11	0.72	15	PASS
N027429-001B-MS	MS	5	24.67	0.36	15	PASS	2.0092	1.88	15	PASS
N027429-001B-MSD	MSD	1	112.4	0.93	15	PASS	9.013	1.55	15	PASS
CCV1	CCV	1	20.43	1.082	15	PASS	20.46	1.23	15	PASS
CCB1	CCB	1	0.0086	58.43	15	<PQL	0.0015	4.65	15	PASS
N027429-001B-MSD	MSD	5	24.41	0.37	15	PASS	1.99	1.4	15	PASS
N027429-002B	SAMP	1	20.85	0.89	15	PASS	0.092	4.94	15	PASS
N027429-002B	SAMP	5	4.3	1.24	15	PASS	0.016	29.56	15	<PQL
N027429-003B	SAMP	1	97.58	1.75	15	PASS	<0.000	N/A	15	<PQL
N027429-003B	SAMP	5	22.37	1.68	15	PASS	<0.000	N/A	15	<PQL
N027429-010B	SAMP	1	7.29	1.026	15	PASS	<0.000	N/A	15	<PQL
N027429-010B	SAMP	5	1.54	0.72	15	PASS	<0.000	N/A	15	<PQL
N027429-013B	SAMP	1	0.53	5.36	15	PASS	0.54	2.2	15	PASS
N027429-013B	SAMP	5	0.11	28.85	15	<PQL	0.11	7.13	15	PASS
N027429-014B	SAMP	1	0.58	3.31	15	PASS	0.52	1.63	15	PASS
CCV2	CCV	1	20.092	1.3	15	PASS	20.78	1.84	15	PASS
CCB2	CCB	1	0.0087	22.29	15	<PQL	0.004	68.56	15	<PQL
N027429-014B	SAMP	5	0.13	5.67	15	PASS	0.11	3.87	15	PASS
N027429-010B	SAMP	5	1.48	5.57	15	PASS	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				59 Co [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027429-001B	SAMP	1	19.42	1.69	15	PASS	0.1	12.34	15	PASS
N027429-005B	SAMP	1	21.64	0.83	15	PASS	<0.000	N/A	15	<PQL
N027429-005B	SAMP	5	6.22	1.65	15	PASS	<0.000	N/A	15	<PQL
N027429-006B	SAMP	1	21.45	1.49	15	PASS	<0.000	N/A	15	<PQL
N027429-006B	SAMP	5	6.032	0.42	15	PASS	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.62	1.59	15	PASS	20.93	1.39	15	PASS
CCB3	CCB	1	0.014	105.65	15	<PQL	0.0038	32.68	15	<PQL
LLCCV1	CCV2	1	0.56	6.064	20	PASS	0.52	1.97	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	23.5	2.27	15	PASS	19.55	1.2	15	PASS
N027429-007B	SAMP	1	70.13	0.73	15	PASS	0.15	8.64	15	PASS
N027429-007B	SAMP	5	15.19	1.11	15	PASS	0.029	9.58	15	PASS
N027429-008B	SAMP	1	67.9	1.068	15	PASS	0.15	1.24	15	PASS
N027429-008B	SAMP	5	14.32	1.79	15	PASS	0.026	4.69	15	PASS
N027429-009B	SAMP	1	41.058	0.95	15	PASS	<0.000	N/A	15	<PQL
N027429-009B	SAMP	5	9.11	0.5	15	PASS	<0.000	N/A	15	<PQL
N027429-012B	SAMP	1	<0.000	N/A	15	<PQL	0.016	22.87	15	<PQL
N027429-012B	SAMP	5	<0.000	N/A	15	<PQL	0.004	51.93	15	<PQL
N027429-015B	SAMP	1	2.55	3.02	15	PASS	0.068	5.48	15	PASS
N027429-015B	SAMP	5	0.15	12.98	15	PASS	0.015	21.41	15	<PQL
CCV4	CCV	1	20.73	0.98	15	PASS	20.4	1.59	15	PASS
CCB4	CCB	1	0.013	47.71	15	<PQL	0.0037	62.12	15	<PQL
N027429-016C	SAMP	1	2.036	1.98	15	PASS	0.0032	132.092	15	<PQL
N027429-016C	SAMP	5	0.41	3.009	15	PASS	<0.000	N/A	15	<PQL
N027429-017C	SAMP	1	1.43	2.44	15	PASS	<0.000	N/A	15	<PQL
N027429-017C	SAMP	5	0.33	10.46	15	PASS	<0.000	N/A	15	<PQL
N027429-018C	SAMP	1	4.25	1.8	15	PASS	<0.000	N/A	15	<PQL
N027429-018C	SAMP	5	0.9	0.36	15	PASS	<0.000	N/A	15	<PQL
N027429-020C	SAMP	1	230.76	0.61	15	PASS	<0.000	N/A	15	<PQL
N027429-020C	SAMP	5	51.62	2.07	15	PASS	<0.000	N/A	15	<PQL
N027429-010B	SAMP	25	0.46	10.7	15	PASS	<0.000	N/A	15	<PQL
CCV5	CCV	1	21.36	0.94	15	PASS	20.46	1.22	15	PASS
CCB5	CCB	1	0.015	12.1	15	PASS	0.0029	49.29	15	<PQL
LLCCV2	CCV2	1	0.6	3.062	20	PASS	0.51	1.26	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.093	0.58	15	PASS	17.17	0.39	15	PASS

PERCENT RSD SUMMARY: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	60 Ni [2]				63 Cu [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	17.31	15	<PQL	0.11	20.031	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.55	3.19	15	PASS	0.52	3.42	15	PASS
Std3-5/50 ppb	ICAL	1	5.035	1.89	15	PASS	4.87	0.78	15	PASS
Std4-10/100 ppb	ICAL	1	10.13	0.34	15	PASS	9.88	0.52	15	PASS
Std5-20/200 ppb	ICAL	1	20.22	1.49	15	PASS	19.9	1.55	15	PASS
Std6-40/400 ppb	ICAL	1	40.26	0.94	15	PASS	39.4	0.78	15	PASS
Std7-100/1000 ppb	ICAL	1	99.52	0.48	15	PASS	97.24	0.58	15	PASS
Std8-200/2000 ppb	ICAL	1	200.16	0.2	15	PASS	201.52	0.53	15	PASS
ICV	ICV	1	10.38	1.81	15	PASS	9.87	0.77	15	PASS
ICB	ICB	1	0.05	122.17	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.081	4.21	20	PASS	0.94	3.37	20	PASS
ICSA1	ICSA	1	0.047	101.3	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.52	1.096	15	PASS	18.25	0.5	15	PASS
LLICV	CCV1	1	1.071	2.41	20	PASS	0.96	5.022	20	PASS
MB-65978	MBLK	1	0.068	48.23	15	<PQL	<0.000	N/A	15	<PQL
LCS-65978	LCS	1	10.36	1.41	15	PASS	9.91	0.83	15	PASS
N027429-001B	SAMP	1	1.25	1.39	15	PASS	<0.000	N/A	15	<PQL
N027429-001B	SAMP	5	0.34	8.76	15	PASS	<0.000	N/A	15	<PQL
N027429-001B	SAMP	25	0.12	20.18	15	<PQL	<0.000	N/A	15	<PQL
N027429-001B-PS	PS	1	11.12	0.7	15	PASS	8.52	0.53	15	PASS
N027429-001B-PS	PS	5	2.45	4.22	15	PASS	1.67	1.29	15	PASS
N027429-001B-MS	MS	1	11.085	1.28	15	PASS	8.65	0.58	15	PASS
N027429-001B-MS	MS	5	2.44	2.79	15	PASS	1.74	1.4	15	PASS
N027429-001B-MSD	MSD	1	11.23	1.69	15	PASS	8.7	1.31	15	PASS
CCV1	CCV	1	20.78	1.15	15	PASS	20.0014	1.27	15	PASS
CCB1	CCB	1	0.053	16.27	15	<PQL	<0.000	N/A	15	<PQL
N027429-001B-MSD	MSD	5	2.43	1.52	15	PASS	1.7	5.28	15	PASS
N027429-002B	SAMP	1	1.28	4.15	15	PASS	<0.000	N/A	15	<PQL
N027429-002B	SAMP	5	0.29	6.57	15	PASS	<0.000	N/A	15	<PQL
N027429-003B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027429-003B	SAMP	5	0.086	35.63	15	<PQL	<0.000	N/A	15	<PQL
N027429-010B	SAMP	1	2.89	1.78	15	PASS	<0.000	N/A	15	<PQL
N027429-010B	SAMP	5	0.65	12.47	15	PASS	<0.000	N/A	15	<PQL
N027429-013B	SAMP	1	4.54	0.81	15	PASS	<0.000	N/A	15	<PQL
N027429-013B	SAMP	5	0.93	2.87	15	PASS	<0.000	N/A	15	<PQL
N027429-014B	SAMP	1	4.37	1.14	15	PASS	<0.000	N/A	15	<PQL
CCV2	CCV	1	21.19	0.98	15	PASS	20.61	0.25	15	PASS
CCB2	CCB	1	0.044	14.63	15	PASS	<0.000	N/A	15	<PQL
N027429-014B	SAMP	5	0.94	4.45	15	PASS	<0.000	N/A	15	<PQL
N027429-010B	SAMP	5	0.69	3.51	15	PASS	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	60 Ni [2]				63 Cu [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027429-001B	SAMP	1	1.2	1.62	15	PASS	<0.000	N/A	15	<PQL
N027429-005B	SAMP	1	0.4	4.13	15	PASS	<0.000	N/A	15	<PQL
N027429-005B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027429-006B	SAMP	1	0.42	15.22	15	<PQL	<0.000	N/A	15	<PQL
N027429-006B	SAMP	5	1.8	9.22	15	PASS	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.61	1.66	15	PASS	19.92	1.83	15	PASS
CCB3	CCB	1	0.12	18.15	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.12	4.31	20	PASS	0.88	1.71	20	PASS
ICSA2	ICSA	1	0.12	12.94	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.31	2.5	15	PASS	17.89	1.45	15	PASS
N027429-007B	SAMP	1	1.26	6.51	15	PASS	<0.000	N/A	15	<PQL
N027429-007B	SAMP	5	0.41	4.43	15	PASS	<0.000	N/A	15	<PQL
N027429-008B	SAMP	1	1.2	5.18	15	PASS	<0.000	N/A	15	<PQL
N027429-008B	SAMP	5	0.36	7.65	15	PASS	<0.000	N/A	15	<PQL
N027429-009B	SAMP	1	0.48	5.9	15	PASS	<0.000	N/A	15	<PQL
N027429-009B	SAMP	5	0.3	10.38	15	PASS	<0.000	N/A	15	<PQL
N027429-012B	SAMP	1	5.85	0.98	15	PASS	0.26	7.16	15	PASS
N027429-012B	SAMP	5	1.33	2.39	15	PASS	<0.000	N/A	15	<PQL
N027429-015B	SAMP	1	5.89	0.43	15	PASS	<0.000	N/A	15	<PQL
N027429-015B	SAMP	5	1.31	1.085	15	PASS	<0.000	N/A	15	<PQL
CCV4	CCV	1	20.92	0.43	15	PASS	20.19	1.39	15	PASS
CCB4	CCB	1	0.14	13.038	15	PASS	<0.000	N/A	15	<PQL
N027429-016C	SAMP	1	3.11	4.7	15	PASS	<0.000	N/A	15	<PQL
N027429-016C	SAMP	5	0.67	5.65	15	PASS	<0.000	N/A	15	<PQL
N027429-017C	SAMP	1	2.79	4.16	15	PASS	<0.000	N/A	15	<PQL
N027429-017C	SAMP	5	0.63	4.97	15	PASS	<0.000	N/A	15	<PQL
N027429-018C	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027429-018C	SAMP	5	0.032	84.31	15	<PQL	<0.000	N/A	15	<PQL
N027429-020C	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027429-020C	SAMP	5	0.015	134.91	15	<PQL	<0.000	N/A	15	<PQL
N027429-010B	SAMP	25	3.42	5.61	15	PASS	1.74	25.73	15	NR!
CCV5	CCV	1	20.98	1.45	15	PASS	20.15	0.2	15	PASS
CCB5	CCB	1	0.039	2.17	15	PASS	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	1.062	1.088	20	PASS	0.84	6.33	20	PASS
ICSA3	ICSA	1	0.059	41.69	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	17.89	0.58	15	PASS	16.13	0.84	15	PASS

PERCENT RSD SUMMARY: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	66 Zn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.32	5.52	15	PASS	0.087	15.58	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.79	5.29	15	PASS	0.5	6.88	15	PASS
Std3-5/50 ppb	ICAL	1	5.82	0.62	15	PASS	4.87	1.14	15	PASS
Std4-10/100 ppb	ICAL	1	10.3	1.28	15	PASS	10.15	2.13	15	PASS
Std5-20/200 ppb	ICAL	1	20.49	0.73	15	PASS	20.23	1.51	15	PASS
Std6-40/400 ppb	ICAL	1	40.89	0.34	15	PASS	39.81	1.48	15	PASS
Std7-100/1000 ppb	ICAL	1	99.92	0.62	15	PASS	98.93	1.25	15	PASS
Std8-200/2000 ppb	ICAL	1	199.78	0.75	15	PASS	200.55	0.65	15	PASS
ICV	ICV	1	100.2	0.51	15	PASS	9.95	0.33	15	PASS
ICB	ICB	1	0.12	16.79	15	<PQL	0.0026	233.34	15	<PQL
LLICV	CCV1	1	10.42	0.97	20	PASS	0.084	25.76	20	<PQL
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	17.23	2.015	15	PASS	19.81	0.5	15	PASS
LLICV	CCV1	1	10.49	0.79	20	PASS	0.1	16.39	20	PASS
MB-65978	MBLK	1	0.001	4193.37	15	<PQL	<0.000	N/A	15	<PQL
LCS-65978	LCS	1	100.25	0.61	15	PASS	9.84	0.55	15	PASS
N027429-001B	SAMP	1	0.71	12.48	15	PASS	0.18	14.22	15	PASS
N027429-001B	SAMP	5	0.16	40.84	15	<PQL	0.012	160.046	15	<PQL
N027429-001B	SAMP	25	0.079	56.26	15	<PQL	<0.000	N/A	15	<PQL
N027429-001B-PS	PS	1	113.73	0.58	15	PASS	9.72	1.76	15	PASS
N027429-001B-PS	PS	5	27.6	1.48	15	PASS	2.22	2.92	15	PASS
N027429-001B-MS	MS	1	114.49	0.71	15	PASS	9.9	2.24	15	PASS
N027429-001B-MS	MS	5	27.67	1.45	15	PASS	2.19	1.94	15	PASS
N027429-001B-MSD	MSD	1	114.75	0.69	15	PASS	9.72	1.83	15	PASS
CCV1	CCV	1	20.96	1.71	15	PASS	20.21	1.52	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.006	235.77	15	<PQL
N027429-001B-MSD	MSD	5	27.21	2.89	15	PASS	2.21	3.45	15	PASS
N027429-002B	SAMP	1	1.96	5.64	15	PASS	0.18	18.42	15	NR!
N027429-002B	SAMP	5	0.46	3.086	15	PASS	0.024	36.95	15	<PQL
N027429-003B	SAMP	1	<0.000	N/A	15	<PQL	2.88	2.33	15	PASS
N027429-003B	SAMP	5	<0.000	N/A	15	<PQL	0.62	0.75	15	PASS
N027429-010B	SAMP	1	3.33	5.5	15	PASS	1.76	3.13	15	PASS
N027429-010B	SAMP	5	1.46	13.33	15	PASS	0.35	1.72	15	PASS
N027429-013B	SAMP	1	<0.000	N/A	15	<PQL	2.63	4.23	15	PASS
N027429-013B	SAMP	5	0.071	55.34	15	<PQL	0.54	5.24	15	PASS
N027429-014B	SAMP	1	<0.000	N/A	15	<PQL	2.52	3.33	15	PASS
CCV2	CCV	1	21.12	1.6	15	PASS	20.077	2.21	15	PASS
CCB2	CCB	1	0.065	30.79	15	<PQL	<0.000	N/A	15	<PQL
N027429-014B	SAMP	5	0.15	10.12	15	PASS	0.51	5.97	15	PASS
N027429-010B	SAMP	5	1.64	1.34	15	PASS	0.32	4.49	15	PASS

PERCENT RSD SUMMARY: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	66 Zn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027429-001B	SAMP	1	0.61	6.98	15	PASS	0.14	9.28	15	PASS
N027429-005B	SAMP	1	<0.000	N/A	15	<PQL	6.29	2.09	15	PASS
N027429-005B	SAMP	5	<0.000	N/A	15	<PQL	1.41	5.81	15	PASS
N027429-006B	SAMP	1	<0.000	N/A	15	<PQL	6.21	3.37	15	PASS
N027429-006B	SAMP	5	<0.000	N/A	15	<PQL	1.48	16.73	15	NR!
CCV3	CCV	1	20.58	1.76	15	PASS	20.25	1.91	15	PASS
CCB3	CCB	1	0.17	10.46	15	PASS	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	10.079	1.2	20	PASS	0.095	14	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	16.49	2.85	15	PASS	20.43	2.4	15	PASS
N027429-007B	SAMP	1	1.68	5.9	15	PASS	7.32	2.16	15	PASS
N027429-007B	SAMP	5	0.46	7.28	15	PASS	1.49	5.27	15	PASS
N027429-008B	SAMP	1	2.14	9.54	15	PASS	7.096	1.77	15	PASS
N027429-008B	SAMP	5	0.63	6.56	15	PASS	1.53	3.33	15	PASS
N027429-009B	SAMP	1	<0.000	N/A	15	<PQL	10.13	1.19	15	PASS
N027429-009B	SAMP	5	<0.000	N/A	15	<PQL	2.12	4.72	15	PASS
N027429-012B	SAMP	1	11.62	1.28	15	PASS	1.47	0.71	15	PASS
N027429-012B	SAMP	5	2.89	5.5	15	PASS	0.31	13.41	15	PASS
N027429-015B	SAMP	1	0.085	148.38	15	<PQL	1.33	5.34	15	PASS
N027429-015B	SAMP	5	0.31	4.85	15	PASS	0.26	4.92	15	PASS
CCV4	CCV	1	20.7	1.39	15	PASS	20.74	0.75	15	PASS
CCB4	CCB	1	0.054	54.072	15	<PQL	<0.000	N/A	15	<PQL
N027429-016C	SAMP	1	<0.000	N/A	15	<PQL	1.21	7.24	15	PASS
N027429-016C	SAMP	5	0.64	10.65	15	PASS	0.24	5.024	15	PASS
N027429-017C	SAMP	1	<0.000	N/A	15	<PQL	1.19	6.37	15	PASS
N027429-017C	SAMP	5	<0.000	N/A	15	<PQL	0.26	11.088	15	PASS
N027429-018C	SAMP	1	<0.000	N/A	15	<PQL	1.79	3.75	15	PASS
N027429-018C	SAMP	5	<0.000	N/A	15	<PQL	0.32	7.44	15	PASS
N027429-020C	SAMP	1	<0.000	N/A	15	<PQL	1.77	3.98	15	PASS
N027429-020C	SAMP	5	<0.000	N/A	15	<PQL	0.35	1.15	15	PASS
N027429-010B	SAMP	25	6.61	2.59	15	PASS	0.11	35.32	15	NR!
CCV5	CCV	1	21.092	2.12	15	PASS	20.68	0.87	15	PASS
CCB5	CCB	1	0.092	39.52	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	10.52	0.62	20	PASS	0.073	40.011	20	<PQL
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	15.82	1.29	15	PASS	17.65	0.8	15	PASS

PERCENT RSD SUMMARY: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				9 Be [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	16.17	15	<PQL	0.096	6.62	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.55	2.81	15	PASS	0.51	0.74	15	PASS
Std3-5/50 ppb	ICAL	1	5.015	4.6	15	PASS	4.95	1.52	15	PASS
Std4-10/100 ppb	ICAL	1	9.49	2.22	15	PASS	9.94	1.37	15	PASS
Std5-20/200 ppb	ICAL	1	20.37	2.35	15	PASS	20.1	1.14	15	PASS
Std6-40/400 ppb	ICAL	1	40.84	1.63	15	PASS	39.26	0.66	15	PASS
Std7-100/1000 ppb	ICAL	1	99.64	0.32	15	PASS	100.28	0.99	15	PASS
Std8-200/2000 ppb	ICAL	1	201.36	2.67	15	PASS	200.47	0.35	15	PASS
ICV	ICV	1	10.49	0.58	15	PASS	9.7	0.76	15	PASS
ICB	ICB	1	0.15	18.32	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.6	3.93	20	PASS	0.49	0.79	20	PASS
ICSA1	ICSA	1	0.099	12.53	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	17.94	4.031	15	PASS	18.12	0.45	15	PASS
LLICV	CCV1	1	0.58	22.6	20	NR!	0.5	1.9	20	PASS
MB-65978	MBLK	1	0.036	15.58	15	<PQL	0.0012	104.023	15	<PQL
LCS-65978	LCS	1	10	3.75	15	PASS	9.92	0.46	15	PASS
N027429-001B	SAMP	1	0.39	7.56	15	PASS	<0.000	N/A	15	<PQL
N027429-001B	SAMP	5	0.1	14.75	15	PASS	<0.000	N/A	15	<PQL
N027429-001B	SAMP	25	0.046	14.16	15	PASS	<0.000	N/A	15	<PQL
N027429-001B-PS	PS	1	9.28	3.37	15	PASS	9.25	0.95	15	PASS
N027429-001B-PS	PS	5	2.25	4.92	15	PASS	1.99	2.48	15	PASS
N027429-001B-MS	MS	1	9.37	1.38	15	PASS	8.2	11.5	15	PASS
N027429-001B-MS	MS	5	2.05	11.22	15	PASS	1.96	1.26	15	PASS
N027429-001B-MSD	MSD	1	9.55	0.32	15	PASS	9.093	0.53	15	PASS
CCV1	CCV	1	21.21	3.2	15	PASS	19.61	0.71	15	PASS
CCB1	CCB	1	0.12	25.82	15	<PQL	<0.000	N/A	15	<PQL
N027429-001B-MSD	MSD	5	2.35	8.68	15	PASS	1.99	2.43	15	PASS
N027429-002B	SAMP	1	0.35	24.37	15	<PQL	<0.000	N/A	15	<PQL
N027429-002B	SAMP	5	0.1	4.085	15	PASS	<0.000	N/A	15	<PQL
N027429-003B	SAMP	1	1.63	9.42	15	PASS	0.0024	31.48	15	<PQL
N027429-003B	SAMP	5	0.35	10.19	15	PASS	<0.000	N/A	15	<PQL
N027429-010B	SAMP	1	2.42	1.36	15	PASS	<0.000	N/A	15	<PQL
N027429-010B	SAMP	5	0.41	20.51	15	<PQL	<0.000	N/A	15	<PQL
N027429-013B	SAMP	1	5.91	3.18	15	PASS	<0.000	N/A	15	<PQL
N027429-013B	SAMP	5	1.26	16.38	15	NR!	<0.000	N/A	15	<PQL
N027429-014B	SAMP	1	5.45	3.74	15	PASS	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.6	4.59	15	PASS	19.64	1.09	15	PASS
CCB2	CCB	1	0.061	33.78	15	<PQL	<0.000	N/A	15	<PQL
N027429-014B	SAMP	5	1.11	17.28	15	NR!	<0.000	N/A	15	<PQL
N027429-010B	SAMP	5	0.5	23.86	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				9 Be [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027429-001B	SAMP	1	0.41	8.61	15	PASS	<0.000	N/A	15	<PQL
N027429-005B	SAMP	1	0.094	46.75	15	<PQL	0.041	193.56	15	<PQL
N027429-005B	SAMP	5	0.045	105.75	15	<PQL	<0.000	N/A	15	<PQL
N027429-006B	SAMP	1	0.13	30.75	15	<PQL	0.0069	41.87	15	<PQL
N027429-006B	SAMP	5	0.059	17.83	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.82	2.77	15	PASS	20.63	1.28	15	PASS
CCB3	CCB	1	0.02	165.52	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.56	15.32	20	PASS	0.48	5.22	20	PASS
ICSA2	ICSA	1	0.014	79.34	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.52	0.87	15	PASS	18.83	0.95	15	PASS
N027429-007B	SAMP	1	1.61	15.73	15	NR!	<0.000	N/A	15	<PQL
N027429-007B	SAMP	5	0.37	15.47	15	<PQL	<0.000	N/A	15	<PQL
N027429-008B	SAMP	1	1.43	1.74	15	PASS	<0.000	N/A	15	<PQL
N027429-008B	SAMP	5	0.32	7.31	15	PASS	<0.000	N/A	15	<PQL
N027429-009B	SAMP	1	0.96	18.031	15	NR!	<0.000	N/A	15	<PQL
N027429-009B	SAMP	5	0.21	13.87	15	PASS	<0.000	N/A	15	<PQL
N027429-012B	SAMP	1	5.26	6.78	15	PASS	<0.000	N/A	15	<PQL
N027429-012B	SAMP	5	1.17	11.43	15	PASS	<0.000	N/A	15	<PQL
N027429-015B	SAMP	1	4.59	4.85	15	PASS	<0.000	N/A	15	<PQL
N027429-015B	SAMP	5	0.98	30.39	15	NR!	<0.000	N/A	15	<PQL
CCV4	CCV	1	21.13	3.11	15	PASS	20.59	0.54	15	PASS
CCB4	CCB	1	0.017	85.8	15	<PQL	<0.000	N/A	15	<PQL
N027429-016C	SAMP	1	1.22	10.0098	15	PASS	<0.000	N/A	15	<PQL
N027429-016C	SAMP	5	0.29	15.72	15	<PQL	<0.000	N/A	15	<PQL
N027429-017C	SAMP	1	0.99	8.75	15	PASS	<0.000	N/A	15	<PQL
N027429-017C	SAMP	5	0.21	34.054	15	<PQL	<0.000	N/A	15	<PQL
N027429-018C	SAMP	1	0.97	8.6	15	PASS	<0.000	N/A	15	<PQL
N027429-018C	SAMP	5	0.16	63.47	15	<PQL	<0.000	N/A	15	<PQL
N027429-020C	SAMP	1	1.058	10.29	15	PASS	<0.000	N/A	15	<PQL
N027429-020C	SAMP	5	0.17	8.73	15	PASS	<0.000	N/A	15	<PQL
N027429-010B	SAMP	25	0.14	75.52	15	<PQL	<0.000	N/A	15	<PQL
CCV5	CCV	1	21.54	0.98	15	PASS	20.88	0.18	15	PASS
CCB5	CCB	1	0.014	39.42	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.49	10.76	20	PASS	0.5	2.87	20	PASS
ICSA3	ICSA	1	0.027	59.64	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	16.25	0.63	15	PASS	17.24	1.18	15	PASS

PERCENT RSD SUMMARY: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.087	4.42	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.48	3.66	15	PASS
Std3-5/50 ppb	ICAL	1	4.97	2.87	15	PASS
Std4-10/100 ppb	ICAL	1	9.87	2.1	15	PASS
Std5-20/200 ppb	ICAL	1	19.89	0.18	15	PASS
Std6-40/400 ppb	ICAL	1	39.3	1.7	15	PASS
Std7-100/1000 ppb	ICAL	1	100.34	1.7	15	PASS
Std8-200/2000 ppb	ICAL	1	199.99	0.99	15	PASS
ICV	ICV	1	10.94	1.79	15	PASS
ICB	ICB	1	0.19	8.25	15	PASS
LLICV	CCV1	1	0.56	2.26	20	PASS
ICSA1	ICSA	1	0.08	26.2	15	<PQL
ICSAB1	ICSAB	1	22.24	0.66	15	PASS
LLICV	CCV1	1	0.62	4.64	20	PASS
MB-65978	MBLK	1	0.027	29.92	15	<PQL
LCS-65978	LCS	1	9.83	0.43	15	PASS
N027429-001B	SAMP	1	136.95	1.72	15	PASS
N027429-001B	SAMP	5	26.32	0.6	15	PASS
N027429-001B	SAMP	25	5.35	0.71	15	PASS
N027429-001B-PS	PS	1	148.038	1.29	15	PASS
N027429-001B-PS	PS	5	29.18	0.69	15	PASS
N027429-001B-MS	MS	1	151.29	1.4	15	PASS
N027429-001B-MS	MS	5	29.8	0.93	15	PASS
N027429-001B-MSD	MSD	1	150.93	0.58	15	PASS
CCV1	CCV	1	20.34	1.24	15	PASS
CCB1	CCB	1	0.26	16.57	15	<PQL
N027429-001B-MSD	MSD	5	29.081	1.48	15	PASS
N027429-002B	SAMP	1	139.19	1.14	15	PASS
N027429-002B	SAMP	5	26.74	1.031	15	PASS
N027429-003B	SAMP	1	67.67	1.25	15	PASS
N027429-003B	SAMP	5	12.69	1.99	15	PASS
N027429-010B	SAMP	1	8.02	1.99	15	PASS
N027429-010B	SAMP	5	1.45	3.46	15	PASS
N027429-013B	SAMP	1	18.91	1.016	15	PASS
N027429-013B	SAMP	5	3.63	3.092	15	PASS
N027429-014B	SAMP	1	18.65	0.9	15	PASS
CCV2	CCV	1	19.76	1.57	15	PASS
CCB2	CCB	1	0.14	20.65	15	<PQL
N027429-014B	SAMP	5	3.42	3.27	15	PASS
N027429-010B	SAMP	5	1.42	3.79	15	PASS

PERCENT RSD SUMMARY: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N027429-001B	SAMP	1	139.56	1.11	15	PASS
N027429-005B	SAMP	1	95.075	0.14	15	PASS
N027429-005B	SAMP	5	17.43	0.58	15	PASS
N027429-006B	SAMP	1	97.17	0.61	15	PASS
N027429-006B	SAMP	5	18.1	0.7	15	PASS
CCV3	CCV	1	19.94	1.13	15	PASS
CCB3	CCB	1	0.077	21.48	15	<PQL
LLCCV1	CCV2	1	0.52	3.012	20	PASS
ICSA2	ICSA	1	0.025	27.78	15	<PQL
ICSAB2	ICSAB	1	22.25	0.65	15	PASS
N027429-007B	SAMP	1	37.87	1.3	15	PASS
N027429-007B	SAMP	5	7.35	0.86	15	PASS
N027429-008B	SAMP	1	38.048	1.39	15	PASS
N027429-008B	SAMP	5	7.18	1.087	15	PASS
N027429-009B	SAMP	1	88.66	0.43	15	PASS
N027429-009B	SAMP	5	15.61	0.85	15	PASS
N027429-012B	SAMP	1	4.2	0.97	15	PASS
N027429-012B	SAMP	5	0.8	4.18	15	PASS
N027429-015B	SAMP	1	7.0062	1.035	15	PASS
N027429-015B	SAMP	5	1.36	2.11	15	PASS
CCV4	CCV	1	19.71	1.014	15	PASS
CCB4	CCB	1	0.057	17.83	15	<PQL
N027429-016C	SAMP	1	8.66	2.65	15	PASS
N027429-016C	SAMP	5	1.61	1.8	15	PASS
N027429-017C	SAMP	1	8.64	2.56	15	PASS
N027429-017C	SAMP	5	1.61	2.05	15	PASS
N027429-018C	SAMP	1	23.46	0.92	15	PASS
N027429-018C	SAMP	5	4.16	0.83	15	PASS
N027429-020C	SAMP	1	42.88	0.71	15	PASS
N027429-020C	SAMP	5	7.7	2.22	15	PASS
N027429-010B	SAMP	25	0.29	7.0049	15	PASS
CCV5	CCV	1	19.56	2.079	15	PASS
CCB5	CCB	1	0.046	32.83	15	<PQL
LLCCV2	CCV2	1	0.49	7.14	20	PASS
ICSA3	ICSA	1	0.0074	163.47	15	<PQL
ICSAB3	ICSAB	1	17.9	0.3	15	PASS

PERCENT RSD SUMMARY: 171222B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.089	21.069	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.53	1.61	15	PASS
Std3-5/50 ppb	ICAL	1	4.94	1.072	15	PASS
Std4-10/100 ppb	ICAL	1	9.96	2.026	15	PASS
Std5-20/200 ppb	ICAL	1	19.94	0.74	15	PASS
Std6-40/400 ppb	ICAL	1	39.77	0.35	15	PASS
Std7-100/1000 ppb	ICAL	1	100.63	1.8	15	PASS
Std8-200/2000 ppb	ICAL	1	199.74	1.0057	15	PASS
ICV	ICV	1	9.88	0.6	15	PASS
ICB	ICB	1	0.09	11.72	15	PASS
LLICV	CCV1	1	0.57	8.63	20	PASS
ICSA1	ICSA	1	0.058	12.096	15	PASS
ICSAB1	ICSAB	1	19.22	2.052	15	PASS
LLICV	CCV1	1	0.52	4.64	20	PASS
N027429-001B-MS	MS	1	146.033	1.061	15	PASS
N027429-002B	SAMP	1	137.22	1.14	15	PASS
N027429-006B	SAMP	5	17.79	0.63	15	PASS
N027429-006B	SAMP	25	3.44	3.039	15	PASS
N027429-007B	SAMP	1	37.28	1.041	15	PASS
N027429-002B	SAMP	1	126.19	0.71	15	PASS
CCV1	CCV	1	19.58	4.29	15	PASS
CCB1	CCB	1	0.098	20.53	15	<PQL
CCV2	CCV	1	18.4	0.94	15	PASS
CCB2	CCB	1	0.062	10.056	15	PASS
LLCCV1	CCV2	1	0.53	4.47	20	PASS
ICSA2	ICSA	1	0.062	34.39	15	<PQL
ICSAB2	ICSAB	1	19.047	2.24	15	PASS

PERCENT RSD SUMMARY: 180102A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.092	15.66	15	<PQL	0.07	21.19	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.5	3.54	15	PASS	0.54	11.7	15	PASS
Std3-5/50 ppb	ICAL	1	5.099	1.055	15	PASS	5.035	0.66	15	PASS
Std4-10/100 ppb	ICAL	1	10.2	0.35	15	PASS	10.13	2.62	15	PASS
Std5-20/200 ppb	ICAL	1	20.12	0.81	15	PASS	19.86	1.1	15	PASS
Std6-40/400 ppb	ICAL	1	40.89	0.63	15	PASS	40.023	0.92	15	PASS
Std7-100/1000 ppb	ICAL	1	100.43	0.26	15	PASS	99.96	1.19	15	PASS
Std8-200/2000 ppb	ICAL	1	199.58	0.45	15	PASS	200.021	0.47	15	PASS
ICV	ICV	1	10.83	0.56	15	PASS	10.68	1.44	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.018	29.87	15	<PQL
LLICV	CCV1	1	1.085	0.13	20	PASS	0.1	32.05	20	NR!
ICSA1	ICSA	1	0.031	50.35	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.38	1.47	15	PASS	20.34	1.95	15	PASS
LLICV	CCV1	1	1.025	2.06	20	PASS	0.1	21.98	20	<PQL
N027429-002B	SAMP	1	8.78	2.58	15	PASS	0.22	12.048	15	PASS
N027429-006B	SAMP	5	4.085	2.65	15	PASS	1.46	8.67	15	PASS
N027429-007B	SAMP	1	3.13	2.21	15	PASS	7.9	0.86	15	PASS
N027429-010B	SAMP	25	155.59	0.46	15	PASS	0.063	39.18	15	<PQL
CCV1	CCV	1	20.26	1.64	15	PASS	20.081	1.11	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0041	96.11	15	<PQL
CCV2	CCV	1	20.92	1.25	15	PASS	20.27	1.97	15	PASS
CCB2	CCB	1	0.16	11.72	15	PASS	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.59	1	15	PASS	20.13	1.068	15	PASS
CCB3	CCB	1	0.028	0.71	15	PASS	<0.000	N/A	15	<PQL
CCV4	CCV	1	21.066	0.83	15	PASS	19.92	0.97	15	PASS
CCB4	CCB	1	0.06	32.67	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.15	1.68	20	PASS	0.083	3.45	20	PASS
ICSA2	ICSA	1	0.12	26.69	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.93	1.084	15	PASS	20.58	2.037	15	PASS

PERCENT RSD SUMMARY: 180102A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.13	70.75	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.46	12.6	15	PASS
Std3-5/50 ppb	ICAL	1	4.78	5.032	15	PASS
Std4-10/100 ppb	ICAL	1	9.81	8.052	15	PASS
Std5-20/200 ppb	ICAL	1	19.78	3.53	15	PASS
Std6-40/400 ppb	ICAL	1	40.15	1.19	15	PASS
Std7-100/1000 ppb	ICAL	1	99.81	2.028	15	PASS
Std8-200/2000 ppb	ICAL	1	200.1	0.086	15	PASS
ICV	ICV	1	10.94	3.55	15	PASS
ICB	ICB	1	0.043	50.13	15	<PQL
LLICV	CCV1	1	0.58	20.87	20	NR!
ICSA1	ICSA	1	0.043	100.83	15	<PQL
ICSAB1	ICSAB	1	18.92	4.13	15	PASS
LLICV	CCV1	1	0.62	9.99	20	PASS
N027429-002B	SAMP	1	0.37	8.0067	15	PASS
N027429-006B	SAMP	5	0.042	29.88	15	<PQL
N027429-007B	SAMP	1	1.52	7.12	15	PASS
N027429-010B	SAMP	25	0.13	22.28	15	<PQL
CCV1	CCV	1	19.74	2.52	15	PASS
CCB1	CCB	1	0.0054	109.65	15	<PQL
CCV2	CCV	1	19.9	2.7	15	PASS
CCB2	CCB	1	0.012	145.73	15	<PQL
CCV3	CCV	1	19.36	4.54	15	PASS
CCB3	CCB	1	0.012	144.62	15	<PQL
CCV4	CCV	1	19.35	2.95	15	PASS
CCB4	CCB	1	0.024	139.8	15	<PQL
LLCCV1	CCV2	1	0.5	32.71	20	NR!
ICSA2	ICSA	1	0.023	31.62	15	<PQL
ICSAB2	ICSAB	1	19.38	1.81	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 171220A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1220001.D	RINSE	RINSE	1	12/20/17 3:01 PM
A1220002.D	Cal Blank	IBLK	1	12/20/17 3:07 PM
A1220003.D	Std1-0.1/1 ppb	ICAL	1	12/20/17 3:13 PM
A1220004.D	Std2-0.5/5 ppb	ICAL	1	12/20/17 3:18 PM
A1220005.D	Std3-5/50 ppb	ICAL	1	12/20/17 3:24 PM
A1220006.D	Std4-10/100 ppb	ICAL	1	12/20/17 3:29 PM
A1220007.D	Std5-20/200 ppb	ICAL	1	12/20/17 3:35 PM
A1220008.D	Std6-40/400 ppb	ICAL	1	12/20/17 3:40 PM
A1220009.D	Std7-100/1000 ppb	ICAL	1	12/20/17 3:46 PM
A1220010.D	Std8-200/2000 ppb	ICAL	1	12/20/17 3:51 PM
A1220011.D	ICV	ICV	1	12/20/17 3:57 PM
A1220012.D	ICB	ICB	1	12/20/17 4:03 PM
A1220013.D	LLICV	CCV1	1	12/20/17 4:09 PM
A1220014.D	ICSA1	ICSA	1	12/20/17 4:14 PM
A1220015.D	ICSAB1	ICSAB	1	12/20/17 4:20 PM
A1220016.D	LLICV	CCV1	1	12/20/17 4:25 PM
A1220017.D	MB-65978	MBLK	1	12/20/17 4:31 PM
A1220018.D	LCS-65978	LCS	1	12/20/17 4:37 PM
A1220019.D	N027429-001B	SAMP	1	12/20/17 4:42 PM
A1220020.D	N027429-001B	SAMP	5	12/20/17 4:48 PM
A1220021.D	N027429-001B	SAMP	25	12/20/17 4:53 PM
A1220022.D	N027429-001B-PS	PS	1	12/20/17 4:59 PM
A1220023.D	N027429-001B-PS	PS	5	12/20/17 5:04 PM
A1220024.D	N027429-001B-MS	MS	1	12/20/17 5:10 PM
A1220025.D	N027429-001B-MS	MS	5	12/20/17 5:15 PM
A1220026.D	N027429-001B-MSD	MSD	1	12/20/17 5:21 PM
A1220027.D	CCV1	CCV	1	12/20/17 5:27 PM
A1220028.D	CCB1	CCB	1	12/20/17 5:32 PM
A1220029.D	N027429-001B-MSD	MSD	5	12/20/17 5:38 PM
A1220030.D	N027429-002B	SAMP	1	12/20/17 5:43 PM
A1220031.D	N027429-002B	SAMP	5	12/20/17 5:49 PM
A1220032.D	N027429-003B	SAMP	1	12/20/17 5:54 PM
A1220033.D	N027429-003B	SAMP	5	12/20/17 6:00 PM
A1220034.D	N027429-010B	SAMP	1	12/20/17 6:05 PM
A1220035.D	N027429-010B	SAMP	5	12/20/17 6:11 PM
A1220036.D	N027429-013B	SAMP	1	12/20/17 6:17 PM
A1220037.D	N027429-013B	SAMP	5	12/20/17 6:22 PM
A1220038.D	N027429-014B	SAMP	1	12/20/17 6:28 PM
A1220039.D	CCV2	CCV	1	12/20/17 6:36 PM
A1220040.D	CCB2	CCB	1	12/20/17 6:41 PM
A1220041.D	N027429-014B	SAMP	5	12/20/17 6:47 PM
A1220042.D	N027429-010B	SAMP	5	12/20/17 6:53 PM

INJECTION LOG: 171220A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1220043.D	N027429-001B	SAMP	1	12/20/17 6:58 PM
A1220044.D	N027429-005B	SAMP	1	12/20/17 7:04 PM
A1220045.D	N027429-005B	SAMP	5	12/20/17 7:09 PM
A1220046.D	N027429-006B	SAMP	1	12/20/17 7:15 PM
A1220047.D	N027429-006B	SAMP	5	12/20/17 7:20 PM
A1220048.D	CCV3	CCV	1	12/20/17 7:26 PM
A1220049.D	CCB3	CCB	1	12/20/17 7:32 PM
A1220050.D	LLCCV1	CCV2	1	12/20/17 7:37 PM
A1220051.D	ICSA2	ICSA	1	12/20/17 7:43 PM
A1220052.D	ICSAB2	ICSAB	1	12/20/17 7:48 PM
A1220053.D	N027429-007B	SAMP	1	12/20/17 7:54 PM
A1220054.D	N027429-007B	SAMP	5	12/20/17 7:59 PM
A1220055.D	N027429-008B	SAMP	1	12/20/17 8:05 PM
A1220056.D	N027429-008B	SAMP	5	12/20/17 8:10 PM
A1220057.D	N027429-009B	SAMP	1	12/20/17 8:16 PM
A1220058.D	N027429-009B	SAMP	5	12/20/17 8:21 PM
A1220059.D	N027429-012B	SAMP	1	12/20/17 8:27 PM
A1220060.D	N027429-012B	SAMP	5	12/20/17 8:33 PM
A1220061.D	N027429-015B	SAMP	1	12/20/17 8:38 PM
A1220062.D	N027429-015B	SAMP	5	12/20/17 8:44 PM
A1220063.D	CCV4	CCV	1	12/20/17 8:49 PM
A1220064.D	CCB4	CCB	1	12/20/17 8:55 PM
A1220065.D	N027429-016C	SAMP	1	12/20/17 9:00 PM
A1220066.D	N027429-016C	SAMP	5	12/20/17 9:06 PM
A1220067.D	N027429-017C	SAMP	1	12/20/17 9:12 PM
A1220068.D	N027429-017C	SAMP	5	12/20/17 9:17 PM
A1220069.D	N027429-018C	SAMP	1	12/20/17 9:23 PM
A1220070.D	N027429-018C	SAMP	5	12/20/17 9:28 PM
A1220071.D	N027429-020C	SAMP	1	12/20/17 9:34 PM
A1220072.D	N027429-020C	SAMP	5	12/20/17 9:39 PM
A1220073.D	N027429-010B	SAMP	25	12/20/17 9:45 PM
A1220074.D	N027430-018B	SAMP	25	12/20/17 9:51 PM
A1220075.D	CCV5	CCV	1	12/20/17 9:56 PM
A1220076.D	CCB5	CCB	1	12/20/17 10:02 PM
A1220077.D	LLCCV2	CCV2	1	12/20/17 10:07 PM
A1220078.D	ICSA3	ICSA	1	12/20/17 10:13 PM
A1220079.D	ICSAB3	ICSAB	1	12/20/17 10:19 PM

INJECTION LOG: 171222B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B1222001.D	RINSE	RINSE	1	12/22/17 3:34 PM
B1222002.D	Cal Blank	IBLK	1	12/22/17 3:39 PM
B1222003.D	Std1-0.1/1 ppb	ICAL	1	12/22/17 3:45 PM
B1222004.D	Std2-0.5/5 ppb	ICAL	1	12/22/17 3:51 PM
B1222005.D	Std3-5/50 ppb	ICAL	1	12/22/17 3:56 PM
B1222006.D	Std4-10/100 ppb	ICAL	1	12/22/17 4:02 PM
B1222007.D	Std5-20/200 ppb	ICAL	1	12/22/17 4:07 PM
B1222008.D	Std6-40/400 ppb	ICAL	1	12/22/17 4:13 PM
B1222009.D	Std7-100/1000 ppb	ICAL	1	12/22/17 4:18 PM
B1222010.D	Std8-200/2000 ppb	ICAL	1	12/22/17 4:24 PM
B1222011.D	ICV	ICV	1	12/22/17 4:30 PM
B1222012.D	ICB	ICB	1	12/22/17 4:35 PM
B1222013.D	LLICV	CCV1	1	12/22/17 4:41 PM
B1222014.D	ICSA1	ICSA	1	12/22/17 4:46 PM
B1222015.D	ICSAB1	ICSAB	1	12/22/17 4:52 PM
B1222016.D	LLICV	CCV1	1	12/22/17 4:58 PM
B1222017.D	N027429-001B-MS	MS	1	12/22/17 5:06 PM
B1222018.D	N027429-002B	SAMP	1	12/22/17 5:11 PM
B1222019.D	N027429-006B	SAMP	5	12/22/17 5:17 PM
B1222020.D	N027429-006B	SAMP	25	12/22/17 5:23 PM
B1222021.D	N027429-007B	SAMP	1	12/22/17 5:29 PM
B1222022.D	N027429-002B	SAMP	1	12/22/17 5:34 PM
B1222023.D	MB-66021	MBLK	1	12/22/17 5:40 PM
B1222024.D	LCS-66021	LCS	1	12/22/17 5:45 PM
B1222025.D	N027459-001C	SAMP	1	12/22/17 5:51 PM
B1222026.D	N027459-001C	SAMP	5	12/22/17 5:57 PM
B1222027.D	CCV1	CCV	1	12/22/17 6:06 PM
B1222028.D	CCB1	CCB	1	12/22/17 6:11 PM
B1222029.D	N027459-001C-PS	PS	1	12/22/17 6:17 PM
B1222030.D	N027459-001C-MS	MS	1	12/22/17 6:23 PM
B1222031.D	N027459-001C-MSD	MSD	1	12/22/17 6:28 PM
B1222032.D	N027459-002C	SAMP	1	12/22/17 6:34 PM
B1222033.D	N027459-002C	SAMP	5	12/22/17 6:39 PM
B1222034.D	CCV2	CCV	1	12/22/17 6:45 PM
B1222035.D	CCB2	CCB	1	12/22/17 6:51 PM
B1222036.D	LLCCV1	CCV2	1	12/22/17 6:56 PM
B1222037.D	ICSA2	ICSA	1	12/22/17 7:02 PM
B1222038.D	ICSAB2	ICSAB	1	12/22/17 7:07 PM

INJECTION LOG: 180102A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0102001.D	RINSE	RINSE	1	01/02/18 1:49 PM
A0102002.D	Cal Blank	IBLK	1	01/02/18 1:55 PM
A0102003.D	Std1-0.1/1 ppb	ICAL	1	01/02/18 2:01 PM
A0102004.D	Std2-0.5/5 ppb	ICAL	1	01/02/18 2:07 PM
A0102005.D	Std3-5/50 ppb	ICAL	1	01/02/18 2:12 PM
A0102006.D	Std4-10/100 ppb	ICAL	1	01/02/18 2:18 PM
A0102007.D	Std5-20/200 ppb	ICAL	1	01/02/18 2:25 PM
A0102008.D	Std6-40/400 ppb	ICAL	1	01/02/18 2:31 PM
A0102009.D	Std7-100/1000 ppb	ICAL	1	01/02/18 2:37 PM
A0102010.D	Std8-200/2000 ppb	ICAL	1	01/02/18 2:43 PM
A0102011.D	ICV	ICV	1	01/02/18 2:49 PM
A0102012.D	ICB	ICB	1	01/02/18 2:54 PM
A0102013.D	LLICV	CCV1	1	01/02/18 3:00 PM
A0102014.D	ICSA1	ICSA	1	01/02/18 3:06 PM
A0102015.D	ICSAB1	ICSAB	1	01/02/18 3:12 PM
A0102016.D	LLICV	CCV1	1	01/02/18 3:18 PM
A0102017.D	N027429-002B	SAMP	1	01/02/18 3:23 PM
A0102018.D	N027429-006B	SAMP	5	01/02/18 3:29 PM
A0102019.D	N027429-007B	SAMP	1	01/02/18 3:34 PM
A0102020.D	N027429-010B	SAMP	25	01/02/18 3:40 PM
A0102021.D	MB-66021	MBLK	1	01/02/18 3:46 PM
A0102022.D	LCS-66021	LCS	1	01/02/18 3:51 PM
A0102023.D	N027459-001C	SAMP	1	01/02/18 3:57 PM
A0102024.D	N027459-001C	SAMP	5	01/02/18 4:02 PM
A0102025.D	N027459-001C-PS	PS	1	01/02/18 4:08 PM
A0102026.D	N027459-001C-MS	MS	1	01/02/18 4:13 PM
A0102027.D	CCV1	CCV	1	01/02/18 4:19 PM
A0102028.D	CCB1	CCB	1	01/02/18 4:25 PM
A0102029.D	N027459-001C-MSD	MSD	1	01/02/18 4:31 PM
A0102030.D	N027459-001C	SAMP	1	01/02/18 4:37 PM
A0102031.D	N027459-002C	SAMP	1	01/02/18 4:43 PM
A0102032.D	N027459-003B	SAMP	1	01/02/18 4:48 PM
A0102033.D	N027459-004B	SAMP	1	01/02/18 4:54 PM
A0102034.D	N027459-005B	SAMP	1	01/02/18 5:00 PM
A0102035.D	N027459-006B	SAMP	5	01/02/18 5:06 PM
A0102036.D	N027459-007B	SAMP	1	01/02/18 5:14 PM
A0102037.D	N027459-008C	SAMP	1	01/02/18 5:19 PM
A0102038.D	N027459-009B	SAMP	5	01/02/18 5:25 PM
A0102039.D	CCV2	CCV	1	01/02/18 5:30 PM
A0102040.D	CCB2	CCB	1	01/02/18 5:36 PM
A0102041.D	N027459-010B	SAMP	5	01/02/18 5:41 PM
A0102042.D	N027459-011B	SAMP	5	01/02/18 5:47 PM

INJECTION LOG: 180102A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0102043.D	N027459-012B	SAMP	1	01/02/18 5:52 PM
A0102044.D	N027459-013B	SAMP	5	01/02/18 5:58 PM
A0102045.D	N027459-014B	SAMP	5	01/02/18 6:04 PM
A0102046.D	N027459-015B	SAMP	1	01/02/18 6:09 PM
A0102047.D	N027459-016C	SAMP	1	01/02/18 6:15 PM
A0102048.D	N027459-017C	SAMP	5	01/02/18 6:20 PM
A0102049.D	N027459-018B	SAMP	5	01/02/18 6:26 PM
A0102050.D	N027459-019B	SAMP	5	01/02/18 6:31 PM
A0102051.D	CCV3	CCV	1	01/02/18 6:37 PM
A0102052.D	CCB3	CCB	1	01/02/18 6:42 PM
A0102053.D	N027459-004B	SAMP	1	01/02/18 6:48 PM
A0102054.D	N027459-006B	SAMP	5	01/02/18 6:53 PM
A0102055.D	N027459-017C	SAMP	5	01/02/18 6:59 PM
A0102056.D	N027459-004B	SAMP	5	01/02/18 7:04 PM
A0102057.D	N027459-017C	SAMP	5	01/02/18 7:10 PM
A0102058.D	CCV4	CCV	1	01/02/18 7:16 PM
A0102059.D	CCB4	CCB	1	01/02/18 7:21 PM
A0102060.D	LLCCV1	CCV2	1	01/02/18 7:27 PM
A0102061.D	ICSA2	ICSA	1	01/02/18 7:32 PM
A0102062.D	ICSAB2	ICSAB	1	01/02/18 7:38 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/8/2017 2:02:32**
Prep End Date: **12/8/2017 6:30:00**
Prep Batch **65978** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 01/03/2018
Initials/ Date: 01/03/2018
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**01-13**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-65978	Aqueous		25	☐	0	0	25	1.000		
MB-65978	Aqueous		25	☐	0	0	25	1.000		
N027429-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-012B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/8/2017 2:02:32**
Prep End Date: **12/8/2017 6:30:00**
Prep Batch **65978** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 01/03/2018
Initials/ Date: 01/03/2018
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**01-13**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027429-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-015B	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-016C	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-017C	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-018C	Groundwater	<2	25	☐	0	0	25	1.000		
N027429-020C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 20 Dec 2017 02:10:17 pm
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	160949.00	0.00	
24 Mg	535541.00	0.00	
25 Mg	71149.60	0.00	
26 Mg	82622.80	0.00	
59 Co	731408.00	0.00	
115 In	1360180.00	0.00	
206 Pb	371476.00	0.00	
207 Pb	322046.00	0.00	
208 Pb	786938.00	0.00	

RSD (%)

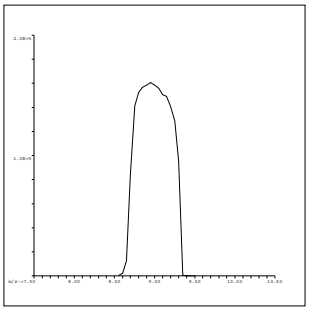
Element	Actual	Required	Flag
9 Be	1.30	5.00	
24 Mg	1.01	5.00	
25 Mg	0.97	5.00	
26 Mg	1.45	5.00	
59 Co	1.10	5.00	
115 In	1.40	5.00	
206 Pb	0.91	5.00	
207 Pb	0.87	5.00	
208 Pb	0.50	5.00	

Ion Ratio

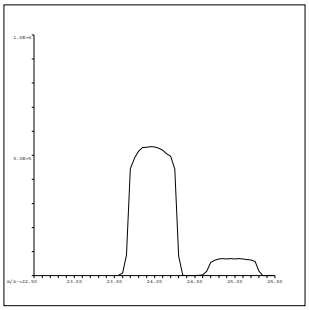
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

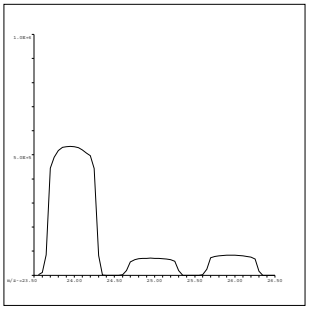
Element	Actual	Required	Flag



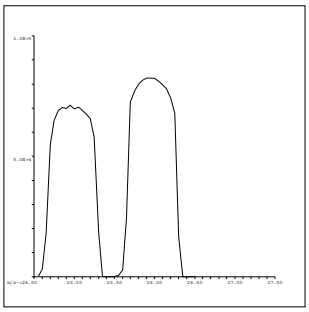
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



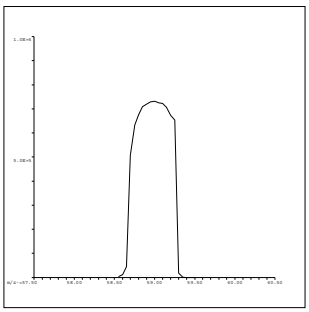
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



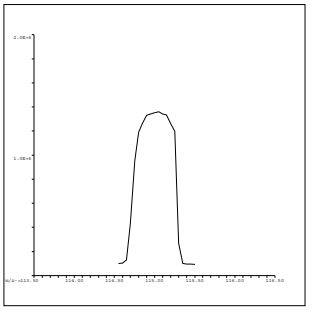
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



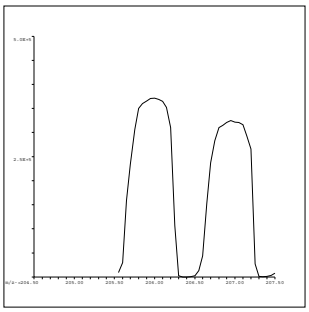
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



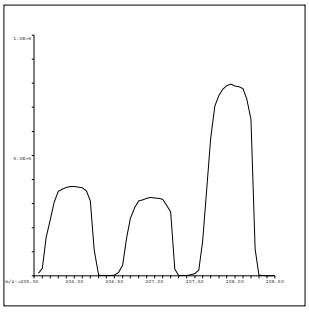
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



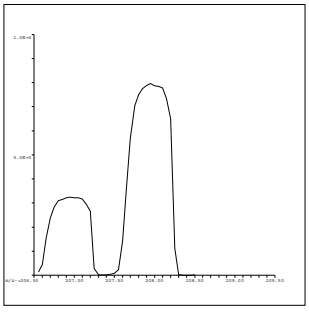
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 22 Dec 2017 05:52:56 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	63459.90	0.00	
24 Mg	232468.00	0.00	
25 Mg	30699.20	0.00	
26 Mg	35785.40	0.00	
59 Co	308914.00	0.00	
115 In	563835.00	0.00	
206 Pb	169533.00	0.00	
207 Pb	147870.00	0.00	
208 Pb	362565.00	0.00	

RSD (%)

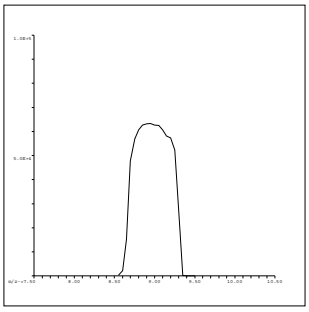
Element	Actual	Required	Flag
9 Be	0.14	5.00	
24 Mg	2.62	5.00	
25 Mg	4.81	5.00	
26 Mg	0.75	5.00	
59 Co	1.03	5.00	
115 In	0.34	5.00	
206 Pb	1.18	5.00	
207 Pb	0.73	5.00	
208 Pb	0.50	5.00	

Ion Ratio

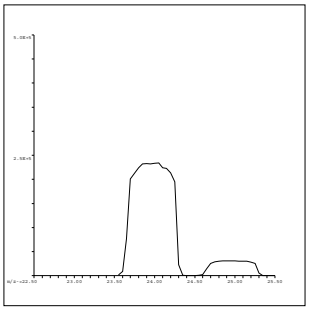
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

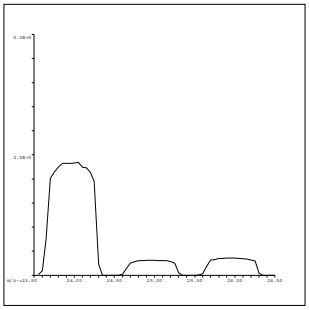
Element	Actual	Required	Flag



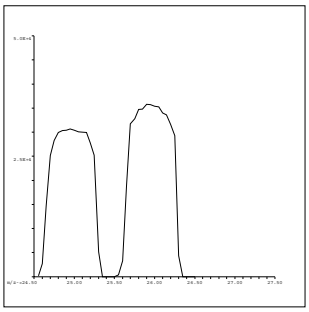
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



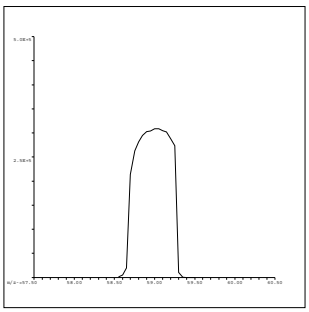
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



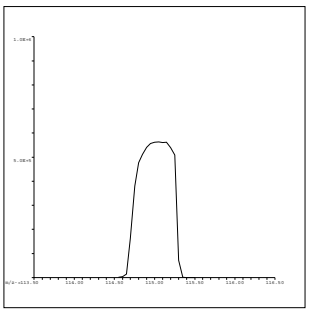
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



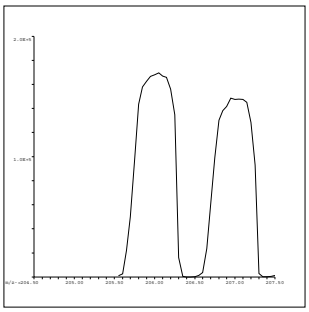
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



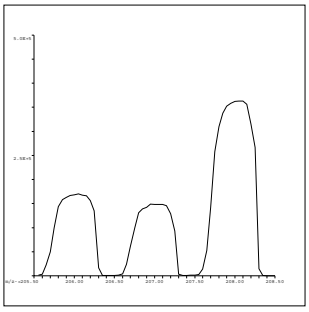
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



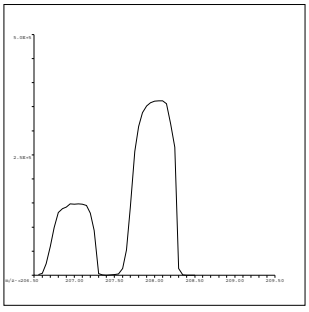
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.05
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.05
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.05
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 2 Jan 2018 10:47:44 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	164242.00	0.00	
24 Mg	658850.00	0.00	
25 Mg	87067.30	0.00	
26 Mg	100137.00	0.00	
59 Co	808018.00	0.00	
115 In	1349420.00	0.00	
206 Pb	386220.00	0.00	
207 Pb	336788.00	0.00	
208 Pb	824151.00	0.00	

RSD (%)

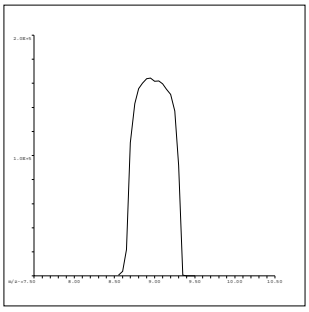
Element	Actual	Required	Flag
9 Be	0.81	5.00	
24 Mg	0.89	5.00	
25 Mg	0.86	5.00	
26 Mg	0.53	5.00	
59 Co	0.30	5.00	
115 In	1.05	5.00	
206 Pb	0.35	5.00	
207 Pb	0.67	5.00	
208 Pb	0.38	5.00	

Ion Ratio

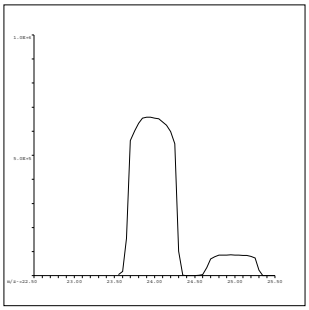
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

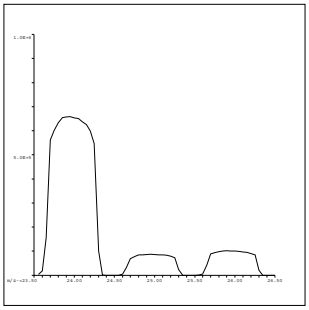
Element	Actual	Required	Flag



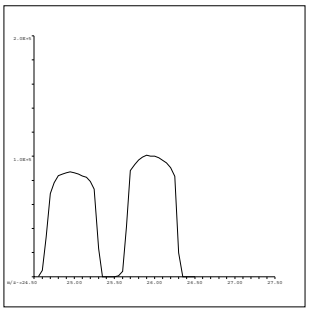
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



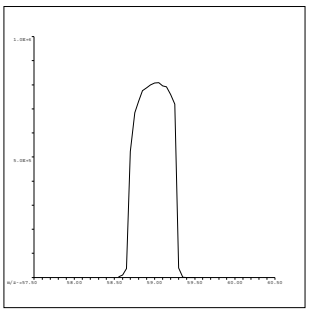
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



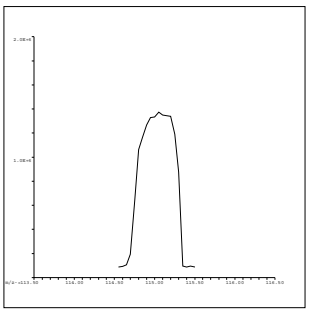
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



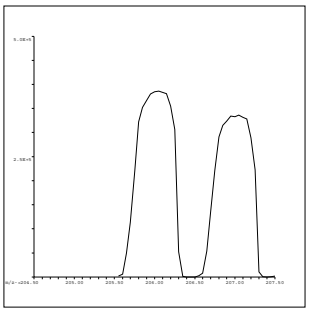
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



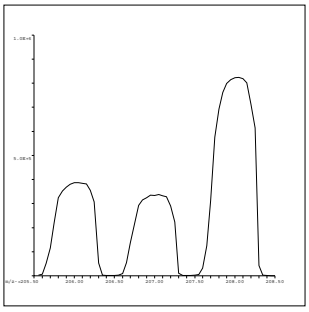
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



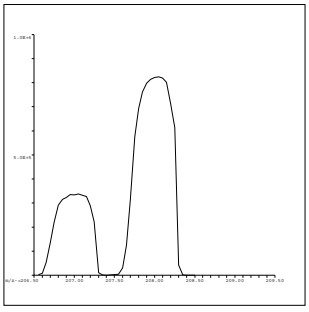
115 In
Mass Calib.
Actual: 115.10
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.05
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.05
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.05
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 171220A

Instrument ID: ICPMS-02

Analyte	Data File	A1220002.D	A1220003.D	A1220004.D	A1220005.D	A1220006.D	A1220007.D	A1220008.D	A1220009.D	A1220010.D	
	Acq. Date-Time	12/20/2017 03:07 PM	12/20/2017 03:13 PM	12/20/2017 03:18 PM	12/20/2017 03:24 PM	12/20/2017 03:29 PM	12/20/2017 03:35 PM	12/20/2017 03:40 PM	12/20/2017 03:46 PM	12/20/2017 03:51 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
6 Li (ISTD) [3]	CPS	1968799.5		1988543.9	1992874.8	1981881.9	1902472.7	1911101.5	1839142.1	1771009.7	
9 Be [3]	CPS	154.5		6272.5	60062.6	119883.1	232618.3	456293.2	1121367.3	2158484.4	1.0000
45 Sc (ISTD) [2]	CPS	100905.6		104189.5	105204.2	103739.5	101795.6	100333.4	97828.7	98438.2	
59 Co [2]	CPS	44.9		7798.1	78647.6	154925	300493.9	592953.2	1453463.4	2829266.9	0.9999
55 Mn [2]	CPS	202.2		2603.5	22790.5	45728.1	88408.5	171246.6	416124.2	810929.4	1.0000
52 Cr [2]	CPS	448.2		4739.1	43100.3	84552.4	162204.8	320859	773573.4	1539603.8	1.0000
51 V [2]	CPS	1941.3		5126.6	33874.4	64389	123095.8	240273.4	582414.2	1137895.7	0.9999
72 Ge (ISTD) [1]	CPS	80026.1		82030.9	82674	81502	78272.6	77364.2	75878.8	73386.3	
78 Se [1]	CPS	3.3		224.5	2026.9	3777.3	7784.4	15421.2	36896.2	72110.8	0.9999
72 Ge (ISTD) [2]	CPS	71622.8	74012.1	72692.1	74385	72374.9	70144.5	69655.5	68214.1	65549.9	
75 As [2]	CPS	42.2	119.1	465.4	4296.6	8663.3	16699.8	32587.6	79246.4	154327.7	1.0000
66 Zn [2]	CPS	489.9		1721.1	9700.8	16328.5	31008.8	60989.7	145264.6	278641.3	1.0000
63 Cu [2]	CPS	5993.6		12094.2	63626.3	119321	226832.7	440352.7	1055975.3	2097047.8	0.9999
60 Ni [2]	CPS	593.8		2871.8	21776.2	42014	80707.1	158994.5	384055.7	741745.8	1.0000
103 Rh (ISTD) [2]	CPS	2326433.2		2383538.1	2397726.3	2358374.5	2314981.8	2303329.7	2207491.6	2186879.4	
95 Mo [2]	CPS	235.6		2792.6	26654.1	51803.3	102272.3	200847.4	491063.8	969449.8	1.0000
103 Rh (ISTD) [3]	CPS	5068179.9		5098561	5114312.5	5126568	4931844.1	4883738.4	4779702.3	4631315.4	
107 Ag [3]	CPS	1882		21148.4	220763	443073	863261.2	1770939	4243684.6	7177346.8	0.9999
115 In (ISTD) [3]	CPS	5343670.1		5424855.6	5485557	5456745.9	5319597.5	5254255.1	5131666.7	5034158.3	
121 Sb [3]	CPS	1753.3		19003.5	172713.5	342522.1	658870	1330185.6	3244310	6301539.2	1.0000
111 Cd [3]	CPS	248.2		5539.4	51875.1	103735.9	200742.2	393017.1	956632.3	1940010.2	0.9999
159 Tb (ISTD) [3]	CPS	7833611		8011478.8	8045903.1	8045551.1	7921889.2	7839527.1	7700891.1	7627015.4	
137 Ba [3]	CPS	339		7396.9	68891.3	133821.1	258631.5	511418.6	1236462.9	2505580.3	0.9999
209 Bi (ISTD) [3]	CPS	4907977.3		4988281.9	5020647.6	5059172.6	4958902.4	4957445.9	4838192.8	4748732.6	
208 Pb [3]	CPS	16397.8		77482.5	635533.9	1257596.3	2450805.9	4885516.4	11944730.1	23531233.6	1.0000
205 Tl [3]	CPS	2943.7		43234	450055.7	907037.1	1830753	3639647.1	8705109	17313479.6	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 171222B

Instrument ID: ICPMS-02

Analyte	Data File	B1222002.D	B1222004.D	B1222005.D	B1222006.D	B1222007.D	B1222008.D	B1222009.D	B1222010.D	
	Acq. Date-Time	12/22/2017 03:39 PM	12/22/2017 03:51 PM	12/22/2017 03:56 PM	12/22/2017 04:02 PM	12/22/2017 04:07 PM	12/22/2017 04:13 PM	12/22/2017 04:18 PM	12/22/2017 04:24 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
103 Rh (ISTD) [2]	CPS	1119833.1	1118030.1	1116169.6	1111811.4	1102494.4	1104071.4	1074383.2	1060434.2	
95 Mo [2]	CPS	55.6	1460.1	13157	26346.8	52236.7	104274.2	256678.3	502857.7	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-170428A
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 180102A

Instrument ID: ICPMS-02

Analyte	Data File	A0102002.D	A0102003.D	A0102004.D	A0102005.D	A0102006.D	A0102007.D	A0102008.D	A0102009.D	A0102010.D	
	Acq. Date-Time	01/02/2018 01:55 PM	01/02/2018 02:01 PM	01/02/2018 02:07 PM	01/02/2018 02:12 PM	01/02/2018 02:18 PM	01/02/2018 02:25 PM	01/02/2018 02:31 PM	01/02/2018 02:37 PM	01/02/2018 02:43 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	97601		91705.4	88382.8	83270.6	83597.6	81659.2	82037.4	81224.8	
52 Cr [2]	CPS	1025.3		4299.3	33893.7	63030.5	123911.1	245098.5	603547.4	1186638.8	1.0000
72 Ge (ISTD) [1]	CPS	77176.8		74440	72038	69455.8	68255.5	67576	65964.8	65749.7	
78 Se [1]	CPS	2.2		141.1	1404.6	2775.9	5495.6	11046.4	26802.9	53560.3	1.0000
72 Ge (ISTD) [2]	CPS	64510.3	64317.3	61794.4	59241.5	56410.7	56876.4	55791.6	55113.9	54277.8	
75 As [2]	CPS	29.8	80.4	403.6	3370.6	6429.8	12689.5	25053.5	61778.2	121715	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **120980**
Client ID: **ICV** Batch ID: **R120980** TestNo: **EPA 6020** Analysis Date: **12/20/2017** SeqNo: **2874739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.060	0.50	10.00	0	101	90	110				
Arsenic	9.948	0.10	10.00	0	99.5	90	110				
Barium	9.762	1.0	10.00	0	97.6	90	110				
Beryllium	9.699	0.50	10.00	0	97.0	90	110				
Cadmium	9.749	0.50	10.00	0	97.5	90	110				
Cobalt	9.612	0.50	10.00	0	96.1	90	110				
Copper	9.874	1.0	10.00	0	98.7	90	110				
Lead	9.738	1.0	10.00	0	97.4	90	110				
Manganese	97.834	0.50	100.0	0	97.8	90	110				
Molybdenum	10.937	0.50	10.00	0	109	90	110				
Nickel	10.375	1.0	10.00	0	104	90	110				
Selenium	10.490	0.50	10.00	0	105	90	110				
Silver	9.382	0.50	10.00	0	93.8	90	110				
Thallium	10.293	0.50	10.00	0	103	90	110				
Vanadium	10.035	1.0	10.00	0	100	90	110				
Zinc	100.201	10	100.0	0	100	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **120980**
Client ID: **ZZZZZZ** Batch ID: **R120980** TestNo: **EPA 6020** Analysis Date: **12/20/2017** SeqNo: **2874741**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.564	0.50	0.5000	0	113	80	120				
Silver	0.475	0.50	0.5000	0	95.0	80	120				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **120980**
Client ID: **ZZZZZZ** Batch ID: **R120980** TestNo: **EPA 6020** Analysis Date: **12/20/2017** SeqNo: **2874744**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ZZZZZZ**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874744**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.534	0.50	0.5000	0	107	80	120				
Arsenic	0.101	0.10	0.1000	0	101	80	120				
Barium	1.047	1.0	1.000	0	105	80	120				
Beryllium	0.504	0.50	0.5000	0	101	80	120				
Cadmium	0.505	0.50	0.5000	0	101	80	120				
Cobalt	0.501	0.50	0.5000	0	100	80	120				
Copper	0.963	1.0	1.000	0	96.3	80	120				
Lead	1.009	1.0	1.000	0	101	80	120				
Manganese	0.563	0.50	0.5000	0	113	80	120				
Nickel	1.071	1.0	1.000	0	107	80	120				
Selenium	0.579	0.50	0.5000	0	116	80	120				
Thallium	0.505	0.50	0.5000	0	101	80	120				
Vanadium	1.077	1.0	1.000	0	108	80	120				
Zinc	10.487	10	10.00	0	105	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCV**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	19.117	0.50	20.00	0	95.6	90	110				
Arsenic	20.206	0.10	20.00	0	101	90	110				
Barium	20.067	1.0	20.00	0	100	90	110				
Beryllium	19.607	0.50	20.00	0	98.0	90	110				
Cadmium	19.793	0.50	20.00	0	99.0	90	110				
Cobalt	20.458	0.50	20.00	0	102	90	110				
Copper	20.001	1.0	20.00	0	100	90	110				
Lead	19.655	1.0	20.00	0	98.3	90	110				
Manganese	20.432	0.50	20.00	0	102	90	110				
Molybdenum	20.343	0.50	20.00	0	102	90	110				
Nickel	20.778	1.0	20.00	0	104	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCV**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	21.212	0.50	20.00	0	106	90	110				
Silver	19.921	0.50	20.00	0	99.6	90	110				
Thallium	20.214	0.50	20.00	0	101	90	110				
Vanadium	20.334	1.0	20.00	0	102	90	110				
Zinc	20.960	10	20.00	0	105	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCV**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	19.143	0.50	20.00	0	95.7	90	110				
Arsenic	20.077	0.10	20.00	0	100	90	110				
Barium	20.593	1.0	20.00	0	103	90	110				
Beryllium	19.644	0.50	20.00	0	98.2	90	110				
Cadmium	19.663	0.50	20.00	0	98.3	90	110				
Cobalt	20.776	0.50	20.00	0	104	90	110				
Copper	20.608	1.0	20.00	0	103	90	110				
Lead	20.061	1.0	20.00	0	100	90	110				
Manganese	20.092	0.50	20.00	0	100	90	110				
Molybdenum	19.763	0.50	20.00	0	98.8	90	110				
Nickel	21.186	1.0	20.00	0	106	90	110				
Selenium	19.598	0.50	20.00	0	98.0	90	110				
Silver	19.802	0.50	20.00	0	99.0	90	110				
Thallium	20.372	0.50	20.00	0	102	90	110				
Vanadium	20.718	1.0	20.00	0	104	90	110				
Zinc	21.115	10	20.00	0	106	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCV**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874776**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	19.222	0.50	20.00	0	96.1	90	110				
Arsenic	20.252	0.10	20.00	0	101	90	110				
Barium	20.694	1.0	20.00	0	103	90	110				
Beryllium	20.627	0.50	20.00	0	103	90	110				
Cadmium	19.909	0.50	20.00	0	99.5	90	110				
Cobalt	20.929	0.50	20.00	0	105	90	110				
Copper	19.917	1.0	20.00	0	99.6	90	110				
Lead	19.844	1.0	20.00	0	99.2	90	110				
Manganese	20.621	0.50	20.00	0	103	90	110				
Molybdenum	19.945	0.50	20.00	0	99.7	90	110				
Nickel	20.614	1.0	20.00	0	103	90	110				
Selenium	20.817	0.50	20.00	0	104	90	110				
Silver	19.796	0.50	20.00	0	99.0	90	110				
Thallium	20.134	0.50	20.00	0	101	90	110				
Vanadium	20.591	1.0	20.00	0	103	90	110				
Zinc	20.580	10	20.00	0	103	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ZZZZZZ**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874778**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.470	0.50	0.5000	0	94.1	70	130				
Arsenic	0.095	0.10	0.1000	0	94.8	70	130				
Barium	1.058	1.0	1.000	0	106	70	130				
Beryllium	0.477	0.50	0.5000	0	95.3	70	130				
Cadmium	0.533	0.50	0.5000	0	107	70	130				
Cobalt	0.520	0.50	0.5000	0	104	70	130				
Copper	0.877	1.0	1.000	0	87.7	70	130				
Lead	0.981	1.0	1.000	0	98.1	70	130				
Manganese	0.555	0.50	0.5000	0	111	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ZZZZZZ**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874778**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.519	0.50	0.5000	0	104	70	130				
Nickel	1.117	1.0	1.000	0	112	70	130				
Selenium	0.564	0.50	0.5000	0	113	70	130				
Silver	0.461	0.50	0.5000	0	92.2	70	130				
Thallium	0.465	0.50	0.5000	0	93.0	70	130				
Vanadium	0.940	1.0	1.000	0	94.0	70	130				
Zinc	10.079	10	10.00	0	101	70	130				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCV**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874791**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.744	0.10	20.00	0	104	90	110				
Manganese	20.729	0.50	20.00	0	104	90	110				
Molybdenum	19.715	0.50	20.00	0	98.6	90	110				
Selenium	21.132	0.50	20.00	0	106	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCV**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874803**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.679	0.10	20.00	0	103	90	110				
Manganese	21.364	0.50	20.00	0	107	90	110				
Molybdenum	19.557	0.50	20.00	0	97.8	90	110				
Selenium	21.539	0.50	20.00	0	108	90	110				

Reported analytes bracketed by CCV4/CCB4 to CCV5/CCB5/LLCCV2/ICSA3/ICSAB3 are just As Mn Mo & Se.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

01/03/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ZZZZZZ**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874805**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.073	0.10	0.1000	0	73.3	70	130				
Manganese	0.595	0.50	0.5000	0	119	70	130				
Molybdenum	0.493	0.50	0.5000	0	98.6	70	130				
Selenium	0.495	0.50	0.5000	0	99.0	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121154**
Client ID: **ICV**	Batch ID: **R121154**	TestNo: **EPA 6020**		Analysis Date: **12/22/2017**	SeqNo: **2881316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	9.884	0.50	10.00	0	98.8	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121154**
Client ID: **ZZZZZZ**	Batch ID: **R121154**	TestNo: **EPA 6020**		Analysis Date: **12/22/2017**	SeqNo: **2881318**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.570	0.50	0.5000	0	114	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121154**
Client ID: **CCV**	Batch ID: **R121154**	TestNo: **EPA 6020**		Analysis Date: **12/22/2017**	SeqNo: **2881332**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	19.579	0.50	20.00	0	97.9	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121154**
Client ID: **CCV**	Batch ID: **R121154**	TestNo: **EPA 6020**		Analysis Date: **12/22/2017**	SeqNo: **2881339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	18.397	0.50	20.00	0	92.0	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121154**
Client ID: **ZZZZZZ**	Batch ID: **R121154**	TestNo: **EPA 6020**		Analysis Date: **12/22/2017**	SeqNo: **2881341**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.526	0.50	0.5000	0	105	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **ICV**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881578**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.679	0.10	10.00	0	107	90	110				
Selenium	10.941	0.50	10.00	0	109	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **ZZZZZZ**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881580**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.580	0.50	0.5000	0	116	80	120				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **ZZZZZZ**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.100	0.10	0.1000	0	99.6	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **CCV**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881594**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.081	0.10	20.00	0	100	90	110				
Selenium	19.738	0.50	20.00	0	98.7	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **CCV**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.272	0.10	20.00	0	101	90	110				
Selenium	19.905	0.50	20.00	0	99.5	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	CCV3	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121160
Client ID:	CCV	Batch ID:	R121160	TestNo:	EPA 6020			Analysis Date:	1/2/2018	SeqNo:	2881618

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.126	0.10	20.00	0	101	90	110				
Selenium	19.359	0.50	20.00	0	96.8	90	110				

Sample ID	CCV4	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121160
Client ID:	CCV	Batch ID:	R121160	TestNo:	EPA 6020			Analysis Date:	1/2/2018	SeqNo:	2881625

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.921	0.10	20.00	0	99.6	90	110				
Selenium	19.353	0.50	20.00	0	96.8	90	110				

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121160
Client ID:	ZZZZZZ	Batch ID:	R121160	TestNo:	EPA 6020			Analysis Date:	1/2/2018	SeqNo:	2881627

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.083	0.10	0.1000	0	83.0	70	130				
Selenium	0.501	0.50	0.5000	0	100	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ICV**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874670**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.977	1.0	10.00	0	99.8	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ZZZZZZ**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874675**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.019	1.0	1.000	0	102	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCV**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874686**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.268	1.0	20.00	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCV**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874698**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.526	1.0	20.00	0	108	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCV**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874707**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.608	1.0	20.00	0	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ZZZZZZ**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874709**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.301	1.0	1.000	0	130	70	130				S

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCV**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874722**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.446	1.0	20.00	0	102	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCV**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874734**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.107	1.0	20.00	0	101	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ZZZZZZ**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.058	1.0	1.000	0	106	70	130				

Cr in LLCCV1 is still within 70-130% recovery.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

01/03/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **ICV**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881524**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.835	1.0	10.00	0	108	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **ZZZZZZ**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.025	1.0	1.000	0	102	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **CCV**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881540**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.262	1.0	20.00	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **CCV**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881552**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.920	1.0	20.00	0	105	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **CCV**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881564**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.594	1.0	20.00	0	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **CCV**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.066	1.0	20.00	0	105	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **ZZZZZZ**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881573**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.151	1.0	1.000	0	115	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ICB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874740**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.127	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.188	0.50									
Nickel	0.050	1.0									
Selenium	0.146	0.50									
Silver	0.125	0.50									
Thallium	0.099	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874756**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874756**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.255	0.50									
Nickel	0.053	1.0									
Selenium	0.124	0.50									
Silver	0.257	0.50									
Thallium	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874768**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.141	0.50									
Nickel	0.044	1.0									
Selenium	0.061	0.50									
Silver	0.205	0.50									
Thallium	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874777**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.077	0.50									
Nickel	0.115	1.0									
Selenium	ND	0.50									
Silver	0.204	0.50									
Thallium	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.057	0.50									
Selenium	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874804**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Reported analytes bracketed by CCV4/CCB4 to CCV5/CCB5/LLCCV2/ICSA3/ICSAB3 are just As Mn Mo & Se.

01/03/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874804**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.046	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121154**
Client ID: **ICB**	Batch ID: **R121154**	TestNo: **EPA 6020**		Analysis Date: **12/22/2017**	SeqNo: **2881317**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.090	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121154**
Client ID: **CCB**	Batch ID: **R121154**	TestNo: **EPA 6020**		Analysis Date: **12/22/2017**	SeqNo: **2881333**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.098	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121154**
Client ID: **CCB**	Batch ID: **R121154**	TestNo: **EPA 6020**		Analysis Date: **12/22/2017**	SeqNo: **2881340**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.062	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **ICB**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Selenium	0.043	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **CCB**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881595**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **CCB**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881607**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Selenium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **CCB**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881619**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **CCB**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881626**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **CCB**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881626**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ICB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874671**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874687**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874699**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.566	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874708**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.284	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874723**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.318	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874735**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.095	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **ICB**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881525**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **CCB**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881541**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **CCB**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.155	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **CCB**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881565**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.028	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **CCB**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881572**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.060	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ICSA**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874742**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.038	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.080	0.50									
Nickel	0.047	1.0									
Selenium	0.099	0.50									
Silver	ND	0.50									
Thallium	0.049	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ICSAB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874743**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	18.706	0.50	20.00	0	93.5	80	120				
Arsenic	19.811	0.10	20.00	0	99.1	80	120				
Barium	20.340	1.0	20.00	0	102	80	120				
Beryllium	18.125	0.50	20.00	0	90.6	80	120				
Cadmium	19.381	0.50	20.00	0	96.9	80	120				
Cobalt	19.742	0.50	20.00	0	98.7	80	120				
Copper	18.251	1.0	20.00	0	91.3	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ICSAB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874743**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	19.968	1.0	20.00	0	99.8	80	120				
Manganese	23.358	0.50	20.00	0	117	80	120				
Molybdenum	22.237	0.50	20.00	0	111	80	120				
Nickel	20.520	1.0	20.00	0	103	80	120				
Selenium	17.938	0.50	20.00	0	89.7	80	120				
Silver	17.849	0.50	20.00	0	89.2	80	120				
Thallium	21.678	0.50	20.00	0	108	80	120				
Vanadium	21.186	1.0	20.00	0	106	80	120				
Zinc	17.229	10	20.00	0	86.1	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ICSA**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874779**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Nickel	0.122	1.0									
Selenium	ND	0.50									
Silver	ND	0.50									
Thallium	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ICSAB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874780**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	18.722	0.50	20.00	0	93.6	80	120				
Arsenic	20.433	0.10	20.00	0	102	80	120				
Barium	18.339	1.0	20.00	0	91.7	80	120				
Beryllium	18.826	0.50	20.00	0	94.1	80	120				
Cadmium	16.650	0.50	20.00	0	83.2	80	120				
Cobalt	19.551	0.50	20.00	0	97.8	80	120				
Copper	17.885	1.0	20.00	0	89.4	80	120				
Lead	19.496	1.0	20.00	0	97.5	80	120				
Manganese	23.498	0.50	20.00	0	117	80	120				
Molybdenum	22.246	0.50	20.00	0	111	80	120				
Nickel	20.307	1.0	20.00	0	102	80	120				
Selenium	19.521	0.50	20.00	0	97.6	80	120				
Silver	18.180	0.50	20.00	0	90.9	80	120				
Thallium	21.622	0.50	20.00	0	108	80	120				
Vanadium	20.648	1.0	20.00	0	103	80	120				
Zinc	16.493	10	20.00	0	82.5	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ICSA**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874806**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ICSAB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874807**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ICSAB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874807**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	17.652	0.10	20.00	0	88.3	80	120				
Manganese	19.093	0.50	20.00	0	95.5	80	120				
Molybdenum	17.897	0.50	20.00	0	89.5	80	120				
Selenium	16.247	0.50	20.00	0	81.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121154**
Client ID: **ICSA**	Batch ID: **R121154**	TestNo: **EPA 6020**		Analysis Date: **12/22/2017**	SeqNo: **2881319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.058	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121154**
Client ID: **ICSAB**	Batch ID: **R121154**	TestNo: **EPA 6020**		Analysis Date: **12/22/2017**	SeqNo: **2881320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	19.221	0.50	20.00	0	96.1	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121154**
Client ID: **ICSA**	Batch ID: **R121154**	TestNo: **EPA 6020**		Analysis Date: **12/22/2017**	SeqNo: **2881342**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.062	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121154**
Client ID: **ICSAB**	Batch ID: **R121154**	TestNo: **EPA 6020**		Analysis Date: **12/22/2017**	SeqNo: **2881343**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	19.047	0.50	20.00	0	95.2	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **ICSA**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881581**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Selenium	0.043	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **ICSAB**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881582**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.343	0.10	20.00	0	102	80	120				
Selenium	18.919	0.50	20.00	0	94.6	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **ICSA**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Selenium	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **ICSAB**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.580	0.10	20.00	0	103	80	120				
Selenium	19.376	0.50	20.00	0	96.9	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	120980
Client ID:	ICSA	Batch ID:	R120980	TestNo:	EPA 6020			Analysis Date:	12/20/2017	SeqNo:	2874673

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.094	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	120980
Client ID:	ICSAB	Batch ID:	R120980	TestNo:	EPA 6020			Analysis Date:	12/20/2017	SeqNo:	2874674

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.972	1.0	20.00	0	110	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	120980
Client ID:	ICSA	Batch ID:	R120980	TestNo:	EPA 6020			Analysis Date:	12/20/2017	SeqNo:	2874710

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.324	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	120980
Client ID:	ICSAB	Batch ID:	R120980	TestNo:	EPA 6020			Analysis Date:	12/20/2017	SeqNo:	2874711

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.175	1.0	20.00	0	101	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	120980
Client ID:	ICSA	Batch ID:	R120980	TestNo:	EPA 6020			Analysis Date:	12/20/2017	SeqNo:	2874737

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.162	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ICSAB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874738**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	17.161	1.0	20.00	0	85.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **ICSA**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881527**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.031	1.0									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **ICSAB**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881528**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.378	1.0	20.00	0	102	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **ICSA**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.120	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **ICSAB**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.929	1.0	20.00	0	105	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [3]					115 In (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	5068179.9	5068179.9	100	PASS	70-125	5343670.1	5343670.1	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	5211195	5068179.9	102.82	PASS	70-125	5506424.8	5343670.1	103.05	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	5098561	5068179.9	100.6	PASS	70-125	5424855.6	5343670.1	101.52	PASS	70-125
Std3-5/50 ppb	ICAL	1	5114312.5	5068179.9	100.91	PASS	70-125	5485557	5343670.1	102.66	PASS	70-125
Std4-10/100 ppb	ICAL	1	5126568	5068179.9	101.15	PASS	70-125	5456745.9	5343670.1	102.12	PASS	70-125
Std5-20/200 ppb	ICAL	1	4931844.1	5068179.9	97.31	PASS	70-125	5319597.5	5343670.1	99.55	PASS	70-125
Std6-40/400 ppb	ICAL	1	4883738.4	5068179.9	96.36	PASS	70-125	5254255.1	5343670.1	98.33	PASS	70-125
Std7-100/1000 ppb	ICAL	1	4779702.3	5068179.9	94.31	PASS	70-125	5131666.7	5343670.1	96.033	PASS	70-125
Std8-200/2000 ppb	ICAL	1	4631315.4	5068179.9	91.38	PASS	70-125	5034158.3	5343670.1	94.21	PASS	70-125
ICV	ICV	1	5622607.5	5068179.9	110.94	PASS	70-125	6085256.6	5343670.1	113.88	PASS	70-125
ICB	ICB	1	4666408.4	5068179.9	92.073	PASS	70-125	4983860.7	5343670.1	93.27	PASS	70-125
LLICV	CCV1	1	4654110	5068179.9	91.83	PASS	70-125	5047932	5343670.1	94.47	PASS	70-125
ICSA1	ICSA	1	4099669.1	5068179.9	80.89	PASS	70-125	4578652.8	5343670.1	85.68	PASS	70-125
ICSAB1	ICSAB	1	4520045.8	5068179.9	89.18	PASS	70-125	5079411	5343670.1	95.055	PASS	70-125
LLICV	CCV1	1	4383165.9	5068179.9	86.48	PASS	70-125	4681421.9	5343670.1	87.61	PASS	70-125
MB-65978	MBLK	1	4205914.9	5068179.9	82.99	PASS	70-125	4478519	5343670.1	83.81	PASS	70-125
LCS-65978	LCS	1	4895557.2	5068179.9	96.59	PASS	70-125	5305523.7	5343670.1	99.29	PASS	70-125
N027429-001B	SAMP	1	3467626.6	5068179.9	68.42	NR!	70-125	3898843.7	5343670.1	72.96	PASS	70-125
N027429-001B	SAMP	5	4089142.8	5068179.9	80.68	PASS	70-125	4459298.6	5343670.1	83.45	PASS	70-125
N027429-001B	SAMP	25	4250721.1	5068179.9	83.87	PASS	70-125	4604387.5	5343670.1	86.17	PASS	70-125
N027429-001B-PS	PS	1	3762114.7	5068179.9	74.23	PASS	70-125	4243966.7	5343670.1	79.42	PASS	70-125
N027429-001B-PS	PS	5	4317275.9	5068179.9	85.18	PASS	70-125	4768427.6	5343670.1	89.24	PASS	70-125
N027429-001B-MS	MS	1	3244838.1	5068179.9	64.024	NR!	70-125	3633714	5343670.1	68	NR!	70-125
N027429-001B-MS	MS	5	4493472	5068179.9	88.66	PASS	70-125	4967238.4	5343670.1	92.96	PASS	70-125
N027429-001B-MSD	MSD	1	4257647.2	5068179.9	84.007	PASS	70-125	4762472.5	5343670.1	89.12	PASS	70-125
CCV1	CCV	1	4793651.1	5068179.9	94.58	PASS	70-125	5147973.5	5343670.1	96.34	PASS	70-125
CCB1	CCB	1	4520368.8	5068179.9	89.19	PASS	70-125	4774153.6	5343670.1	89.34	PASS	70-125
N027429-001B-MSD	MSD	5	4393369.1	5068179.9	86.69	PASS	70-125	4826201.7	5343670.1	90.32	PASS	70-125
N027429-002B	SAMP	1	4016830.5	5068179.9	79.26	PASS	70-125	4580013.8	5343670.1	85.71	PASS	70-125
N027429-002B	SAMP	5	4690908.5	5068179.9	92.56	PASS	70-125	5141369.9	5343670.1	96.21	PASS	70-125
N027429-003B	SAMP	1	2543824.8	5068179.9	50.19	NR!	70-125	2994913.5	5343670.1	56.046	NR!	70-125
N027429-003B	SAMP	5	4427517.4	5068179.9	87.36	PASS	70-125	5019667.6	5343670.1	93.94	PASS	70-125
N027429-010B	SAMP	1	3414992.3	5068179.9	67.38	NR!	70-125	3887910.4	5343670.1	72.76	PASS	70-125
N027429-010B	SAMP	5	4858005.7	5068179.9	95.85	PASS	70-125	5465007.9	5343670.1	102.27	PASS	70-125
N027429-013B	SAMP	1	5015997.8	5068179.9	98.97	PASS	70-125	5625500.3	5343670.1	105.27	PASS	70-125
N027429-013B	SAMP	5	5630703.4	5068179.9	111.1	PASS	70-125	6208204.3	5343670.1	116.18	PASS	70-125
N027429-014B	SAMP	1	5019659.1	5068179.9	99.043	PASS	70-125	5646285.5	5343670.1	105.66	PASS	70-125
CCV2	CCV	1	5730378.3	5068179.9	113.07	PASS	70-125	6157986.2	5343670.1	115.24	PASS	70-125
CCB2	CCB	1	5485455.6	5068179.9	108.23	PASS	70-125	5812323.9	5343670.1	108.77	PASS	70-125
N027429-014B	SAMP	5	5193746.3	5068179.9	102.48	PASS	70-125	5703819.9	5343670.1	106.74	PASS	70-125
N027429-010B	SAMP	5	4418662.7	5068179.9	87.18	PASS	70-125	4996682.6	5343670.1	93.51	PASS	70-125

INTERNAL STANDARD: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [3]					115 In (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027429-001B	SAMP	1	4807382.2	5068179.9	94.85	PASS	70-125	5367972.1	5343670.1	100.45	PASS	70-125
N027429-005B	SAMP	1	2649906.2	5068179.9	52.29	NR!	70-125	3143232.4	5343670.1	58.82	NR!	70-125
N027429-005B	SAMP	5	4403264.7	5068179.9	86.88	PASS	70-125	5037411.7	5343670.1	94.27	PASS	70-125
N027429-006B	SAMP	1	2464975.5	5068179.9	48.64	NR!	70-125	2944040.8	5343670.1	55.094	NR!	70-125
N027429-006B	SAMP	5	2182605.3	5068179.9	43.065	NR!	70-125	2315330.9	5343670.1	43.33	NR!	70-125
CCV3	CCV	1	4880251.1	5068179.9	96.29	PASS	70-125	5207030.6	5343670.1	97.44	PASS	70-125
CCB3	CCB	1	4731251.4	5068179.9	93.35	PASS	70-125	5038726.5	5343670.1	94.29	PASS	70-125
LLCCV1	CCV2	1	4909962.6	5068179.9	96.88	PASS	70-125	5183967.1	5343670.1	97.011	PASS	70-125
ICSA2	ICSA	1	4584966.5	5068179.9	90.47	PASS	70-125	5067251.2	5343670.1	94.83	PASS	70-125
ICSAB2	ICSAB	1	3925006.1	5068179.9	77.44	PASS	70-125	4464662.6	5343670.1	83.55	PASS	70-125
N027429-007B	SAMP	1	4562154.9	5068179.9	90.016	PASS	70-125	5044783.3	5343670.1	94.41	PASS	70-125
N027429-007B	SAMP	5	4979693.6	5068179.9	98.25	PASS	70-125	5408149.8	5343670.1	101.21	PASS	70-125
N027429-008B	SAMP	1	4332236.1	5068179.9	85.48	PASS	70-125	4867625.6	5343670.1	91.091	PASS	70-125
N027429-008B	SAMP	5	4874994.7	5068179.9	96.19	PASS	70-125	5327406.2	5343670.1	99.7	PASS	70-125
N027429-009B	SAMP	1	2452684.7	5068179.9	48.39	NR!	70-125	2862168.4	5343670.1	53.56	NR!	70-125
N027429-009B	SAMP	5	3769803.6	5068179.9	74.38	PASS	70-125	4286360	5343670.1	80.21	PASS	70-125
N027429-012B	SAMP	1	3974987.7	5068179.9	78.43	PASS	70-125	4480731.9	5343670.1	83.85	PASS	70-125
N027429-012B	SAMP	5	4536278.8	5068179.9	89.51	PASS	70-125	4920950.2	5343670.1	92.089	PASS	70-125
N027429-015B	SAMP	1	4050745.1	5068179.9	79.93	PASS	70-125	4471326.9	5343670.1	83.68	PASS	70-125
N027429-015B	SAMP	5	4435704	5068179.9	87.52	PASS	70-125	4863854.2	5343670.1	91.021	PASS	70-125
CCV4	CCV	1	4612329.8	5068179.9	91.006	PASS	70-125	4838034.7	5343670.1	90.54	PASS	70-125
CCB4	CCB	1	4379465.2	5068179.9	86.41	PASS	70-125	4596113.8	5343670.1	86.01	PASS	70-125
N027429-016C	SAMP	1	3427940.7	5068179.9	67.64	NR!	70-125	3847070.7	5343670.1	71.99	PASS	70-125
N027429-016C	SAMP	5	4218857	5068179.9	83.24	PASS	70-125	4568218.4	5343670.1	85.49	PASS	70-125
N027429-017C	SAMP	1	3538796	5068179.9	69.82	NR!	70-125	3958890.3	5343670.1	74.086	PASS	70-125
N027429-017C	SAMP	5	4175244.3	5068179.9	82.38	PASS	70-125	4546018.5	5343670.1	85.073	PASS	70-125
N027429-018C	SAMP	1	2549911.6	5068179.9	50.31	NR!	70-125	2911789.5	5343670.1	54.49	NR!	70-125
N027429-018C	SAMP	5	4046031.9	5068179.9	79.83	PASS	70-125	4560407.4	5343670.1	85.34	PASS	70-125
N027429-020C	SAMP	1	2649892.2	5068179.9	52.28	NR!	70-125	3070706.5	5343670.1	57.46	NR!	70-125
N027429-020C	SAMP	5	3897259.7	5068179.9	76.9	PASS	70-125	4376039.3	5343670.1	81.89	PASS	70-125
N027429-010B	SAMP	25	2577501.1	5068179.9	50.86	NR!	70-125	2694448.6	5343670.1	50.42	NR!	70-125
CCV5	CCV	1	4581610.4	5068179.9	90.4	PASS	70-125	4938683.2	5343670.1	92.42	PASS	70-125
CCB5	CCB	1	4393066.3	5068179.9	86.68	PASS	70-125	4635551.1	5343670.1	86.75	PASS	70-125
LLCCV2	CCV2	1	4583019.4	5068179.9	90.43	PASS	70-125	4915473.5	5343670.1	91.99	PASS	70-125
ICSA3	ICSA	1	3718284.7	5068179.9	73.37	PASS	70-125	4126376.9	5343670.1	77.22	PASS	70-125
ICSAB3	ICSAB	1	4032663.2	5068179.9	79.57	PASS	70-125	4663646.9	5343670.1	87.27	PASS	70-125

INTERNAL STANDARD: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					209 Bi (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	7833611	7833611	100	PASS	70-125	4907977.3	4907977.3	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	8114975.8	7833611	103.59	PASS	70-125	5067384.9	4907977.3	103.25	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	8011478.8	7833611	102.27	PASS	70-125	4988281.9	4907977.3	101.64	PASS	70-125
Std3-5/50 ppb	ICAL	1	8045903.1	7833611	102.71	PASS	70-125	5020647.6	4907977.3	102.3	PASS	70-125
Std4-10/100 ppb	ICAL	1	8045551.1	7833611	102.71	PASS	70-125	5059172.6	4907977.3	103.08	PASS	70-125
Std5-20/200 ppb	ICAL	1	7921889.2	7833611	101.13	PASS	70-125	4958902.4	4907977.3	101.04	PASS	70-125
Std6-40/400 ppb	ICAL	1	7839527.1	7833611	100.08	PASS	70-125	4957445.9	4907977.3	101.01	PASS	70-125
Std7-100/1000 ppb	ICAL	1	7700891.1	7833611	98.31	PASS	70-125	4838192.8	4907977.3	98.58	PASS	70-125
Std8-200/2000 ppb	ICAL	1	7627015.4	7833611	97.36	PASS	70-125	4748732.6	4907977.3	96.76	PASS	70-125
ICV	ICV	1	9181579.9	7833611	117.21	PASS	70-125	5861931.1	4907977.3	119.44	PASS	70-125
ICB	ICB	1	7609528.4	7833611	97.14	PASS	70-125	4842931.5	4907977.3	98.67	PASS	70-125
LLICV	CCV1	1	7627186.8	7833611	97.36	PASS	70-125	4866451.4	4907977.3	99.15	PASS	70-125
ICSA1	ICSA	1	7216780.7	7833611	92.13	PASS	70-125	3911222.2	4907977.3	79.69	PASS	70-125
ICSAB1	ICSAB	1	7407884.6	7833611	94.57	PASS	70-125	4062363.3	4907977.3	82.77	PASS	70-125
LLICV	CCV1	1	7104310	7833611	90.69	PASS	70-125	4487569.2	4907977.3	91.43	PASS	70-125
MB-65978	MBLK	1	6760438.3	7833611	86.3	PASS	70-125	4324333.1	4907977.3	88.11	PASS	70-125
LCS-65978	LCS	1	8083555	7833611	103.19	PASS	70-125	5141858.3	4907977.3	104.77	PASS	70-125
N027429-001B	SAMP	1	6119946.4	7833611	78.12	PASS	70-125	3330785.7	4907977.3	67.86	NR!	70-125
N027429-001B	SAMP	5	6900196.4	7833611	88.084	PASS	70-125	4063988.7	4907977.3	82.8	PASS	70-125
N027429-001B	SAMP	25	7108896.4	7833611	90.75	PASS	70-125	4411091.7	4907977.3	89.88	PASS	70-125
N027429-001B-PS	PS	1	6691595	7833611	85.42	PASS	70-125	3596738.1	4907977.3	73.28	PASS	70-125
N027429-001B-PS	PS	5	7288634.7	7833611	93.043	PASS	70-125	4235907.7	4907977.3	86.31	PASS	70-125
N027429-001B-MS	MS	1	5618639.2	7833611	71.72	PASS	70-125	2955239.2	4907977.3	60.21	NR!	70-125
N027429-001B-MS	MS	5	7525912.2	7833611	96.072	PASS	70-125	4408631.5	4907977.3	89.83	PASS	70-125
N027429-001B-MSD	MSD	1	7348881.9	7833611	93.81	PASS	70-125	3870033.7	4907977.3	78.85	PASS	70-125
CCV1	CCV	1	7567727	7833611	96.61	PASS	70-125	4761095.1	4907977.3	97.007	PASS	70-125
CCB1	CCB	1	7141573.6	7833611	91.17	PASS	70-125	4497120	4907977.3	91.63	PASS	70-125
N027429-001B-MSD	MSD	5	7391760.2	7833611	94.36	PASS	70-125	4333828.3	4907977.3	88.3	PASS	70-125
N027429-002B	SAMP	1	7034679.9	7833611	89.8	PASS	70-125	3735303.1	4907977.3	76.11	PASS	70-125
N027429-002B	SAMP	5	7917305.2	7833611	101.07	PASS	70-125	4542174.2	4907977.3	92.55	PASS	70-125
N027429-003B	SAMP	1	4646148.8	7833611	59.31	NR!	70-125	2038622.5	4907977.3	41.54	NR!	70-125
N027429-003B	SAMP	5	7483133.6	7833611	95.53	PASS	70-125	3735468	4907977.3	76.11	PASS	70-125
N027429-010B	SAMP	1	5871056.2	7833611	74.95	PASS	70-125	2626510.1	4907977.3	53.52	NR!	70-125
N027429-010B	SAMP	5	8133116.5	7833611	103.82	PASS	70-125	4167718.3	4907977.3	84.92	PASS	70-125
N027429-013B	SAMP	1	8271733.1	7833611	105.59	PASS	70-125	4194275.5	4907977.3	85.46	PASS	70-125
N027429-013B	SAMP	5	9019569.3	7833611	115.14	PASS	70-125	5083911.4	4907977.3	103.58	PASS	70-125
N027429-014B	SAMP	1	8322985.5	7833611	106.25	PASS	70-125	4222517.2	4907977.3	86.034	PASS	70-125
CCV2	CCV	1	8811860.1	7833611	112.49	PASS	70-125	5419522.6	4907977.3	110.42	PASS	70-125
CCB2	CCB	1	8379503.4	7833611	106.97	PASS	70-125	5198058	4907977.3	105.91	PASS	70-125
N027429-014B	SAMP	5	8577698.1	7833611	109.5	PASS	70-125	4908835.7	4907977.3	100.02	PASS	70-125
N027429-010B	SAMP	5	7522284.1	7833611	96.026	PASS	70-125	3960501.5	4907977.3	80.7	PASS	70-125

INTERNAL STANDARD: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					209 Bi (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027429-001B	SAMP	1	7928593.7	7833611	101.21	PASS	70-125	4111911.2	4907977.3	83.78	PASS	70-125
N027429-005B	SAMP	1	4743964.1	7833611	60.56	NR!	70-125	2026321.5	4907977.3	41.29	NR!	70-125
N027429-005B	SAMP	5	7450927.6	7833611	95.11	PASS	70-125	3662368.4	4907977.3	74.62	PASS	70-125
N027429-006B	SAMP	1	4480126.4	7833611	57.19	NR!	70-125	1860800.6	4907977.3	37.91	NR!	70-125
N027429-006B	SAMP	5	3583429.2	7833611	45.74	NR!	70-125	2020457	4907977.3	41.17	NR!	70-125
CCV3	CCV	1	7474290.8	7833611	95.41	PASS	70-125	4593236.9	4907977.3	93.59	PASS	70-125
CCB3	CCB	1	7319784.7	7833611	93.44	PASS	70-125	4496917.7	4907977.3	91.62	PASS	70-125
LLCCV1	CCV2	1	7560805.3	7833611	96.52	PASS	70-125	4641992.8	4907977.3	94.58	PASS	70-125
ICSA2	ICSA	1	7533998.2	7833611	96.18	PASS	70-125	3938274.4	4907977.3	80.24	PASS	70-125
ICSAB2	ICSAB	1	6423749.5	7833611	82.002	PASS	70-125	3584600.6	4907977.3	73.036	PASS	70-125
N027429-007B	SAMP	1	7488040.4	7833611	95.59	PASS	70-125	3902742.3	4907977.3	79.52	PASS	70-125
N027429-007B	SAMP	5	7907882.5	7833611	100.95	PASS	70-125	4528335.9	4907977.3	92.26	PASS	70-125
N027429-008B	SAMP	1	7224029.5	7833611	92.22	PASS	70-125	3772920.3	4907977.3	76.87	PASS	70-125
N027429-008B	SAMP	5	7781861.4	7833611	99.34	PASS	70-125	4508413.3	4907977.3	91.86	PASS	70-125
N027429-009B	SAMP	1	4376515.5	7833611	55.87	NR!	70-125	1938134.4	4907977.3	39.49	NR!	70-125
N027429-009B	SAMP	5	6285027.3	7833611	80.23	PASS	70-125	3199834.4	4907977.3	65.2	NR!	70-125
N027429-012B	SAMP	1	6507978.5	7833611	83.078	PASS	70-125	3285169.2	4907977.3	66.94	NR!	70-125
N027429-012B	SAMP	5	7074231.1	7833611	90.31	PASS	70-125	3966557.8	4907977.3	80.82	PASS	70-125
N027429-015B	SAMP	1	6517562.1	7833611	83.2	PASS	70-125	3351669.1	4907977.3	68.29	NR!	70-125
N027429-015B	SAMP	5	6957833	7833611	88.82	PASS	70-125	3955498.1	4907977.3	80.59	PASS	70-125
CCV4	CCV	1	6844716.4	7833611	87.38	PASS	70-125	4241047.9	4907977.3	86.41	PASS	70-125
CCB4	CCB	1	6594815.5	7833611	84.19	PASS	70-125	4061786.6	4907977.3	82.76	PASS	70-125
N027429-016C	SAMP	1	5735933	7833611	73.22	PASS	70-125	2872005.6	4907977.3	58.52	NR!	70-125
N027429-016C	SAMP	5	6706065.4	7833611	85.61	PASS	70-125	3689031.6	4907977.3	75.16	PASS	70-125
N027429-017C	SAMP	1	5867790.1	7833611	74.91	PASS	70-125	2915224.7	4907977.3	59.4	NR!	70-125
N027429-017C	SAMP	5	6638181.1	7833611	84.74	PASS	70-125	3638154.2	4907977.3	74.13	PASS	70-125
N027429-018C	SAMP	1	4339667.9	7833611	55.4	NR!	70-125	1997816.4	4907977.3	40.71	NR!	70-125
N027429-018C	SAMP	5	6654666.6	7833611	84.95	PASS	70-125	3352016.5	4907977.3	68.3	NR!	70-125
N027429-020C	SAMP	1	4575963.3	7833611	58.41	NR!	70-125	2035915.4	4907977.3	41.48	NR!	70-125
N027429-020C	SAMP	5	6468856.2	7833611	82.58	PASS	70-125	3259939.4	4907977.3	66.42	NR!	70-125
N027429-010B	SAMP	25	4064715.6	7833611	51.89	NR!	70-125	2474448.1	4907977.3	50.42	NR!	70-125
CCV5	CCV	1	7020760.4	7833611	89.62	PASS	70-125	4332550	4907977.3	88.28	PASS	70-125
CCB5	CCB	1	6736886.7	7833611	86	PASS	70-125	4177183.1	4907977.3	85.11	PASS	70-125
LLCCV2	CCV2	1	7072538.9	7833611	90.28	PASS	70-125	4372869	4907977.3	89.097	PASS	70-125
ICSA3	ICSA	1	6151647.7	7833611	78.53	PASS	70-125	3226553.6	4907977.3	65.74	NR!	70-125
ICSAB3	ICSAB	1	7381564	7833611	94.23	PASS	70-125	4426625.7	4907977.3	90.19	PASS	70-125

INTERNAL STANDARD: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	100905.6	100905.6	100	PASS	70-125	71622.8	71622.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	104840.7	100905.6	103.9	PASS	70-125	74012.1	71622.8	103.34	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	104189.5	100905.6	103.25	PASS	70-125	72692.1	71622.8	101.49	PASS	70-125
Std3-5/50 ppb	ICAL	1	105204.2	100905.6	104.26	PASS	70-125	74385	71622.8	103.86	PASS	70-125
Std4-10/100 ppb	ICAL	1	103739.5	100905.6	102.81	PASS	70-125	72374.9	71622.8	101.05	PASS	70-125
Std5-20/200 ppb	ICAL	1	101795.6	100905.6	100.88	PASS	70-125	70144.5	71622.8	97.94	PASS	70-125
Std6-40/400 ppb	ICAL	1	100333.4	100905.6	99.43	PASS	70-125	69655.5	71622.8	97.25	PASS	70-125
Std7-100/1000 ppb	ICAL	1	97828.7	100905.6	96.95	PASS	70-125	68214.1	71622.8	95.24	PASS	70-125
Std8-200/2000 ppb	ICAL	1	98438.2	100905.6	97.55	PASS	70-125	65549.9	71622.8	91.52	PASS	70-125
ICV	ICV	1	112925.3	100905.6	111.91	PASS	70-125	76744	71622.8	107.15	PASS	70-125
ICB	ICB	1	95338.5	100905.6	94.48	PASS	70-125	65223.2	71622.8	91.065	PASS	70-125
LLICV	CCV1	1	91505.2	100905.6	90.68	PASS	70-125	63804	71622.8	89.083	PASS	70-125
ICSA1	ICSA	1	91169	100905.6	90.35	PASS	70-125	57287	71622.8	79.98	PASS	70-125
ICSAB1	ICSAB	1	103916.7	100905.6	102.98	PASS	70-125	66355.6	71622.8	92.65	PASS	70-125
LLICV	CCV1	1	83562.1	100905.6	82.81	PASS	70-125	58485.3	71622.8	81.66	PASS	70-125
MB-65978	MBLK	1	80829.4	100905.6	80.1	PASS	70-125	56841.9	71622.8	79.36	PASS	70-125
LCS-65978	LCS	1	96920.9	100905.6	96.051	PASS	70-125	66484.7	71622.8	92.83	PASS	70-125
N027429-001B	SAMP	1	74224.9	100905.6	73.56	PASS	70-125	48188.9	71622.8	67.28	NR!	70-125
N027429-001B	SAMP	5	84857.5	100905.6	84.096	PASS	70-125	57221.1	71622.8	79.89	PASS	70-125
N027429-001B	SAMP	25	84690.8	100905.6	83.93	PASS	70-125	59100.1	71622.8	82.52	PASS	70-125
N027429-001B-PS	PS	1	80642.3	100905.6	79.92	PASS	70-125	51740.7	71622.8	72.24	PASS	70-125
N027429-001B-PS	PS	5	91846.3	100905.6	91.022	PASS	70-125	60848.7	71622.8	84.96	PASS	70-125
N027429-001B-MS	MS	1	92702	100905.6	91.87	PASS	70-125	58820	71622.8	82.12	PASS	70-125
N027429-001B-MS	MS	5	97635.5	100905.6	96.76	PASS	70-125	64056.4	71622.8	89.44	PASS	70-125
N027429-001B-MSD	MSD	1	96409.4	100905.6	95.54	PASS	70-125	60169.4	71622.8	84.009	PASS	70-125
CCV1	CCV	1	99125.6	100905.6	98.24	PASS	70-125	67055.9	71622.8	93.62	PASS	70-125
CCB1	CCB	1	90027.5	100905.6	89.22	PASS	70-125	61945.1	71622.8	86.49	PASS	70-125
N027429-001B-MSD	MSD	5	92897.5	100905.6	92.064	PASS	70-125	61593.7	71622.8	86	PASS	70-125
N027429-002B	SAMP	1	89560.6	100905.6	88.76	PASS	70-125	56737.1	71622.8	79.22	PASS	70-125
N027429-002B	SAMP	5	101837	100905.6	100.92	PASS	70-125	66404.6	71622.8	92.71	PASS	70-125
N027429-003B	SAMP	1	71992.8	100905.6	71.35	PASS	70-125	37311.2	71622.8	52.094	NR!	70-125
N027429-003B	SAMP	5	100434.3	100905.6	99.53	PASS	70-125	60166	71622.8	84.004	PASS	70-125
N027429-010B	SAMP	1	99097.8	100905.6	98.21	PASS	70-125	52928.6	71622.8	73.9	PASS	70-125
N027429-010B	SAMP	5	115536.4	100905.6	114.5	PASS	70-125	70445.6	71622.8	98.36	PASS	70-125
N027429-013B	SAMP	1	120782.6	100905.6	119.7	PASS	70-125	72956.6	71622.8	101.86	PASS	70-125
N027429-013B	SAMP	5	126714	100905.6	125.58	NR!	70-125	82352	71622.8	114.98	PASS	70-125
N027429-014B	SAMP	1	124303.7	100905.6	123.19	PASS	70-125	74628.4	71622.8	104.2	PASS	70-125
CCV2	CCV	1	119250.7	100905.6	118.18	PASS	70-125	80521.8	71622.8	112.42	PASS	70-125
CCB2	CCB	1	111865.6	100905.6	110.86	PASS	70-125	75977.9	71622.8	106.08	PASS	70-125
N027429-014B	SAMP	5	112610.8	100905.6	111.6	PASS	70-125	73489.8	71622.8	102.61	PASS	70-125
N027429-010B	SAMP	5	103727.1	100905.6	102.8	PASS	70-125	60077.8	71622.8	83.88	PASS	70-125

INTERNAL STANDARD: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027429-001B	SAMP	1	113719.3	100905.6	112.7	PASS	70-125	70913.3	71622.8	99.009	PASS	70-125
N027429-005B	SAMP	1	82301.2	100905.6	81.56	PASS	70-125	40135.9	71622.8	56.038	NR!	70-125
N027429-005B	SAMP	5	104156.3	100905.6	103.22	PASS	70-125	61623.7	71622.8	86.039	PASS	70-125
N027429-006B	SAMP	1	80307.7	100905.6	79.59	PASS	70-125	40573.6	71622.8	56.65	NR!	70-125
N027429-006B	SAMP	5	49560.1	100905.6	49.12	NR!	70-125	29967.3	71622.8	41.84	NR!	70-125
CCV3	CCV	1	95098.1	100905.6	94.24	PASS	70-125	66320.7	71622.8	92.6	PASS	70-125
CCB3	CCB	1	91612	100905.6	90.79	PASS	70-125	63641.2	71622.8	88.86	PASS	70-125
LLCCV1	CCV2	1	96017.3	100905.6	95.16	PASS	70-125	67613.8	71622.8	94.4	PASS	70-125
ICSA2	ICSA	1	104670	100905.6	103.73	PASS	70-125	63928	71622.8	89.26	PASS	70-125
ICSAB2	ICSAB	1	89241.1	100905.6	88.44	PASS	70-125	57088.7	71622.8	79.71	PASS	70-125
N027429-007B	SAMP	1	105893.3	100905.6	104.94	PASS	70-125	63844.2	71622.8	89.14	PASS	70-125
N027429-007B	SAMP	5	111266.5	100905.6	110.27	PASS	70-125	72043.8	71622.8	100.59	PASS	70-125
N027429-008B	SAMP	1	100769.4	100905.6	99.87	PASS	70-125	60982.4	71622.8	85.14	PASS	70-125
N027429-008B	SAMP	5	108411.1	100905.6	107.44	PASS	70-125	69418.1	71622.8	96.92	PASS	70-125
N027429-009B	SAMP	1	69802.5	100905.6	69.18	NR!	70-125	35765.7	71622.8	49.94	NR!	70-125
N027429-009B	SAMP	5	88033.8	100905.6	87.24	PASS	70-125	53281.2	71622.8	74.39	PASS	70-125
N027429-012B	SAMP	1	93384.3	100905.6	92.55	PASS	70-125	56129.5	71622.8	78.37	PASS	70-125
N027429-012B	SAMP	5	102300	100905.6	101.38	PASS	70-125	64967.6	71622.8	90.71	PASS	70-125
N027429-015B	SAMP	1	95989.5	100905.6	95.13	PASS	70-125	57897	71622.8	80.84	PASS	70-125
N027429-015B	SAMP	5	100653.8	100905.6	99.75	PASS	70-125	65682.6	71622.8	91.71	PASS	70-125
CCV4	CCV	1	95867.4	100905.6	95.007	PASS	70-125	64668.8	71622.8	90.29	PASS	70-125
CCB4	CCB	1	88879.3	100905.6	88.082	PASS	70-125	60895.6	71622.8	85.023	PASS	70-125
N027429-016C	SAMP	1	82401	100905.6	81.66	PASS	70-125	49191.7	71622.8	68.68	NR!	70-125
N027429-016C	SAMP	5	94865.2	100905.6	94.014	PASS	70-125	61140.7	71622.8	85.36	PASS	70-125
N027429-017C	SAMP	1	86397.4	100905.6	85.62	PASS	70-125	51470	71622.8	71.86	PASS	70-125
N027429-017C	SAMP	5	95760.3	100905.6	94.9	PASS	70-125	60270	71622.8	84.15	PASS	70-125
N027429-018C	SAMP	1	71729.5	100905.6	71.086	PASS	70-125	38376.2	71622.8	53.58	NR!	70-125
N027429-018C	SAMP	5	92780	100905.6	91.95	PASS	70-125	56373.7	71622.8	78.71	PASS	70-125
N027429-020C	SAMP	1	80451.1	100905.6	79.73	PASS	70-125	40763.5	71622.8	56.91	NR!	70-125
N027429-020C	SAMP	5	91829.5	100905.6	91.005	PASS	70-125	53746	71622.8	75.04	PASS	70-125
N027429-010B	SAMP	25	57889.3	100905.6	57.37	NR!	70-125	36020.6	71622.8	50.29	NR!	70-125
CCV5	CCV	1	93436.5	100905.6	92.6	PASS	70-125	63036.8	71622.8	88.012	PASS	70-125
CCB5	CCB	1	88581.5	100905.6	87.79	PASS	70-125	59803.5	71622.8	83.5	PASS	70-125
LLCCV2	CCV2	1	92209.3	100905.6	91.38	PASS	70-125	63981.7	71622.8	89.33	PASS	70-125
ICSA3	ICSA	1	86026.5	100905.6	85.25	PASS	70-125	53275.6	71622.8	74.38	PASS	70-125
ICSAB3	ICSAB	1	78846.8	100905.6	78.14	PASS	70-125	51034	71622.8	71.25	PASS	70-125

INTERNAL STANDARD: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					6 Li (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	80026.1	80026.1	100	PASS	70-125	1968799.5	1968799.5	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	83729.5	80026.1	104.63	PASS	70-125	2037299.6	1968799.5	103.48	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	82030.9	80026.1	102.51	PASS	70-125	1988543.9	1968799.5	101	PASS	70-125
Std3-5/50 ppb	ICAL	1	82674	80026.1	103.31	PASS	70-125	1992874.8	1968799.5	101.22	PASS	70-125
Std4-10/100 ppb	ICAL	1	81502	80026.1	101.84	PASS	70-125	1981881.9	1968799.5	100.66	PASS	70-125
Std5-20/200 ppb	ICAL	1	78272.6	80026.1	97.81	PASS	70-125	1902472.7	1968799.5	96.63	PASS	70-125
Std6-40/400 ppb	ICAL	1	77364.2	80026.1	96.67	PASS	70-125	1911101.5	1968799.5	97.069	PASS	70-125
Std7-100/1000 ppb	ICAL	1	75878.8	80026.1	94.82	PASS	70-125	1839142.1	1968799.5	93.41	PASS	70-125
Std8-200/2000 ppb	ICAL	1	73386.3	80026.1	91.7	PASS	70-125	1771009.7	1968799.5	89.95	PASS	70-125
ICV	ICV	1	87124.5	80026.1	108.87	PASS	70-125	2133726.1	1968799.5	108.38	PASS	70-125
ICB	ICB	1	73432.3	80026.1	91.76	PASS	70-125	1761920.6	1968799.5	89.49	PASS	70-125
LLICV	CCV1	1	70814.1	80026.1	88.49	PASS	70-125	1774841	1968799.5	90.15	PASS	70-125
ICSA1	ICSA	1	63373.6	80026.1	79.19	PASS	70-125	1773006	1968799.5	90.055	PASS	70-125
ICSAB1	ICSAB	1	75429.7	80026.1	94.26	PASS	70-125	1972981	1968799.5	100.21	PASS	70-125
LLICV	CCV1	1	67442	80026.1	84.28	PASS	70-125	1616383.9	1968799.5	82.1	PASS	70-125
MB-65978	MBLK	1	66813.9	80026.1	83.49	PASS	70-125	1538932.1	1968799.5	78.17	PASS	70-125
LCS-65978	LCS	1	77765.5	80026.1	97.18	PASS	70-125	1805314.6	1968799.5	91.7	PASS	70-125
N027429-001B	SAMP	1	54232.1	80026.1	67.77	NR!	70-125	1396654.6	1968799.5	70.94	PASS	70-125
N027429-001B	SAMP	5	65559	80026.1	81.92	PASS	70-125	1634326.8	1968799.5	83.011	PASS	70-125
N027429-001B	SAMP	25	67065.3	80026.1	83.8	PASS	70-125	1657801.6	1968799.5	84.2	PASS	70-125
N027429-001B-PS	PS	1	58727.7	80026.1	73.39	PASS	70-125	1553880.3	1968799.5	78.93	PASS	70-125
N027429-001B-PS	PS	5	69953.8	80026.1	87.41	PASS	70-125	1787396.1	1968799.5	90.79	PASS	70-125
N027429-001B-MS	MS	1	65689.4	80026.1	82.085	PASS	70-125	1602902.5	1968799.5	81.42	PASS	70-125
N027429-001B-MS	MS	5	72462.2	80026.1	90.55	PASS	70-125	1920293.1	1968799.5	97.54	PASS	70-125
N027429-001B-MSD	MSD	1	66225	80026.1	82.75	PASS	70-125	1867924.4	1968799.5	94.88	PASS	70-125
CCV1	CCV	1	76199.2	80026.1	95.22	PASS	70-125	1957594.4	1968799.5	99.43	PASS	70-125
CCB1	CCB	1	71894	80026.1	89.84	PASS	70-125	1792503.9	1968799.5	91.046	PASS	70-125
N027429-001B-MSD	MSD	5	68878.1	80026.1	86.07	PASS	70-125	1826016.3	1968799.5	92.75	PASS	70-125
N027429-002B	SAMP	1	62235	80026.1	77.77	PASS	70-125	1740996.6	1968799.5	88.43	PASS	70-125
N027429-002B	SAMP	5	76958.3	80026.1	96.17	PASS	70-125	1981841.2	1968799.5	100.66	PASS	70-125
N027429-003B	SAMP	1	39096	80026.1	48.85	NR!	70-125	622978.9	1968799.5	31.64	NR!	70-125
N027429-003B	SAMP	5	65726.1	80026.1	82.13	PASS	70-125	1777367	1968799.5	90.28	PASS	70-125
N027429-010B	SAMP	1	56052.2	80026.1	70.042	PASS	70-125	1156270.3	1968799.5	58.73	NR!	70-125
N027429-010B	SAMP	5	79061.5	80026.1	98.79	PASS	70-125	1911128	1968799.5	97.071	PASS	70-125
N027429-013B	SAMP	1	78830.3	80026.1	98.51	PASS	70-125	2071151.5	1968799.5	105.2	PASS	70-125
N027429-013B	SAMP	5	93866.7	80026.1	117.3	PASS	70-125	2273202.9	1968799.5	115.46	PASS	70-125
N027429-014B	SAMP	1	81017.7	80026.1	101.24	PASS	70-125	2137356	1968799.5	108.56	PASS	70-125
CCV2	CCV	1	92019.8	80026.1	114.99	PASS	70-125	2226996.8	1968799.5	113.11	PASS	70-125
CCB2	CCB	1	88320.8	80026.1	110.36	PASS	70-125	2059472.2	1968799.5	104.61	PASS	70-125
N027429-014B	SAMP	5	84642.3	80026.1	105.77	PASS	70-125	2006305.6	1968799.5	101.91	PASS	70-125
N027429-010B	SAMP	5	62538.1	80026.1	78.15	PASS	70-125	1847849.4	1968799.5	93.86	PASS	70-125

INTERNAL STANDARD: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					6 Li (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027429-001B	SAMP	1	76400	80026.1	95.47	PASS	70-125	2069931.4	1968799.5	105.14	PASS	70-125
N027429-005B	SAMP	1	44543.9	80026.1	55.66	NR!	70-125	562544.5	1968799.5	28.57	NR!	70-125
N027429-005B	SAMP	5	68500.9	80026.1	85.6	PASS	70-125	1613676	1968799.5	81.96	PASS	70-125
N027429-006B	SAMP	1	43026.5	80026.1	53.77	NR!	70-125	493166.5	1968799.5	25.049	NR!	70-125
N027429-006B	SAMP	5	37055.2	80026.1	46.3	NR!	70-125	884467.9	1968799.5	44.92	NR!	70-125
CCV3	CCV	1	73868.3	80026.1	92.31	PASS	70-125	1674652	1968799.5	85.06	PASS	70-125
CCB3	CCB	1	72090.6	80026.1	90.084	PASS	70-125	1669378.2	1968799.5	84.79	PASS	70-125
LLCCV1	CCV2	1	75979.4	80026.1	94.94	PASS	70-125	1798586.3	1968799.5	91.35	PASS	70-125
ICSA2	ICSA	1	70685.9	80026.1	88.33	PASS	70-125	1949497.7	1968799.5	99.02	PASS	70-125
ICSAB2	ICSAB	1	63967	80026.1	79.93	PASS	70-125	1657511.3	1968799.5	84.19	PASS	70-125
N027429-007B	SAMP	1	70386.6	80026.1	87.95	PASS	70-125	1824576.7	1968799.5	92.67	PASS	70-125
N027429-007B	SAMP	5	82145.4	80026.1	102.65	PASS	70-125	1962535.9	1968799.5	99.68	PASS	70-125
N027429-008B	SAMP	1	69240.6	80026.1	86.52	PASS	70-125	1742720.1	1968799.5	88.52	PASS	70-125
N027429-008B	SAMP	5	80580.1	80026.1	100.69	PASS	70-125	1939783.7	1968799.5	98.53	PASS	70-125
N027429-009B	SAMP	1	40296.2	80026.1	50.35	NR!	70-125	682248.8	1968799.5	34.65	NR!	70-125
N027429-009B	SAMP	5	58475.6	80026.1	73.071	PASS	70-125	1439962	1968799.5	73.14	PASS	70-125
N027429-012B	SAMP	1	59909.6	80026.1	74.86	PASS	70-125	1626612.5	1968799.5	82.62	PASS	70-125
N027429-012B	SAMP	5	74094.2	80026.1	92.59	PASS	70-125	1786890.4	1968799.5	90.76	PASS	70-125
N027429-015B	SAMP	1	64769.3	80026.1	80.94	PASS	70-125	1653492	1968799.5	83.98	PASS	70-125
N027429-015B	SAMP	5	75223.6	80026.1	94	PASS	70-125	1772355.2	1968799.5	90.022	PASS	70-125
CCV4	CCV	1	74498.6	80026.1	93.093	PASS	70-125	1690420.3	1968799.5	85.86	PASS	70-125
CCB4	CCB	1	70534	80026.1	88.14	PASS	70-125	1595603	1968799.5	81.044	PASS	70-125
N027429-016C	SAMP	1	54586.5	80026.1	68.21	NR!	70-125	1335622.2	1968799.5	67.84	NR!	70-125
N027429-016C	SAMP	5	69249.7	80026.1	86.53	PASS	70-125	1657924.8	1968799.5	84.21	PASS	70-125
N027429-017C	SAMP	1	58198	80026.1	72.72	PASS	70-125	1396265.4	1968799.5	70.92	PASS	70-125
N027429-017C	SAMP	5	69669.3	80026.1	87.058	PASS	70-125	1629876.9	1968799.5	82.79	PASS	70-125
N027429-018C	SAMP	1	42466.6	80026.1	53.066	NR!	70-125	864737.8	1968799.5	43.92	NR!	70-125
N027429-018C	SAMP	5	62527.2	80026.1	78.13	PASS	70-125	1511647.2	1968799.5	76.78	PASS	70-125
N027429-020C	SAMP	1	45262.5	80026.1	56.56	NR!	70-125	884787.6	1968799.5	44.94	NR!	70-125
N027429-020C	SAMP	5	61769.8	80026.1	77.19	PASS	70-125	1456896.4	1968799.5	74	PASS	70-125
N027429-010B	SAMP	25	42792.5	80026.1	53.47	NR!	70-125	1154309.6	1968799.5	58.63	NR!	70-125
CCV5	CCV	1	74899.9	80026.1	93.59	PASS	70-125	1567248.3	1968799.5	79.6	PASS	70-125
CCB5	CCB	1	70671.4	80026.1	88.31	PASS	70-125	1510529.6	1968799.5	76.72	PASS	70-125
LLCCV2	CCV2	1	74736.8	80026.1	93.39	PASS	70-125	1571887.2	1968799.5	79.84	PASS	70-125
ICSA3	ICSA	1	64316.3	80026.1	80.37	PASS	70-125	1450003.7	1968799.5	73.65	PASS	70-125
ICSAB3	ICSAB	1	59026.5	80026.1	73.76	PASS	70-125	1459934.7	1968799.5	74.15	PASS	70-125

INTERNAL STANDARD: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	2326433.2	2326433.2	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	2401346.4	2326433.2	103.22	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	2383538.1	2326433.2	102.45	PASS	70-125
Std3-5/50 ppb	ICAL	1	2397726.3	2326433.2	103.06	PASS	70-125
Std4-10/100 ppb	ICAL	1	2358374.5	2326433.2	101.37	PASS	70-125
Std5-20/200 ppb	ICAL	1	2314981.8	2326433.2	99.51	PASS	70-125
Std6-40/400 ppb	ICAL	1	2303329.7	2326433.2	99.007	PASS	70-125
Std7-100/1000 ppb	ICAL	1	2207491.6	2326433.2	94.89	PASS	70-125
Std8-200/2000 ppb	ICAL	1	2186879.4	2326433.2	94.001	PASS	70-125
ICV	ICV	1	2578026.8	2326433.2	110.81	PASS	70-125
ICB	ICB	1	2187637.1	2326433.2	94.034	PASS	70-125
LLICV	CCV1	1	2183336.5	2326433.2	93.85	PASS	70-125
ICSA1	ICSA	1	1869023.8	2326433.2	80.34	PASS	70-125
ICSAB1	ICSAB	1	2082964.3	2326433.2	89.53	PASS	70-125
LLICV	CCV1	1	1990058.2	2326433.2	85.54	PASS	70-125
MB-65978	MBLK	1	1928565	2326433.2	82.9	PASS	70-125
LCS-65978	LCS	1	2278421.4	2326433.2	97.94	PASS	70-125
N027429-001B	SAMP	1	1522406.7	2326433.2	65.44	NR!	70-125
N027429-001B	SAMP	5	1867085.6	2326433.2	80.26	PASS	70-125
N027429-001B	SAMP	25	1972104.5	2326433.2	84.77	PASS	70-125
N027429-001B-PS	PS	1	1632487.4	2326433.2	70.17	PASS	70-125
N027429-001B-PS	PS	5	1981169.7	2326433.2	85.16	PASS	70-125
N027429-001B-MS	MS	1	1836790	2326433.2	78.95	PASS	70-125
N027429-001B-MS	MS	5	2070143	2326433.2	88.98	PASS	70-125
N027429-001B-MSD	MSD	1	1858481.4	2326433.2	79.89	PASS	70-125
CCV1	CCV	1	2230719	2326433.2	95.89	PASS	70-125
CCB1	CCB	1	2091380	2326433.2	89.9	PASS	70-125
N027429-001B-MSD	MSD	5	2005529	2326433.2	86.21	PASS	70-125
N027429-002B	SAMP	1	1777823.8	2326433.2	76.42	PASS	70-125
N027429-002B	SAMP	5	2153037.4	2326433.2	92.55	PASS	70-125
N027429-003B	SAMP	1	1049866.3	2326433.2	45.13	NR!	70-125
N027429-003B	SAMP	5	1871907.5	2326433.2	80.46	PASS	70-125
N027429-010B	SAMP	1	1516468	2326433.2	65.18	NR!	70-125
N027429-010B	SAMP	5	2198120.2	2326433.2	94.48	PASS	70-125
N027429-013B	SAMP	1	2256179.2	2326433.2	96.98	PASS	70-125
N027429-013B	SAMP	5	2583818.3	2326433.2	111.06	PASS	70-125
N027429-014B	SAMP	1	2245164	2326433.2	96.51	PASS	70-125
CCV2	CCV	1	2668512.8	2326433.2	114.7	PASS	70-125
CCB2	CCB	1	2519722.2	2326433.2	108.31	PASS	70-125
N027429-014B	SAMP	5	2355082.4	2326433.2	101.23	PASS	70-125
N027429-010B	SAMP	5	1902124.7	2326433.2	81.76	PASS	70-125

INTERNAL STANDARD: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N027429-001B	SAMP	1	2133352.9	2326433.2	91.7	PASS	70-125
N027429-005B	SAMP	1	1112927.7	2326433.2	47.84	NR!	70-125
N027429-005B	SAMP	5	1905003.9	2326433.2	81.89	PASS	70-125
N027429-006B	SAMP	1	1111387.8	2326433.2	47.77	NR!	70-125
N027429-006B	SAMP	5	915022	2326433.2	39.33	NR!	70-125
CCV3	CCV	1	2193426.9	2326433.2	94.28	PASS	70-125
CCB3	CCB	1	2127424.1	2326433.2	91.45	PASS	70-125
LLCCV1	CCV2	1	2205772.3	2326433.2	94.81	PASS	70-125
ICSA2	ICSA	1	2025252	2326433.2	87.054	PASS	70-125
ICSAB2	ICSAB	1	1795917.3	2326433.2	77.2	PASS	70-125
N027429-007B	SAMP	1	2012295	2326433.2	86.5	PASS	70-125
N027429-007B	SAMP	5	2282091.1	2326433.2	98.094	PASS	70-125
N027429-008B	SAMP	1	1925363.3	2326433.2	82.76	PASS	70-125
N027429-008B	SAMP	5	2224626	2326433.2	95.62	PASS	70-125
N027429-009B	SAMP	1	1032573.4	2326433.2	44.38	NR!	70-125
N027429-009B	SAMP	5	1650109	2326433.2	70.93	PASS	70-125
N027429-012B	SAMP	1	1724707.3	2326433.2	74.14	PASS	70-125
N027429-012B	SAMP	5	2028216.3	2326433.2	87.18	PASS	70-125
N027429-015B	SAMP	1	1797929.1	2326433.2	77.28	PASS	70-125
N027429-015B	SAMP	5	2031156.7	2326433.2	87.31	PASS	70-125
CCV4	CCV	1	2105435	2326433.2	90.5	PASS	70-125
CCB4	CCB	1	1979850.6	2326433.2	85.1	PASS	70-125
N027429-016C	SAMP	1	1497799.3	2326433.2	64.38	NR!	70-125
N027429-016C	SAMP	5	1899260.2	2326433.2	81.64	PASS	70-125
N027429-017C	SAMP	1	1540188	2326433.2	66.2	NR!	70-125
N027429-017C	SAMP	5	1893245.4	2326433.2	81.38	PASS	70-125
N027429-018C	SAMP	1	1108911.8	2326433.2	47.67	NR!	70-125
N027429-018C	SAMP	5	1747636.1	2326433.2	75.12	PASS	70-125
N027429-020C	SAMP	1	1189700.7	2326433.2	51.14	NR!	70-125
N027429-020C	SAMP	5	1714011	2326433.2	73.68	PASS	70-125
N027429-010B	SAMP	25	1160163.4	2326433.2	49.87	NR!	70-125
CCV5	CCV	1	2096107	2326433.2	90.1	PASS	70-125
CCB5	CCB	1	2008897.1	2326433.2	86.35	PASS	70-125
LLCCV2	CCV2	1	2099390.6	2326433.2	90.24	PASS	70-125
ICSA3	ICSA	1	1721892.6	2326433.2	74.014	PASS	70-125
ICSAB3	ICSAB	1	1808143	2326433.2	77.72	PASS	70-125

INTERNAL STANDARD: 171222B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	1119833.1	1119833.1	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	1136622.9	1119833.1	101.5	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	1118030.1	1119833.1	99.84	PASS	70-125
Std3-5/50 ppb	ICAL	1	1116169.6	1119833.1	99.67	PASS	70-125
Std4-10/100 ppb	ICAL	1	1111811.4	1119833.1	99.28	PASS	70-125
Std5-20/200 ppb	ICAL	1	1102494.4	1119833.1	98.45	PASS	70-125
Std6-40/400 ppb	ICAL	1	1104071.4	1119833.1	98.59	PASS	70-125
Std7-100/1000 ppb	ICAL	1	1074383.2	1119833.1	95.94	PASS	70-125
Std8-200/2000 ppb	ICAL	1	1060434.2	1119833.1	94.7	PASS	70-125
ICV	ICV	1	1073918.9	1119833.1	95.9	PASS	70-125
ICB	ICB	1	1074709.9	1119833.1	95.97	PASS	70-125
LLICV	CCV1	1	1069383.6	1119833.1	95.49	PASS	70-125
ICSA1	ICSA	1	962467.5	1119833.1	85.95	PASS	70-125
ICSAB1	ICSAB	1	816497	1119833.1	72.91	PASS	70-125
LLICV	CCV1	1	1339382.3	1119833.1	119.61	PASS	70-125
N027429-001B-MS	MS	1	994840.6	1119833.1	88.84	PASS	70-125
N027429-002B	SAMP	1	926817.1	1119833.1	82.76	PASS	70-125
N027429-006B	SAMP	5	913525.4	1119833.1	81.58	PASS	70-125
N027429-006B	SAMP	25	1030094.5	1119833.1	91.99	PASS	70-125
N027429-007B	SAMP	1	967358.6	1119833.1	86.38	PASS	70-125
N027429-002B	SAMP	1	1012097	1119833.1	90.38	PASS	70-125
CCV1	CCV	1	1215677	1119833.1	108.56	PASS	70-125
CCB1	CCB	1	1163418.3	1119833.1	103.89	PASS	70-125
CCV2	CCV	1	1316400.9	1119833.1	117.55	PASS	70-125
CCB2	CCB	1	1180087.2	1119833.1	105.38	PASS	70-125
LLCCV1	CCV2	1	1162958.8	1119833.1	103.85	PASS	70-125
ICSA2	ICSA	1	959638.1	1119833.1	85.69	PASS	70-125
ICSAB2	ICSAB	1	814821.5	1119833.1	72.76	PASS	70-125

INTERNAL STANDARD: 180102A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	97601	97601	100	PASS	70-125	64510.3	64510.3	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	95478.6	97601	97.83	PASS	70-125	64317.3	64510.3	99.7	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	91705.4	97601	93.96	PASS	70-125	61794.4	64510.3	95.79	PASS	70-125
Std3-5/50 ppb	ICAL	1	88382.8	97601	90.56	PASS	70-125	59241.5	64510.3	91.83	PASS	70-125
Std4-10/100 ppb	ICAL	1	83270.6	97601	85.32	PASS	70-125	56410.7	64510.3	87.44	PASS	70-125
Std5-20/200 ppb	ICAL	1	83597.6	97601	85.65	PASS	70-125	56876.4	64510.3	88.17	PASS	70-125
Std6-40/400 ppb	ICAL	1	81659.2	97601	83.67	PASS	70-125	55791.6	64510.3	86.48	PASS	70-125
Std7-100/1000 ppb	ICAL	1	82037.4	97601	84.054	PASS	70-125	55113.9	64510.3	85.43	PASS	70-125
Std8-200/2000 ppb	ICAL	1	81224.8	97601	83.22	PASS	70-125	54277.8	64510.3	84.14	PASS	70-125
ICV	ICV	1	78565.8	97601	80.5	PASS	70-125	53608.8	64510.3	83.1	PASS	70-125
ICB	ICB	1	78338.4	97601	80.26	PASS	70-125	54102.9	64510.3	83.87	PASS	70-125
LLICV	CCV1	1	78671.3	97601	80.61	PASS	70-125	54180.7	64510.3	83.99	PASS	70-125
ICSA1	ICSA	1	88684.6	97601	90.86	PASS	70-125	57302.3	64510.3	88.83	PASS	70-125
ICSAB1	ICSAB	1	93332.9	97601	95.63	PASS	70-125	60409	64510.3	93.64	PASS	70-125
LLICV	CCV1	1	92620.4	97601	94.9	PASS	70-125	62823.6	64510.3	97.39	PASS	70-125
N027429-002B	SAMP	1	89336.2	97601	91.53	PASS	70-125	60062.4	64510.3	93.11	PASS	70-125
N027429-006B	SAMP	5	95387.2	97601	97.73	PASS	70-125	59196.6	64510.3	91.76	PASS	70-125
N027429-007B	SAMP	1	111481.2	97601	114.22	PASS	70-125	71484.7	64510.3	110.81	PASS	70-125
N027429-010B	SAMP	25	109637.8	97601	112.33	PASS	70-125	71052.9	64510.3	110.14	PASS	70-125
CCV1	CCV	1	120577.2	97601	123.54	PASS	70-125	78913	64510.3	122.33	PASS	70-125
CCB1	CCB	1	114360	97601	117.17	PASS	70-125	74452.1	64510.3	115.41	PASS	70-125
CCV2	CCV	1	94821.5	97601	97.15	PASS	70-125	64861.7	64510.3	100.54	PASS	70-125
CCB2	CCB	1	85077.1	97601	87.17	PASS	70-125	59705.3	64510.3	92.55	PASS	70-125
CCV3	CCV	1	97096.4	97601	99.48	PASS	70-125	65459.4	64510.3	101.47	PASS	70-125
CCB3	CCB	1	87422.7	97601	89.57	PASS	70-125	60075.7	64510.3	93.13	PASS	70-125
CCV4	CCV	1	88426.7	97601	90.6	PASS	70-125	61642.6	64510.3	95.55	PASS	70-125
CCB4	CCB	1	84930.8	97601	87.018	PASS	70-125	59035.4	64510.3	91.51	PASS	70-125
LLCCV1	CCV2	1	83589.6	97601	85.64	PASS	70-125	58756.6	64510.3	91.081	PASS	70-125
ICSA2	ICSA	1	81431.3	97601	83.43	PASS	70-125	54632.1	64510.3	84.69	PASS	70-125
ICSAB2	ICSAB	1	83455.7	97601	85.51	PASS	70-125	55178.5	64510.3	85.53	PASS	70-125

INTERNAL STANDARD: 180102A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	77176.8	77176.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	76970.4	77176.8	99.73	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	74440	77176.8	96.45	PASS	70-125
Std3-5/50 ppb	ICAL	1	72038	77176.8	93.34	PASS	70-125
Std4-10/100 ppb	ICAL	1	69455.8	77176.8	90	PASS	70-125
Std5-20/200 ppb	ICAL	1	68255.5	77176.8	88.44	PASS	70-125
Std6-40/400 ppb	ICAL	1	67576	77176.8	87.56	PASS	70-125
Std7-100/1000 ppb	ICAL	1	65964.8	77176.8	85.47	PASS	70-125
Std8-200/2000 ppb	ICAL	1	65749.7	77176.8	85.19	PASS	70-125
ICV	ICV	1	64535.8	77176.8	83.62	PASS	70-125
ICB	ICB	1	65777.7	77176.8	85.23	PASS	70-125
LLICV	CCV1	1	65630.3	77176.8	85.039	PASS	70-125
ICSA1	ICSA	1	66550.7	77176.8	86.23	PASS	70-125
ICSAB1	ICSAB	1	70821.8	77176.8	91.77	PASS	70-125
LLICV	CCV1	1	78590.5	77176.8	101.83	PASS	70-125
N027429-002B	SAMP	1	66766.8	77176.8	86.51	PASS	70-125
N027429-006B	SAMP	5	66721.1	77176.8	86.45	PASS	70-125
N027429-007B	SAMP	1	82598.8	77176.8	107.03	PASS	70-125
N027429-010B	SAMP	25	85824.1	77176.8	111.2	PASS	70-125
CCV1	CCV	1	95066.3	77176.8	123.18	PASS	70-125
CCB1	CCB	1	88750.3	77176.8	115	PASS	70-125
CCV2	CCV	1	78234.1	77176.8	101.37	PASS	70-125
CCB2	CCB	1	73157.4	77176.8	94.79	PASS	70-125
CCV3	CCV	1	79403.1	77176.8	102.88	PASS	70-125
CCB3	CCB	1	71288.3	77176.8	92.37	PASS	70-125
CCV4	CCV	1	73060.3	77176.8	94.67	PASS	70-125
CCB4	CCB	1	70106.4	77176.8	90.84	PASS	70-125
LLCCV1	CCV2	1	69260.8	77176.8	89.74	PASS	70-125
ICSA2	ICSA	1	64378.7	77176.8	83.42	PASS	70-125
ICSAB2	ICSAB	1	63374.6	77176.8	82.12	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N027429
Test Method: EPA 6020
Analysis Date: 12/20/2017

Matrix: Groundwater
Batch No.: 65978

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to several analytes. The calculated concentration is <25RL.
~~Dilution test failed for Mn. However, PS passed criteria~~

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027429-001B DT 25X	Antimony	ug/L	0	NA	0		10
N027429-001B DT 5X	Arsenic	ug/L	0	NA	0.137223	100.00%	10
N027429-001B DT 5X	Barium	ug/L	14.51051	NA	22.76623	36.26%	10
N027429-001B DT 5X	Beryllium	ug/L	0	NA	0		10
N027429-001B DT 25X	Cadmium	ug/L	0	NA	0		10
N027429-001B DT 5X	Chromium	ug/L	2.673477	NA	2.748077	2.71%	10
N027429-001B DT 5X	Cobalt	ug/L	0	NA	0.103652	100.00%	10
N027429-001B DT 5X	Copper	ug/L	0	NA	0		10
N027429-001B DT 25X	Lead	ug/L	0	NA	0		10
N027429-001B DT 5X	Manganese	ug/L	~~14.51051~~ 20.93247	~~FAIL~~ Pass	19.4232	~~25.29%~~ 7.8	10
N027429-001B DT 5X	Molybdenum	ug/L	131.5986	PASS	139.5583	5.70%	10
N027429-001B DT 5X	Nickel	ug/L	1.695334	NA	1.203017	40.92%	10
N027429-001B DT 5X	Selenium	ug/L	0.512659	NA	0.414758	23.60%	10
N027429-001B DT 25X	Silver	ug/L	0	NA	0.503569	100.00%	10
N027429-001B DT 25X	Thallium	ug/L	0	NA	0.172082	100.00%	10
N027429-001B DT 5X	Vanadium	ug/L	0	NA	0		10
N027429-001B DT 5X	Zinc	ug/L	0	NA	0.606022	100.00%	10

Note: NA - Not applicable

Mary 01/03/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027429-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	120980
Client ID:	ZZZZZZ	Batch ID:	65978	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874750

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.718	0.10	10.00	0.1372	95.8	80	120				
Barium	31.126	1.0	10.00	22.77	83.6	80	120				
Beryllium	9.249	0.50	10.00	0	92.5	80	120				
Cobalt	9.200	0.50	10.00	0.1037	91.0	80	120				
Copper	8.521	1.0	10.00	0	85.2	80	120				
Manganese	114.056	0.50	100.0	19.42	94.6	80	120				
Molybdenum	148.038	0.50	10.00	139.6	84.8	80	120				
Nickel	11.120	1.0	10.00	1.203	99.2	80	120				
Selenium	9.278	0.50	10.00	0.4148	88.6	80	120				
Vanadium	10.150	1.0	10.00	0	102	80	120				
Zinc	113.727	10	100.0	0.6060	113	80	120				

Sample ID	N027429-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	120980
Client ID:	ZZZZZZ	Batch ID:	65978	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874751

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.156	2.5	10.00	0	102	80	120				
Cadmium	1.544	2.5	10.00	0	15.4	80	120				S
Lead	9.228	5.0	10.00	0	92.3	80	120				
Silver	11.450	2.5	10.00	0.5036	109	80	120				
Thallium	10.458	2.5	10.00	0.1721	103	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N027429-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	120980
Client ID:	ZZZZZZ	Batch ID:	65978	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874681

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.920	1.0	10.00	2.748	91.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

EPA 7470A
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65961
ASSET #: N027429

Instrument ID: AA-01
Analyst: MG
Date Analyzed: 12/8/2017

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[X] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)			X			
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.			X			
7. Are ICSA and AB within ± 20% of expected value?			X			
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)			X			
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).			X			
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEL Date: 12/21/17

2nd Level Reviewer Mary 12/21/2017 Date: ____

SAMPLE CALCULATION

SAMPLE CALCULATION

WORKORDER NO: N027429
TEST METHOD: EPA 7470
MATRIX: Groundwater

FORMULA:

Calculate the Mercury concentration in ug/L in the sample is as follows:

Mercury, ug/L = A * DF

where:
A = ug/L, instrument calculated concentration
DF = Dilution factor

For Sample **N027429-001B** , the concentration in ug/L is calculated as follows:

Mercury, ug/L = 0.00496 * 1

Mercury, ug/L = 0.00496

Reporting results in two significant figures,

Mercury, ug/L = 0.0050

Since reporting limit is 0.20. ug/L,

Mercury, ug/L = ND

% RSD SUMMARY

RSD SUMMARY: 171208WA

Instrument ID: AA-01

Sample Name	Type	DF	Concentration	RSD	Criteria	Comment
Calibration Zero	IBLK	1	0	9.5	20	PASS
Standard #1	ICAL	1	0.2	3.53	20	PASS
Standard #2	ICAL	1	1	0.42	20	PASS
Standard #3	ICAL	1	5	1.014	20	PASS
Standard #4	ICAL	1	10	0.78	20	PASS
Standard #5	ICAL	1	20	1.17	20	PASS
ICV	ICV	1	10.10106	0.48	20	PASS
ICB	ICB	1	-0.02796	23.89	20	<PQL
CCV1	CCV	1	9.94851	0.64	20	PASS
CCB1	CCB	1	-0.0363	20.39	20	<PQL
MB-65961	MBLK	1	0.01415	88.69	20	<PQL
LCS-65961	LCS	1	4.82204	0.94	20	PASS
N027406-001D-MS	MS	1	4.75136	0.93	20	PASS
N027406-001D-MSD	MSD	1	4.80558	0.62	20	PASS
N027406-001D	SAMP	1	0.01676	41.41	20	<PQL
N027406-002D	SAMP	1	0.03731	46.53	20	<PQL
N027406-003D	SAMP	1	0.11187	5.3	20	PASS
N027406-004D	SAMP	1	0.11666	4.84	20	PASS
CCV2	CCV	1	10.02976	0.11	20	PASS
CCB2	CCB	1	0.00159	517.61	20	<PQL
N027429-001B	SAMP	1	0.00496	298.79	20	<PQL
N027429-002B	SAMP	1	0.04807	16.58	20	PASS
N027429-003B	SAMP	1	0.09088	7.78	20	PASS
N027429-010B	SAMP	1	0.08427	9.019	20	PASS
N027429-013B	SAMP	1	0.063	18.54	20	PASS
N027429-014B	SAMP	1	0.03618	7.44	20	PASS
CCV3	CCV	1	10.25345	0.25	20	PASS
CCB3	CCB	1	0.0551	10.11	20	PASS

ANALYSIS RUN LOG

INJECTION LOG: 171208WA

Instrument ID: AA-01

Sample ID	Type	DF	Date	Time	Comments
Calibration Zero	IBLK	1	12/8/2017	12:30:01	Reported
Standard #1	ICAL	1	12/8/2017	12:32:43	Reported
Standard #2	ICAL	1	12/8/2017	12:35:25	Reported
Standard #3	ICAL	1	12/8/2017	12:38:08	Reported
Standard #4	ICAL	1	12/8/2017	12:40:51	Reported
Standard #5	ICAL	1	12/8/2017	12:43:36	Reported
ICV	ICV	1	12/8/2017	12:46:18	Reported
ICB	ICB	1	12/8/2017	12:48:59	Reported
MB-65960	MBLK	1	12/8/2017	12:51:42	Reported
LCS-65960	LCS	1	12/8/2017	12:54:25	Reported
N027406-001C-MS	MS	1	12/8/2017	12:57:09	Reported
N027406-001C-MSD	MSD	1	12/8/2017	12:59:52	Reported
N027406-001C	SAMP	1	12/8/2017	13:02:33	Reported
N027406-002C	SAMP	1	12/8/2017	13:05:15	Reported
N027406-003C	SAMP	1	12/8/2017	13:07:58	Reported
N027406-004C	SAMP	1	12/8/2017	13:10:42	Reported
N027422-001B	SAMP	1	12/8/2017	13:13:26	Reported
N027422-002B	SAMP	1	12/8/2017	13:16:10	Reported
CCV1	CCV	1	12/8/2017	13:18:54	Reported
CCB1	CCB	1	12/8/2017	13:21:36	Reported
N027422-003B	SAMP	1	12/8/2017	13:24:18	Reported
N027432-001B	SAMP	1	12/8/2017	13:27:00	Reported
MB-65961	MBLK	1	12/8/2017	13:29:43	Reported
LCS-65961	LCS	1	12/8/2017	13:32:26	Reported
N027406-001D-MS	MS	1	12/8/2017	13:35:10	Reported
N027406-001D-MSD	MSD	1	12/8/2017	13:37:55	Reported
N027406-001D	SAMP	1	12/8/2017	13:40:40	Reported
N027406-002D	SAMP	1	12/8/2017	13:43:24	Reported
N027406-003D	SAMP	1	12/8/2017	13:46:07	Reported
N027406-004D	SAMP	1	12/8/2017	13:48:51	Reported
CCV2	CCV	1	12/8/2017	13:51:34	Reported
CCB2	CCB	1	12/8/2017	13:54:16	Reported
N027429-001B	SAMP	1	12/8/2017	13:57:00	Reported
N027429-002B	SAMP	1	12/8/2017	13:59:45	Reported
N027429-003B	SAMP	1	12/8/2017	14:02:30	Reported
N027429-010B	SAMP	1	12/8/2017	14:05:16	Reported
N027429-013B	SAMP	1	12/8/2017	14:08:01	Reported
N027429-014B	SAMP	1	12/8/2017	14:10:45	Reported
CCV3	CCV	1	12/8/2017	14:13:28	Reported
CCB3	CCB	1	12/8/2017	14:16:10	Reported

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/8/2017 8:00:00**
Prep End Date: **12/8/2017 11:30:00**
Reviewed/ Date: 12/21/2017
Initials/ Date: for MG

Prep Batch **65961** Prep Code: **7470_PR_DIS** Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**Db-1-26**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-65961	Aqueous		25	☐	0	0	50	2.000		
MB-65961	Aqueous		25	☐	0	0	50	2.000		
N027406-001D	Water	<2	25	☐	0	0	50	2.000		
N027406-001D-MS	Water	<2	25	☐	0	0	50	2.000		
N027406-001D-MS	Water	<2	25	☐	0	0	50	2.000		
N027406-002D	Water	<2	25	☐	0	0	50	2.000		
N027406-003D	Water	<2	25	☐	0	0	50	2.000		
N027406-004D	Water	<2	25	☐	0	0	50	2.000		
N027429-001B	Groundwater	<2	25	☐	0	0	50	2.000		
N027429-002B	Groundwater	<2	25	☐	0	0	50	2.000		
N027429-003B	Groundwater	<2	25	☐	0	0	50	2.000		
N027429-010B	Groundwater	<2	25	☐	0	0	50	2.000		
N027429-013B	Groundwater	<2	25	☐	0	0	50	2.000		
N027429-014B	Groundwater	<2	25	☐	0	0	50	2.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8541	Potassium Persulfate
8755	POTASSIUM PERMANGANATE
9306	SODIUM CHLORIDE
9307	HYDROXYGLAMINE HCl
9465	sulfuric acid
9601	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171109	500 ppb Hg ICAL/CCV	ICAL/CCV	0.25
2MWST-171109	500 ppb Hg ICV/LCS/LCSD/MS/MSD	ICV/LCS/MS/M	0.25

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 171208WA

Instrument ID: AA-01

	Stock	Working
Standard Concentration:	1,000 PPM	500 PPB
ICAL Standard:	2MSST-161109A -160906C	2MWST-171109B A

Comments:

Calibration Acceptance Criteria: > 0.995 Correlation

Sample ID	Date	Time	Concentration	Units	Ave Absorbance	Comments	R
Calibration Zero	12/08/2017	12:30:01	0	PPB	57.80202	Reported	
Standard #1	12/08/2017	12:32:43	0.2	PPB	111.37199	Reported	
Standard #2	12/08/2017	12:35:25	1	PPB	533.23494	Reported	
Standard #3	12/08/2017	12:38:08	5	PPB	2450.16978	Reported	
Standard #4	12/08/2017	12:40:51	10	PPB	4853.4376	Reported	
Standard #5	12/08/2017	12:43:36	20	PPB	9587.7029	Reported	1.000

* Please note that the instrument printout for the 'Average Absorbance' were represented in three significant figures. The exact values are represented in the ICAL Summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID **ICV**	SampType: **ICV**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120675**
Client ID: **ICV**	Batch ID: **R120675**	TestNo: **EPA 7470A**		Analysis Date: **12/8/2017**	SeqNo: **2856714**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.101	0.20	10.00	0	101	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120675**
Client ID: **CCV**	Batch ID: **R120675**	TestNo: **EPA 7470A**		Analysis Date: **12/8/2017**	SeqNo: **2856726**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	9.949	0.20	10.00	0	99.5	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120675**
Client ID: **CCV**	Batch ID: **R120675**	TestNo: **EPA 7470A**		Analysis Date: **12/8/2017**	SeqNo: **2856738**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.030	0.20	10.00	0	100	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120675**
Client ID: **CCV**	Batch ID: **R120675**	TestNo: **EPA 7470A**		Analysis Date: **12/8/2017**	SeqNo: **2856746**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.253	0.20	10.00	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027429
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID **ICB**	SampType: **ICB**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120675**
Client ID: **ICB**	Batch ID: **R120675**	TestNo: **EPA 7470A**		Analysis Date: **12/8/2017**	SeqNo: **2856715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	-0.02796	0.10									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120675**
Client ID: **CCB**	Batch ID: **R120675**	TestNo: **EPA 7470A**		Analysis Date: **12/8/2017**	SeqNo: **2856727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	-0.0363	0.20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120675**
Client ID: **CCB**	Batch ID: **R120675**	TestNo: **EPA 7470A**		Analysis Date: **12/8/2017**	SeqNo: **2856739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.002	0.20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120675**
Client ID: **CCB**	Batch ID: **R120675**	TestNo: **EPA 7470A**		Analysis Date: **12/8/2017**	SeqNo: **2856747**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.055	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

MDL STUDY

Method Detection Limits

Method Name:	Mercury
Method Number:	EPA Method 7470/245.1
Date of Analysis:	4/5/2016
Analyst:	Claire Ignacio/ Amy Mata
Matrix:	Water
Spike Concentration:	0.2 ug/L

Compound	#1	#2	#3	#4	#5	#6	#7	SD	MDL	LOD	PQL
Mercury, ug/L	0.29	0.30	0.29	0.24	0.30	0.24	0.30	0.028	0.0870	0.10	0.20

LOD: **0.10 ug/L**
LOQ: **0.20 ug/L**

LOD Verification @ 0.10 ug/L

Spike Amount: ug/L	0.100
Actual Amount: ug/L	0.130
% Recovery:	**130%**

LOQ Verification @ 0.20 ug/L

Spike Amount: ug/L	0.200
Actual Amount: ug/L	0.210
% Recovery:	**105%**

December 22, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027430

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 07, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburcao for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Subcontracted Analyses:

Oxygen/Deuterium was subcontracted to Zymax- Pittsburg,PA.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (3.5 ug/L) and hexavalent chromium (0 ug/L) for sample N027430-002 (MW-49-275-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (1.7 ug/L) and hexavalent chromium (0 ug/L) for sample N027430-012 (MW-33-040-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Dilution was necessary for samples N027430-002, -012, -014, -017 and -018 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 300.0:

Dilution was necessary for some samples due to precipitation upon the addition of eluent.

Matrix Spike (MS) is outside recovery criteria for Bromide in QC sample N027430-004CMS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N027430-002B-MS1 and N027430-002B-MSD1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N027430-002B-MS1 and N027430-002B-MSD1 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N027430-004B-MS2 and N027430-004B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Molybdenum in QC samples N027430-002B-MS and N027430-002B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Manganese in QC samples N027430-002B-MS and N027430-002B-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary on some analytes for samples N027430-002, -012, -014, -015, -016, -017 and -018 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Because the results for total dissolved chromium (3.5 ug/L) and hexavalent chromium (0 ug/L) for sample N027430-002 (MW-49-275-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 3.4 and 0.07 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (1.7 ug/L) and hexavalent chromium (0 ug/L) for sample N027430-012 (MW-33-040-Q417) are discrepant, sample from both the total dissolved

chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.5 and 0 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027430
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027430-001A	MW-49-275-EB-Q417	Groundwater	12/7/2017 1:15:00 PM	12/7/2017	12/22/2017
N027430-002A	MW-49-275-Q417	Groundwater	12/7/2017 1:47:00 PM	12/7/2017	12/22/2017
N027430-002B	MW-49-275-Q417	Groundwater	12/7/2017 1:47:00 PM	12/7/2017	12/22/2017
N027430-002C	MW-49-275-Q417	Groundwater	12/7/2017 1:47:00 PM	12/7/2017	12/22/2017
N027430-002D	MW-49-275-Q417	Groundwater	12/7/2017 1:47:00 PM	12/7/2017	12/22/2017
N027430-003A	MW-29-EB-Q417	Groundwater	12/7/2017 12:20:00 PM	12/7/2017	12/22/2017
N027430-004A	MW-29-Q417	Groundwater	12/7/2017 1:00:00 PM	12/7/2017	12/22/2017
N027430-004B	MW-29-Q417	Groundwater	12/7/2017 1:00:00 PM	12/7/2017	12/22/2017
N027430-004C	MW-29-Q417	Groundwater	12/7/2017 1:00:00 PM	12/7/2017	12/22/2017
N027430-004D	MW-29-Q417	Groundwater	12/7/2017 1:00:00 PM	12/7/2017	12/22/2017
N027430-005A	MW-28-025-EB-Q417	Groundwater	12/7/2017 11:25:00 AM	12/7/2017	12/22/2017
N027430-006A	MW-28-025-Q417	Groundwater	12/7/2017 12:01:00 PM	12/7/2017	12/22/2017
N027430-006B	MW-28-025-Q417	Groundwater	12/7/2017 12:01:00 PM	12/7/2017	12/22/2017
N027430-006C	MW-28-025-Q417	Groundwater	12/7/2017 12:01:00 PM	12/7/2017	12/22/2017
N027430-006D	MW-28-025-Q417	Groundwater	12/7/2017 12:01:00 PM	12/7/2017	12/22/2017
N027430-007A	MW-28-090-EB-Q417	Groundwater	12/7/2017 12:20:00 PM	12/7/2017	12/22/2017
N027430-008A	MW-28-090-Q417	Groundwater	12/7/2017 12:10:00 PM	12/7/2017	12/22/2017
N027430-008B	MW-28-090-Q417	Groundwater	12/7/2017 12:10:00 PM	12/7/2017	12/22/2017
N027430-008C	MW-28-090-Q417	Groundwater	12/7/2017 12:10:00 PM	12/7/2017	12/22/2017
N027430-008D	MW-28-090-Q417	Groundwater	12/7/2017 12:10:00 PM	12/7/2017	12/22/2017
N027430-009A	MW-723-Q417	Groundwater	12/7/2017 3:25:00 PM	12/7/2017	12/22/2017
N027430-010A	MW-724-Q417	Groundwater	12/7/2017 3:30:00 PM	12/7/2017	12/22/2017
N027430-011A	MW-33-040-EB-Q417	Groundwater	12/7/2017 9:15:00 AM	12/7/2017	12/22/2017
N027430-012A	MW-33-040-Q417	Groundwater	12/7/2017 9:55:00 AM	12/7/2017	12/22/2017
N027430-012B	MW-33-040-Q417	Groundwater	12/7/2017 9:55:00 AM	12/7/2017	12/22/2017
N027430-012C	MW-33-040-Q417	Groundwater	12/7/2017 9:55:00 AM	12/7/2017	12/22/2017
N027430-012D	MW-33-040-Q417	Groundwater	12/7/2017 9:55:00 AM	12/7/2017	12/22/2017
N027430-012E	MW-33-040-Q417	Groundwater	12/7/2017 9:55:00 AM	12/7/2017	12/22/2017
N027430-013A	MW-33-090-Q417	Groundwater	12/7/2017 8:47:00 AM	12/7/2017	12/22/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027430
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027430-013B	MW-33-090-Q417	Groundwater	12/7/2017 8:47:00 AM	12/7/2017	12/22/2017
N027430-013C	MW-33-090-Q417	Groundwater	12/7/2017 8:47:00 AM	12/7/2017	12/22/2017
N027430-013D	MW-33-090-Q417	Groundwater	12/7/2017 8:47:00 AM	12/7/2017	12/22/2017
N027430-013E	MW-33-090-Q417	Groundwater	12/7/2017 8:47:00 AM	12/7/2017	12/22/2017
N027430-014A	MW-33-150-Q417	Groundwater	12/7/2017 9:44:00 AM	12/7/2017	12/22/2017
N027430-014B	MW-33-150-Q417	Groundwater	12/7/2017 9:44:00 AM	12/7/2017	12/22/2017
N027430-014C	MW-33-150-Q417	Groundwater	12/7/2017 9:44:00 AM	12/7/2017	12/22/2017
N027430-014D	MW-33-150-Q417	Groundwater	12/7/2017 9:44:00 AM	12/7/2017	12/22/2017
N027430-014E	MW-33-150-Q417	Groundwater	12/7/2017 9:44:00 AM	12/7/2017	12/22/2017
N027430-015A	MW-33-210-Q417	Groundwater	12/7/2017 9:00:00 AM	12/7/2017	12/22/2017
N027430-015B	MW-33-210-Q417	Groundwater	12/7/2017 9:00:00 AM	12/7/2017	12/22/2017
N027430-015C	MW-33-210-Q417	Groundwater	12/7/2017 9:00:00 AM	12/7/2017	12/22/2017
N027430-015D	MW-33-210-Q417	Groundwater	12/7/2017 9:00:00 AM	12/7/2017	12/22/2017
N027430-015E	MW-33-210-Q417	Groundwater	12/7/2017 9:00:00 AM	12/7/2017	12/22/2017
N027430-016A	MW-46-175-Q417	Groundwater	12/7/2017 10:44:00 AM	12/7/2017	12/22/2017
N027430-016B	MW-46-175-Q417	Groundwater	12/7/2017 10:44:00 AM	12/7/2017	12/22/2017
N027430-016C	MW-46-175-Q417	Groundwater	12/7/2017 10:44:00 AM	12/7/2017	12/22/2017
N027430-016D	MW-46-175-Q417	Groundwater	12/7/2017 10:44:00 AM	12/7/2017	12/22/2017
N027430-016E	MW-46-175-Q417	Groundwater	12/7/2017 10:44:00 AM	12/7/2017	12/22/2017
N027430-017A	MW-46-205-Q417	Groundwater	12/7/2017 10:45:00 AM	12/7/2017	12/22/2017
N027430-017B	MW-46-205-Q417	Groundwater	12/7/2017 10:45:00 AM	12/7/2017	12/22/2017
N027430-017C	MW-46-205-Q417	Groundwater	12/7/2017 10:45:00 AM	12/7/2017	12/22/2017
N027430-018A	MW-49-365-Q417	Groundwater	12/7/2017 1:05:00 PM	12/7/2017	12/22/2017
N027430-018B	MW-49-365-Q417	Groundwater	12/7/2017 1:05:00 PM	12/7/2017	12/22/2017
N027430-018C	MW-49-365-Q417	Groundwater	12/7/2017 1:05:00 PM	12/7/2017	12/22/2017
N027430-018D	MW-49-365-Q417	Groundwater	12/7/2017 1:05:00 PM	12/7/2017	12/22/2017
N027430-019A	MW-722-Q417	Groundwater	12/7/2017 3:30:00 PM	12/7/2017	12/22/2017
N027430-020A	TW-02D-Q417	Groundwater	12/7/2017 12:58:00 PM	12/7/2017	12/22/2017
N027430-020B	TW-02D-Q417	Groundwater	12/7/2017 12:58:00 PM	12/7/2017	12/22/2017
N027430-020C	TW-02D-Q417	Groundwater	12/7/2017 12:58:00 PM	12/7/2017	12/22/2017

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-275-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	18000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	1400	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	5400	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 8:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	7700	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-365-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	25000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-020

Client Sample ID: TW-02D-Q417
Collection Date: 12/7/2017 12:58:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	4800	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N027429-005DDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **120747**
Client ID: **ZZZZZZ**	Batch ID: **R120747**	TestNo: **EPA 120.1**		Analysis Date: **12/8/2017**	SeqNo: **2860676**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	15840.000	0.10						15870	0.189	10	

Sample ID **N027430-002CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **120747**
Client ID: **ZZZZZZ**	Batch ID: **R120747**	TestNo: **EPA 120.1**		Analysis Date: **12/8/2017**	SeqNo: **2860691**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	17930.000	0.10						17890	0.223	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N027430-018CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120750
Client ID:	ZZZZZZ	Batch ID:	R120750	TestNo:	EPA 120.1			Analysis Date:	12/8/2017	SeqNo:	2860752

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	24900.000	0.10						24700	0.806	10	

Sample ID	N027459-003CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120750
Client ID:	ZZZZZZ	Batch ID:	R120750	TestNo:	EPA 120.1			Analysis Date:	12/8/2017	SeqNo:	2860769

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	11670.000	0.10						11690	0.171	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-275-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**			PrepDate	**12/12/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	14000	100	100		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**			PrepDate	**12/12/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	970	10	10		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	780	10	10		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3900	50	50		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	8400	100	100		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 8:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**			PrepDate	**12/12/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	5700	50	50		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	9000	100	100		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	11000	100	100		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**				PrepDate	**12/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	10000	100	100		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	12000	100	100		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-365-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	22000	200	200		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:58:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3300	33	33		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66025**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/12/2017**	RunNo: **120818**
Client ID: **LCSW**	Batch ID: **66025**	TestNo: **SM2540C**		Analysis Date: **12/12/2017**	SeqNo: **2865479**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	936.000	10	1000	0	93.6	80	120				

Sample ID **MB-66025**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/12/2017**	RunNo: **120818**
Client ID: **PBW**	Batch ID: **66025**	TestNo: **SM2540C**		Analysis Date: **12/12/2017**	SeqNo: **2865480**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N027430-002CDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/12/2017**	RunNo: **120818**
Client ID: **ZZZZZZ**	Batch ID: **66025**	TestNo: **SM2540C**		Analysis Date: **12/12/2017**	SeqNo: **2865485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	14560.000	100						13930	4.42	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66055** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/13/2017** RunNo: **120820**
Client ID: **LCSW** Batch ID: **66055** TestNo: **SM2540C** Analysis Date: **12/13/2017** SeqNo: **2865495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	953.000	10	1000	0	95.3	80	120				

Sample ID **MB-66055** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/13/2017** RunNo: **120820**
Client ID: **PBW** Batch ID: **66055** TestNo: **SM2540C** Analysis Date: **12/13/2017** SeqNo: **2865496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N027430-018CDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/13/2017** RunNo: **120820**
Client ID: **ZZZZZZ** Batch ID: **66055** TestNo: **SM2540C** Analysis Date: **12/13/2017** SeqNo: **2865501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	22760.000	200						21820	4.22	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-275-EB-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:15:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 11:07 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-275-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/11/2017 11:45 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	3.5	0.019	1.0		µg/L	1	12/19/2017 06:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-EB-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 12:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 12:23 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/19/2017 07:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-EB-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 11:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 12:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 01:01 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/19/2017 10:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-EB-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 01:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A** QC Batch: **R120833**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 01:57 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/19/2017 07:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-723-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 3:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 02:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-724-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 02:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-EB-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 04:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/11/2017 07:41 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	1.7	0.019	1.0		µg/L	1	12/19/2017 08:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 8:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	5.5	0.17	1.0		µg/L	5	12/11/2017 04:29 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	5.0	0.019	1.0		µg/L	1	12/19/2017 08:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	7.0	0.17	1.0		µg/L	5	12/11/2017 04:48 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	7.2	0.019	1.0		µg/L	1	12/19/2017 08:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A** QC Batch: **R120833**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	14	0.17	1.0		µg/L	5	12/11/2017 05:26 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	15	0.019	1.0		µg/L	1	12/19/2017 08:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211B** QC Batch: **R120834**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	11	0.17	1.0		µg/L	5	12/11/2017 09:53 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	11	0.019	1.0		µg/L	1	12/19/2017 09:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-017

Client Sample ID: MW-46-205-Q417
Collection Date: 12/7/2017 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211B** QC Batch: **R120834**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/11/2017 10:12 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/19/2017 09:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-365-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_171211B** QC Batch: **R120834**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/11/2017 10:31 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/19/2017 09:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-722-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 03:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-020

Client Sample ID: TW-02D-Q417
Collection Date: 12/7/2017 12:58:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A** QC Batch: **R120833**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	110	0.66	4.0		µg/L	20	12/11/2017 02:54 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	93	0.019	1.0		µg/L	1	12/19/2017 09:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R120833** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120833**
Client ID: **PBW** Batch ID: **R120833** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R120833** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120833**
Client ID: **LCSW** Batch ID: **R120833** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866007**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.161	0.20	5.000	0	103	90	110				

Sample ID **N027405-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120833**
Client ID: **ZZZZZZ** Batch ID: **R120833** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866008**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.424	1.0	5.000	4.203	104	90	110				

Sample ID **N027405-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120833**
Client ID: **ZZZZZZ** Batch ID: **R120833** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.452	1.0	5.000	0	109	90	110				

Sample ID **N027405-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120833**
Client ID: **ZZZZZZ** Batch ID: **R120833** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.692	1.0	5.000	1.529	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027430-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.068	0.20	1.000	0	107	90	110				

Sample ID **N027430-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.905	1.0	5.000	0.3715	90.7	90	110				

Sample ID **N027430-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.074	0.20	1.000	0	107	90	110				

Sample ID **N027430-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Sample ID **N027430-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866025**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027430-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866027

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.097	0.20	1.000	0	110	90	110				

Sample ID	N027430-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866031

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.056	0.20	1.000	0	106	90	110				

Sample ID	N027430-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866033

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.976	0.20	1.000	0	97.6	90	110				

Sample ID	N027430-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866035

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.057	0.20	1.000	0	106	90	110				

Sample ID	N027430-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866037

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.040	0.20	1.000	0	104	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027430-020AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866039**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	211.092	4.0	100.0	105.8	105	90	110				

Sample ID **N027430-019AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866043**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Sample ID **N027430-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866045**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.068	0.20	1.000	0	107	90	110				

Sample ID **N027430-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866047**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.554	1.0	5.000	5.490	101	90	110				

Sample ID **N027430-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866049**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.171	1.0	5.000	6.955	104	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027430-015AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	18.580	1.0	5.000	13.88	94.0	90	110				

Sample ID **N027405-006ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866054**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.215	1.0						4.203	0.273	20	

Sample ID **N027430-020AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866055**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	210.110	4.0	100.0	105.8	104	90	110	211.1	0.466	20	

Sample ID **N027430-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.371	1.0	5.000	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	LCS-R120834	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	LCSW	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866068

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.175	0.20	5.000	0	104	90	110				

Sample ID	MB-R120834	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	PBW	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866069

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	N027431-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866071

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9591.600	200	5000	4141	109	90	110				

Sample ID	N027431-006AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866072

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9630.200	200	5000	4141	110	90	110	9592	0.402	20	

Sample ID	N027428-002ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866076

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	546.890	20						549.7	0.509	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027428-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1059.800	20	500.0	549.7	102	90	110				

Sample ID **N027428-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0	108	90	110				

Sample ID **N027430-016AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866081**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	16.573	1.0	5.000	11.46	102	90	110				

Sample ID **N027430-017AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.899	1.0	5.000	0.8090	102	90	110				

Sample ID **N027430-018AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.580	1.0	5.000	0	91.6	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027431-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866089

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.637	1.0	5.000	0.3545	106	90	110				

Sample ID	N027431-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866091

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.256	1.0	5.000	0.2550	100	90	110				

Sample ID	N027431-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866093

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.104	1.0	5.000	0.2855	96.4	90	110				

Sample ID	N027431-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866095

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2844.640	40	1000	1798	105	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66020	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	120962
Client ID:	PBW	Batch ID:	66020	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2873342

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66020	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	120962
Client ID:	LCSW	Batch ID:	66020	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2873343

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.165	1.0	10.00	0	102	85	115				

Sample ID	N027430-002B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	120962
Client ID:	ZZZZZZ	Batch ID:	66020	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2873349

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	13.198	1.0	10.00	3.546	96.5	75	125				

Sample ID	N027430-002B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	120962
Client ID:	ZZZZZZ	Batch ID:	66020	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2873351

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	13.183	1.0	10.00	3.546	96.4	75	125	13.20	0.112	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-275-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	38	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	460	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	210	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	280	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	420	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 8:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	120	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	58	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	59	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	44	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	47	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-365-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	44	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:58:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	160	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R120816**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **LCSW**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	98.394	5.0	100.0	0	98.4	85	115				

Sample ID **MB-R120816**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **PBW**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N027430-002CDDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **ZZZZZZ**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865286**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	38.153	5.0						38.15	0	30	

Sample ID **N027431-002CMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **ZZZZZZ**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865300**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	196.787	5.0	100.0	99.40	97.4	75	125				

Sample ID **N027431-002CMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **ZZZZZZ**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	196.787	5.0	100.0	99.40	97.4	75	125	196.8	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-002

Client Sample ID: MW-49-275-Q417
Collection Date: 12/7/2017 1:47:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 12:09 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	8700	18	1000		mg/L	2000	12/15/2017 05:11 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	1400	4.6	100		mg/L	200	12/15/2017 05:26 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-004

Client Sample ID: MW-29-Q417
Collection Date: 12/7/2017 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/12/2017 11:23 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	210	0.46	25		mg/L	50	12/15/2017 01:36 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	140	0.46	10		mg/L	20	12/15/2017 02:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-006

Client Sample ID: MW-28-025-Q417
Collection Date: 12/7/2017 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/12/2017 10:22 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	110	0.18	10		mg/L	20	12/15/2017 05:41 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	270	0.46	10		mg/L	20	12/15/2017 05:41 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-008

Client Sample ID: MW-28-090-Q417
Collection Date: 12/7/2017 12:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 12:55 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	1900	4.6	250		mg/L	500	12/15/2017 06:12 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**				PrepDate			Analyst: **RAB**
Fluoride	1.9	0.032	0.50		mg/L	5	12/13/2017 09:32 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	570	1.1	25		mg/L	50	12/15/2017 06:27 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-012

Client Sample ID: MW-33-040-Q417
Collection Date: 12/7/2017 9:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/12/2017 11:54 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	4000	4.6	250		mg/L	500	12/15/2017 07:13 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Fluoride	12	0.13	2.0		mg/L	20	12/18/2017 10:49 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	1500	4.6	100		mg/L	200	12/15/2017 07:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-013

Client Sample ID: MW-33-090-Q417
Collection Date: 12/7/2017 8:47:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 01:10 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	2900	9.1	500		mg/L	1000	12/15/2017 07:44 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**				PrepDate			Analyst: **RAB**
Fluoride	2.2	0.032	0.50		mg/L	5	12/13/2017 11:19 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	730	2.3	50		mg/L	100	12/15/2017 07:59 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-014

Client Sample ID: MW-33-150-Q417
Collection Date: 12/7/2017 9:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 01:25 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	5100	18	1000		mg/L	2000	12/15/2017 08:14 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**				PrepDate			Analyst: **RAB**
Fluoride	2.4	0.032	0.50		mg/L	5	12/13/2017 11:34 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	840	2.3	50		mg/L	100	12/15/2017 08:29 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-015

Client Sample ID: MW-33-210-Q417
Collection Date: 12/7/2017 9:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 02:11 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	6400	18	1000		mg/L	2000	12/15/2017 08:45 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**				PrepDate			Analyst: **RAB**
Fluoride	1.8	0.032	0.50		mg/L	5	12/13/2017 11:49 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	1200	2.3	50		mg/L	100	12/15/2017 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-016

Client Sample ID: MW-46-175-Q417
Collection Date: 12/7/2017 10:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/13/2017 01:41 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	6100	9.1	500		mg/L	1000	12/15/2017 09:15 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	900	2.3	50		mg/L	100	12/15/2017 09:31 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/13/2017 01:56 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	7700	9.1	500		mg/L	1000	12/15/2017 10:17 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	900	2.3	50		mg/L	100	12/15/2017 10:32 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-018

Client Sample ID: MW-49-365-Q417
Collection Date: 12/7/2017 1:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 02:27 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	14000	46	2500		mg/L	5000	12/15/2017 10:47 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	1300	4.6	100		mg/L	200	12/15/2017 11:02 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-020

Client Sample ID: TW-02D-Q417
Collection Date: 12/7/2017 12:58:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 02:42 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	1800	4.6	250		mg/L	500	12/15/2017 04:09 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	370	1.1	25		mg/L	50	12/15/2017 04:40 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	LCS-R120771_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120771
Client ID:	LCSW	Batch ID:	R120771	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2863377

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.251	0.50	1.250	0	100	90	110				

Sample ID	MB-R120771_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120771
Client ID:	PBW	Batch ID:	R120771	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2863378

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	N027430-006CDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120771
Client ID:	ZZZZZZ	Batch ID:	R120771	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2863380

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50						0	0	20	

Sample ID	N027430-006CMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120771
Client ID:	ZZZZZZ	Batch ID:	R120771	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2863381

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.003	0.50	1.250	0	80.2	80	120				

Sample ID	N027430-006CMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120771
Client ID:	ZZZZZZ	Batch ID:	R120771	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2863382

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.036	0.50	1.250	0	82.9	80	120	1.003	3.25	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	N027430-004CMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120771
Client ID:	ZZZZZZ	Batch ID:	R120771	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2863384

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.799	0.50	1.250	0	63.9	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	LCS-R120854_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	LCSW	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869516

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.989	0.50	2.000	0	99.4	90	110				

Sample ID	MB-R120854_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	PBW	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869517

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	N027430-004CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	ZZZZZZ	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869519

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	209.355	25						210.2	0.398	20	

Sample ID	N027430-004CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	ZZZZZZ	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869520

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	316.325	25	100.0	210.2	106	80	120				

Sample ID	N027430-004CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	ZZZZZZ	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869521

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	317.025	25	100.0	210.2	107	80	120	316.3	0.221	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N027430-020CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	ZZZZZZ	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869525

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2813.150	250	1000	1774	104	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	MB-R120803_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120803
Client ID:	PBW	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867952

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID	LCS-R120803_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120803
Client ID:	LCSW	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867953

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.228	0.10	1.250	0	98.2	90	110				

Sample ID	N027430-008CDUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120803
Client ID:	ZZZZZZ	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867959

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.790	0.50						1.929	7.48	20	

Sample ID	N027430-008CMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120803
Client ID:	ZZZZZZ	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867962

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	7.748	0.50	6.250	1.929	93.1	80	120				

Sample ID	N027430-008CMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120803
Client ID:	ZZZZZZ	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867963

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	8.353	0.50	6.250	1.929	103	80	120	7.748	7.51	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	MB-R120937_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	PBW	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872494

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID	LCS-R120937_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	LCSW	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872495

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.181	0.10	1.250	0	94.5	90	110				

Sample ID	N027430-012CDUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872497

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	11.460	2.0						11.66	1.71	20	

Sample ID	N027430-012CMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872498

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	37.536	2.0	25.00	11.66	104	80	120				

Sample ID	N027430-012CMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872499

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	35.016	2.0	25.00	11.66	93.4	80	120	37.54	6.95	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	LCS-R120854_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	LCSW	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869546

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.730	0.50	4.000	0	93.3	90	110				

Sample ID	MB-R120854_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	PBW	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869547

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	N027430-004CDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	ZZZZZZ	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869549

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	139.038	10						139.8	0.532	20	

Sample ID	N027430-004CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	ZZZZZZ	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869550

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	221.892	10	80.00	139.8	103	80	120				

Sample ID	N027430-004CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	ZZZZZZ	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869551

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	220.132	10	80.00	139.8	100	80	120	221.9	0.796	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N027430-020CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	ZZZZZZ	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869555

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	573.715	25	200.0	373.2	100	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.30	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 8:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.1	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.6	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.8	0.044	0.10		mg/L	2	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.1	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R121010	**MBLK**	**4500N03F_W**	**mg/L**		**121010**
Client ID: **PBW**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876073**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-R121010	**LCS**	**4500N03F_W**	**mg/L**		**121010**
Client ID: **LCSW**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.526	0.050	0.5000	0	105	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027429-007CMS	**MS**	**4500N03F_W**	**mg/L**		**121010**
Client ID: **ZZZZZZ**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.621	0.25	2.500	2.809	112	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027429-007CMSD	**MSD**	**4500N03F_W**	**mg/L**		**121010**
Client ID: **ZZZZZZ**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.484	0.25	2.500	2.809	107	75	125	5.621	2.47	20	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027429-008CDUP	**DUP**	**4500N03F_W**	**mg/L**		**121010**
Client ID: **ZZZZZZ**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.177	0.25						2.951	7.36	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-275-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**				PrepDate	**12/11/2017**	Analyst: **CEI**
Boron	2400	38	100		ug/L	1	12/19/2017 02:46 AM
Calcium	210000	28	500		ug/L	1	12/19/2017 02:46 AM
Iron	53	1.8	20		ug/L	1	12/19/2017 02:46 AM
Magnesium	4700	4.4	100		ug/L	1	12/19/2017 02:46 AM
Sodium	5700000	6600	120000		ug/L	250	12/20/2017 07:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-004

Client Sample ID: MW-29-Q417
Collection Date: 12/7/2017 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	370	38	100		ug/L	1	12/19/2017 03:18 AM
Calcium	70000	28	500		ug/L	1	12/19/2017 03:18 AM
Iron	1000	1.8	20		ug/L	1	12/19/2017 03:18 AM
Magnesium	30000	4.4	100		ug/L	1	12/19/2017 03:18 AM
Sodium	230000	260	5000		ug/L	10	12/20/2017 08:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-006

Client Sample ID: MW-28-025-Q417
Collection Date: 12/7/2017 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	170	38	100		ug/L	1	12/19/2017 03:23 AM
Calcium	93000	28	500		ug/L	1	12/19/2017 03:23 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 03:23 AM
Magnesium	27000	4.4	100		ug/L	1	12/19/2017 03:23 AM
Sodium	110000	260	5000		ug/L	10	12/20/2017 08:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**				PrepDate	**12/11/2017**	Analyst: **CEI**
Boron	770	38	100		ug/L	1	12/19/2017 03:28 AM
Calcium	180000	28	500		ug/L	1	12/19/2017 03:28 AM
Iron	500	1.8	20		ug/L	1	12/19/2017 03:28 AM
Magnesium	37000	4.4	100		ug/L	1	12/19/2017 03:28 AM
Sodium	1200000	2600	50000		ug/L	100	12/20/2017 08:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**				PrepDate	**12/11/2017**	Analyst: **CEI**
Boron	2200	38	100		ug/L	1	12/19/2017 03:46 AM
Calcium	54000	28	500		ug/L	1	12/19/2017 03:46 AM
Iron	140	1.8	20		ug/L	1	12/19/2017 03:46 AM
Magnesium	72000	4.4	100		ug/L	1	12/19/2017 03:46 AM
Sodium	3000000	2600	50000		ug/L	100	12/20/2017 08:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Dec-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 8:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**				PrepDate	**12/11/2017**	Analyst: **CEI**
Boron	1100	38	100		ug/L	1	12/19/2017 03:53 AM
Calcium	260000	28	500		ug/L	1	12/19/2017 03:53 AM
Iron	20	1.8	20		ug/L	1	12/19/2017 03:53 AM
Magnesium	24000	4.4	100		ug/L	1	12/19/2017 03:53 AM
Sodium	1900000	2600	50000		ug/L	100	12/20/2017 08:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1000	38	100		ug/L	1	12/19/2017 04:00 AM
Calcium	370000	28	500		ug/L	1	12/19/2017 04:00 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 04:00 AM
Magnesium	41000	4.4	100		ug/L	1	12/19/2017 04:00 AM
Sodium	3100000	2600	50000		ug/L	100	12/20/2017 08:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-015

Client Sample ID: MW-33-210-Q417
Collection Date: 12/7/2017 9:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1400	38	100		ug/L	1	12/19/2017 04:07 AM
Calcium	540000	140	2500		ug/L	5	12/19/2017 12:02 PM
Iron	68	1.8	20		ug/L	1	12/19/2017 04:07 AM
Magnesium	52000	4.4	100		ug/L	1	12/19/2017 04:07 AM
Sodium	3800000	6600	120000		ug/L	250	12/20/2017 08:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-016

Client Sample ID: MW-46-175-Q417
Collection Date: 12/7/2017 10:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1900	38	100		ug/L	1	12/19/2017 04:14 AM
Calcium	98000	28	500		ug/L	1	12/19/2017 04:14 AM
Iron	70	1.8	20		ug/L	1	12/19/2017 04:14 AM
Magnesium	2600	4.4	100		ug/L	1	12/19/2017 04:14 AM
Sodium	4100000	6600	120000		ug/L	250	12/20/2017 08:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**				PrepDate	**12/11/2017**	Analyst: **CEI**
Boron	3000	38	100		ug/L	1	12/19/2017 04:20 AM
Calcium	100000	28	500		ug/L	1	12/19/2017 04:20 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 04:20 AM
Magnesium	2500	4.4	100		ug/L	1	12/19/2017 04:20 AM
Sodium	5000000	6600	120000		ug/L	250	12/20/2017 09:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-018

Client Sample ID: MW-49-365-Q417
Collection Date: 12/7/2017 1:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	3700	38	100		ug/L	1	12/19/2017 04:27 AM
Calcium	320000	28	500		ug/L	1	12/19/2017 04:27 AM
Iron	240	1.8	20		ug/L	1	12/19/2017 04:27 AM
Magnesium	6500	4.4	100		ug/L	1	12/19/2017 04:27 AM
Sodium	8400000	13000	250000		ug/L	500	12/20/2017 09:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:58:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-020		

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_171218B** QC Batch: **65993** PrepDate **12/11/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	820	38	100		ug/L	1	12/19/2017 04:34 AM
Calcium	160000	28	500		ug/L	1	12/19/2017 04:34 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 04:34 AM
Magnesium	37000	4.4	100		ug/L	1	12/19/2017 04:34 AM
Sodium	1100000	2600	50000		ug/L	100	12/20/2017 09:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-65993**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **PBW**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	48.972	500									
Iron	ND	20									
Magnesium	4.804	100									

Sample ID **LCS1-65993**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **LCSW**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871607**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4518.810	100	5000	0	90.4	85	115				
Calcium	9590.941	500	10000	0	95.9	85	115				
Iron	109.266	20	100.0	0	109	85	115				
Magnesium	9312.753	100	10000	0	93.1	85	115				

Sample ID **N027430-002B-MS1**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6944.229	100	5000	2389	91.1	75	125				
Calcium	214316.917	500	10000	211000	32.8	75	125				S
Iron	120.528	20	100.0	52.84	67.7	75	125				S
Magnesium	11862.775	100	10000	4660	72.0	75	125				S

Sample ID **N027430-002B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6971.693	100	5000	2389	91.7	75	125	6944	0.395	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027430-002B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120920		
Client ID:	ZZZZZZ	Batch ID:	65993	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2871612		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	215346.305	500	10000	211000	43.1	75	125	214300	0.479	20	S
Iron	119.359	20	100.0	52.84	66.5	75	125	120.5	0.974	20	S
Magnesium	11837.119	100	10000	4660	71.8	75	125	11860	0.217	20	S

Sample ID	MB-65993	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120973		
Client ID:	PBW	Batch ID:	65993	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874508		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	26.536	500									

Sample ID	LCS2-65993	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120973		
Client ID:	LCSW	Batch ID:	65993	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874509		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20336.418	500	20000	0	102	85	115				

Sample ID	N027430-004B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120973		
Client ID:	ZZZZZZ	Batch ID:	65993	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874522		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	261208.893	5000	20000	226700	172	75	125				S

Sample ID	N027430-004B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120973		
Client ID:	ZZZZZZ	Batch ID:	65993	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874523		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	258902.013	5000	20000	226700	161	75	125	261200	0.887	20	S

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-275-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	340	0.28	2.5		µg/L	5	12/19/2017 06:33 PM
Molybdenum	250	0.19	2.5		µg/L	5	12/19/2017 06:33 PM
Selenium	ND	0.14	2.5		µg/L	5	12/19/2017 06:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-004

Client Sample ID: MW-29-Q417
Collection Date: 12/7/2017 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Arsenic	9.2	0.025	0.10		µg/L	1	12/19/2017 07:28 PM
Manganese	200	0.28	2.5		µg/L	5	12/19/2017 07:34 PM
Molybdenum	4.8	0.039	0.50		µg/L	1	12/19/2017 07:28 PM
Selenium	ND	0.028	0.50		µg/L	1	12/19/2017 07:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**				PrepDate	**12/12/2017**	Analyst: **CEI**
Arsenic	0.71	0.025	0.10		µg/L	1	12/19/2017 10:09 PM
Manganese	ND	0.056	0.50		µg/L	1	12/19/2017 10:09 PM
Molybdenum	4.3	0.039	0.50		µg/L	1	12/19/2017 10:09 PM
Selenium	1.2	0.028	0.50		µg/L	1	12/19/2017 10:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-008

Client Sample ID: MW-28-090-Q417
Collection Date: 12/7/2017 12:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**	Analyst: **CEI**	
Arsenic	1.7	0.025	0.10		µg/L	1	12/19/2017 07:54 PM
Manganese	130	0.056	0.50		µg/L	1	12/19/2017 07:54 PM
Molybdenum	23	0.039	0.50		µg/L	1	12/19/2017 07:54 PM
Selenium	ND	0.028	0.50		µg/L	1	12/19/2017 07:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**				PrepDate	**12/12/2017**	Analyst: **CEI**
Arsenic	9.7	0.025	0.10		µg/L	1	12/19/2017 08:05 PM
Manganese	14	0.056	0.50		µg/L	1	12/19/2017 08:05 PM
Molybdenum	340	0.19	2.5		µg/L	5	12/19/2017 08:11 PM
Selenium	ND	0.14	2.5		µg/L	5	12/19/2017 08:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 8:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**				PrepDate	**12/12/2017**	Analyst: **CEI**
Arsenic	1.1	0.025	0.10		µg/L	1	12/19/2017 08:17 PM
Manganese	5.4	0.056	0.50		µg/L	1	12/19/2017 08:17 PM
Molybdenum	11	0.039	0.50		µg/L	1	12/19/2017 08:17 PM
Selenium	ND	0.028	0.50		µg/L	1	12/19/2017 08:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**	Analyst: **CEI**	
Arsenic	1.8	0.12	0.50		µg/L	5	12/19/2017 08:44 PM
Manganese	3.8	0.056	0.50		µg/L	1	12/19/2017 08:39 PM
Molybdenum	41	0.19	2.5		µg/L	5	12/19/2017 08:44 PM
Selenium	ND	0.14	2.5		µg/L	5	12/19/2017 08:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**				PrepDate	**12/12/2017**	Analyst: **CEI**
Arsenic	1.0	0.12	0.50		µg/L	5	12/19/2017 08:55 PM
Manganese	18	0.056	0.50		µg/L	1	12/19/2017 08:50 PM
Molybdenum	17	0.19	2.5		µg/L	5	12/19/2017 08:55 PM
Selenium	ND	0.14	2.5		µg/L	5	12/19/2017 08:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-016

Client Sample ID: MW-46-175-Q417
Collection Date: 12/7/2017 10:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	17	0.056	0.50		µg/L	1	12/19/2017 09:01 PM
Molybdenum	180	0.19	2.5		µg/L	5	12/19/2017 09:07 PM
Selenium	ND	0.14	2.5		µg/L	5	12/19/2017 09:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**				PrepDate	**12/12/2017**	Analyst: **CEI**
Manganese	39	0.056	0.50		µg/L	1	12/19/2017 09:12 PM
Molybdenum	320	0.19	2.5		µg/L	5	12/19/2017 09:18 PM
Selenium	ND	0.14	2.5		µg/L	5	12/19/2017 09:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-365-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**	Analyst: **CEI**	
Manganese	300	0.28	2.5		µg/L	5	12/19/2017 09:41 PM
Molybdenum	190	0.19	2.5		µg/L	5	12/19/2017 09:41 PM
Selenium	ND	0.69	12		µg/L	25	12/20/2017 09:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:58:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**	Analyst: **CEI**	
Manganese	24	0.056	0.50		µg/L	1	12/19/2017 09:46 PM
Molybdenum	14	0.039	0.50		µg/L	1	12/19/2017 09:46 PM
Selenium	1.4	0.028	0.50		µg/L	1	12/19/2017 09:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66020**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120962**
Client ID: **PBW**	Batch ID: **66020**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2873399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-66020**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120962**
Client ID: **LCSW**	Batch ID: **66020**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2873400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.679	0.10	10.00	0	96.8	85	115				
Manganese	100.074	0.50	100.0	0	100	85	115				
Molybdenum	9.982	0.50	10.00	0	99.8	85	115				
Selenium	9.653	0.50	10.00	0	96.5	85	115				

Sample ID **N027430-002B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120962**
Client ID: **ZZZZZZ**	Batch ID: **66020**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2873407**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.028	0.50	10.00	2.215	108	75	125				
Manganese	467.773	2.5	100.0	335.8	132	75	125				S
Molybdenum	292.655	2.5	10.00	253.7	390	75	125				S
Selenium	9.785	2.5	10.00	0.2703	95.2	75	125				

Sample ID **N027430-002B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120962**
Client ID: **ZZZZZZ**	Batch ID: **66020**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2873411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.986	0.50	10.00	2.215	118	75	125	13.03	7.09	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027430-002B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	120962
Client ID:	ZZZZZZ	Batch ID:	66020	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2873411

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	476.720	2.5	100.0	335.8	141	75	125	467.8	1.89	20	S
Molybdenum	301.417	2.5	10.00	253.7	477	75	125	292.7	2.95	20	S
Selenium	11.103	2.5	10.00	0.2703	108	75	125	9.785	12.6	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker	RWQCB ✓	1. Chilled
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec	CalTrans	2. Headspace
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	Others ✓	LEVEL III	3. Container Intact
Title: Geologist II	Phone: 916-786-3302 Fax:		Specify: RWQCB	LEVEL IV	4. Seal Present
Signature: Date: 12/7/2017	Sampled By: Gantt Jeffers		Global ID:	Regulatory	5. IR number 2
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*			Specify State:	6. Method of Cooling: Ice
Project Name: PG&E Topock - GMP	Signature: Date: 12/7/2017				Sample Temp: 3.9°C
Project Number: RC000753.801B					Courier: Tracking No.:

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM; 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3; 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4; 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0); 1 liter poly	Specific Conductance (EPA 120.1); 1 liter poly	Total Dissolved Solids (SM2540C); 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B); 1 liter poly	Fluoride (EPA 300.0); 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027430-01 ✓	MW-49-275-EB-Q417	12/7/2017	13:15		X																			E	1	P	B	
2	-02 ✓	MW-49-275-Q417	12/7/2017	13:47			X	X			X						X		X	X	X	X				E	5	P	BN	
3	-03 ✓	MW-29-EB-Q417	12/7/2017	12:20		X																				E	1	P	B	
4	-04 ✓	MW-29-Q417	12/7/2017	13:00			X		X		X							X	X	X	X	X				E	5	P	BNS	
5	-05 ✓	MW-28-025-EB-Q417	12/7/2017	11:25		X																				E	1	P	B	
6	-06 ✓	MW-28-025-Q417	12/7/2017	12:01			X		X		X							X	X	X	X	X				E	5	P	BNS	
7	-07 ✓	MW-28-090-EB-Q417	12/7/2017	11:20		X																				E	1	P	B	
8	-08 ✓	MW-28-090-Q417	12/7/2017	12:10			X		X		X							X	X	X	X	X	X			E	5	P	BNS	
9	-09 ✓	MW-723-Q417	12/7/2017	15:25		X																				E	1	P	B	
10	-10 ✓	MW-724-Q417	12/7/2017	15:30		X																				E	1	P	B	

Relinquished by (Signature and Printed Name): G. Jeffers	Date/Time: 12.7.17 1626	Received by (Signature and Printed Name):	Date/Time:
Relinquished by (Signature and Printed Name):	Date/Time: 12/7/17 1842	Received by (Signature and Printed Name):	Date/Time: 12/7/17 1842
Relinquished by (Signature and Printed Name):	Date/Time:	Received by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

	A = < 24 Hrs or Same Day TAT
	B = Next Workday
	C = 2 Workdays
	D = 3 Workdays
X	E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis.
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B = (NH4)2SO4/NH4OH		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓ (Specify: RWQCB)
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition (Y N): 1. Chilled; 2. Headspace; 3. Container Intact; 4. Seal Present; 5. IR number 2
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Global ID: Specify State:
Submitted By: Gantt Jeffers	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	6. Method of Cooling: Ice
Title: Geologist II			Sample Temp: 2-9°C
Signature: Date: 12/7/2017	Sampled By: Gantt Jeffers	Matrix: Ground x Sediment; Potable Soil; NPDES Other Solid; Surface	Courier:
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*		Tracking No.:
Project Name: PG&E Topock - GMP	Signature: Date: 12/7/2017		
Project Number: RC000753.801B			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM — 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3 — 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 — 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3 — 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3 — 500 mL poly	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3 — 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3 — 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4 — 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) — 1 liter poly	Specific Conductance (EPA 120.1) — 1 liter poly	Total Dissolved Solids (SM2540C) — 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) — 1 liter poly	Fluoride (EPA 300.0) — 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027430-11 ✓	MW-33-040-EB-Q417	12/7/2017	9:15		X												X							E	1	P	B	
2	-12 ✓	MW-33-040-Q417	12/7/2017	9:55			X	X	X		X							X	X	X	X	X			E	6	P	BNS	
3	-13 ✓	MW-33-090-Q417	12/7/2017	8:47		X		X	X		X							X	X	X	X	X			E	5	P	BNS	
4	-14 ✓	MW-33-150-Q417	12/7/2017	9:44		X		X	X		X							X	X	X	X	X			E	5	P	BNS	
5	-15 ✓	MW-33-210-Q417	12/7/2017	9:00		X		X	X		X							X	X	X	X	X			E	5	P	BNS	
6	-16 ✓	MW-46-175-Q417	12/7/2017	10:44		X		X			X						X	X	X	X	X				E	5	P	BNS	
7	-17 ✓	MW-46-205-Q417	12/7/2017	10:45		X					X						X	X	X	X	X				E	3	P	BN	
8	-18 ✓	MW-49-365-Q417	12/7/2017	13:05			X	X			X						X	X	X	X	X				E	5	P	BN	
9	-19 ✓	MW-722-Q417	12/7/2017	15:30		X																			E	1	P	B	
10	-20 ✓	TW-02D-Q417	12/7/2017	12:58		X					X						X	X	X	X	X				E	3	P	BN	

Relinquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
G. Jeffers	12.7.17 1626		
			12/7/17 1626
	12/7/17 1642		
			12/7/17 1642

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B = (NH4)2SO4/NH4OH		

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/7/2017	Workorder:	N027430
Rep sample Temp (Deg C):	3.9/2.9	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: N/A Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 12/21/2017

Reviewed By: 12/21/2017

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (760) 781 3338
FAX: (805) 544-8226
Acct #:

Field Sampler: Signed

11-Dec-17

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: OXY_DEUT		
N027430-002D / MW-49-275-Q417	Groundwater	12/7/2017 1:47:00 PM	8OZP	1		
N027430-012E / MW-33-040-Q417	Groundwater	12/7/2017 9:55:00 AM	8OZP	1		
N027430-013E / MW-33-090-Q417	Groundwater	12/7/2017 8:47:00 AM	16OZP	1		
N027430-014E / MW-33-150-Q417	Groundwater	12/7/2017 9:44:00 AM	8OZP	1		
N027430-015E / MW-33-210-Q417	Groundwater	12/7/2017 9:00:00 AM	8OZP	1		
N027430-016E / MW-46-175-Q417	Groundwater	12/7/2017 10:44:00 AM	8OZP	1		
N027430-018D / MW-49-365-Q417	Groundwater	12/7/2017 1:05:00 PM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N27430A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Oxygen and Deuterium Stable Isotopes SFIRM. EDD Requirement Labspec7 edata.

Fedex #: 770961567484

		Date/Time			Date/Time
Relinquished by:		12/11/2017 16:00		**Received by:**	
Relinquished by:				**Received by:**	

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-001A	MW-49-275-EB-Q417	12/7/2017 1:15:00 PM	12/21/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-002A	MW-49-275-Q417	12/7/2017 1:47:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-002B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-002C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-002D			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027430-003A	MW-29-EB-Q417	12/7/2017 12:20:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-004A	MW-29-Q417	12/7/2017 1:00:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-004B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-004B	MW-29-Q417	12/7/2017 1:00:00 PM	12/21/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-004C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-004D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-005A	MW-28-025-EB-Q417	12/7/2017 11:25:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-006A	MW-28-025-Q417	12/7/2017 12:01:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-006B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-006C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-006C	MW-28-025-Q417	12/7/2017 12:01:00 PM	12/21/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-006D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-007A	MW-28-090-EB-Q417	12/7/2017 12:20:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-008A	MW-028-090-Q417	12/7/2017 12:10:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-008B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-008C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-008D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-009A	MW-723-Q417	12/7/2017 3:25:00 PM	12/21/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-010A	MW-724-Q417	12/7/2017 3:30:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-011A	MW-33-040-EB-Q417	12/7/2017 9:15:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-012A	MW-33-040-Q417	12/7/2017 9:55:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-012B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-012C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-012D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-012E			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	WW
N027430-013A	MW-33-090-Q417	12/7/2017 8:47:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-013B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-013B	MW-33-090-Q417	12/7/2017 8:47:00 AM	12/21/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-013C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-013D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-013E			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	WW
N027430-014A	MW-33-150-Q417	12/7/2017 9:44:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-014B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-014C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-014C	MW-33-150-Q417	12/7/2017 9:44:00 AM	12/21/2017	Groundwater	SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-014D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-014E			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	WW
N027430-015A	MW-33-210-Q417	12/7/2017 9:00:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-015B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-015C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-015C	MW-33-210-Q417	12/7/2017 9:00:00 AM	12/21/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-015D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-015E			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	WW
N027430-016A	MW-46-175-Q417	12/7/2017 10:44:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-016B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-016C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-016D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-016E			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-017A	MW-46-205-Q417	12/7/2017 10:45:00 AM	12/21/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-017B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-017C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-018A	MW-49-365-Q417	12/7/2017 1:05:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-018B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-018C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-018C	MW-49-365-Q417	12/7/2017 1:05:00 PM	12/21/2017	Groundwater		Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-018D			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027430-019A	MW-722-Q417	12/7/2017 3:30:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-020A	TW-02D-Q417	12/7/2017 12:58:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-020B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-020C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-021A	FOLDER	12/21/2017	12/21/2017		EDD	RWQCB	☐	☐	☐	LAB
			12/21/2017		Folder	Folder	☐	☐	☐	LAB
			12/21/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP

Project No.: RC000753.801B

ASSET Laboratories Work Order:

N027430

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

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December 22, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027430

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 07, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburcao for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Subcontracted Analyses:

Oxygen/Deuterium was subcontracted to Zymax- Pittsburg,PA.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (3.5 ug/L) and hexavalent chromium (0 ug/L) for sample N027430-002 (MW-49-275-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (1.7 ug/L) and hexavalent chromium (0 ug/L) for sample N027430-012 (MW-33-040-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Dilution was necessary for samples N027430-002, -012, -014, -017 and -018 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 300.0:

Dilution was necessary for some samples due to precipitation upon the addition of eluent.

Matrix Spike (MS) is outside recovery criteria for Bromide in QC sample N027430-004CMS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N027430-002B-MS1 and N027430-002B-MSD1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N027430-002B-MS1 and N027430-002B-MSD1 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N027430-004B-MS2 and N027430-004B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Molybdenum in QC samples N027430-002B-MS and N027430-002B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Manganese in QC samples N027430-002B-MS and N027430-002B-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary on some analytes for samples N027430-002, -012, -014, -015, -016, -017 and -018 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Because the results for total dissolved chromium (3.5 ug/L) and hexavalent chromium (0 ug/L) for sample N027430-002 (MW-49-275-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 3.4 and 0.07 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (1.7 ug/L) and hexavalent chromium (0 ug/L) for sample N027430-012 (MW-33-040-Q417) are discrepant, sample from both the total dissolved

chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.5 and 0 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

ASSET Laboratories

Date: *22-Dec-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027430
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027430-001A	MW-49-275-EB-Q417	Groundwater	12/7/2017 1:15:00 PM	12/7/2017	12/22/2017
N027430-002A	MW-49-275-Q417	Groundwater	12/7/2017 1:47:00 PM	12/7/2017	12/22/2017
N027430-002B	MW-49-275-Q417	Groundwater	12/7/2017 1:47:00 PM	12/7/2017	12/22/2017
N027430-002C	MW-49-275-Q417	Groundwater	12/7/2017 1:47:00 PM	12/7/2017	12/22/2017
N027430-002D	MW-49-275-Q417	Groundwater	12/7/2017 1:47:00 PM	12/7/2017	12/22/2017
N027430-003A	MW-29-EB-Q417	Groundwater	12/7/2017 12:20:00 PM	12/7/2017	12/22/2017
N027430-004A	MW-29-Q417	Groundwater	12/7/2017 1:00:00 PM	12/7/2017	12/22/2017
N027430-004B	MW-29-Q417	Groundwater	12/7/2017 1:00:00 PM	12/7/2017	12/22/2017
N027430-004C	MW-29-Q417	Groundwater	12/7/2017 1:00:00 PM	12/7/2017	12/22/2017
N027430-004D	MW-29-Q417	Groundwater	12/7/2017 1:00:00 PM	12/7/2017	12/22/2017
N027430-005A	MW-28-025-EB-Q417	Groundwater	12/7/2017 11:25:00 AM	12/7/2017	12/22/2017
N027430-006A	MW-28-025-Q417	Groundwater	12/7/2017 12:01:00 PM	12/7/2017	12/22/2017
N027430-006B	MW-28-025-Q417	Groundwater	12/7/2017 12:01:00 PM	12/7/2017	12/22/2017
N027430-006C	MW-28-025-Q417	Groundwater	12/7/2017 12:01:00 PM	12/7/2017	12/22/2017
N027430-006D	MW-28-025-Q417	Groundwater	12/7/2017 12:01:00 PM	12/7/2017	12/22/2017
N027430-007A	MW-28-090-EB-Q417	Groundwater	12/7/2017 12:20:00 PM	12/7/2017	12/22/2017
N027430-008A	MW-28-090-Q417	Groundwater	12/7/2017 12:10:00 PM	12/7/2017	12/22/2017
N027430-008B	MW-28-090-Q417	Groundwater	12/7/2017 12:10:00 PM	12/7/2017	12/22/2017
N027430-008C	MW-28-090-Q417	Groundwater	12/7/2017 12:10:00 PM	12/7/2017	12/22/2017
N027430-008D	MW-28-090-Q417	Groundwater	12/7/2017 12:10:00 PM	12/7/2017	12/22/2017
N027430-009A	MW-723-Q417	Groundwater	12/7/2017 3:25:00 PM	12/7/2017	12/22/2017
N027430-010A	MW-724-Q417	Groundwater	12/7/2017 3:30:00 PM	12/7/2017	12/22/2017
N027430-011A	MW-33-040-EB-Q417	Groundwater	12/7/2017 9:15:00 AM	12/7/2017	12/22/2017
N027430-012A	MW-33-040-Q417	Groundwater	12/7/2017 9:55:00 AM	12/7/2017	12/22/2017
N027430-012B	MW-33-040-Q417	Groundwater	12/7/2017 9:55:00 AM	12/7/2017	12/22/2017
N027430-012C	MW-33-040-Q417	Groundwater	12/7/2017 9:55:00 AM	12/7/2017	12/22/2017
N027430-012D	MW-33-040-Q417	Groundwater	12/7/2017 9:55:00 AM	12/7/2017	12/22/2017
N027430-012E	MW-33-040-Q417	Groundwater	12/7/2017 9:55:00 AM	12/7/2017	12/22/2017
N027430-013A	MW-33-090-Q417	Groundwater	12/7/2017 8:47:00 AM	12/7/2017	12/22/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027430
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027430-013B	MW-33-090-Q417	Groundwater	12/7/2017 8:47:00 AM	12/7/2017	12/22/2017
N027430-013C	MW-33-090-Q417	Groundwater	12/7/2017 8:47:00 AM	12/7/2017	12/22/2017
N027430-013D	MW-33-090-Q417	Groundwater	12/7/2017 8:47:00 AM	12/7/2017	12/22/2017
N027430-013E	MW-33-090-Q417	Groundwater	12/7/2017 8:47:00 AM	12/7/2017	12/22/2017
N027430-014A	MW-33-150-Q417	Groundwater	12/7/2017 9:44:00 AM	12/7/2017	12/22/2017
N027430-014B	MW-33-150-Q417	Groundwater	12/7/2017 9:44:00 AM	12/7/2017	12/22/2017
N027430-014C	MW-33-150-Q417	Groundwater	12/7/2017 9:44:00 AM	12/7/2017	12/22/2017
N027430-014D	MW-33-150-Q417	Groundwater	12/7/2017 9:44:00 AM	12/7/2017	12/22/2017
N027430-014E	MW-33-150-Q417	Groundwater	12/7/2017 9:44:00 AM	12/7/2017	12/22/2017
N027430-015A	MW-33-210-Q417	Groundwater	12/7/2017 9:00:00 AM	12/7/2017	12/22/2017
N027430-015B	MW-33-210-Q417	Groundwater	12/7/2017 9:00:00 AM	12/7/2017	12/22/2017
N027430-015C	MW-33-210-Q417	Groundwater	12/7/2017 9:00:00 AM	12/7/2017	12/22/2017
N027430-015D	MW-33-210-Q417	Groundwater	12/7/2017 9:00:00 AM	12/7/2017	12/22/2017
N027430-015E	MW-33-210-Q417	Groundwater	12/7/2017 9:00:00 AM	12/7/2017	12/22/2017
N027430-016A	MW-46-175-Q417	Groundwater	12/7/2017 10:44:00 AM	12/7/2017	12/22/2017
N027430-016B	MW-46-175-Q417	Groundwater	12/7/2017 10:44:00 AM	12/7/2017	12/22/2017
N027430-016C	MW-46-175-Q417	Groundwater	12/7/2017 10:44:00 AM	12/7/2017	12/22/2017
N027430-016D	MW-46-175-Q417	Groundwater	12/7/2017 10:44:00 AM	12/7/2017	12/22/2017
N027430-016E	MW-46-175-Q417	Groundwater	12/7/2017 10:44:00 AM	12/7/2017	12/22/2017
N027430-017A	MW-46-205-Q417	Groundwater	12/7/2017 10:45:00 AM	12/7/2017	12/22/2017
N027430-017B	MW-46-205-Q417	Groundwater	12/7/2017 10:45:00 AM	12/7/2017	12/22/2017
N027430-017C	MW-46-205-Q417	Groundwater	12/7/2017 10:45:00 AM	12/7/2017	12/22/2017
N027430-018A	MW-49-365-Q417	Groundwater	12/7/2017 1:05:00 PM	12/7/2017	12/22/2017
N027430-018B	MW-49-365-Q417	Groundwater	12/7/2017 1:05:00 PM	12/7/2017	12/22/2017
N027430-018C	MW-49-365-Q417	Groundwater	12/7/2017 1:05:00 PM	12/7/2017	12/22/2017
N027430-018D	MW-49-365-Q417	Groundwater	12/7/2017 1:05:00 PM	12/7/2017	12/22/2017
N027430-019A	MW-722-Q417	Groundwater	12/7/2017 3:30:00 PM	12/7/2017	12/22/2017
N027430-020A	TW-02D-Q417	Groundwater	12/7/2017 12:58:00 PM	12/7/2017	12/22/2017
N027430-020B	TW-02D-Q417	Groundwater	12/7/2017 12:58:00 PM	12/7/2017	12/22/2017
N027430-020C	TW-02D-Q417	Groundwater	12/7/2017 12:58:00 PM	12/7/2017	12/22/2017

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-002

Client Sample ID: MW-49-275-Q417
Collection Date: 12/7/2017 1:47:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	18000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	1400	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-006

Client Sample ID: MW-28-025-Q417
Collection Date: 12/7/2017 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	5400	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 8:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	7700	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-365-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	25000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-020

Client Sample ID: TW-02D-Q417
Collection Date: 12/7/2017 12:58:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	4800	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N027429-005DDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **120747**
Client ID: **ZZZZZZ**	Batch ID: **R120747**	TestNo: **EPA 120.1**		Analysis Date: **12/8/2017**	SeqNo: **2860676**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	15840.000	0.10						15870	0.189	10	

Sample ID **N027430-002CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **120747**
Client ID: **ZZZZZZ**	Batch ID: **R120747**	TestNo: **EPA 120.1**		Analysis Date: **12/8/2017**	SeqNo: **2860691**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	17930.000	0.10						17890	0.223	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N027430-018CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120750
Client ID:	ZZZZZZ	Batch ID:	R120750	TestNo:	EPA 120.1			Analysis Date:	12/8/2017	SeqNo:	2860752

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	24900.000	0.10						24700	0.806	10	

Sample ID	N027459-003CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120750
Client ID:	ZZZZZZ	Batch ID:	R120750	TestNo:	EPA 120.1			Analysis Date:	12/8/2017	SeqNo:	2860769

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	11670.000	0.10						11690	0.171	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-275-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**			PrepDate	**12/12/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	14000	100	100		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	970	10	10		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	780	10	10		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**			PrepDate	**12/12/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3900	50	50		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**			PrepDate	**12/12/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	8400	100	100		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 8:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**			PrepDate	**12/12/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	5700	50	50		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**			PrepDate	**12/12/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	9000	100	100		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	11000	100	100		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**				PrepDate	**12/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	10000	100	100		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	12000	100	100		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-365-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	22000	200	200		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:58:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3300	33	33		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-66025	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/12/2017	RunNo:	120818
Client ID:	LCSW	Batch ID:	66025	TestNo:	SM2540C			Analysis Date:	12/12/2017	SeqNo:	2865479

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	936.000	10	1000	0	93.6	80	120				

Sample ID	MB-66025	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/12/2017	RunNo:	120818
Client ID:	PBW	Batch ID:	66025	TestNo:	SM2540C			Analysis Date:	12/12/2017	SeqNo:	2865480

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N027430-002CDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/12/2017	RunNo:	120818
Client ID:	ZZZZZZ	Batch ID:	66025	TestNo:	SM2540C			Analysis Date:	12/12/2017	SeqNo:	2865485

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	14560.000	100						13930	4.42	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66055**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/13/2017**	RunNo: **120820**
Client ID: **LCSW**	Batch ID: **66055**	TestNo: **SM2540C**		Analysis Date: **12/13/2017**	SeqNo: **2865495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	953.000	10	1000	0	95.3	80	120				

Sample ID **MB-66055**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/13/2017**	RunNo: **120820**
Client ID: **PBW**	Batch ID: **66055**	TestNo: **SM2540C**		Analysis Date: **12/13/2017**	SeqNo: **2865496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N027430-018CDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/13/2017**	RunNo: **120820**
Client ID: **ZZZZZZ**	Batch ID: **66055**	TestNo: **SM2540C**		Analysis Date: **12/13/2017**	SeqNo: **2865501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	22760.000	200						21820	4.22	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-275-EB-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:15:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 11:07 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-002

Client Sample ID: MW-49-275-Q417
Collection Date: 12/7/2017 1:47:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A** QC Batch: **R120833**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/11/2017 11:45 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	3.5	0.019	1.0		µg/L	1	12/19/2017 06:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-EB-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 12:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-004

Client Sample ID: MW-29-Q417
Collection Date: 12/7/2017 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 12:23 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/19/2017 07:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-EB-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 11:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 12:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A** QC Batch: **R120833**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 01:01 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/19/2017 10:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-EB-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 01:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-008

Client Sample ID: MW-28-090-Q417
Collection Date: 12/7/2017 12:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A** QC Batch: **R120833**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 01:57 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/19/2017 07:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-723-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 3:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 02:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-724-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 02:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-EB-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 04:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A** QC Batch: **R120833**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/11/2017 07:41 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	1.7	0.019	1.0		µg/L	1	12/19/2017 08:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 8:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	5.5	0.17	1.0		µg/L	5	12/11/2017 04:29 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	5.0	0.019	1.0		µg/L	1	12/19/2017 08:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	7.0	0.17	1.0		µg/L	5	12/11/2017 04:48 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	7.2	0.019	1.0		µg/L	1	12/19/2017 08:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A** QC Batch: **R120833**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	14	0.17	1.0		µg/L	5	12/11/2017 05:26 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	15	0.019	1.0		µg/L	1	12/19/2017 08:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-016

Client Sample ID: MW-46-175-Q417
Collection Date: 12/7/2017 10:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211B** QC Batch: **R120834**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	11	0.17	1.0		µg/L	5	12/11/2017 09:53 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	11	0.019	1.0		µg/L	1	12/19/2017 09:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_171211B** QC Batch: **R120834**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/11/2017 10:12 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/19/2017 09:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-365-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_171211B** QC Batch: **R120834**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/11/2017 10:31 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/19/2017 09:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-722-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 03:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-020

Client Sample ID: TW-02D-Q417
Collection Date: 12/7/2017 12:58:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A** QC Batch: **R120833**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	110	0.66	4.0		µg/L	20	12/11/2017 02:54 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	93	0.019	1.0		µg/L	1	12/19/2017 09:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R120833**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **PBW**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R120833**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **LCSW**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866007**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.161	0.20	5.000	0	103	90	110				

Sample ID **N027405-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866008**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.424	1.0	5.000	4.203	104	90	110				

Sample ID **N027405-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.452	1.0	5.000	0	109	90	110				

Sample ID **N027405-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.692	1.0	5.000	1.529	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027430-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.068	0.20	1.000	0	107	90	110				

Sample ID **N027430-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.905	1.0	5.000	0.3715	90.7	90	110				

Sample ID **N027430-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.074	0.20	1.000	0	107	90	110				

Sample ID **N027430-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Sample ID **N027430-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866025**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027430-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866027**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.097	0.20	1.000	0	110	90	110				

Sample ID **N027430-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866031**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.056	0.20	1.000	0	106	90	110				

Sample ID **N027430-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866033**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.976	0.20	1.000	0	97.6	90	110				

Sample ID **N027430-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.057	0.20	1.000	0	106	90	110				

Sample ID **N027430-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866037**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.040	0.20	1.000	0	104	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027430-020AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866039**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	211.092	4.0	100.0	105.8	105	90	110				

Sample ID **N027430-019AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866043**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Sample ID **N027430-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866045**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.068	0.20	1.000	0	107	90	110				

Sample ID **N027430-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866047**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.554	1.0	5.000	5.490	101	90	110				

Sample ID **N027430-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866049**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.171	1.0	5.000	6.955	104	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027430-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833	
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866053	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	18.580	1.0	5.000	13.88	94.0	90	110					

Sample ID	N027405-006ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833	
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866054	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	4.215	1.0						4.203	0.273	20		

Sample ID	N027430-020AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833	
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866055	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	210.110	4.0	100.0	105.8	104	90	110	211.1	0.466	20		

Sample ID	N027430-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833	
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866059	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	5.371	1.0	5.000	0	107	90	110					

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	LCS-R120834	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834	
Client ID:	LCSW	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866068	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	5.175	0.20	5.000	0	104	90	110					

Sample ID	MB-R120834	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834	
Client ID:	PBW	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866069	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	ND	0.20										

Sample ID	N027431-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834	
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866071	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	9591.600	200	5000	4141	109	90	110					

Sample ID	N027431-006AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834	
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866072	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	9630.200	200	5000	4141	110	90	110	9592	0.402	20		

Sample ID	N027428-002ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834	
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866076	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	546.890	20						549.7	0.509	20		

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027428-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1059.800	20	500.0	549.7	102	90	110				

Sample ID **N027428-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0	108	90	110				

Sample ID **N027430-016AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866081**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	16.573	1.0	5.000	11.46	102	90	110				

Sample ID **N027430-017AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.899	1.0	5.000	0.8090	102	90	110				

Sample ID **N027430-018AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.580	1.0	5.000	0	91.6	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027431-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866089

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.637	1.0	5.000	0.3545	106	90	110				

Sample ID	N027431-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866091

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.256	1.0	5.000	0.2550	100	90	110				

Sample ID	N027431-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866093

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.104	1.0	5.000	0.2855	96.4	90	110				

Sample ID	N027431-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866095

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2844.640	40	1000	1798	105	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66020	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	120962
Client ID:	PBW	Batch ID:	66020	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2873342

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66020	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	120962
Client ID:	LCSW	Batch ID:	66020	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2873343

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.165	1.0	10.00	0	102	85	115				

Sample ID	N027430-002B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	120962
Client ID:	ZZZZZZ	Batch ID:	66020	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2873349

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	13.198	1.0	10.00	3.546	96.5	75	125				

Sample ID	N027430-002B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	120962
Client ID:	ZZZZZZ	Batch ID:	66020	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2873351

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	13.183	1.0	10.00	3.546	96.4	75	125	13.20	0.112	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-275-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	38	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	460	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	210	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	280	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	420	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 8:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	120	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	58	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-015

Client Sample ID: MW-33-210-Q417
Collection Date: 12/7/2017 9:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	59	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	44	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	47	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-365-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	44	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-020

Client Sample ID: TW-02D-Q417
Collection Date: 12/7/2017 12:58:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	160	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R120816**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **LCSW**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	98.394	5.0	100.0	0	98.4	85	115				

Sample ID **MB-R120816**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **PBW**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N027430-002CDDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **ZZZZZZ**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865286**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	38.153	5.0						38.15	0	30	

Sample ID **N027431-002CMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **ZZZZZZ**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865300**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	196.787	5.0	100.0	99.40	97.4	75	125				

Sample ID **N027431-002CMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **ZZZZZZ**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	196.787	5.0	100.0	99.40	97.4	75	125	196.8	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-002

Client Sample ID: MW-49-275-Q417
Collection Date: 12/7/2017 1:47:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 12:09 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	8700	18	1000		mg/L	2000	12/15/2017 05:11 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	1400	4.6	100		mg/L	200	12/15/2017 05:26 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-004

Client Sample ID: MW-29-Q417
Collection Date: 12/7/2017 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/12/2017 11:23 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	210	0.46	25		mg/L	50	12/15/2017 01:36 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	140	0.46	10		mg/L	20	12/15/2017 02:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-006

Client Sample ID: MW-28-025-Q417
Collection Date: 12/7/2017 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/12/2017 10:22 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	110	0.18	10		mg/L	20	12/15/2017 05:41 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	270	0.46	10		mg/L	20	12/15/2017 05:41 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-008

Client Sample ID: MW-28-090-Q417
Collection Date: 12/7/2017 12:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 12:55 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	1900	4.6	250		mg/L	500	12/15/2017 06:12 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**				PrepDate			Analyst: **RAB**
Fluoride	1.9	0.032	0.50		mg/L	5	12/13/2017 09:32 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	570	1.1	25		mg/L	50	12/15/2017 06:27 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-012

Client Sample ID: MW-33-040-Q417
Collection Date: 12/7/2017 9:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/12/2017 11:54 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	4000	4.6	250		mg/L	500	12/15/2017 07:13 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Fluoride	12	0.13	2.0		mg/L	20	12/18/2017 10:49 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	1500	4.6	100		mg/L	200	12/15/2017 07:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-013

Client Sample ID: MW-33-090-Q417
Collection Date: 12/7/2017 8:47:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 01:10 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	2900	9.1	500		mg/L	1000	12/15/2017 07:44 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**				PrepDate			Analyst: **RAB**
Fluoride	2.2	0.032	0.50		mg/L	5	12/13/2017 11:19 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	730	2.3	50		mg/L	100	12/15/2017 07:59 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-014

Client Sample ID: MW-33-150-Q417
Collection Date: 12/7/2017 9:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 01:25 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	5100	18	1000		mg/L	2000	12/15/2017 08:14 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**				PrepDate			Analyst: **RAB**
Fluoride	2.4	0.032	0.50		mg/L	5	12/13/2017 11:34 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	840	2.3	50		mg/L	100	12/15/2017 08:29 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-015

Client Sample ID: MW-33-210-Q417
Collection Date: 12/7/2017 9:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 02:11 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	6400	18	1000		mg/L	2000	12/15/2017 08:45 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**				PrepDate			Analyst: **RAB**
Fluoride	1.8	0.032	0.50		mg/L	5	12/13/2017 11:49 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	1200	2.3	50		mg/L	100	12/15/2017 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-016

Client Sample ID: MW-46-175-Q417
Collection Date: 12/7/2017 10:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/13/2017 01:41 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	6100	9.1	500		mg/L	1000	12/15/2017 09:15 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	900	2.3	50		mg/L	100	12/15/2017 09:31 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-017

Client Sample ID: MW-46-205-Q417
Collection Date: 12/7/2017 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/13/2017 01:56 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	7700	9.1	500		mg/L	1000	12/15/2017 10:17 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	900	2.3	50		mg/L	100	12/15/2017 10:32 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-018

Client Sample ID: MW-49-365-Q417
Collection Date: 12/7/2017 1:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 02:27 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	14000	46	2500		mg/L	5000	12/15/2017 10:47 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	1300	4.6	100		mg/L	200	12/15/2017 11:02 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-020

Client Sample ID: TW-02D-Q417
Collection Date: 12/7/2017 12:58:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 02:42 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	1800	4.6	250		mg/L	500	12/15/2017 04:09 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	370	1.1	25		mg/L	50	12/15/2017 04:40 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	LCS-R120771_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120771
Client ID:	LCSW	Batch ID:	R120771	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2863377

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.251	0.50	1.250	0	100	90	110				

Sample ID	MB-R120771_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120771
Client ID:	PBW	Batch ID:	R120771	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2863378

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	N027430-006CDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120771
Client ID:	ZZZZZZ	Batch ID:	R120771	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2863380

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50						0	0	20	

Sample ID	N027430-006CMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120771
Client ID:	ZZZZZZ	Batch ID:	R120771	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2863381

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.003	0.50	1.250	0	80.2	80	120				

Sample ID	N027430-006CMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120771
Client ID:	ZZZZZZ	Batch ID:	R120771	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2863382

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.036	0.50	1.250	0	82.9	80	120	1.003	3.25	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	N027430-004CMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120771
Client ID:	ZZZZZZ	Batch ID:	R120771	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2863384

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.799	0.50	1.250	0	63.9	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	LCS-R120854_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	LCSW	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869516

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.989	0.50	2.000	0	99.4	90	110				

Sample ID	MB-R120854_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	PBW	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869517

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	N027430-004CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	ZZZZZZ	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869519

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	209.355	25						210.2	0.398	20	

Sample ID	N027430-004CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	ZZZZZZ	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869520

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	316.325	25	100.0	210.2	106	80	120				

Sample ID	N027430-004CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	ZZZZZZ	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869521

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	317.025	25	100.0	210.2	107	80	120	316.3	0.221	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N027430-020CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	ZZZZZZ	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869525

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2813.150	250	1000	1774	104	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	MB-R120803_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120803
Client ID:	PBW	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867952

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID	LCS-R120803_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120803
Client ID:	LCSW	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867953

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.228	0.10	1.250	0	98.2	90	110				

Sample ID	N027430-008CDUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120803
Client ID:	ZZZZZZ	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867959

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.790	0.50						1.929	7.48	20	

Sample ID	N027430-008CMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120803
Client ID:	ZZZZZZ	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867962

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	7.748	0.50	6.250	1.929	93.1	80	120				

Sample ID	N027430-008CMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120803
Client ID:	ZZZZZZ	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867963

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	8.353	0.50	6.250	1.929	103	80	120	7.748	7.51	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	MB-R120937_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	PBW	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872494

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID	LCS-R120937_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	LCSW	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872495

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.181	0.10	1.250	0	94.5	90	110				

Sample ID	N027430-012CDUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872497

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	11.460	2.0						11.66	1.71	20	

Sample ID	N027430-012CMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872498

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	37.536	2.0	25.00	11.66	104	80	120				

Sample ID	N027430-012CMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872499

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	35.016	2.0	25.00	11.66	93.4	80	120	37.54	6.95	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **LCS-R120854_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120854**
Client ID: **LCSW** Batch ID: **R120854** TestNo: **EPA 300.0** Analysis Date: **12/15/2017** SeqNo: **2869546**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.730	0.50	4.000	0	93.3	90	110				

Sample ID **MB-R120854_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120854**
Client ID: **PBW** Batch ID: **R120854** TestNo: **EPA 300.0** Analysis Date: **12/15/2017** SeqNo: **2869547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **N027430-004CDUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120854**
Client ID: **ZZZZZZ** Batch ID: **R120854** TestNo: **EPA 300.0** Analysis Date: **12/15/2017** SeqNo: **2869549**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	139.038	10						139.8	0.532	20	

Sample ID **N027430-004CMS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120854**
Client ID: **ZZZZZZ** Batch ID: **R120854** TestNo: **EPA 300.0** Analysis Date: **12/15/2017** SeqNo: **2869550**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	221.892	10	80.00	139.8	103	80	120				

Sample ID **N027430-004CMSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120854**
Client ID: **ZZZZZZ** Batch ID: **R120854** TestNo: **EPA 300.0** Analysis Date: **12/15/2017** SeqNo: **2869551**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	220.132	10	80.00	139.8	100	80	120	221.9	0.796	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N027430-020CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	ZZZZZZ	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869555

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	573.715	25	200.0	373.2	100	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.30	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 8:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.1	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.6	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.8	0.044	0.10		mg/L	2	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.1	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R121010**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **PBW**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876073**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R121010**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **LCSW**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.526	0.050	0.5000	0	105	85	115				

Sample ID **N027429-007CMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **ZZZZZZ**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.621	0.25	2.500	2.809	112	75	125				

Sample ID **N027429-007CMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **ZZZZZZ**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.484	0.25	2.500	2.809	107	75	125	5.621	2.47	20	

Sample ID **N027429-008CDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **ZZZZZZ**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.177	0.25						2.951	7.36	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-002

Client Sample ID: MW-49-275-Q417
Collection Date: 12/7/2017 1:47:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	2400	38	100		ug/L	1	12/19/2017 02:46 AM
Calcium	210000	28	500		ug/L	1	12/19/2017 02:46 AM
Iron	53	1.8	20		ug/L	1	12/19/2017 02:46 AM
Magnesium	4700	4.4	100		ug/L	1	12/19/2017 02:46 AM
Sodium	5700000	6600	120000		ug/L	250	12/20/2017 07:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-004

Client Sample ID: MW-29-Q417
Collection Date: 12/7/2017 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	370	38	100		ug/L	1	12/19/2017 03:18 AM
Calcium	70000	28	500		ug/L	1	12/19/2017 03:18 AM
Iron	1000	1.8	20		ug/L	1	12/19/2017 03:18 AM
Magnesium	30000	4.4	100		ug/L	1	12/19/2017 03:18 AM
Sodium	230000	260	5000		ug/L	10	12/20/2017 08:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-006

Client Sample ID: MW-28-025-Q417
Collection Date: 12/7/2017 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	170	38	100		ug/L	1	12/19/2017 03:23 AM
Calcium	93000	28	500		ug/L	1	12/19/2017 03:23 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 03:23 AM
Magnesium	27000	4.4	100		ug/L	1	12/19/2017 03:23 AM
Sodium	110000	260	5000		ug/L	10	12/20/2017 08:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**				PrepDate	**12/11/2017**	Analyst: **CEI**
Boron	770	38	100		ug/L	1	12/19/2017 03:28 AM
Calcium	180000	28	500		ug/L	1	12/19/2017 03:28 AM
Iron	500	1.8	20		ug/L	1	12/19/2017 03:28 AM
Magnesium	37000	4.4	100		ug/L	1	12/19/2017 03:28 AM
Sodium	1200000	2600	50000		ug/L	100	12/20/2017 08:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-012

Client Sample ID: MW-33-040-Q417
Collection Date: 12/7/2017 9:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	2200	38	100		ug/L	1	12/19/2017 03:46 AM
Calcium	54000	28	500		ug/L	1	12/19/2017 03:46 AM
Iron	140	1.8	20		ug/L	1	12/19/2017 03:46 AM
Magnesium	72000	4.4	100		ug/L	1	12/19/2017 03:46 AM
Sodium	3000000	2600	50000		ug/L	100	12/20/2017 08:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-013

Client Sample ID: MW-33-090-Q417
Collection Date: 12/7/2017 8:47:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1100	38	100		ug/L	1	12/19/2017 03:53 AM
Calcium	260000	28	500		ug/L	1	12/19/2017 03:53 AM
Iron	20	1.8	20		ug/L	1	12/19/2017 03:53 AM
Magnesium	24000	4.4	100		ug/L	1	12/19/2017 03:53 AM
Sodium	1900000	2600	50000		ug/L	100	12/20/2017 08:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-014

Client Sample ID: MW-33-150-Q417
Collection Date: 12/7/2017 9:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1000	38	100		ug/L	1	12/19/2017 04:00 AM
Calcium	370000	28	500		ug/L	1	12/19/2017 04:00 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 04:00 AM
Magnesium	41000	4.4	100		ug/L	1	12/19/2017 04:00 AM
Sodium	3100000	2600	50000		ug/L	100	12/20/2017 08:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-015

Client Sample ID: MW-33-210-Q417
Collection Date: 12/7/2017 9:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1400	38	100		ug/L	1	12/19/2017 04:07 AM
Calcium	540000	140	2500		ug/L	5	12/19/2017 12:02 PM
Iron	68	1.8	20		ug/L	1	12/19/2017 04:07 AM
Magnesium	52000	4.4	100		ug/L	1	12/19/2017 04:07 AM
Sodium	3800000	6600	120000		ug/L	250	12/20/2017 08:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-016

Client Sample ID: MW-46-175-Q417
Collection Date: 12/7/2017 10:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1900	38	100		ug/L	1	12/19/2017 04:14 AM
Calcium	98000	28	500		ug/L	1	12/19/2017 04:14 AM
Iron	70	1.8	20		ug/L	1	12/19/2017 04:14 AM
Magnesium	2600	4.4	100		ug/L	1	12/19/2017 04:14 AM
Sodium	4100000	6600	120000		ug/L	250	12/20/2017 08:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-017

Client Sample ID: MW-46-205-Q417
Collection Date: 12/7/2017 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	3000	38	100		ug/L	1	12/19/2017 04:20 AM
Calcium	100000	28	500		ug/L	1	12/19/2017 04:20 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 04:20 AM
Magnesium	2500	4.4	100		ug/L	1	12/19/2017 04:20 AM
Sodium	5000000	6600	120000		ug/L	250	12/20/2017 09:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-018

Client Sample ID: MW-49-365-Q417
Collection Date: 12/7/2017 1:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	3700	38	100		ug/L	1	12/19/2017 04:27 AM
Calcium	320000	28	500		ug/L	1	12/19/2017 04:27 AM
Iron	240	1.8	20		ug/L	1	12/19/2017 04:27 AM
Magnesium	6500	4.4	100		ug/L	1	12/19/2017 04:27 AM
Sodium	8400000	13000	250000		ug/L	500	12/20/2017 09:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-020

Client Sample ID: TW-02D-Q417
Collection Date: 12/7/2017 12:58:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	820	38	100		ug/L	1	12/19/2017 04:34 AM
Calcium	160000	28	500		ug/L	1	12/19/2017 04:34 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 04:34 AM
Magnesium	37000	4.4	100		ug/L	1	12/19/2017 04:34 AM
Sodium	1100000	2600	50000		ug/L	100	12/20/2017 09:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-65993**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **PBW**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	48.972	500									
Iron	ND	20									
Magnesium	4.804	100									

Sample ID **LCS1-65993**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **LCSW**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871607**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4518.810	100	5000	0	90.4	85	115				
Calcium	9590.941	500	10000	0	95.9	85	115				
Iron	109.266	20	100.0	0	109	85	115				
Magnesium	9312.753	100	10000	0	93.1	85	115				

Sample ID **N027430-002B-MS1**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6944.229	100	5000	2389	91.1	75	125				
Calcium	214316.917	500	10000	211000	32.8	75	125				S
Iron	120.528	20	100.0	52.84	67.7	75	125				S
Magnesium	11862.775	100	10000	4660	72.0	75	125				S

Sample ID **N027430-002B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6971.693	100	5000	2389	91.7	75	125	6944	0.395	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N027430-002B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	215346.305	500	10000	211000	43.1	75	125	214300	0.479	20	S
Iron	119.359	20	100.0	52.84	66.5	75	125	120.5	0.974	20	S
Magnesium	11837.119	100	10000	4660	71.8	75	125	11860	0.217	20	S

Sample ID **MB-65993**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120973**
Client ID: **PBW**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2874508**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	26.536	500									

Sample ID **LCS2-65993**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120973**
Client ID: **LCSW**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2874509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20336.418	500	20000	0	102	85	115				

Sample ID **N027430-004B-MS2**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120973**
Client ID: **ZZZZZZ**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2874522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	261208.893	5000	20000	226700	172	75	125				S

Sample ID **N027430-004B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120973**
Client ID: **ZZZZZZ**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2874523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	258902.013	5000	20000	226700	161	75	125	261200	0.887	20	S

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-002

Client Sample ID: MW-49-275-Q417
Collection Date: 12/7/2017 1:47:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**	Analyst: **CEI**	
Manganese	340	0.28	2.5		µg/L	5	12/19/2017 06:33 PM
Molybdenum	250	0.19	2.5		µg/L	5	12/19/2017 06:33 PM
Selenium	ND	0.14	2.5		µg/L	5	12/19/2017 06:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-004

Client Sample ID: MW-29-Q417
Collection Date: 12/7/2017 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Arsenic	9.2	0.025	0.10		µg/L	1	12/19/2017 07:28 PM
Manganese	200	0.28	2.5		µg/L	5	12/19/2017 07:34 PM
Molybdenum	4.8	0.039	0.50		µg/L	1	12/19/2017 07:28 PM
Selenium	ND	0.028	0.50		µg/L	1	12/19/2017 07:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-006

Client Sample ID: MW-28-025-Q417
Collection Date: 12/7/2017 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**	Analyst: **CEI**	
Arsenic	0.71	0.025	0.10		µg/L	1	12/19/2017 10:09 PM
Manganese	ND	0.056	0.50		µg/L	1	12/19/2017 10:09 PM
Molybdenum	4.3	0.039	0.50		µg/L	1	12/19/2017 10:09 PM
Selenium	1.2	0.028	0.50		µg/L	1	12/19/2017 10:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-008

Client Sample ID: MW-28-090-Q417
Collection Date: 12/7/2017 12:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Arsenic	1.7	0.025	0.10		µg/L	1	12/19/2017 07:54 PM
Manganese	130	0.056	0.50		µg/L	1	12/19/2017 07:54 PM
Molybdenum	23	0.039	0.50		µg/L	1	12/19/2017 07:54 PM
Selenium	ND	0.028	0.50		µg/L	1	12/19/2017 07:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Arsenic	9.7	0.025	0.10		µg/L	1	12/19/2017 08:05 PM
Manganese	14	0.056	0.50		µg/L	1	12/19/2017 08:05 PM
Molybdenum	340	0.19	2.5		µg/L	5	12/19/2017 08:11 PM
Selenium	ND	0.14	2.5		µg/L	5	12/19/2017 08:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-013

Client Sample ID: MW-33-090-Q417
Collection Date: 12/7/2017 8:47:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Arsenic	1.1	0.025	0.10		µg/L	1	12/19/2017 08:17 PM
Manganese	5.4	0.056	0.50		µg/L	1	12/19/2017 08:17 PM
Molybdenum	11	0.039	0.50		µg/L	1	12/19/2017 08:17 PM
Selenium	ND	0.028	0.50		µg/L	1	12/19/2017 08:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-014

Client Sample ID: MW-33-150-Q417
Collection Date: 12/7/2017 9:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**	Analyst: **CEI**	
Arsenic	1.8	0.12	0.50		µg/L	5	12/19/2017 08:44 PM
Manganese	3.8	0.056	0.50		µg/L	1	12/19/2017 08:39 PM
Molybdenum	41	0.19	2.5		µg/L	5	12/19/2017 08:44 PM
Selenium	ND	0.14	2.5		µg/L	5	12/19/2017 08:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-015

Client Sample ID: MW-33-210-Q417
Collection Date: 12/7/2017 9:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**	Analyst: **CEI**	
Arsenic	1.0	0.12	0.50		µg/L	5	12/19/2017 08:55 PM
Manganese	18	0.056	0.50		µg/L	1	12/19/2017 08:50 PM
Molybdenum	17	0.19	2.5		µg/L	5	12/19/2017 08:55 PM
Selenium	ND	0.14	2.5		µg/L	5	12/19/2017 08:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-016

Client Sample ID: MW-46-175-Q417
Collection Date: 12/7/2017 10:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	17	0.056	0.50		µg/L	1	12/19/2017 09:01 PM
Molybdenum	180	0.19	2.5		µg/L	5	12/19/2017 09:07 PM
Selenium	ND	0.14	2.5		µg/L	5	12/19/2017 09:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**				PrepDate	**12/12/2017**	Analyst: **CEI**
Manganese	39	0.056	0.50		µg/L	1	12/19/2017 09:12 PM
Molybdenum	320	0.19	2.5		µg/L	5	12/19/2017 09:18 PM
Selenium	ND	0.14	2.5		µg/L	5	12/19/2017 09:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-018

Client Sample ID: MW-49-365-Q417
Collection Date: 12/7/2017 1:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	300	0.28	2.5		µg/L	5	12/19/2017 09:41 PM
Molybdenum	190	0.19	2.5		µg/L	5	12/19/2017 09:41 PM
Selenium	ND	0.69	12		µg/L	25	12/20/2017 09:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-020

Client Sample ID: TW-02D-Q417
Collection Date: 12/7/2017 12:58:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	24	0.056	0.50		µg/L	1	12/19/2017 09:46 PM
Molybdenum	14	0.039	0.50		µg/L	1	12/19/2017 09:46 PM
Selenium	1.4	0.028	0.50		µg/L	1	12/19/2017 09:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66020**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120962**
Client ID: **PBW**	Batch ID: **66020**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2873399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-66020**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120962**
Client ID: **LCSW**	Batch ID: **66020**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2873400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.679	0.10	10.00	0	96.8	85	115				
Manganese	100.074	0.50	100.0	0	100	85	115				
Molybdenum	9.982	0.50	10.00	0	99.8	85	115				
Selenium	9.653	0.50	10.00	0	96.5	85	115				

Sample ID **N027430-002B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120962**
Client ID: **ZZZZZZ**	Batch ID: **66020**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2873407**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.028	0.50	10.00	2.215	108	75	125				
Manganese	467.773	2.5	100.0	335.8	132	75	125				S
Molybdenum	292.655	2.5	10.00	253.7	390	75	125				S
Selenium	9.785	2.5	10.00	0.2703	95.2	75	125				

Sample ID **N027430-002B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120962**
Client ID: **ZZZZZZ**	Batch ID: **66020**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2873411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.986	0.50	10.00	2.215	118	75	125	13.03	7.09	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027430-002B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	120962
Client ID:	ZZZZZZ	Batch ID:	66020	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2873411

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	476.720	2.5	100.0	335.8	141	75	125	467.8	1.89	20	S
Molybdenum	301.417	2.5	10.00	253.7	477	75	125	292.7	2.95	20	S
Selenium	11.103	2.5	10.00	0.2703	108	75	125	9.785	12.6	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD		RTNE		1. Chilled		
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker		RWQCB	✓	2. Headspace		
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec		CalTrans		3. Container Intact		
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	Others	✓	LEVEL III		4. Seal Present		
Title: Geologist II	Phone: 916-786-3302 Fax:		Specify: RWQCB		LEVEL IV		5. IR number 2		
			Global ID:		Regulatory		6. Method of Cooling: ice		
Signature: Date: 12/7/2017	Sampled By: Gantt Jeffers				Specify State:		Sample Temp: 3.9°C		

I hereby authorize ASSET Labs to perform the tests indicated below.

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Project Name: PG&E Topock - GMP

Project Number: RC000753.801B

Signature: Date: 12/7/2017

Matrix: Ground x Sediment; Potable Soil; NPDES Other Solid; Surface

Courier:

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3 500 mL poly	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) 1 liter poly	Specific Conductance (EPA 120.1) 1 liter poly	Total Dissolved Solids (SM2540C) 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) 1 liter poly	Fluoride (EPA 300.0) 1 liter poly				Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027430-01 ✓	MW-49-275-EB-Q417	12/7/2017	13:15		X																						E	1	P	B	
2	-02 ✓	MW-49-275-Q417	12/7/2017	13:47			X	X			X								X		X	X	X	X				E	5	P	BN	
3	-03 ✓	MW-29-EB-Q417	12/7/2017	12:20		X																						E	1	P	B	
4	-04 ✓	MW-29-Q417	12/7/2017	13:00			X		X		X							X	X	X	X	X						E	5	P	BNS	
5	-05 ✓	MW-28-025-EB-Q417	12/7/2017	11:25		X																						E	1	P	B	
6	-06 ✓	MW-28-025-Q417	12/7/2017	12:01			X		X		X							X	X	X	X	X						E	5	P	BNS	
7	-07 ✓	MW-28-090-EB-Q417	12/7/2017	11:20		X																						E	1	P	B	
8	-08 ✓	MW-28-090-Q417	12/7/2017	12:10			X		X		X							X	X	X	X	X	X					E	5	P	BNS	
9	-09 ✓	MW-723-Q417	12/7/2017	15:25		X																						E	1	P	B	
10	-10 ✓	MW-724-Q417	12/7/2017	15:30		X																						E	1	P	B	

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
G. Jeffers	12.7.17 1626	pmgalang	12/7/17 1626
pmgalang	12/7/17 1842	pmgalang	12/7/17 1842

Turn Around Time (TAT)

- A = < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis.
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B = (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition: 1. Chilled; 2. Headspace; 3. Container Intact; 4. Seal Present; 5. IR number 2
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	6. Method of Cooling: ice
Submitted By: Gantt Jeffers	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	Global ID: Specify State:
Title: Geologist II			Sample Temp: 2-9°C
Signature: Date: 12/7/2017	Sampled By: Gantt Jeffers	Matrix: Ground x Sediment; Potable Soil; NPDES Other Solid; Surface	Courier: Tracking No.:
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*		
Project Name: PG&E Topock - GMP	Signature: Date: 12/7/2017		
Project Number: RC000753.801B			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM; 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3; 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4; 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0); 1 liter poly	Specific Conductance (EPA 120.1); 1 liter poly	Total Dissolved Solids (SM2540C); 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B); 1 liter poly	Fluoride (EPA 300.0); 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027430-11 ✓	MW-33-040-EB-Q417	12/7/2017	9:15		X																	E	1	P	B	
2	-12 ✓	MW-33-040-Q417	12/7/2017	9:55			X	X	X		X							X	X	X	X	X	E	6	P	BNS	
3	-13 ✓	MW-33-090-Q417	12/7/2017	8:47		X		X	X		X							X	X	X	X	X	E	5	P	BNS	
4	-14 ✓	MW-33-150-Q417	12/7/2017	9:44		X		X	X		X							X	X	X	X	X	E	5	P	BNS	
5	-15 ✓	MW-33-210-Q417	12/7/2017	9:00		X		X	X		X							X	X	X	X	X	E	5	P	BNS	
6	-16 ✓	MW-46-175-Q417	12/7/2017	10:44		X		X			X						X	X	X	X	X		E	5	P	BNS	
7	-17 ✓	MW-46-205-Q417	12/7/2017	10:45		X					X						X	X	X	X	X		E	3	P	BN	
8	-18 ✓	MW-49-365-Q417	12/7/2017	13:05			X	X			X						X	X	X	X	X		E	5	P	BN	
9	-19 ✓	MW-722-Q417	12/7/2017	15:30		X												X	X	X	X		E	1	P	B	
10	-20 ✓	TW-02D-Q417	12/7/2017	12:58		X					X						X	X	X	X	X		E	3	P	BN	

Relinquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
G. Jeffers	12.7.17 1626		
			12/7/17 1626
	12/7/17 1642		
			12/7/17 1642

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B = (NH4)2SO4/NH4OH		

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/7/2017	Workorder:	N027430
Rep sample Temp (Deg C):	3.9/2.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	N/A	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 12/21/2017

Reviewed By: 12/21/2017

nancy@assetlaboratories.com

From: Quennie Manimtim [quennie@assetlaboratories.com]
Sent: Friday, December 08, 2017 10:01 AM
To: 'Daniel Moore'; 'Madsen, Laura'; 'Marlon B. Cartin'
Cc: 'Kalib Sumter'; 'Bush, Dan'; 'Kellogg, Lisa'; nancy@assetlaboratories.com; 'Sample Control'; 'Bloes, Marty'
Subject: RE: Magnesium

Thanks Dan!

From: Daniel Moore [mailto:Daniel.Moore@critigen.com]
Sent: Friday, December 08, 2017 9:54 AM
To: 'Quennie Manimtim'; 'Madsen, Laura'; 'Marlon B. Cartin'
Cc: Kalib Sumter; 'Bush, Dan'; 'Kellogg, Lisa'; nancy@assetlaboratories.com; 'Sample Control'; 'Bloes, Marty'
Subject: RE: Magnesium

You bet. Thanks for letting us know.

From: Quennie Manimtim [mailto:quennie@assetlaboratories.com]
Sent: Friday, December 08, 2017 10:31 AM
To: Daniel Moore <Daniel.Moore@critigen.com>; 'Madsen, Laura' <Laura.Madsen@arcadis.com>; 'Marlon B. Cartin' <marlon@assetlaboratories.com>
Cc: Kalib Sumter <Kalib.Sumter@critigen.com>; 'Bush, Dan' <Dan.Bush@arcadis.com>; 'Kellogg, Lisa' <Lisa.Kellogg@arcadis.com>; nancy@assetlaboratories.com; 'Sample Control' <samplecontrol.lv@assetlaboratories.com>; 'Bloes, Marty' <mbloes@pivox.com>
Subject: RE: Magnesium

Hi Dan,

Thank you for your response on this matter. We will change the method for magnesium to 6010 instead of 6020. We also noticed some samples being requested for Cu and Ni by 6010 and the rest of the other metals (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn) by 6020. Historically the Cu and Ni was analyzed by 6020, can we change the method from 6010 to 6020?

Thanks,
Quennie

From: Daniel Moore [mailto:Daniel.Moore@critigen.com]
Sent: Friday, December 08, 2017 9:09 AM
To: 'Madsen, Laura'; Marlon B. Cartin
Cc: Kalib Sumter; Bush, Dan; Kellogg, Lisa; nancy@assetlaboratories.com; 'Quennie Manimtim'; 'Sample Control'; Bloes, Marty
Subject: RE: Magnesium

Hi Laura/Marlon –

The methods that are included in the COC should be coming from our sampling planning efforts. The methods on the CoC should be what we are expecting to receive from the laboratory. However, as we discussed there would be times that the laboratory would request such method/analyte changes. The QAPP allows for the use of either 6010 or 6020 for the analysis of magnesium. Changing this to 6010 is not an issue from a quality standpoint.

My vote is Asset can change the method for these samples and we will update the database to reflect the change during the login review process.

Dan

From: Madsen, Laura [mailto:Laura.Madsen@arcadis.com]
Sent: Friday, December 08, 2017 9:57 AM
To: Marlon B. Cartin <marlon@assetlaboratories.com>; Daniel Moore <Daniel.Moore@critigen.com>
Cc: Kalib Sumter <Kalib.Sumter@critigen.com>; Bush, Dan <Dan.Bush@arcadis.com>; Kellogg, Lisa <Lisa.Kellogg@arcadis.com>; nancy@assetlaboratories.com; 'Quennie Manimtim' <quennie@assetlaboratories.com>; 'Sample Control' <samplecontrol.lv@assetlaboratories.com>; Bloes, Marty <mbloes@pivox.com>
Subject: RE: Magnesium

Hi,
Dan I had thought some time ago you and Kalib had said you had worked through all the sample analyte methods with Marlon and verified which ones we needed. That is what I was referring to when I spoke to Marlon yesterday. Can you confirm which method should be used for magnesium?

Thanks,
Laura

From: Marlon B. Cartin [mailto:marlon@assetlaboratories.com]
Sent: Friday, December 8, 2017 10:53 AM
To: Dan Moore <Daniel.Moore@critigen.com>
Cc: Kalib Sumter <Kalib.Sumter@critigen.com>; Bush, Dan <Dan.Bush@arcadis.com>; Madsen, Laura <Laura.Madsen@arcadis.com>; Kellogg, Lisa <Lisa.Kellogg@arcadis.com>; nancy@assetlaboratories.com; 'Quennie Manimtim' <quennie@assetlaboratories.com>; 'Sample Control' <samplecontrol.lv@assetlaboratories.com>; Bloes, Marty <mbloes@pivox.com>
Subject: Magnesium

Hi Dan,

We've been receiving COC's recently from Topock for the annual sampling event where Magnesium was being requested for EPA 6020-ICP-MS. Magnesium detection is generally high on Topock samples, if we run by ICP-MS, we will have a high DF due to low detection limit. Also, Mg was historically being done by EPA 6010-ICP. I called Laura about this and she advised me to consult this to you.
Please confirm which method to use so we can start working on the samples. Attached is an example of COC.

Thanks,

Marlon Cartin
Project Manager
California: 11110 Artesia Blvd., Ste. B, Cerritos, CA 90703 | P: 562.219.7435 | F: 562.219.7436
Nevada: 3151 W. Post Road, Las Vegas, NV 89118 | P: 702.307.2659 Ext. 410 | F: 702.307.2691 | M: 702.439.0421
www.assetlaboratories.com

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-001A	MW-49-275-EB-Q417	12/7/2017 1:15:00 PM	12/21/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-002A	MW-49-275-Q417	12/7/2017 1:47:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-002B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-002C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-002D			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027430-003A	MW-29-EB-Q417	12/7/2017 12:20:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-004A	MW-29-Q417	12/7/2017 1:00:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-004B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-004B	MW-29-Q417	12/7/2017 1:00:00 PM	12/21/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-004C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-004D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-005A	MW-28-025-EB-Q417	12/7/2017 11:25:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-006A	MW-28-025-Q417	12/7/2017 12:01:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-006B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-006C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-006C	MW-28-025-Q417	12/7/2017 12:01:00 PM	12/21/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-006D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-007A	MW-28-090-EB-Q417	12/7/2017 12:20:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-008A	MW-028-090-Q417	12/7/2017 12:10:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-008B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-008C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-008D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-009A	MW-723-Q417	12/7/2017 3:25:00 PM	12/21/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-010A	MW-724-Q417	12/7/2017 3:30:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-011A	MW-33-040-EB-Q417	12/7/2017 9:15:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-012A	MW-33-040-Q417	12/7/2017 9:55:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-012B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-012C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-012D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-012E			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	WW
N027430-013A	MW-33-090-Q417	12/7/2017 8:47:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-013B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-013B	MW-33-090-Q417	12/7/2017 8:47:00 AM	12/21/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-013C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-013D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-013E			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	WW
N027430-014A	MW-33-150-Q417	12/7/2017 9:44:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-014B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-014C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-014C	MW-33-150-Q417	12/7/2017 9:44:00 AM	12/21/2017	Groundwater	SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-014D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-014E			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	WW
N027430-015A	MW-33-210-Q417	12/7/2017 9:00:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-015B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-015C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-015C	MW-33-210-Q417	12/7/2017 9:00:00 AM	12/21/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-015D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-015E			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	WW
N027430-016A	MW-46-175-Q417	12/7/2017 10:44:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-016B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-016C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-016D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-016E			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-017A	MW-46-205-Q417	12/7/2017 10:45:00 AM	12/21/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-017B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-017C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-018A	MW-49-365-Q417	12/7/2017 1:05:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-018B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-018C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-018C	MW-49-365-Q417	12/7/2017 1:05:00 PM	12/21/2017	Groundwater		Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-018D			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027430-019A	MW-722-Q417	12/7/2017 3:30:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-020A	TW-02D-Q417	12/7/2017 12:58:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-020B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-020C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-021A	FOLDER	12/21/2017	12/21/2017		EDD	RWQCB	☐	☐	☐	LAB
			12/21/2017		Folder	Folder	☐	☐	☐	LAB
			12/21/2017		Folder	Folder	☐	☐	☐	LAB

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (760) 781 3338
FAX: (805) 544-8226
Acct #:

Field Sampler: Signed

11-Dec-17

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**OXY_DEUT**		
N027430-002D / MW-49-275-Q417	Groundwater	12/7/2017 1:47:00 PM	8OZP	1		
N027430-012E / MW-33-040-Q417	Groundwater	12/7/2017 9:55:00 AM	8OZP	1		
N027430-013E / MW-33-090-Q417	Groundwater	12/7/2017 8:47:00 AM	16OZP	1		
N027430-014E / MW-33-150-Q417	Groundwater	12/7/2017 9:44:00 AM	8OZP	1		
N027430-015E / MW-33-210-Q417	Groundwater	12/7/2017 9:00:00 AM	8OZP	1		
N027430-016E / MW-46-175-Q417	Groundwater	12/7/2017 10:44:00 AM	8OZP	1		
N027430-018D / MW-49-365-Q417	Groundwater	12/7/2017 1:05:00 PM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N27430A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Oxygen and Deuterium Stable Isotopes SFIRM. EDD Requirement Labspec7 edata.

Fedex #: 770961567484

		Date/Time			Date/Time
Relinquished by:		12/11/2017 16:00		**Received by:**	
Relinquished by:				**Received by:**	

List of Analysts

ASSET Laboratories Work Order: N027430

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6010B_Dissolved, EPA 6020_Dissolved
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	EPA 120.1, SM 2540C, SM 2320 B

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120747/R120750 **Analyst:** LSR

ASSET #: N027430 **Date Analyzed:** 12/8/2017

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 12/21/2017

2nd Level Reviewer: RLB 12/22/2017 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 12/8/17 1700

Analyst: LSR CONTD

Standard	Std ID	Reading	Comments
9.43 uS/cm	CMW - 170984	9.42 @ 21.1°C	% Rec: (90-110%)
1410	170822C	1421 @ 21.3°C	
99100	170818B	10020 @ 21.4°C	
99672	170822E	99310 @ 21.4°C	

	Sample ID	Matrix	Reading	Comments
1	W027429-010D	H2O	10246 @ 20.2C	
2	12D		2530 @ 20.2C	
3	13D		1974 @ 20.3C	
4	14D		1971 @ 20.3C	
5	15D		1979 @ 20.3C	
6	16D		3630 @ 20.3C	
7	17D		3640 @ 20.4C	
8	18D		10290 @ 20.6C	
9	20D		10180 @ 20.7C	
10	W027430-002C		17890 @ 20.6C	
Dup	2C DUP		17930 @ 20.5C	Accept: 10% water, 20% soil
20	Std Chk:			% Rec: (90-110%)

Silvia Ramit 12/21/2017

Date: CONTD

Analyst: RB 12/22/2017

Standard	Std ID	Reading	Comments
1413 uS/cm	CMW - 170615G	1414 @ 22.0°C	% Rec: (90-110%)
10000	170822F	10210 @ 22.3°C	
99672	170821B	98500 @ 22.0°C	

	Sample ID	Matrix	Reading	Comments
1	W027430-004C	H2O	1424 @ 20.2C	
2	6C		1019 @ 20.4C	
3	8C		5430 @ 20.7°C	1413 CMW 170615G
4	12C		10930 @ 20.8C	= 1419 @ 20.7 °C
5	13C		7720 @ 21.0°C	10000 CMW 170822F
6	14C		11740 @ 21.0C	= 10260 @ 21.1°C
7	15C		13810 @ 20.8C	99672 CMW 170821B
8	16C		13970 @ 20.8C	= 99100 @ 21.3°C
9	17C		16670 @ 20.5°C	
10	18C		24700 @ 20.7°C	
Dup	18C DUP		24900 @ 20.4°C	Accept: 10% water, 20% soil
20	Std Chk:			% Rec: (90-110%)

Logbook # 6

Conductivity Logbook

Date: 12/5/17 1700
Analyst: LSR

CONT'D

Standard	Std ID	Reading	Comments
9.43 uS/cm	CNW-1710KA	9.42 @ 21.1°C	% Rec: (90-110%)
1410	1708226	1421 @ 21.3°C	
9986	1710183	10070 @ 21.4°C	
99672	1710226E	99730 @ 21.4°C	

	Sample ID	Matrix	Reading	Comments
1	NO27430-020C	H2O	4780 @ 20.9°C	
2	NO27431-001C		2030 @ 20.7°C	
3	2C		7430 @ 20.9°C	
4	3C		13350 @ 21.1°C	
5	4C		13300 @ 21.1°C	
6	5C		1658 @ 20.8°C	
7	6C		7120 @ 20.9°C	
8	NO27459-001E		5280 @ 20.8°C	
9	2E		8080 @ 20.0°C	
10	3C		11690 @ 19.8°C	
Dup	3C DUP		11670 @ 19.8°C	Accept: 10% water, 20% soil
40	Std Chk:			% Rec: (90-110%)

Date: CONT'D
Analyst:

Silvia Ramit 12/21/2017
RB 12/22/2017

Standard	Std ID	Reading	Comments
1413 uS/cm	CNW-1706156	1473 @ 20.6°C	% Rec: (90-110%)
10000	170822F	10190 @ 20.9°C	
99672	170831B	97900 @ 21.1°C	

	Sample ID	Matrix	Reading	Comments
1	NO27459-004C	H2O	11950 @ 20.2°C	
2	5C		4460 @ 20.1°C	
3	6C		14570 @ 20.1°C	1413 CNW 1706156
4	6C DUP		14560 @ 20.0°C	= 1464 @ 21.1°C
5	7C		1788 @ 20.2°C	10000 CNW 170822F
6	8E		1647 @ 20.1°C	= 10250 @ 21.6°C
7	9C		7140 @ 20.2°C	99672 CNW 170831B
8	10C		7330 @ 20.2°C	= 98500 @ 21.6°C
9	11C		5200 @ 20.6°C	
10	12C		1269 @ 20.7°C	
Dup	13C		10580 @ 20.4°C	Accept: 10% water, 20% soil
50	Std Chk:			% Rec: (90-110%)

Logbook # 6

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 60025/60055 **Analyst:** LSR

ASSET #: N027430 **Date Analyzed:** 12/12,12/13/17

Method: EPA 160.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 12/21/2017

2nd Level Reviewer: RB 12/22/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N027430-002C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(59.2740 - 59.1347)*1000000}{10}$$

= 13930 mg/L

Reporting result in two significant figures,

TDS = 14000 mg/L

Julia Ramit 12/21/2017

RLB 12/22/2017

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/12/2017 12:55:5**
Prep End Date:

Reviewed/ Date: RB 12/22/2017
Initials/ Date: Lilia Ramit 12/21/2017

Prep Batch **66025** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66025	Water	12/17/1211C	100	☐	0	0	100	1.000		
MB-66025	Water		100	☐	0	0	100	1.000		
N027429-017D	Groundwater	3640	100 /40	☐	0	0	100	1.000		
N027429-018D	Groundwater	10290	100 /10	☐	0	0	100	1.000		
N027429-020D	Groundwater	10180	100 /10	☐	0	0	100	1.000		
N027430-002C	Groundwater	17890	100 /10	☐	0	0	100	1.000		
N027430-002C-DU	Groundwater	1	100 /10	☐	0	0	100	1.000		
N027430-004C	Groundwater	1424	100	☐	0	0	100	1.000		
N027430-006C	Groundwater	1019	100	☐	0	0	100	1.000		
N027430-008C	Unknown	5430	100 /20	☐	0	0	100	1.000		
N027430-012C	Groundwater	10930	100 /10	☐	0	0	100	1.000		
N027430-013C	Groundwater	7720	100 /20	☐	0	0	100	1.000		
N027430-014C	Groundwater	11740	100 /10	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9466

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/12/2017 12:55:5**
Prep End Date: **12/13/2017 11:55:0**

Reviewed/ Date: RLB 12/22/2017
Initials/ Date: Lilia Ramit 12/21/2017

Prep Batch **66025** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66025	Water		100	☐	0	0	100	1.000		
MB-66025	Water		100	☐	0	0	100	1.000		
N027429-017D	Groundwater		40	☐	0	0	100	2.500		
N027429-018D	Groundwater		10	☐	0	0	100	10.000		
N027429-020D	Groundwater		10	☐	0	0	100	10.000		
N027430-002C	Groundwater		10	☐	0	0	100	10.000		
N027430-002C-DU	Groundwater		10	☐	0	0	100	10.000		
N027430-004C	Groundwater		100	☐	0	0	100	1.000		
N027430-006C	Groundwater		100	☐	0	0	100	1.000		
N027430-008C	Unknown		20	☐	0	0	100	5.000		
N027430-012C	Groundwater		10	☐	0	0	100	10.000		
N027430-013C	Groundwater		20	☐	0	0	100	5.000		
N027430-014C	Groundwater		10	☐	0	0	100	10.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9666	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171211C	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/13/2017 1:09:28**
Prep End Date:

Reviewed/ Date: RB 12/22/2017

Initials/ Date: Lilia Ramit 12/21/2017

Prep Batch **66055** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH (cond)	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66055	Water	lwsil 77211C	100	☐	0	0	100	1.000		
MB-66055	Water		100	☐	0	0	100	1.000		
N027430-015C	Groundwater	13810	100 /10	☐	0	0	100	1.000		
N027430-016C	Groundwater	13970	100 /10	☐	0	0	100	1.000		
N027430-017C	Groundwater	16670	100 /10	☐	0	0	100	1.000		
N027430-018C	Groundwater	24700	100 /5	☐	0	0	100	1.000		
N027430-018C-DU	Groundwater	1	100 /5	☐	0	0	100	1.000		
N027430-020C	Groundwater	4780	100 /30	☐	0	0	100	1.000		
N027459-001E	Groundwater	5280	100 /20	☐	0	0	100	1.000		
N027459-002E	Groundwater	8080	100 /20	☐	0	0	100	1.000		
N027459-003C	Groundwater	11690	100 /10	☐	0	0	100	1.000		
N027459-004C	Groundwater	11950	100 /10	☐	0	0	100	1.000		
N027459-005C	Groundwater	4460	100 /30	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

96616

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/13/2017 1:09:28**
Prep End Date: **12/14/2017 11:00:0**

Reviewed/ Date: RB 12/22/2017

Initials/ Date: Julia Ramit 12/21/2017

Prep Batch **66055** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66055	Water		100	☐	0	0	100	1.000		
MB-66055	Water		100	☐	0	0	100	1.000		
N027430-015C	Groundwater		10	☐	0	0	100	10.000		
N027430-016C	Groundwater		10	☐	0	0	100	10.000		
N027430-017C	Groundwater		10	☐	0	0	100	10.000		
N027430-018C	Groundwater		5	☐	0	0	100	20.000		
N027430-018C-DU	Groundwater		5	☐	0	0	100	20.000		
N027430-020C	Groundwater		30	☐	0	0	100	3.333		
N027459-001E	Groundwater		20	☐	0	0	100	5.000		
N027459-002E	Groundwater		20	☐	0	0	100	5.000		
N027459-003C	Groundwater		10	☐	0	0	100	10.000		
N027459-004C	Groundwater		10	☐	0	0	100	10.000		
N027459-005C	Groundwater		30	☐	0	0	100	3.333		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9666	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171211C	1000 ppm NaCl	LCS	100

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/20/17 1255 FF	MB 66025	100	68.3657 68.3658	68.3656 68.3659	
KL	LCS 66025	100	70.7429 70.7432	70.8364 70.8368	
T	NO27429-017D	40	46.0434 46.0435	46.1466 46.1470	
IF	18D	10	60.6246 60.6243	60.7044 60.7047	
S	20D	10	45.7302 45.7301	45.8040 45.8041	
A	NO27430-002C	10	59.1348 59.1347	59.2741 59.2740	
M	2C dup	10	49.0617 49.0615	49.2074 49.2071	
IX	4C	100	76.5869 76.5872	76.6838 76.6839	
18	6C	100	53.6844 53.6848	53.7631 53.7630	
31	8C	20	63.3144 63.3147	63.3933 63.3931	

Julia Ramit 12/21/2017

ASSET LABORATORIES 12/22/2017
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00912

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/12/17 RR	N027430-012C	10	62.3273 62.3277	62.4112 62.4113	
(-)	13C	20	60.5871 60.5875	60.7023 60.7022	
8	14C	10	53.6990 53.6993	53.7893 53.7891	

Julia Ramit 12/21/2017

Closing out : 49.9999 12/13/17 RB 12/22/2017 @ 1157

ASSET Laboratories

Logbook#8

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
12/13/2017									
MB-66025	100	68.3658	68.3659	1	1	1			MBLK
LCS-66025	100	70.7432	70.8368	936	1	936			LCS
N027429-017D	40	46.0435	46.147	1035	2.5	2587.5	3640	0.711	SAMP
N027429-018D	10	60.6243	60.7047	804	10	8040	10290	0.781	SAMP
N027429-020D	10	45.7301	45.8041	740	10	7400	10180	0.727	SAMP
N027430-002C	10	59.1347	59.274	1393	10	13930	17890	0.779	SAMP
N027430-002CDUP	10	49.0615	49.2071	1456	10	14560	17890	0.814	DUP
N027430-004C	100	76.5872	76.6839	967	1	967	1424	0.679	SAMP
N027430-006C	100	53.6848	53.763	782	1	782	1019	0.767	SAMP
N027430-008C	20	63.3147	63.3931	784	5	3920	5430	0.722	SAMP
N027430-012C	10	62.3277	62.4113	836	10	8360	10930	0.765	SAMP
N027430-013C	20	60.5875	60.7022	1147	5	5735	7720	0.743	SAMP
N027430-014C	10	53.6993	53.7891	898	10	8980	11740	0.765	SAMP

Julia Ramit 12/21/2017

RB 12/22/2017

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/13/17 1309 CC	MB 66055	100	70.0663 70.0661	70.0662 70.0663	
EE	LCS 66055	100	68.2178 68.2175	68.3125 68.3128	
1K	NO27430-015C	10	62.4357 62.4353	62.5478 62.5482	
15	16C	10	61.5250 61.5249	61.6290 61.6294	
A	17C	10	59.1298 59.1297	59.2537 59.2541	
16	18C	5	49.3552 49.3549	49.4636 49.4640	
C	18C DUP	5	50.3707 50.3706	50.4846 50.4844	
12	20C	30	53.6901 53.6905	53.7897 53.7901	
8	NO27459-001E	20	53.6969 53.6972	53.7717 53.7721	
CB	2E	20	53.5406 53.5406	53.6652 53.6655	

Julia Ramit 12/21/2017

12/22/2017

ASSET LABORATORIES
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV
ELAP Cert 2676 | NV Cert NV00922

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/13/17 IF	NO 1704459-003C	10	60.6241 60.6238	60.7199 60.7203	
T	4C	10	46.0447 46.0443	46.1439 46.1442	
31	5C	30	63.3092 63.3089	63.4000 63.4004	
Julia Ramit	12/21/2017				
RJB	12/22/2017				

ASSET LABORATORIES
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00732

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
12/14/2017									
MB-66055	100	70.0661	70.0663	2	1	2			MBLK
LCS-66055	100	68.2175	68.3128	953	1	953			LCS
N027430-015C	10	62.4353	62.5482	1129	10	11290	13810	0.818	SAMP
N027430-016C	10	61.5249	61.6294	1045	10	10450	13970	0.748	SAMP
N027430-017C	10	59.1297	59.2541	1244	10	12440	16670	0.746	SAMP
N027430-018C	5	49.3549	49.464	1091	20	21820	24700	0.883	SAMP
N027430-018CDUP	5	50.3706	50.4844	1138	20	22760	24700	0.921	DUP
N027430-020C	30	53.6905	53.7901	996	3.33333333	3320	4780	0.695	SAMP
N027459-001E	20	53.6972	53.7721	749	5	3745	5280	0.709	SAMP
N027459-002E	20	53.5406	53.6655	1249	5	6245	8080	0.773	SAMP
N027459-003C	10	60.6238	60.7203	965	10	9650	11690	0.825	SAMP
N027459-004C	10	46.0443	46.1442	999	10	9990	11950	0.836	SAMP
N027459-005C	30	63.3089	63.4004	915	3.33333333	3050	4460	0.684	SAMP

Divia Ramit 12/21/2017

RB 12/22/2017

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120833
ASSET #: N027430

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 12/11/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	~~X~~	X			X	
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?	X		~~X~~			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments: Dilution was necessary for N027430-002A, -012A, -013A, and -014A due to matrix interference.

N027430-002A (218.6) = 0.37 ppb , N027430-002B (6020) = 3.5 ppb
N027430-012A (218.6) = 0 ppb , N027430-012B (6020) = 1.7 ppb
MS confirmation performed; recovery within criteria.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/16/2017

2nd Level Reviewer: RLB 12/22/2017 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120834
ASSET #: N027430

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 12/11/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X		X			X
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

017A and -018A

Dilution were necessary in N027430-~~002A/12A/13A/14A/15A~~ due to matrix interference.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 12/16/2017

2nd Level Reviewer RLB 12/22/2017 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N027430-013A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 1.0980 * 5$$

$$Cr^{+6}, \mu g/L = 5.49$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 5.5}$$

rba 12/16/2017

RLB 12/22/2017

ANALYSIS RUN LOG

INJECTION LOG: 171128A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/28/17 10:57 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/28/17 11:08 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/28/17 11:17 AM	Reported
13	MB-R120468	MBLK	1	Hexavalent Chromium	11/28/17 11:27 AM	Reported
14	LCS-R120468	LCS	1	Hexavalent Chromium	11/28/17 11:36 AM	Reported
15	N027215-001A	SAMP	1	Hexavalent Chromium	11/28/17 11:47 AM	Reported
16	N027215-002A	SAMP	1	Hexavalent Chromium	11/28/17 11:59 AM	Reported
17	N027215-003A	SAMP	1	Hexavalent Chromium	11/28/17 12:08 PM	Reported
18	N027215-004A	SAMP	1	Hexavalent Chromium	11/28/17 12:18 PM	Reported
19	N027215-005A	SAMP	1	Hexavalent Chromium	11/28/17 12:27 PM	Reported
20	N027215-002ADUP	DUP	1	Hexavalent Chromium	11/28/17 12:37 PM	Reported
21	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 12:46 PM	Not Reported
22	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 12:56 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	11/28/17 1:05 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/28/17 1:14 PM	Reported
25	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:04 PM	Not Reported
26	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:16 PM	Not Reported
27	N027215-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:29 PM	Reported
28	N027215-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:41 PM	Reported
29	CCV-2	CCV	1	Hexavalent Chromium	11/28/17 2:50 PM	Reported
30	CCB-2	CCB	1	Hexavalent Chromium	11/28/17 3:00 PM	Reported



Injection Log Summary

Sequence Details

Name:	**IC-07_171128A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**28/Nov/17 15:47:35**
No. of Injections:	**33**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		11/28/2017 10:57	Finished	ICV @5ppb, IWST-171002A
11	PQL@0.2ppb,CCV2,	12	1000	Unknown		11/28/2017 11:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		11/28/2017 11:17	Finished	ICB R171114C
13	MB-H2O,MBLK,1	14	1000	Unknown		11/28/2017 11:27	Finished	MB R171114C
14	LCS-H2O,LCS,1	15	1000	Unknown		11/28/2017 11:36	Finished	LCS, IWST-171002B
15	N027215-001A,SAMP	17	1000	Unknown		11/28/2017 11:47	Finished	SAMP,10mL
16	N027215-002A,SAMP	18	1000	Unknown		11/28/2017 11:59	Finished	SAMP,10mL
17	N027215-003A,SAMP	19	1000	Unknown		11/28/2017 12:08	Finished	SAMP,10mL
18	N027215-004A,SAMP	20	1000	Unknown		11/28/2017 12:18	Finished	SAMP,10mL
19	N027215-005A,SAMP	21	1000	Unknown		11/28/2017 12:27	Finished	SAMP,10mL
20	N027215-002ADUP,D	22	1000	Unknown		11/28/2017 12:37	Finished	DUP,10mL
21	N027157-001AMS,MS	23	1000	Unknown		11/28/2017 12:46	Finished	MS (5ppb), IWST-171002B,10
22	N027157-001AMSD,M	24	1000	Unknown		11/28/2017 12:56	Finished	MSD (5ppb), IWST-171002B,1
23	CCV-1,CCV1,1,	25	1000	Unknown		11/28/2017 13:05	Finished	CCV @10ppb, IWST-171002A
24	CCB-1,CCB,1,	26	1000	Unknown		11/28/2017 13:14	Finished	CCB R171031A
25	N027157-001AMS,MS	28	1000	Unknown		11/28/2017 14:04	Finished	MS (5ppb), IWST-171002B,10
26	N027157-001AMSD,M	29	1000	Unknown		11/28/2017 14:16	Finished	MSD (5ppb), IWST-171002B,1
27	N027215-001AMS,MS	31	1000	Unknown		11/28/2017 14:29	Finished	MS (5ppb), IWST-171002B,10
28	N027215-001AMSD,M	32	1000	Unknown		11/28/2017 14:41	Finished	MSD (5ppb), IWST-171002B,1
29	CCV-2,CCV,1,	33	1000	Unknown		11/28/2017 14:50	Finished	CCV @5ppb, IWST-171002A
30	CCB-2,CCB,1,	34	1000	Unknown		11/28/2017 15:00	Finished	CCB R171031A
31	SHUTDOWN	35	1000	Unknown		11/28/2017 15:09	Finished	
32	Eluent: R171128A	36	1000	Unknown		n.a.	Finished	Eluent
33	PCR: R171128B	37	1000	Unknown		n.a.	Finished	Post-Column Reagent

rba 11/29/2017

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 8:57 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 9:08 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/11/17 9:18 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/11/17 9:27 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/11/17 9:37 AM	Reported
15	MB-R120833	MBLK	1	Hexavalent Chromium	12/11/17 9:46 AM	Reported
16	LCS-R120833	LCS	1	Hexavalent Chromium	12/11/17 9:56 AM	Reported
17	N027405-006AMS	MS	5	Hexavalent Chromium	12/11/17 10:09 AM	Reported
18	N027405-006A	SAMP	5	Hexavalent Chromium	12/11/17 10:20 AM	Reported
19	N027405-007AMS	MS	5	Hexavalent Chromium	12/11/17 10:29 AM	Reported
20	N027405-007A	SAMP	5	Hexavalent Chromium	12/11/17 10:39 AM	Reported
21	N027405-008AMS	MS	5	Hexavalent Chromium	12/11/17 10:48 AM	Reported
22	N027405-008A	SAMP	5	Hexavalent Chromium	12/11/17 10:58 AM	Reported
23	N027430-001A	SAMP	1	Hexavalent Chromium	12/11/17 11:07 AM	Reported
24	N027430-001AMS	MS	1	Hexavalent Chromium	12/11/17 11:17 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/11/17 11:26 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/11/17 11:36 AM	Reported
27	N027430-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:45 AM	Reported
28	N027430-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:54 AM	Reported
29	N027430-003A	SAMP	1	Hexavalent Chromium	12/11/17 12:04 PM	Reported
30	N027430-003AMS	MS	1	Hexavalent Chromium	12/11/17 12:13 PM	Reported
31	N027430-004A	SAMP	1	Hexavalent Chromium	12/11/17 12:23 PM	Reported
32	N027430-004AMS	MS	1	Hexavalent Chromium	12/11/17 12:32 PM	Reported
33	N027430-005A	SAMP	1	Hexavalent Chromium	12/11/17 12:42 PM	Reported
34	N027430-005AMS	MS	1	Hexavalent Chromium	12/11/17 12:51 PM	Reported
35	N027430-006A	SAMP	1	Hexavalent Chromium	12/11/17 1:01 PM	Reported
36	N027430-006AMS	MS	1	Hexavalent Chromium	12/11/17 1:10 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/11/17 1:20 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/11/17 1:29 PM	Reported
39	N027430-007A	SAMP	1	Hexavalent Chromium	12/11/17 1:38 PM	Reported
40	N027430-007AMS	MS	1	Hexavalent Chromium	12/11/17 1:48 PM	Reported
41	N027430-008A	SAMP	1	Hexavalent Chromium	12/11/17 1:57 PM	Reported
42	N027430-008AMS	MS	1	Hexavalent Chromium	12/11/17 2:07 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027430-009A	SAMP	1	Hexavalent Chromium	12/11/17 2:16 PM	Reported
44	N027430-009AMS	MS	1	Hexavalent Chromium	12/11/17 2:26 PM	Reported
45	N027430-010A	SAMP	1	Hexavalent Chromium	12/11/17 2:35 PM	Reported
46	N027430-010AMS	MS	1	Hexavalent Chromium	12/11/17 2:45 PM	Reported
47	N027430-020A	SAMP	20	Hexavalent Chromium	12/11/17 2:54 PM	Reported
48	N027430-020AMS	MS	20	Hexavalent Chromium	12/11/17 3:04 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/11/17 3:13 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/11/17 3:23 PM	Reported
51	N027430-012A	SAMP	1	Hexavalent Chromium	12/11/17 3:32 PM	Not Reported
52	N027430-012AMS	MS	1	Hexavalent Chromium	12/11/17 3:41 PM	Not Reported
53	N027430-019A	SAMP	1	Hexavalent Chromium	12/11/17 3:51 PM	Reported
54	N027430-019AMS	MS	1	Hexavalent Chromium	12/11/17 4:00 PM	Reported
55	N027430-011A	SAMP	1	Hexavalent Chromium	12/11/17 4:10 PM	Reported
56	N027430-011AMS	MS	1	Hexavalent Chromium	12/11/17 4:19 PM	Reported
57	N027430-013A	SAMP	5	Hexavalent Chromium	12/11/17 4:29 PM	Reported
58	N027430-013AMS	MS	5	Hexavalent Chromium	12/11/17 4:38 PM	Reported
59	N027430-014A	SAMP	5	Hexavalent Chromium	12/11/17 4:48 PM	Reported
60	N027430-014AMS	MS	5	Hexavalent Chromium	12/11/17 4:57 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/11/17 5:07 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/11/17 5:16 PM	Reported
63	N027430-015A	SAMP	5	Hexavalent Chromium	12/11/17 5:26 PM	Reported
64	N027430-015AMS	MS	5	Hexavalent Chromium	12/11/17 5:35 PM	Reported
65	N027405-006ADUP	DUP	5	Hexavalent Chromium	12/11/17 5:44 PM	Reported
66	N027430-020AMSD	MSD	20	Hexavalent Chromium	12/11/17 5:54 PM	Reported
67	N027430-002A	SAMP	1	Hexavalent Chromium	12/11/17 6:05 PM	Not Reported
68	N027430-002AMS	MS	1	Hexavalent Chromium	12/11/17 6:16 PM	Not Reported
69	N027430-013A	SAMP	1	Hexavalent Chromium	12/11/17 6:25 PM	Not Reported
70	N027430-013AMS	MS	1	Hexavalent Chromium	12/11/17 6:35 PM	Not Reported
71	N027430-014A	SAMP	1	Hexavalent Chromium	12/11/17 6:44 PM	Not Reported
72	N027430-014AMS	MS	1	Hexavalent Chromium	12/11/17 6:54 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	12/11/17 7:03 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	12/11/17 7:13 PM	Reported
75	N027430-015A	SAMP	1	Hexavalent Chromium	12/11/17 7:22 PM	Not Reported
76	N027430-015AMS	MS	1	Hexavalent Chromium	12/11/17 7:32 PM	Not Reported
77	N027430-012A	SAMP	5	Hexavalent Chromium	12/11/17 7:41 PM	Reported
78	N027430-012AMS	MS	5	Hexavalent Chromium	12/11/17 7:50 PM	Reported
79	LCS-R120834	LCS	1	Hexavalent Chromium	12/11/17 8:00 PM	Reported
80	MB-R120834	MBLK	1	Hexavalent Chromium	12/11/17 8:09 PM	Reported
81	N027431-006A	SAMP	1000	Hexavalent Chromium	12/11/17 8:19 PM	Reported
82	N027431-006AMS	MS	1000	Hexavalent Chromium	12/11/17 8:28 PM	Reported
83	N027431-006AMSD	MSD	1000	Hexavalent Chromium	12/11/17 8:38 PM	Reported
84	N027428-002A	SAMP	100	Hexavalent Chromium	12/11/17 8:47 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	12/11/17 8:57 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	12/11/17 9:06 PM	Reported
87	N027428-002ADUP	DUP	100	Hexavalent Chromium	12/11/17 9:16 PM	Reported
88	N027428-002AMS	MS	100	Hexavalent Chromium	12/11/17 9:25 PM	Reported
89	N027428-001A	SAMP	1	Hexavalent Chromium	12/11/17 9:35 PM	Reported
90	N027428-001AMS	MS	1	Hexavalent Chromium	12/11/17 9:44 PM	Reported
91	N027430-016A	SAMP	5	Hexavalent Chromium	12/11/17 9:53 PM	Reported
92	N027430-016AMS	MS	5	Hexavalent Chromium	12/11/17 10:03 PM	Reported
93	N027430-017A	SAMP	5	Hexavalent Chromium	12/11/17 10:12 PM	Reported
94	N027430-017AMS	MS	5	Hexavalent Chromium	12/11/17 10:22 PM	Reported
95	N027430-018A	SAMP	5	Hexavalent Chromium	12/11/17 10:31 PM	Reported
96	N027430-018AMS	MS	5	Hexavalent Chromium	12/11/17 10:41 PM	Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	12/11/17 10:50 PM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	12/11/17 11:00 PM	Reported
99	N027431-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:09 PM	Reported
100	N027431-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:19 PM	Reported
101	N027431-003A	SAMP	5	Hexavalent Chromium	12/11/17 11:28 PM	Reported
102	N027431-003AMS	MS	5	Hexavalent Chromium	12/11/17 11:38 PM	Reported
103	N027431-004A	SAMP	5	Hexavalent Chromium	12/11/17 11:47 PM	Reported
104	N027431-004AMS	MS	5	Hexavalent Chromium	12/11/17 11:56 PM	Reported
105	N027431-001A	SAMP	10	Hexavalent Chromium	12/12/17 12:06 AM	Not Reported
106	N027431-001AMS	MS	10	Hexavalent Chromium	12/12/17 12:15 AM	Not Reported
107	N027431-005A	SAMP	200	Hexavalent Chromium	12/12/17 12:25 AM	Reported
108	N027431-005AMS	MS	200	Hexavalent Chromium	12/12/17 12:34 AM	Reported
109	CCV-9	CCV	1	Hexavalent Chromium	12/12/17 12:44 AM	Reported
110	CCB-9	CCB	1	Hexavalent Chromium	12/12/17 12:53 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171211A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**12/Dec/17 01:24:03**
No. of Injections:	**113**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/11/2017 08:57	Finished	BLANK
11	BLANK	2	1000	Unknown		12/11/2017 09:08	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/11/2017 09:18	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/11/2017 09:27	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/11/2017 09:37	Finished	CCB R171129A
15	MB-1,MBLK,1	6	1000	Unknown		12/11/2017 09:46	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/11/2017 09:56	Finished	LCS, IWST-171002B
17	N027405-006AMS,MS	1	1000	Unknown		12/11/2017 10:09	Finished	MS (1ppb), IWST-171002B,2>1
18	N027405-006A,SAMP	2	1000	Unknown		12/11/2017 10:20	Finished	SAMP,2>10mL
19	N027405-007AMS,MS	3	1000	Unknown		12/11/2017 10:29	Finished	MS (1ppb), IWST-171002B,2>1
20	N027405-007A,SAMP	4	1000	Unknown		12/11/2017 10:39	Finished	SAMP,2>10mL
21	N027405-008AMS,MS	5	1000	Unknown		12/11/2017 10:48	Finished	SAMP,2>10mL
22	N027405-008A,SAMP	6	1000	Unknown		12/11/2017 10:58	Finished	MS (1ppb), IWST-171002B,2>1
23	N027430-001A,SAMP	7	1000	Unknown		12/11/2017 11:07	Finished	SAMP,10mL
24	N027430-001AMS,MS	8	1000	Unknown		12/11/2017 11:17	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	9	1000	Unknown		12/11/2017 11:26	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	10	1000	Unknown		12/11/2017 11:36	Finished	CCB R171129A
27	N027430-002A,SAMP	11	1000	Unknown		12/11/2017 11:45	Finished	SAMP,2>10mL
28	N027430-002AMS,MS	12	1000	Unknown		12/11/2017 11:54	Finished	MS (1ppb), IWST-171002B,2>1
29	N027430-003A,SAMP	13	1000	Unknown		12/11/2017 12:04	Finished	SAMP,10mL
30	N027430-003AMS,MS	14	1000	Unknown		12/11/2017 12:13	Finished	MS (1ppb), IWST-171002B,10
31	N027430-004A,SAMP	15	1000	Unknown		12/11/2017 12:23	Finished	SAMP,10mL
32	N027430-004AMS,MS	16	1000	Unknown		12/11/2017 12:32	Finished	MS (1ppb), IWST-171002B,10
33	N027430-005A,SAMP	17	1000	Unknown		12/11/2017 12:42	Finished	SAMP,10mL
34	N027430-005AMS,MS	18	1000	Unknown		12/11/2017 12:51	Finished	MS (1ppb), IWST-171002B,10
35	N027430-006A,SAMP	19	1000	Unknown		12/11/2017 13:01	Finished	SAMP,10mL
36	N027430-006AMS,MS	20	1000	Unknown		12/11/2017 13:10	Finished	MS (1ppb), IWST-171002B,10
37	CCV-3,CCV,1,	21	1000	Unknown		12/11/2017 13:20	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	22	1000	Unknown		12/11/2017 13:29	Finished	CCB R171129A
39	N027430-007A,SAMP	23	1000	Unknown		12/11/2017 13:38	Finished	SAMP,10mL
40	N027430-007AMS,MS	24	1000	Unknown		12/11/2017 13:48	Finished	MS (1ppb), IWST-171002B,10
41	N027430-008A,SAMP	25	1000	Unknown		12/11/2017 13:57	Finished	SAMP,10mL
42	N027430-008AMS,MS	26	1000	Unknown		12/11/2017 14:07	Finished	MS (1ppb), IWST-171002B,10
43	N027430-009A,SAMP	27	1000	Unknown		12/11/2017 14:16	Finished	SAMP,10mL
44	N027430-009AMS,MS	28	1000	Unknown		12/11/2017 14:26	Finished	MS (1ppb), IWST-171002B,10
45	N027430-010A,SAMP	29	1000	Unknown		12/11/2017 14:35	Finished	SAMP,10mL
46	N027430-010AMS,MS	30	1000	Unknown		12/11/2017 14:45	Finished	MS (1ppb), IWST-171002B,10
47	N027430-020A,SAMP	31	1000	Unknown		12/11/2017 14:54	Finished	SAMP,0.5>10mL
48	N027430-020AMS,MS	32	1000	Unknown		12/11/2017 15:04	Finished	MS (5ppb), IWST-171002B,0.5
49	CCV-4,CCV1,1,	33	1000	Unknown		12/11/2017 15:13	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	34	1000	Unknown		12/11/2017 15:23	Finished	CCB R171129A
51	N027430-012A,SAMP	35	1000	Unknown		12/11/2017 15:32	Finished	SAMP,10mL
52	N027430-012AMS,MS	36	1000	Unknown		12/11/2017 15:41	Finished	MS (1ppb), IWST-171002B,10
53	N027430-019A,SAMP	37	1000	Unknown		12/11/2017 15:51	Finished	SAMP,10mL
54	N027430-019AMS,MS	38	1000	Unknown		12/11/2017 16:00	Finished	MS (1ppb), IWST-171002B,10
55	N027430-011A,SAMP	39	1000	Unknown		12/11/2017 16:10	Finished	SAMP,10mL
56	N027430-011AMS,MS	40	1000	Unknown		12/11/2017 16:19	Finished	MS (1ppb), IWST-171002B,10
57	N027430-013A,SAMP	41	1000	Unknown		12/11/2017 16:29	Finished	SAMP,2>10mL
58	N027430-013AMS,MS	42	1000	Unknown		12/11/2017 16:38	Finished	MS (1ppb), IWST-171002B,2>1
59	N027430-014A,SAMP	43	1000	Unknown		12/11/2017 16:48	Finished	SAMP,2>10mL
60	N027430-014AMS,MS	44	1000	Unknown		12/11/2017 16:57	Finished	MS (1ppb), IWST-171002B,2>1

61	CCV-5,CCV,1,	45	1000	Unknown		12/11/2017 17:07	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	46	1000	Unknown		12/11/2017 17:16	Finished	CCB R171129A
63	N027430-015A,SAMP	47	1000	Unknown		12/11/2017 17:26	Finished	SAMP,2>10mL
64	N027430-015AMS,MS	48	1000	Unknown		12/11/2017 17:35	Finished	MS (1ppb), IWST-171002B,2>1
65	N027405-006ADUP,D	49	1000	Unknown		12/11/2017 17:44	Finished	DUP,2>10mL
66	N027430-020AMSD,M	50	1000	Unknown		12/11/2017 17:54	Finished	MSD (5ppb), IWST-171002B,0.
67	N027430-002A,SAMP	1	1000	Unknown		12/11/2017 18:05	Finished	MSD (5ppb), IWST-171002B,0.
68	N027430-002AMS,MS	2	1000	Unknown		12/11/2017 18:16	Finished	DUP,2>10mL
69	N027430-013A,SAMP	3	1000	Unknown		12/11/2017 18:25	Finished	SAMP,2>10mL
70	N027430-013AMS,MS	4	1000	Unknown		12/11/2017 18:35	Finished	MS (1ppb), IWST-171002B,2>1
71	N027430-014A,SAMP	5	1000	Unknown		12/11/2017 18:44	Finished	SAMP,10mL
72	N027430-014AMS,MS	6	1000	Unknown		12/11/2017 18:54	Finished	MS (1ppb), IWST-171002B,10
73	CCV-6,CCV1,1,	7	1000	Unknown		12/11/2017 19:03	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	8	1000	Unknown		12/11/2017 19:13	Finished	CCB R171129A
75	N027430-015A,SAMP	9	1000	Unknown		12/11/2017 19:22	Finished	LCS, IWST-171002B
76	N027430-015AMS,MS	10	1000	Unknown		12/11/2017 19:32	Finished	MB R171129A
77	N027430-012A,SAMP	11	1000	Unknown		12/11/2017 19:41	Finished	SAMP,2>10mL
78	N027430-012AMS,MS	12	1000	Unknown		12/11/2017 19:50	Finished	MS (1ppb), IWST-171002B,2>1
79	LCS-2,LCS,1	13	1000	Unknown		12/11/2017 20:00	Finished	LCS, IWST-171002B
80	MB-2,MBLK,1	14	1000	Unknown		12/11/2017 20:09	Finished	MB R171129A
81	N027431-006A,SAMP	15	1000	Unknown		12/11/2017 20:19	Finished	DUP,0.1>10mL
82	N027431-006AMS,MS	16	1000	Unknown		12/11/2017 20:28	Finished	SAMP,10mL
83	N027431-006AMSD,M	17	1000	Unknown		12/11/2017 20:38	Finished	SAMP,5>10mL
84	N027428-002A,SAMP	18	1000	Unknown		12/11/2017 20:47	Finished	SAMP,0.2>10mL
85	CCV-7,CCV,1,	19	1000	Unknown		12/11/2017 20:57	Finished	CCV @5ppb, IWST-171002A
86	CCB-7,CCB,1,	20	1000	Unknown		12/11/2017 21:06	Finished	CCB R171114C
87	N027428-002ADUP,D	21	1000	Unknown		12/11/2017 21:16	Finished	SAMP,0.2>10mL
88	N027428-002AMS,MS	22	1000	Unknown		12/11/2017 21:25	Finished	SAMP,1>10mL
89	N027428-001A,SAMP	23	1000	Unknown		12/11/2017 21:35	Finished	SAMP,0.5>10mL
90	N027428-001AMS,MS	24	1000	Unknown		12/11/2017 21:44	Finished	SAMP,5>10mL
91	N027430-016A,SAMP	25	1000	Unknown		12/11/2017 21:53	Finished	SAMP,10mL
92	N027430-016AMS,MS	26	1000	Unknown		12/11/2017 22:03	Finished	SAMP,2>10mL
93	N027430-017A,SAMP	27	1000	Unknown		12/11/2017 22:12	Finished	MS (5ppb), IWST-171002B,2>1
94	N027430-017AMS,MS	28	1000	Unknown		12/11/2017 22:22	Finished	MSD (5ppb), IWST-171002B,2>
95	N027430-018A,SAMP	29	1000	Unknown		12/11/2017 22:31	Finished	SAMP,10mL
96	N027430-018AMS,MS	30	1000	Unknown		12/11/2017 22:41	Finished	MS (1ppb), IWST-171002B,10
97	CCV-8,CCV1,1,	31	1000	Unknown		12/11/2017 22:50	Finished	CCV @10ppb, IWST-171002A
98	CCB-8,CCB,1,	32	1000	Unknown		12/11/2017 23:00	Finished	CCB R171129A
99	N027431-002A,SAMP	33	1000	Unknown		12/11/2017 23:09	Finished	SAMP,10mL
100	N027431-002AMS,MS	34	1000	Unknown		12/11/2017 23:19	Finished	MS (1ppb), IWST-171002B,10
101	N027431-003A,SAMP	35	1000	Unknown		12/11/2017 23:28	Finished	SAMP,10mL
102	N027431-003AMS,MS	36	1000	Unknown		12/11/2017 23:38	Finished	MS (1ppb), IWST-171002B,10
103	N027431-004A,SAMP	37	1000	Unknown		12/11/2017 23:47	Finished	SAMP,10mL
104	N027431-004AMS,MS	38	1000	Unknown		12/11/2017 23:56	Finished	MS (1ppb), IWST-171002B,10
105	N027431-001A,SAMP	39	1000	Unknown		12/12/2017 00:06	Finished	SAMP,10mL
106	N027431-001AMS,MS	40	1000	Unknown		12/12/2017 00:15	Finished	MS (1ppb), IWST-171002B,10
107	N027431-005A,SAMP	41	1000	Unknown		12/12/2017 00:25	Finished	SAMP,10mL
108	N027431-005AMS,MS	42	1000	Unknown		12/12/2017 00:34	Finished	MS (1ppb), IWST-171002B,10
109	CCV-9,CCV,1,	43	1000	Unknown		12/12/2017 00:44	Finished	CCV @5ppb, IWST-171002A
110	CCB-9,CCB,1,	44	1000	Unknown		12/12/2017 00:53	Finished	CCB R171114C
111	SHUTDOWN	45	1000	Unknown		12/12/2017 01:03	Finished	
112	Eluent: R171211B	46	1000	Unknown		n.a.	Finished	Eluent
113	PCR: R171211C	47	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 12/7/17
Time Prepared: 1510H
Prepared By: MDA

Reagent ID:
Sulfuric Acid: 9465
Diphenylcarbazide: CINV - 171116A
NH4OH + NH4SO4 eluent: M71208A
NH4OH + NH4SO4 buffer: M71114C

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N027388-001A	7.32	9.40	~250 ml	~250 ml	5 ml	M71114C
2)	2A	7.51	9.35				
3)	3A	7.18	9.32				
4)	4A	7.36	9.43				
5)	5A	7.45	9.46				
6)	6A	7.53	9.38				
7)	7A	7.12	9.31				
8)	8A	7.18	9.36				
9)	9A	7.44	9.33				
10)	10A	7.37	9.38				
11)							
12)							
13)							
14)							
15)							

Sample Preparation

MC

Date Prepared: 12/8/17
Time Prepared: 0:38
Prepared By: MC

Slope ~~99.2~~ 97.8%
pH 4: ~~3.96~~ 4.02 25°C
7: ~~6.97~~ 6.97 25°C
10: ~~9.87~~ 9.98 25°C

Reagent ID:
Sulfuric Acid: 9465
Diphenylcarbazide: CINV - 171116A
NH4OH + NH4SO4 eluent: M71211B
NH4OH + NH4SO4 buffer: M71129A

Press calibrate when arrow blinking.

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N027430 - 1A	9.50	—	250 ml	250 ml		M71129A
2)	2A	9.50	—				1/2
3)	2A	9.50	—				2/2
4)	3A	9.50	—				
5)	4A	9.21	9.33			3 drops	1/2
6)	4A	9.23	9.36			3 drops	2/2
7)	5A	9.52	—				
8)	6A	9.27	9.38			2 drops	1/2
9)	6A	9.28	9.40			2 drops	2/2
10)	7A	9.49	—				
11)	8A	9.01	9.51			6 drops.	1/2
12)	8A	9.17	9.34			3 drops.	2/2
13)	9A	9.56	—				
14)	10A	9.52	—				
15)	11A	9.47	—				
	12A	9.30	—				1/2

Logbook No. 13

rba 12/16/2017
RB 12/22/2017

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 12/8/17
Time Prepared: 4:40
Prepared By: MC

Reagent ID:
Sulfuric Acid: 9465
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: ~~M71718~~ M71211B
NH4OH + NH4SO4 buffer: M71129A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N027430-12A	9.32	—	250	250		2/2 M71129A
2)	13A	9.33	—				
3)	14A	9.43	—				
4)	MC ~~14E~~	~~7.55~~					
5)	15A	9.45	—				
6)	16A	9.56	—				
7)	17A	9.52	—				
8)	18A	9.49	—				1/2
9)	18A	9.49	—				2/2
10)							
11)							
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 12/11/17
Time Prepared: 1437H
Prepared By: MDA

Reagent ID:
Sulfuric Acid: 9465
Diphenylcarbazide: CINV-170620A
NH4OH + NH4SO4 eluent: M71211B
NH4OH + NH4SO4 buffer: M71129A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N027431-1A	9.31	-	~250ml	~250ml		M71129A
2)	2A	9.31	-				
3)	3A	9.32	-				
4)	4A	9.34	-				
5)	5A	9.37	-				
6)	6A	9.33	-				
7)	N027465-1A	9.50	-				
8)	2A	9.51	-				
9)	3A	9.48	-				
10)	N027428-1A	9.38					
11)	2A	9.42					
12)							
13)							
14)							
15)							

Logbook No. 13

rba 12/16/2017

ASSET LABORATORIES 12/22/2017

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV
ELAP Cert 2676 | NV Cert NV00
ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 11/28/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0529	0.2484	1.2584	2.5328	3.7596	5.0155	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-171002A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RJB 12/22/2017

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ICV**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.092	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.185	0.20	0.2000	0	92.6	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCV**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.077	0.20	5.000	0	102	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866004**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.215	0.20	0.2000	0	108	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866016**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.152	0.20	10.00	0	102	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCV**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.030	0.20	5.000	0	101	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866040**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.193	0.20	10.00	0	102	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCV**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.045	0.20	5.000	0	101	95	105				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866056**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.294	0.20	10.00	0	103	95	105				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCV**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866060**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.109	0.20	5.000	0	102	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ICV**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866062**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.092	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.185	0.20	0.2000	0	92.6	80	120				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866065**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.215	0.20	0.2000	0	108	80	120				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.294	0.20	10.00	0	103	95	105				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **CCV**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.109	0.20	5.000	0	102	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-8**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866086**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.160	0.20	10.00	0	102	95	105				

Sample ID **CCV-9**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **CCV**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866096**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.072	0.20	5.000	0	101	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ICB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866005**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866041**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866051**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866061**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ICB**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **CCB**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **CCB**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866075**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **CCB**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-9**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **CCB**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.148	
CCV-7	4.148	
CCV-8	4.140	
CCV-9	4.148	

Average	4.143
Actual RT Window	4.063 - 4.223
Applied RT Window	3.943 - 4.343

MB-R120833	N.A.	N.A.
LCS-R120833	4.140	PASS
N027405-006AMS	4.090	PASS
N027405-006A	4.090	PASS
N027405-007AMS	4.090	PASS
N027405-007A	N.A.	N.A.
N027405-008AMS	4.090	PASS
N027405-008A	4.090	PASS
N027430-001A	N.A.	N.A.
N027430-001AMS	4.140	PASS
N027430-002A	4.031	PASS
N027430-002AMS	4.056	PASS
N027430-003A	N.A.	N.A.
N027430-003AMS	4.140	PASS
N027430-004A	N.A.	N.A.
N027430-004AMS	4.131	PASS
N027430-005A	N.A.	N.A.
N027430-005AMS	4.148	PASS
N027430-006A	N.A.	N.A.
N027430-006AMS	4.131	PASS



12/22/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.148	
CCV-7	4.148	
CCV-8	4.140	
CCV-9	4.148	
Average	4.143	
Actual RT Window	4.063 - 4.223	
Applied RT Window	3.943 - 4.343	
N027430-007A	N.A.	N.A.
N027430-007AMS	4.140	PASS
N027430-008A	N.A.	N.A.
N027430-008AMS	4.040	PASS
N027430-009A	N.A.	N.A.
N027430-009AMS	4.140	PASS
N027430-010A	N.A.	N.A.
N027430-010AMS	4.140	PASS
N027430-020A	4.140	PASS
N027430-020AMS	4.140	PASS
N027430-012A	N.A.	N.A.
N027430-012AMS	3.848	FAIL
N027430-019A	N.A.	N.A.
N027430-019AMS	4.140	PASS
N027430-011A	N.A.	N.A.
N027430-011AMS	4.140	PASS
N027430-013A	4.115	PASS
N027430-013AMS	4.115	PASS
N027430-014A	4.098	PASS
N027430-014AMS	4.098	PASS



12/22/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.148	
CCV-7	4.148	
CCV-8	4.140	
CCV-9	4.148	
Average	4.143	
Actual RT Window	4.063 - 4.223	
Applied RT Window	3.943 - 4.343	
N027430-015A	4.081	PASS
N027430-015AMS	4.081	PASS
N027405-006ADUP	4.090	PASS
N027430-020AMSD	4.140	PASS
N027430-002A	N.A.	N.A.
N027430-002AMS	N.A.	N.A.
N027430-013A	3.956	PASS
N027430-013AMS	3.965	PASS
N027430-014A	3.723	FAIL
N027430-014AMS	3.723	FAIL
N027430-015A	N.A.	N.A.
N027430-015AMS	N.A.	N.A.
N027430-012A	N.A.	N.A.
N027430-012AMS	4.106	PASS
LCS-R120834	4.148	PASS
MB-R120834	N.A.	N.A.
N027431-006A	4.140	PASS
N027431-006AMS	4.140	PASS
N027431-006AMSD	4.140	PASS
N027428-002A	4.140	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.148	
CCV-7	4.148	
CCV-8	4.140	
CCV-9	4.148	
Average	4.143	
Actual RT Window	4.063 - 4.223	
Applied RT Window	3.943 - 4.343	
N027428-002ADUP	4.140	PASS
N027428-002AMS	4.140	PASS
N027428-001A	N.A.	N.A.
N027428-001AMS	4.131	PASS
N027430-016A	4.081	PASS
N027430-016AMS	4.081	PASS
N027430-017A	4.056	PASS
N027430-017AMS	4.073	PASS
N027430-018A	N.A.	N.A.
N027430-018AMS	3.998	PASS
N027431-002A	4.115	PASS
N027431-002AMS	4.115	PASS
N027431-003A	4.090	PASS
N027431-003AMS	4.081	PASS
N027431-004A	4.081	PASS
N027431-004AMS	4.090	PASS
N027431-001A	4.140	PASS
N027431-001AMS	4.140	PASS
N027431-005A	4.140	PASS
N027431-005AMS	4.140	PASS

RB 12/22/2017

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 Unit: ug/L
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

MDL/LOD & PQL Verification 2017

Method Name: **Hexavalent Chromium by IC**
Method Number: EPA Method 218.6
Analysis Date(s): 5/31/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: µg/L

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.103

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.194	**97**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 171128A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/28/17 10:57 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/28/17 11:08 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/28/17 11:17 AM	Reported
13	MB-R120468	MBLK	1	Hexavalent Chromium	11/28/17 11:27 AM	Reported
14	LCS-R120468	LCS	1	Hexavalent Chromium	11/28/17 11:36 AM	Reported
15	N027215-001A	SAMP	1	Hexavalent Chromium	11/28/17 11:47 AM	Reported
16	N027215-002A	SAMP	1	Hexavalent Chromium	11/28/17 11:59 AM	Reported
17	N027215-003A	SAMP	1	Hexavalent Chromium	11/28/17 12:08 PM	Reported
18	N027215-004A	SAMP	1	Hexavalent Chromium	11/28/17 12:18 PM	Reported
19	N027215-005A	SAMP	1	Hexavalent Chromium	11/28/17 12:27 PM	Reported
20	N027215-002ADUP	DUP	1	Hexavalent Chromium	11/28/17 12:37 PM	Reported
21	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 12:46 PM	Not Reported
22	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 12:56 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	11/28/17 1:05 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/28/17 1:14 PM	Reported
25	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:04 PM	Not Reported
26	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:16 PM	Not Reported
27	N027215-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:29 PM	Reported
28	N027215-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:41 PM	Reported
29	CCV-2	CCV	1	Hexavalent Chromium	11/28/17 2:50 PM	Reported
30	CCB-2	CCB	1	Hexavalent Chromium	11/28/17 3:00 PM	Reported

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Injection Log Summary

Sequence Details

Name:	**IC-07_171128A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**28/Nov/17 15:47:35**
No. of Injections:	**33**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		11/28/2017 10:57	Finished	ICV @5ppb, IWST-171002A
11	PQL@0.2ppb,CCV2,	12	1000	Unknown		11/28/2017 11:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		11/28/2017 11:17	Finished	ICB R171114C
13	MB-H2O,MBLK,1	14	1000	Unknown		11/28/2017 11:27	Finished	MB R171114C
14	LCS-H2O,LCS,1	15	1000	Unknown		11/28/2017 11:36	Finished	LCS, IWST-171002B
15	N027215-001A,SAMF	17	1000	Unknown		11/28/2017 11:47	Finished	SAMP,10mL
16	N027215-002A,SAMF	18	1000	Unknown		11/28/2017 11:59	Finished	SAMP,10mL
17	N027215-003A,SAMF	19	1000	Unknown		11/28/2017 12:08	Finished	SAMP,10mL
18	N027215-004A,SAMF	20	1000	Unknown		11/28/2017 12:18	Finished	SAMP,10mL
19	N027215-005A,SAMF	21	1000	Unknown		11/28/2017 12:27	Finished	SAMP,10mL
20	N027215-002ADUP,D	22	1000	Unknown		11/28/2017 12:37	Finished	DUP,10mL
21	N027157-001AMS,MS	23	1000	Unknown		11/28/2017 12:46	Finished	MS (5ppb), IWST-171002B,10
22	N027157-001AMSD,M	24	1000	Unknown		11/28/2017 12:56	Finished	MSD (5ppb), IWST-171002B,1
23	CCV-1,CCV1,1,	25	1000	Unknown		11/28/2017 13:05	Finished	CCV @10ppb, IWST-171002A
24	CCB-1,CCB,1,	26	1000	Unknown		11/28/2017 13:14	Finished	CCB R171031A
25	N027157-001AMS,MS	28	1000	Unknown		11/28/2017 14:04	Finished	MS (5ppb), IWST-171002B,10
26	N027157-001AMSD,M	29	1000	Unknown		11/28/2017 14:16	Finished	MSD (5ppb), IWST-171002B,1
27	N027215-001AMS,MS	31	1000	Unknown		11/28/2017 14:29	Finished	MS (5ppb), IWST-171002B,10
28	N027215-001AMSD,M	32	1000	Unknown		11/28/2017 14:41	Finished	MSD (5ppb), IWST-171002B,1
29	CCV-2,CCV,1,	33	1000	Unknown		11/28/2017 14:50	Finished	CCV @5ppb, IWST-171002A
30	CCB-2,CCB,1,	34	1000	Unknown		11/28/2017 15:00	Finished	CCB R171031A
31	SHUTDOWN	35	1000	Unknown		11/28/2017 15:09	Finished	
32	Eluent: R171128A	36	1000	Unknown		n.a.	Finished	Eluent
33	PCR: R171128B	37	1000	Unknown		n.a.	Finished	Post-Column Reagent

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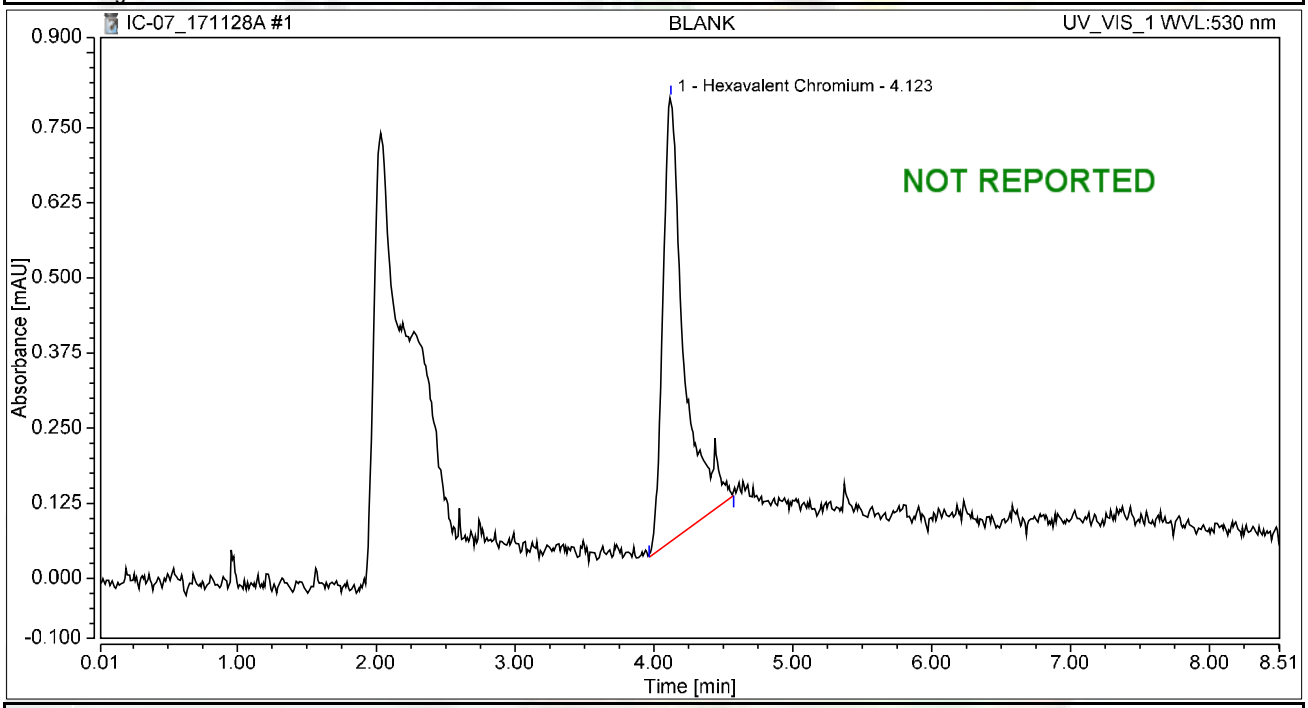
Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

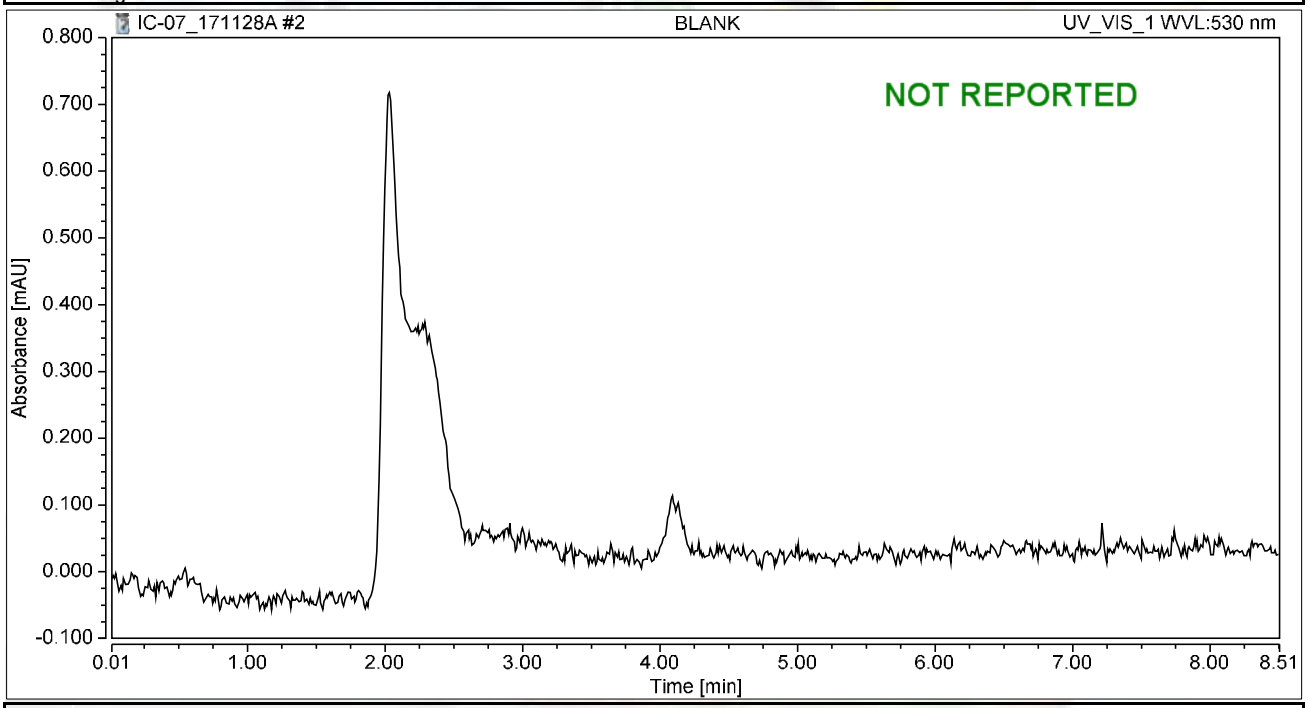
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.130	0.738	100.00	100.00	0.5193
Total:			**0.130**	**0.738**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

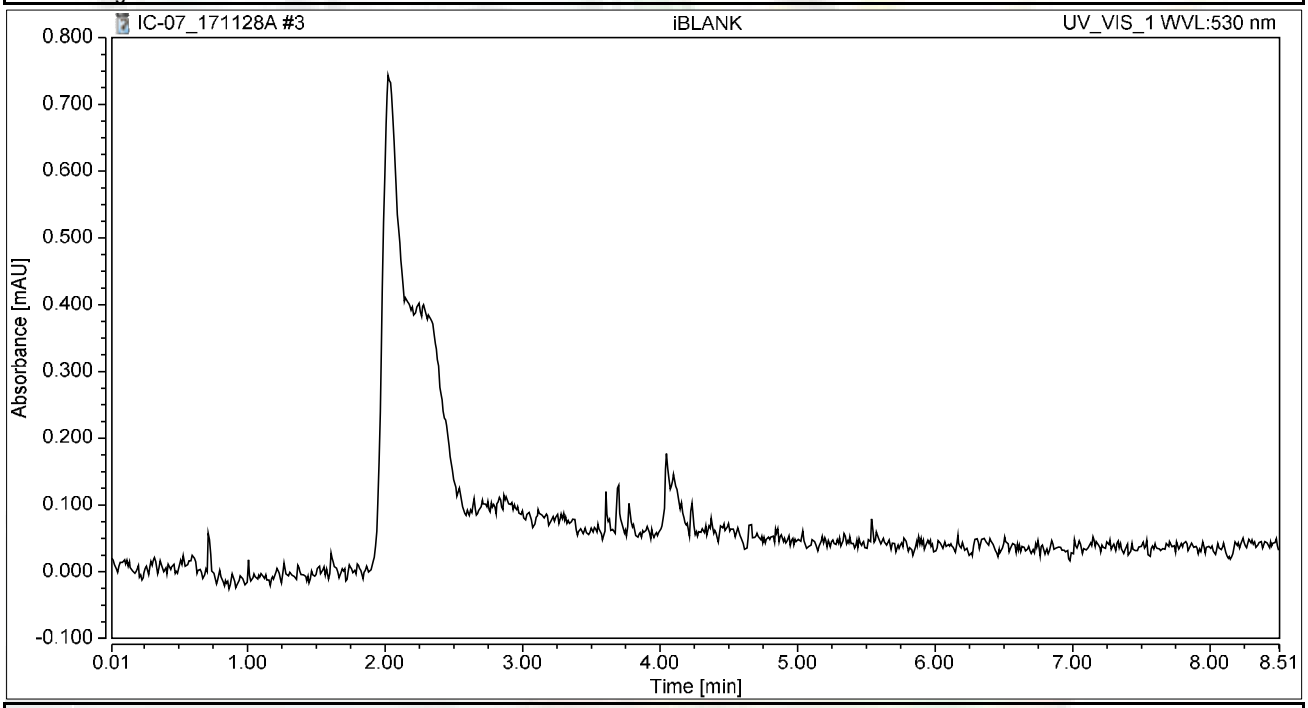
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

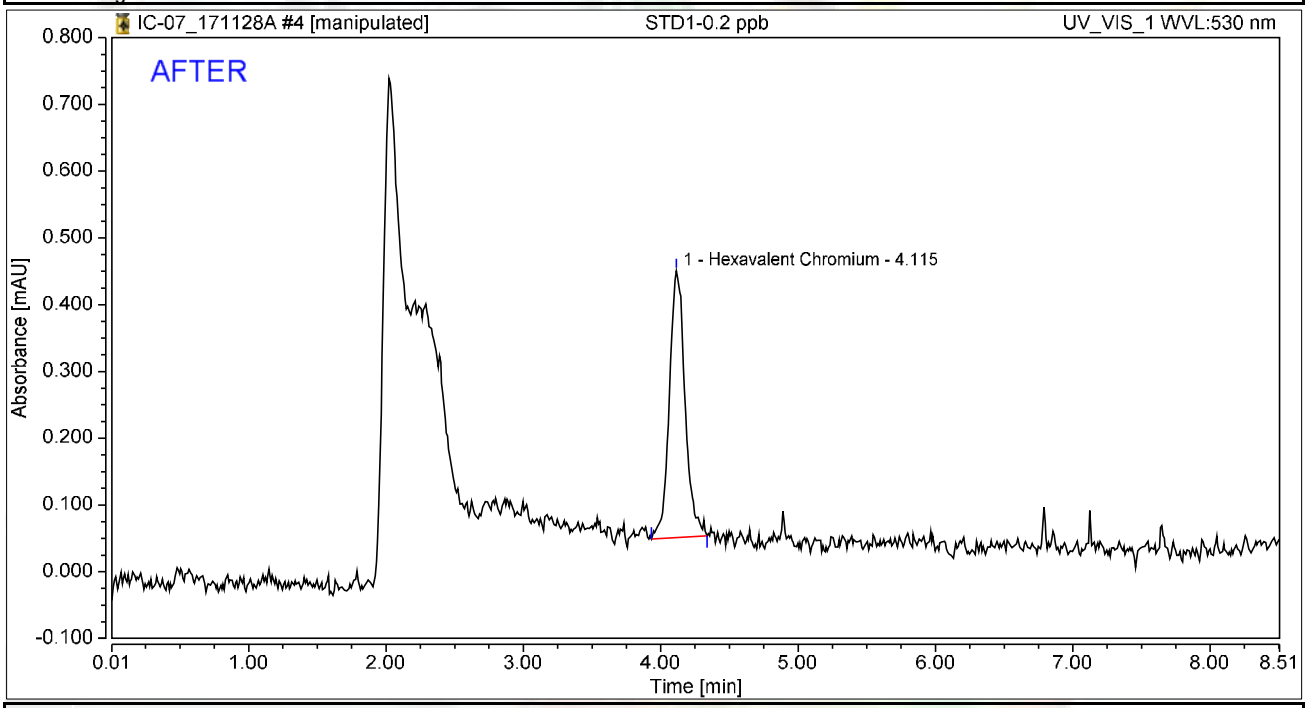
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.053	0.400	100.00	100.00	0.2108
Total:			**0.053**	**0.400**	**100.00**	**100.00**	

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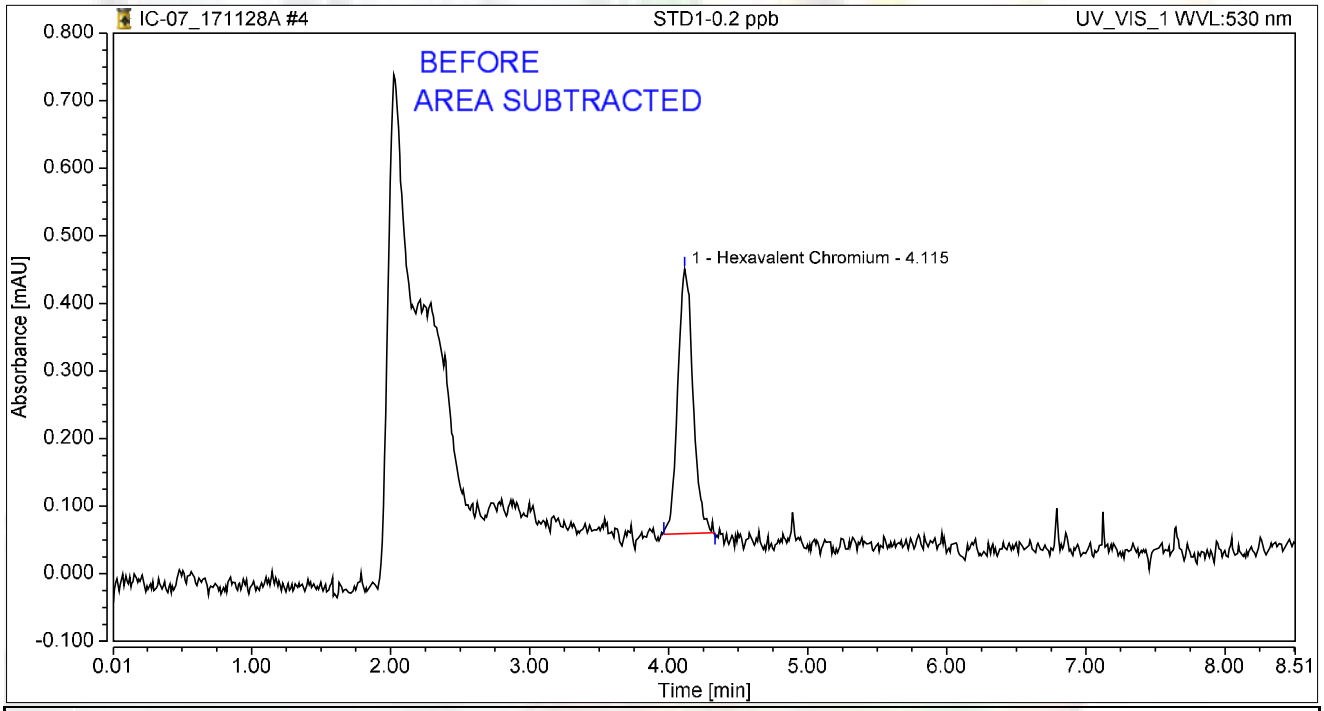
Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.050	0.391	100.00	100.00	0.1957
Total:			**0.050**	**0.391**	**100.00**	**100.00**	

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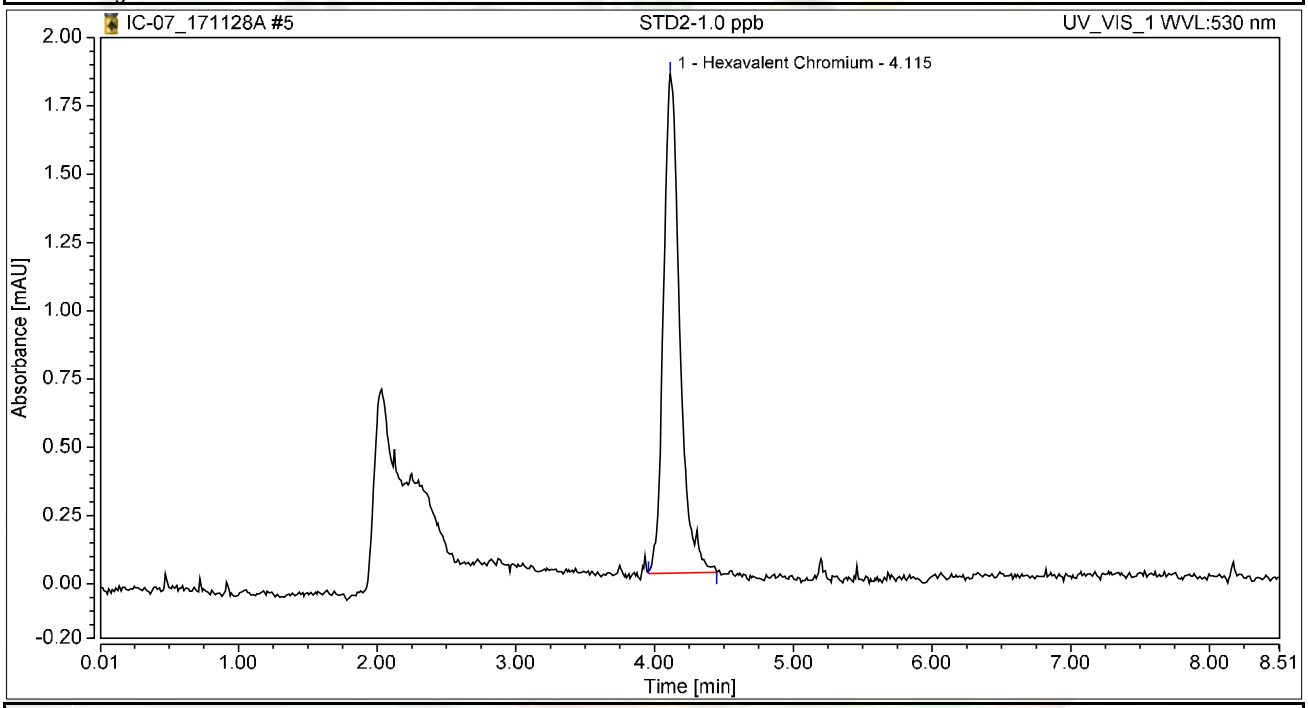
Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

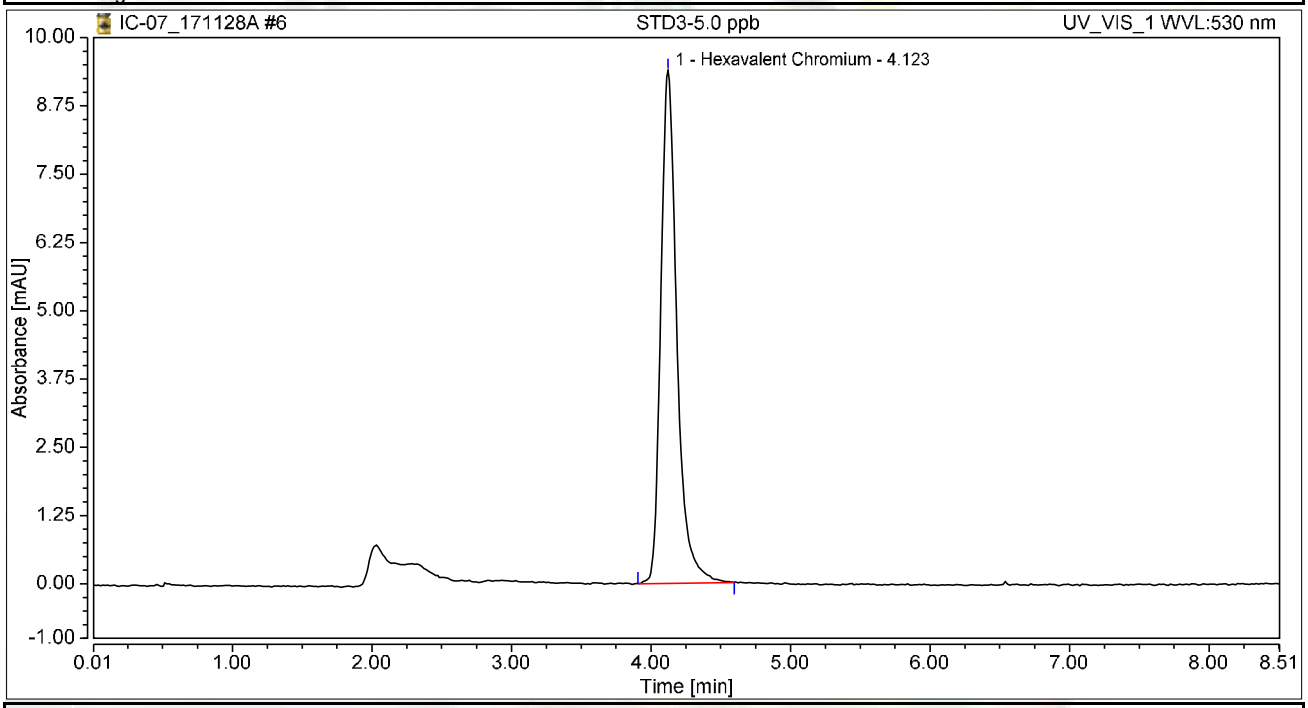
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.248	1.827	100.00	100.00	0.9892
Total:			**0.248**	**1.827**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

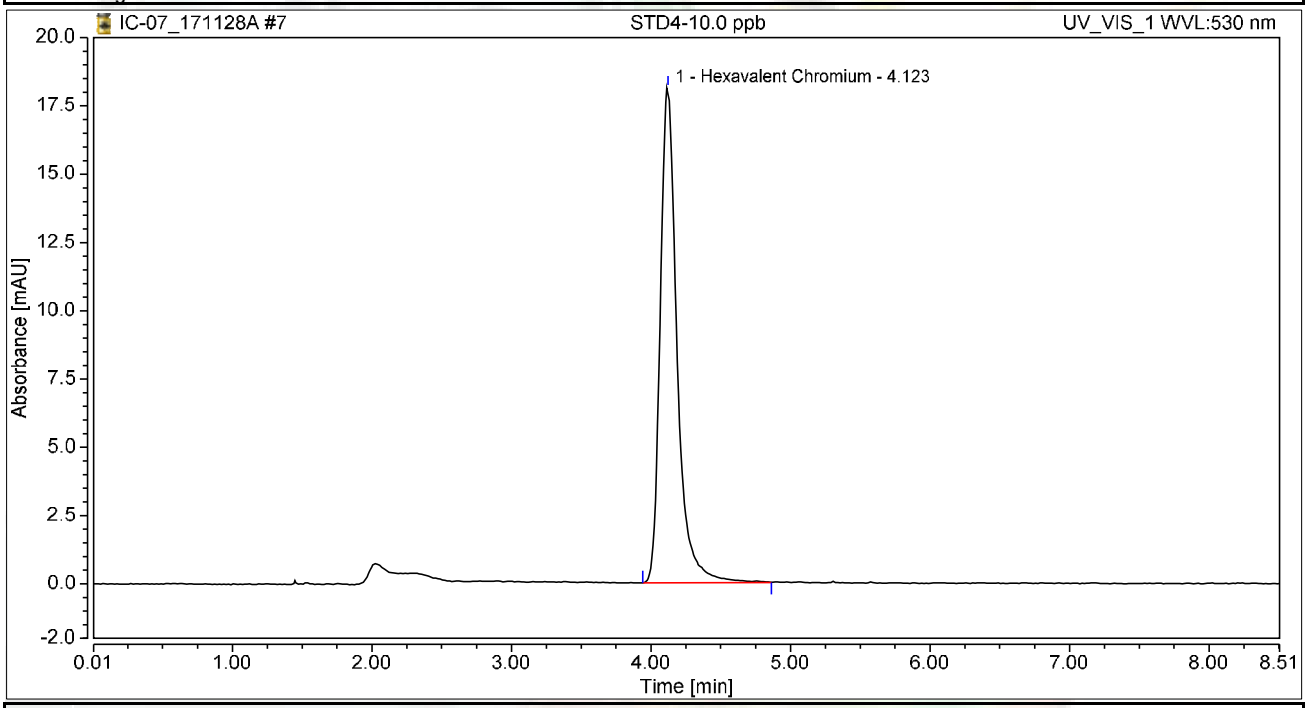
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.258	9.388	100.00	100.00	5.0118
Total:			**1.258**	**9.388**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

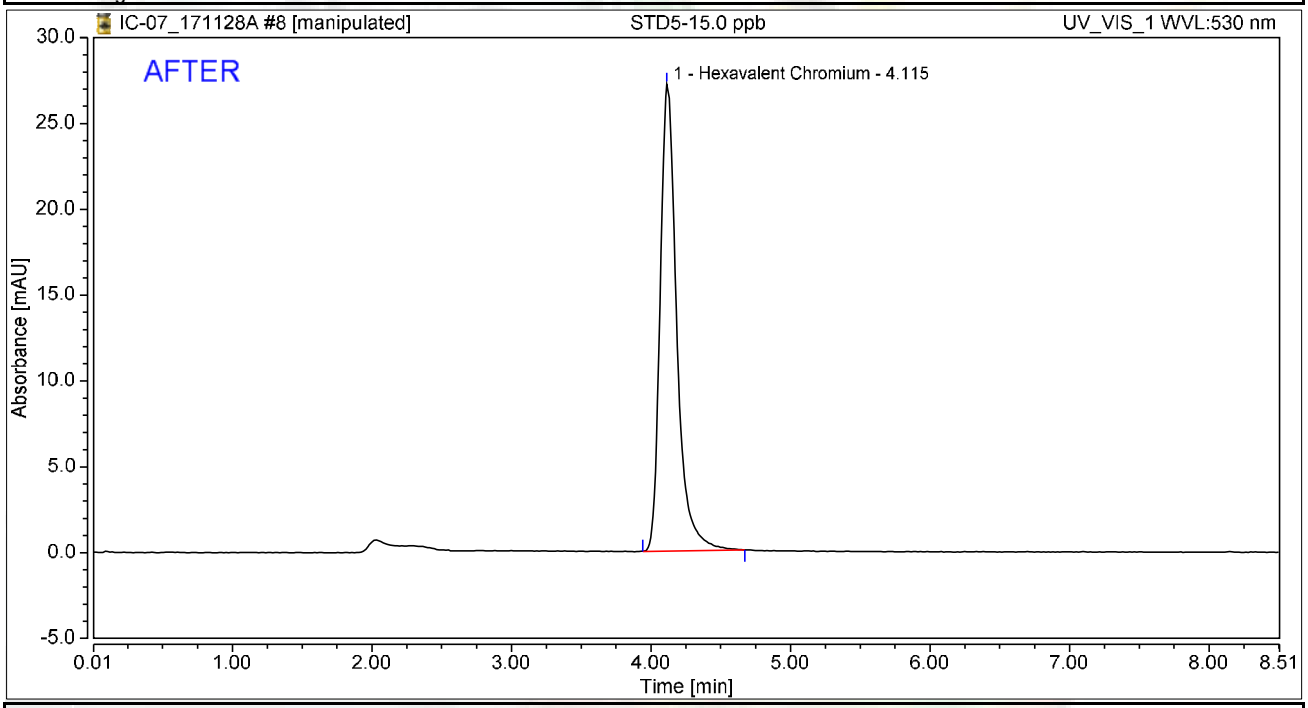
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	2.533	18.115	100.00	100.00	10.0869
Total:			**2.533**	**18.115**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	3.760	27.183	100.00	100.00	14.9728
Total:			**3.760**	**27.183**	**100.00**	**100.00**	

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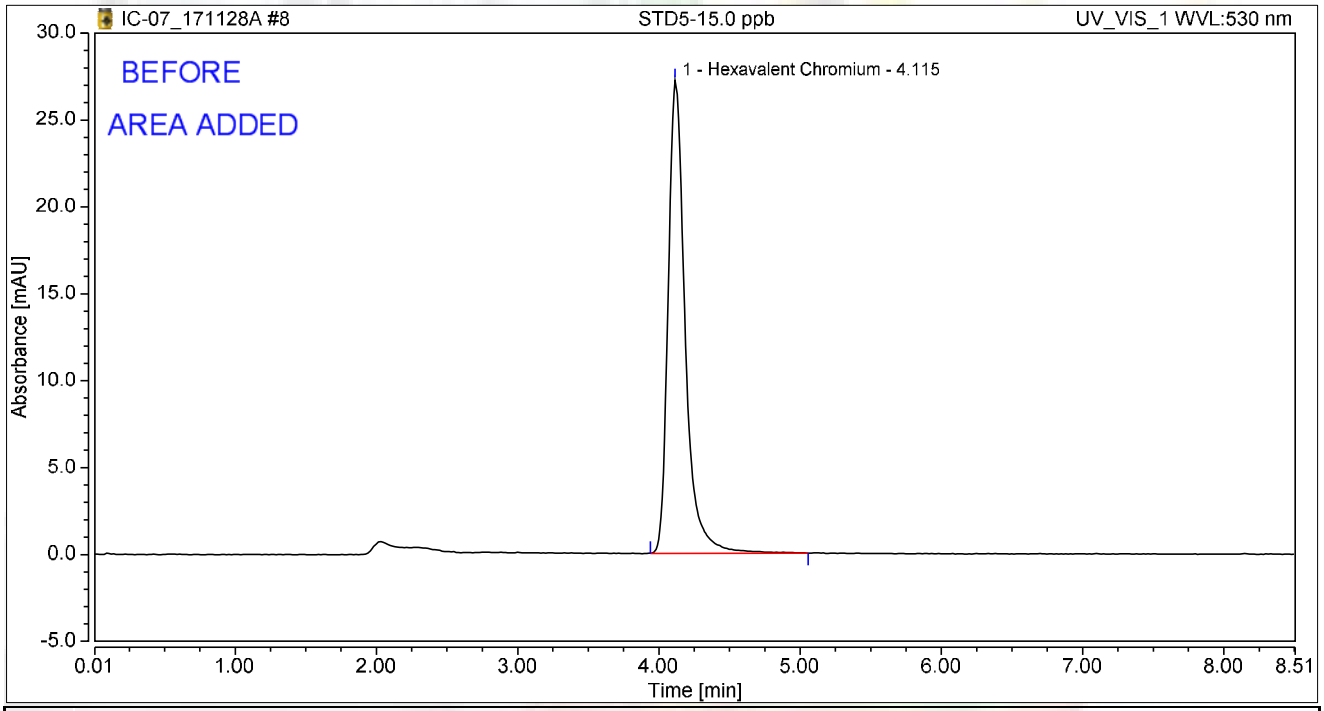
Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	3.807	27.204	100.00	100.00	14.9839
Total:			**3.807**	**27.204**	**100.00**	**100.00**	

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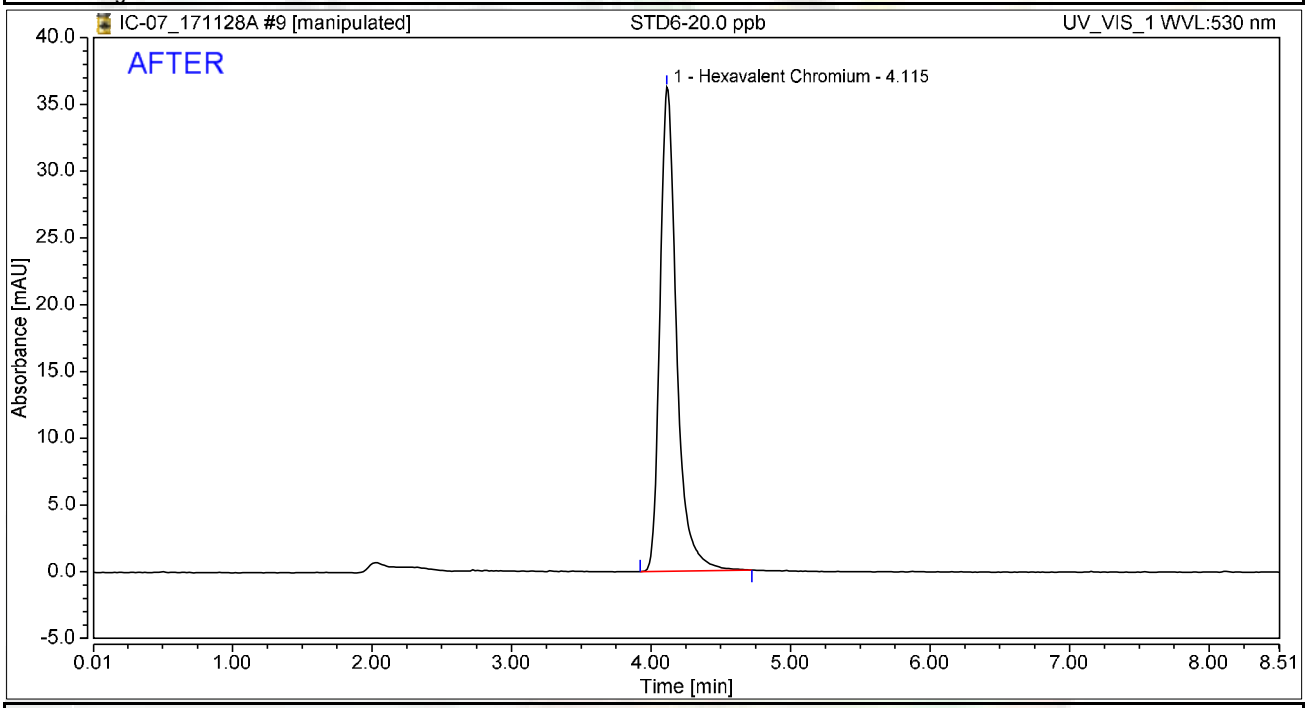
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	5.015	36.251	100.00	100.00	19.9744
Total:			**5.015**	**36.251**	**100.00**	**100.00**	

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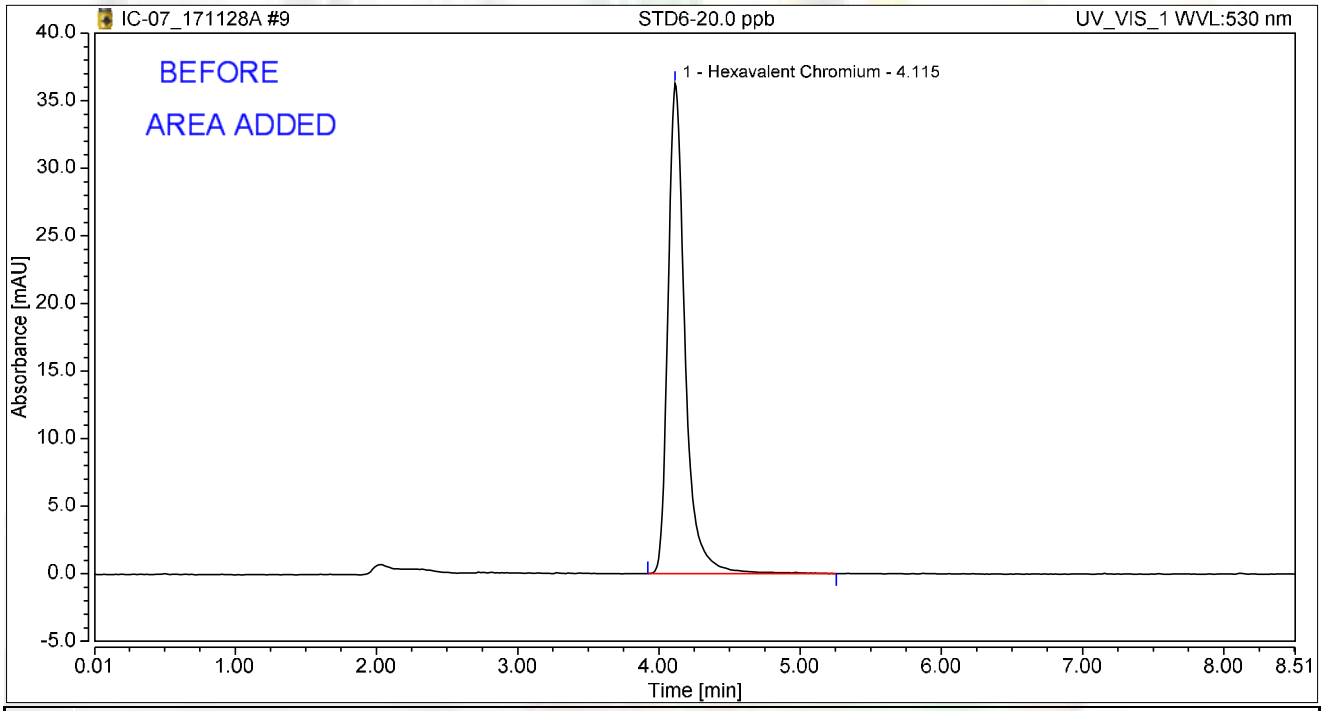
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	5.092	36.279	100.00	100.00	20.0407
Total:			**5.092**	**36.279**	**100.00**	**100.00**	

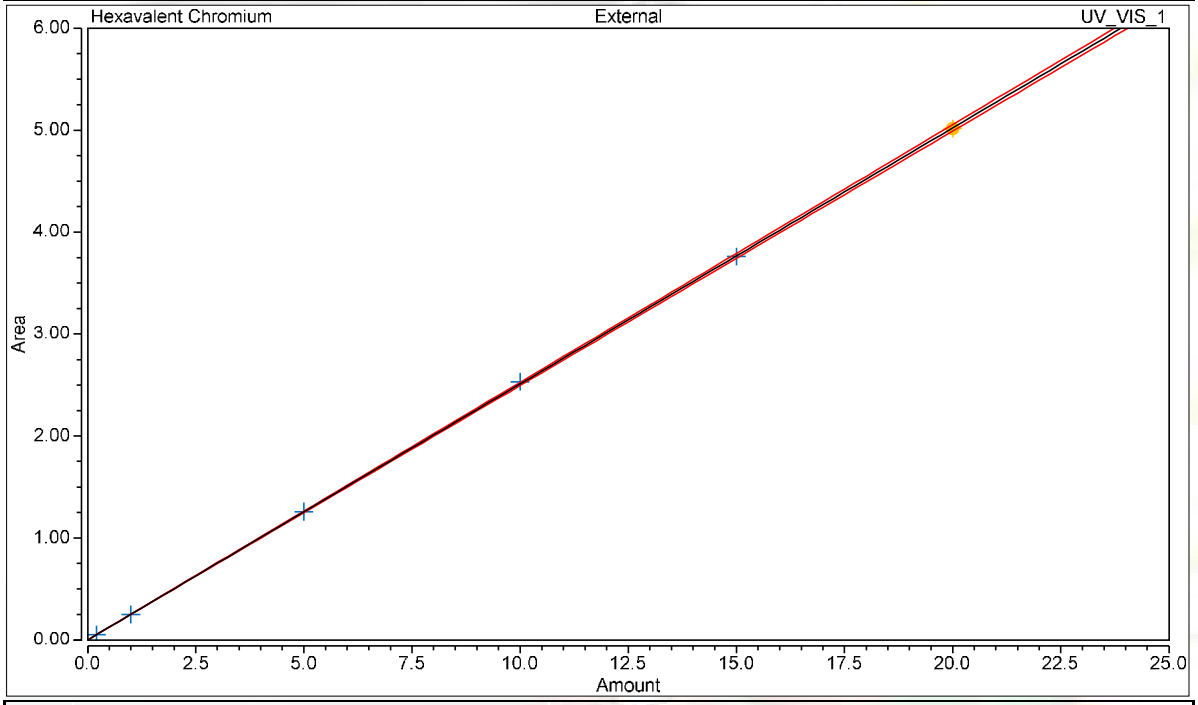
rba 11/29/2017

RB 12/11/2017

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2511
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99997

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

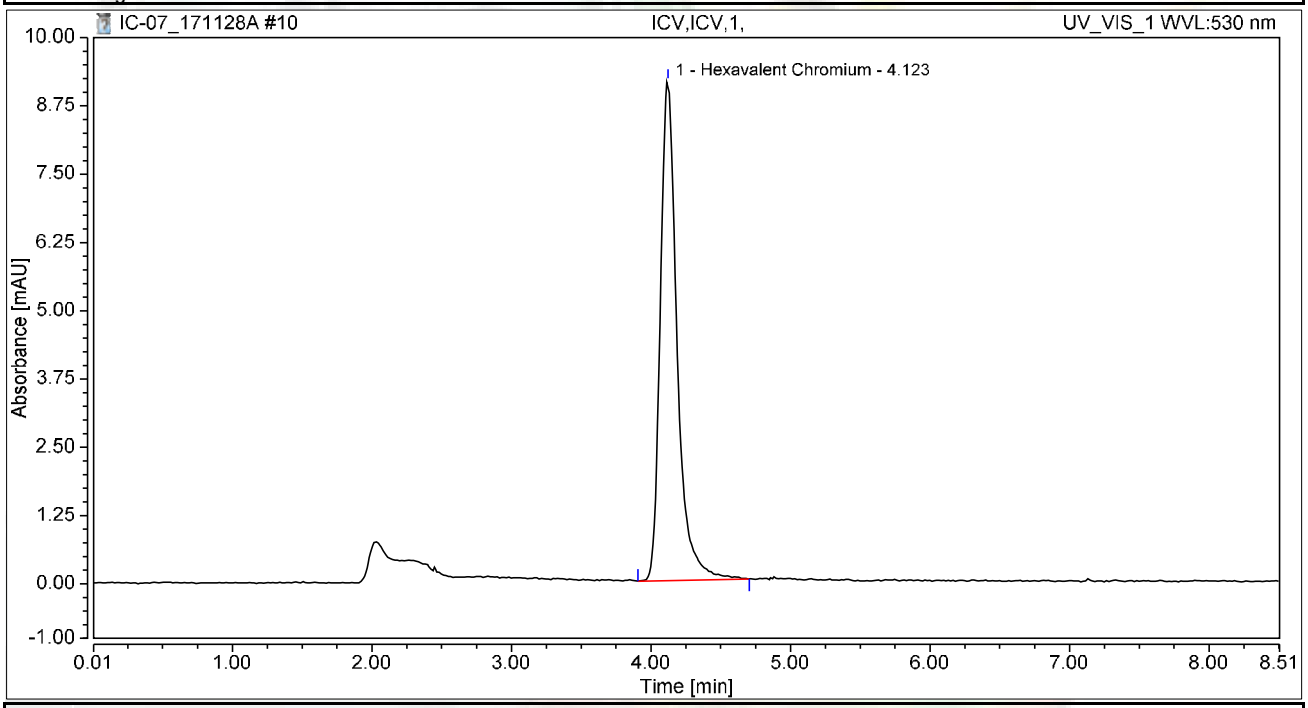
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0529	0.053	0.400
5	STD2-1.0 ppb	02	1.0000	0.2484	0.248	1.827
6	STD3-5.0 ppb	03	5.0000	1.2584	1.258	9.388
7	STD4-10.0 ppb	04	10.0000	2.5328	2.533	18.115
8	STD5-15.0 ppb	05	15.0000	3.7596	3.760	27.183
9	STD6-20.0 ppb	06	20.0000	5.0155	5.015	36.251

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

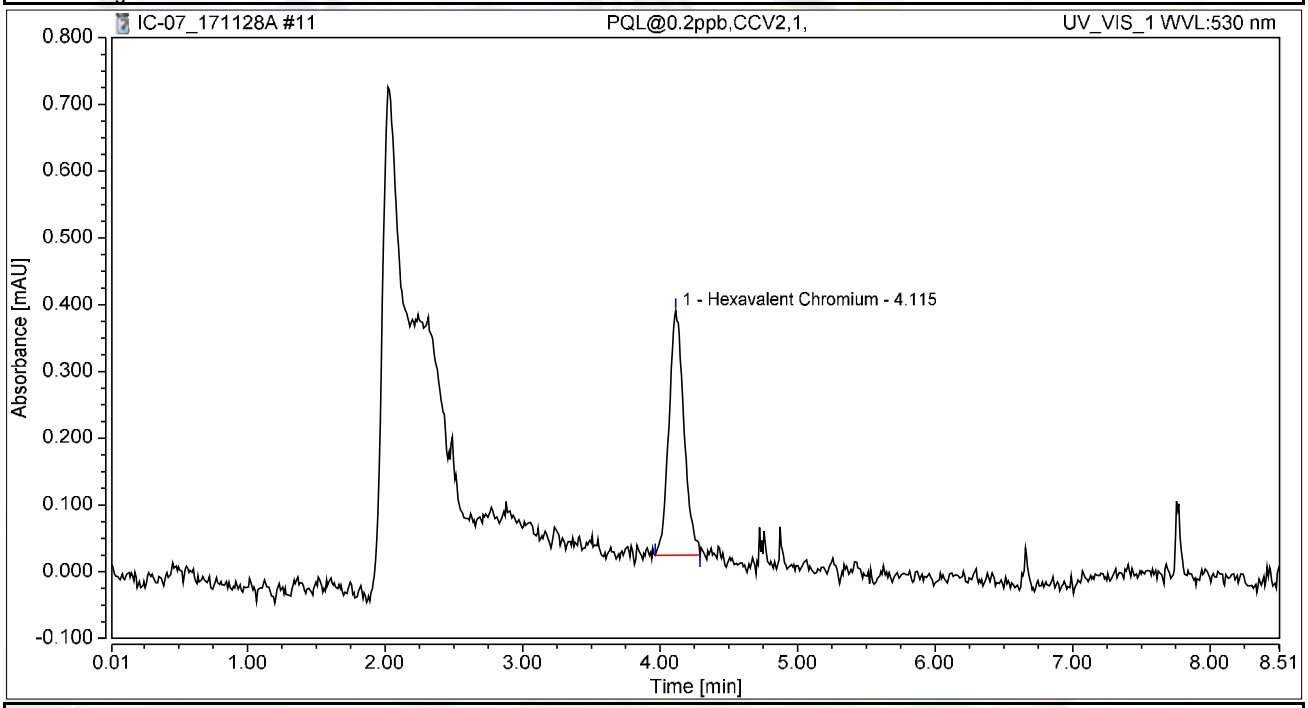
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.279	9.143	100.00	100.00	5.0922
Total:			**1.279**	**9.143**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

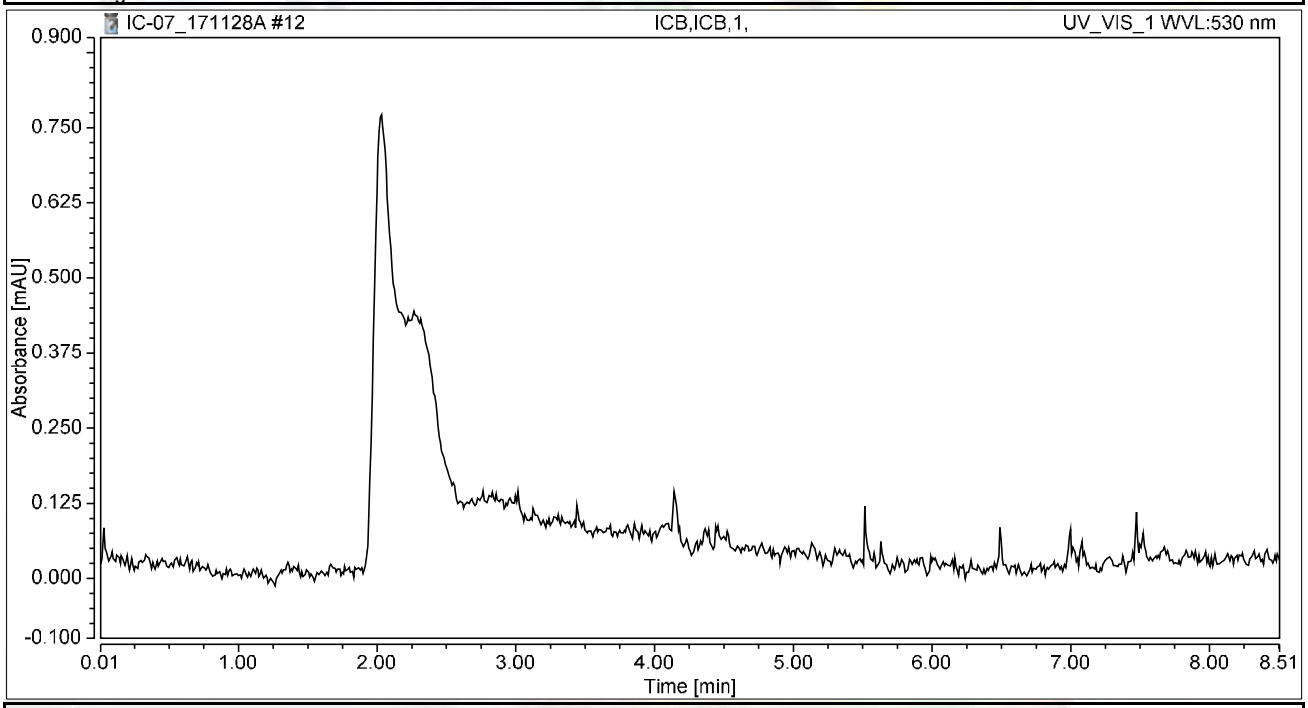
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.046	0.367	100.00	100.00	0.1851
Total:			**0.046**	**0.367**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 8:57 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 9:08 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/11/17 9:18 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/11/17 9:27 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/11/17 9:37 AM	Reported
15	MB-R120833	MBLK	1	Hexavalent Chromium	12/11/17 9:46 AM	Reported
16	LCS-R120833	LCS	1	Hexavalent Chromium	12/11/17 9:56 AM	Reported
17	N027405-006AMS	MS	5	Hexavalent Chromium	12/11/17 10:09 AM	Reported
18	N027405-006A	SAMP	5	Hexavalent Chromium	12/11/17 10:20 AM	Reported
19	N027405-007AMS	MS	5	Hexavalent Chromium	12/11/17 10:29 AM	Reported
20	N027405-007A	SAMP	5	Hexavalent Chromium	12/11/17 10:39 AM	Reported
21	N027405-008AMS	MS	5	Hexavalent Chromium	12/11/17 10:48 AM	Reported
22	N027405-008A	SAMP	5	Hexavalent Chromium	12/11/17 10:58 AM	Reported
23	N027430-001A	SAMP	1	Hexavalent Chromium	12/11/17 11:07 AM	Reported
24	N027430-001AMS	MS	1	Hexavalent Chromium	12/11/17 11:17 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/11/17 11:26 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/11/17 11:36 AM	Reported
27	N027430-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:45 AM	Reported
28	N027430-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:54 AM	Reported
29	N027430-003A	SAMP	1	Hexavalent Chromium	12/11/17 12:04 PM	Reported
30	N027430-003AMS	MS	1	Hexavalent Chromium	12/11/17 12:13 PM	Reported
31	N027430-004A	SAMP	1	Hexavalent Chromium	12/11/17 12:23 PM	Reported
32	N027430-004AMS	MS	1	Hexavalent Chromium	12/11/17 12:32 PM	Reported
33	N027430-005A	SAMP	1	Hexavalent Chromium	12/11/17 12:42 PM	Reported
34	N027430-005AMS	MS	1	Hexavalent Chromium	12/11/17 12:51 PM	Reported
35	N027430-006A	SAMP	1	Hexavalent Chromium	12/11/17 1:01 PM	Reported
36	N027430-006AMS	MS	1	Hexavalent Chromium	12/11/17 1:10 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/11/17 1:20 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/11/17 1:29 PM	Reported
39	N027430-007A	SAMP	1	Hexavalent Chromium	12/11/17 1:38 PM	Reported
40	N027430-007AMS	MS	1	Hexavalent Chromium	12/11/17 1:48 PM	Reported
41	N027430-008A	SAMP	1	Hexavalent Chromium	12/11/17 1:57 PM	Reported
42	N027430-008AMS	MS	1	Hexavalent Chromium	12/11/17 2:07 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027430-009A	SAMP	1	Hexavalent Chromium	12/11/17 2:16 PM	Reported
44	N027430-009AMS	MS	1	Hexavalent Chromium	12/11/17 2:26 PM	Reported
45	N027430-010A	SAMP	1	Hexavalent Chromium	12/11/17 2:35 PM	Reported
46	N027430-010AMS	MS	1	Hexavalent Chromium	12/11/17 2:45 PM	Reported
47	N027430-020A	SAMP	20	Hexavalent Chromium	12/11/17 2:54 PM	Reported
48	N027430-020AMS	MS	20	Hexavalent Chromium	12/11/17 3:04 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/11/17 3:13 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/11/17 3:23 PM	Reported
51	N027430-012A	SAMP	1	Hexavalent Chromium	12/11/17 3:32 PM	Not Reported
52	N027430-012AMS	MS	1	Hexavalent Chromium	12/11/17 3:41 PM	Not Reported
53	N027430-019A	SAMP	1	Hexavalent Chromium	12/11/17 3:51 PM	Reported
54	N027430-019AMS	MS	1	Hexavalent Chromium	12/11/17 4:00 PM	Reported
55	N027430-011A	SAMP	1	Hexavalent Chromium	12/11/17 4:10 PM	Reported
56	N027430-011AMS	MS	1	Hexavalent Chromium	12/11/17 4:19 PM	Reported
57	N027430-013A	SAMP	5	Hexavalent Chromium	12/11/17 4:29 PM	Reported
58	N027430-013AMS	MS	5	Hexavalent Chromium	12/11/17 4:38 PM	Reported
59	N027430-014A	SAMP	5	Hexavalent Chromium	12/11/17 4:48 PM	Reported
60	N027430-014AMS	MS	5	Hexavalent Chromium	12/11/17 4:57 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/11/17 5:07 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/11/17 5:16 PM	Reported
63	N027430-015A	SAMP	5	Hexavalent Chromium	12/11/17 5:26 PM	Reported
64	N027430-015AMS	MS	5	Hexavalent Chromium	12/11/17 5:35 PM	Reported
65	N027405-006ADUP	DUP	5	Hexavalent Chromium	12/11/17 5:44 PM	Reported
66	N027430-020AMSD	MSD	20	Hexavalent Chromium	12/11/17 5:54 PM	Reported
67	N027430-002A	SAMP	1	Hexavalent Chromium	12/11/17 6:05 PM	Not Reported
68	N027430-002AMS	MS	1	Hexavalent Chromium	12/11/17 6:16 PM	Not Reported
69	N027430-013A	SAMP	1	Hexavalent Chromium	12/11/17 6:25 PM	Not Reported
70	N027430-013AMS	MS	1	Hexavalent Chromium	12/11/17 6:35 PM	Not Reported
71	N027430-014A	SAMP	1	Hexavalent Chromium	12/11/17 6:44 PM	Not Reported
72	N027430-014AMS	MS	1	Hexavalent Chromium	12/11/17 6:54 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	12/11/17 7:03 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	12/11/17 7:13 PM	Reported
75	N027430-015A	SAMP	1	Hexavalent Chromium	12/11/17 7:22 PM	Not Reported
76	N027430-015AMS	MS	1	Hexavalent Chromium	12/11/17 7:32 PM	Not Reported
77	N027430-012A	SAMP	5	Hexavalent Chromium	12/11/17 7:41 PM	Reported
78	N027430-012AMS	MS	5	Hexavalent Chromium	12/11/17 7:50 PM	Reported
79	LCS-R120834	LCS	1	Hexavalent Chromium	12/11/17 8:00 PM	Reported
80	MB-R120834	MBLK	1	Hexavalent Chromium	12/11/17 8:09 PM	Reported
81	N027431-006A	SAMP	1000	Hexavalent Chromium	12/11/17 8:19 PM	Reported
82	N027431-006AMS	MS	1000	Hexavalent Chromium	12/11/17 8:28 PM	Reported
83	N027431-006AMSD	MSD	1000	Hexavalent Chromium	12/11/17 8:38 PM	Reported
84	N027428-002A	SAMP	100	Hexavalent Chromium	12/11/17 8:47 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	12/11/17 8:57 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	12/11/17 9:06 PM	Reported
87	N027428-002ADUP	DUP	100	Hexavalent Chromium	12/11/17 9:16 PM	Reported
88	N027428-002AMS	MS	100	Hexavalent Chromium	12/11/17 9:25 PM	Reported
89	N027428-001A	SAMP	1	Hexavalent Chromium	12/11/17 9:35 PM	Reported
90	N027428-001AMS	MS	1	Hexavalent Chromium	12/11/17 9:44 PM	Reported
91	N027430-016A	SAMP	5	Hexavalent Chromium	12/11/17 9:53 PM	Reported
92	N027430-016AMS	MS	5	Hexavalent Chromium	12/11/17 10:03 PM	Reported
93	N027430-017A	SAMP	5	Hexavalent Chromium	12/11/17 10:12 PM	Reported
94	N027430-017AMS	MS	5	Hexavalent Chromium	12/11/17 10:22 PM	Reported
95	N027430-018A	SAMP	5	Hexavalent Chromium	12/11/17 10:31 PM	Reported
96	N027430-018AMS	MS	5	Hexavalent Chromium	12/11/17 10:41 PM	Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	12/11/17 10:50 PM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	12/11/17 11:00 PM	Reported
99	N027431-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:09 PM	Reported
100	N027431-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:19 PM	Reported
101	N027431-003A	SAMP	5	Hexavalent Chromium	12/11/17 11:28 PM	Reported
102	N027431-003AMS	MS	5	Hexavalent Chromium	12/11/17 11:38 PM	Reported
103	N027431-004A	SAMP	5	Hexavalent Chromium	12/11/17 11:47 PM	Reported
104	N027431-004AMS	MS	5	Hexavalent Chromium	12/11/17 11:56 PM	Reported
105	N027431-001A	SAMP	10	Hexavalent Chromium	12/12/17 12:06 AM	Not Reported
106	N027431-001AMS	MS	10	Hexavalent Chromium	12/12/17 12:15 AM	Not Reported
107	N027431-005A	SAMP	200	Hexavalent Chromium	12/12/17 12:25 AM	Reported
108	N027431-005AMS	MS	200	Hexavalent Chromium	12/12/17 12:34 AM	Reported
109	CCV-9	CCV	1	Hexavalent Chromium	12/12/17 12:44 AM	Reported
110	CCB-9	CCB	1	Hexavalent Chromium	12/12/17 12:53 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171211A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**12/Dec/17 01:24:03**
No. of Injections:	**113**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/11/2017 08:57	Finished	BLANK
11	BLANK	2	1000	Unknown		12/11/2017 09:08	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/11/2017 09:18	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/11/2017 09:27	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/11/2017 09:37	Finished	CCB R171129A
15	MB-1,MBLK,1	6	1000	Unknown		12/11/2017 09:46	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/11/2017 09:56	Finished	LCS, IWST-171002B
17	N027405-006AMS,MS	1	1000	Unknown		12/11/2017 10:09	Finished	MS (1ppb), IWST-171002B,2>1
18	N027405-006A,SAMP	2	1000	Unknown		12/11/2017 10:20	Finished	SAMP,2>10mL
19	N027405-007AMS,MS	3	1000	Unknown		12/11/2017 10:29	Finished	MS (1ppb), IWST-171002B,2>1
20	N027405-007A,SAMP	4	1000	Unknown		12/11/2017 10:39	Finished	SAMP,2>10mL
21	N027405-008AMS,MS	5	1000	Unknown		12/11/2017 10:48	Finished	SAMP,2>10mL
22	N027405-008A,SAMP	6	1000	Unknown		12/11/2017 10:58	Finished	MS (1ppb), IWST-171002B,2>1
23	N027430-001A,SAMP	7	1000	Unknown		12/11/2017 11:07	Finished	SAMP,10mL
24	N027430-001AMS,MS	8	1000	Unknown		12/11/2017 11:17	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	9	1000	Unknown		12/11/2017 11:26	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	10	1000	Unknown		12/11/2017 11:36	Finished	CCB R171129A
27	N027430-002A,SAMP	11	1000	Unknown		12/11/2017 11:45	Finished	SAMP,2>10mL
28	N027430-002AMS,MS	12	1000	Unknown		12/11/2017 11:54	Finished	MS (1ppb), IWST-171002B,2>1
29	N027430-003A,SAMP	13	1000	Unknown		12/11/2017 12:04	Finished	SAMP,10mL
30	N027430-003AMS,MS	14	1000	Unknown		12/11/2017 12:13	Finished	MS (1ppb), IWST-171002B,10
31	N027430-004A,SAMP	15	1000	Unknown		12/11/2017 12:23	Finished	SAMP,10mL
32	N027430-004AMS,MS	16	1000	Unknown		12/11/2017 12:32	Finished	MS (1ppb), IWST-171002B,10
33	N027430-005A,SAMP	17	1000	Unknown		12/11/2017 12:42	Finished	SAMP,10mL
34	N027430-005AMS,MS	18	1000	Unknown		12/11/2017 12:51	Finished	MS (1ppb), IWST-171002B,10
35	N027430-006A,SAMP	19	1000	Unknown		12/11/2017 13:01	Finished	SAMP,10mL
36	N027430-006AMS,MS	20	1000	Unknown		12/11/2017 13:10	Finished	MS (1ppb), IWST-171002B,10
37	CCV-3,CCV,1,	21	1000	Unknown		12/11/2017 13:20	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	22	1000	Unknown		12/11/2017 13:29	Finished	CCB R171129A
39	N027430-007A,SAMP	23	1000	Unknown		12/11/2017 13:38	Finished	SAMP,10mL
40	N027430-007AMS,MS	24	1000	Unknown		12/11/2017 13:48	Finished	MS (1ppb), IWST-171002B,10
41	N027430-008A,SAMP	25	1000	Unknown		12/11/2017 13:57	Finished	SAMP,10mL
42	N027430-008AMS,MS	26	1000	Unknown		12/11/2017 14:07	Finished	MS (1ppb), IWST-171002B,10
43	N027430-009A,SAMP	27	1000	Unknown		12/11/2017 14:16	Finished	SAMP,10mL
44	N027430-009AMS,MS	28	1000	Unknown		12/11/2017 14:26	Finished	MS (1ppb), IWST-171002B,10
45	N027430-010A,SAMP	29	1000	Unknown		12/11/2017 14:35	Finished	SAMP,10mL
46	N027430-010AMS,MS	30	1000	Unknown		12/11/2017 14:45	Finished	MS (1ppb), IWST-171002B,10
47	N027430-020A,SAMP	31	1000	Unknown		12/11/2017 14:54	Finished	SAMP,0.5>10mL
48	N027430-020AMS,MS	32	1000	Unknown		12/11/2017 15:04	Finished	MS (5ppb), IWST-171002B,0.5
49	CCV-4,CCV1,1,	33	1000	Unknown		12/11/2017 15:13	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	34	1000	Unknown		12/11/2017 15:23	Finished	CCB R171129A
51	N027430-012A,SAMP	35	1000	Unknown		12/11/2017 15:32	Finished	SAMP,10mL
52	N027430-012AMS,MS	36	1000	Unknown		12/11/2017 15:41	Finished	MS (1ppb), IWST-171002B,10
53	N027430-019A,SAMP	37	1000	Unknown		12/11/2017 15:51	Finished	SAMP,10mL
54	N027430-019AMS,MS	38	1000	Unknown		12/11/2017 16:00	Finished	MS (1ppb), IWST-171002B,10
55	N027430-011A,SAMP	39	1000	Unknown		12/11/2017 16:10	Finished	SAMP,10mL
56	N027430-011AMS,MS	40	1000	Unknown		12/11/2017 16:19	Finished	MS (1ppb), IWST-171002B,10
57	N027430-013A,SAMP	41	1000	Unknown		12/11/2017 16:29	Finished	SAMP,2>10mL
58	N027430-013AMS,MS	42	1000	Unknown		12/11/2017 16:38	Finished	MS (1ppb), IWST-171002B,2>1
59	N027430-014A,SAMP	43	1000	Unknown		12/11/2017 16:48	Finished	SAMP,2>10mL
60	N027430-014AMS,MS	44	1000	Unknown		12/11/2017 16:57	Finished	MS (1ppb), IWST-171002B,2>1

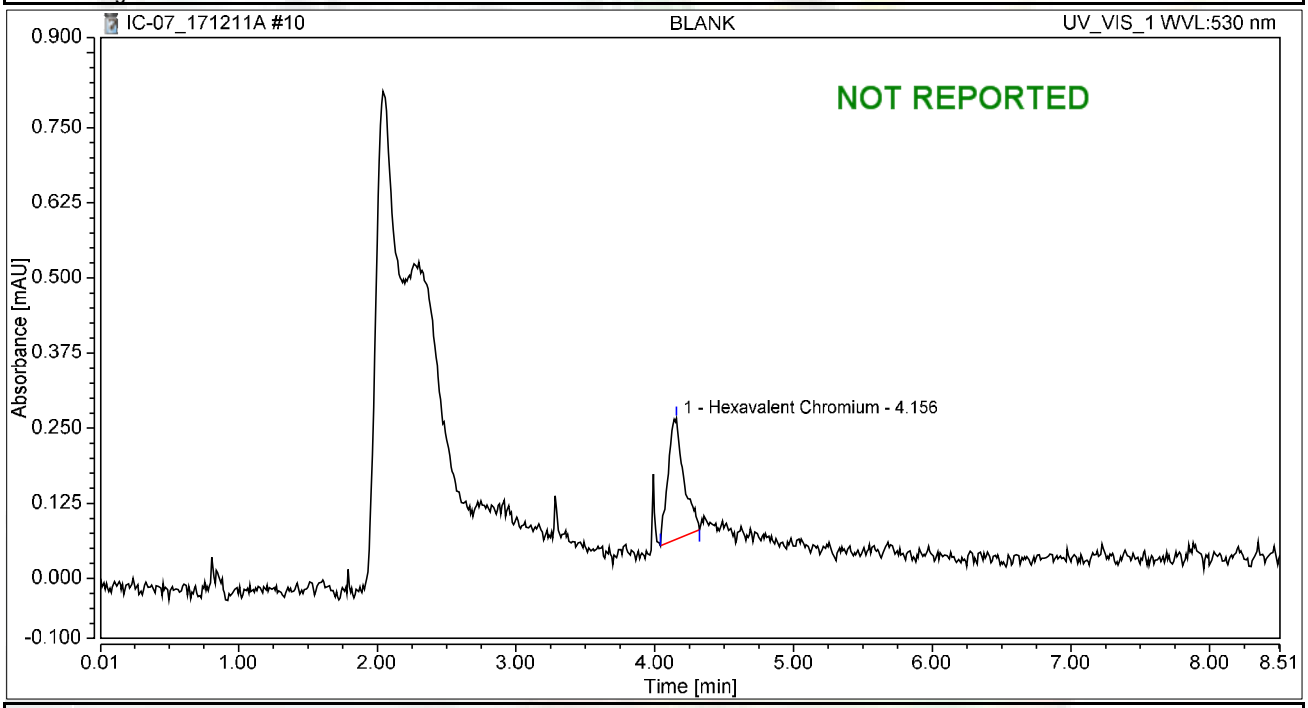
61	CCV-5,CCV,1,	45	1000	Unknown		12/11/2017 17:07	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	46	1000	Unknown		12/11/2017 17:16	Finished	CCB R171129A
63	N027430-015A,SAMF	47	1000	Unknown		12/11/2017 17:26	Finished	SAMP,2>10mL
64	N027430-015AMS,MS	48	1000	Unknown		12/11/2017 17:35	Finished	MS (1ppb), IWST-171002B,2>1
65	N027405-006ADUP,D	49	1000	Unknown		12/11/2017 17:44	Finished	DUP,2>10mL
66	N027430-020AMSD,M	50	1000	Unknown		12/11/2017 17:54	Finished	MSD (5ppb), IWST-171002B,0.
67	N027430-002A,SAMF	1	1000	Unknown		12/11/2017 18:05	Finished	MSD (5ppb), IWST-171002B,0.
68	N027430-002AMS,MS	2	1000	Unknown		12/11/2017 18:16	Finished	DUP,2>10mL
69	N027430-013A,SAMF	3	1000	Unknown		12/11/2017 18:25	Finished	SAMP,2>10mL
70	N027430-013AMS,MS	4	1000	Unknown		12/11/2017 18:35	Finished	MS (1ppb), IWST-171002B,2>1
71	N027430-014A,SAMF	5	1000	Unknown		12/11/2017 18:44	Finished	SAMP,10mL
72	N027430-014AMS,MS	6	1000	Unknown		12/11/2017 18:54	Finished	MS (1ppb), IWST-171002B,10
73	CCV-6,CCV1,1,	7	1000	Unknown		12/11/2017 19:03	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	8	1000	Unknown		12/11/2017 19:13	Finished	CCB R171129A
75	N027430-015A,SAMF	9	1000	Unknown		12/11/2017 19:22	Finished	LCS, IWST-171002B
76	N027430-015AMS,MS	10	1000	Unknown		12/11/2017 19:32	Finished	MB R171129A
77	N027430-012A,SAMF	11	1000	Unknown		12/11/2017 19:41	Finished	SAMP,2>10mL
78	N027430-012AMS,MS	12	1000	Unknown		12/11/2017 19:50	Finished	MS (1ppb), IWST-171002B,2>1
79	LCS-2,LCS,1	13	1000	Unknown		12/11/2017 20:00	Finished	LCS, IWST-171002B
80	MB-2,MBLK,1	14	1000	Unknown		12/11/2017 20:09	Finished	MB R171129A
81	N027431-006A,SAMF	15	1000	Unknown		12/11/2017 20:19	Finished	DUP,0.1>10mL
82	N027431-006AMS,MS	16	1000	Unknown		12/11/2017 20:28	Finished	SAMP,10mL
83	N027431-006AMSD,M	17	1000	Unknown		12/11/2017 20:38	Finished	SAMP,5>10mL
84	N027428-002A,SAMF	18	1000	Unknown		12/11/2017 20:47	Finished	SAMP,0.2>10mL
85	CCV-7,CCV,1,	19	1000	Unknown		12/11/2017 20:57	Finished	CCV @5ppb, IWST-171002A
86	CCB-7,CCB,1,	20	1000	Unknown		12/11/2017 21:06	Finished	CCB R171114C
87	N027428-002ADUP,D	21	1000	Unknown		12/11/2017 21:16	Finished	SAMP,0.2>10mL
88	N027428-002AMS,MS	22	1000	Unknown		12/11/2017 21:25	Finished	SAMP,1>10mL
89	N027428-001A,SAMF	23	1000	Unknown		12/11/2017 21:35	Finished	SAMP,0.5>10mL
90	N027428-001AMS,MS	24	1000	Unknown		12/11/2017 21:44	Finished	SAMP,5>10mL
91	N027430-016A,SAMF	25	1000	Unknown		12/11/2017 21:53	Finished	SAMP,10mL
92	N027430-016AMS,MS	26	1000	Unknown		12/11/2017 22:03	Finished	SAMP,2>10mL
93	N027430-017A,SAMF	27	1000	Unknown		12/11/2017 22:12	Finished	MS (5ppb), IWST-171002B,2>1
94	N027430-017AMS,MS	28	1000	Unknown		12/11/2017 22:22	Finished	MSD (5ppb), IWST-171002B,2
95	N027430-018A,SAMF	29	1000	Unknown		12/11/2017 22:31	Finished	SAMP,10mL
96	N027430-018AMS,MS	30	1000	Unknown		12/11/2017 22:41	Finished	MS (1ppb), IWST-171002B,10
97	CCV-8,CCV1,1,	31	1000	Unknown		12/11/2017 22:50	Finished	CCV @10ppb, IWST-171002A
98	CCB-8,CCB,1,	32	1000	Unknown		12/11/2017 23:00	Finished	CCB R171129A
99	N027431-002A,SAMF	33	1000	Unknown		12/11/2017 23:09	Finished	SAMP,10mL
100	N027431-002AMS,MS	34	1000	Unknown		12/11/2017 23:19	Finished	MS (1ppb), IWST-171002B,10
101	N027431-003A,SAMF	35	1000	Unknown		12/11/2017 23:28	Finished	SAMP,10mL
102	N027431-003AMS,MS	36	1000	Unknown		12/11/2017 23:38	Finished	MS (1ppb), IWST-171002B,10
103	N027431-004A,SAMF	37	1000	Unknown		12/11/2017 23:47	Finished	SAMP,10mL
104	N027431-004AMS,MS	38	1000	Unknown		12/11/2017 23:56	Finished	MS (1ppb), IWST-171002B,10
105	N027431-001A,SAMF	39	1000	Unknown		12/12/2017 00:06	Finished	SAMP,10mL
106	N027431-001AMS,MS	40	1000	Unknown		12/12/2017 00:15	Finished	MS (1ppb), IWST-171002B,10
107	N027431-005A,SAMF	41	1000	Unknown		12/12/2017 00:25	Finished	SAMP,10mL
108	N027431-005AMS,MS	42	1000	Unknown		12/12/2017 00:34	Finished	MS (1ppb), IWST-171002B,10
109	CCV-9,CCV,1,	43	1000	Unknown		12/12/2017 00:44	Finished	CCV @5ppb, IWST-171002A
110	CCB-9,CCB,1,	44	1000	Unknown		12/12/2017 00:53	Finished	CCB R171114C
111	SHUTDOWN	45	1000	Unknown		12/12/2017 01:03	Finished	
112	Eluent: R171211B	46	1000	Unknown		n.a.	Finished	Eluent
113	PCR: R171211C	47	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 08:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

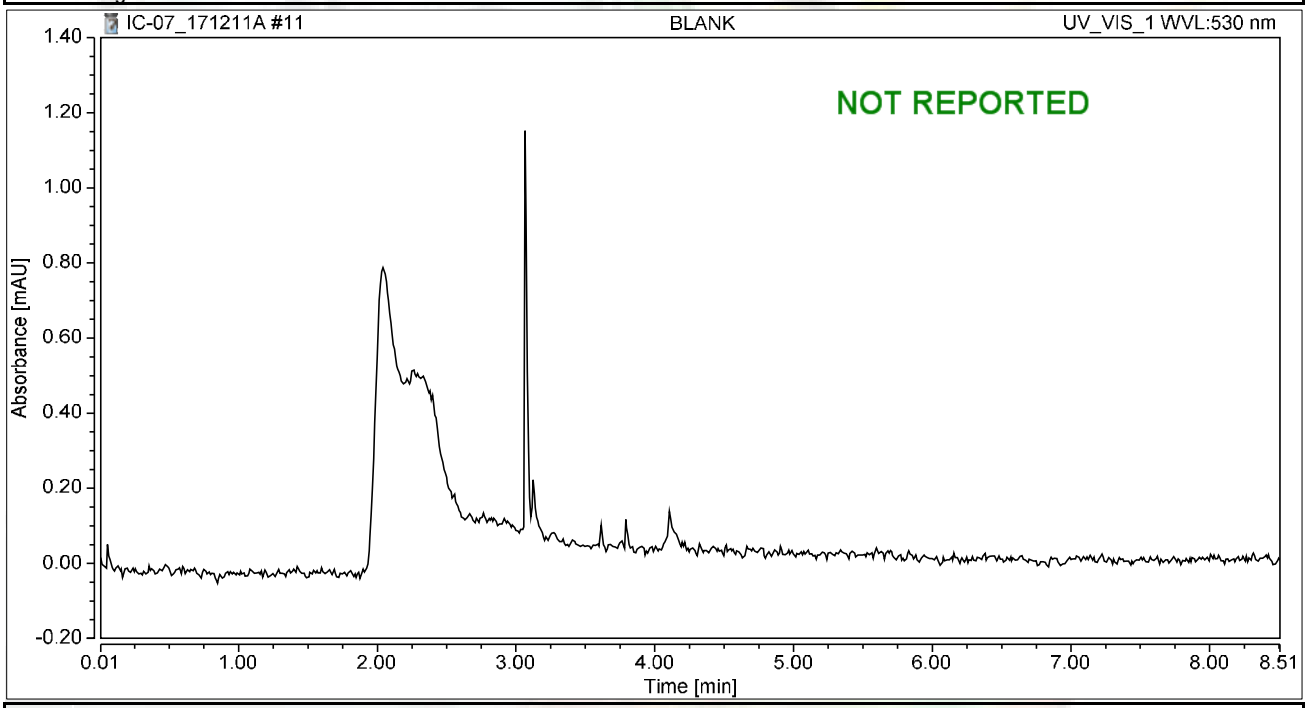
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.027	0.201	100.00	100.00	0.1065
Total:			**0.027**	**0.201**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

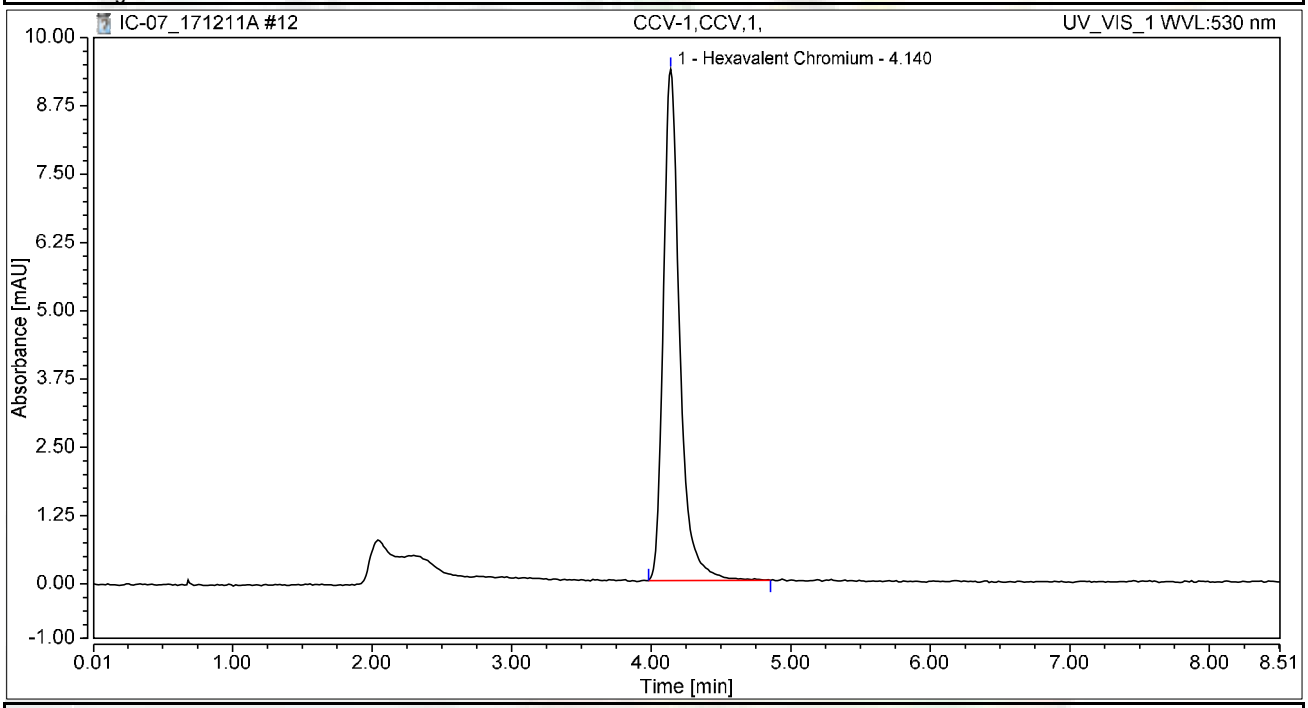
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

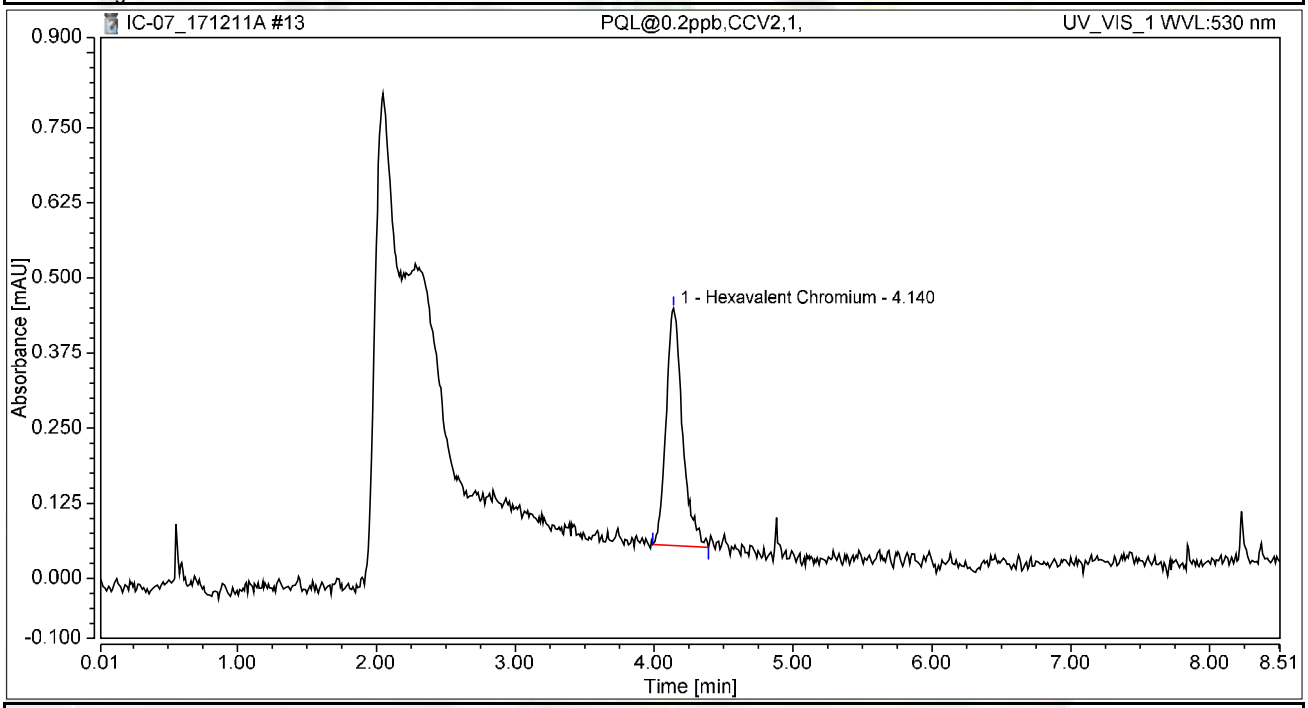
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.275	9.355	100.00	100.00	5.0770
Total:			**1.275**	**9.355**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

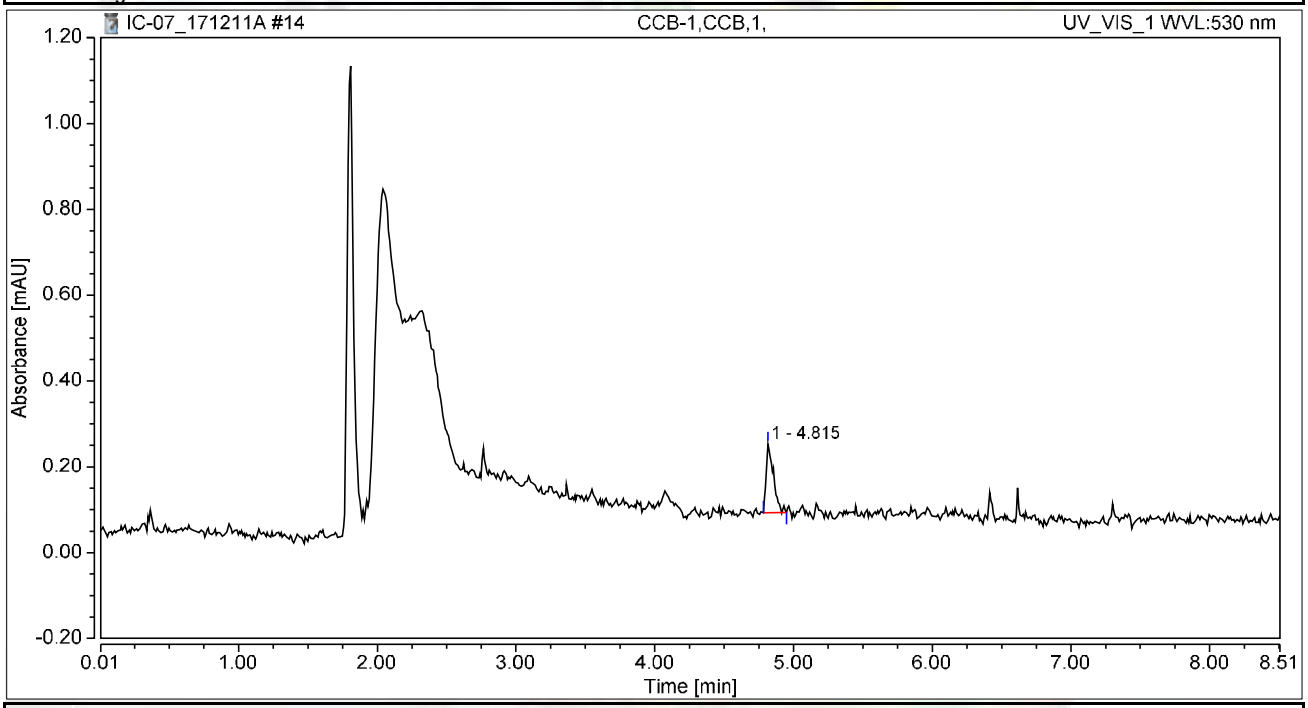
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.054	0.395	100.00	100.00	0.2151
Total:			**0.054**	**0.395**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

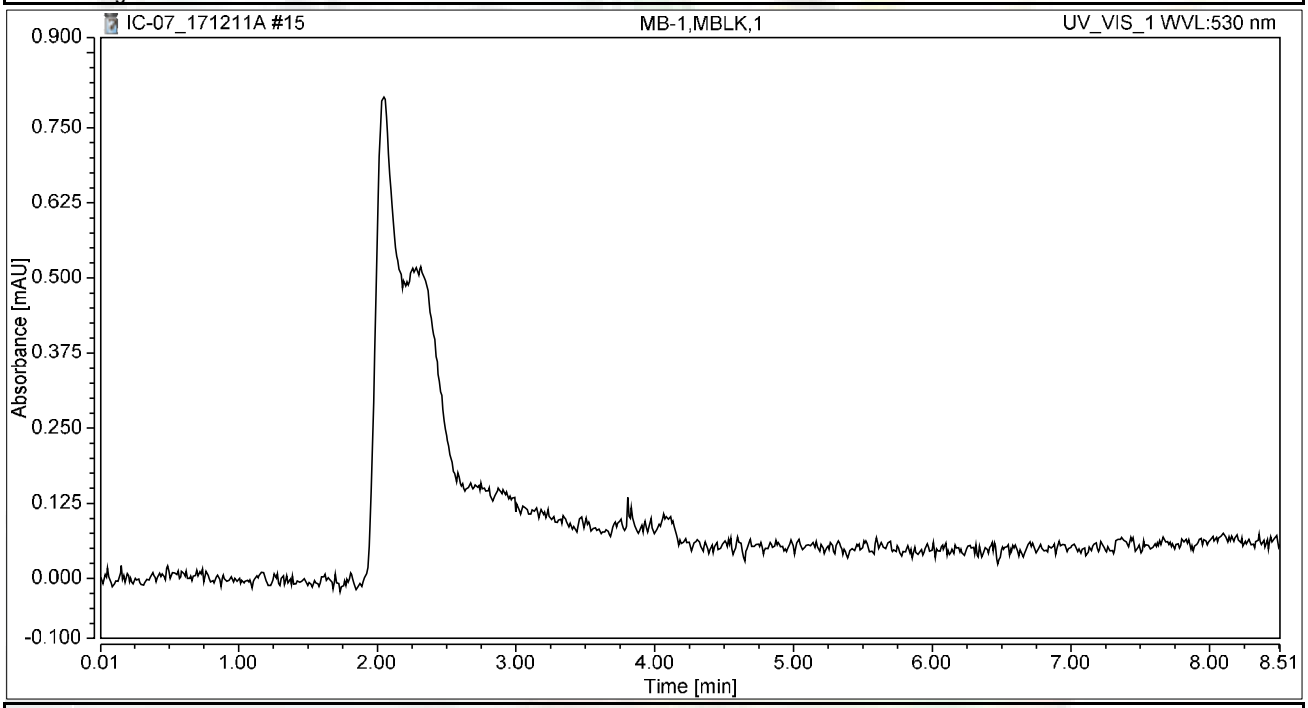
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		4.815	0.010	0.160	100.00	100.00	n.a.
Total:			**0.010**	**0.160**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-1,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

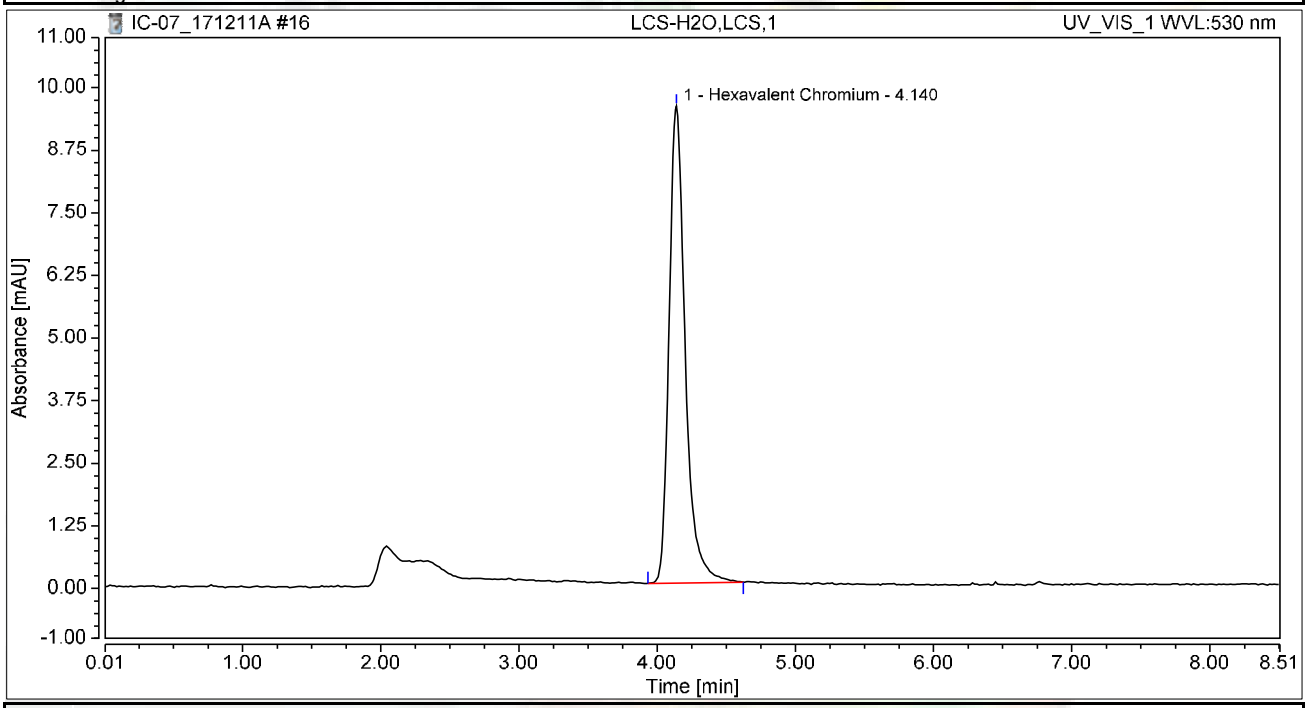
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

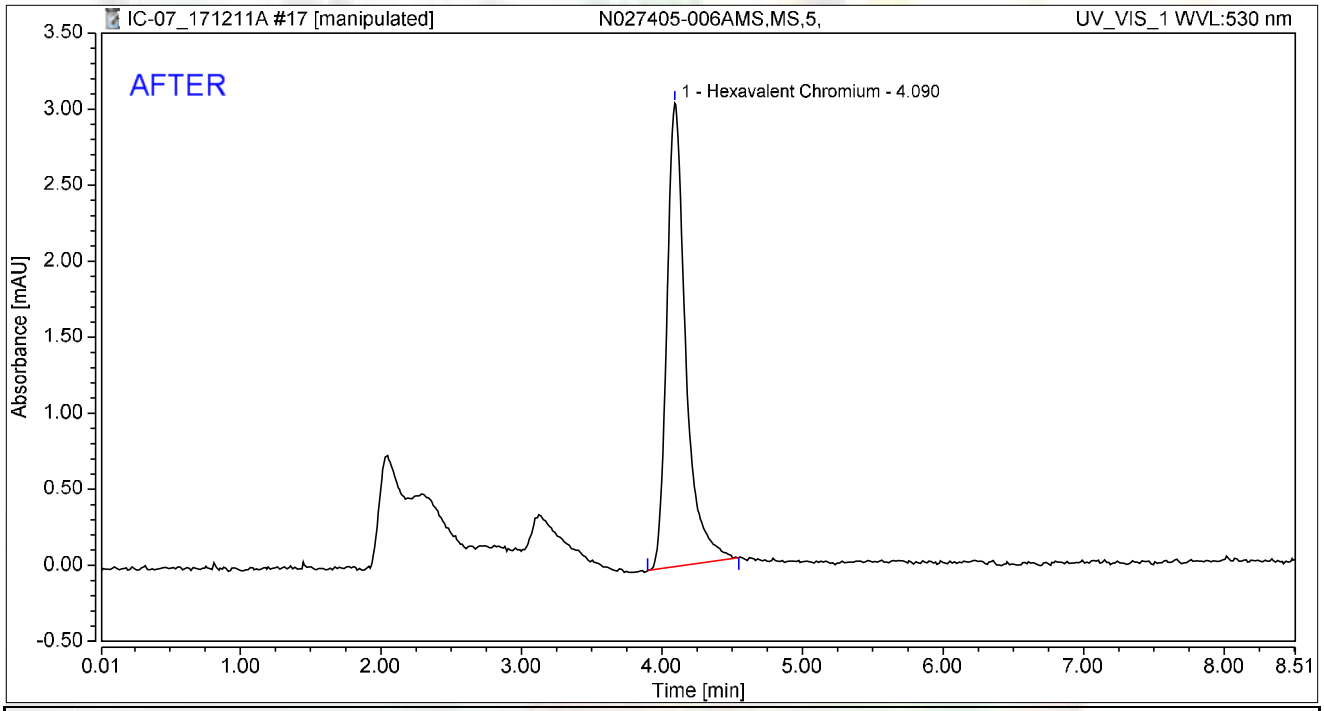
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.296	9.528	100.00	100.00	5.1607
Total:			**1.296**	**9.528**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-006AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.473	3.048	100.00	100.00	1.8848
Total:			**0.473**	**3.048**	**100.00**	**100.00**	

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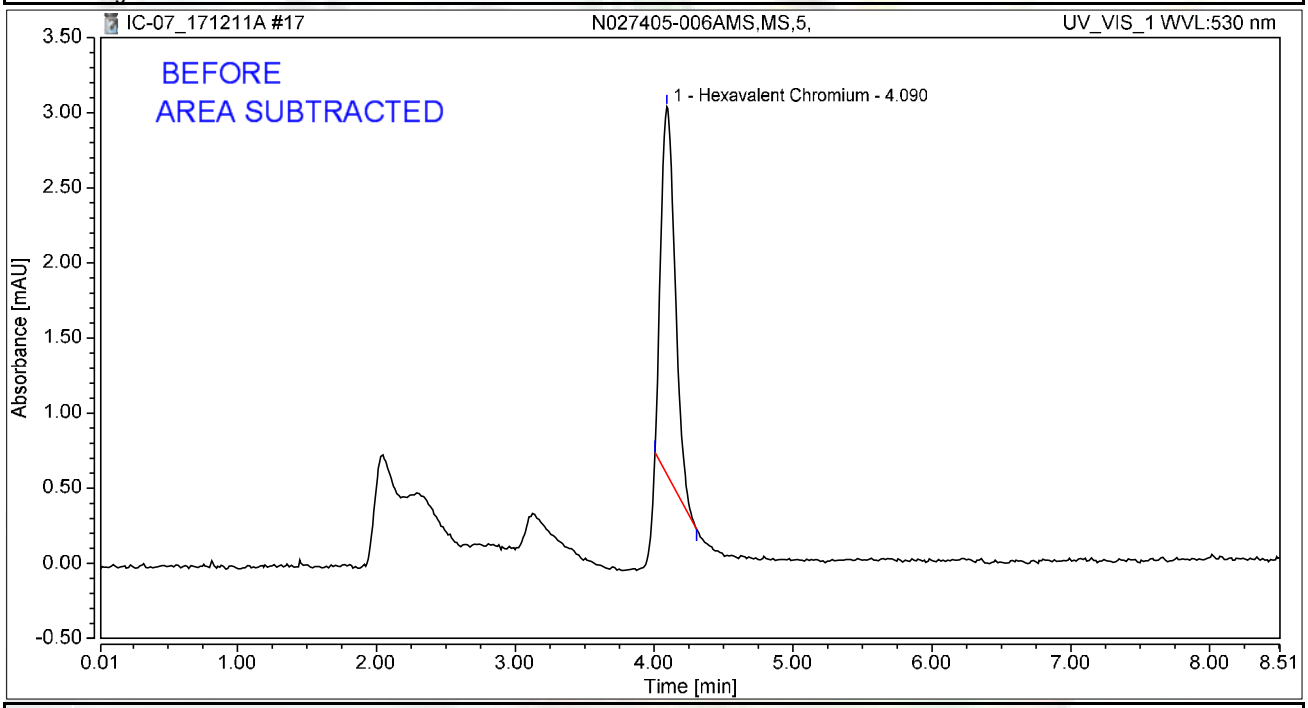
Chromatogram and Results

Injection Details

Injection Name:	**N027405-006AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.293	2.442	100.00	100.00	1.1666
Total:			**0.293**	**2.442**	**100.00**	**100.00**	

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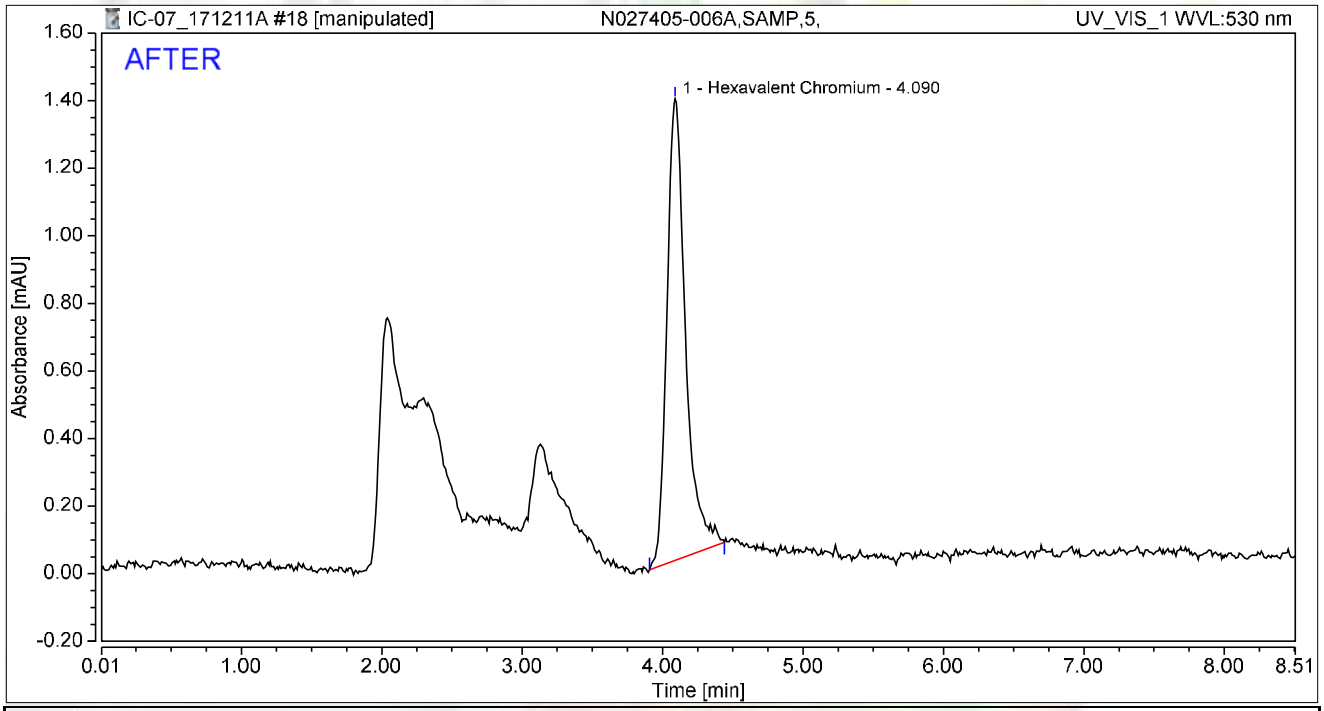
Chromatogram and Results

Injection Details

Injection Name:	**N027405-006A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.211	1.365	100.00	100.00	0.8406
Total:			**0.211**	**1.365**	**100.00**	**100.00**	

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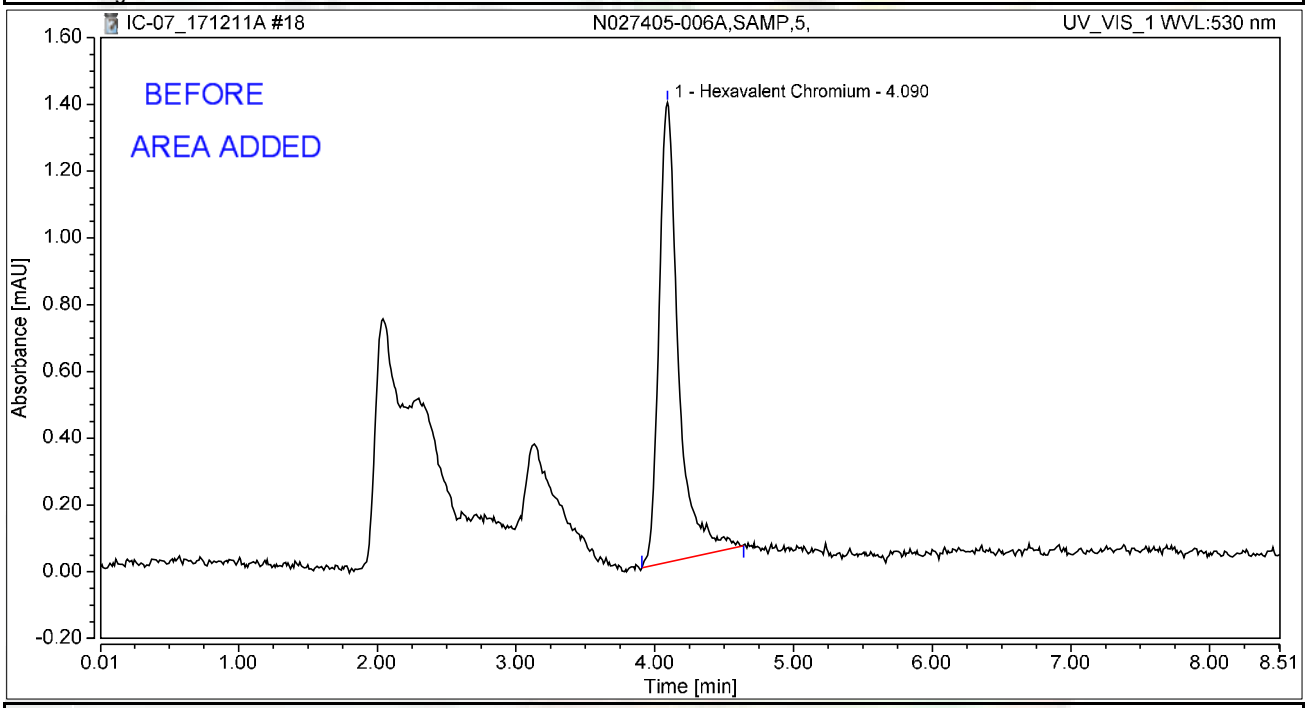
Chromatogram and Results

Injection Details

Injection Name:	**N027405-006A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.225	1.377	100.00	100.00	0.8948
Total:			**0.225**	**1.377**	**100.00**	**100.00**	

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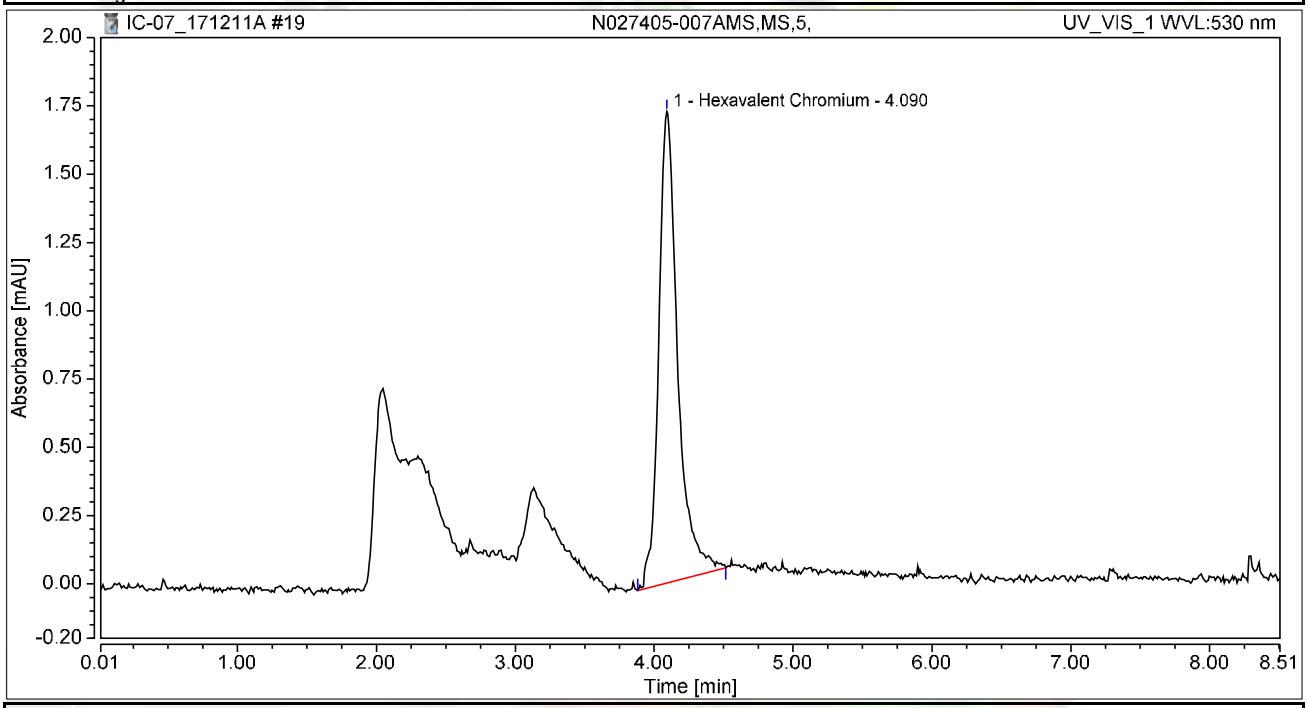
12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027405-007AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

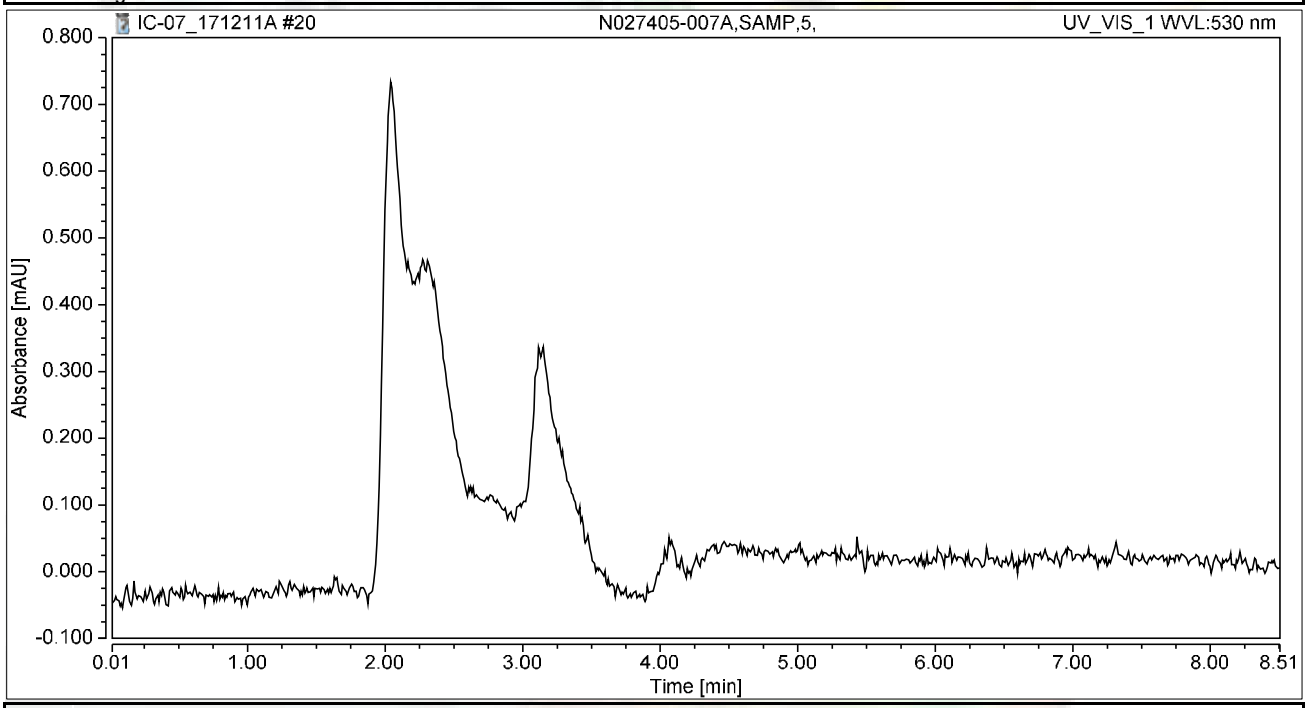
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.274	1.727	100.00	100.00	1.0903
Total:			**0.274**	**1.727**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-007A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

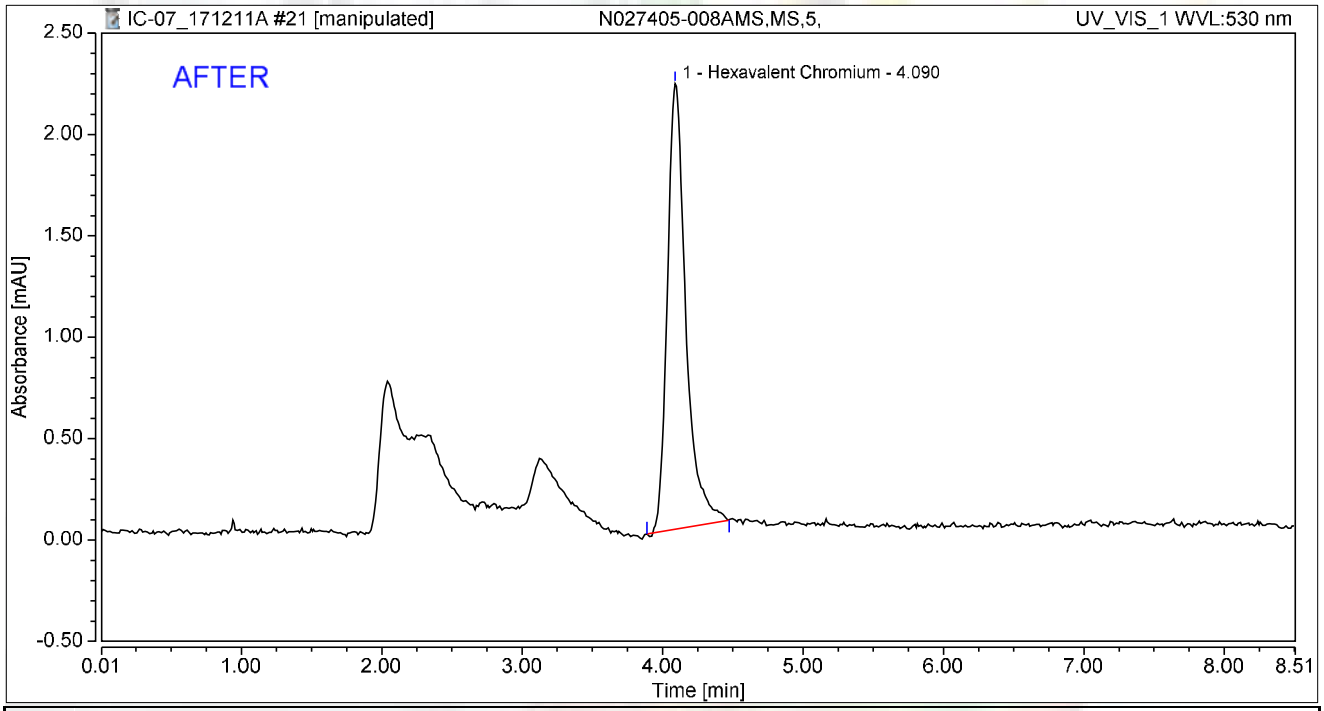
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-008AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.336	2.197	100.00	100.00	1.3384
Total:			**0.336**	**2.197**	**100.00**	**100.00**	

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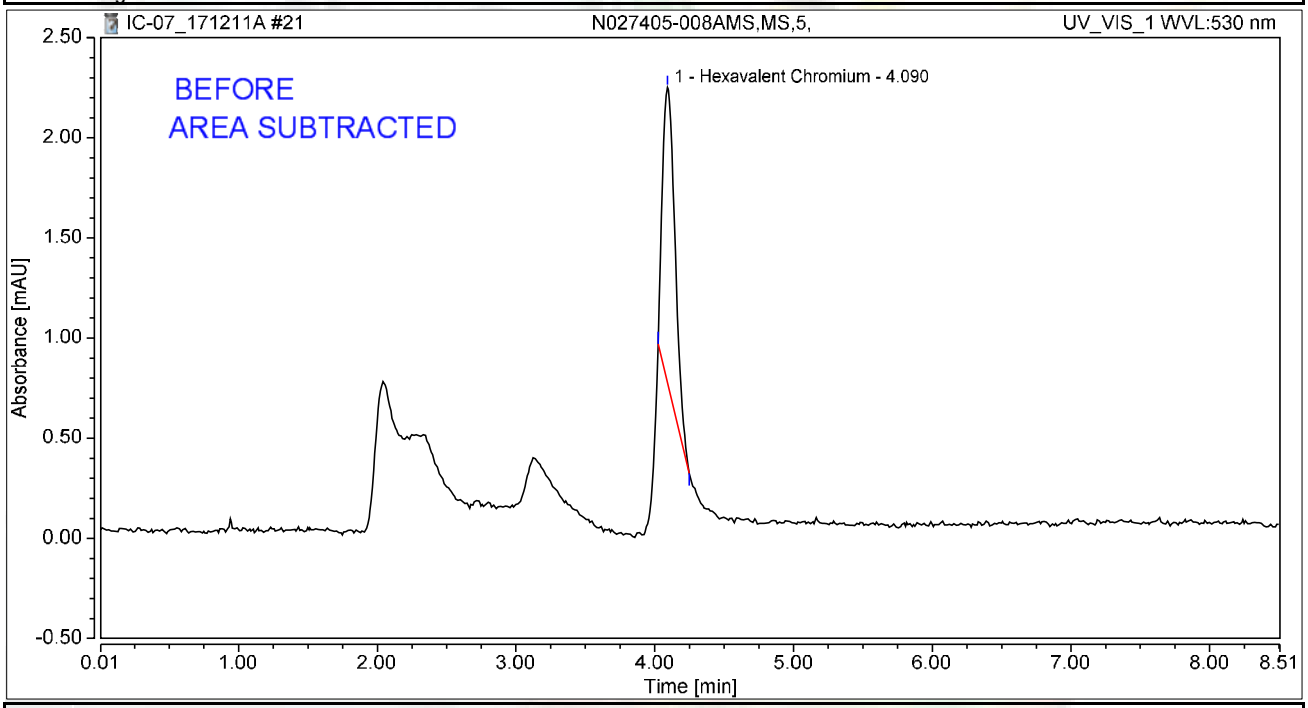
Chromatogram and Results

Injection Details

Injection Name:	**N027405-008AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.158	1.471	100.00	100.00	0.6275
Total:			**0.158**	**1.471**	**100.00**	**100.00**	

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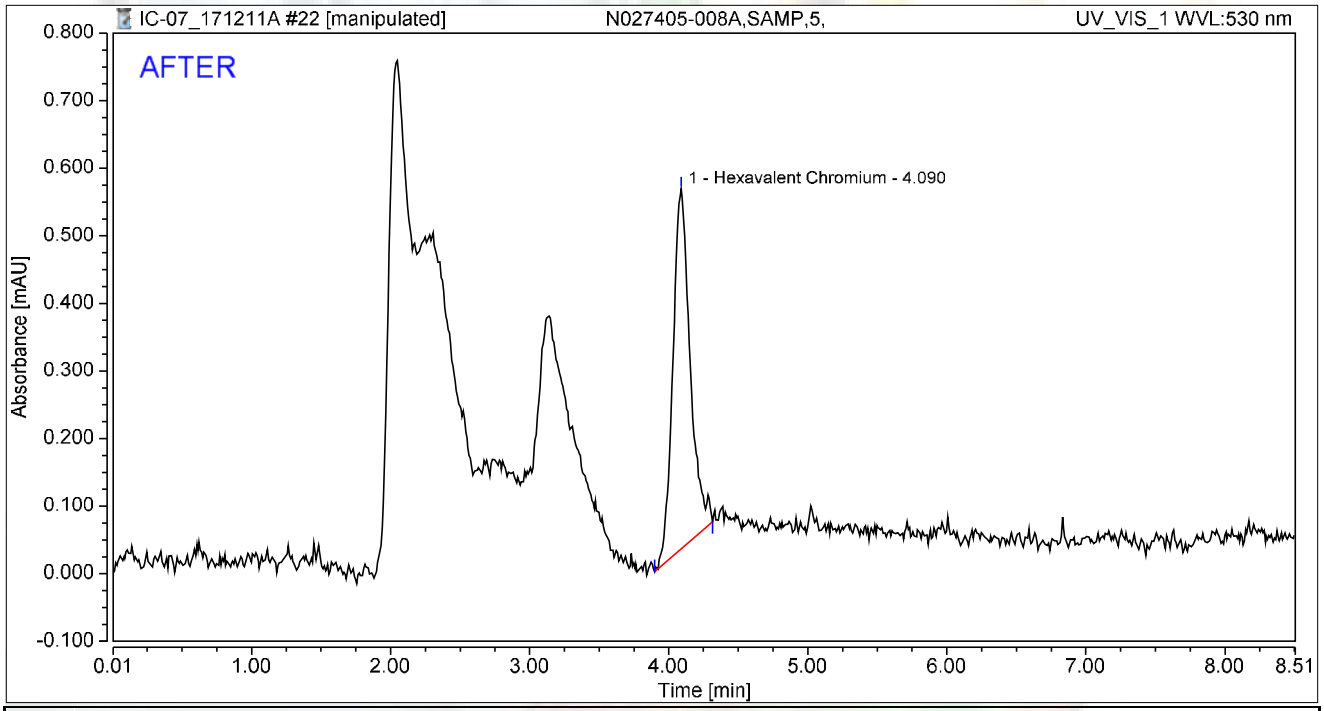
Chromatogram and Results

Injection Details

Injection Name:	**N027405-008A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.077	0.532	100.00	100.00	0.3057
Total:			**0.077**	**0.532**	**100.00**	**100.00**	

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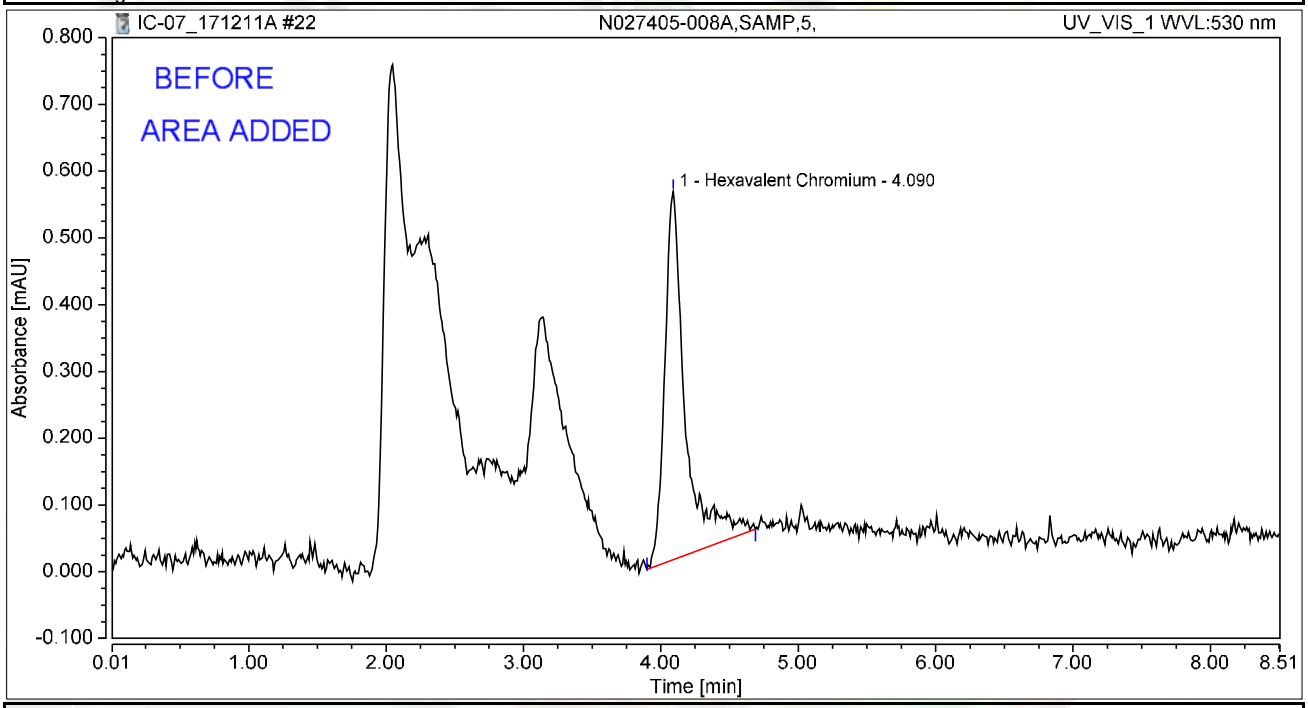
Chromatogram and Results

Injection Details

Injection Name:	**N027405-008A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.097	0.552	100.00	100.00	0.3848
Total:			**0.097**	**0.552**	**100.00**	**100.00**	

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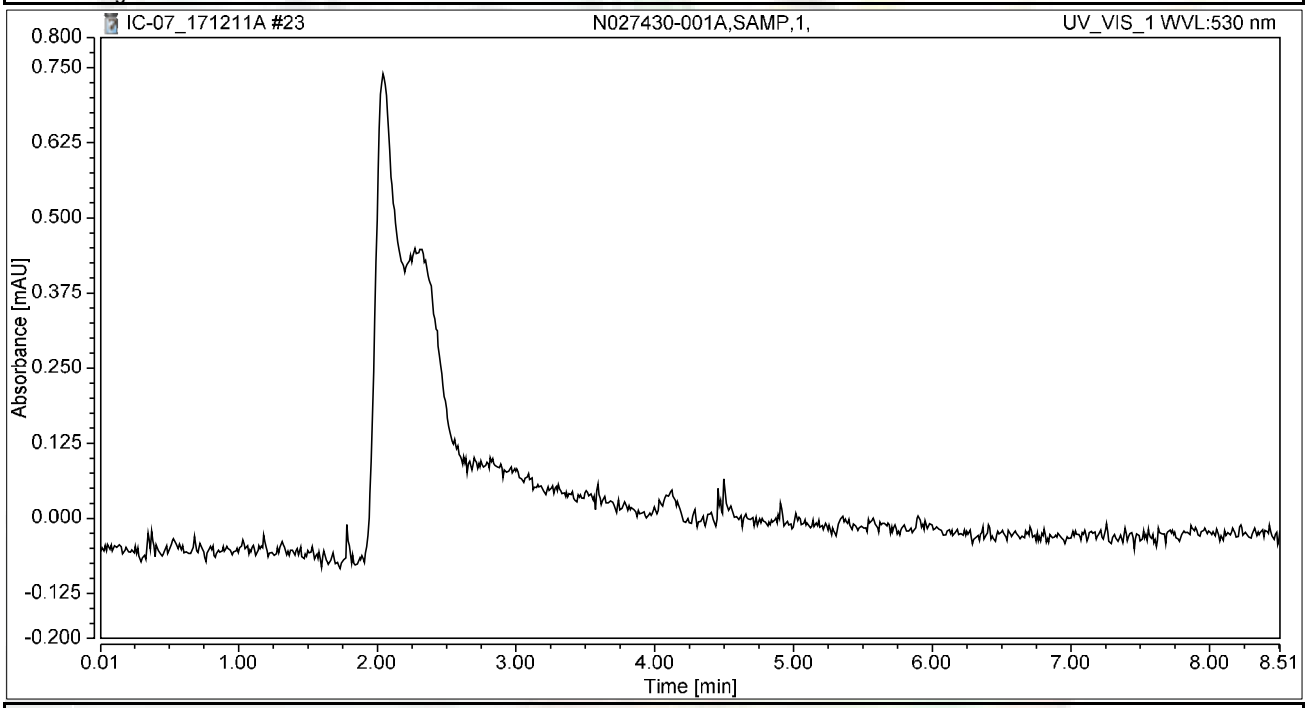
Chromatogram and Results

Injection Details

Injection Name:	**N027430-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

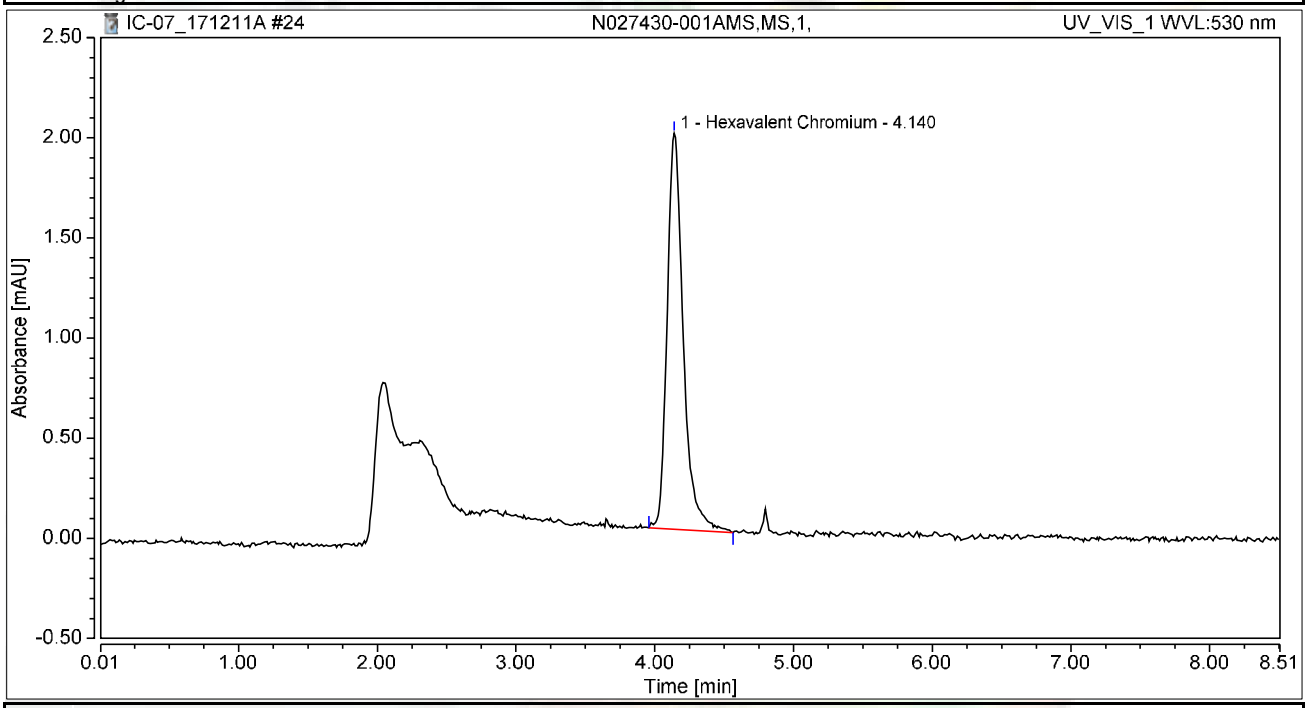
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

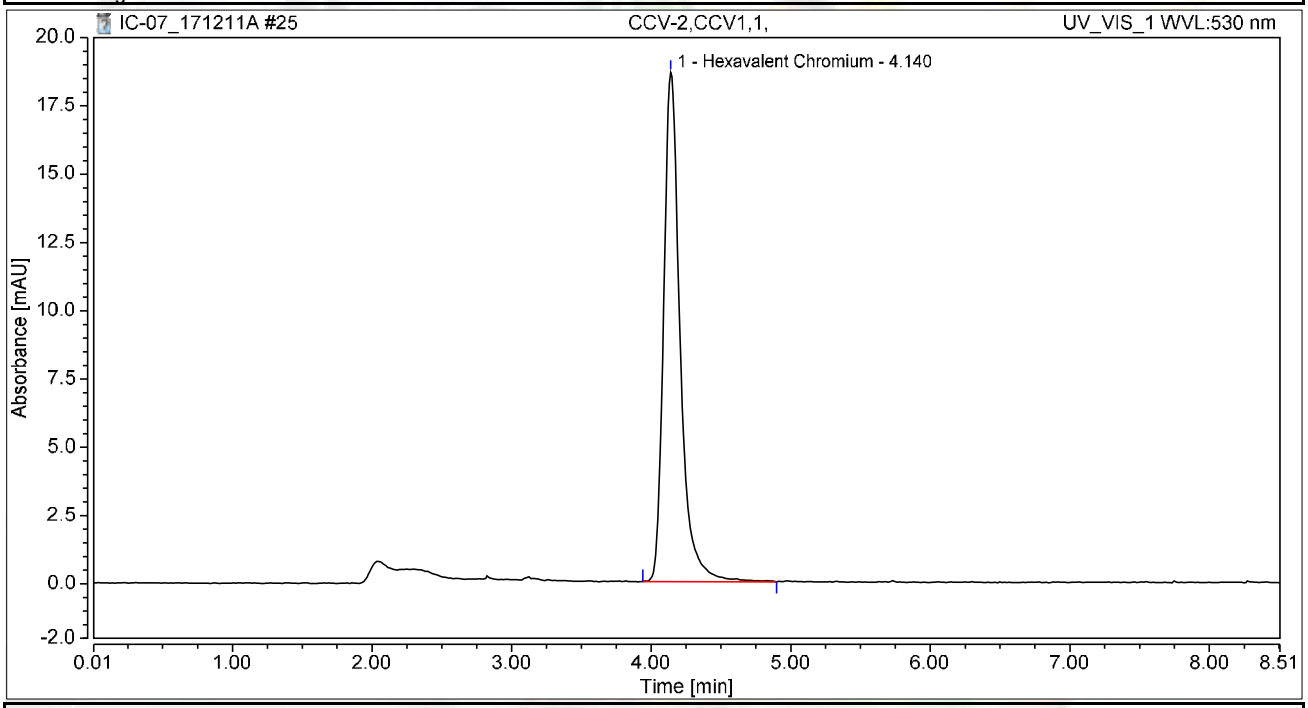
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.268	1.978	100.00	100.00	1.0677
Total:			**0.268**	**1.978**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

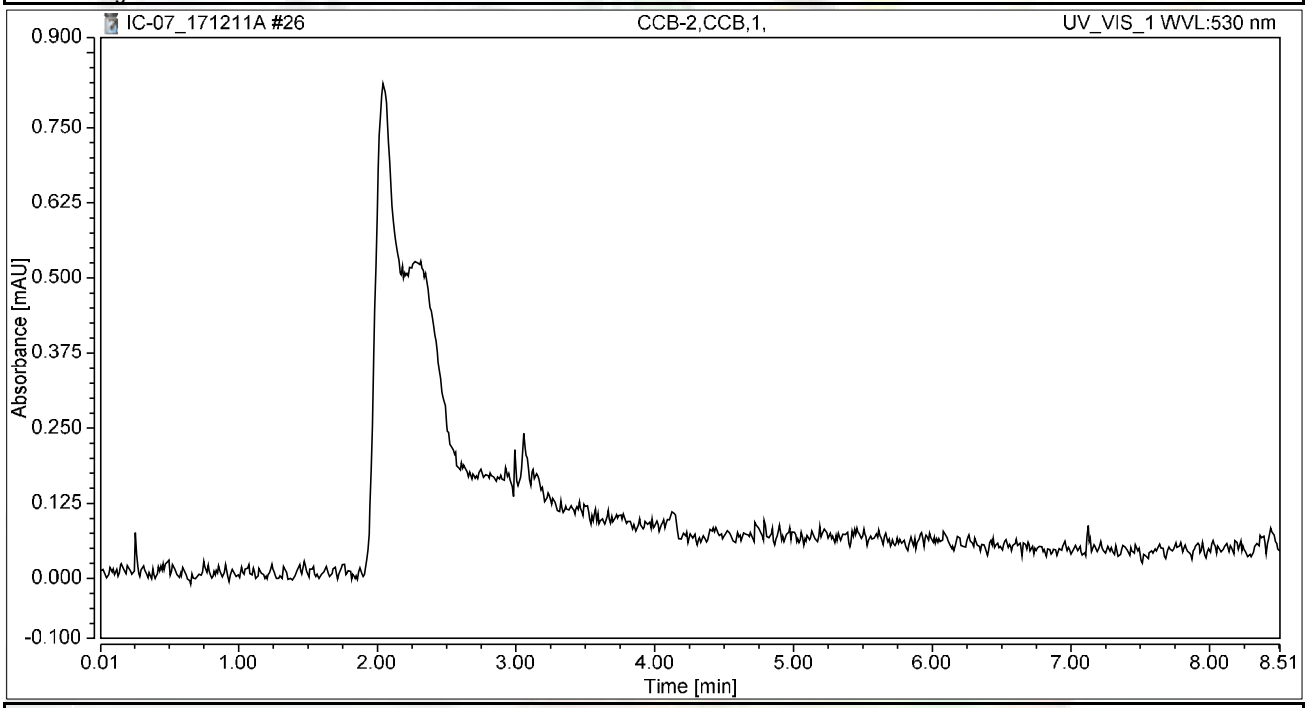
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.549	18.640	100.00	100.00	10.1518
Total:			**2.549**	**18.640**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

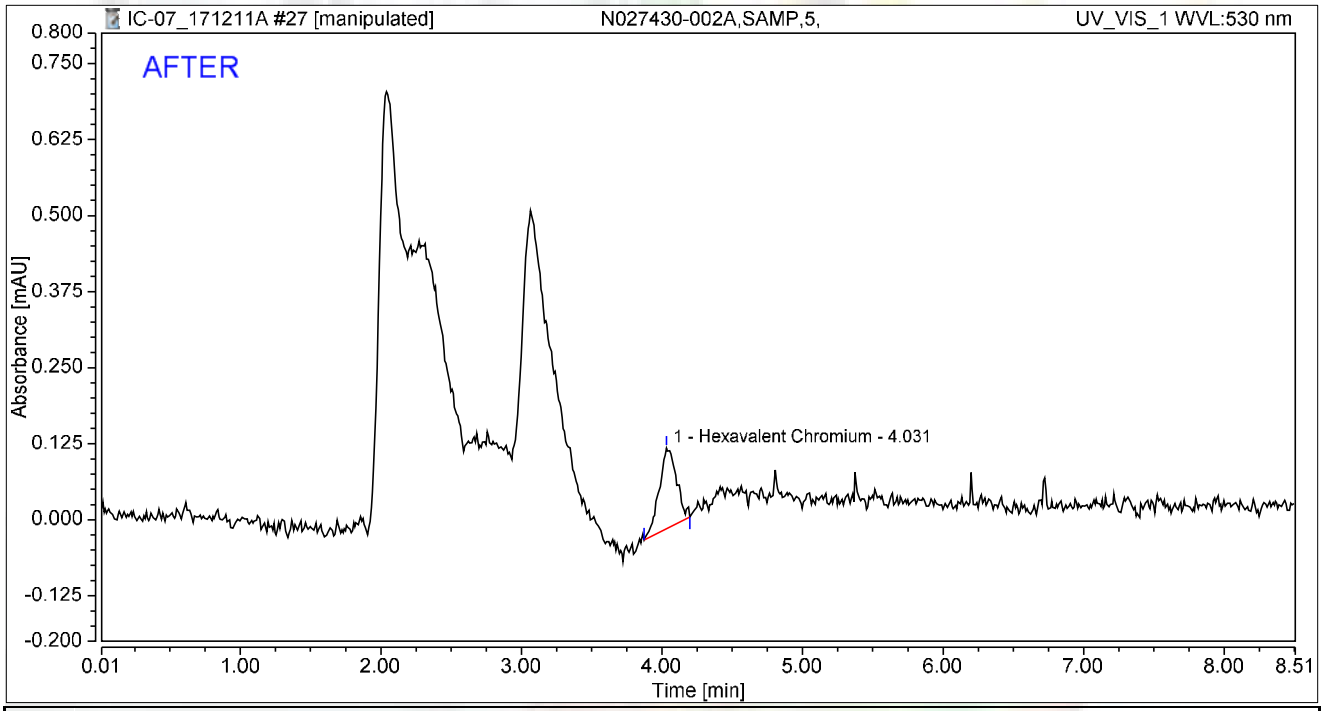
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-002A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.031	0.019	0.133	100.00	100.00	0.0743
Total:			**0.019**	**0.133**	**100.00**	**100.00**	

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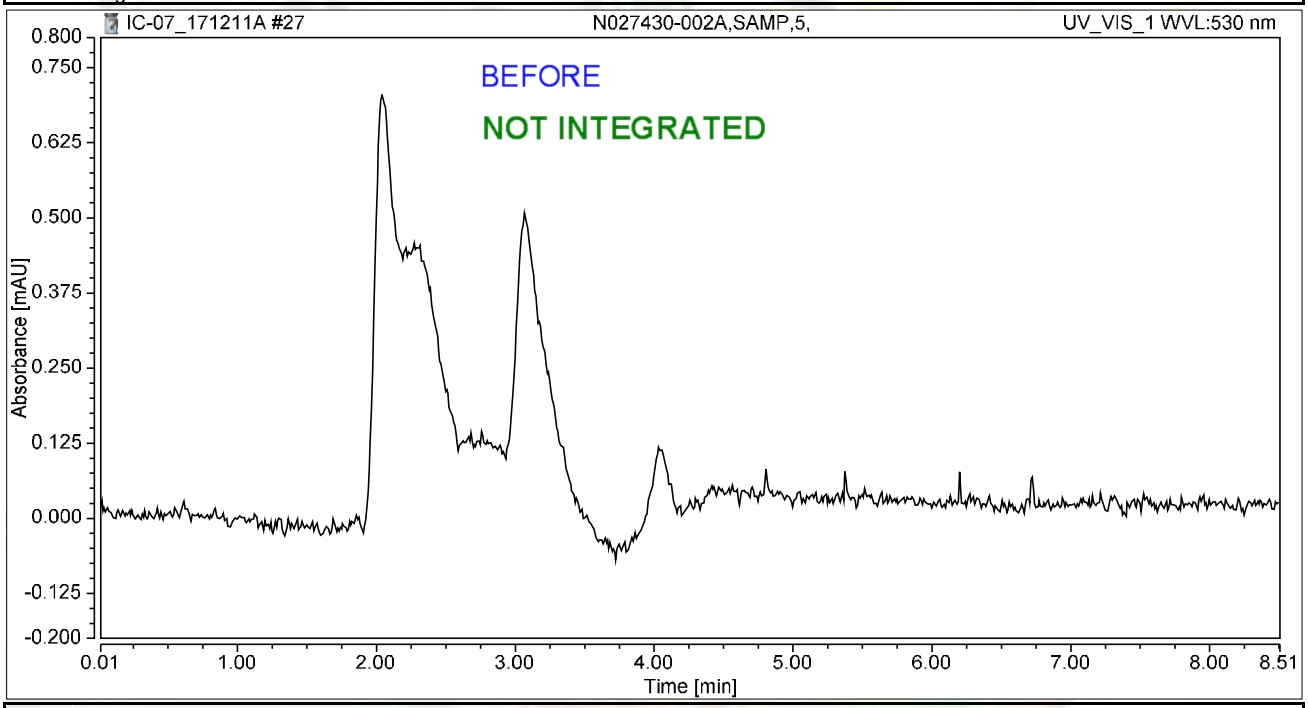
Chromatogram and Results

Injection Details

Injection Name:	**N027430-002A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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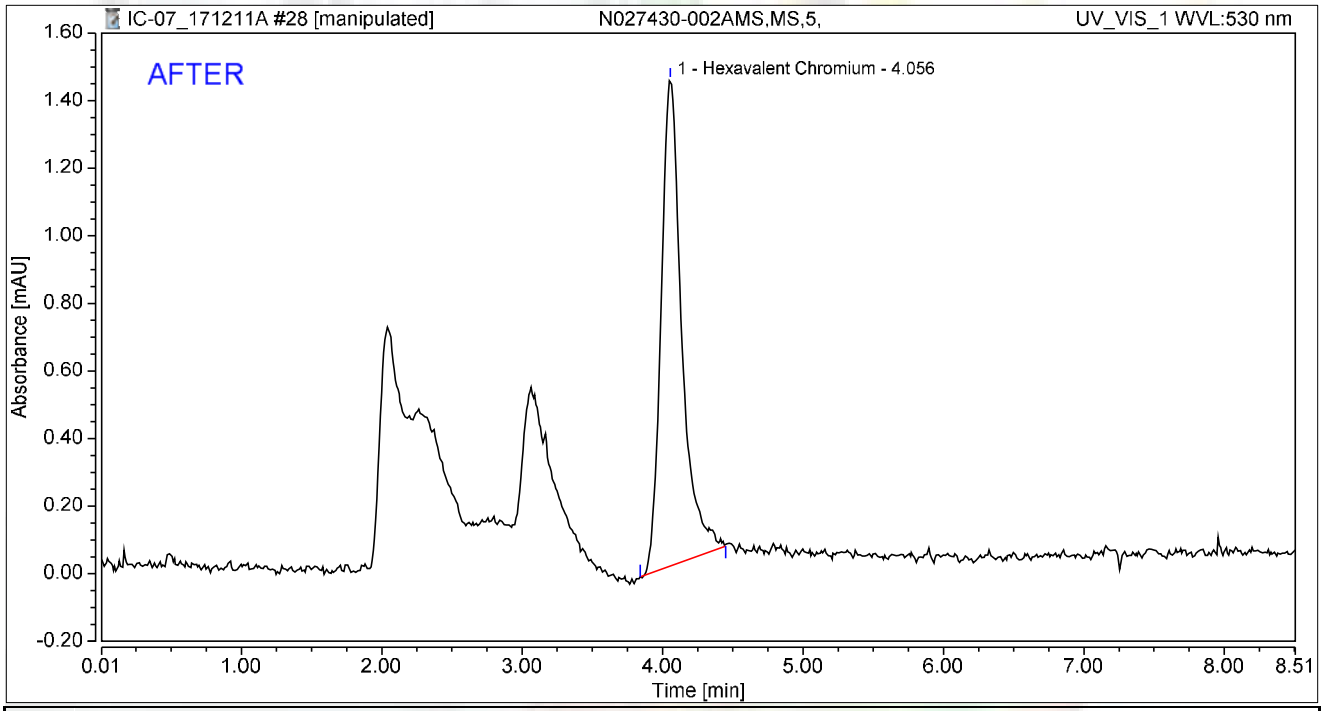
Chromatogram and Results

Injection Details

Injection Name:	**N027430-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.246	1.438	100.00	100.00	0.9810
Total:			**0.246**	**1.438**	**100.00**	**100.00**	

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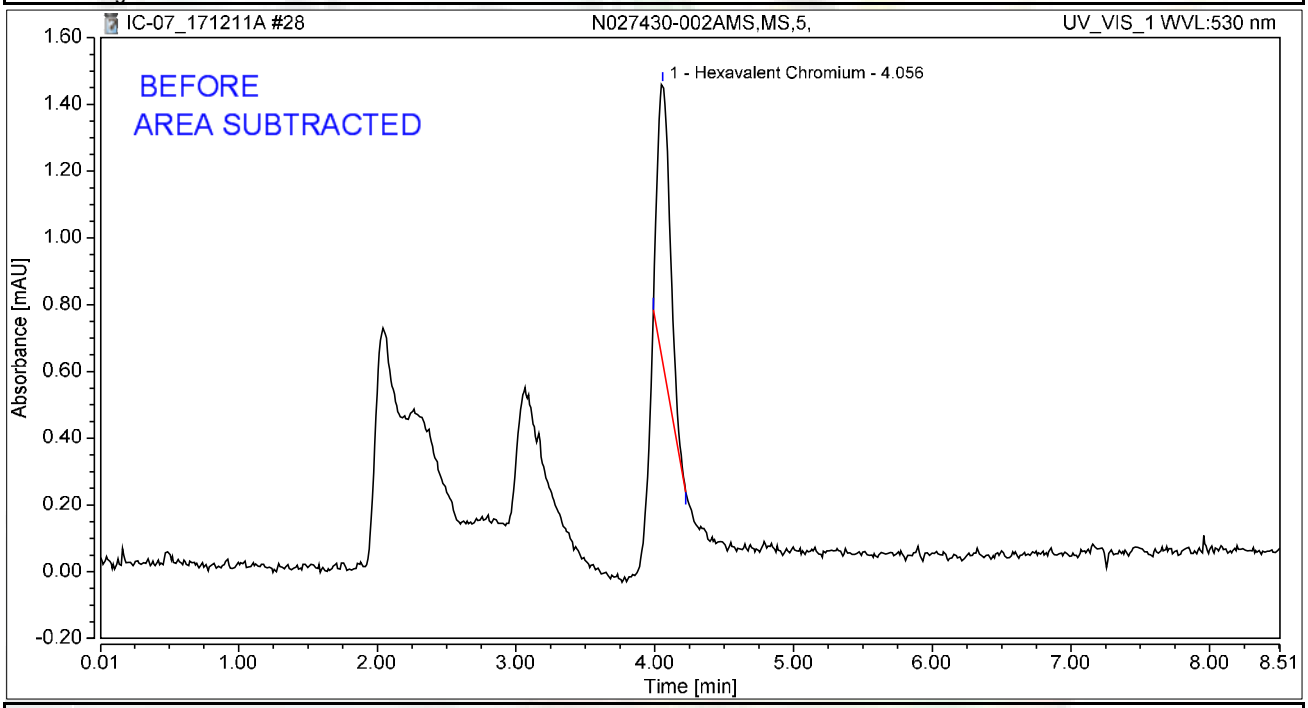
Chromatogram and Results

Injection Details

Injection Name:	**N027430-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.090	0.832	100.00	100.00	0.3580
Total:			**0.090**	**0.832**	**100.00**	**100.00**	

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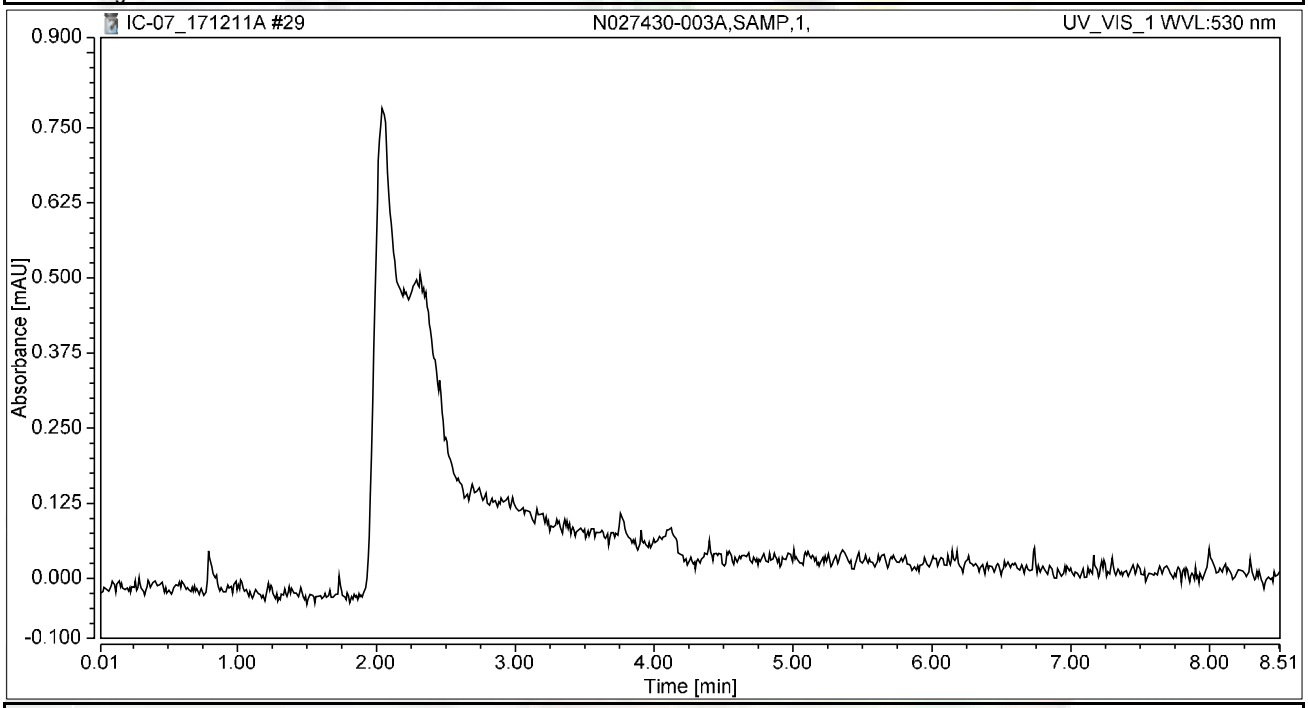
Chromatogram and Results

Injection Details

Injection Name:	**N027430-003A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 12:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

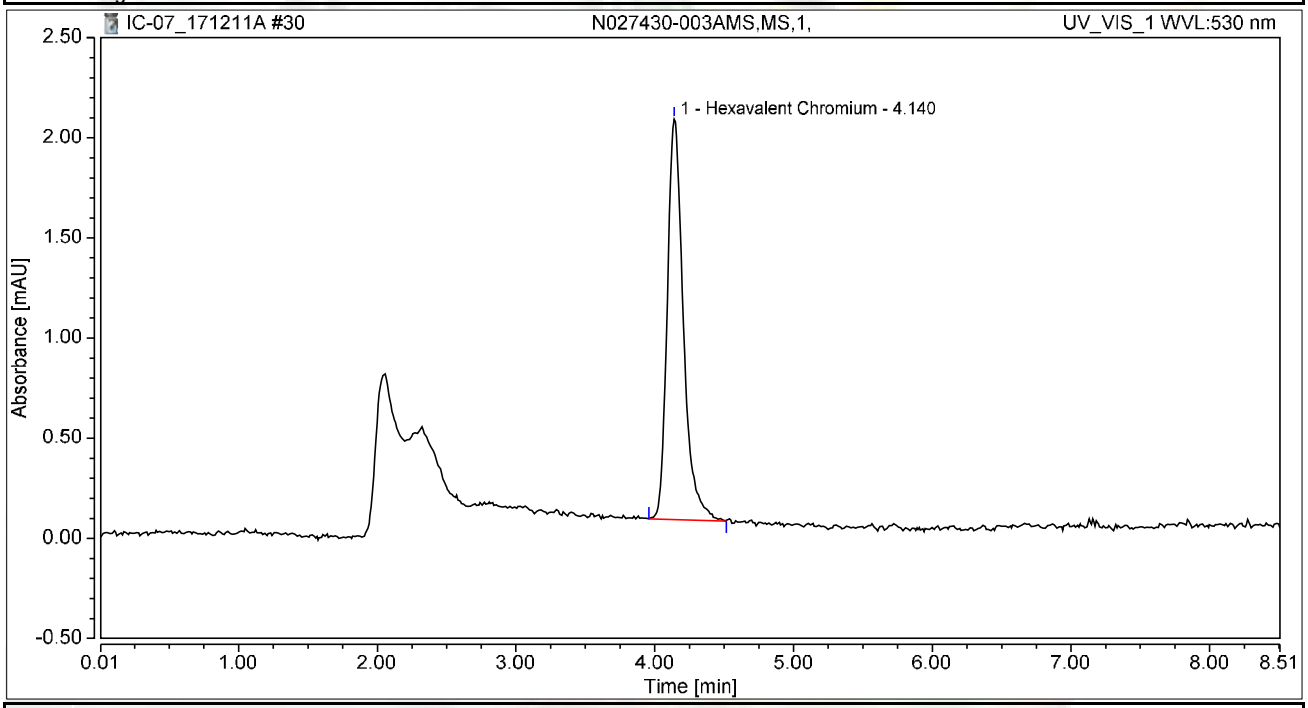
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

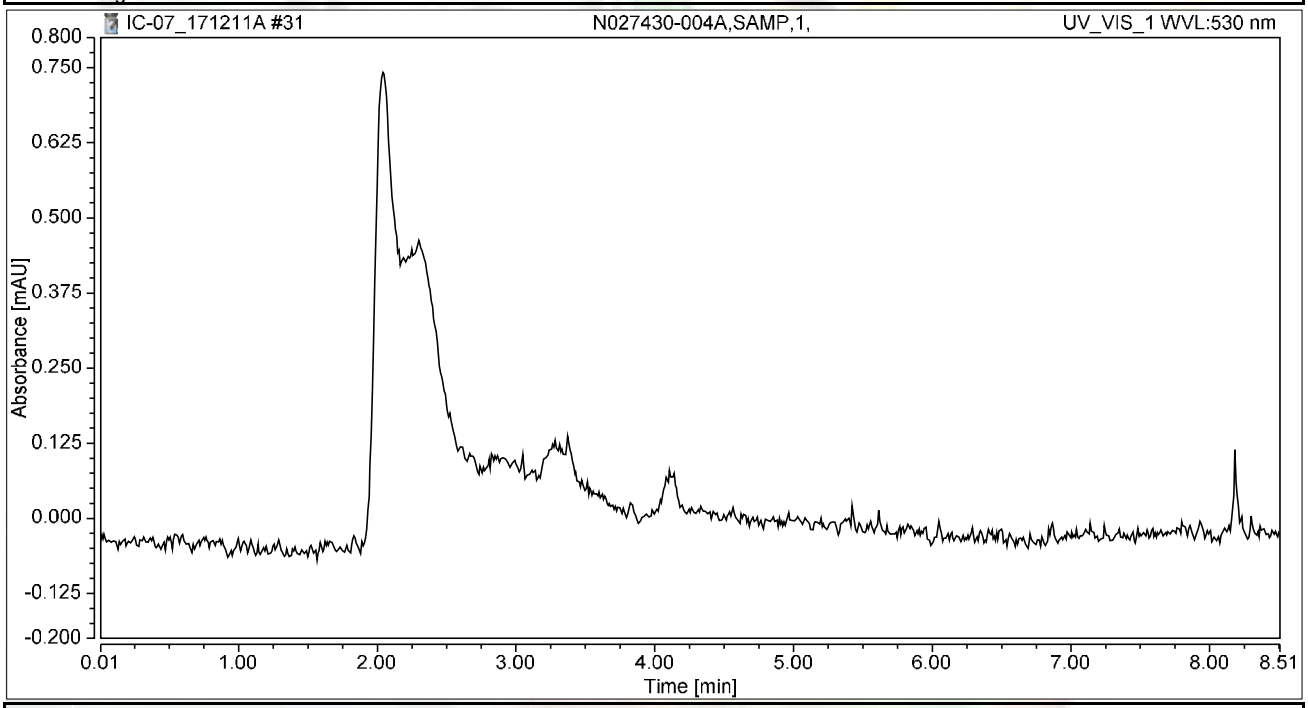
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.270	1.999	100.00	100.00	1.0741
Total:			**0.270**	**1.999**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 12:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

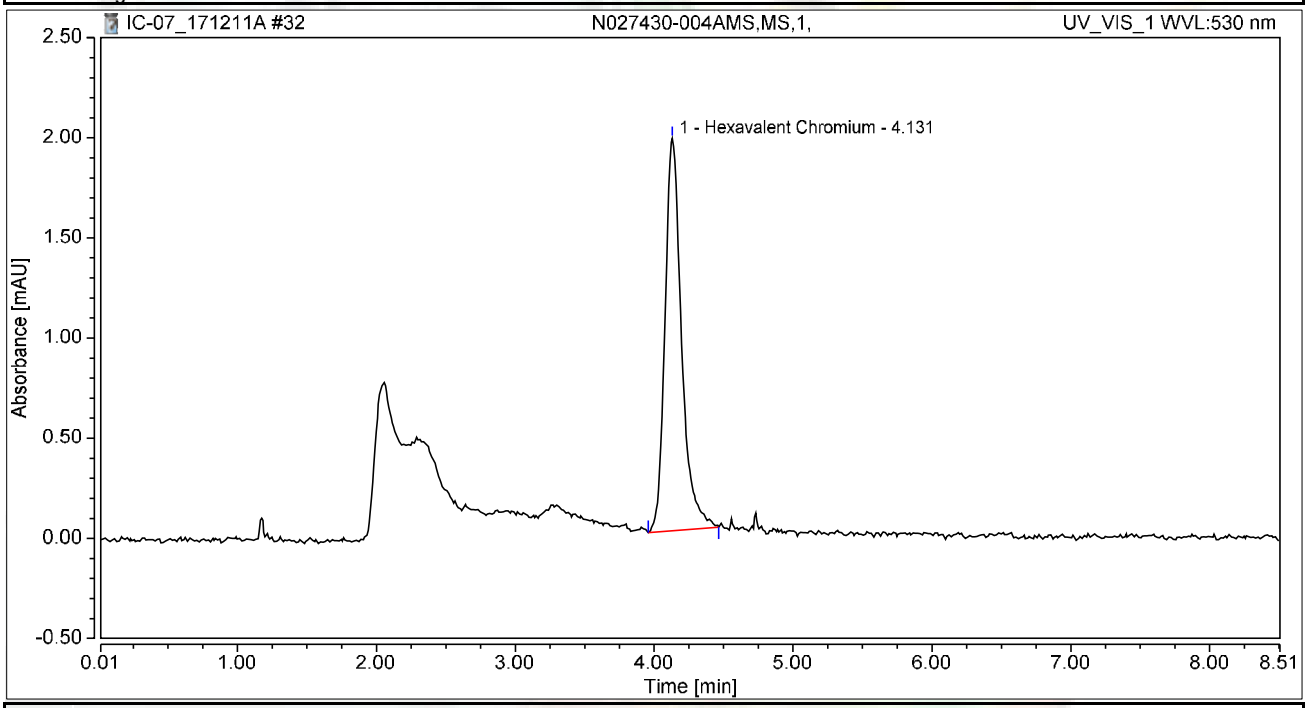
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-004AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 12:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

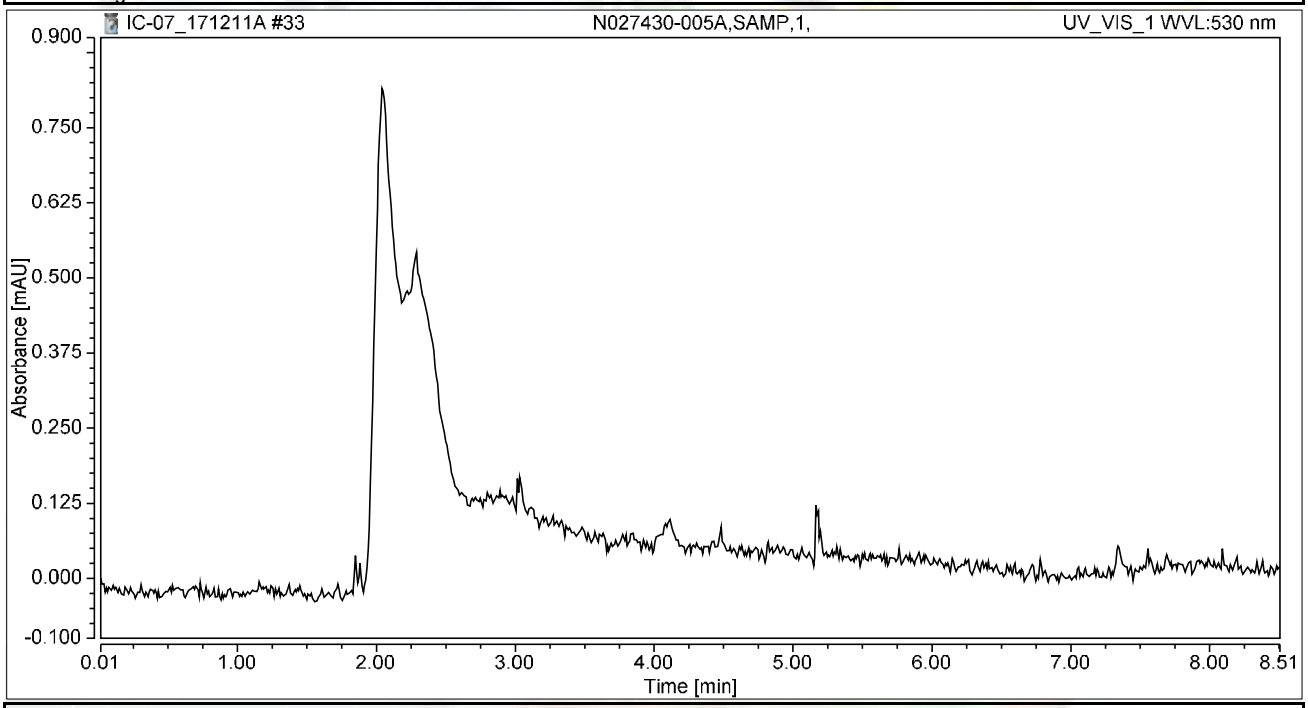
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.270	1.958	100.00	100.00	1.0766
Total:			**0.270**	**1.958**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-005A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 12:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

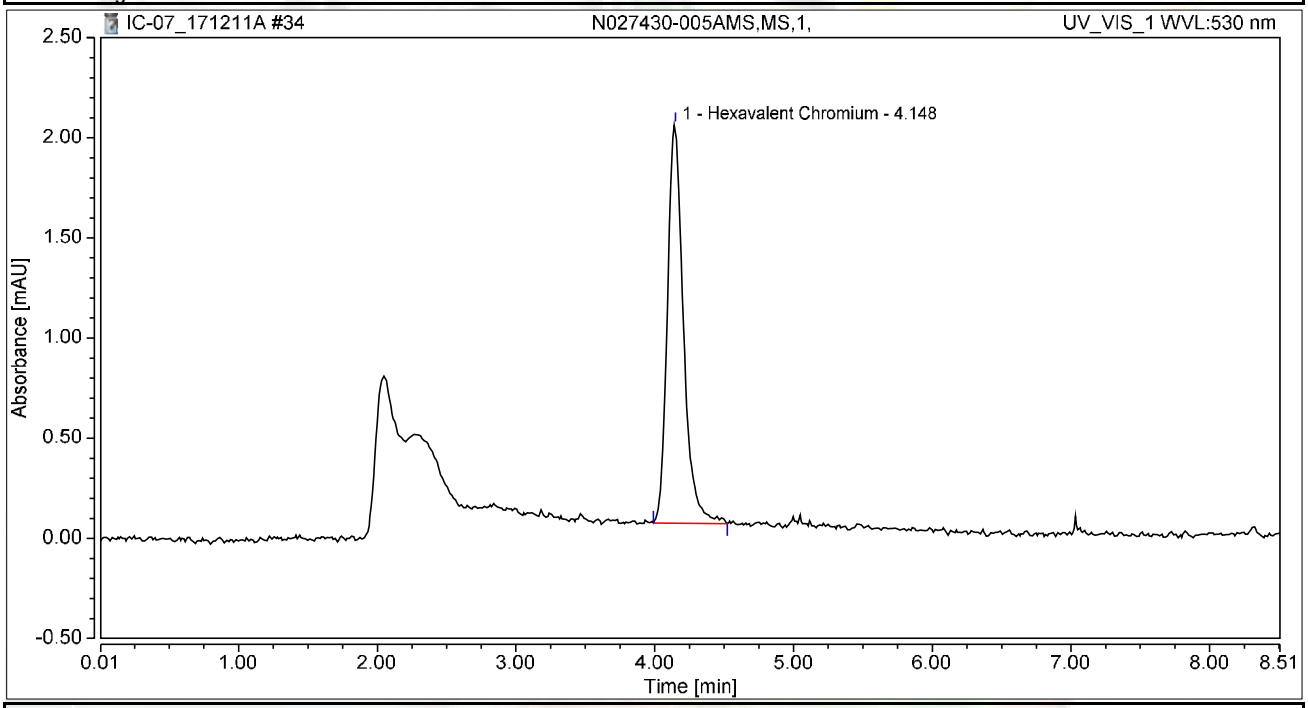
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-005AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 12:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

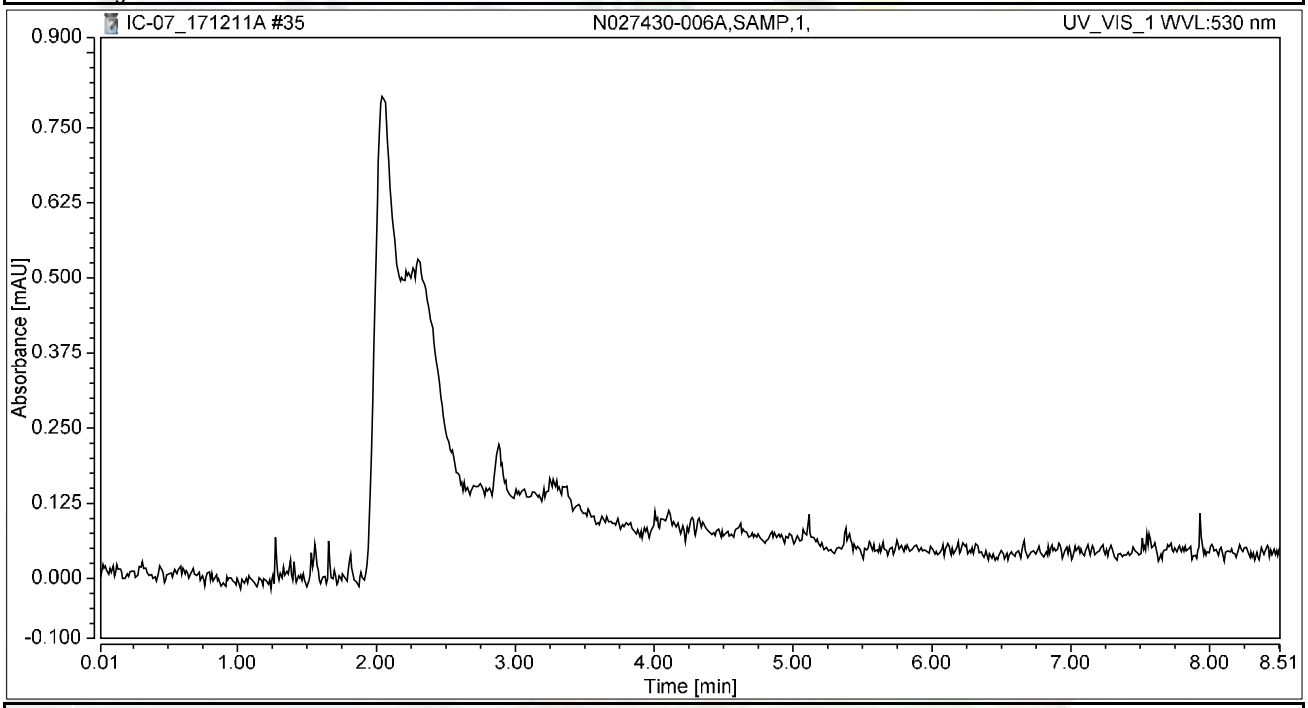
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.269	1.991	100.00	100.00	1.0694
Total:			**0.269**	**1.991**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-006A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

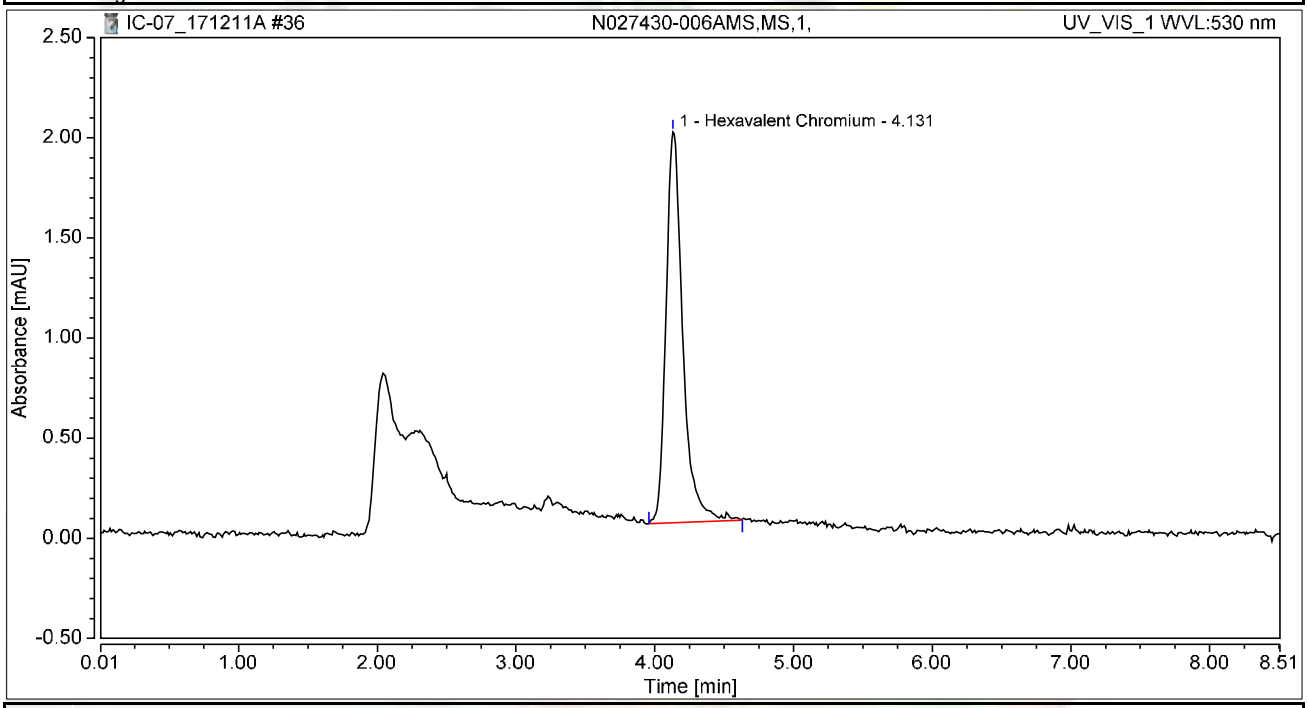
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

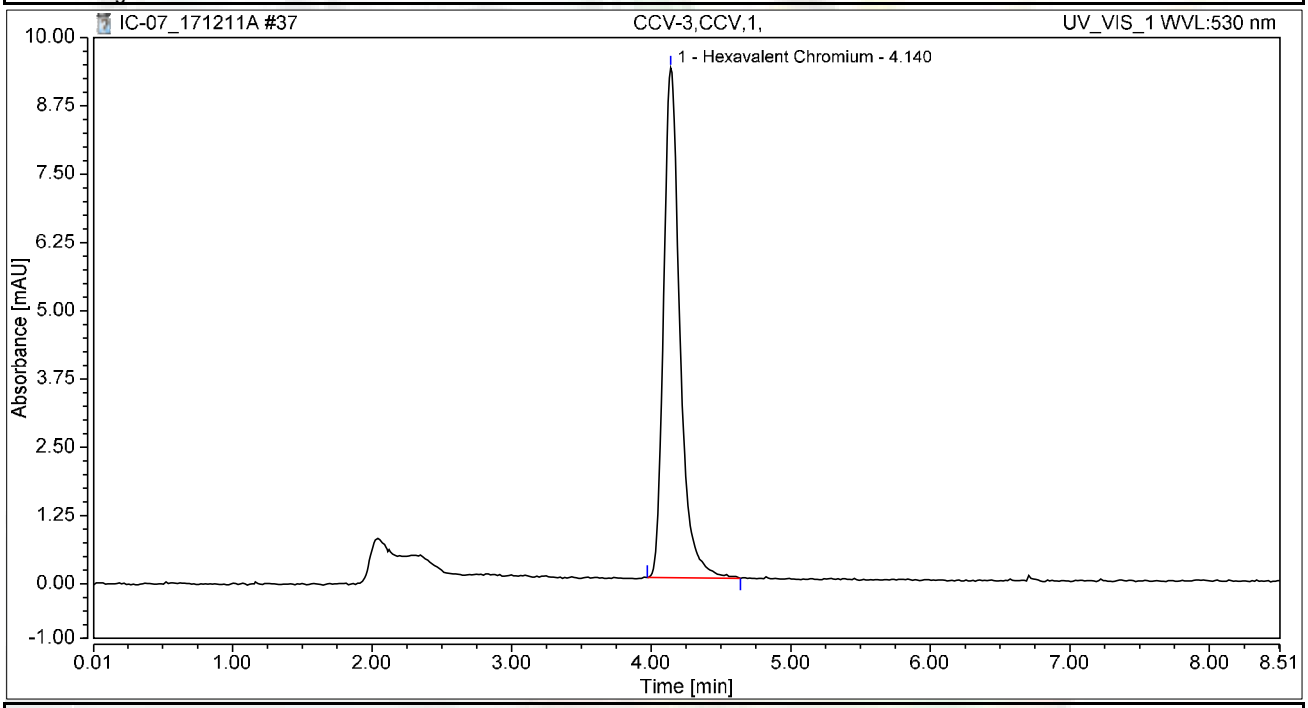
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.275	1.952	100.00	100.00	1.0966
Total:			**0.275**	**1.952**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

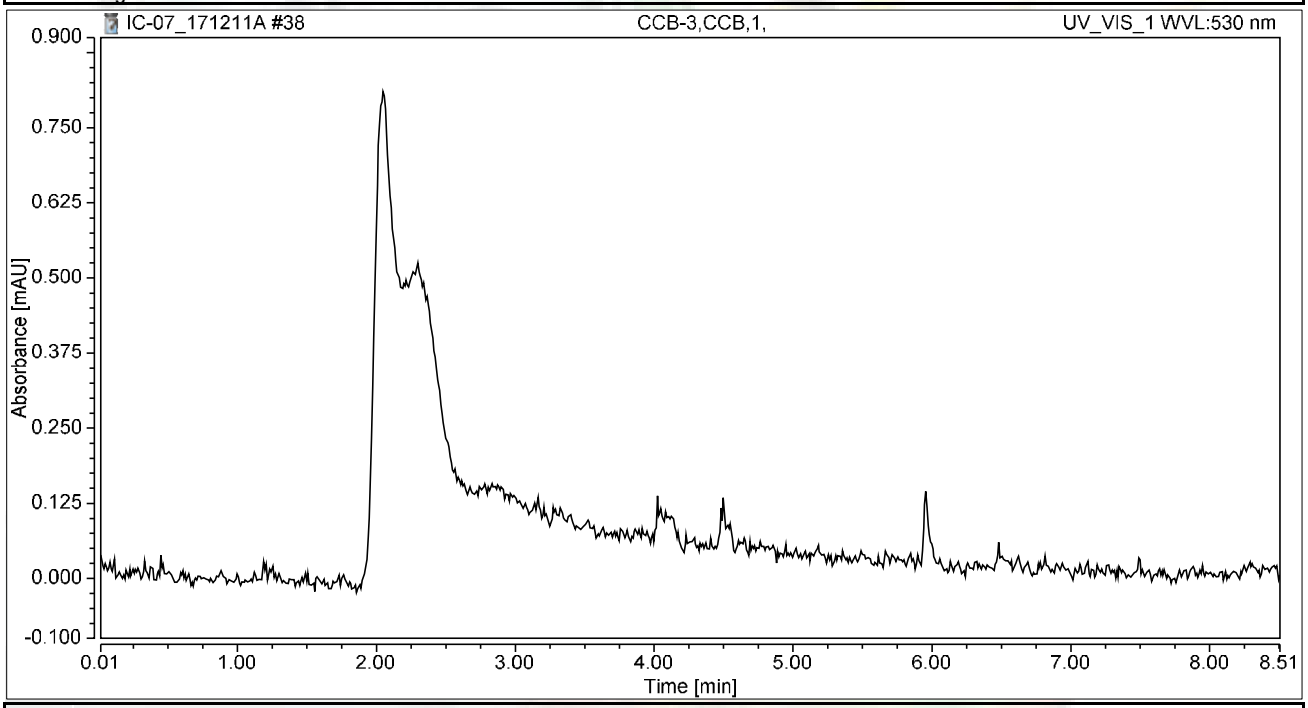
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.263	9.333	100.00	100.00	5.0296
Total:			**1.263**	**9.333**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

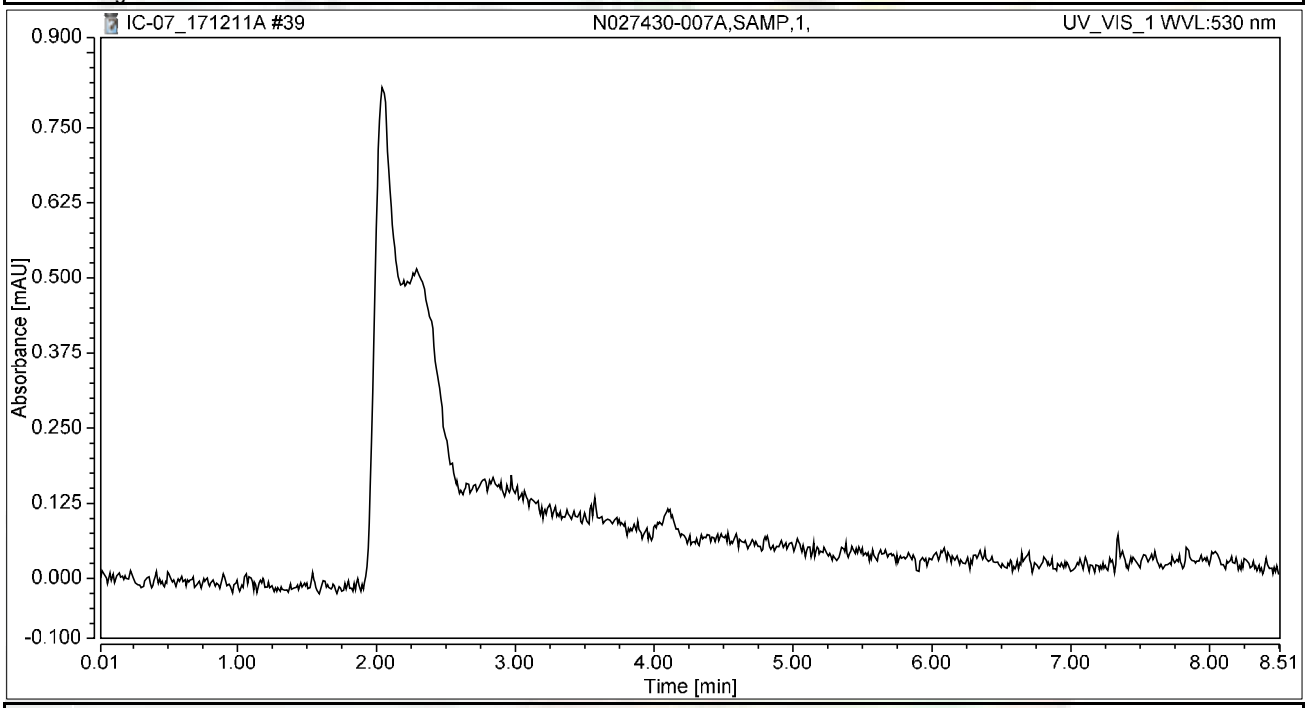
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-007A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

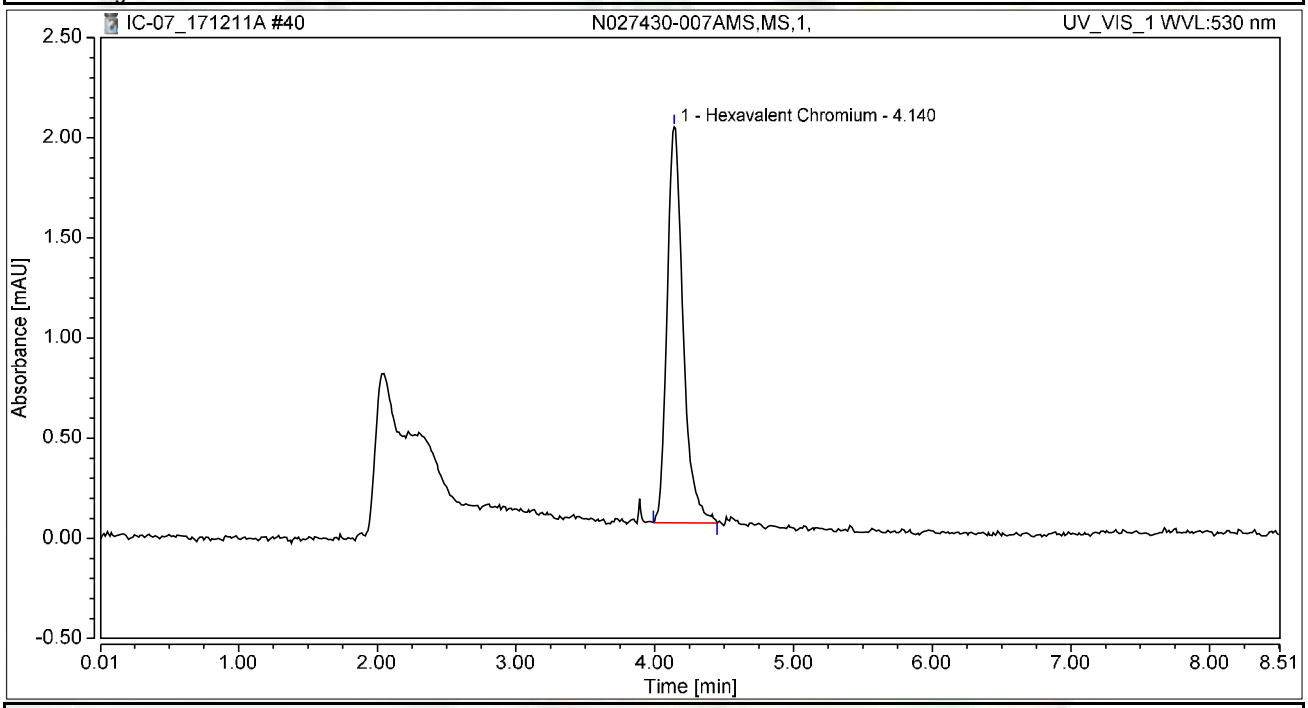
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

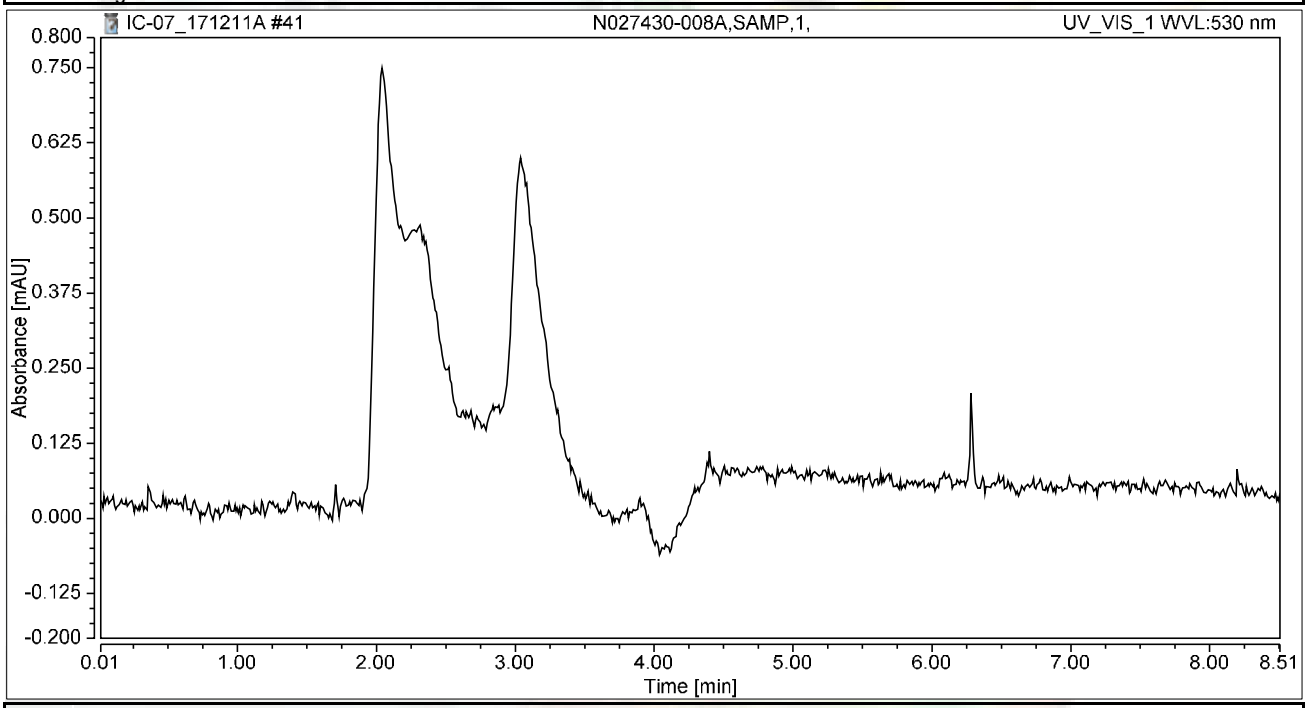
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.265	1.976	100.00	100.00	1.0563
Total:			**0.265**	**1.976**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-008A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

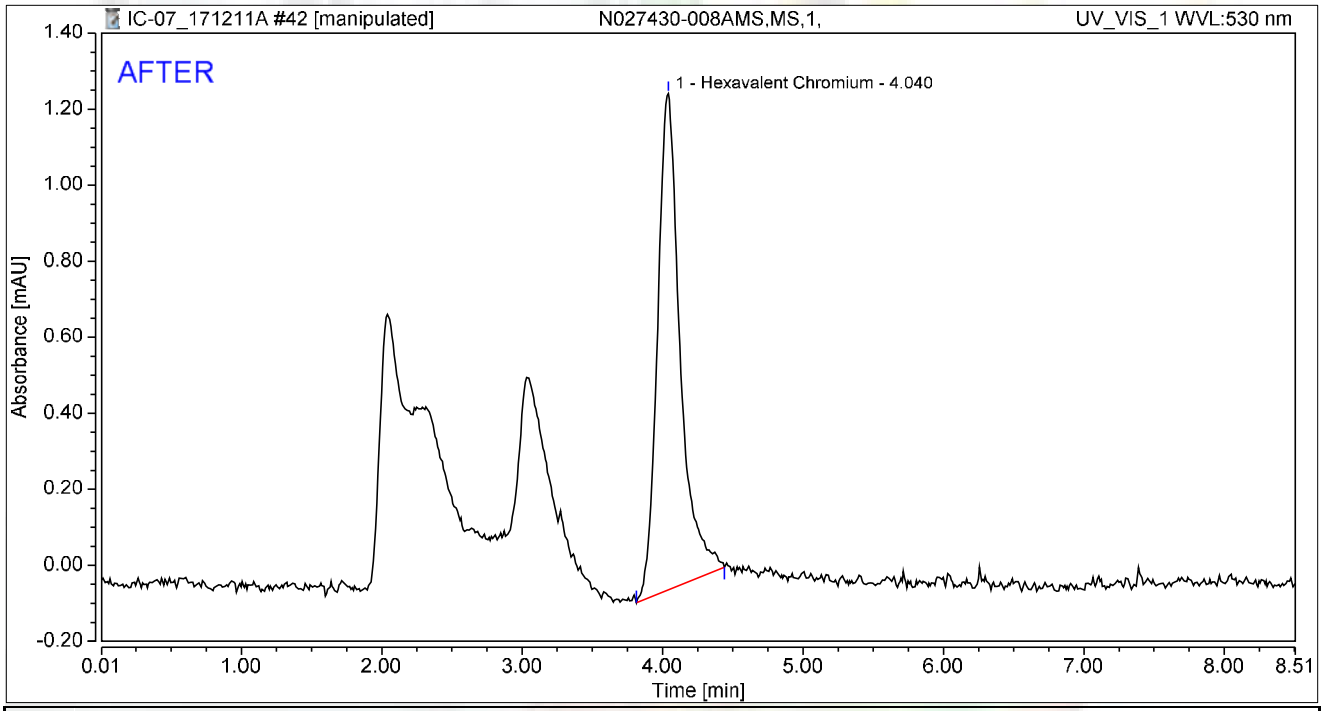
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.040	0.245	1.305	100.00	100.00	0.9757
Total:			**0.245**	**1.305**	**100.00**	**100.00**	

rba 12/16/2017

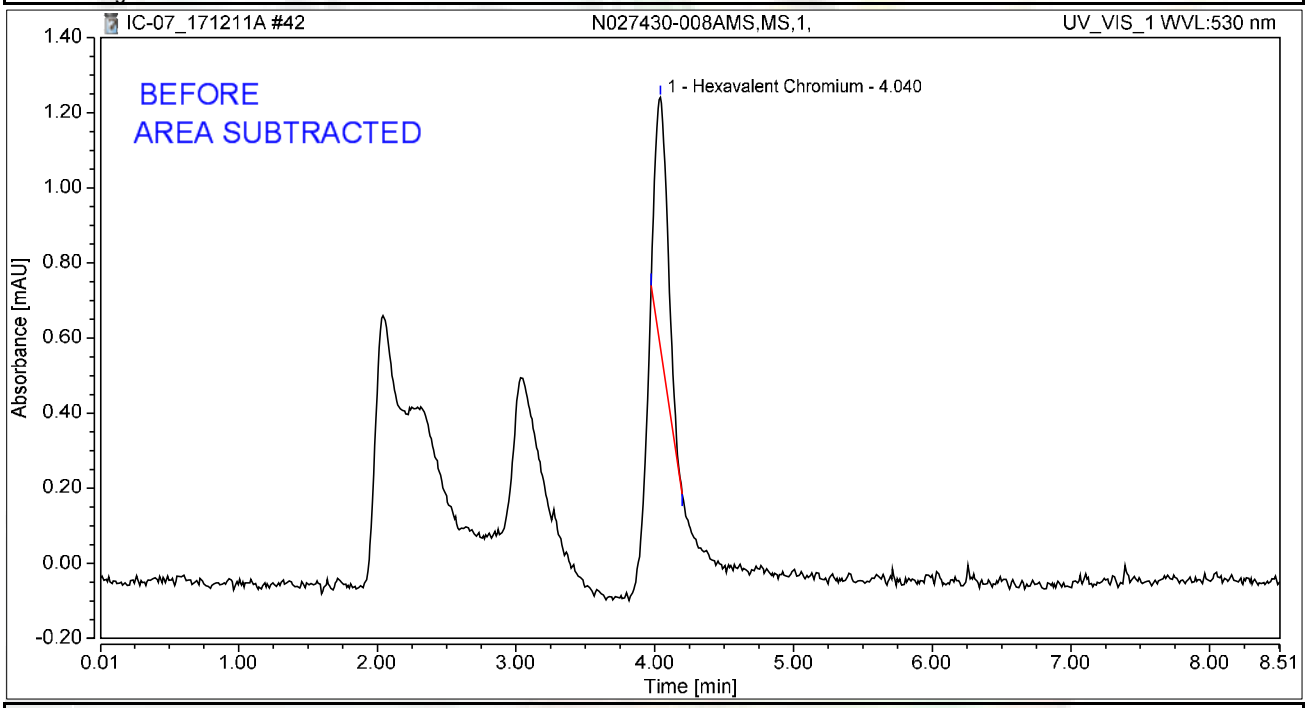
12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027430-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.040	0.072	0.665	100.00	100.00	0.2850
Total:			**0.072**	**0.665**	**100.00**	**100.00**	

rba 12/16/2017

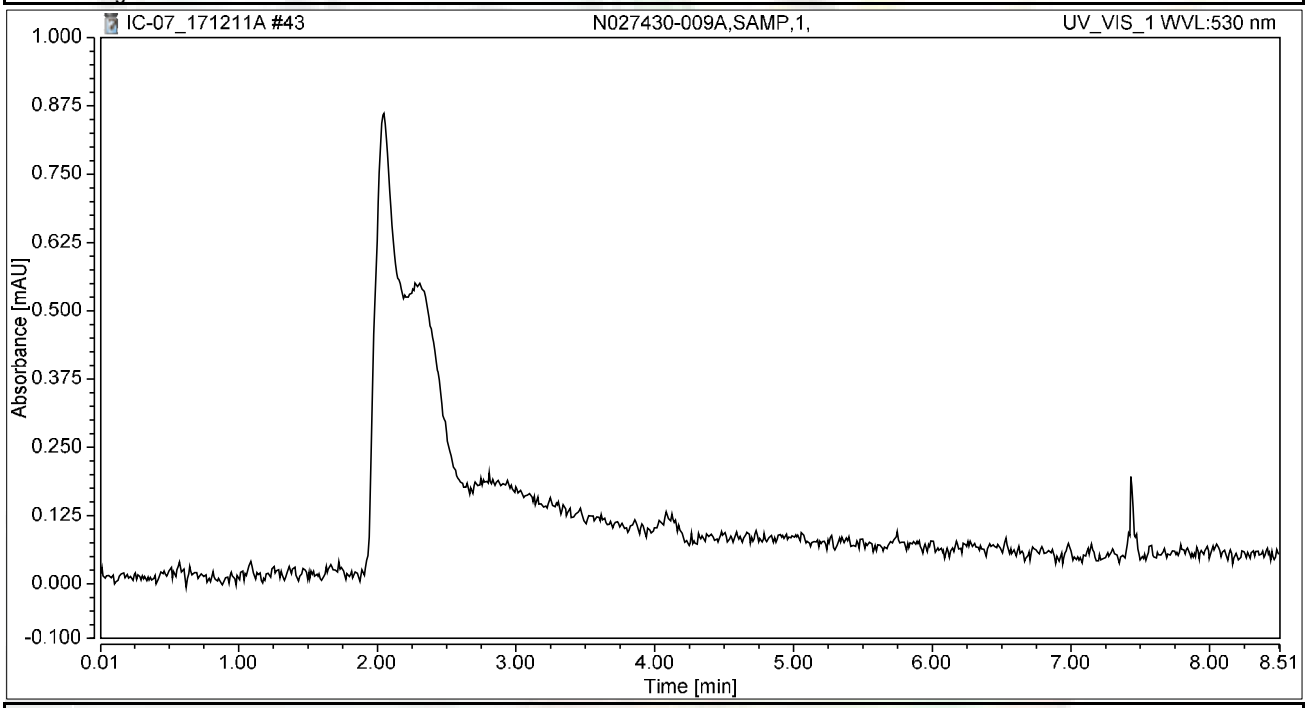
12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027430-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

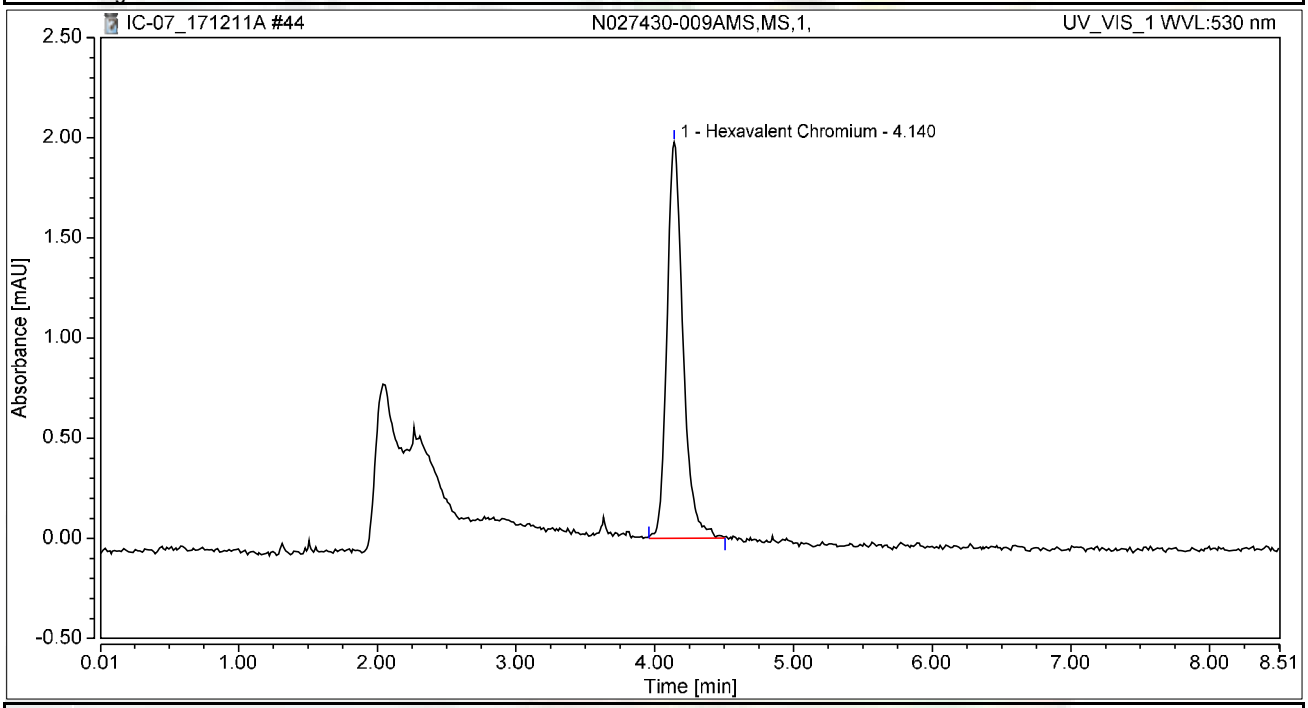
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

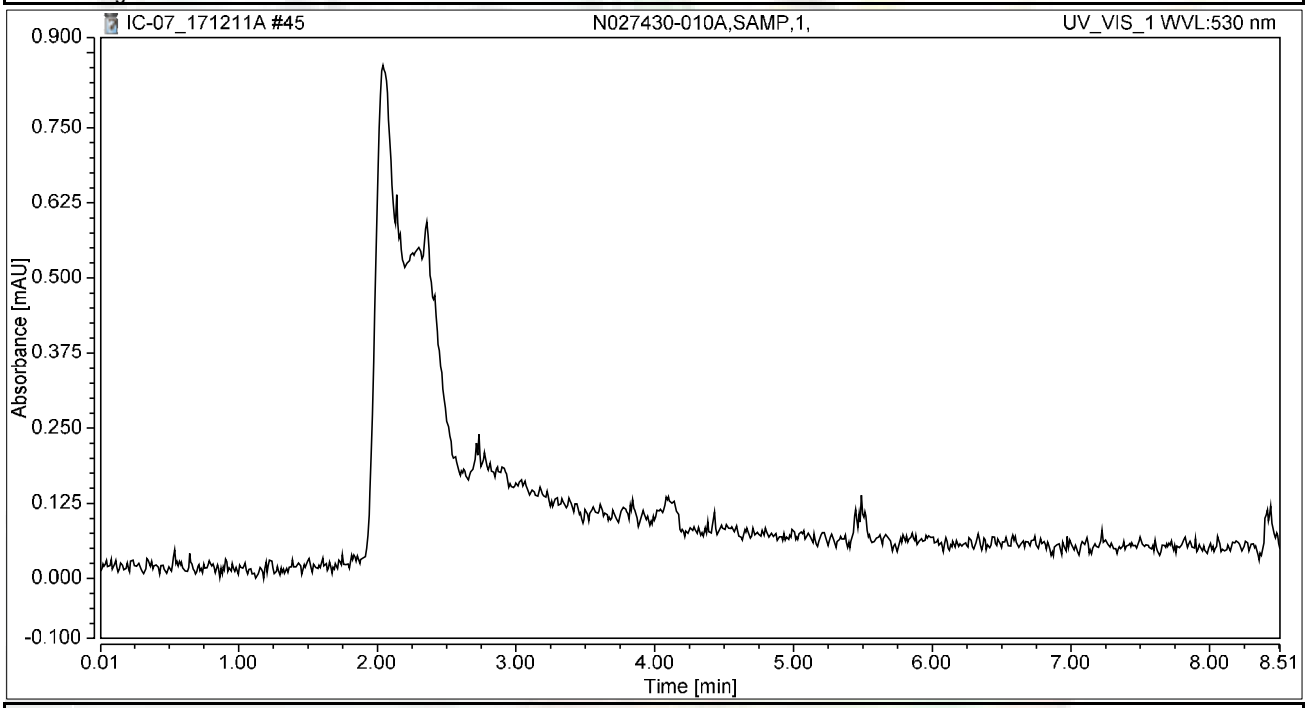
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.265	1.978	100.00	100.00	1.0572
Total:			**0.265**	**1.978**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

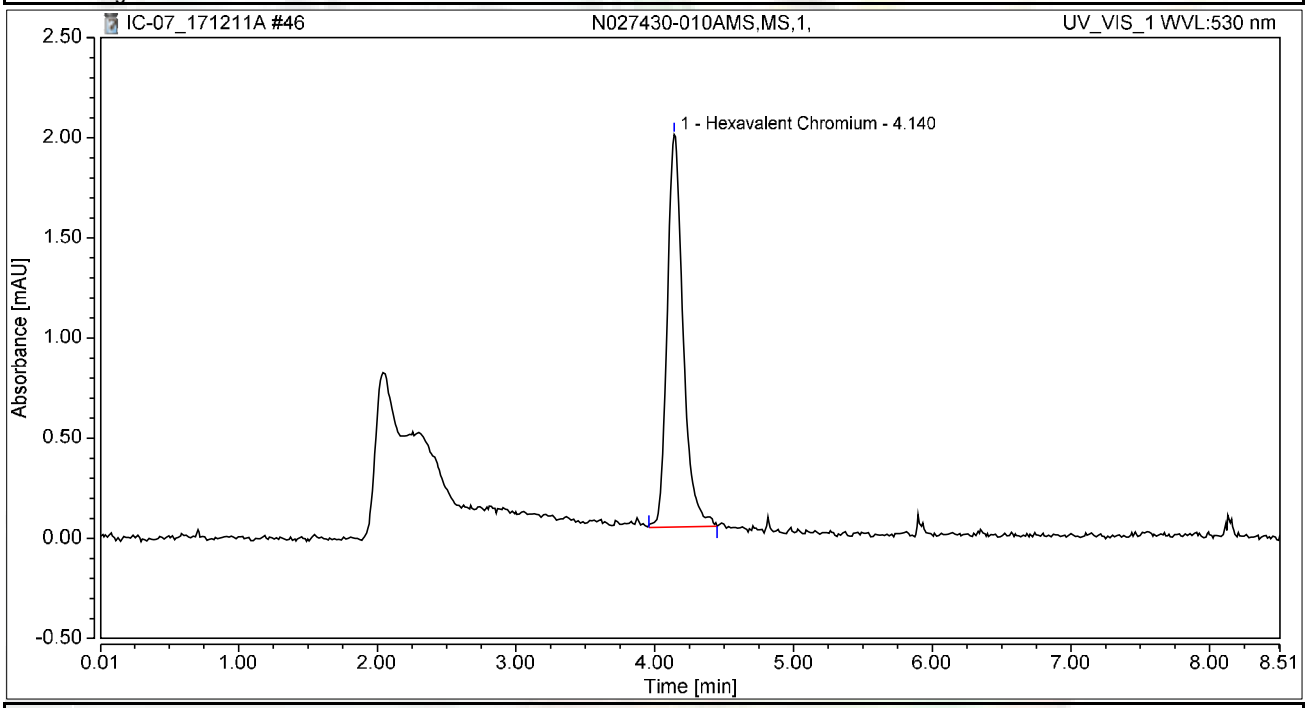
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-010AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

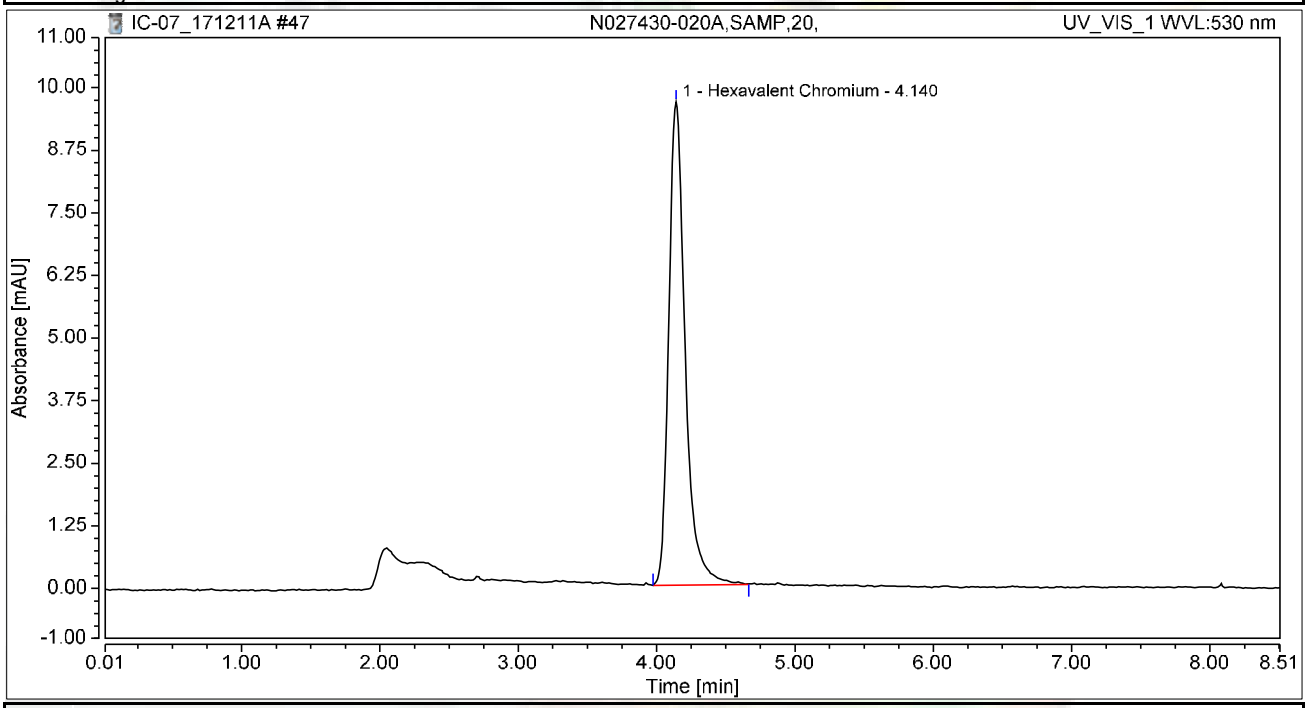
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.261	1.959	100.00	100.00	1.0401
Total:			**0.261**	**1.959**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-020A,SAMP,20,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

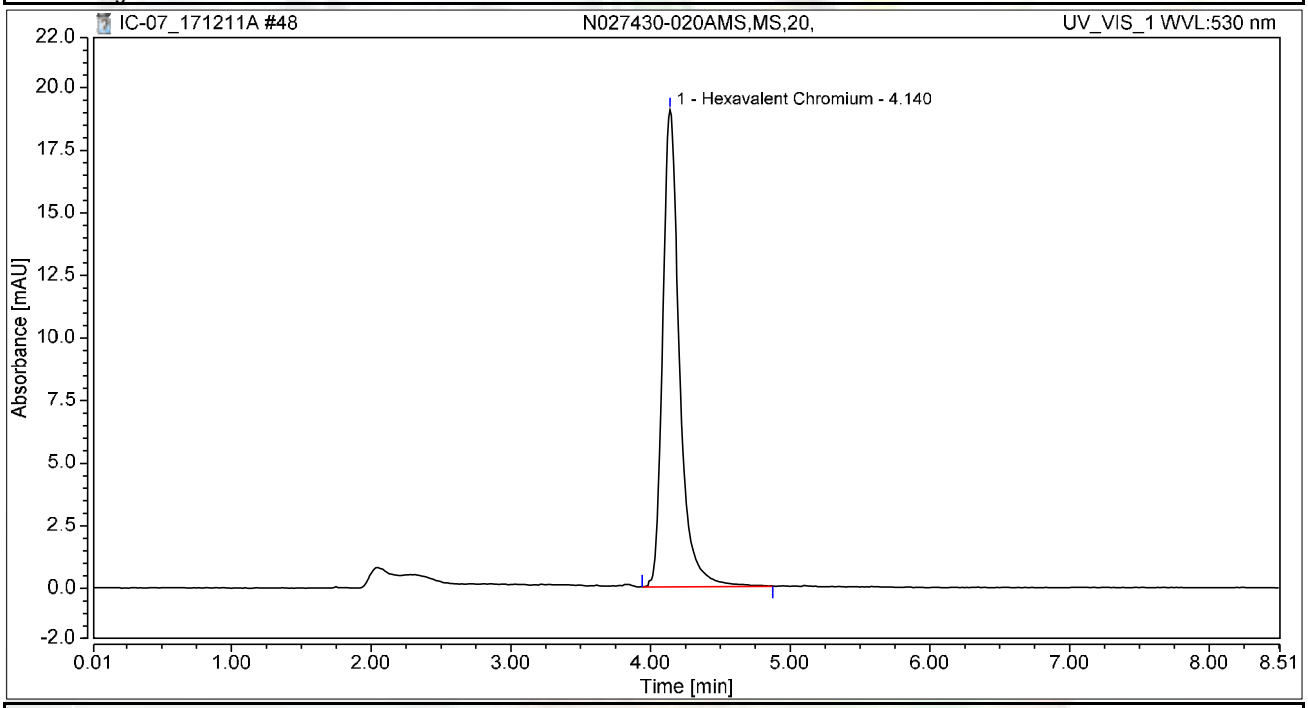
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.328	9.652	100.00	100.00	5.2893
Total:			**1.328**	**9.652**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-020AMS,MS,20,**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

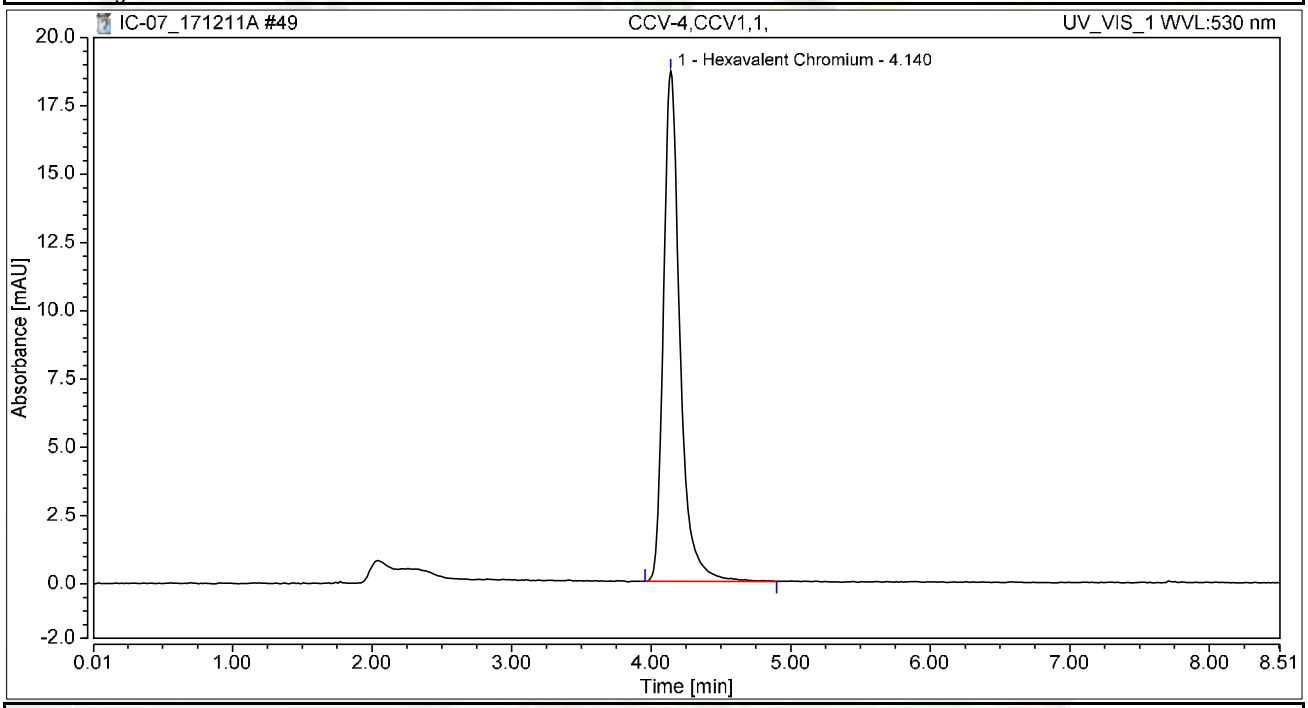
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.650	19.050	100.00	100.00	10.5546
Total:			**2.650**	**19.050**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

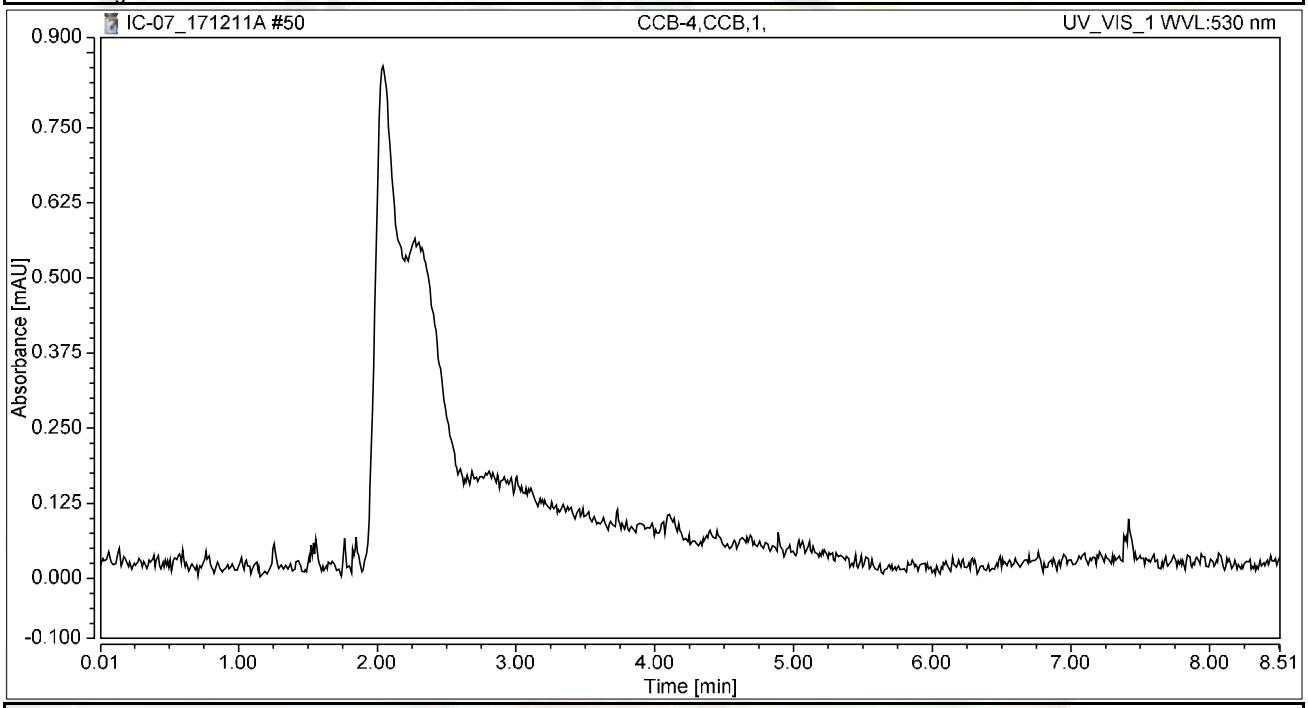
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.559	18.685	100.00	100.00	10.1931
Total:			**2.559**	**18.685**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

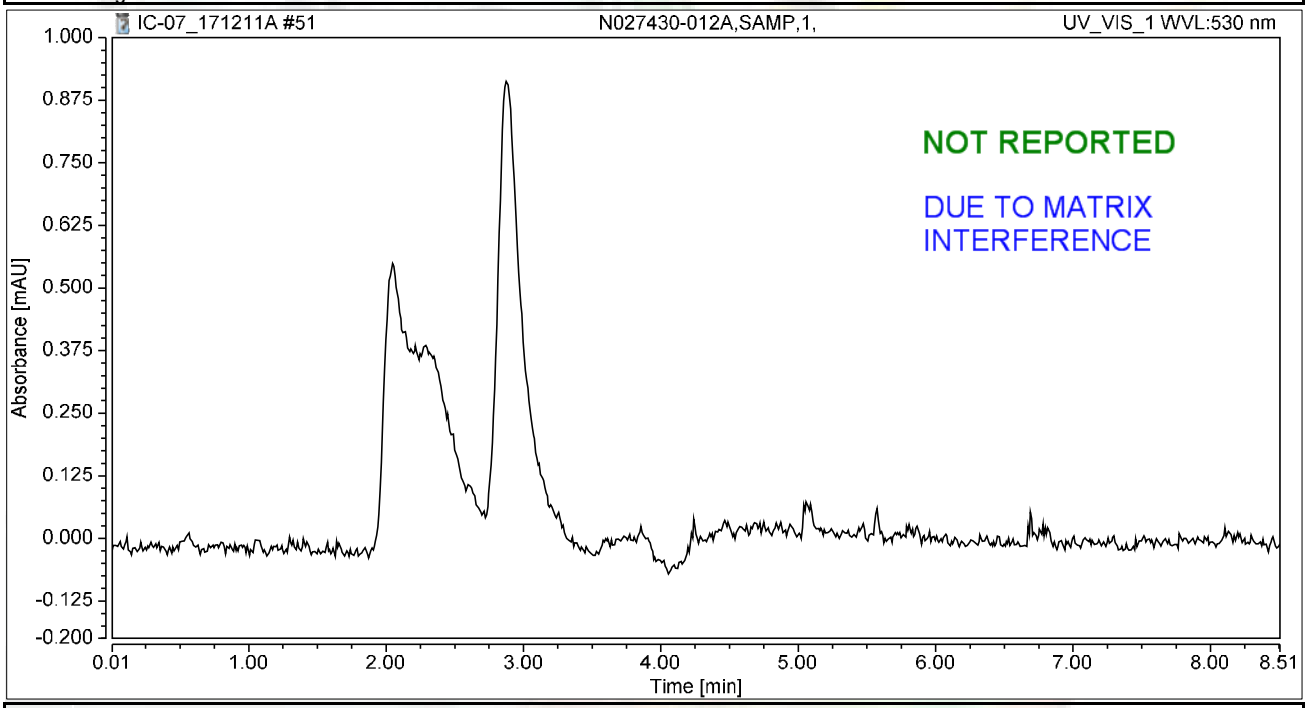
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-012A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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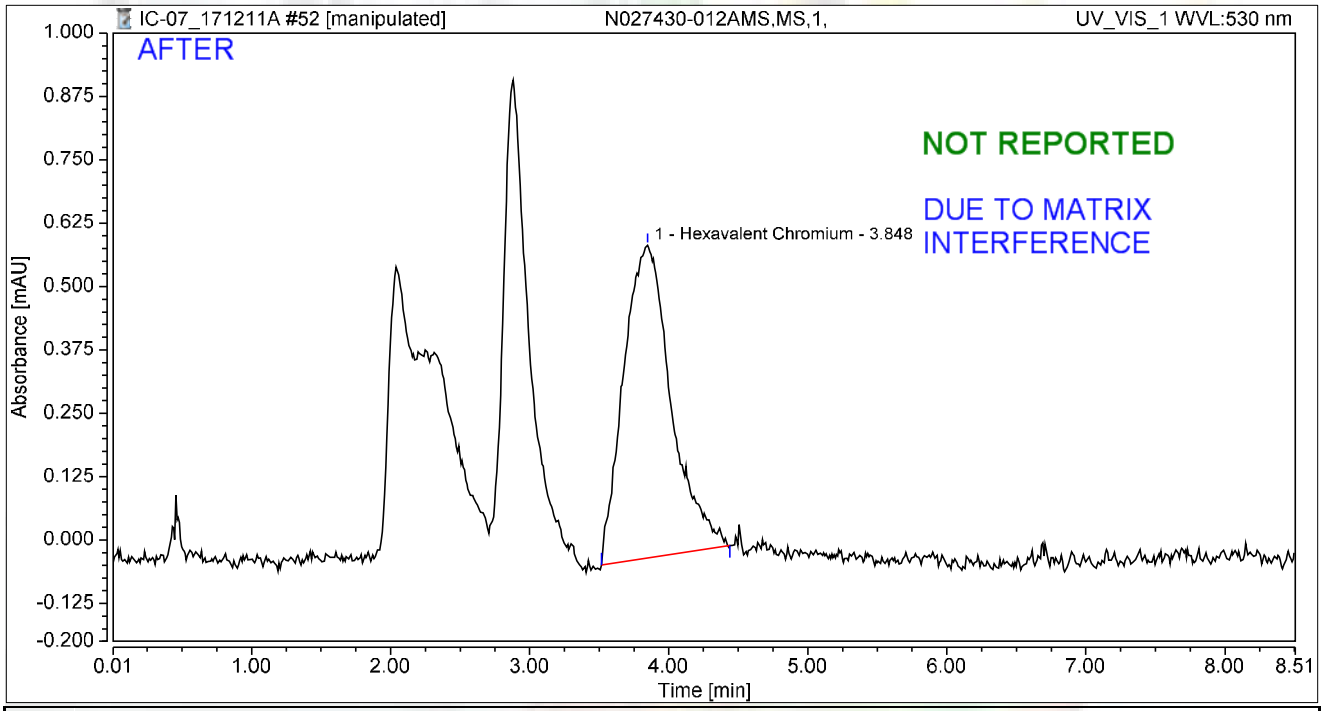
Chromatogram and Results

Injection Details

Injection Name:	**N027430-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.848	0.243	0.616	100.00	100.00	0.9692
Total:			**0.243**	**0.616**	**100.00**	**100.00**	

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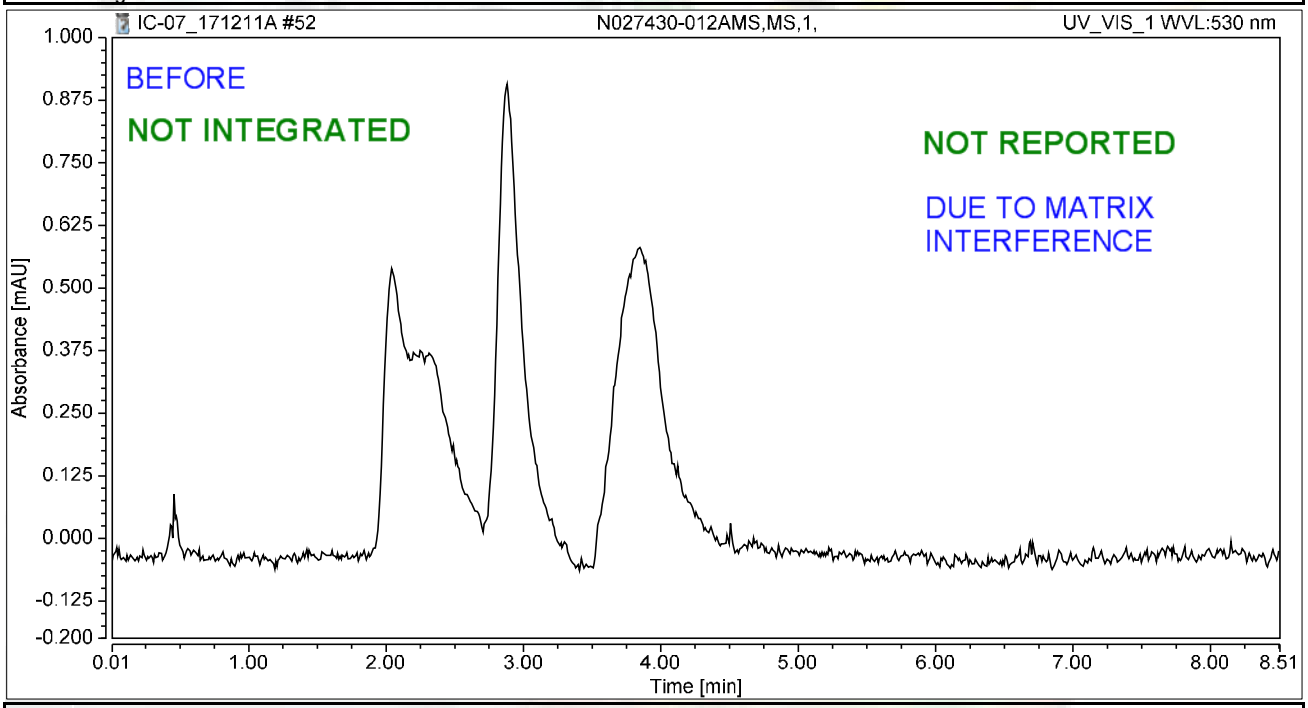
Chromatogram and Results

Injection Details

Injection Name:	**N027430-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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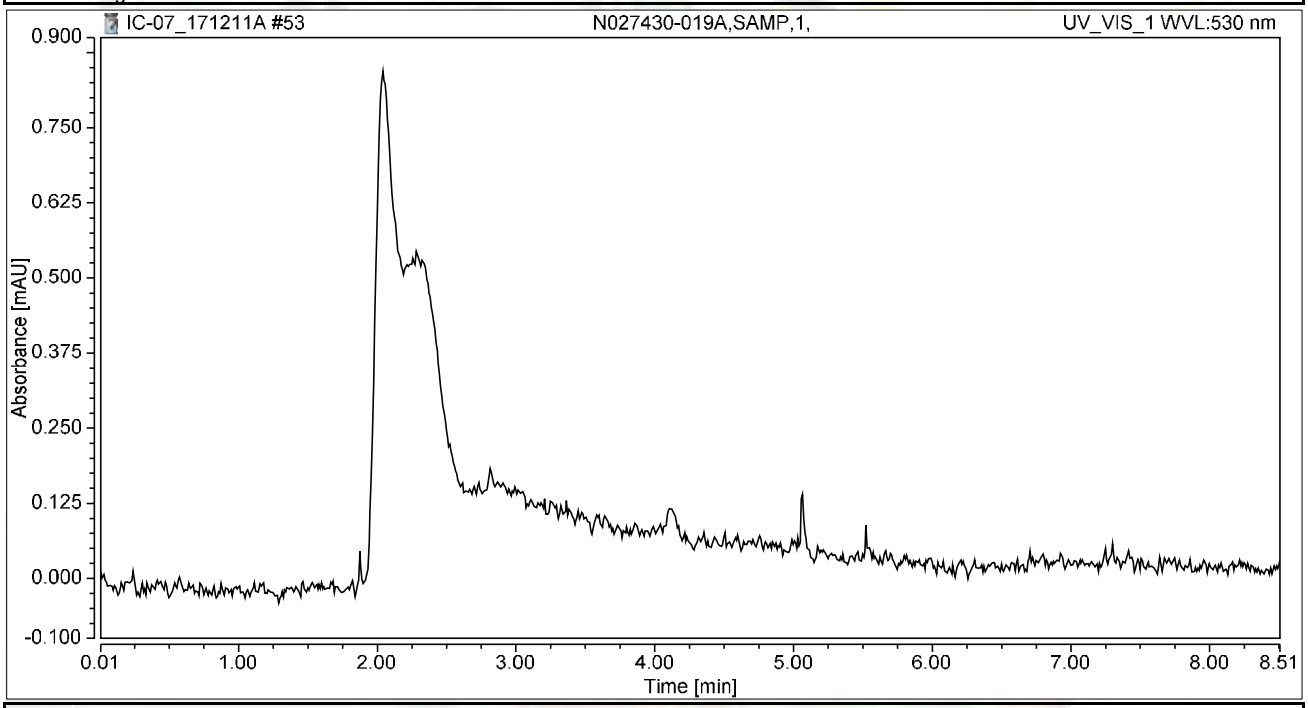
Chromatogram and Results

Injection Details

Injection Name:	**N027430-019A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

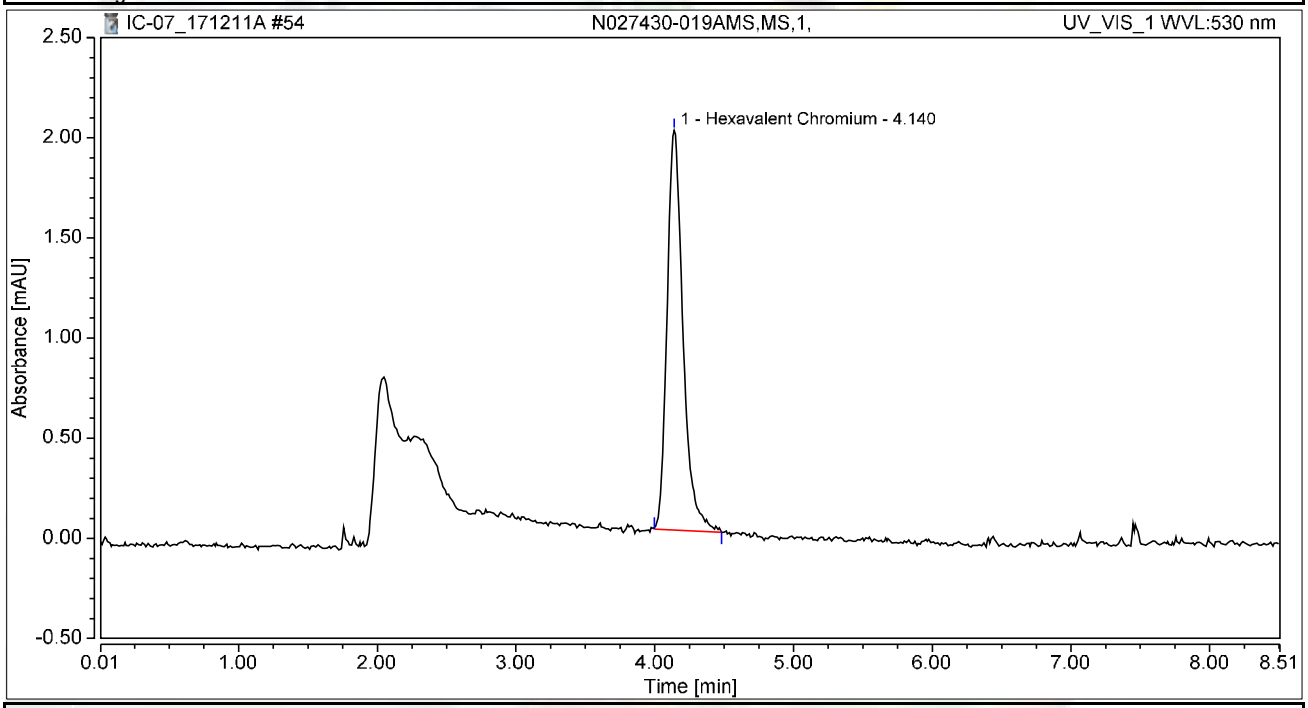
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-019AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

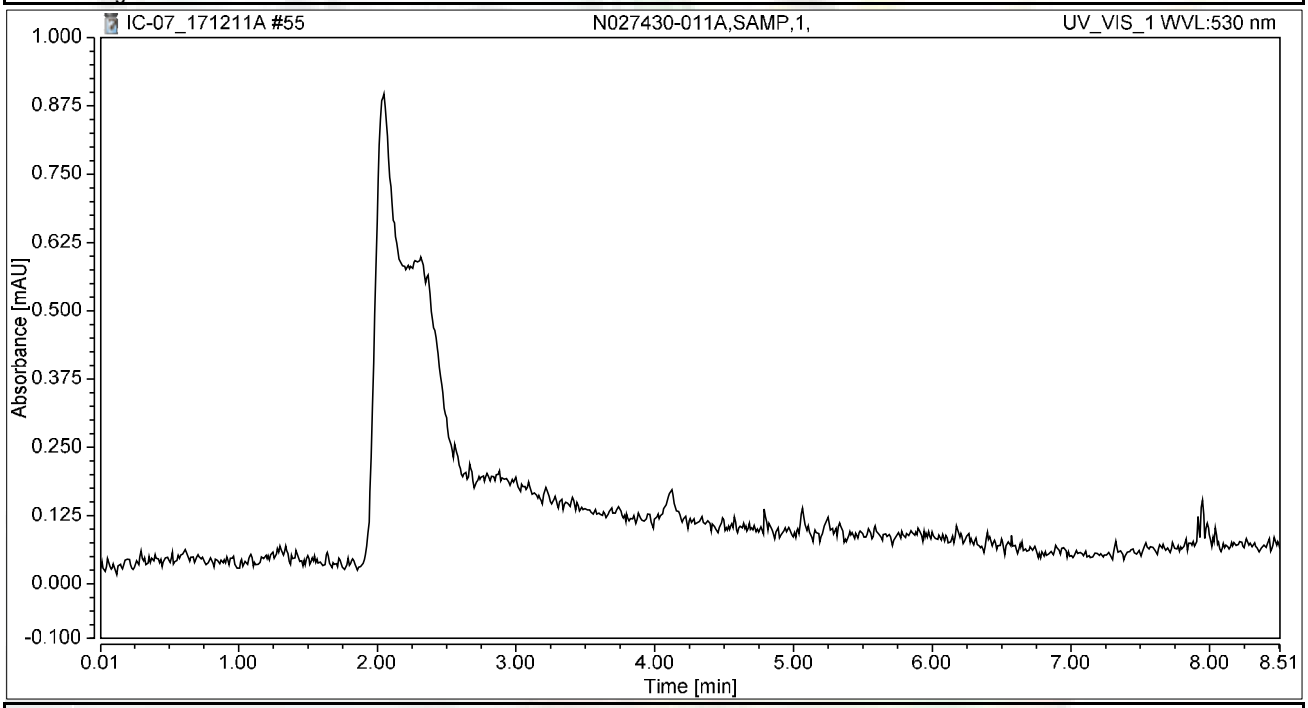
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.266	1.995	100.00	100.00	1.0592
Total:			**0.266**	**1.995**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

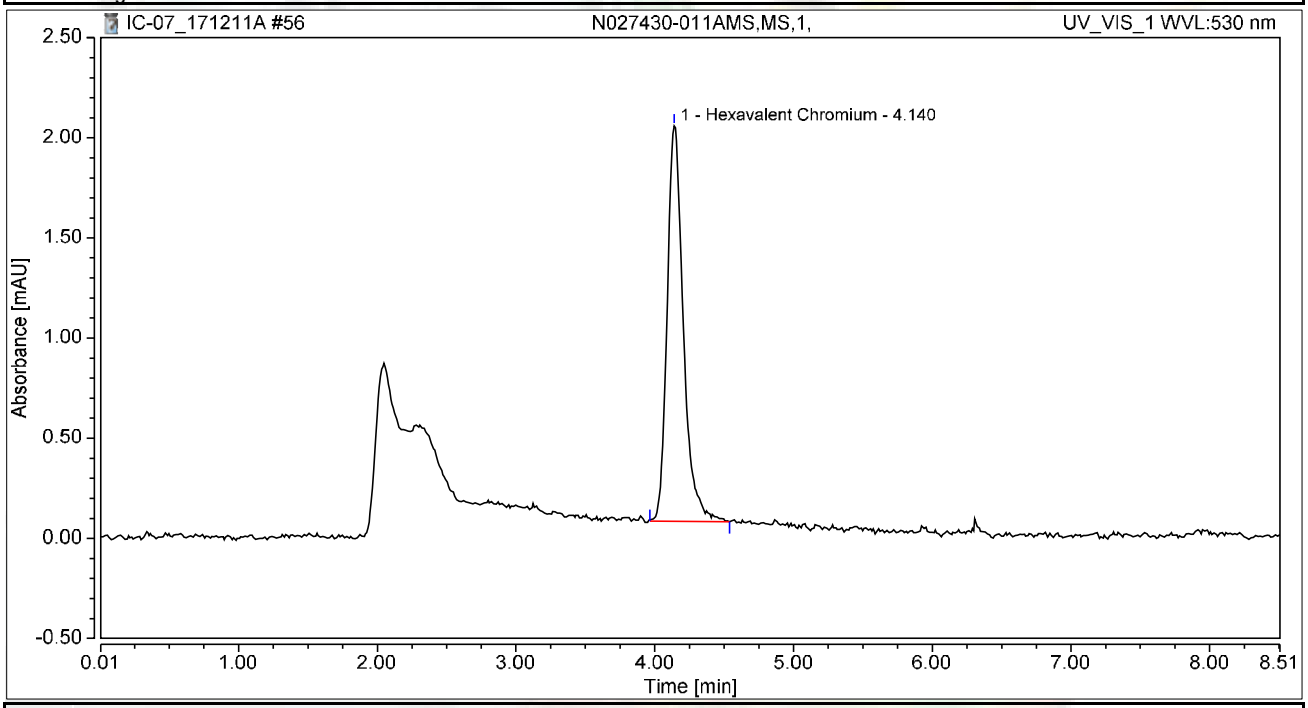
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

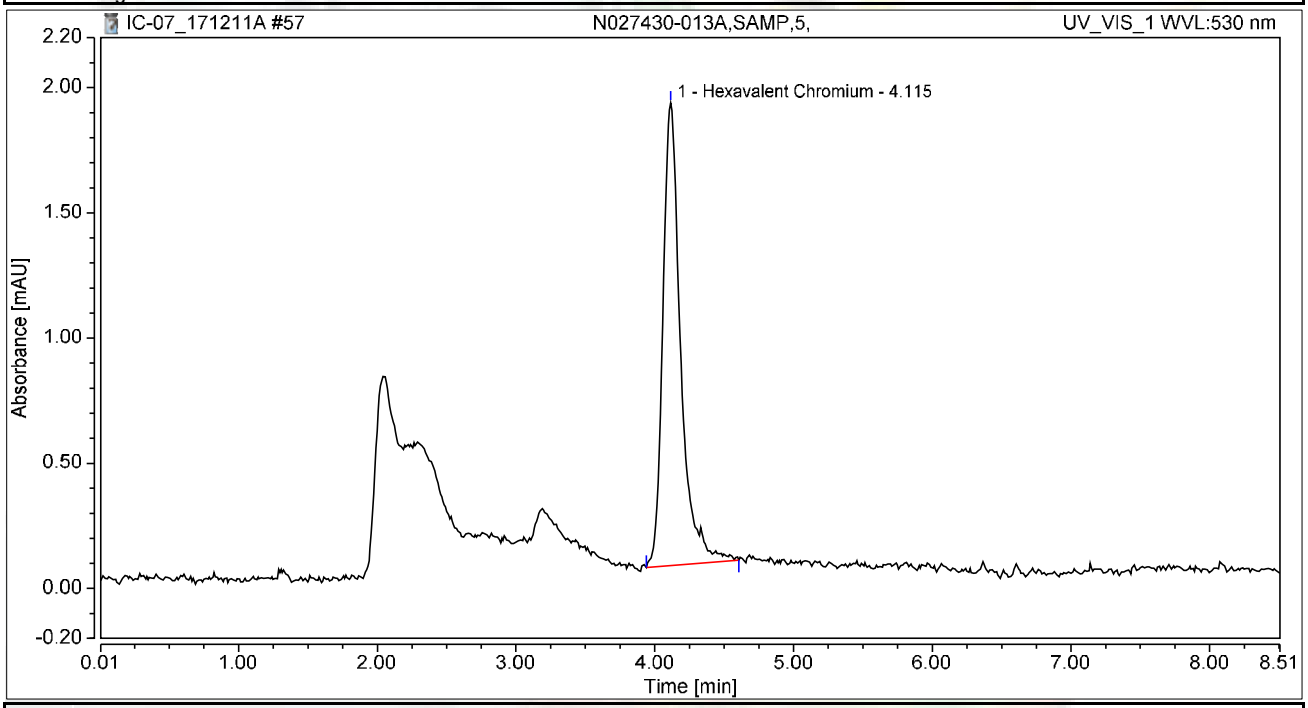
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.268	1.975	100.00	100.00	1.0679
Total:			**0.268**	**1.975**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-013A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

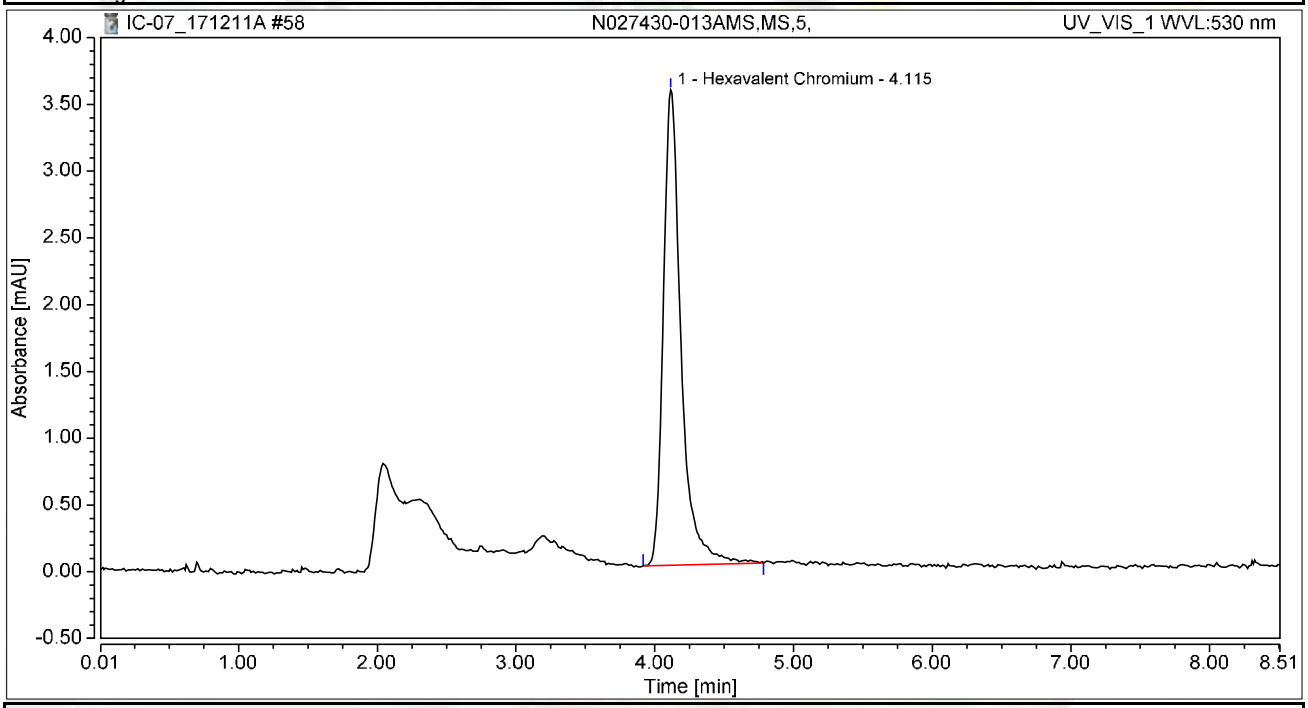
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.276	1.848	100.00	100.00	1.0980
Total:			**0.276**	**1.848**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-013AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

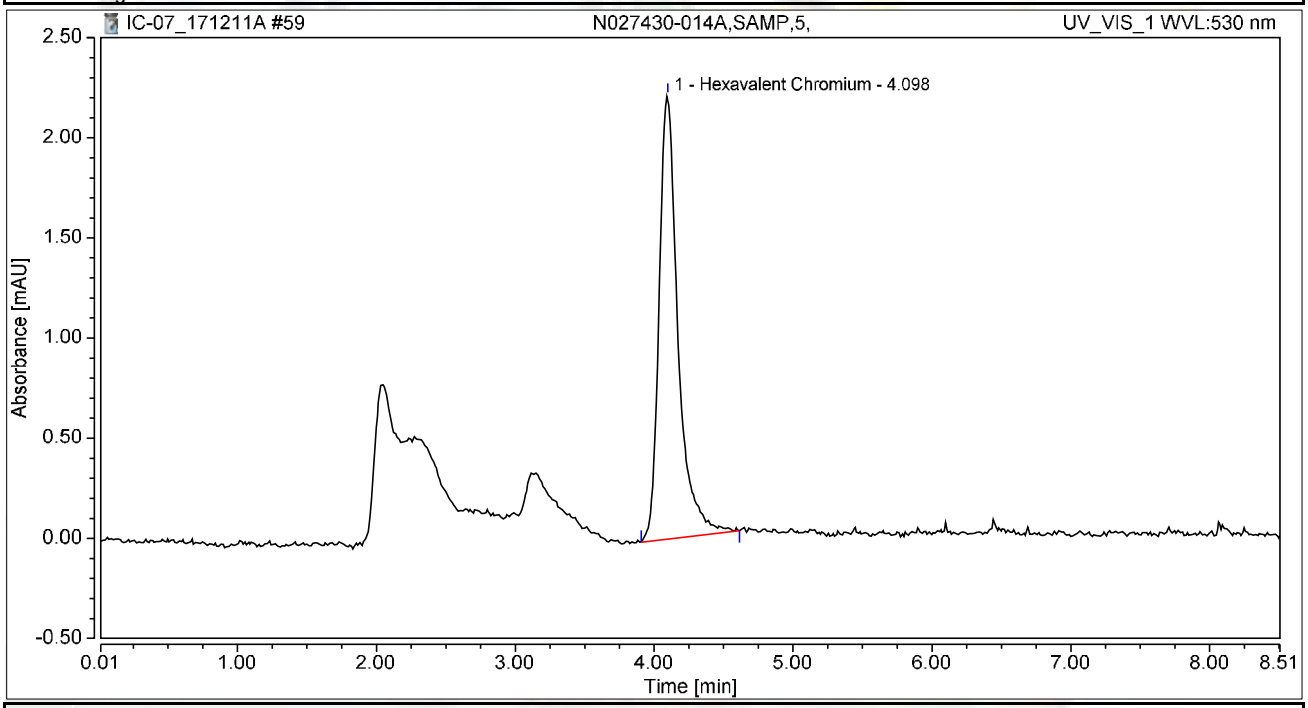
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.530	3.560	100.00	100.00	2.1108
Total:			**0.530**	**3.560**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-014A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

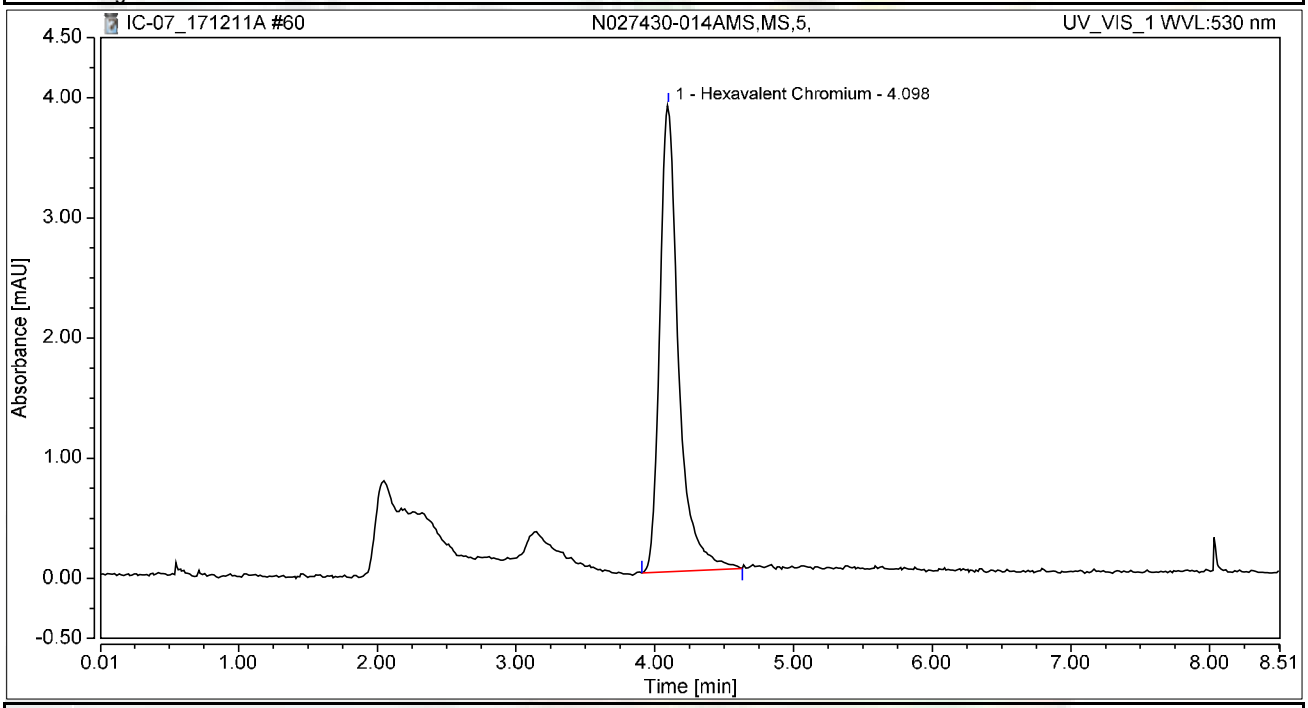
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.349	2.216	100.00	100.00	1.3910
Total:			**0.349**	**2.216**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-014AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

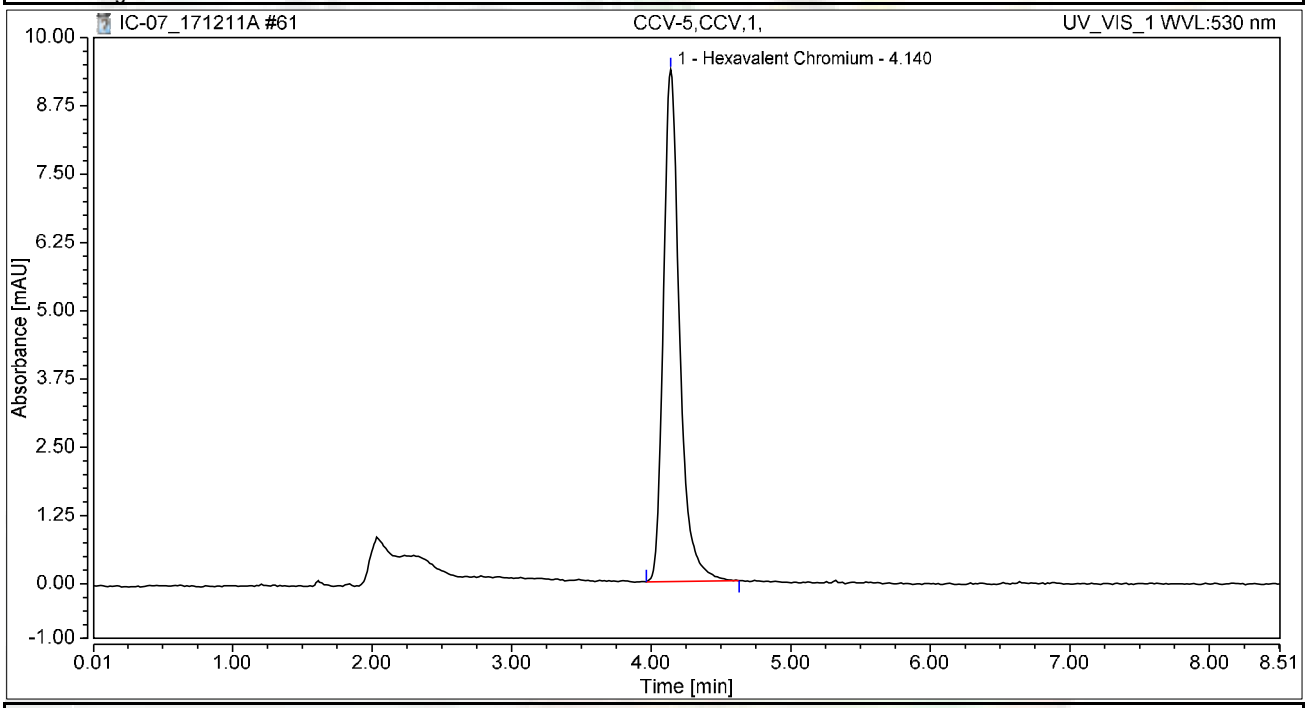
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.611	3.884	100.00	100.00	2.4341
Total:			**0.611**	**3.884**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

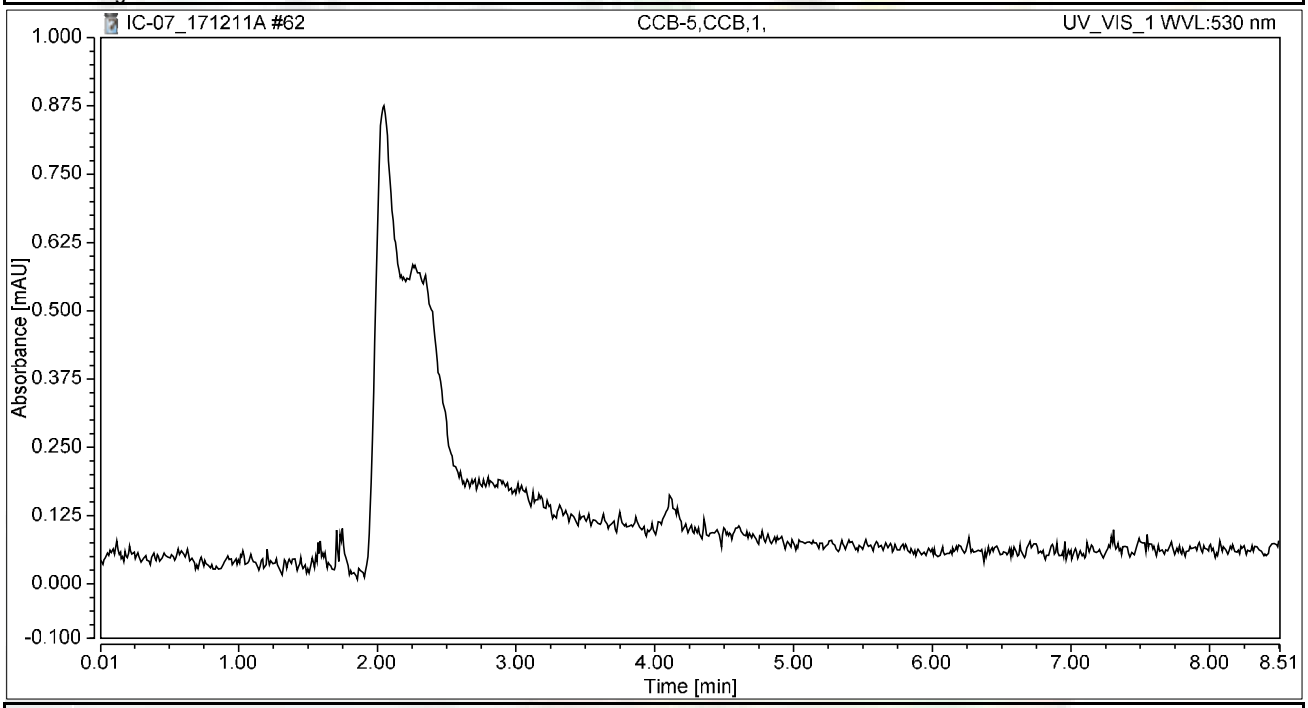
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.267	9.371	100.00	100.00	5.0451
Total:			**1.267**	**9.371**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

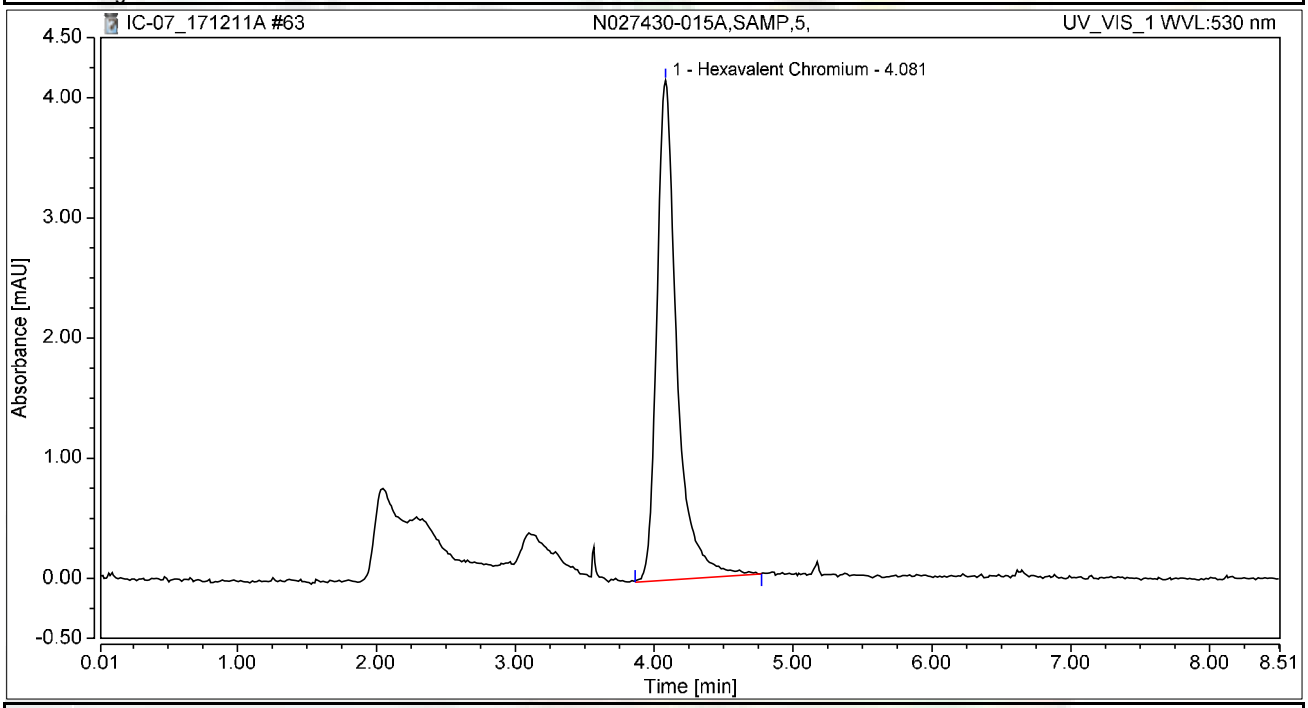
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-015A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

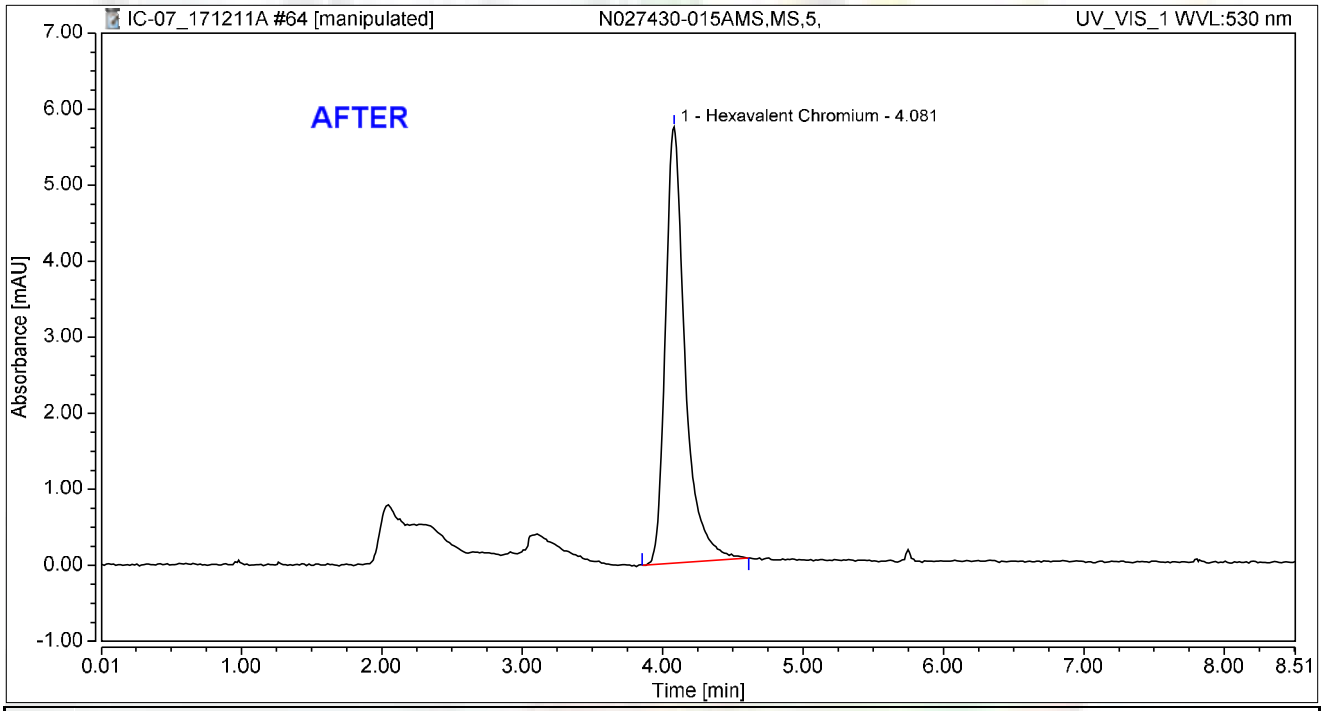
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.697	4.158	100.00	100.00	2.7763
Total:			**0.697**	**4.158**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-015AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.933	5.734	100.00	100.00	3.7159
Total:			**0.933**	**5.734**	**100.00**	**100.00**	

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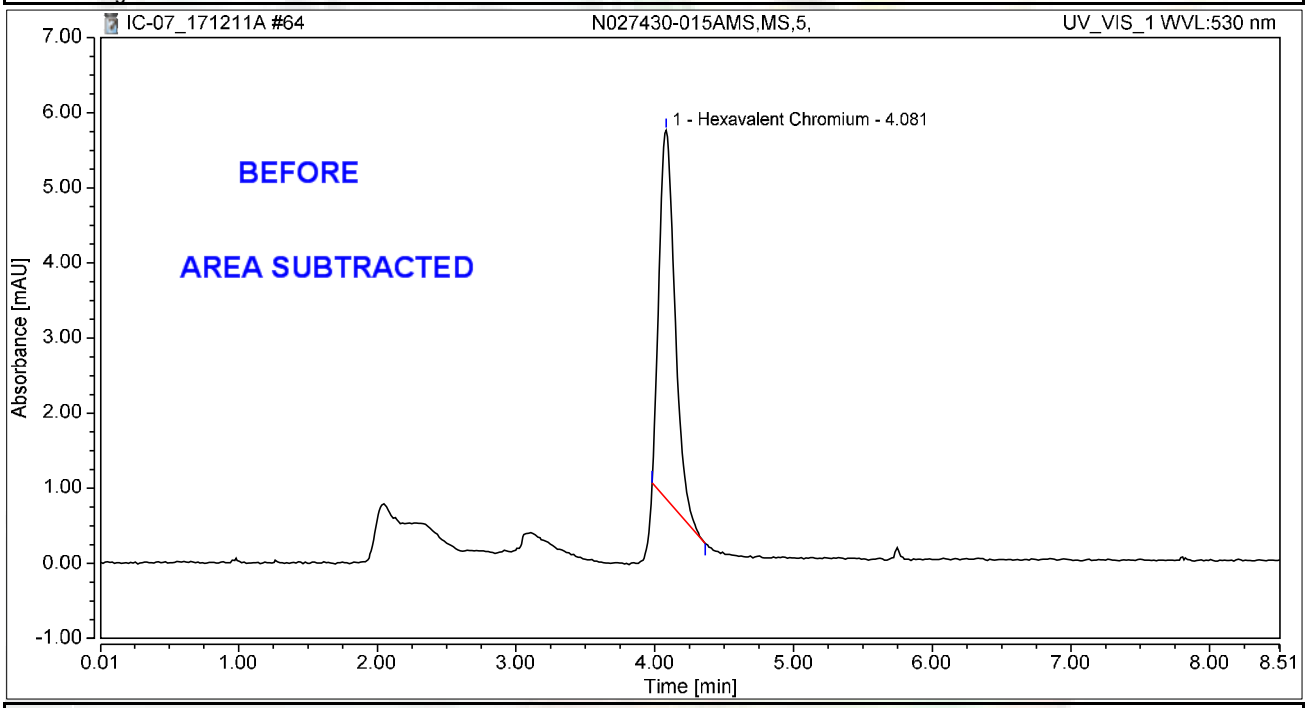
Chromatogram and Results

Injection Details

Injection Name:	**N027430-015AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.652	4.903	100.00	100.00	2.5956
Total:			**0.652**	**4.903**	**100.00**	**100.00**	

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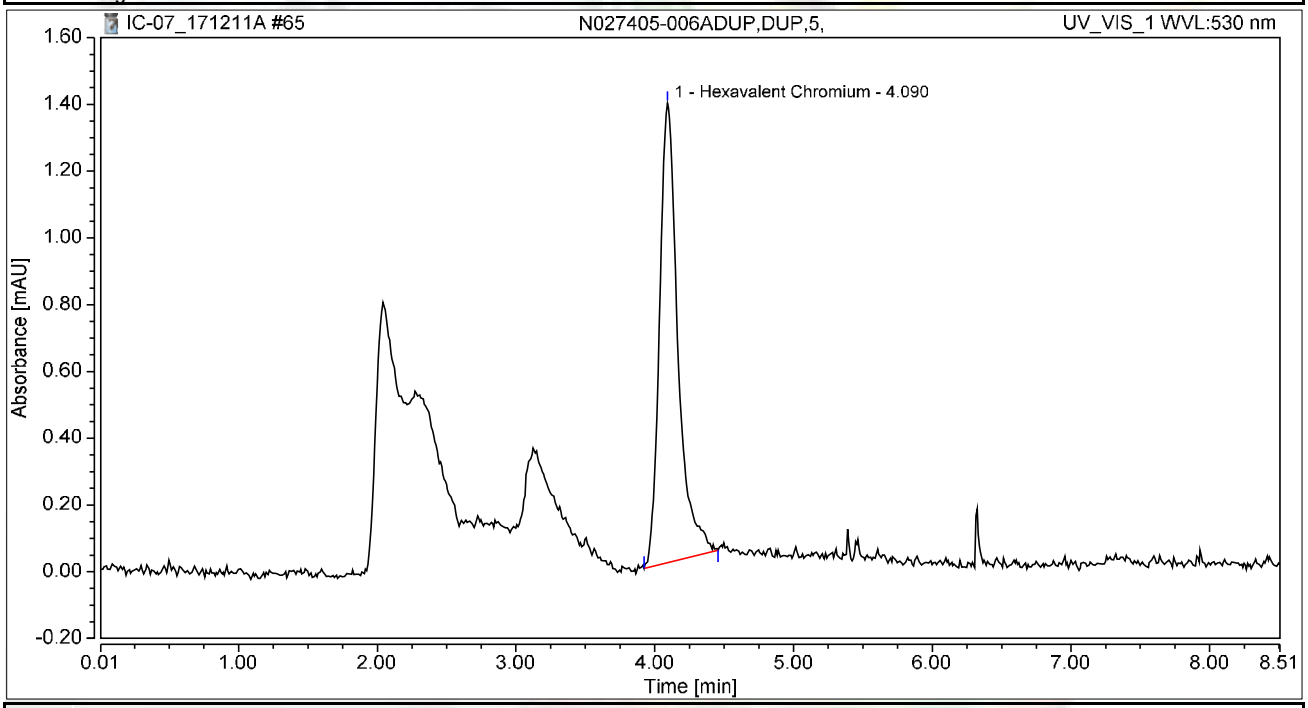
Chromatogram and Results

Injection Details

Injection Name:	**N027405-006ADUP,DUP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**49**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

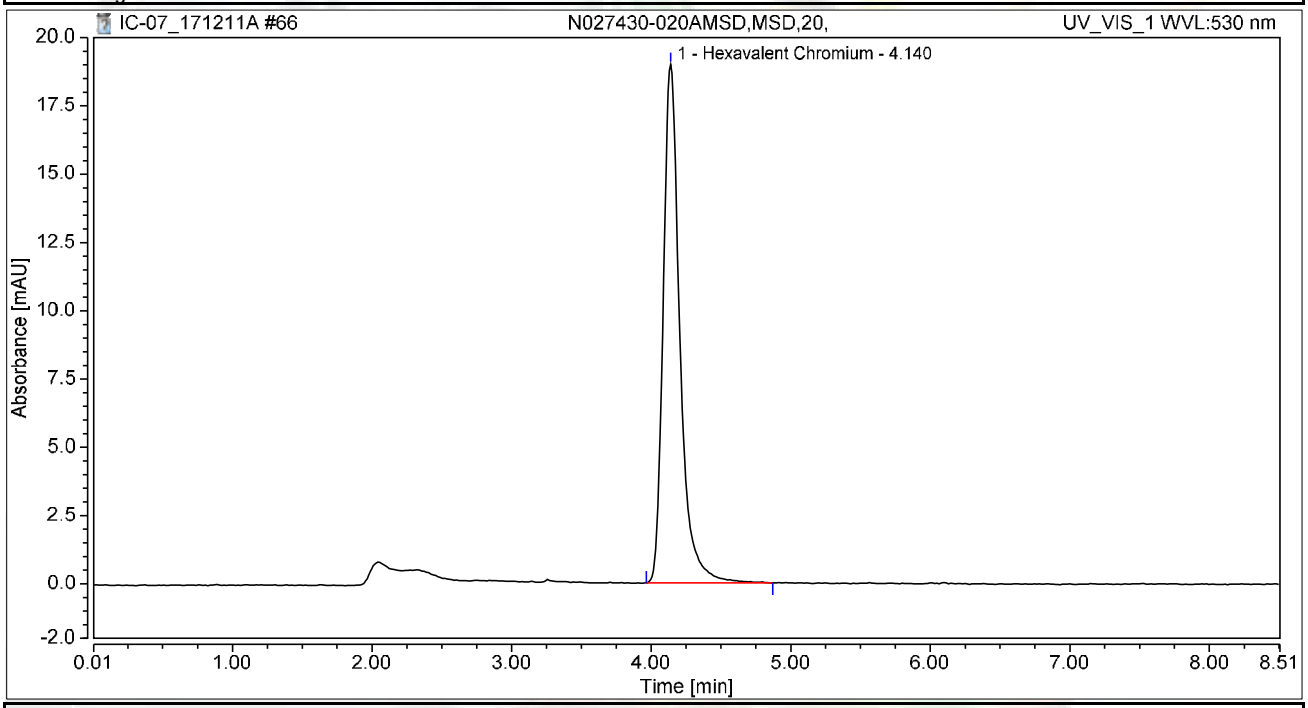
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.212	1.377	100.00	100.00	0.8429
Total:			**0.212**	**1.377**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-020AMSD,MSD,20,**	*Run Time (min):*	**8.50**
Vial Number:	**50**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

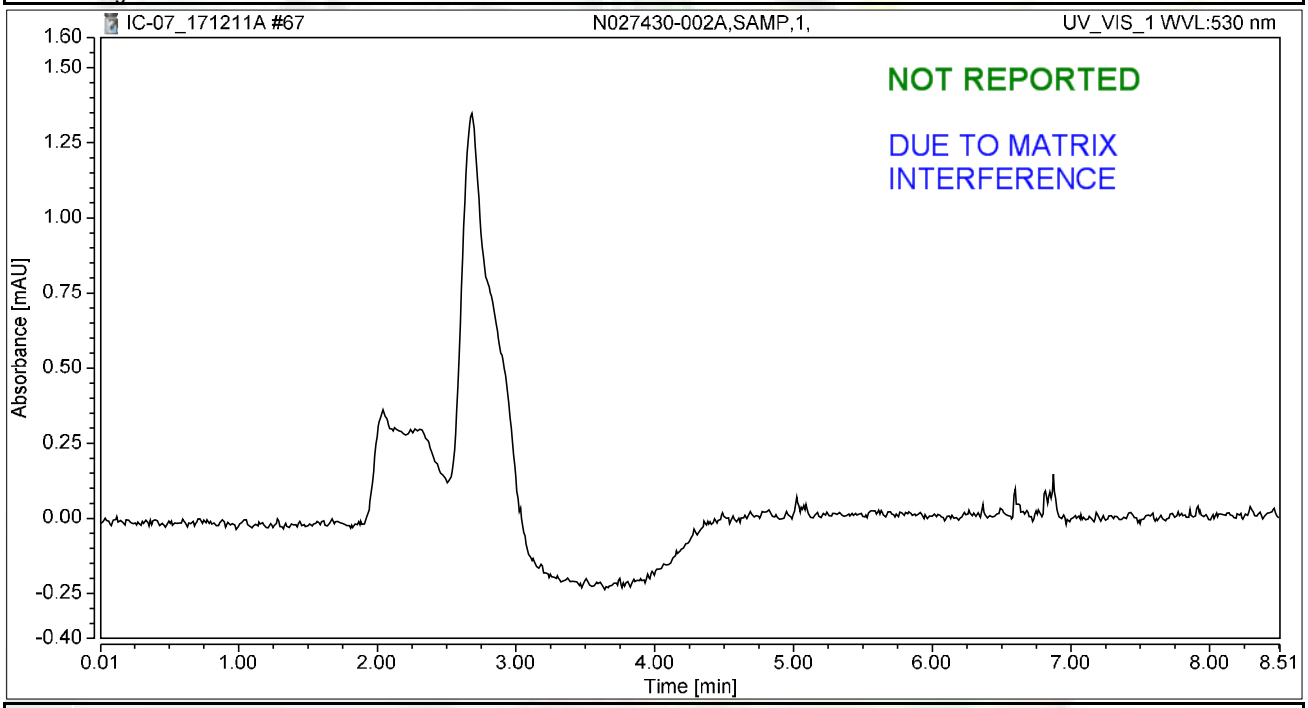
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.638	18.984	100.00	100.00	10.5055
Total:			**2.638**	**18.984**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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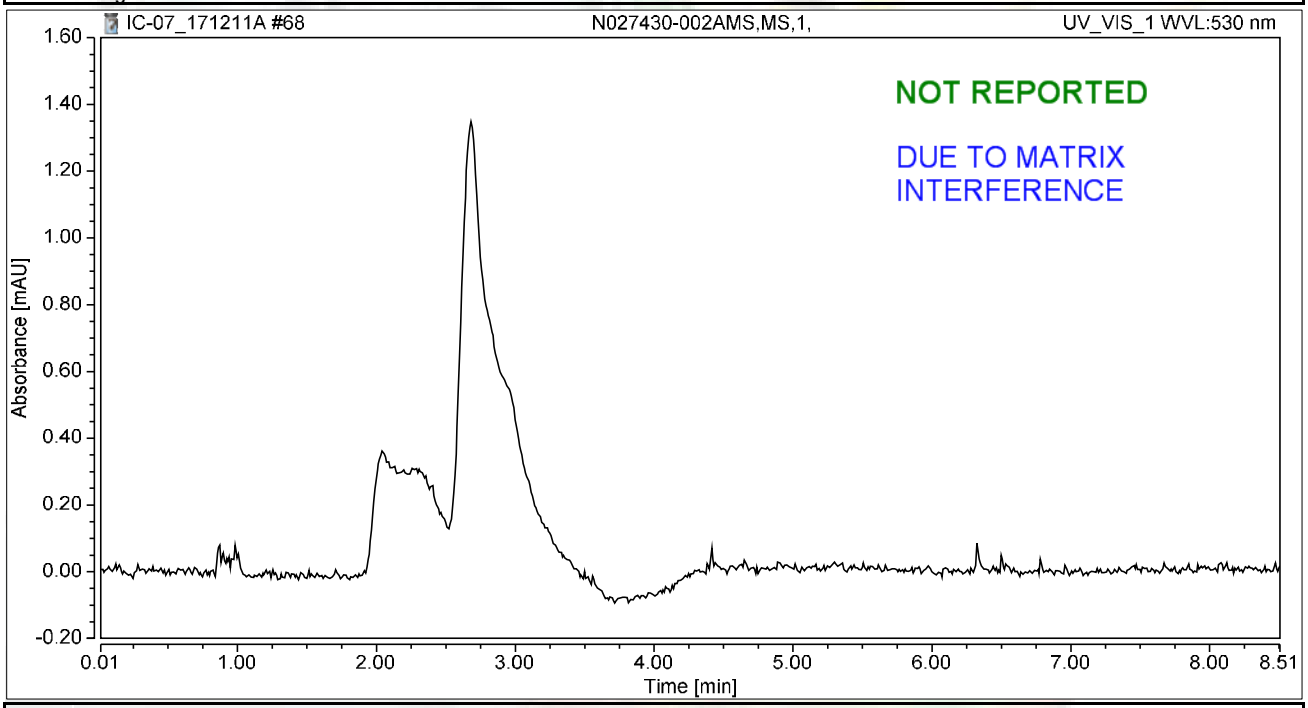
Chromatogram and Results

Injection Details

Injection Name:	**N027430-002AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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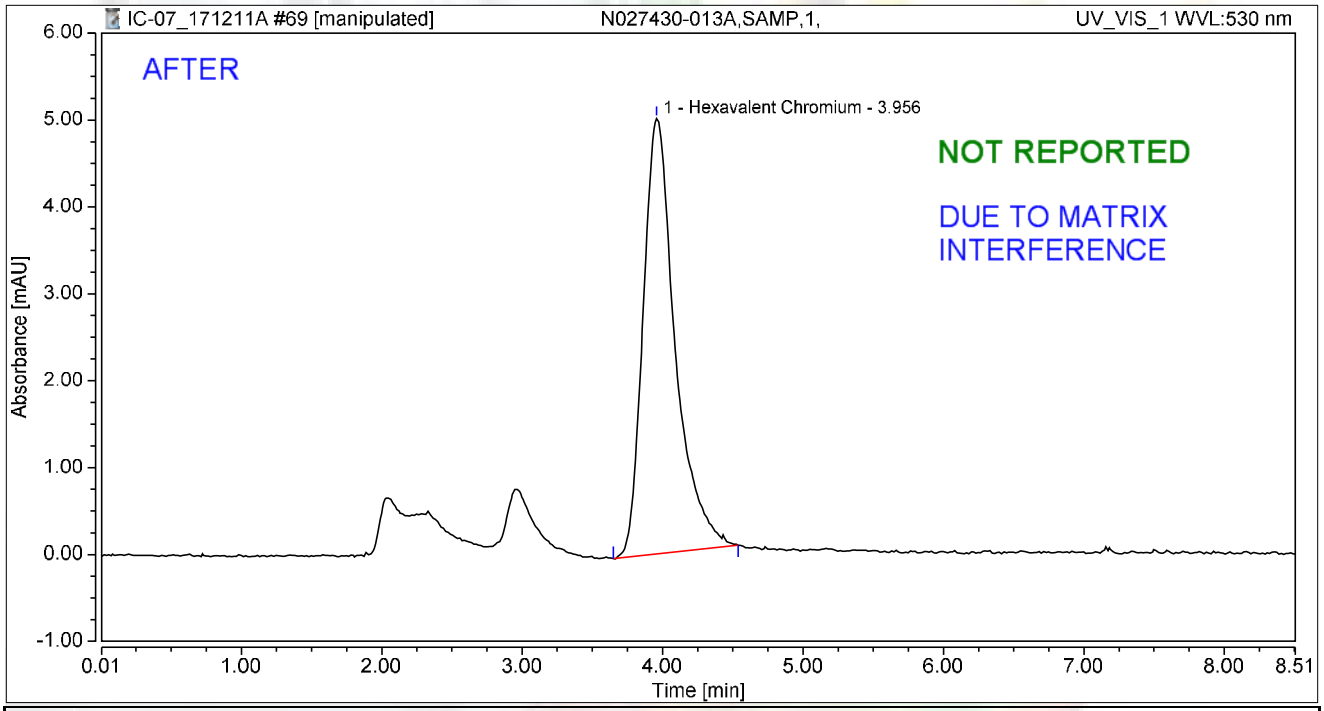
Chromatogram and Results

Injection Details

Injection Name:	**N027430-013A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.956	1.323	5.011	100.00	100.00	5.2695
Total:			**1.323**	**5.011**	**100.00**	**100.00**	

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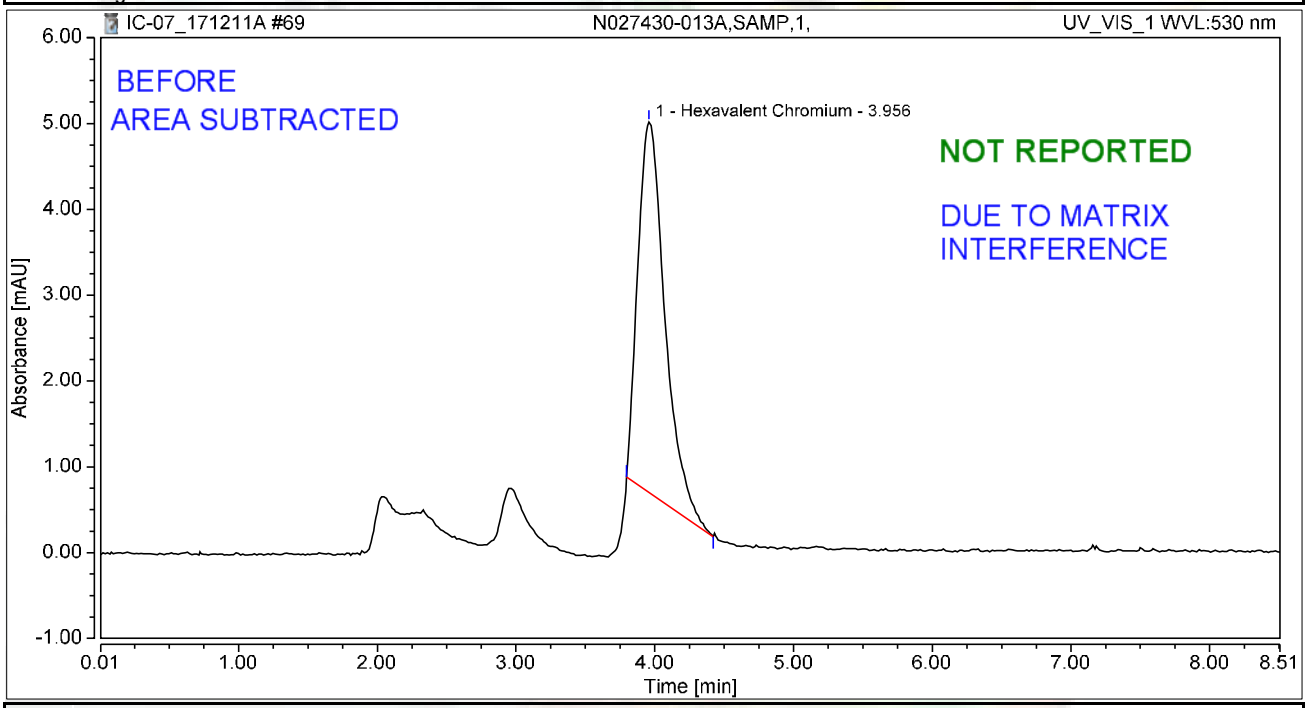
Chromatogram and Results

Injection Details

Injection Name:	**N027430-013A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.956	0.975	4.312	100.00	100.00	3.8839
Total:			**0.975**	**4.312**	**100.00**	**100.00**	

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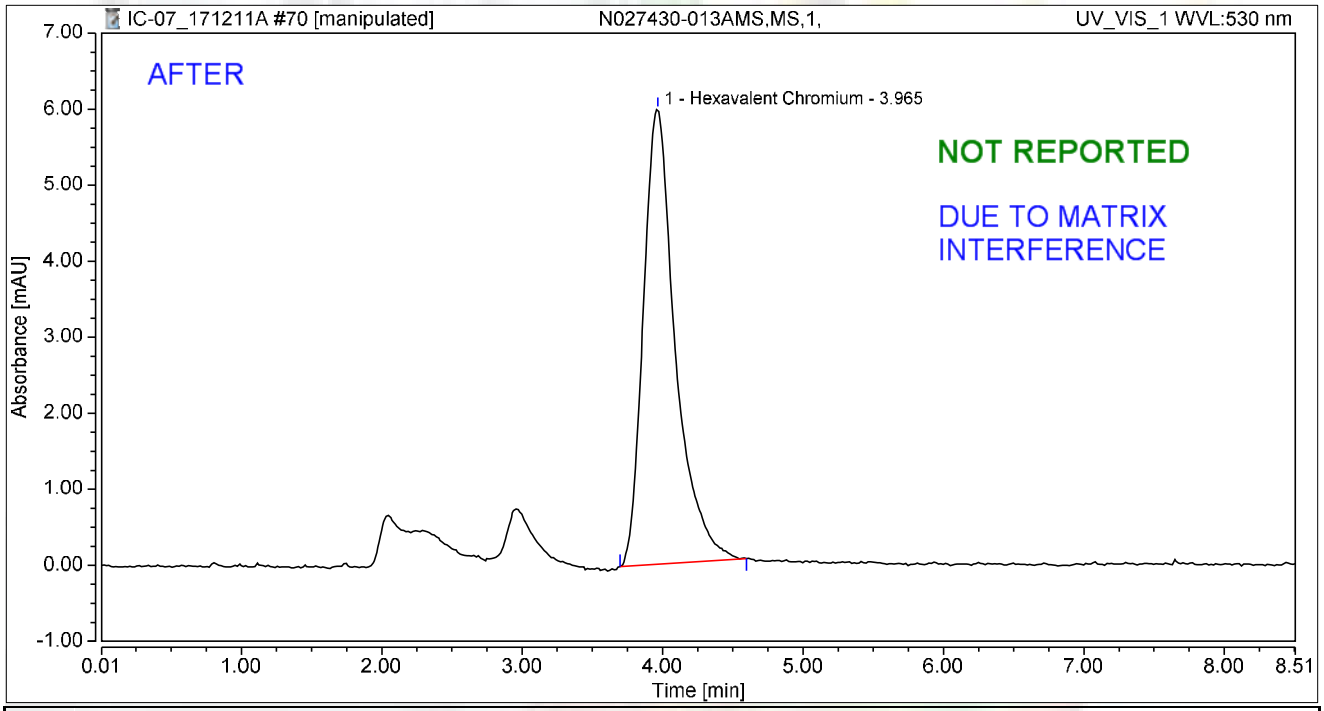
Chromatogram and Results

Injection Details

Injection Name:	**N027430-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.965	1.578	5.981	100.00	100.00	6.2829
Total:			**1.578**	**5.981**	**100.00**	**100.00**	

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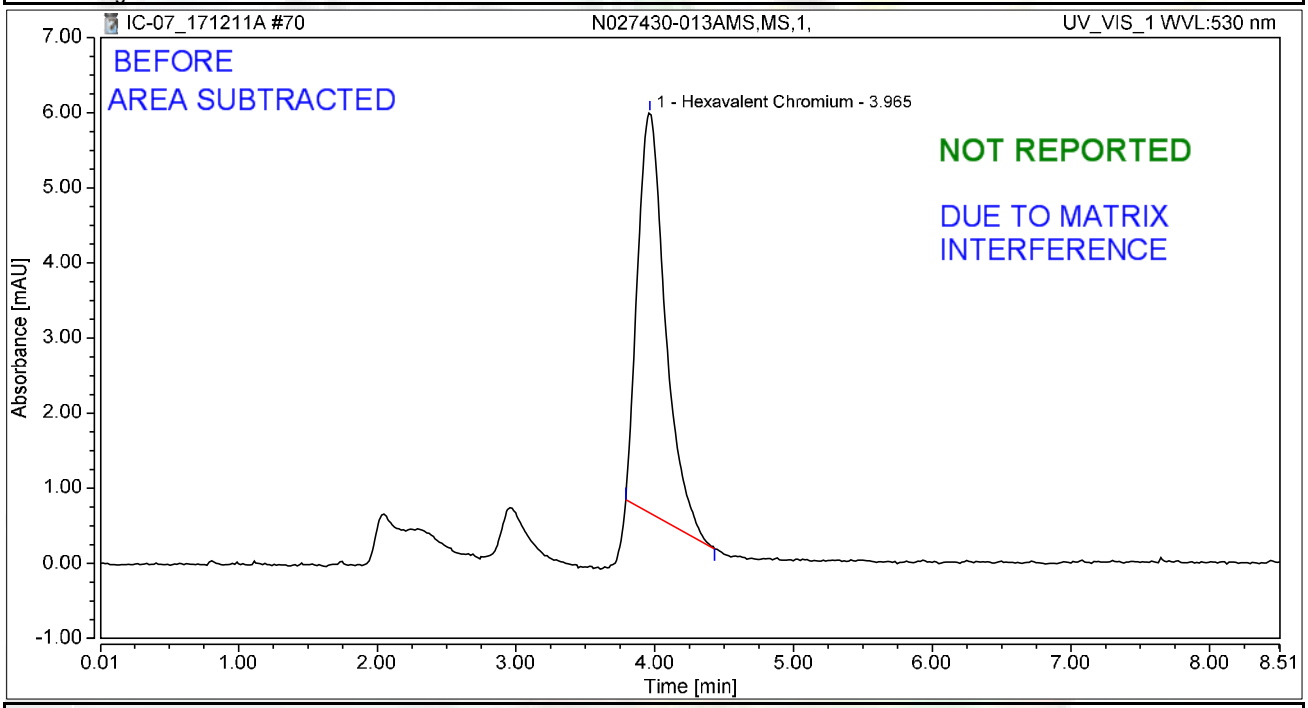
Chromatogram and Results

Injection Details

Injection Name:	**N027430-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.965	1.232	5.326	100.00	100.00	4.9056
Total:			**1.232**	**5.326**	**100.00**	**100.00**	

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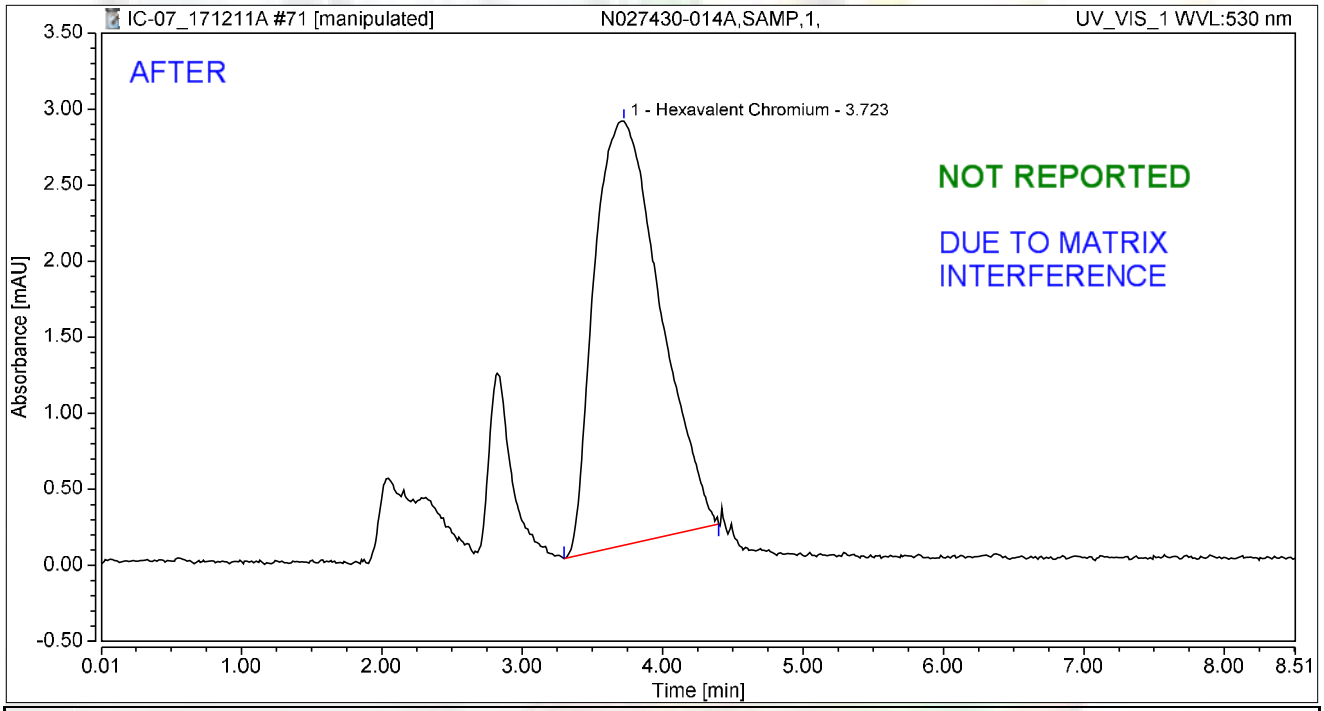
Chromatogram and Results

Injection Details

Injection Name:	**N027430-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	1.515	2.788	100.00	100.00	6.0348
Total:			**1.515**	**2.788**	**100.00**	**100.00**	

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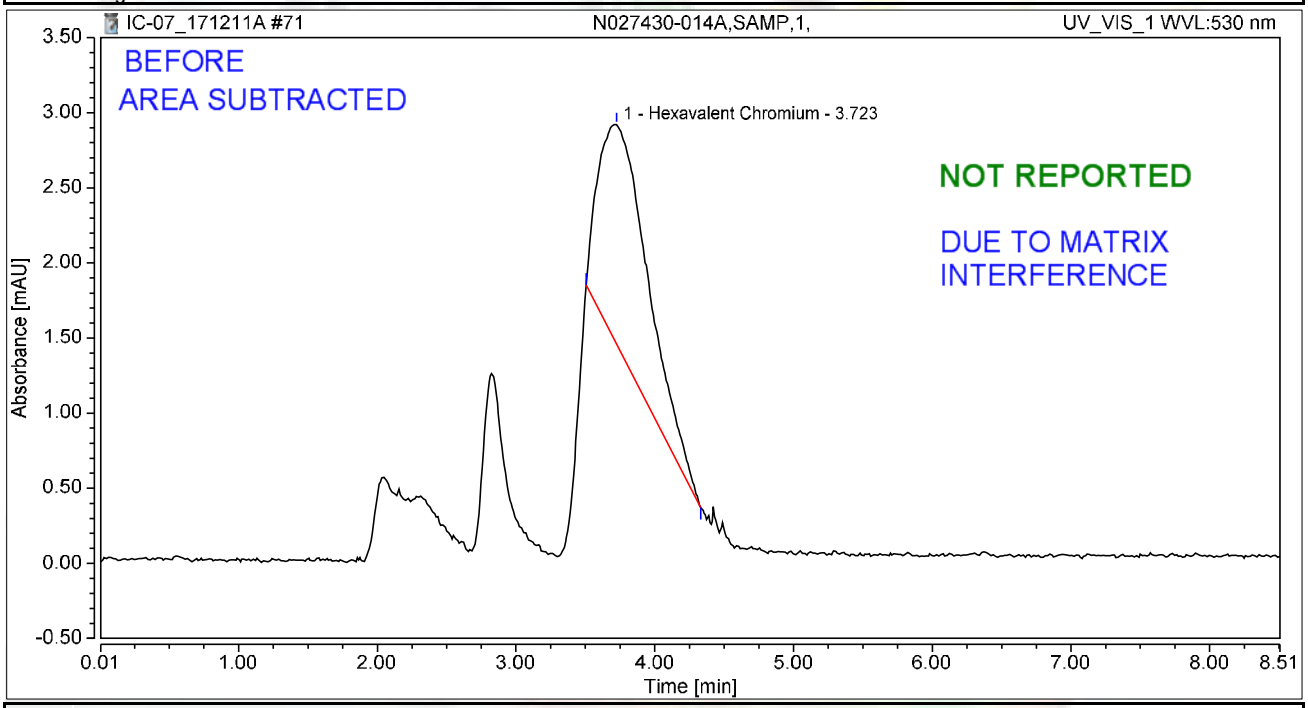
Chromatogram and Results

Injection Details

Injection Name:	**N027430-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	0.615	1.457	100.00	100.00	2.4504
Total:			**0.615**	**1.457**	**100.00**	**100.00**	

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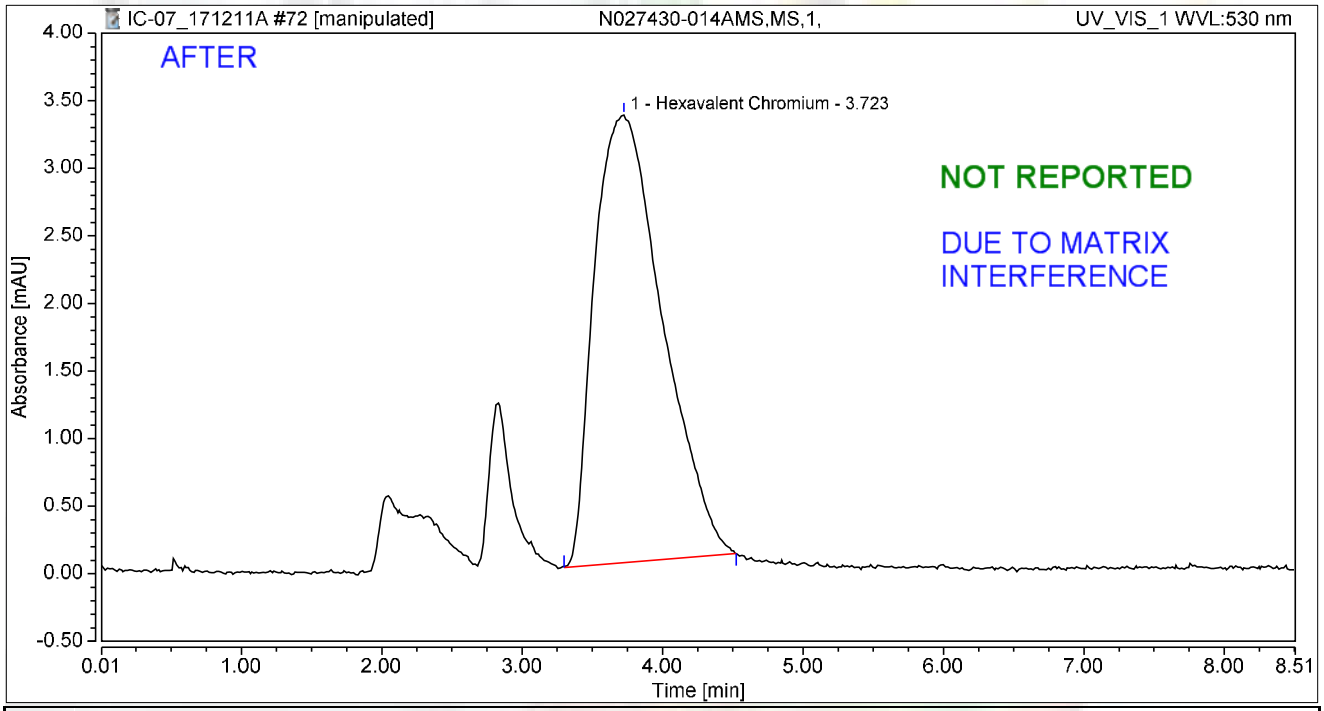
Chromatogram and Results

Injection Details

Injection Name:	**N027430-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	1.860	3.313	100.00	100.00	7.4083
Total:			**1.860**	**3.313**	**100.00**	**100.00**	

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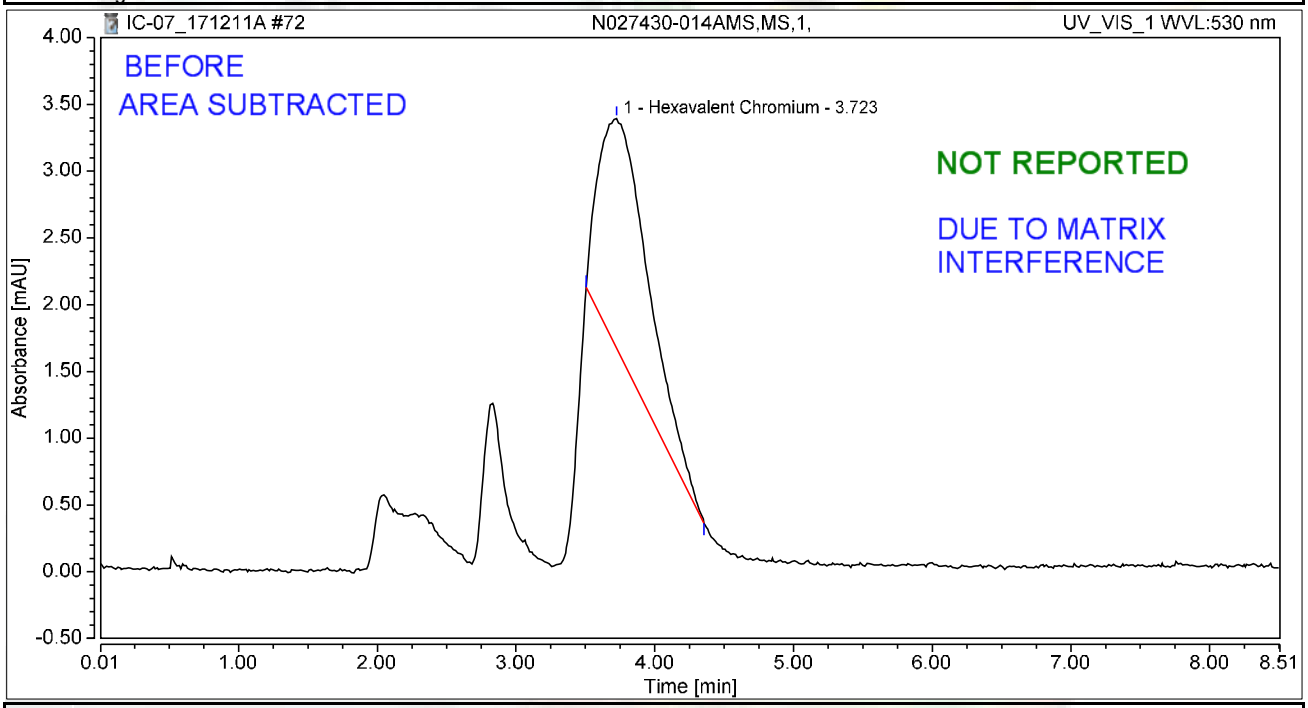
Chromatogram and Results

Injection Details

Injection Name:	**N027430-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	0.727	1.714	100.00	100.00	2.8964
Total:			**0.727**	**1.714**	**100.00**	**100.00**	

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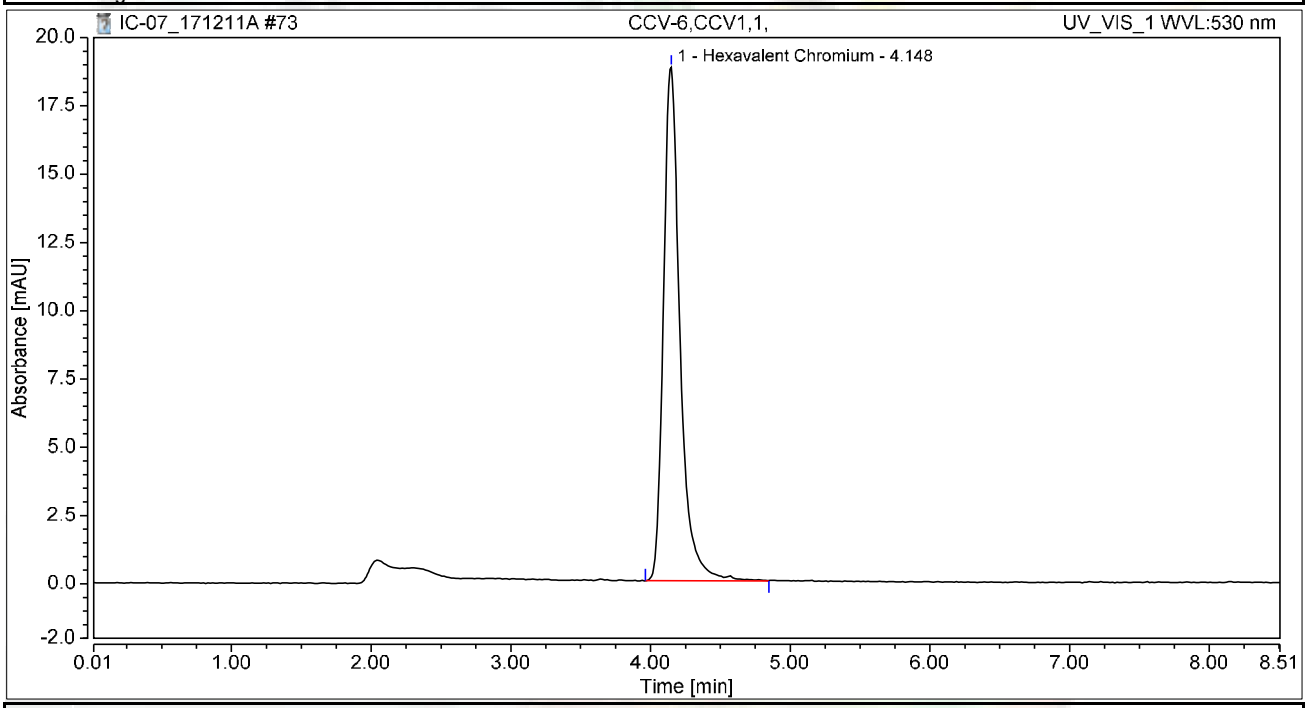
Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

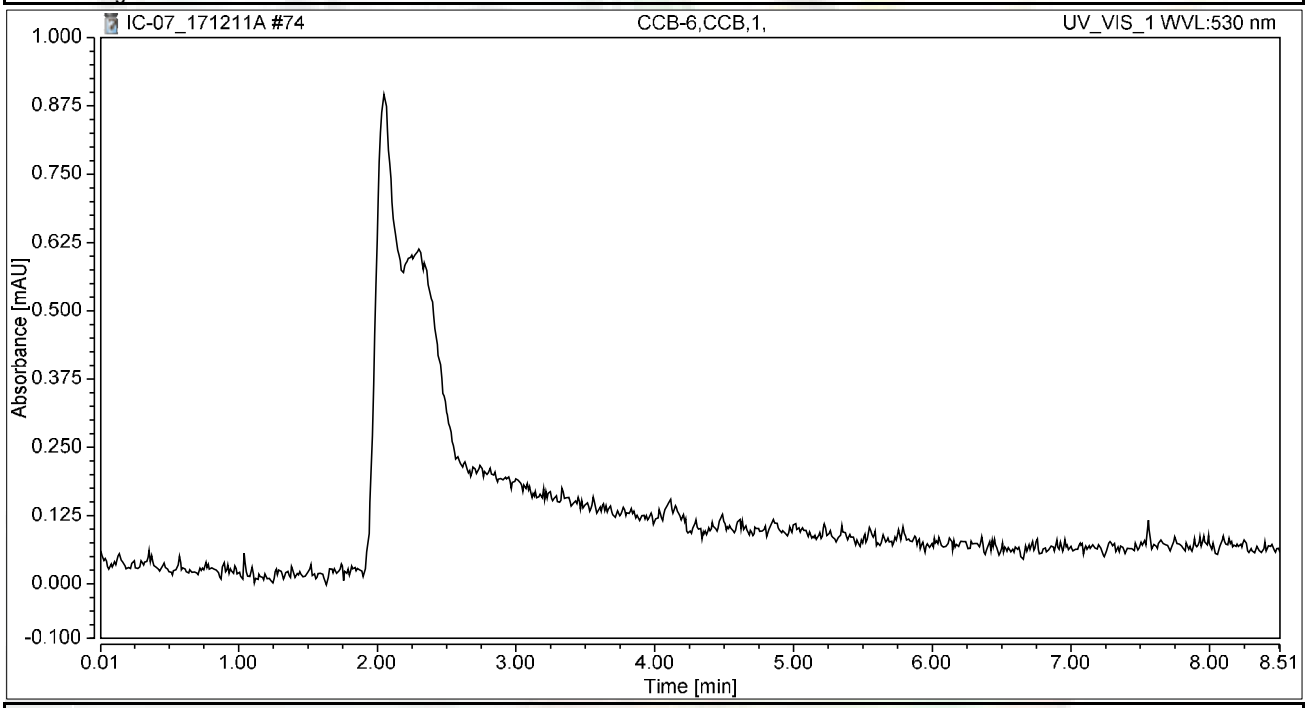
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.585	18.801	100.00	100.00	10.2939
Total:			**2.585**	**18.801**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

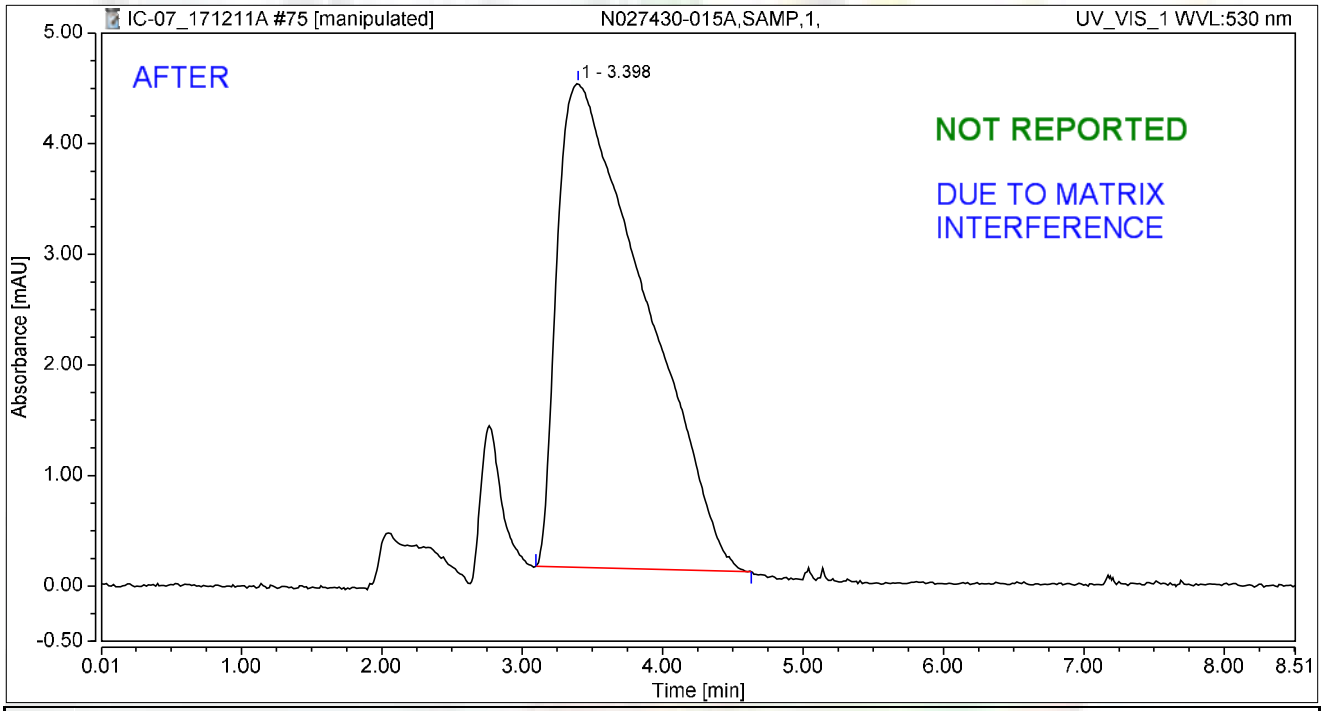
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.398	3.144	4.377	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**3.144**	**4.377**	**100.00**	**100.00**	

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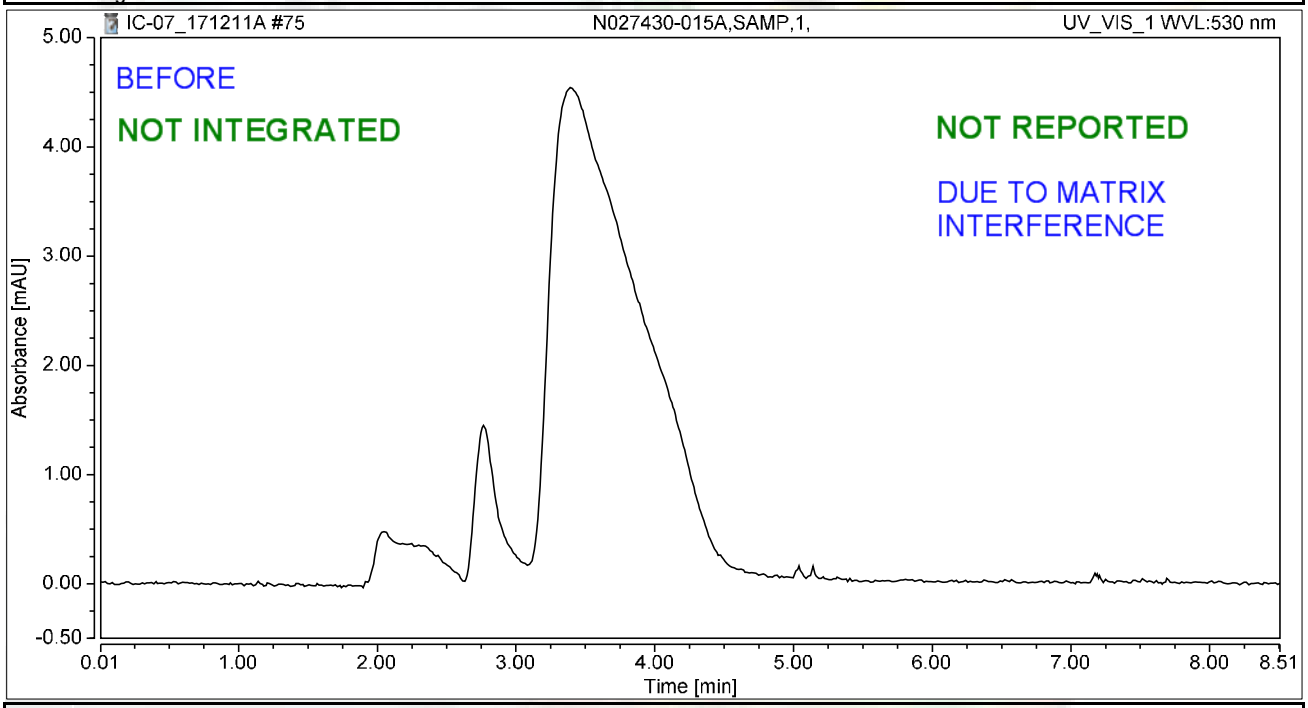
Chromatogram and Results

Injection Details

Injection Name:	**N027430-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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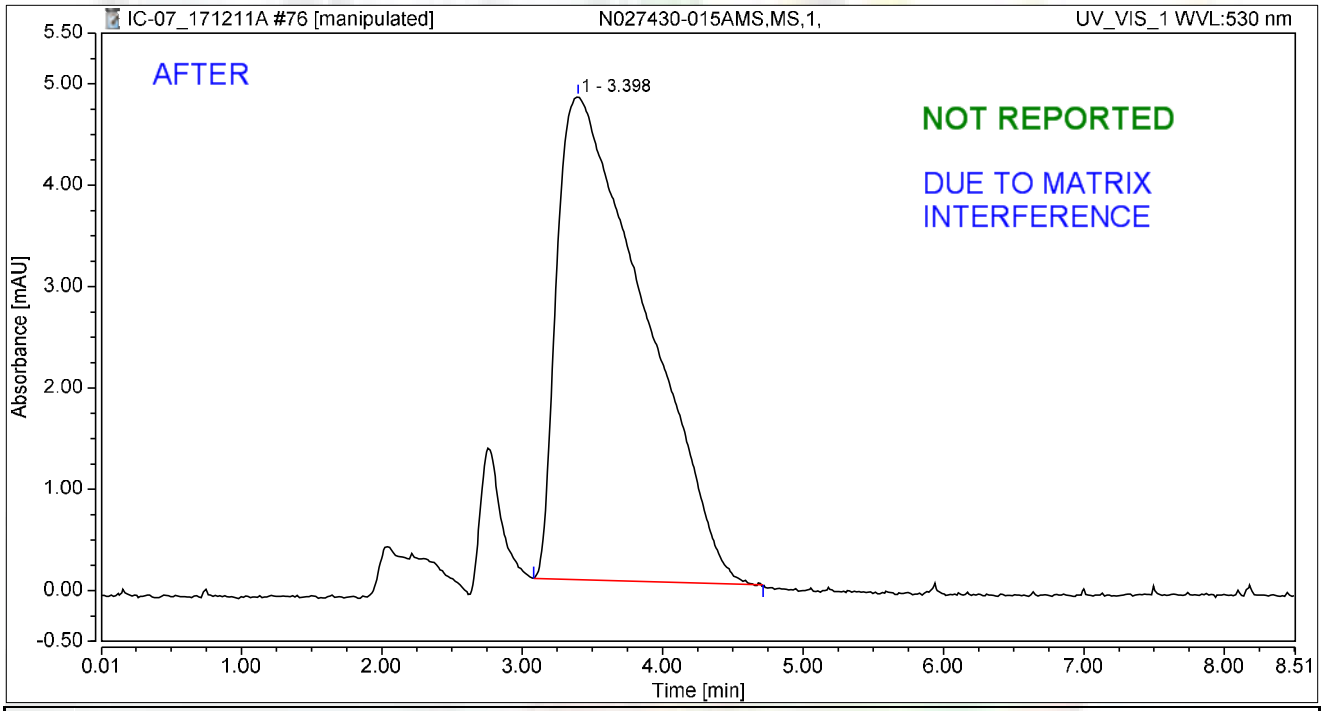
Chromatogram and Results

Injection Details

Injection Name:	**N027430-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.398	3.441	4.762	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**3.441**	**4.762**	**100.00**	**100.00**	

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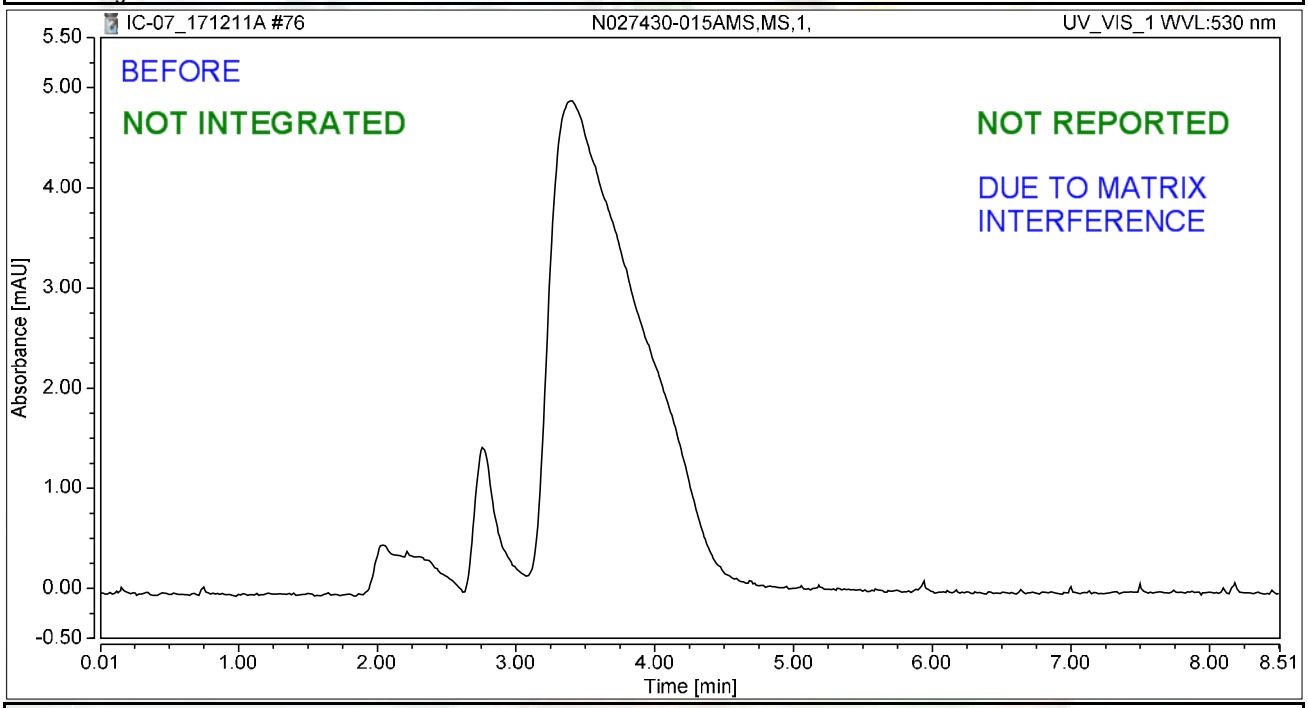
Chromatogram and Results

Injection Details

Injection Name:	**N027430-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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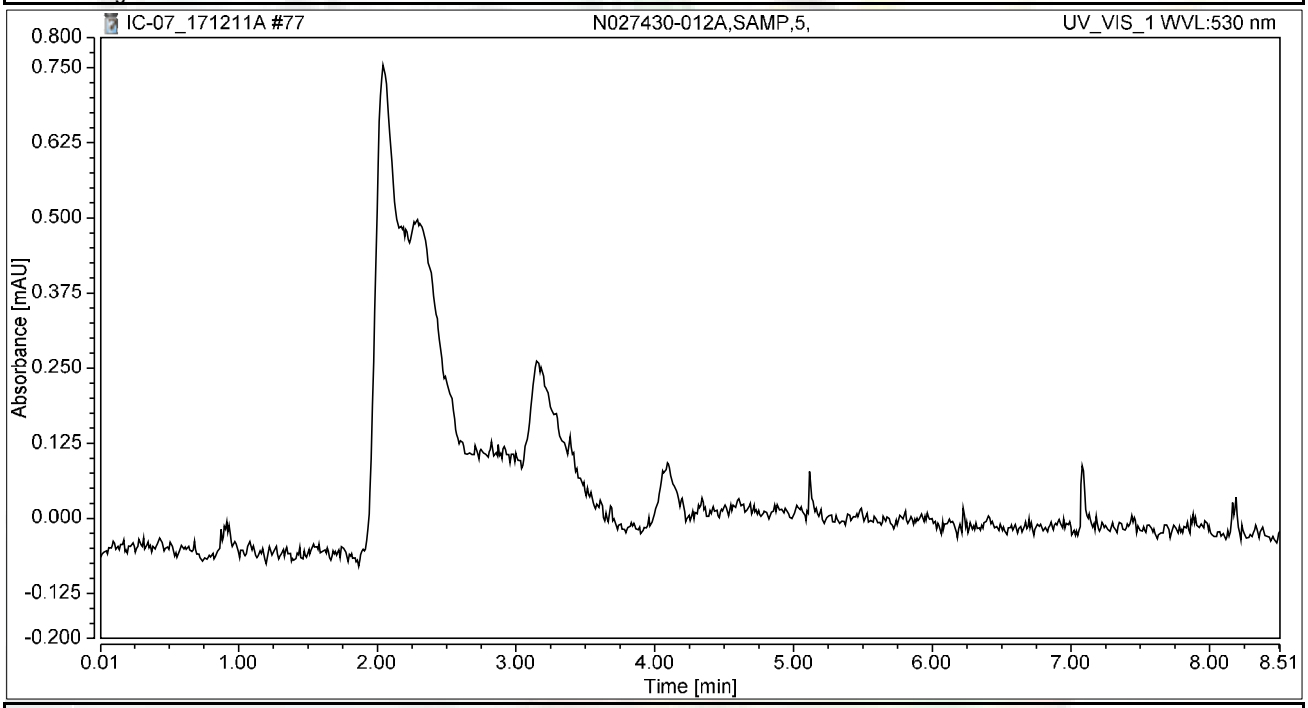
Chromatogram and Results

Injection Details

Injection Name:	**N027430-012A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

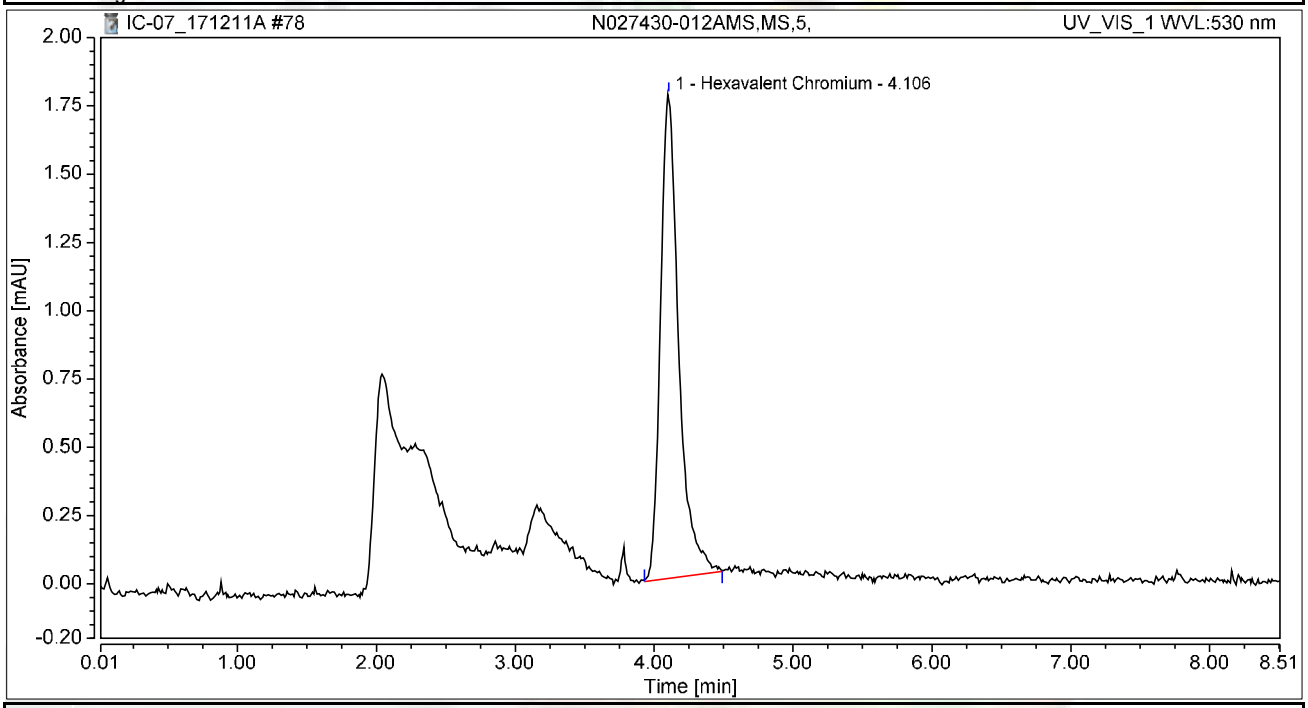
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-012AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

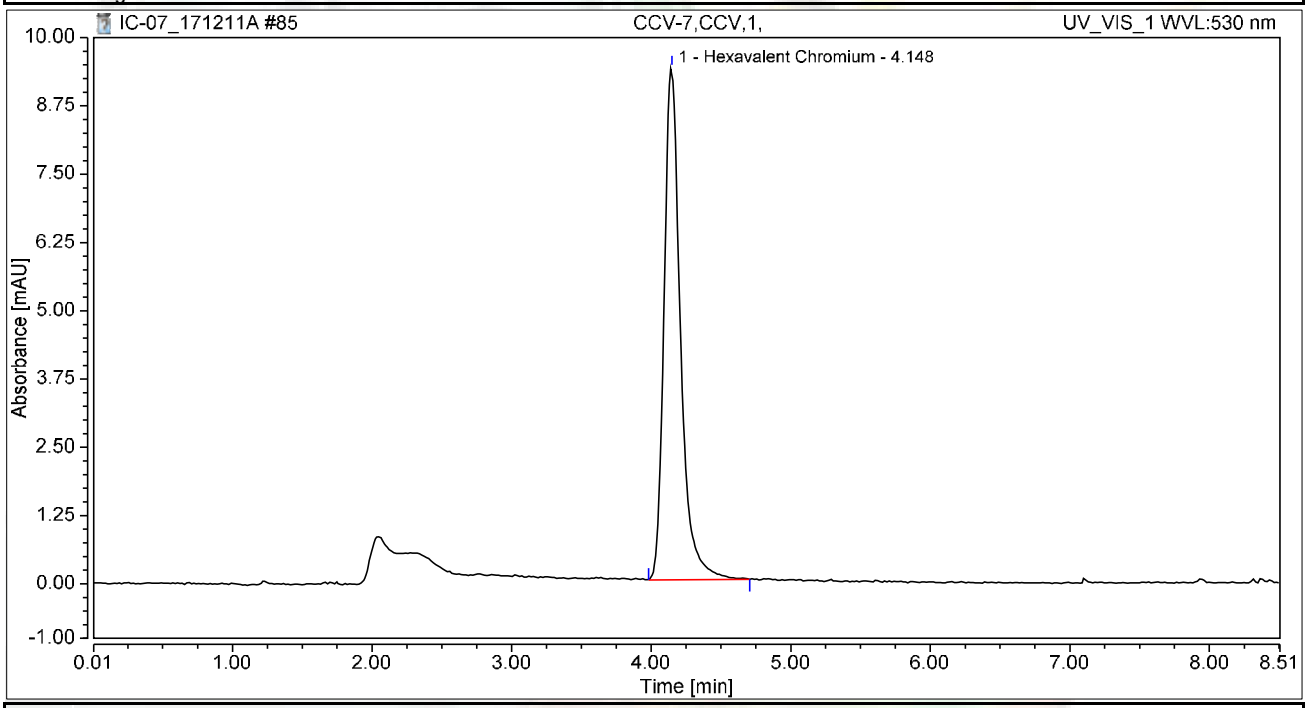
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.270	1.772	100.00	100.00	1.0741
Total:			**0.270**	**1.772**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

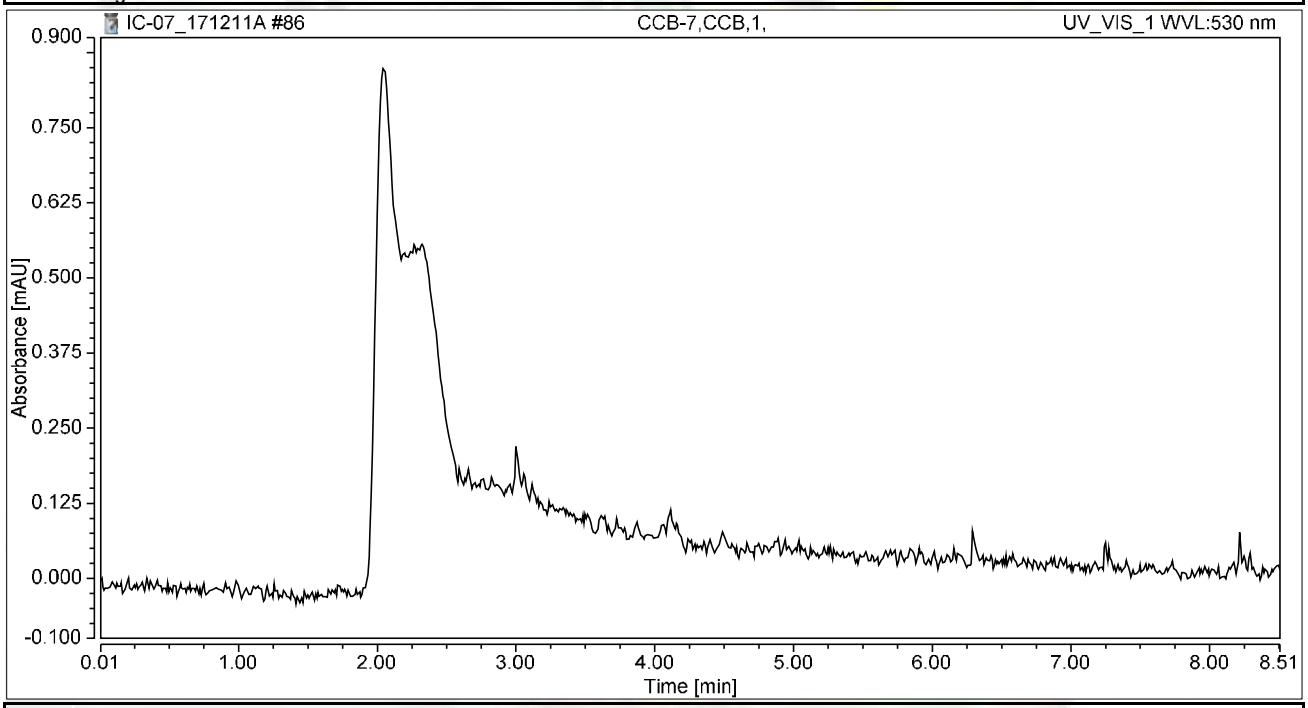
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.283	9.373	100.00	100.00	5.1094
Total:			**1.283**	**9.373**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 8:57 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 9:08 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/11/17 9:18 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/11/17 9:27 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/11/17 9:37 AM	Reported
15	MB-R120833	MBLK	1	Hexavalent Chromium	12/11/17 9:46 AM	Reported
16	LCS-R120833	LCS	1	Hexavalent Chromium	12/11/17 9:56 AM	Reported
17	N027405-006AMS	MS	5	Hexavalent Chromium	12/11/17 10:09 AM	Reported
18	N027405-006A	SAMP	5	Hexavalent Chromium	12/11/17 10:20 AM	Reported
19	N027405-007AMS	MS	5	Hexavalent Chromium	12/11/17 10:29 AM	Reported
20	N027405-007A	SAMP	5	Hexavalent Chromium	12/11/17 10:39 AM	Reported
21	N027405-008AMS	MS	5	Hexavalent Chromium	12/11/17 10:48 AM	Reported
22	N027405-008A	SAMP	5	Hexavalent Chromium	12/11/17 10:58 AM	Reported
23	N027430-001A	SAMP	1	Hexavalent Chromium	12/11/17 11:07 AM	Reported
24	N027430-001AMS	MS	1	Hexavalent Chromium	12/11/17 11:17 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/11/17 11:26 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/11/17 11:36 AM	Reported
27	N027430-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:45 AM	Reported
28	N027430-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:54 AM	Reported
29	N027430-003A	SAMP	1	Hexavalent Chromium	12/11/17 12:04 PM	Reported
30	N027430-003AMS	MS	1	Hexavalent Chromium	12/11/17 12:13 PM	Reported
31	N027430-004A	SAMP	1	Hexavalent Chromium	12/11/17 12:23 PM	Reported
32	N027430-004AMS	MS	1	Hexavalent Chromium	12/11/17 12:32 PM	Reported
33	N027430-005A	SAMP	1	Hexavalent Chromium	12/11/17 12:42 PM	Reported
34	N027430-005AMS	MS	1	Hexavalent Chromium	12/11/17 12:51 PM	Reported
35	N027430-006A	SAMP	1	Hexavalent Chromium	12/11/17 1:01 PM	Reported
36	N027430-006AMS	MS	1	Hexavalent Chromium	12/11/17 1:10 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/11/17 1:20 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/11/17 1:29 PM	Reported
39	N027430-007A	SAMP	1	Hexavalent Chromium	12/11/17 1:38 PM	Reported
40	N027430-007AMS	MS	1	Hexavalent Chromium	12/11/17 1:48 PM	Reported
41	N027430-008A	SAMP	1	Hexavalent Chromium	12/11/17 1:57 PM	Reported
42	N027430-008AMS	MS	1	Hexavalent Chromium	12/11/17 2:07 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027430-009A	SAMP	1	Hexavalent Chromium	12/11/17 2:16 PM	Reported
44	N027430-009AMS	MS	1	Hexavalent Chromium	12/11/17 2:26 PM	Reported
45	N027430-010A	SAMP	1	Hexavalent Chromium	12/11/17 2:35 PM	Reported
46	N027430-010AMS	MS	1	Hexavalent Chromium	12/11/17 2:45 PM	Reported
47	N027430-020A	SAMP	20	Hexavalent Chromium	12/11/17 2:54 PM	Reported
48	N027430-020AMS	MS	20	Hexavalent Chromium	12/11/17 3:04 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/11/17 3:13 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/11/17 3:23 PM	Reported
51	N027430-012A	SAMP	1	Hexavalent Chromium	12/11/17 3:32 PM	Not Reported
52	N027430-012AMS	MS	1	Hexavalent Chromium	12/11/17 3:41 PM	Not Reported
53	N027430-019A	SAMP	1	Hexavalent Chromium	12/11/17 3:51 PM	Reported
54	N027430-019AMS	MS	1	Hexavalent Chromium	12/11/17 4:00 PM	Reported
55	N027430-011A	SAMP	1	Hexavalent Chromium	12/11/17 4:10 PM	Reported
56	N027430-011AMS	MS	1	Hexavalent Chromium	12/11/17 4:19 PM	Reported
57	N027430-013A	SAMP	5	Hexavalent Chromium	12/11/17 4:29 PM	Reported
58	N027430-013AMS	MS	5	Hexavalent Chromium	12/11/17 4:38 PM	Reported
59	N027430-014A	SAMP	5	Hexavalent Chromium	12/11/17 4:48 PM	Reported
60	N027430-014AMS	MS	5	Hexavalent Chromium	12/11/17 4:57 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/11/17 5:07 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/11/17 5:16 PM	Reported
63	N027430-015A	SAMP	5	Hexavalent Chromium	12/11/17 5:26 PM	Reported
64	N027430-015AMS	MS	5	Hexavalent Chromium	12/11/17 5:35 PM	Reported
65	N027405-006ADUP	DUP	5	Hexavalent Chromium	12/11/17 5:44 PM	Reported
66	N027430-020AMSD	MSD	20	Hexavalent Chromium	12/11/17 5:54 PM	Reported
67	N027430-002A	SAMP	1	Hexavalent Chromium	12/11/17 6:05 PM	Not Reported
68	N027430-002AMS	MS	1	Hexavalent Chromium	12/11/17 6:16 PM	Not Reported
69	N027430-013A	SAMP	1	Hexavalent Chromium	12/11/17 6:25 PM	Not Reported
70	N027430-013AMS	MS	1	Hexavalent Chromium	12/11/17 6:35 PM	Not Reported
71	N027430-014A	SAMP	1	Hexavalent Chromium	12/11/17 6:44 PM	Not Reported
72	N027430-014AMS	MS	1	Hexavalent Chromium	12/11/17 6:54 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	12/11/17 7:03 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	12/11/17 7:13 PM	Reported
75	N027430-015A	SAMP	1	Hexavalent Chromium	12/11/17 7:22 PM	Not Reported
76	N027430-015AMS	MS	1	Hexavalent Chromium	12/11/17 7:32 PM	Not Reported
77	N027430-012A	SAMP	5	Hexavalent Chromium	12/11/17 7:41 PM	Reported
78	N027430-012AMS	MS	5	Hexavalent Chromium	12/11/17 7:50 PM	Reported
79	LCS-R120834	LCS	1	Hexavalent Chromium	12/11/17 8:00 PM	Reported
80	MB-R120834	MBLK	1	Hexavalent Chromium	12/11/17 8:09 PM	Reported
81	N027431-006A	SAMP	1000	Hexavalent Chromium	12/11/17 8:19 PM	Reported
82	N027431-006AMS	MS	1000	Hexavalent Chromium	12/11/17 8:28 PM	Reported
83	N027431-006AMSD	MSD	1000	Hexavalent Chromium	12/11/17 8:38 PM	Reported
84	N027428-002A	SAMP	100	Hexavalent Chromium	12/11/17 8:47 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	12/11/17 8:57 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	12/11/17 9:06 PM	Reported
87	N027428-002ADUP	DUP	100	Hexavalent Chromium	12/11/17 9:16 PM	Reported
88	N027428-002AMS	MS	100	Hexavalent Chromium	12/11/17 9:25 PM	Reported
89	N027428-001A	SAMP	1	Hexavalent Chromium	12/11/17 9:35 PM	Reported
90	N027428-001AMS	MS	1	Hexavalent Chromium	12/11/17 9:44 PM	Reported
91	N027430-016A	SAMP	5	Hexavalent Chromium	12/11/17 9:53 PM	Reported
92	N027430-016AMS	MS	5	Hexavalent Chromium	12/11/17 10:03 PM	Reported
93	N027430-017A	SAMP	5	Hexavalent Chromium	12/11/17 10:12 PM	Reported
94	N027430-017AMS	MS	5	Hexavalent Chromium	12/11/17 10:22 PM	Reported
95	N027430-018A	SAMP	5	Hexavalent Chromium	12/11/17 10:31 PM	Reported
96	N027430-018AMS	MS	5	Hexavalent Chromium	12/11/17 10:41 PM	Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	12/11/17 10:50 PM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	12/11/17 11:00 PM	Reported
99	N027431-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:09 PM	Reported
100	N027431-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:19 PM	Reported
101	N027431-003A	SAMP	5	Hexavalent Chromium	12/11/17 11:28 PM	Reported
102	N027431-003AMS	MS	5	Hexavalent Chromium	12/11/17 11:38 PM	Reported
103	N027431-004A	SAMP	5	Hexavalent Chromium	12/11/17 11:47 PM	Reported
104	N027431-004AMS	MS	5	Hexavalent Chromium	12/11/17 11:56 PM	Reported
105	N027431-001A	SAMP	10	Hexavalent Chromium	12/12/17 12:06 AM	Not Reported
106	N027431-001AMS	MS	10	Hexavalent Chromium	12/12/17 12:15 AM	Not Reported
107	N027431-005A	SAMP	200	Hexavalent Chromium	12/12/17 12:25 AM	Reported
108	N027431-005AMS	MS	200	Hexavalent Chromium	12/12/17 12:34 AM	Reported
109	CCV-9	CCV	1	Hexavalent Chromium	12/12/17 12:44 AM	Reported
110	CCB-9	CCB	1	Hexavalent Chromium	12/12/17 12:53 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171211A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**12/Dec/17 01:24:03**
No. of Injections:	**113**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/11/2017 08:57	Finished	BLANK
11	BLANK	2	1000	Unknown		12/11/2017 09:08	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/11/2017 09:18	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/11/2017 09:27	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/11/2017 09:37	Finished	CCB R171129A
15	MB-1,MBLK,1	6	1000	Unknown		12/11/2017 09:46	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/11/2017 09:56	Finished	LCS, IWST-171002B
17	N027405-006AMS,MS	1	1000	Unknown		12/11/2017 10:09	Finished	MS (1ppb), IWST-171002B,2>1
18	N027405-006A,SAMP	2	1000	Unknown		12/11/2017 10:20	Finished	SAMP,2>10mL
19	N027405-007AMS,MS	3	1000	Unknown		12/11/2017 10:29	Finished	MS (1ppb), IWST-171002B,2>1
20	N027405-007A,SAMP	4	1000	Unknown		12/11/2017 10:39	Finished	SAMP,2>10mL
21	N027405-008AMS,MS	5	1000	Unknown		12/11/2017 10:48	Finished	SAMP,2>10mL
22	N027405-008A,SAMP	6	1000	Unknown		12/11/2017 10:58	Finished	MS (1ppb), IWST-171002B,2>1
23	N027430-001A,SAMP	7	1000	Unknown		12/11/2017 11:07	Finished	SAMP,10mL
24	N027430-001AMS,MS	8	1000	Unknown		12/11/2017 11:17	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	9	1000	Unknown		12/11/2017 11:26	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	10	1000	Unknown		12/11/2017 11:36	Finished	CCB R171129A
27	N027430-002A,SAMP	11	1000	Unknown		12/11/2017 11:45	Finished	SAMP,2>10mL
28	N027430-002AMS,MS	12	1000	Unknown		12/11/2017 11:54	Finished	MS (1ppb), IWST-171002B,2>1
29	N027430-003A,SAMP	13	1000	Unknown		12/11/2017 12:04	Finished	SAMP,10mL
30	N027430-003AMS,MS	14	1000	Unknown		12/11/2017 12:13	Finished	MS (1ppb), IWST-171002B,10
31	N027430-004A,SAMP	15	1000	Unknown		12/11/2017 12:23	Finished	SAMP,10mL
32	N027430-004AMS,MS	16	1000	Unknown		12/11/2017 12:32	Finished	MS (1ppb), IWST-171002B,10
33	N027430-005A,SAMP	17	1000	Unknown		12/11/2017 12:42	Finished	SAMP,10mL
34	N027430-005AMS,MS	18	1000	Unknown		12/11/2017 12:51	Finished	MS (1ppb), IWST-171002B,10
35	N027430-006A,SAMP	19	1000	Unknown		12/11/2017 13:01	Finished	SAMP,10mL
36	N027430-006AMS,MS	20	1000	Unknown		12/11/2017 13:10	Finished	MS (1ppb), IWST-171002B,10
37	CCV-3,CCV,1,	21	1000	Unknown		12/11/2017 13:20	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	22	1000	Unknown		12/11/2017 13:29	Finished	CCB R171129A
39	N027430-007A,SAMP	23	1000	Unknown		12/11/2017 13:38	Finished	SAMP,10mL
40	N027430-007AMS,MS	24	1000	Unknown		12/11/2017 13:48	Finished	MS (1ppb), IWST-171002B,10
41	N027430-008A,SAMP	25	1000	Unknown		12/11/2017 13:57	Finished	SAMP,10mL
42	N027430-008AMS,MS	26	1000	Unknown		12/11/2017 14:07	Finished	MS (1ppb), IWST-171002B,10
43	N027430-009A,SAMP	27	1000	Unknown		12/11/2017 14:16	Finished	SAMP,10mL
44	N027430-009AMS,MS	28	1000	Unknown		12/11/2017 14:26	Finished	MS (1ppb), IWST-171002B,10
45	N027430-010A,SAMP	29	1000	Unknown		12/11/2017 14:35	Finished	SAMP,10mL
46	N027430-010AMS,MS	30	1000	Unknown		12/11/2017 14:45	Finished	MS (1ppb), IWST-171002B,10
47	N027430-020A,SAMP	31	1000	Unknown		12/11/2017 14:54	Finished	SAMP,0.5>10mL
48	N027430-020AMS,MS	32	1000	Unknown		12/11/2017 15:04	Finished	MS (5ppb), IWST-171002B,0.5
49	CCV-4,CCV1,1,	33	1000	Unknown		12/11/2017 15:13	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	34	1000	Unknown		12/11/2017 15:23	Finished	CCB R171129A
51	N027430-012A,SAMP	35	1000	Unknown		12/11/2017 15:32	Finished	SAMP,10mL
52	N027430-012AMS,MS	36	1000	Unknown		12/11/2017 15:41	Finished	MS (1ppb), IWST-171002B,10
53	N027430-019A,SAMP	37	1000	Unknown		12/11/2017 15:51	Finished	SAMP,10mL
54	N027430-019AMS,MS	38	1000	Unknown		12/11/2017 16:00	Finished	MS (1ppb), IWST-171002B,10
55	N027430-011A,SAMP	39	1000	Unknown		12/11/2017 16:10	Finished	SAMP,10mL
56	N027430-011AMS,MS	40	1000	Unknown		12/11/2017 16:19	Finished	MS (1ppb), IWST-171002B,10
57	N027430-013A,SAMP	41	1000	Unknown		12/11/2017 16:29	Finished	SAMP,2>10mL
58	N027430-013AMS,MS	42	1000	Unknown		12/11/2017 16:38	Finished	MS (1ppb), IWST-171002B,2>1
59	N027430-014A,SAMP	43	1000	Unknown		12/11/2017 16:48	Finished	SAMP,2>10mL
60	N027430-014AMS,MS	44	1000	Unknown		12/11/2017 16:57	Finished	MS (1ppb), IWST-171002B,2>1

IC-07 RBA 12/14/2017 7:32:55 PM rba 12/16/2017 12/21/2017

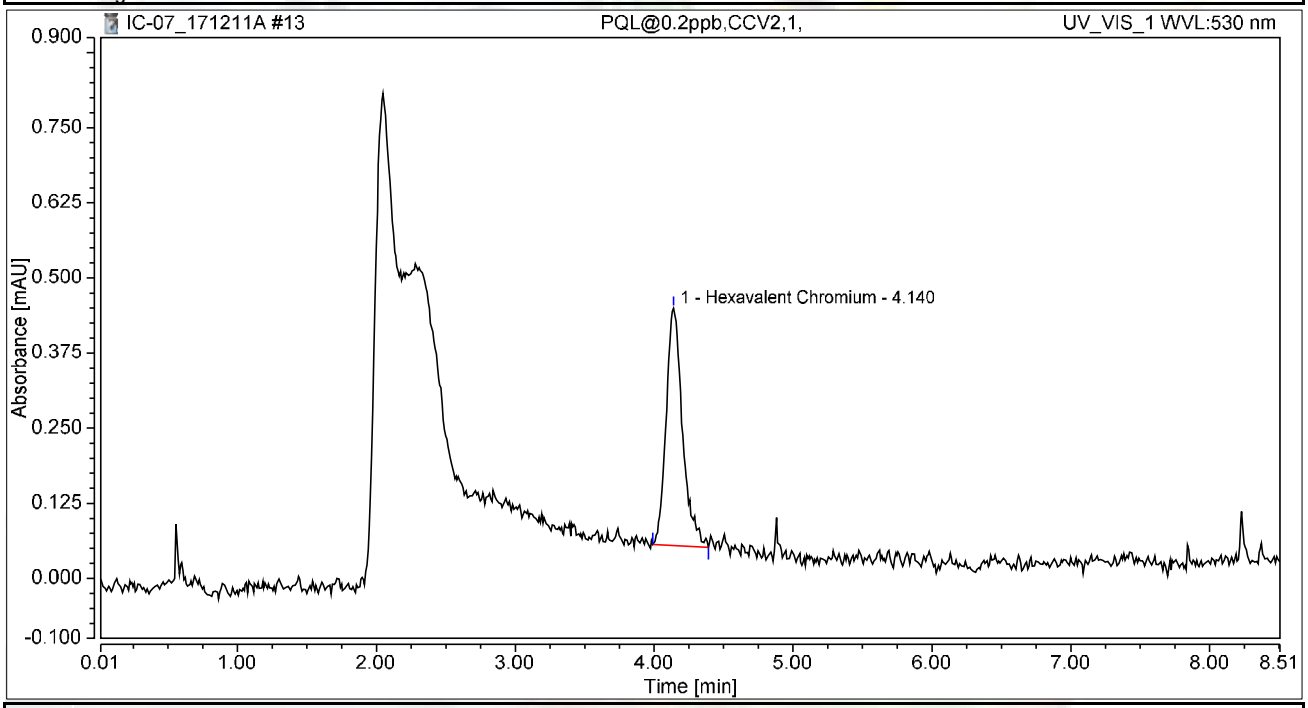
61	CCV-5,CCV,1,	45	1000	Unknown		12/11/2017 17:07	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	46	1000	Unknown		12/11/2017 17:16	Finished	CCB R171129A
63	N027430-015A,SAMF	47	1000	Unknown		12/11/2017 17:26	Finished	SAMP,2>10mL
64	N027430-015AMS,MS	48	1000	Unknown		12/11/2017 17:35	Finished	MS (1ppb), IWST-171002B,2>1
65	N027405-006ADUP,D	49	1000	Unknown		12/11/2017 17:44	Finished	DUP,2>10mL
66	N027430-020AMSD,M	50	1000	Unknown		12/11/2017 17:54	Finished	MSD (5ppb), IWST-171002B,0.
67	N027430-002A,SAMF	1	1000	Unknown		12/11/2017 18:05	Finished	MSD (5ppb), IWST-171002B,0.
68	N027430-002AMS,MS	2	1000	Unknown		12/11/2017 18:16	Finished	DUP,2>10mL
69	N027430-013A,SAMF	3	1000	Unknown		12/11/2017 18:25	Finished	SAMP,2>10mL
70	N027430-013AMS,MS	4	1000	Unknown		12/11/2017 18:35	Finished	MS (1ppb), IWST-171002B,2>1
71	N027430-014A,SAMF	5	1000	Unknown		12/11/2017 18:44	Finished	SAMP,10mL
72	N027430-014AMS,MS	6	1000	Unknown		12/11/2017 18:54	Finished	MS (1ppb), IWST-171002B,10
73	CCV-6,CCV1,1,	7	1000	Unknown		12/11/2017 19:03	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	8	1000	Unknown		12/11/2017 19:13	Finished	CCB R171129A
75	N027430-015A,SAMF	9	1000	Unknown		12/11/2017 19:22	Finished	LCS, IWST-171002B
76	N027430-015AMS,MS	10	1000	Unknown		12/11/2017 19:32	Finished	MB R171129A
77	N027430-012A,SAMF	11	1000	Unknown		12/11/2017 19:41	Finished	SAMP,2>10mL
78	N027430-012AMS,MS	12	1000	Unknown		12/11/2017 19:50	Finished	MS (1ppb), IWST-171002B,2>1
79	LCS-2,LCS,1	13	1000	Unknown		12/11/2017 20:00	Finished	LCS, IWST-171002B
80	MB-2,MBLK,1	14	1000	Unknown		12/11/2017 20:09	Finished	MB R171129A
81	N027431-006A,SAMF	15	1000	Unknown		12/11/2017 20:19	Finished	DUP,0.1>10mL
82	N027431-006AMS,MS	16	1000	Unknown		12/11/2017 20:28	Finished	SAMP,10mL
83	N027431-006AMSD,M	17	1000	Unknown		12/11/2017 20:38	Finished	SAMP,5>10mL
84	N027428-002A,SAMF	18	1000	Unknown		12/11/2017 20:47	Finished	SAMP,0.2>10mL
85	CCV-7,CCV,1,	19	1000	Unknown		12/11/2017 20:57	Finished	CCV @5ppb, IWST-171002A
86	CCB-7,CCB,1,	20	1000	Unknown		12/11/2017 21:06	Finished	CCB R171114C
87	N027428-002ADUP,D	21	1000	Unknown		12/11/2017 21:16	Finished	SAMP,0.2>10mL
88	N027428-002AMS,MS	22	1000	Unknown		12/11/2017 21:25	Finished	SAMP,1>10mL
89	N027428-001A,SAMF	23	1000	Unknown		12/11/2017 21:35	Finished	SAMP,0.5>10mL
90	N027428-001AMS,MS	24	1000	Unknown		12/11/2017 21:44	Finished	SAMP,5>10mL
91	N027430-016A,SAMF	25	1000	Unknown		12/11/2017 21:53	Finished	SAMP,10mL
92	N027430-016AMS,MS	26	1000	Unknown		12/11/2017 22:03	Finished	SAMP,2>10mL
93	N027430-017A,SAMF	27	1000	Unknown		12/11/2017 22:12	Finished	MS (5ppb), IWST-171002B,2>1
94	N027430-017AMS,MS	28	1000	Unknown		12/11/2017 22:22	Finished	MSD (5ppb), IWST-171002B,2
95	N027430-018A,SAMF	29	1000	Unknown		12/11/2017 22:31	Finished	SAMP,10mL
96	N027430-018AMS,MS	30	1000	Unknown		12/11/2017 22:41	Finished	MS (1ppb), IWST-171002B,10
97	CCV-8,CCV1,1,	31	1000	Unknown		12/11/2017 22:50	Finished	CCV @10ppb, IWST-171002A
98	CCB-8,CCB,1,	32	1000	Unknown		12/11/2017 23:00	Finished	CCB R171129A
99	N027431-002A,SAMF	33	1000	Unknown		12/11/2017 23:09	Finished	SAMP,10mL
100	N027431-002AMS,MS	34	1000	Unknown		12/11/2017 23:19	Finished	MS (1ppb), IWST-171002B,10
101	N027431-003A,SAMF	35	1000	Unknown		12/11/2017 23:28	Finished	SAMP,10mL
102	N027431-003AMS,MS	36	1000	Unknown		12/11/2017 23:38	Finished	MS (1ppb), IWST-171002B,10
103	N027431-004A,SAMF	37	1000	Unknown		12/11/2017 23:47	Finished	SAMP,10mL
104	N027431-004AMS,MS	38	1000	Unknown		12/11/2017 23:56	Finished	MS (1ppb), IWST-171002B,10
105	N027431-001A,SAMF	39	1000	Unknown		12/12/2017 00:06	Finished	SAMP,10mL
106	N027431-001AMS,MS	40	1000	Unknown		12/12/2017 00:15	Finished	MS (1ppb), IWST-171002B,10
107	N027431-005A,SAMF	41	1000	Unknown		12/12/2017 00:25	Finished	SAMP,10mL
108	N027431-005AMS,MS	42	1000	Unknown		12/12/2017 00:34	Finished	MS (1ppb), IWST-171002B,10
109	CCV-9,CCV,1,	43	1000	Unknown		12/12/2017 00:44	Finished	CCV @5ppb, IWST-171002A
110	CCB-9,CCB,1,	44	1000	Unknown		12/12/2017 00:53	Finished	CCB R171114C
111	SHUTDOWN	45	1000	Unknown		12/12/2017 01:03	Finished	
112	Eluent: R171211B	46	1000	Unknown		n.a.	Finished	Eluent
113	PCR: R171211C	47	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

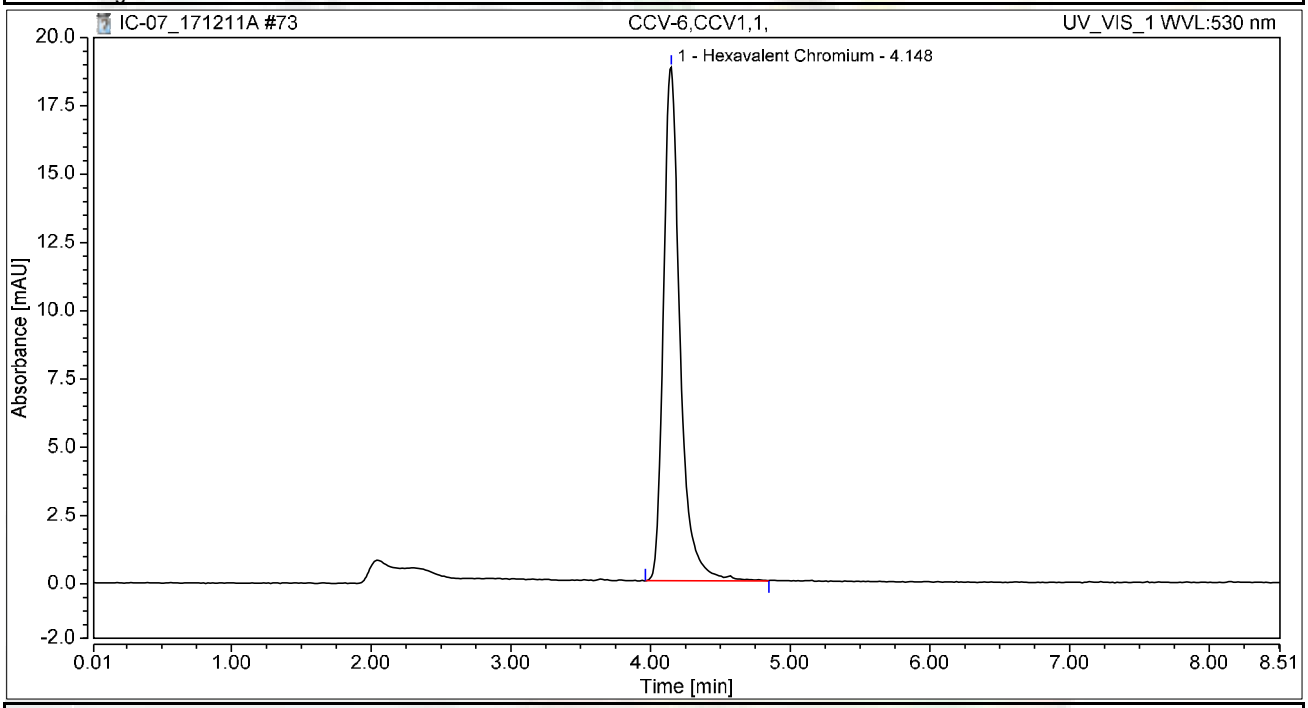
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.054	0.395	100.00	100.00	0.2151
Total:			**0.054**	**0.395**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

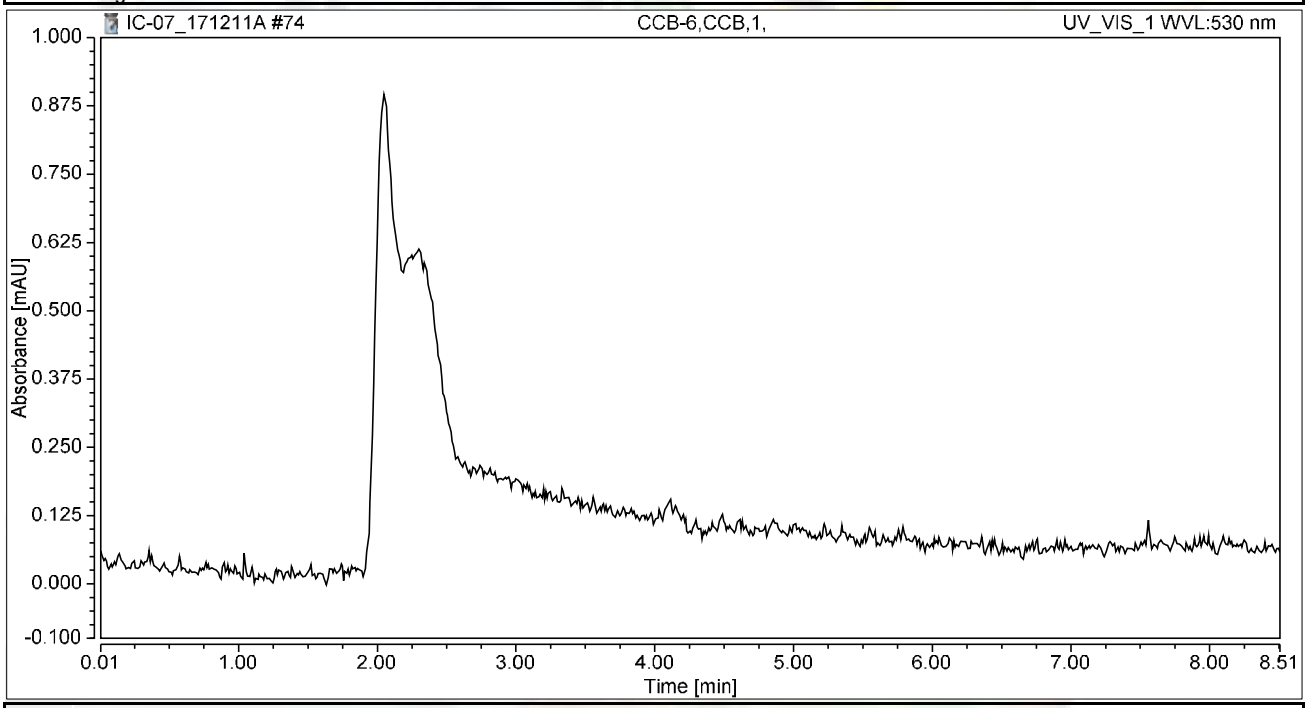
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.585	18.801	100.00	100.00	10.2939
Total:			**2.585**	**18.801**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

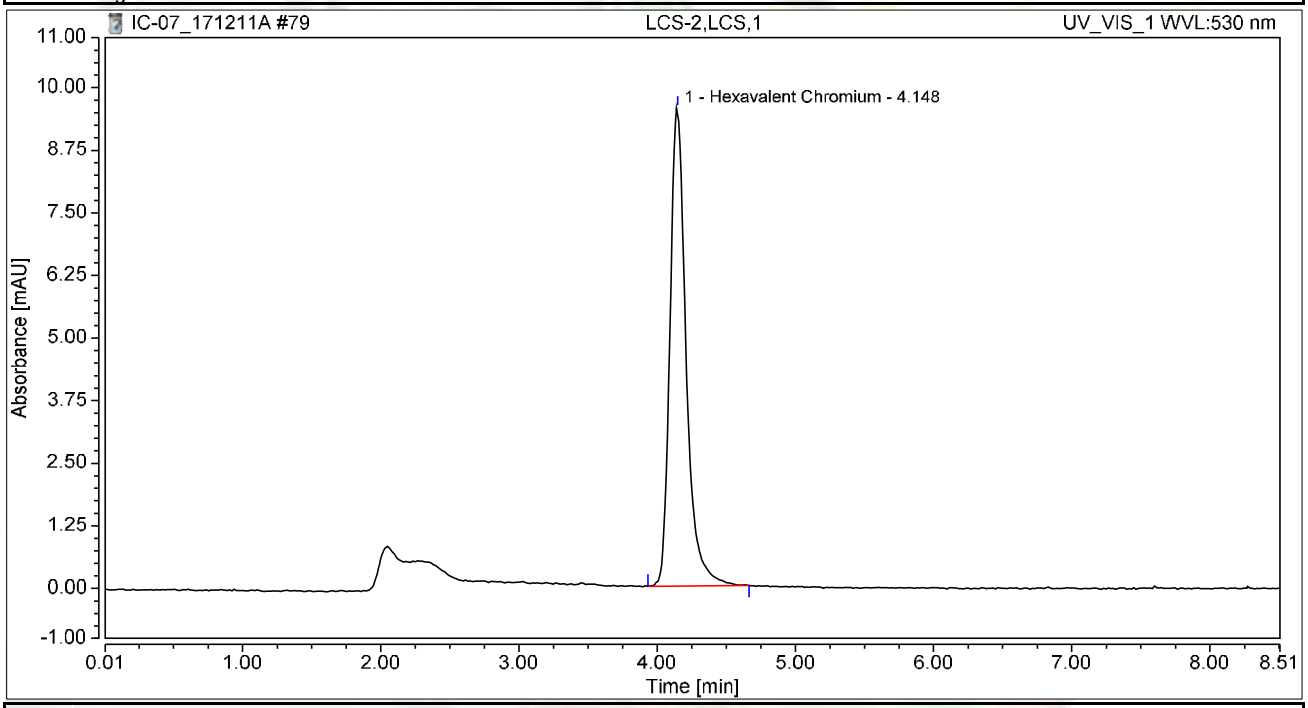
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-2,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

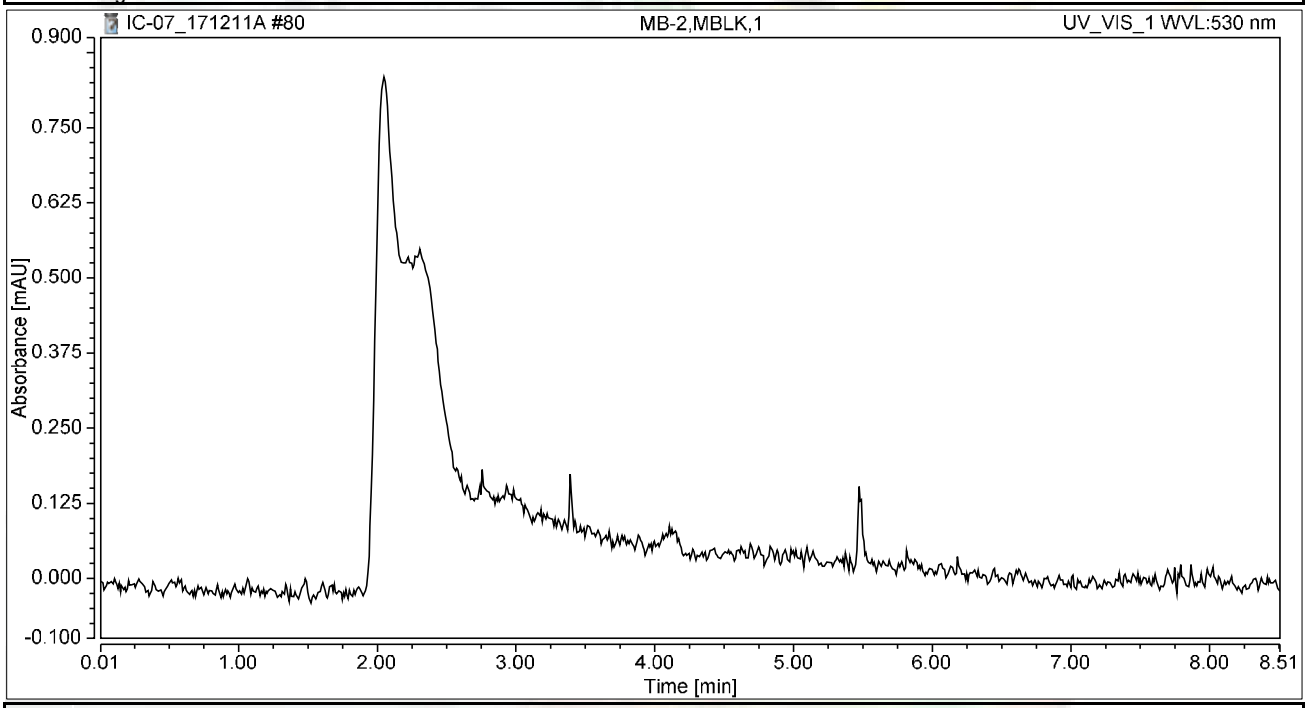
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.299	9.550	100.00	100.00	5.1752
Total:			**1.299**	**9.550**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-2,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

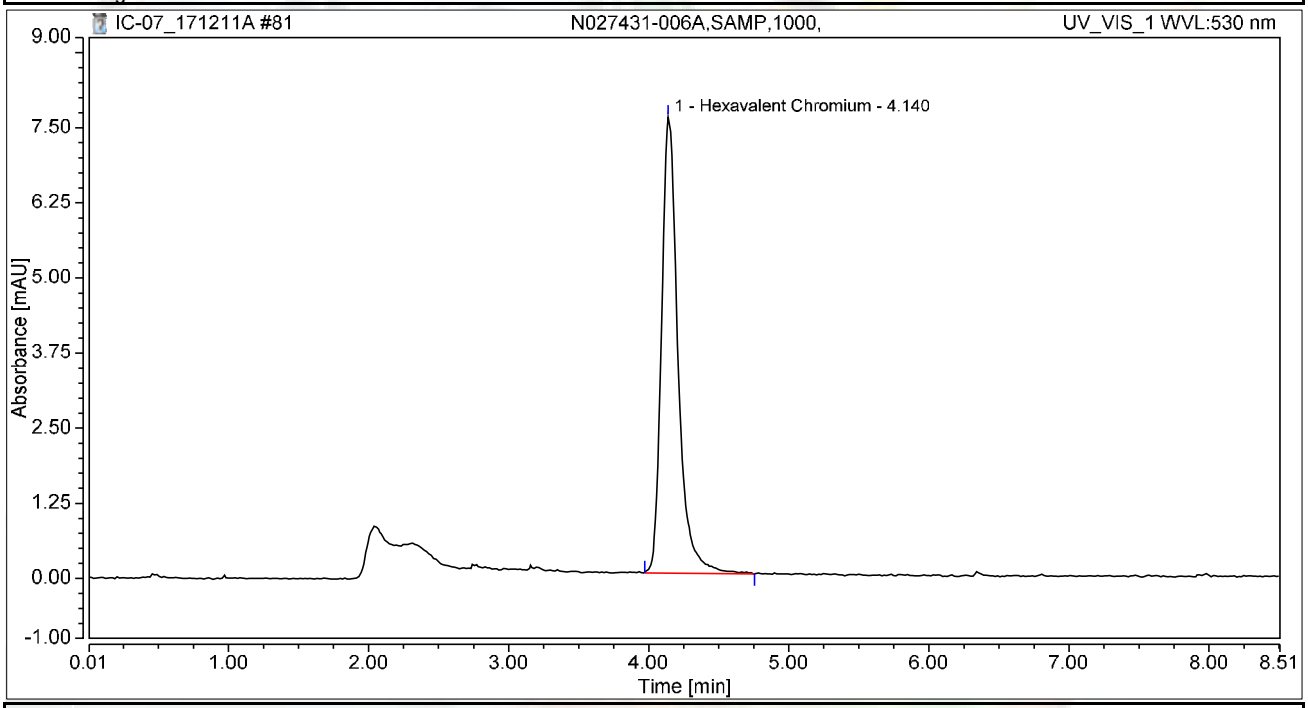
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-006A,SAMP,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

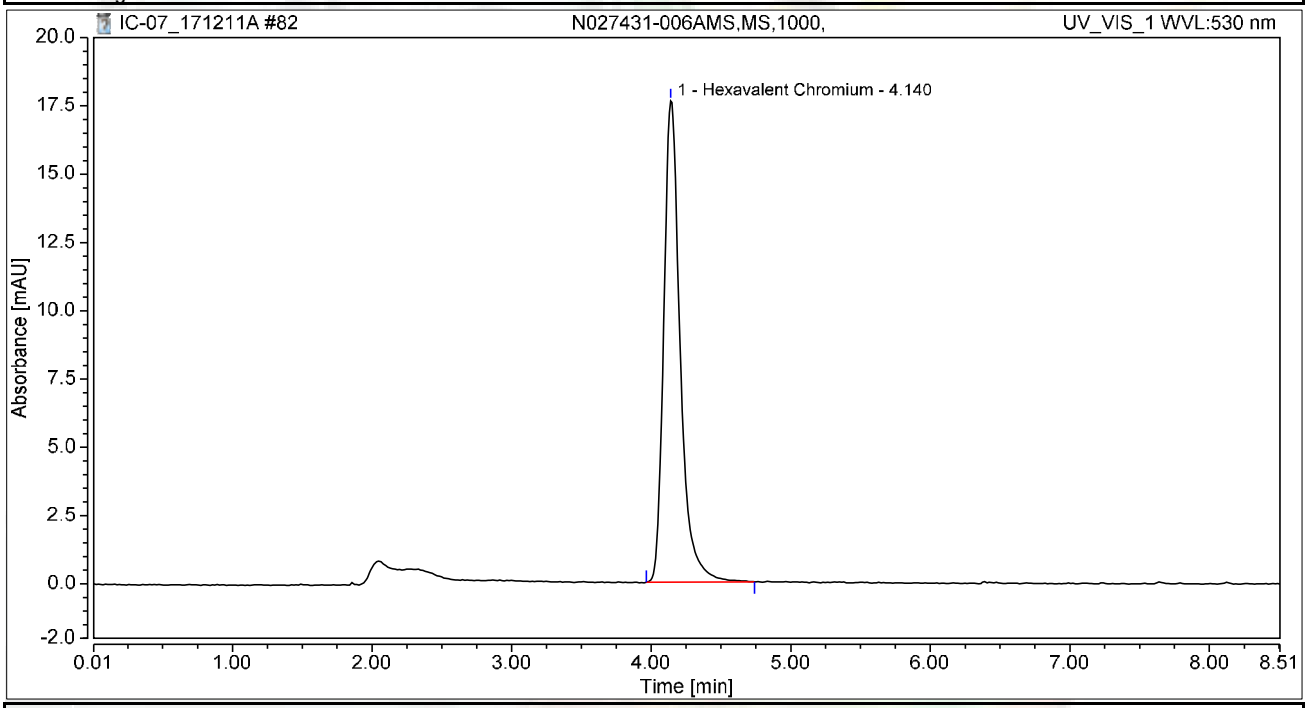
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.040	7.590	100.00	100.00	4.1412
Total:			**1.040**	**7.590**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-006AMS,MS,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

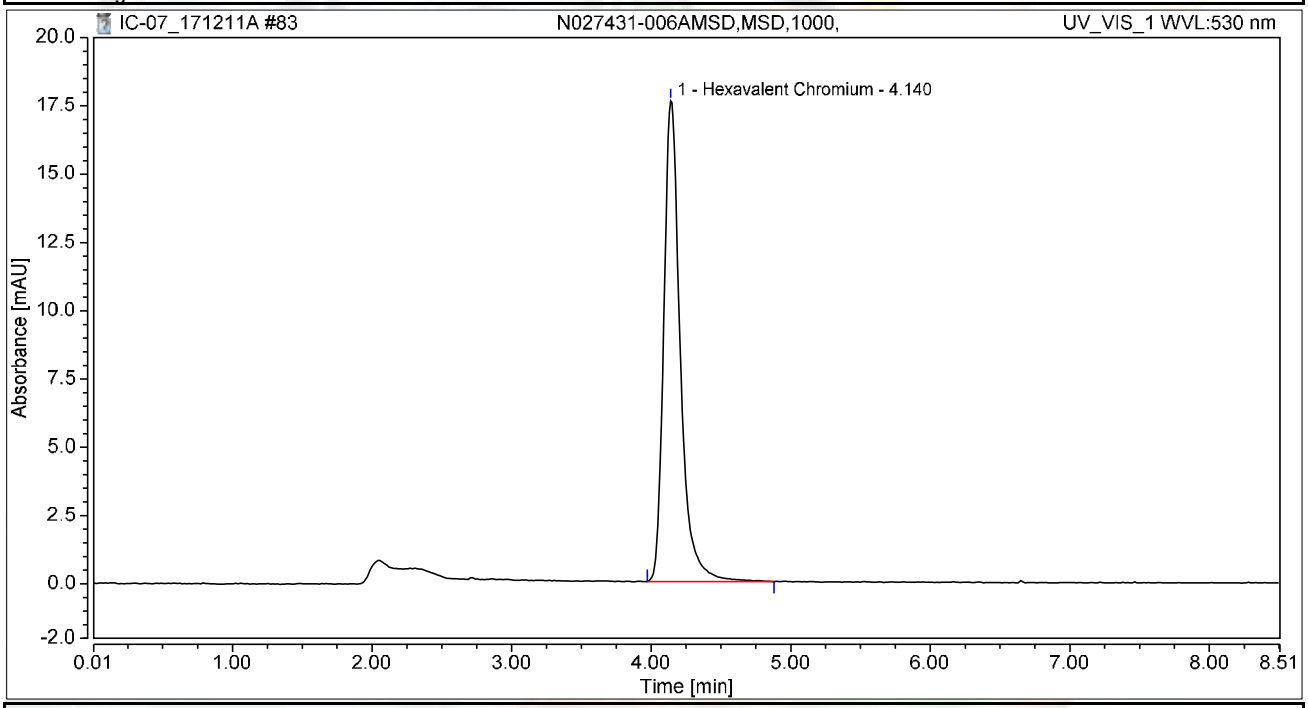
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.408	17.620	100.00	100.00	9.5916
Total:			**2.408**	**17.620**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-006AMSD,MSD,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

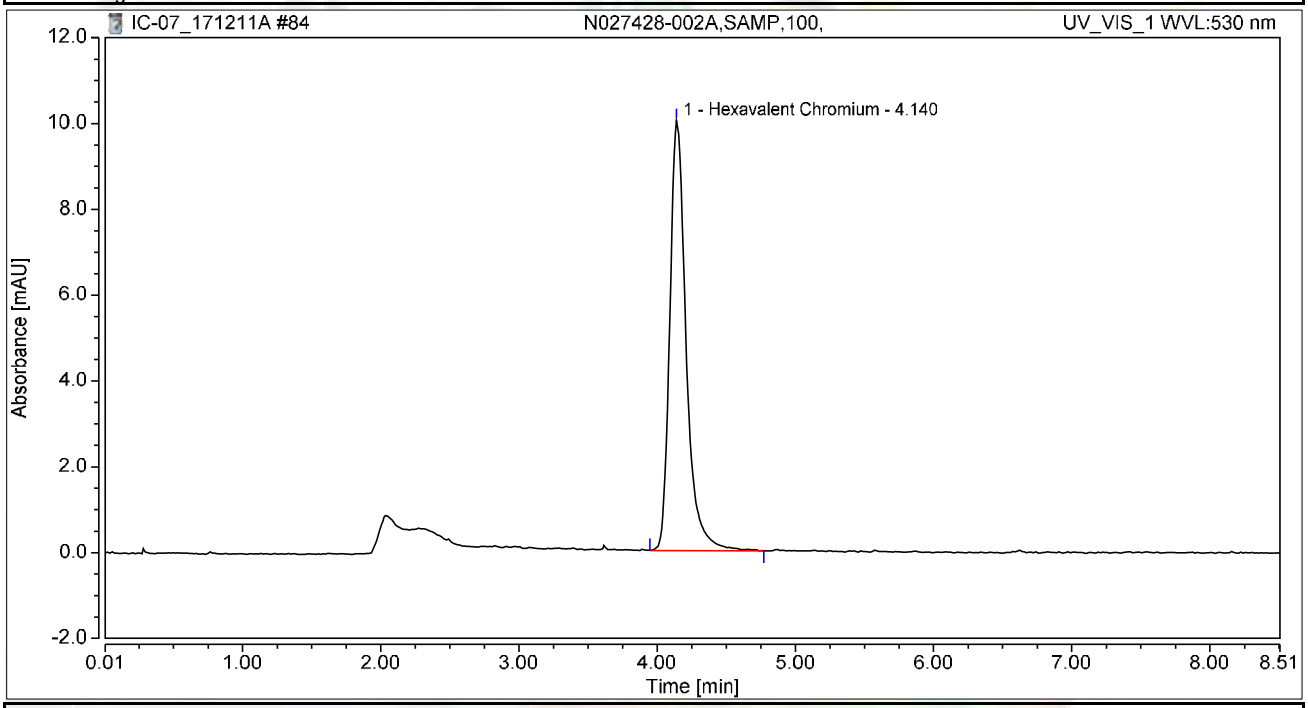
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.418	17.606	100.00	100.00	9.6302
Total:			**2.418**	**17.606**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027428-002A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

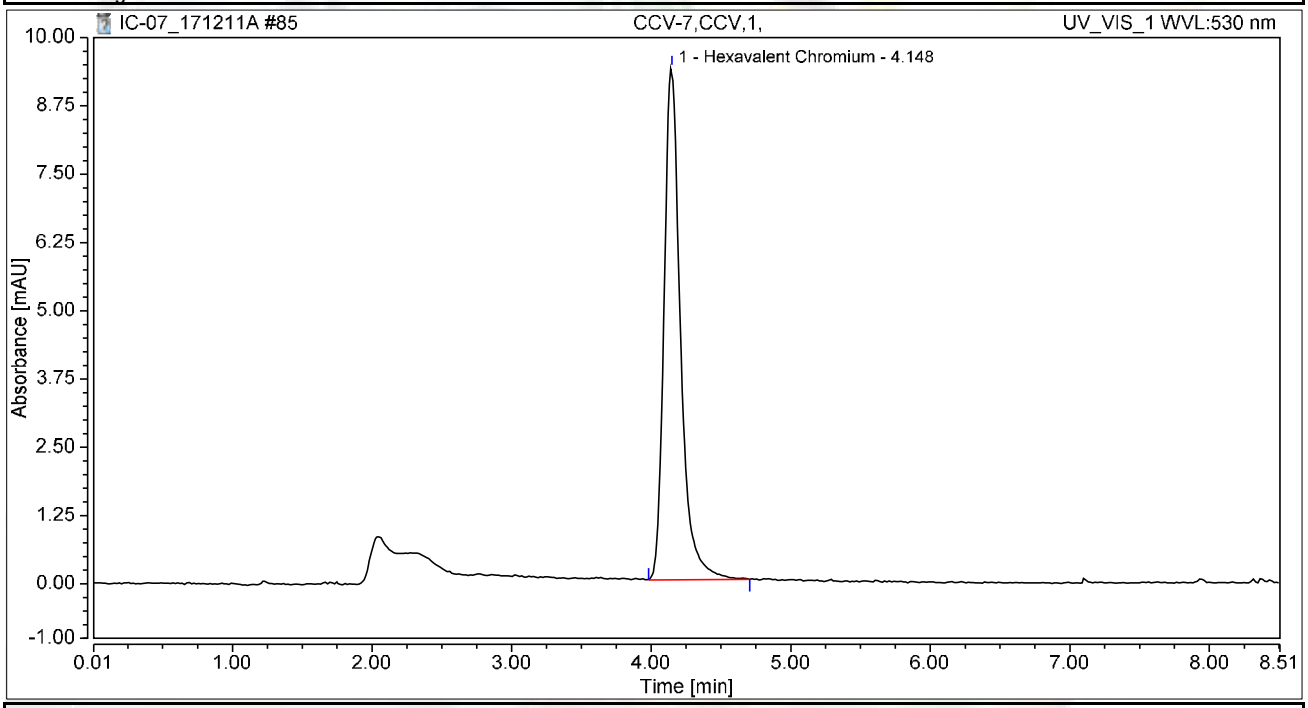
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.380	10.020	100.00	100.00	5.4968
Total:			**1.380**	**10.020**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

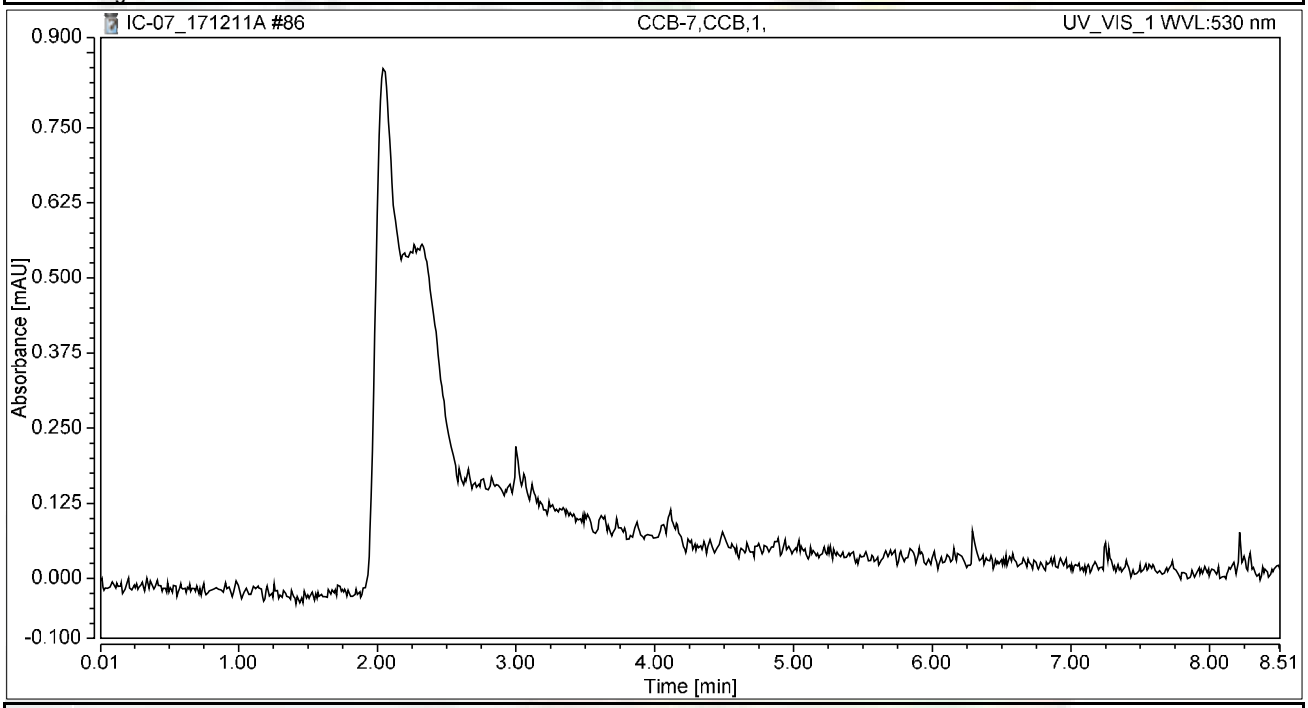
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.283	9.373	100.00	100.00	5.1094
Total:			**1.283**	**9.373**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

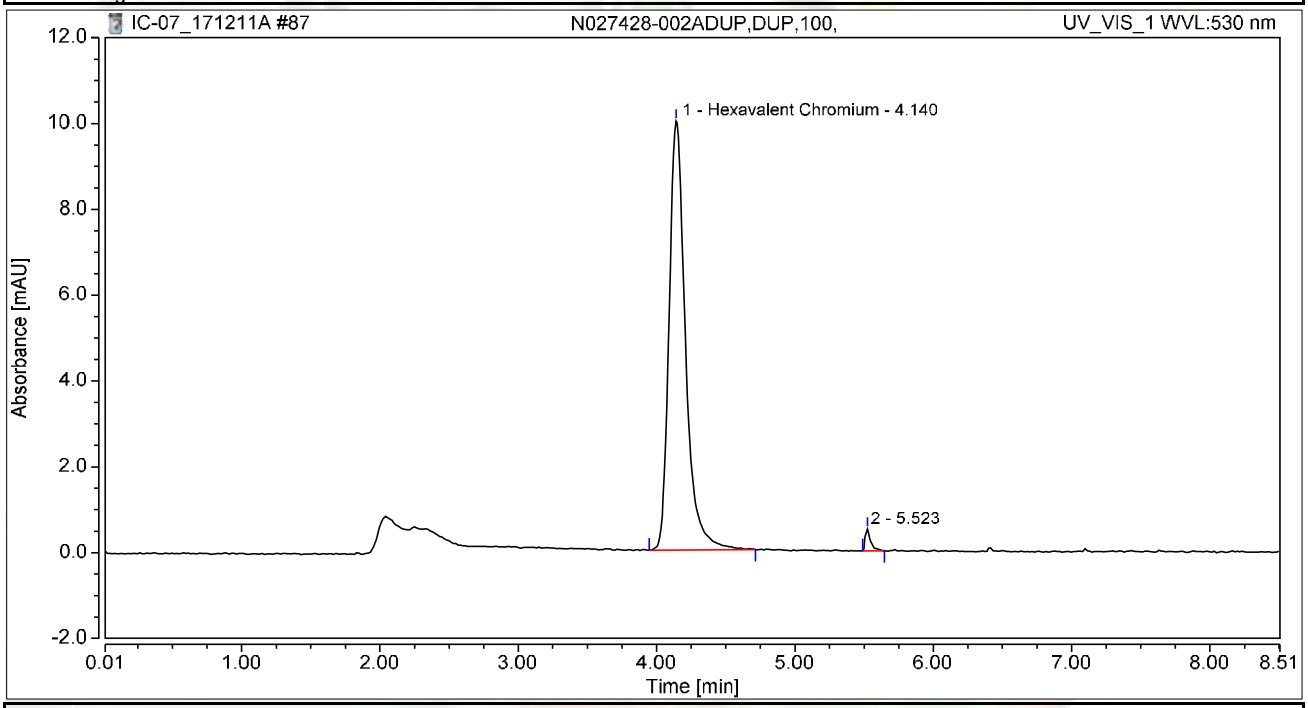
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027428-002ADUP,DUP,100,**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

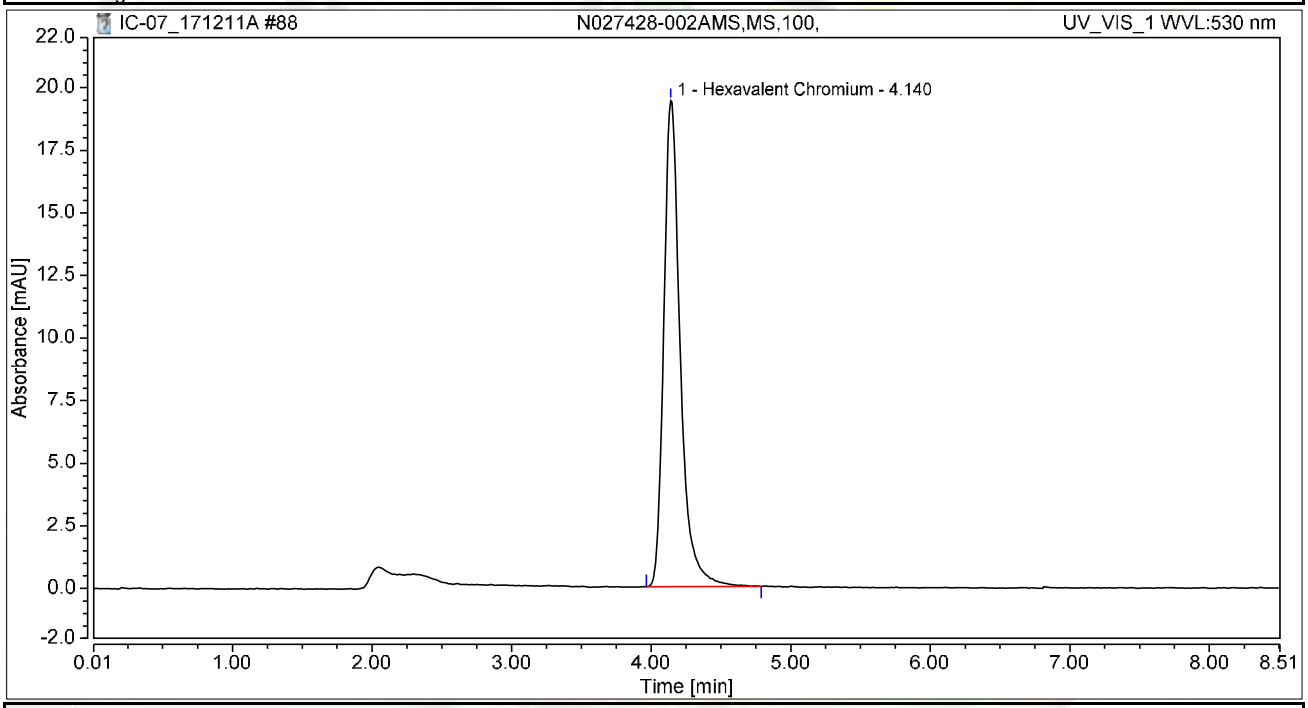
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.373	9.989	98.33	95.21	5.4689
2		5.523	0.023	0.502	1.67	4.79	n.a.
Total:			**1.397**	**10.491**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027428-002AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

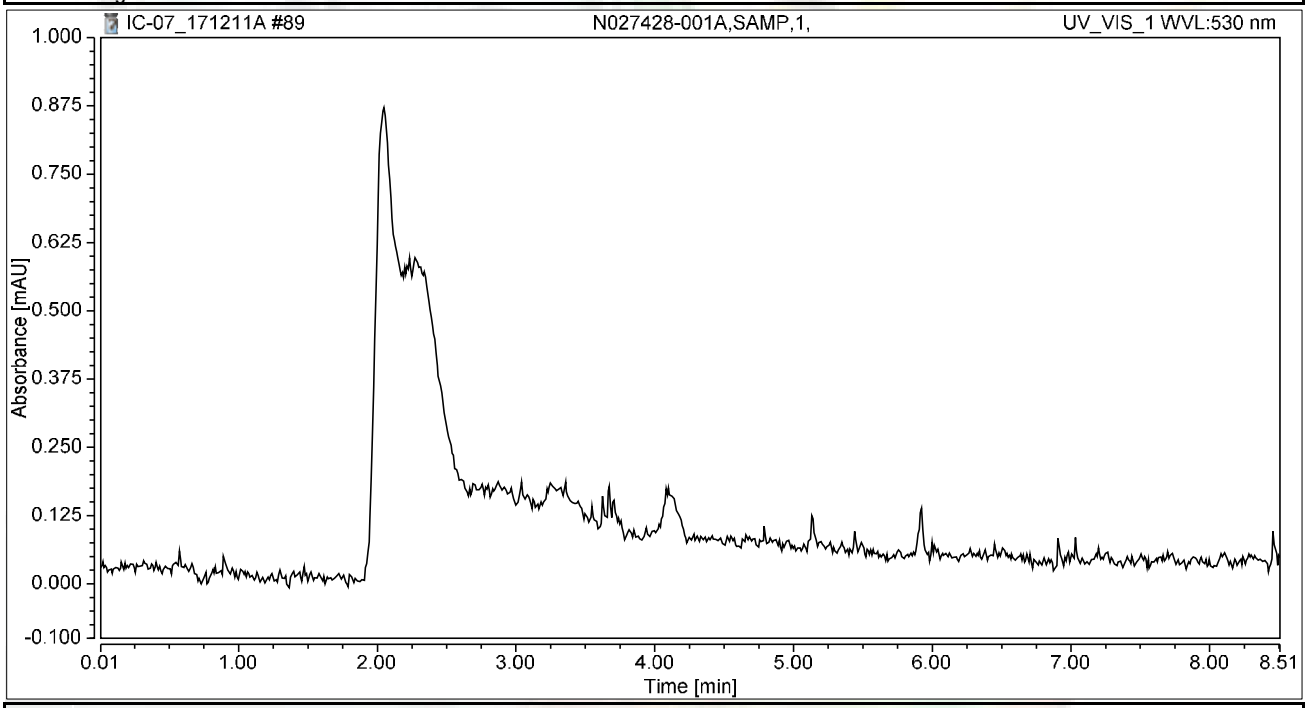
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.661	19.412	100.00	100.00	10.5980
Total:			**2.661**	**19.412**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027428-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

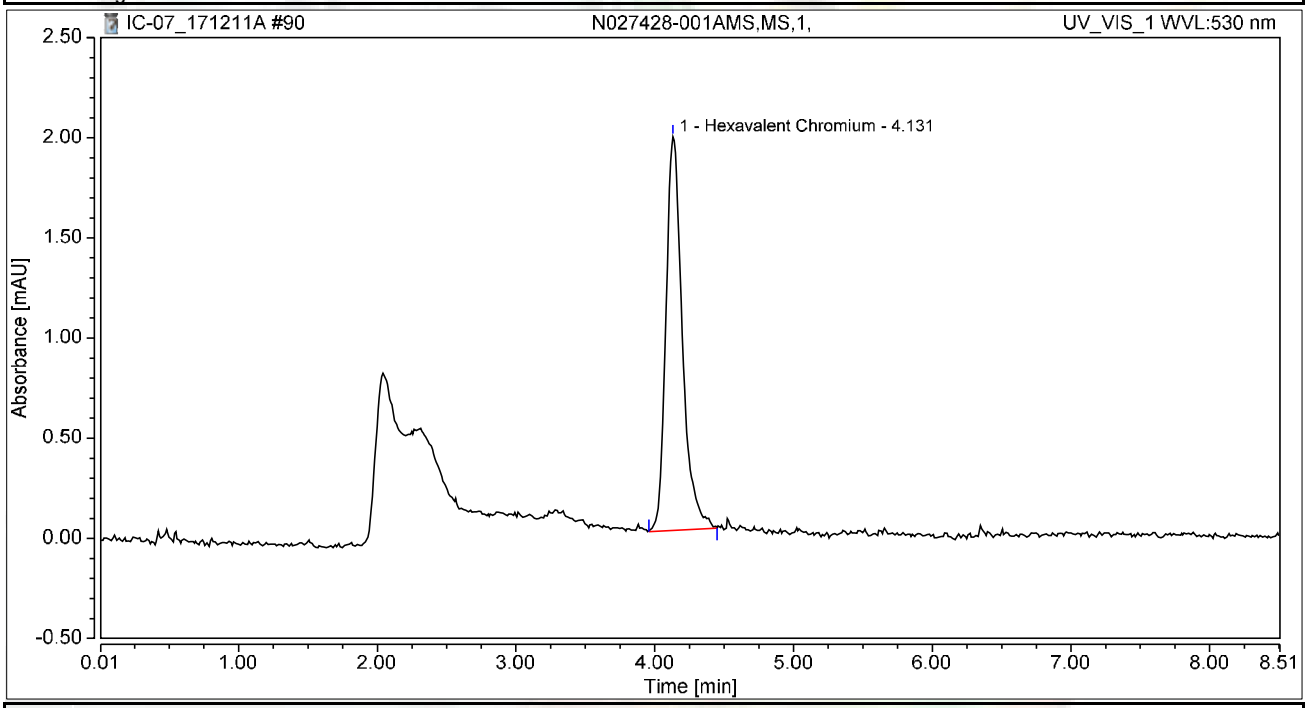
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027428-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

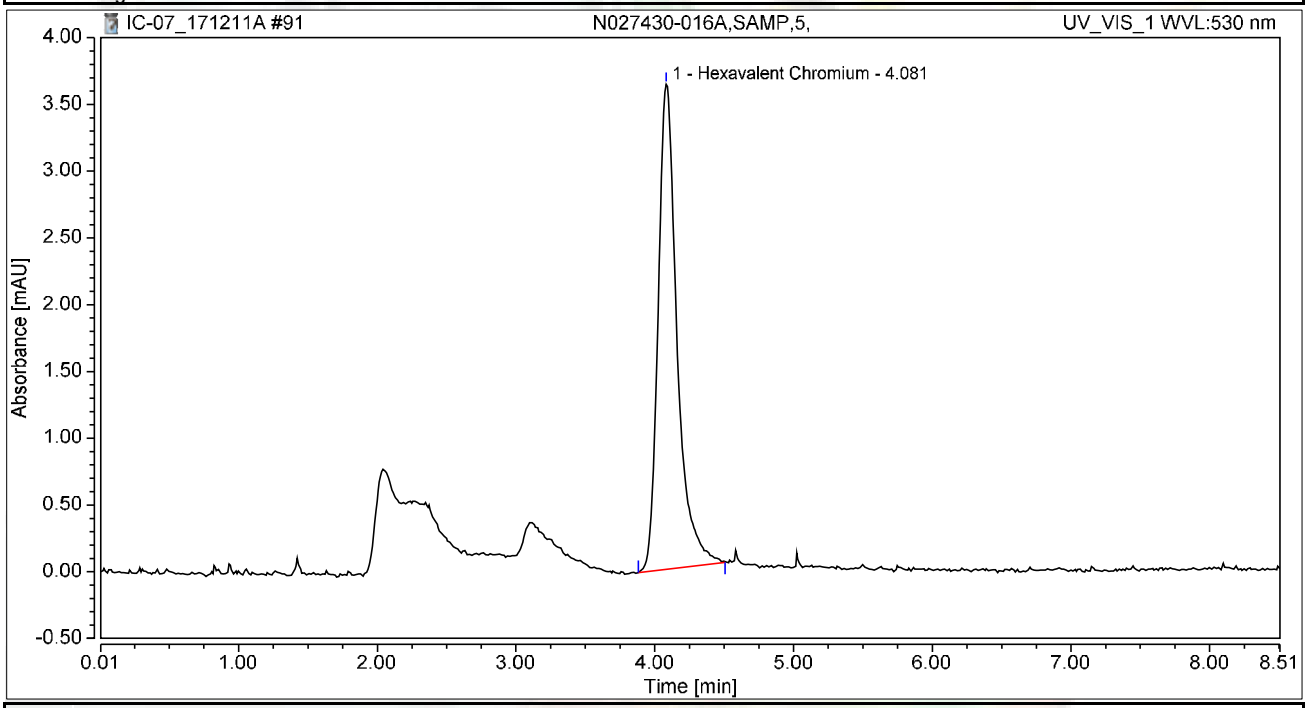
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.271	1.965	100.00	100.00	1.0787
Total:			**0.271**	**1.965**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-016A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

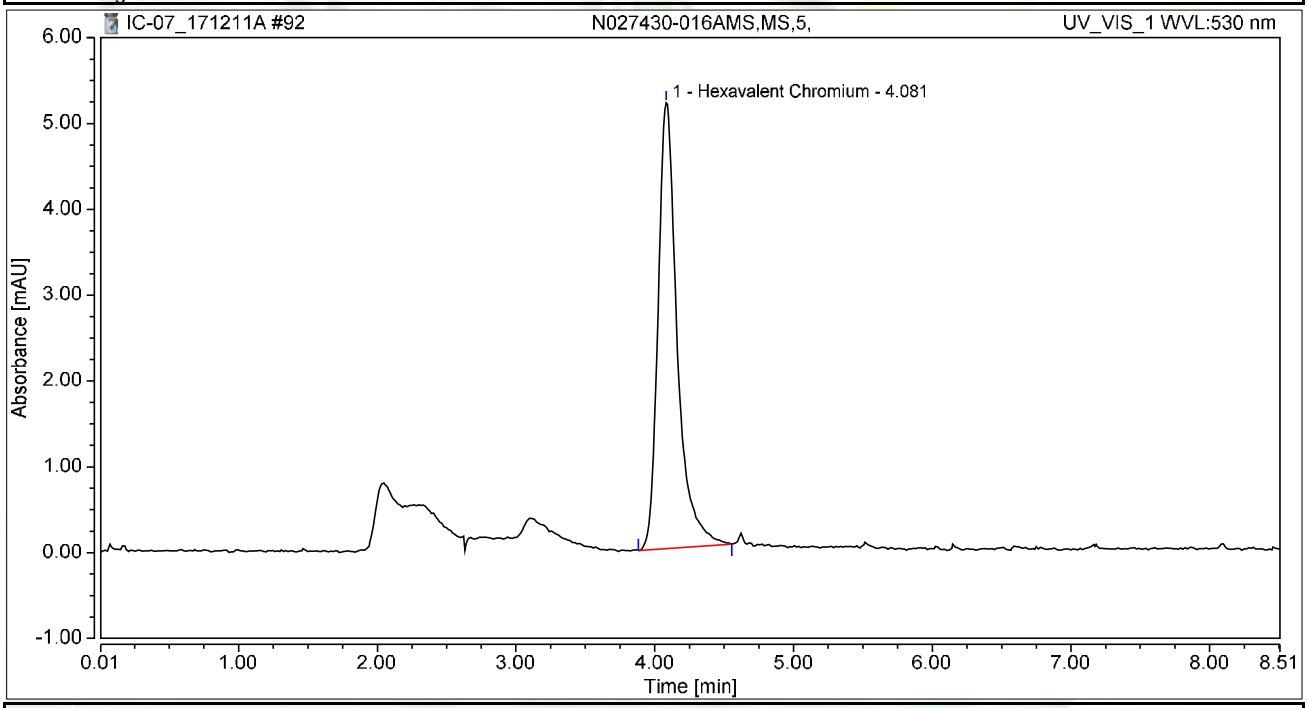
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.575	3.632	100.00	100.00	2.2917
Total:			**0.575**	**3.632**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-016AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

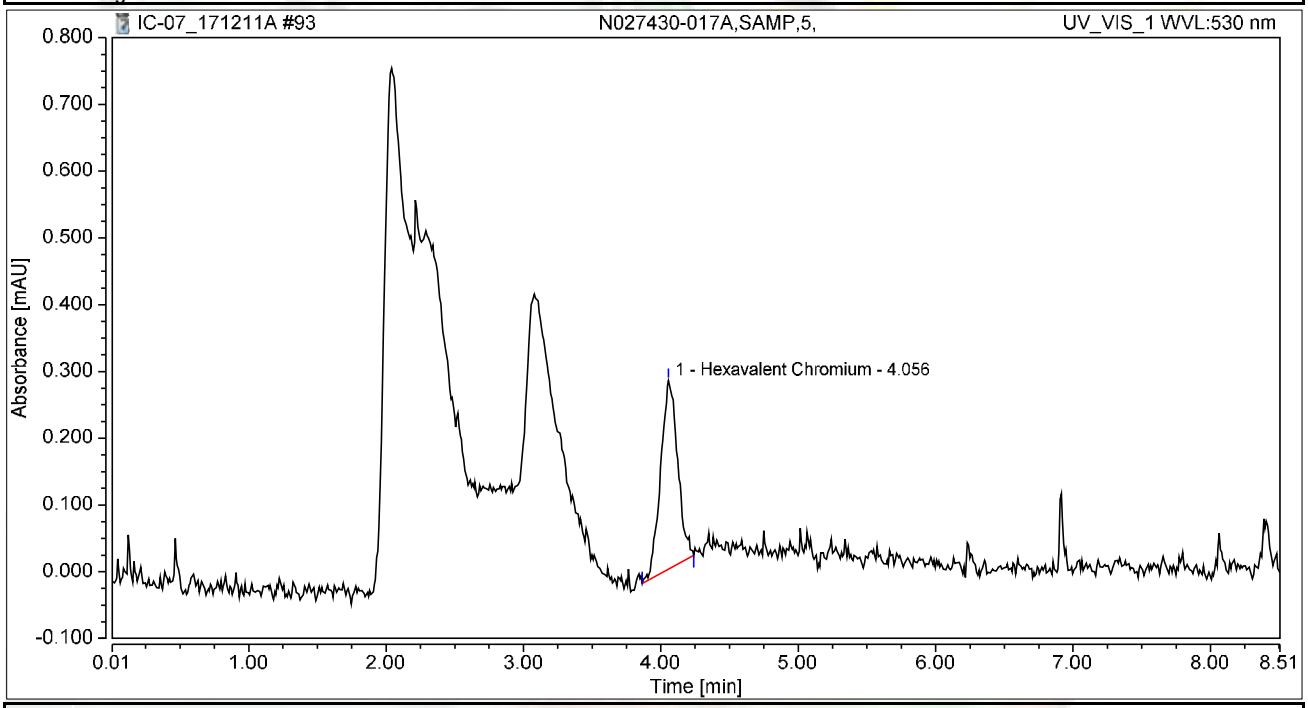
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.832	5.194	100.00	100.00	3.3146
Total:			**0.832**	**5.194**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-017A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

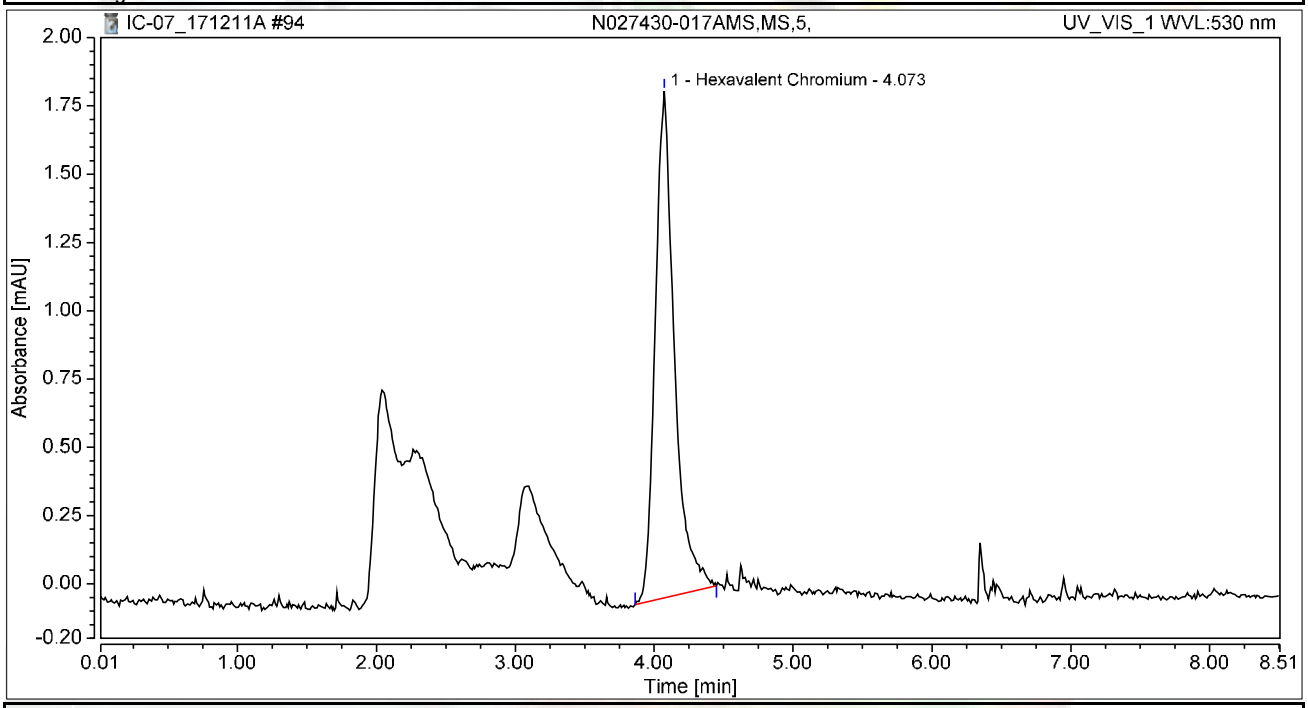
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.041	0.283	100.00	100.00	0.1618
Total:			**0.041**	**0.283**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-017AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

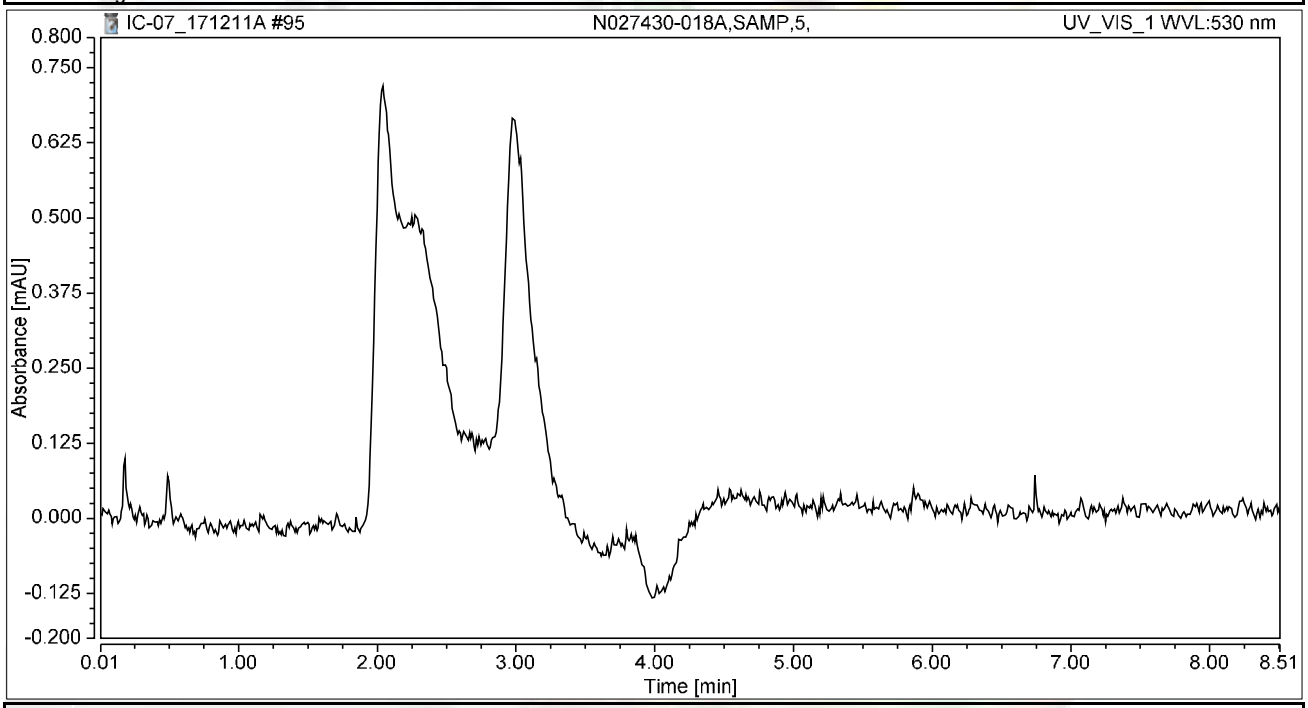
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	0.296	1.856	100.00	100.00	1.1798
Total:			**0.296**	**1.856**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-018A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

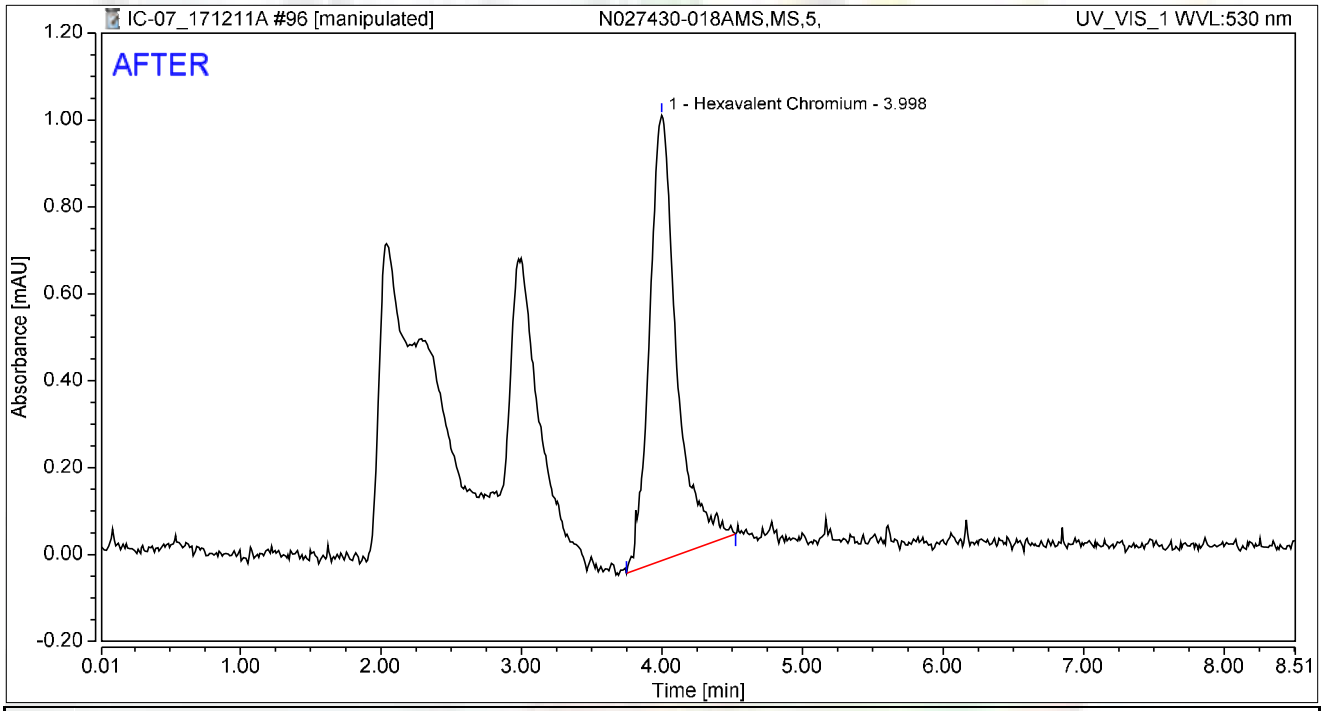
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-018AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.998	0.230	1.025	100.00	100.00	0.9160
Total:			**0.230**	**1.025**	**100.00**	**100.00**	

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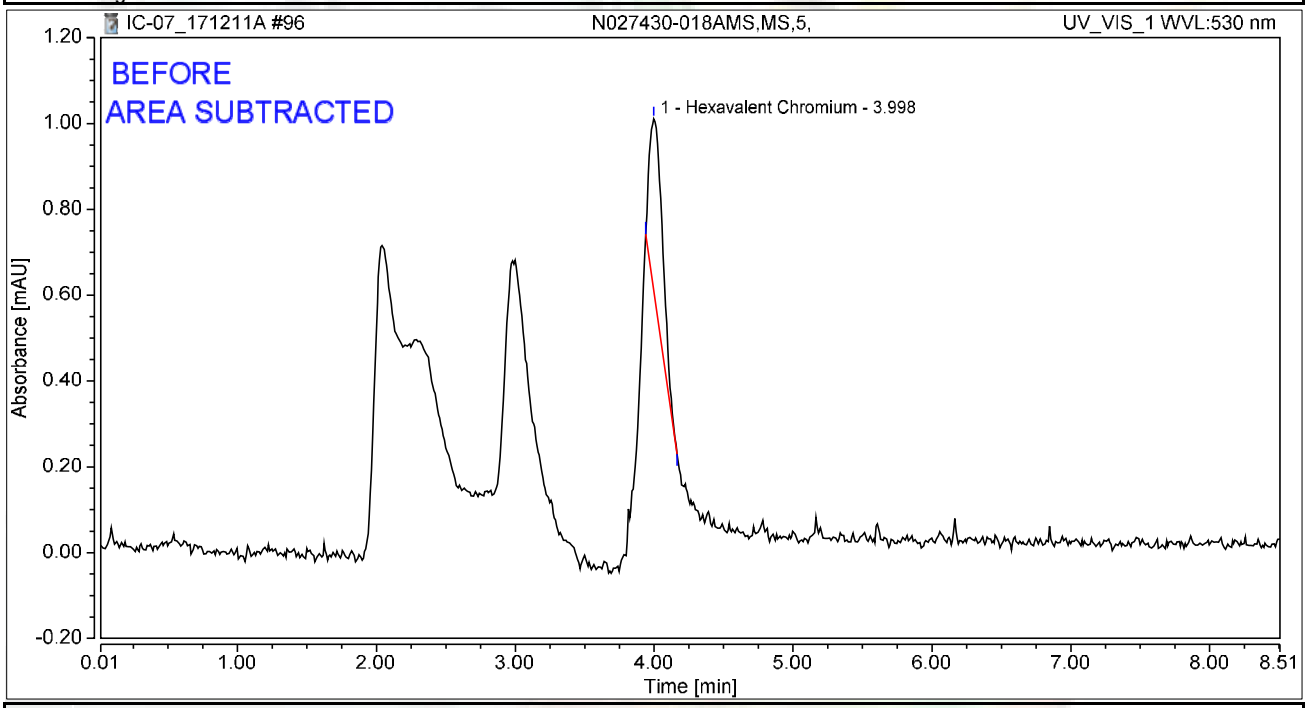
Chromatogram and Results

Injection Details

Injection Name:	**N027430-018AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.998	0.045	0.401	100.00	100.00	0.1811
Total:			**0.045**	**0.401**	**100.00**	**100.00**	

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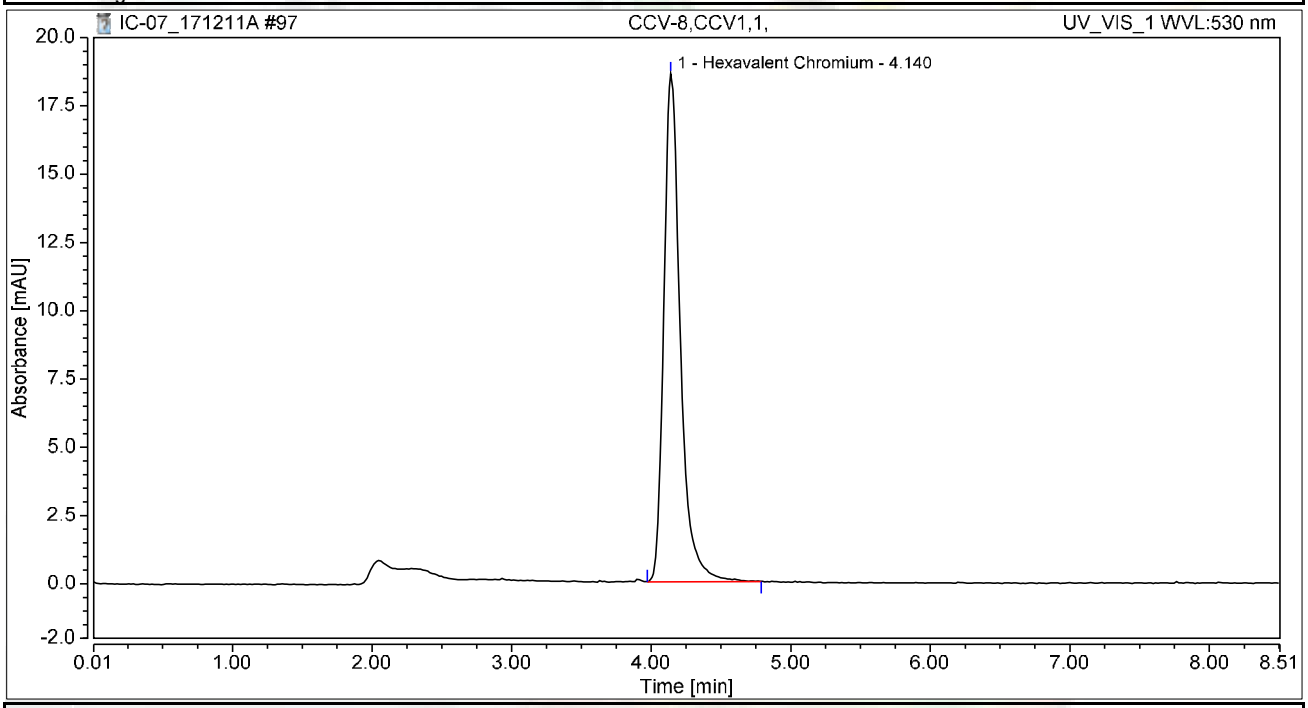
Chromatogram and Results

Injection Details

Injection Name:	**CCV-8,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

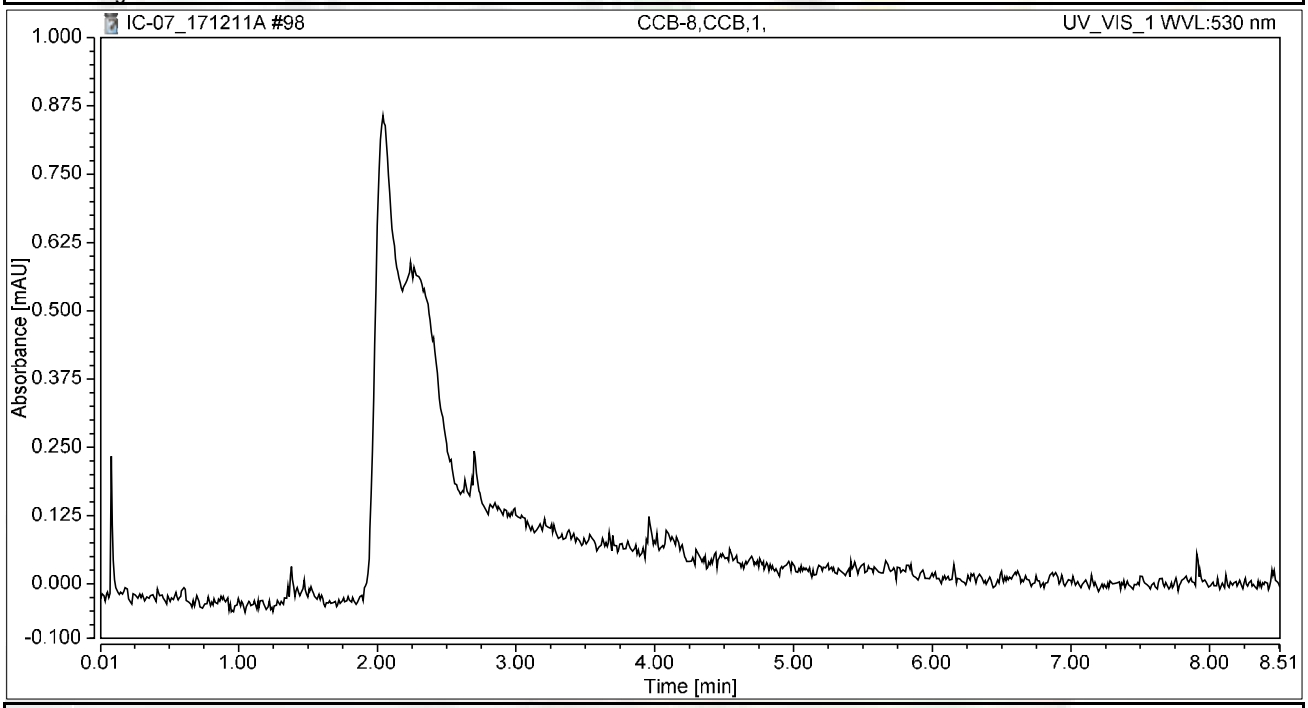
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.551	18.593	100.00	100.00	10.1602
Total:			**2.551**	**18.593**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-8,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

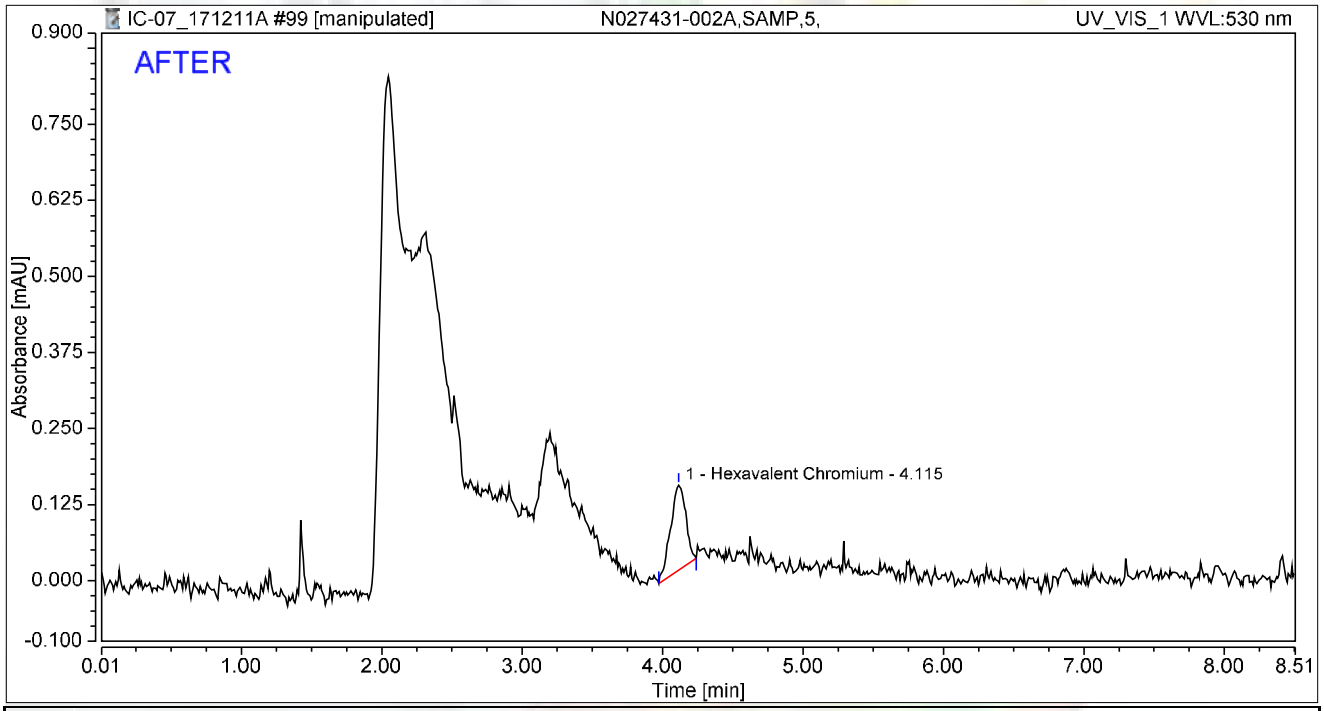
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.018	0.140	100.00	100.00	0.0709
Total:			**0.018**	**0.140**	**100.00**	**100.00**	

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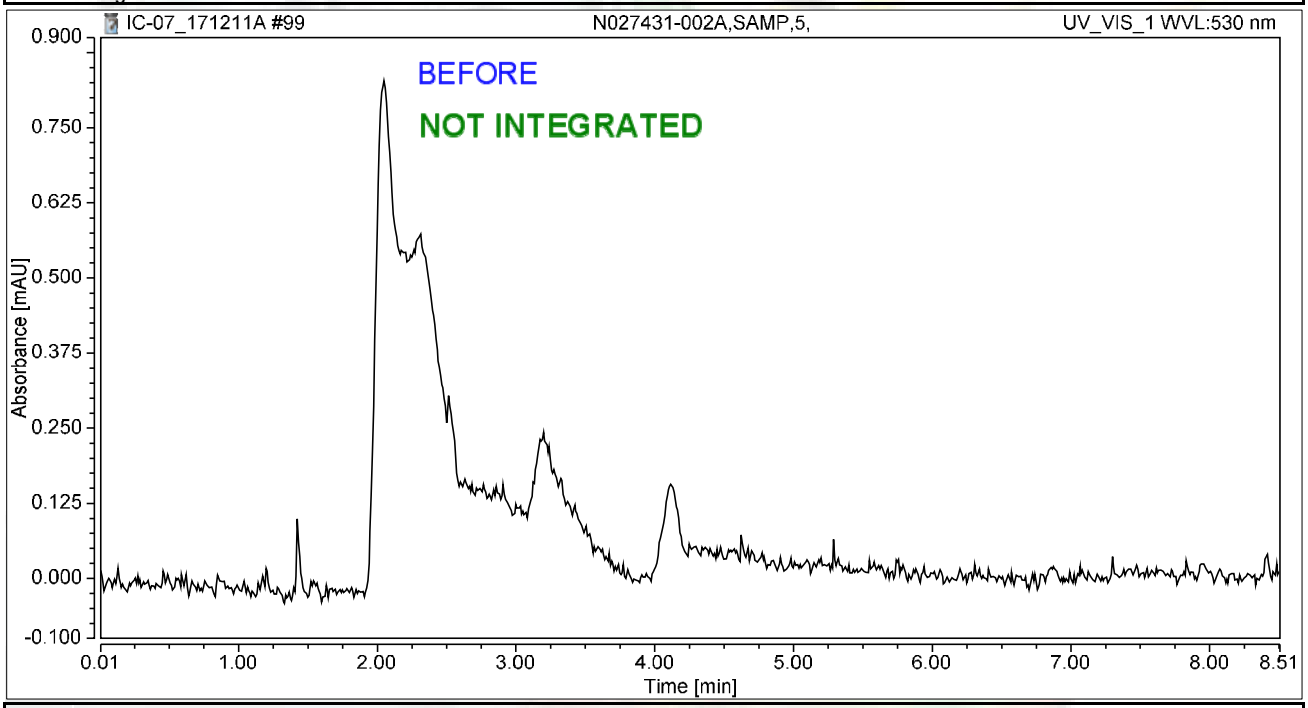
Chromatogram and Results

Injection Details

Injection Name:	**N027431-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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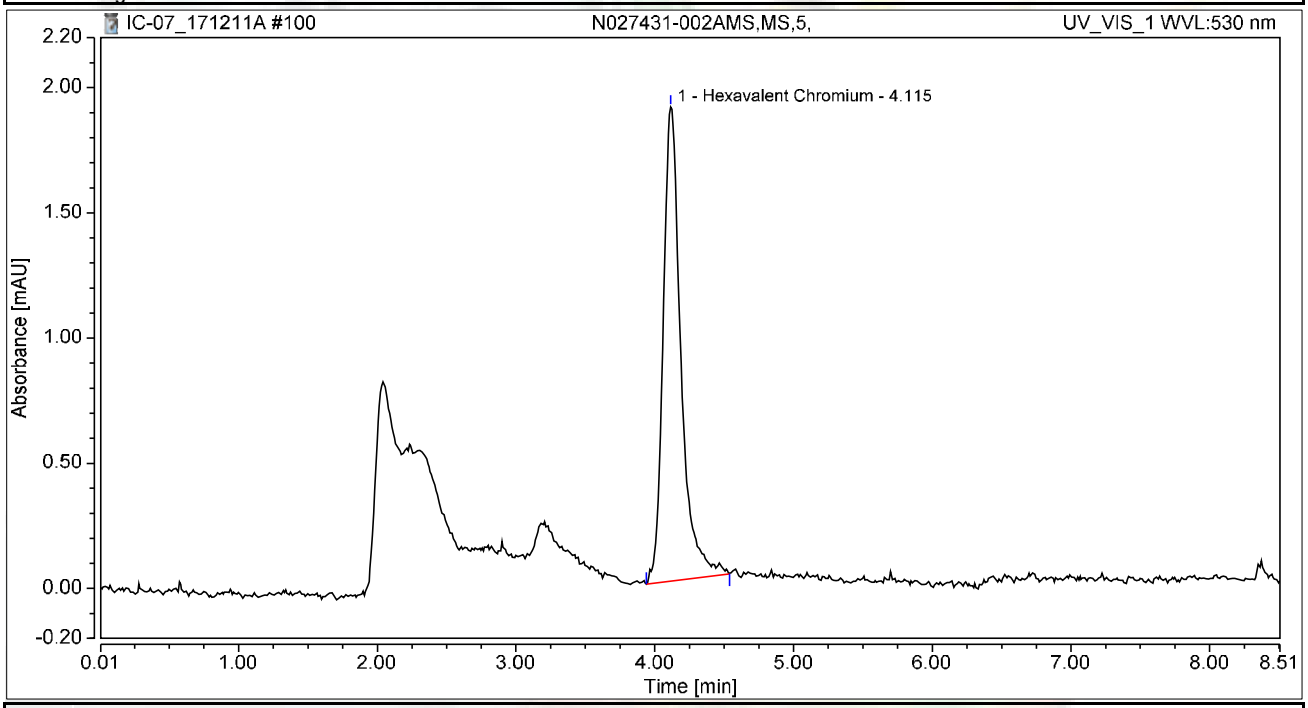
Chromatogram and Results

Injection Details

Injection Name:	**N027431-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

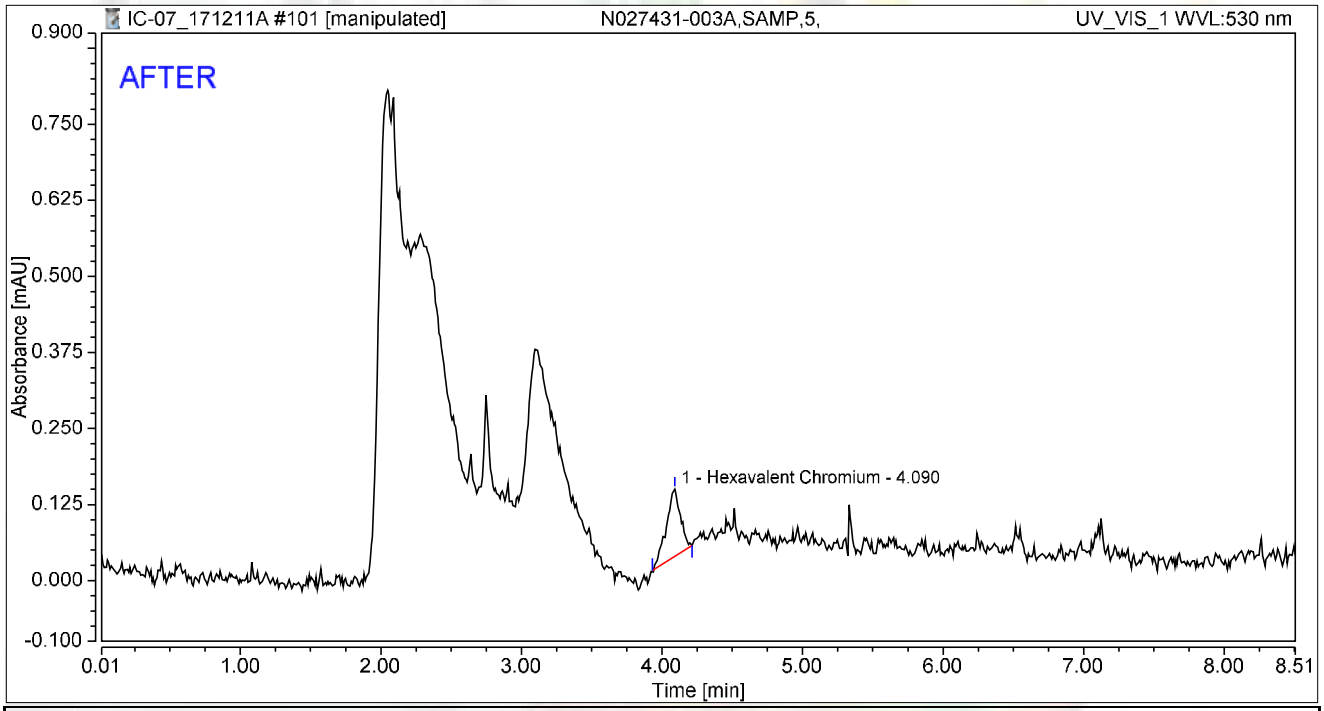
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.283	1.894	100.00	100.00	1.1274
Total:			**0.283**	**1.894**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-003A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.013	0.111	100.00	100.00	0.0510
Total:			**0.013**	**0.111**	**100.00**	**100.00**	

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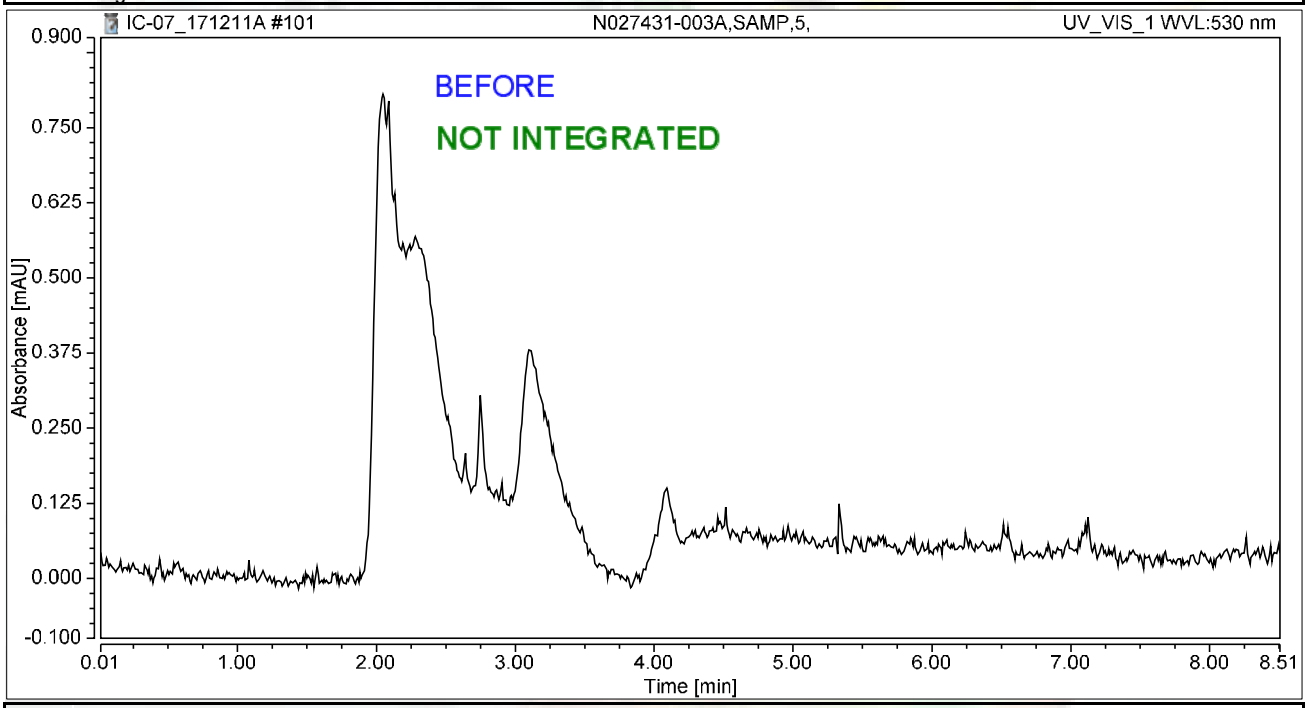
Chromatogram and Results

Injection Details

Injection Name:	**N027431-003A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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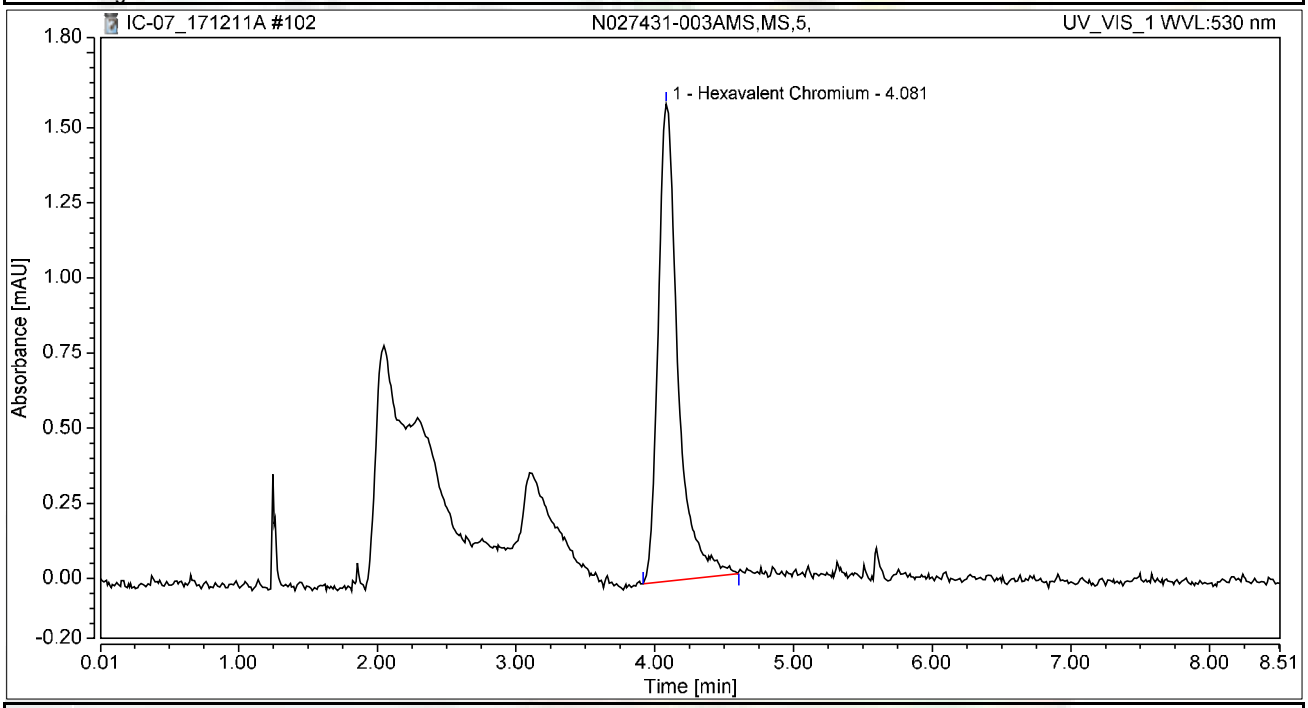
Chromatogram and Results

Injection Details

Injection Name:	**N027431-003AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

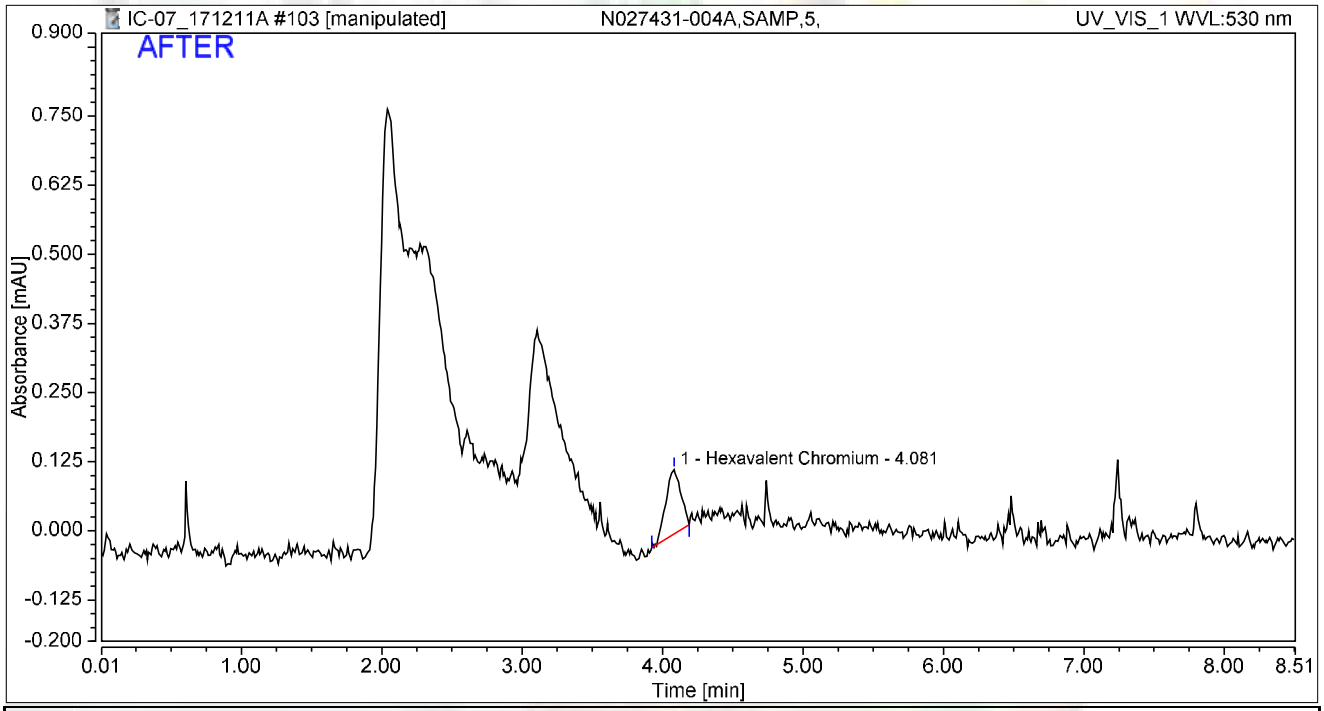
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.264	1.589	100.00	100.00	1.0512
Total:			**0.264**	**1.589**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.014	0.117	100.00	100.00	0.0571
Total:			**0.014**	**0.117**	**100.00**	**100.00**	

rba 12/16/2017

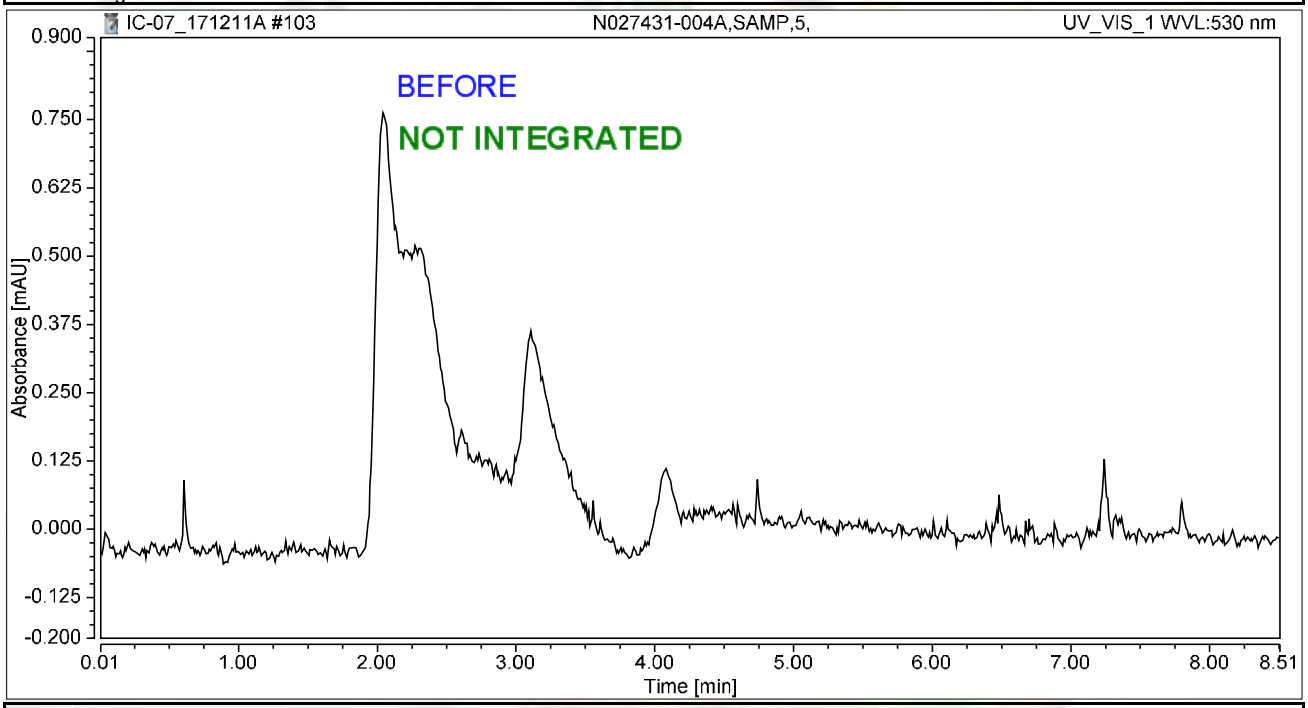
RB 12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027431-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

rba 12/16/2017

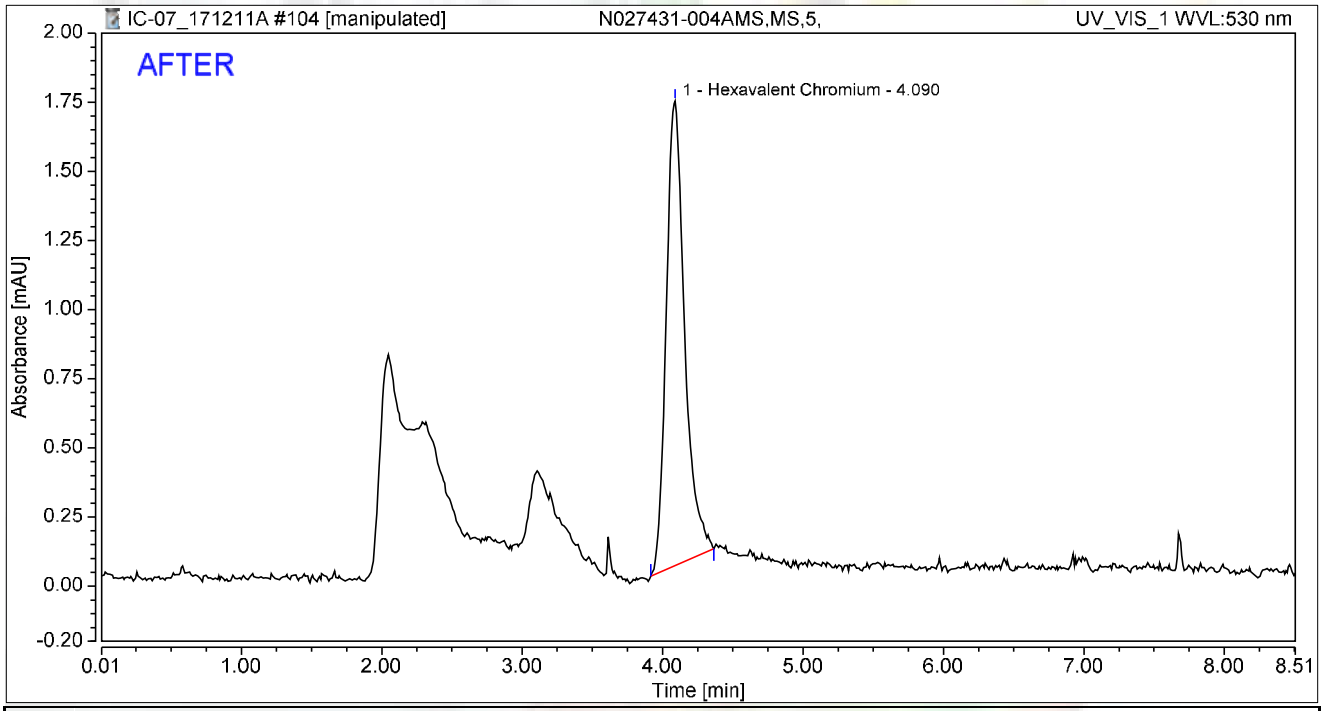
12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027431-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.256	1.679	100.00	100.00	1.0207
Total:			**0.256**	**1.679**	**100.00**	**100.00**	

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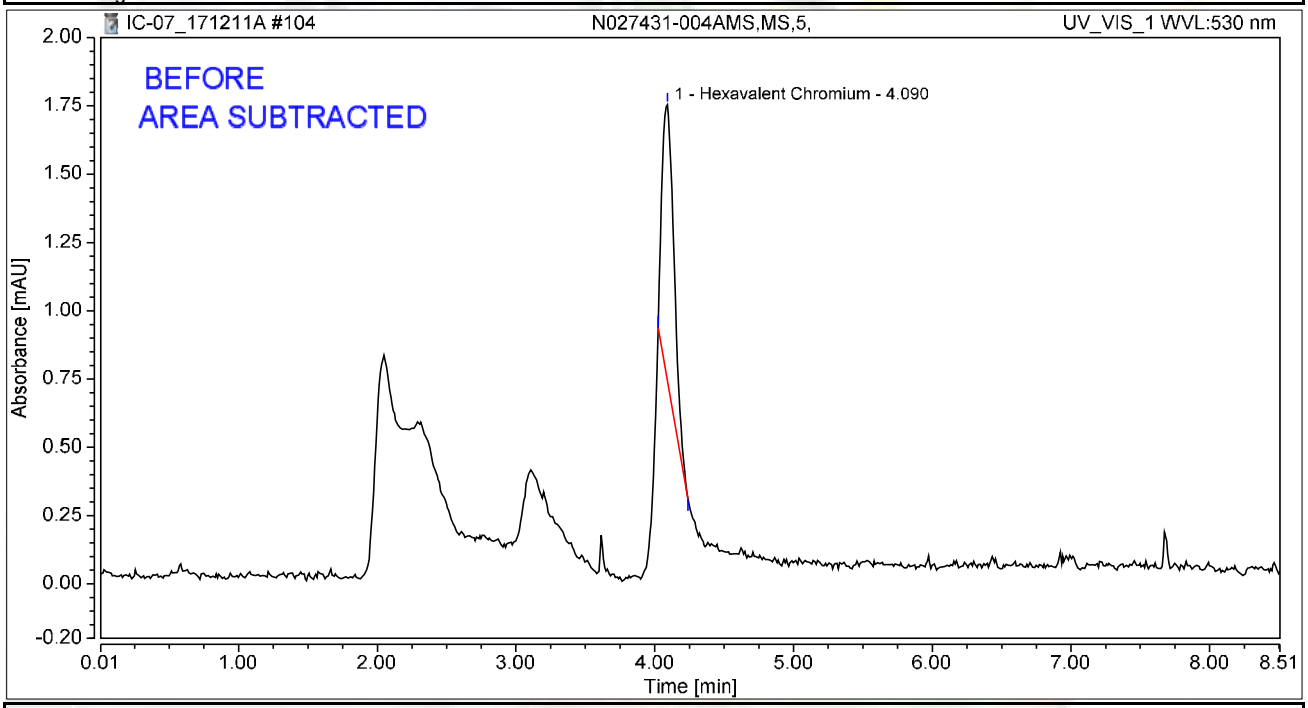
Chromatogram and Results

Injection Details

Injection Name:	**N027431-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.101	1.009	100.00	100.00	0.4041
Total:			**0.101**	**1.009**	**100.00**	**100.00**	

rba 12/16/2017

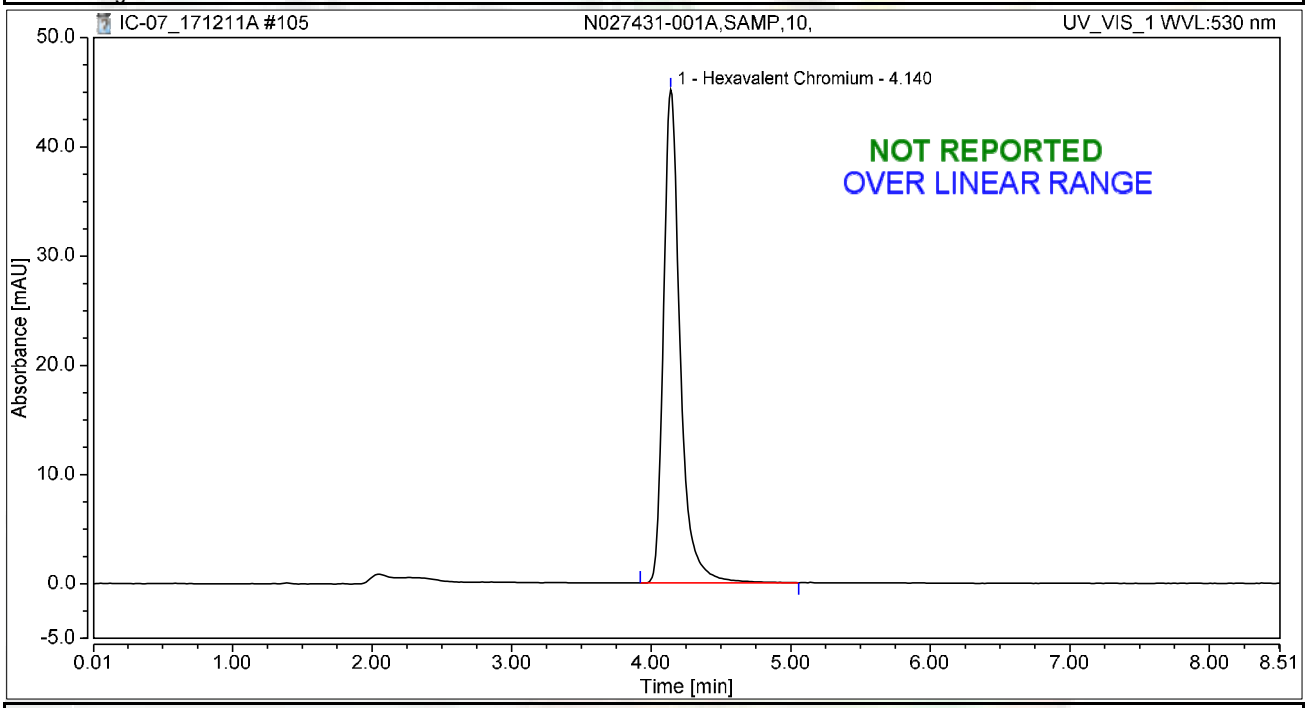
12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027431-001A,SAMP,10,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 00:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	6.271	45.157	100.00	100.00	24.9758
Total:			**6.271**	**45.157**	**100.00**	**100.00**	

rba 12/16/2017

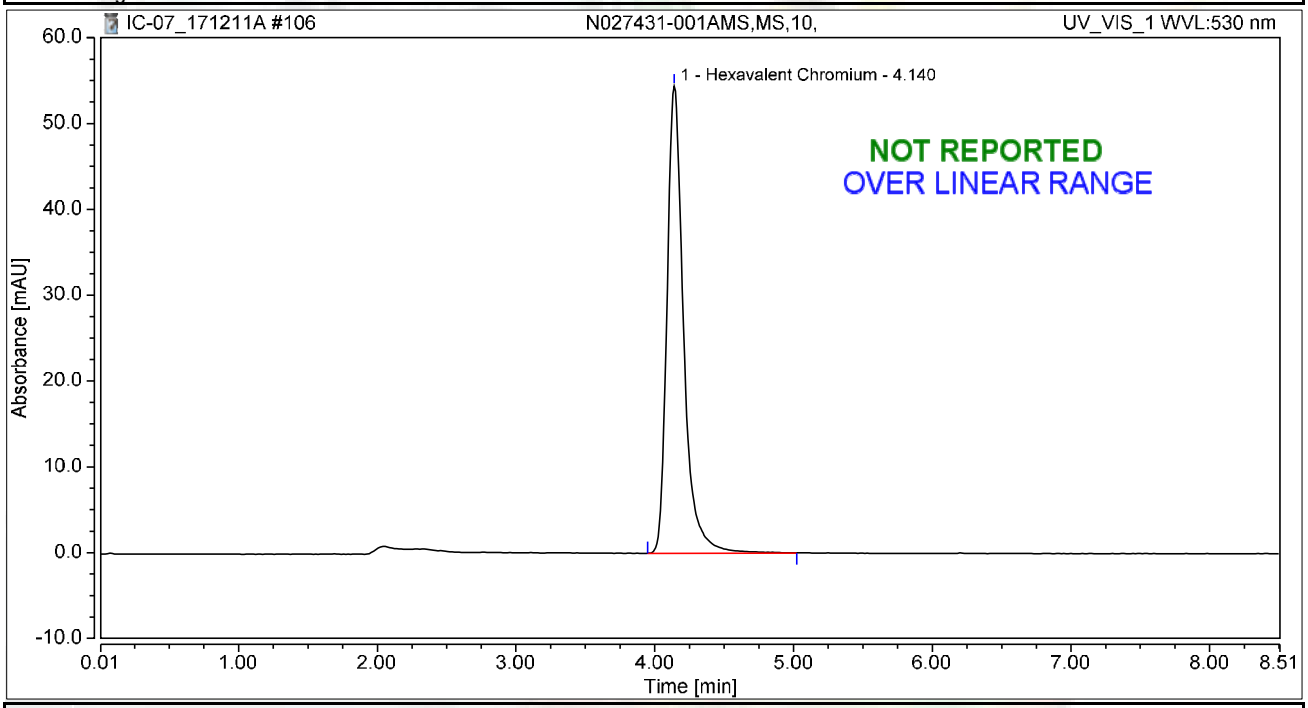
RB 12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027431-001AMS,MS,10,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 00:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	7.562	54.427	100.00	100.00	30.1165
Total:			**7.562**	**54.427**	**100.00**	**100.00**	

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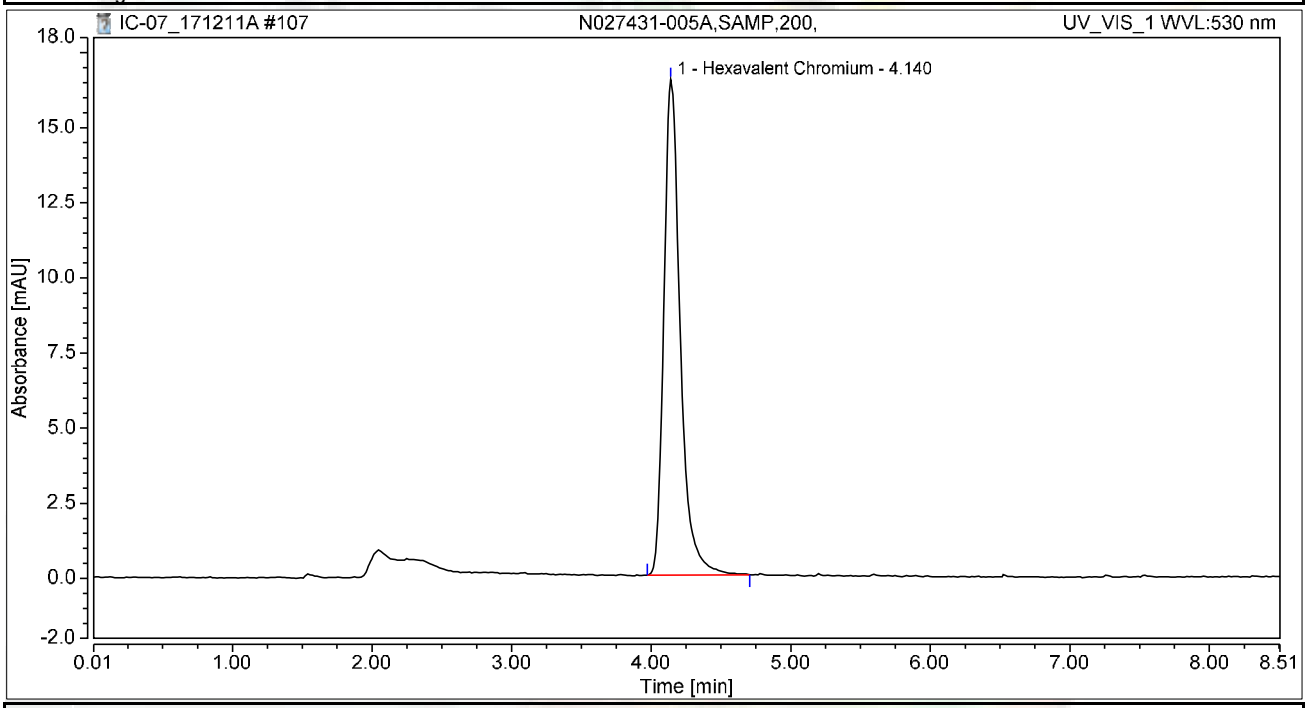
Chromatogram and Results

Injection Details

Injection Name:	**N027431-005A,SAMP,200,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 00:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

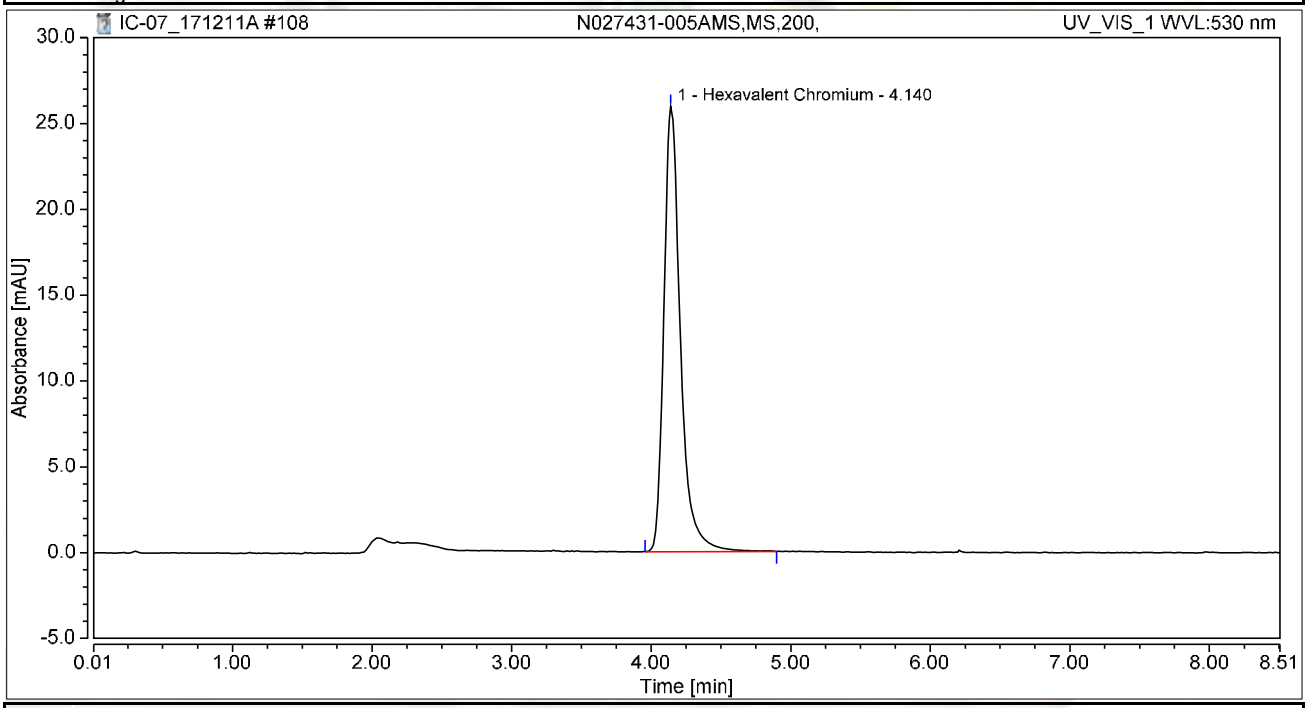
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.258	16.507	100.00	100.00	8.9923
Total:			**2.258**	**16.507**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-005AMS,MS,200,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 00:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

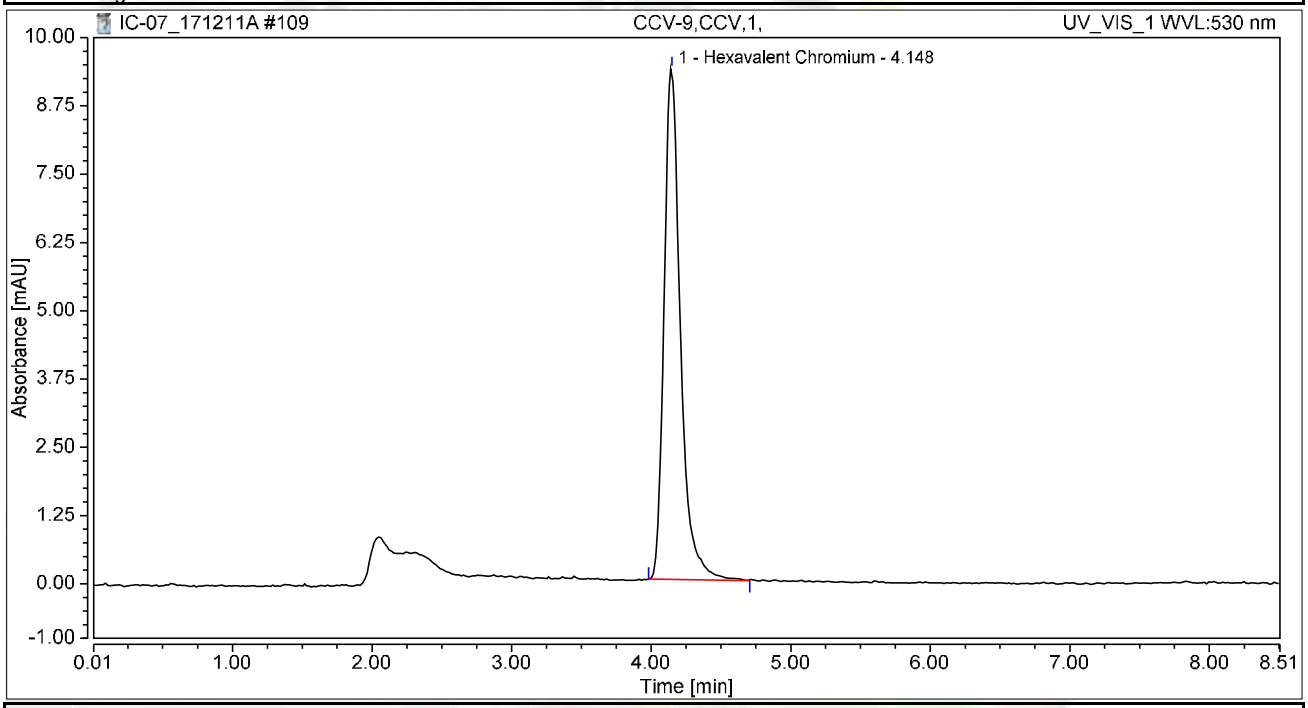
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	3.571	25.942	100.00	100.00	14.2232
Total:			**3.571**	**25.942**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-9,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 00:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

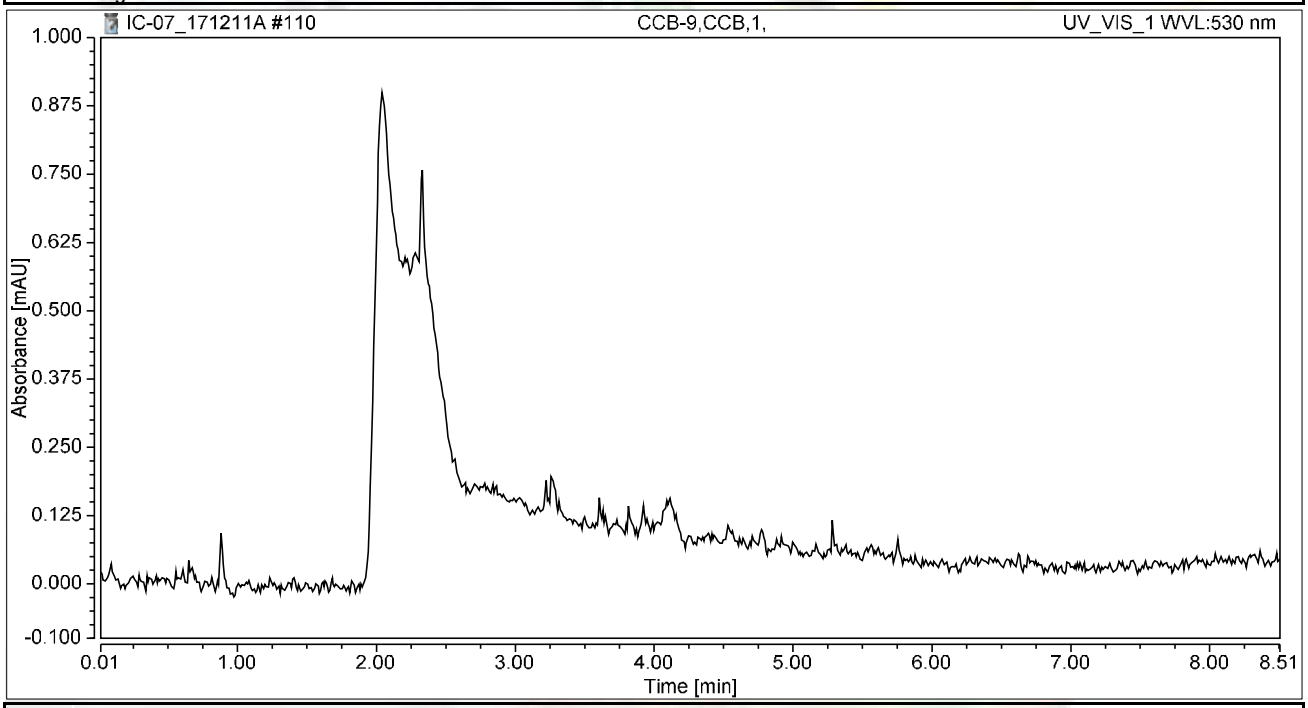
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.274	9.350	100.00	100.00	5.0724
Total:			**1.274**	**9.350**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-9,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 00:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

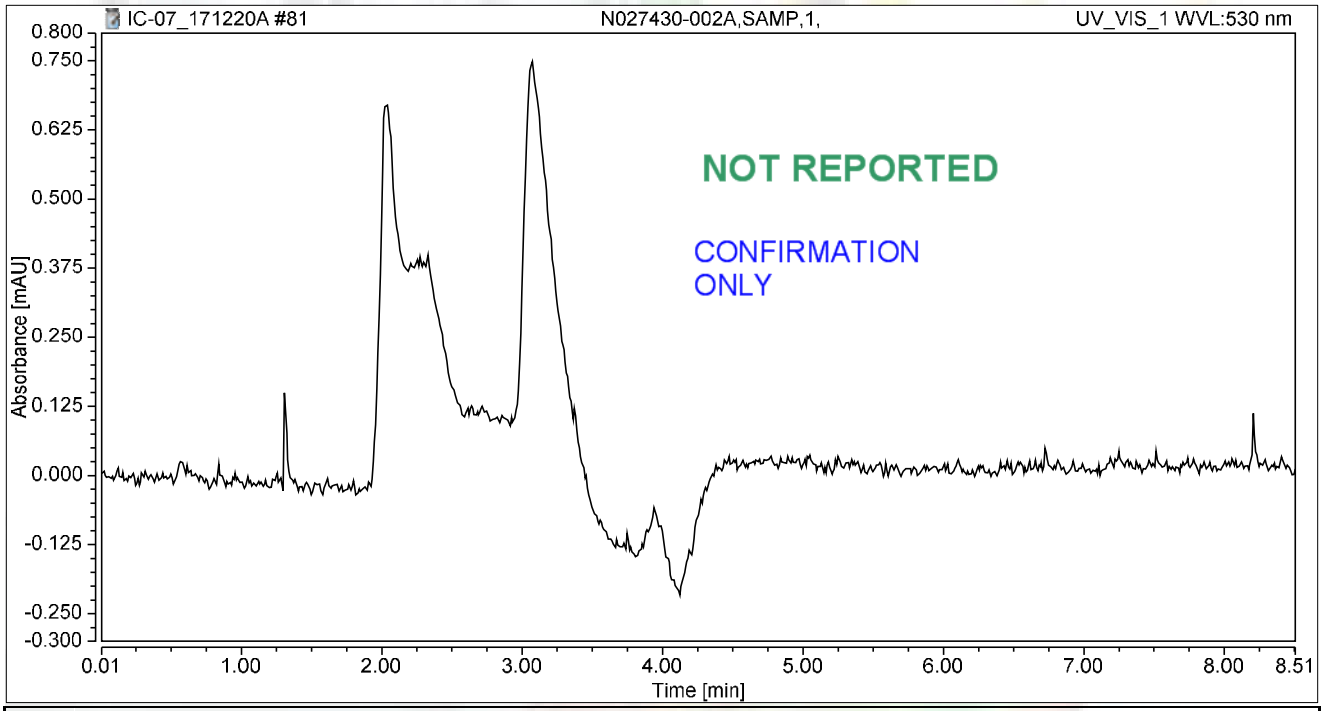
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 20:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

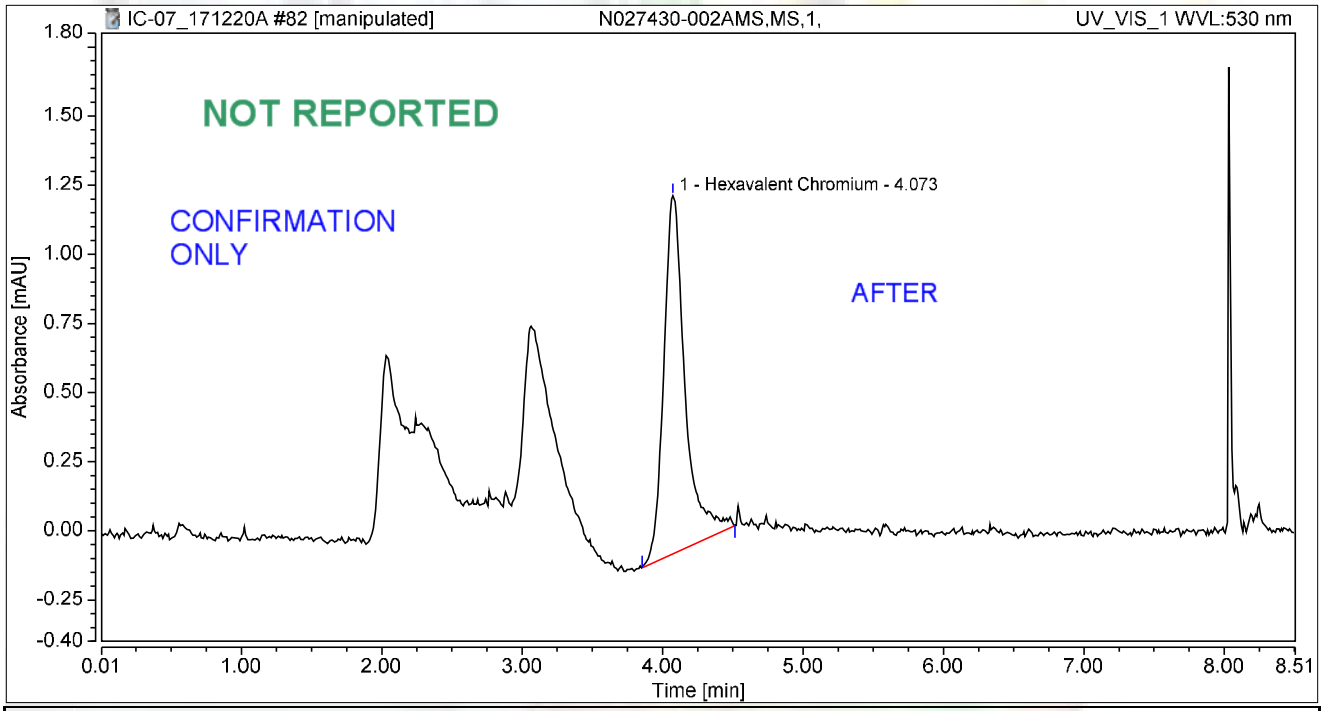
rba 12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027430-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 20:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	0.229	1.296	100.00	100.00	0.9101
Total:			**0.229**	**1.296**	**100.00**	**100.00**	

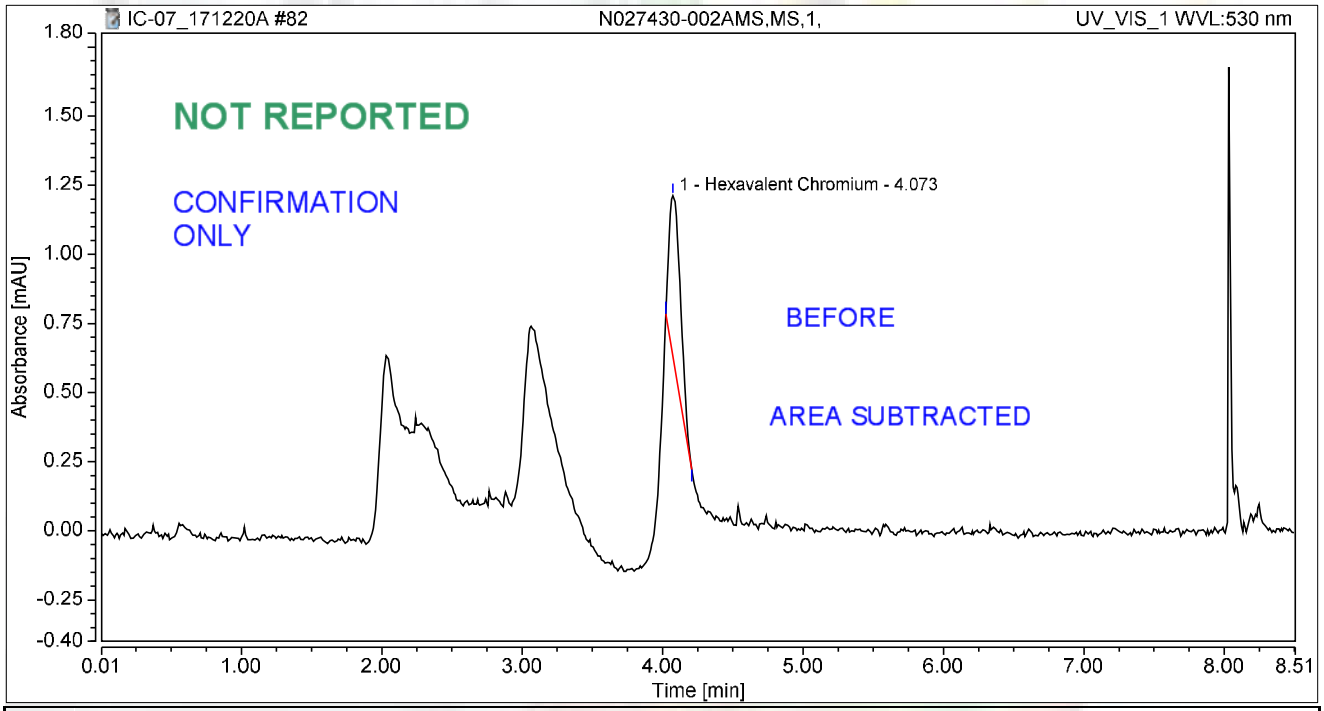
rba 12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027430-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 20:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	0.057	0.581	100.00	100.00	0.2283
Total:			**0.057**	**0.581**	**100.00**	**100.00**	

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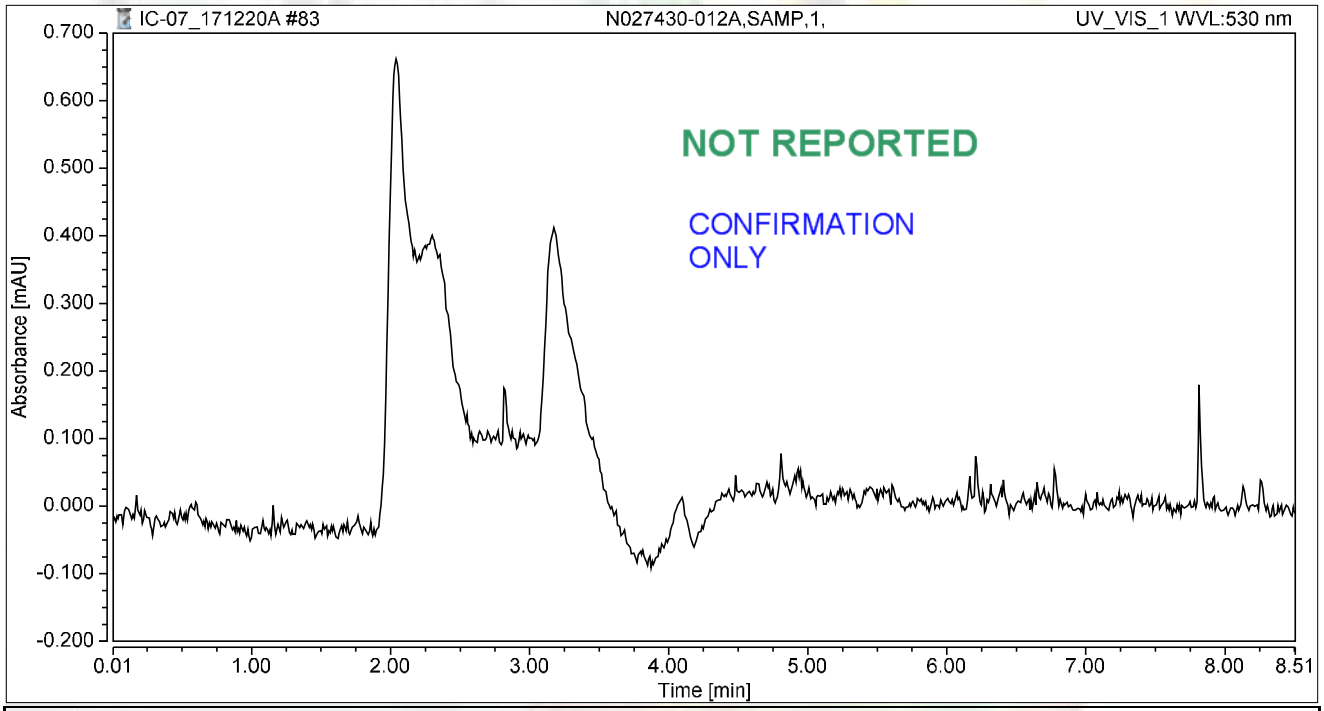
Chromatogram and Results

Injection Details

Injection Name:	**N027430-012A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 20:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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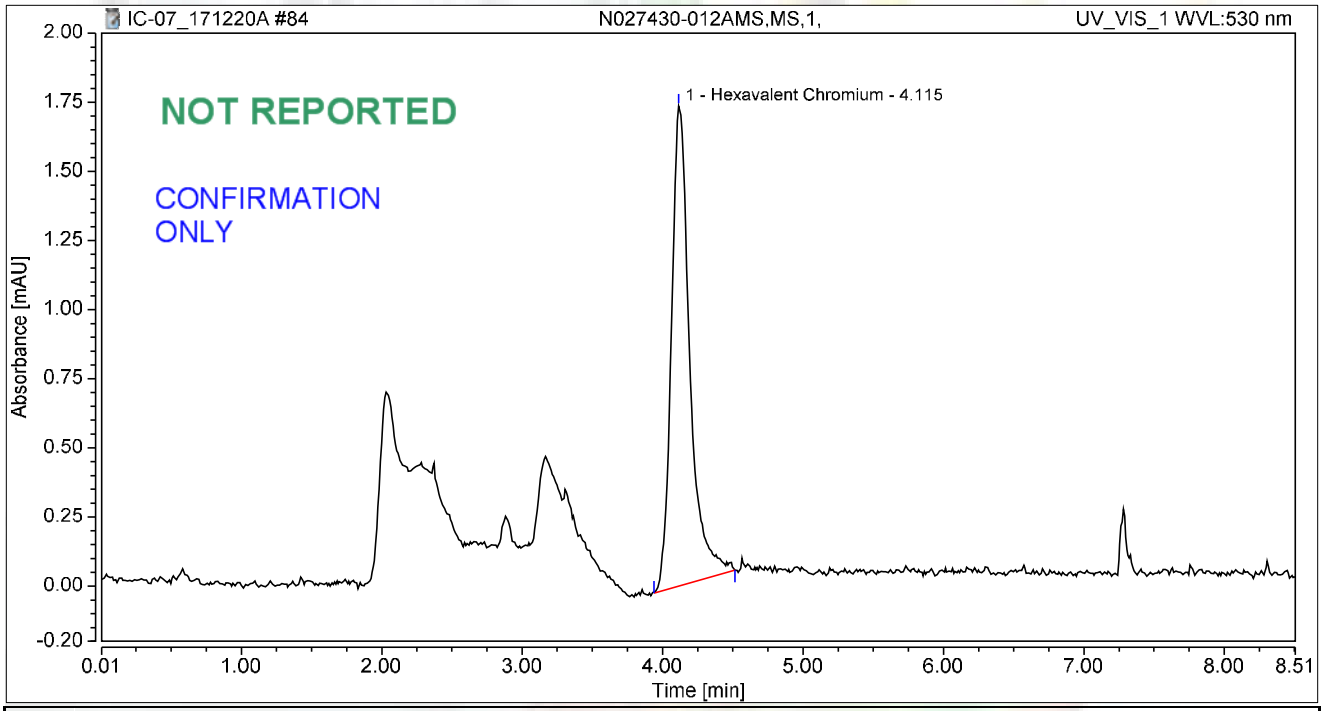
Chromatogram and Results

Injection Details

Injection Name:	**N027430-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 20:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.265	1.736	100.00	100.00	1.0534
Total:			**0.265**	**1.736**	**100.00**	**100.00**	

rba 12/21/2017

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120816 **Analyst:** LSR

ASSET #: N027430 **Date Analyzed:** 12/14/2017

Method: EPA 2320

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X			X		
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Silvia Ramit Date: 12/21/2017

2nd Level Reviewer RB 12/22/2017 Date:

SAMPLE CALCULATION

Sample ID: **N027430-002C @ pH 8.00**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (12.45 mL)

= **0.02008 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (1.90) (0.02008 N) (1) * 1000

= 38.1520 mg**/L**

Reporting results in two significant figures,

= **38 mg/L** as CaCO3

Julia Ramit 12/21/2017

RLB 12/22/2017

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02008 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (1.90 mL) (0.02008) (1) * 1000

= 38.1520 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 38.1520 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **38 mg/L**

Julia Ramit 12/21/2017

RLB 12/22/2017

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.69	50	0.00	0.050	MBLK
LCS-1	8.77	50	0.10	4.90	LCS
N027430-002C	8.00	50	0.00	1.90	SAMP
N027430-004C	7.77	50	0.00	22.70	SAMP
N027430-006C	7.68	50	0.00	10.60	SAMP
N027430-008C	7.61	50	0.00	13.70	SAMP
N027430-012C	7.96	50	0.00	20.70	SAMP
N027430-013C	7.59	50	0.00	6.20	SAMP
N027430-014C	7.69	50	0.00	2.90	SAMP
N027430-015C	7.58	50	0.00	2.95	SAMP
N027430-016C	8.21	50	0.00	2.20	SAMP
N027430-017C	8.21	50	0.00	2.35	SAMP
N027430-018C	7.75	50	0.00	2.20	SAMP
N027430-020C	7.63	50	0.00	8.20	SAMP
N027431-001C	7.76	50	0.00	4.70	SAMP
N027431-002C	7.61	50	0.00	4.95	SAMP
N027431-003C	7.61	50	0.00	2.90	SAMP
N027431-004C	7.65	50	0.00	3.00	SAMP
N027431-005C	7.96	50	0.00	5.20	SAMP
N027431-006C	7.60	50	0.00	4.90	SAMP
N027459-001E	7.60	50	0.00	3.90	SAMP
N027459-002E	7.72	50	0.00	2.45	SAMP
N027430-002CDDUP	8.00	50	0.00	1.90	DUP
N027431-002CMS	8.23	50	0.00	9.80	MS
N027431-002CMSD	8.24	50	0.00	9.80	MSD

Standardization:

Spike amt:	**5**	ml
Titrant used:	**12.45**	ml
N H2SO4	**0.02008**	Normal
Date Analyzed:	**12/14/17**	
Time:	**8:15 AM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-161205A**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R171211A**	

Silvia Ramit 12/21/2017

RLB 12/22/2017

Date Analyzed:	12/14/17		Reagents:					Standardization:					P = 0
Time Started:	8:15 AM			Sodium Carbonate:		CINV-161205A			Spike amt:	5	mL		P < 1/2 T
Analyzed By:	LSR			Hydrochloric Acid:		0			Titrant used:	12.45	mL		P = 1/2 T
				Sulfuric Acid:		R171211A							P > 1/2 T
									N H2SO4	0.02008	N		P = T

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.69				0.02008	0.00	0.05	0.05	1	0.00	1.00	
LCS-1	50	8.77				0.02008	0.10	4.80	4.90	1	2.01	98.39	
N027430-002C	50	8				0.02008	0.00	1.90	1.90	1	0.00	38.15	
N027430-004C	50	7.77				0.02008	0.00	22.70	22.70	1	0.00	455.82	
N027430-006C	50	7.68				0.02008	0.00	10.60	10.60	1	0.00	212.85	
N027430-008C	50	7.61				0.02008	0.00	13.70	13.70	1	0.00	275.10	
N027430-012C	50	7.96				0.02008	0.00	20.70	20.70	1	0.00	415.66	
N027430-013C	50	7.59				0.02008	0.00	6.20	6.20	1	0.00	124.50	
N027430-014C	50	7.69				0.02008	0.00	2.90	2.90	1	0.00	58.23	
N027430-015C	50	7.58				0.02008	0.00	2.95	2.95	1	0.00	59.24	
N027430-016C	50	8.21				0.02008	0.00	2.20	2.20	1	0.00	44.18	
N027430-017C	50	8.21				0.02008	0.00	2.35	2.35	1	0.00	47.19	
N027430-018C	50	7.75				0.02008	0.00	2.20	2.20	1	0.00	44.18	
N027430-020C	50	7.63				0.02008	0.00	8.20	8.20	1	0.00	164.66	
N027431-001C	50	7.76				0.02008	0.00	4.70	4.70	1	0.00	94.38	
N027431-002C	50	7.61				0.02008	0.00	4.95	4.95	1	0.00	99.40	
N027431-003C	50	7.61				0.02008	0.00	2.90	2.90	1	0.00	58.23	
N027431-004C	50	7.65				0.02008	0.00	3.00	3.00	1	0.00	60.24	
N027431-005C	50	7.96				0.02008	0.00	5.20	5.20	1	0.00	104.42	
N027431-006C	50	7.6				0.02008	0.00	4.90	4.90	1	0.00	98.39	
N027459-001E	50	7.6				0.02008	0.00	3.90	3.90	1	0.00	78.31	
N027459-002E	50	7.72				0.02008	0.00	2.45	2.45	1	0.00	49.20	
N027430-002CDD	50	8				0.02008	0.00	1.90	1.90	1	0.00	38.15	
N027431-002CMS	50	8.23				0.02008	0.00	9.80	9.80	1	0.00	196.79	
N027431-002CMS	50	8.24				0.02008	0.00	9.80	9.80	1	0.00	196.79	

Julia Ramit 12/21/2017

RLB 12/22/2017

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	12/14/17
Time:	8:15 AM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.00	1.00	1.00		P = 0
LCS-1	0.00	4.02	94.38	98.39	98.39		P < 1/2 T
N027430-002C	0.00	0.00	38.15	38.15	38.15		P = 0
N027430-004C	0.00	0.00	455.82	455.82	455.82		P = 0
N027430-006C	0.00	0.00	212.85	212.85	212.85		P = 0
N027430-008C	0.00	0.00	275.10	275.10	275.10		P = 0
N027430-012C	0.00	0.00	415.66	415.66	415.66		P = 0
N027430-013C	0.00	0.00	124.50	124.50	124.50		P = 0
N027430-014C	0.00	0.00	58.23	58.23	58.23		P = 0
N027430-015C	0.00	0.00	59.24	59.24	59.24		P = 0
N027430-016C	0.00	0.00	44.18	44.18	44.18		P = 0
N027430-017C	0.00	0.00	47.19	47.19	47.19		P = 0
N027430-018C	0.00	0.00	44.18	44.18	44.18		P = 0
N027430-020C	0.00	0.00	164.66	164.66	164.66		P = 0
N027431-001C	0.00	0.00	94.38	94.38	94.38		P = 0
N027431-002C	0.00	0.00	99.40	99.40	99.40		P = 0
N027431-003C	0.00	0.00	58.23	58.23	58.23		P = 0
N027431-004C	0.00	0.00	60.24	60.24	60.24		P = 0
N027431-005C	0.00	0.00	104.42	104.42	104.42		P = 0
N027431-006C	0.00	0.00	98.39	98.39	98.39		P = 0
N027459-001E	0.00	0.00	78.31	78.31	78.31		P = 0
N027459-002E	0.00	0.00	49.20	49.20	49.20		P = 0
N027430-002CDDUP	0.00	0.00	38.15	38.15	38.15		P = 0
N027431-002CMS	0.00	0.00	196.79	196.79	196.79		P = 0
N027431-002CMSD	0.00	0.00	196.79	196.79	196.79		P = 0

Lilia Ramit 12/21/2017

RLB 12/22/2017

Alkalinity Preparation and Runlog

Book #8

Matrix: H2O

Date Extracted: 12/14/17
Time Extracted:
Extracted By: LSR

Date Analyzed: 12/14/17
Time Analyzed: 815
Analyzed By: LSR

Reagent Lot # / Reagent ID
Sodium Carbonate: CANV160205A
Hydrochloric Acid: —
Sulfuric Acid: R171211A
Sodium Bicarbonate: CANV150601A

pH meter Calibration:
SLOPE: 98.7%
pH 7 - 7.03 CANV170615F
4 - 4.03 170615E
10 - 10.01 170322D

	Sample ID	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50mL	10.61	MST171211A	5mL	0.05N	-	-	12.50	50/50	$N_{H_2SO_4} = \frac{(1.65g/L)(5mL)}{(53)(V\ titrant)}$	= 0.020000
	#2	↓	10.58	↓	↓	↓	-	-	12.40	↓		= 0.020129
1)	MBLK	50mL	5.69	-	-	-	0.02008	0	0.05	50/50		Ave: 0.020065
2)	LCS		8.77	MST171211B	1mL	0.05N		0.10	4.90			
3)	ND27450-2C		8.00					0	1.90			
4)	4C		7.77					0	22.70			
5)	6C		7.68					0	10.60			
6)	8C		7.61					0	13.70			
7)	12C		7.96					0	20.70			
8)	13C		7.59					0	6.20			
9)	14C		7.69					0	2.90			
10)	15C		7.58					0	2.95		$P = \frac{(V\ pH\ 8.3)(N_{H_2SO_4})(50,000)}{V_{SX}}$	
11)	16C		8.21					0	2.20			
12)	17C		8.21					0	2.35			
13)	18C		7.75					0	2.20		$T = \frac{(V\ pH\ 4.5)(N_{H_2SO_4})(50,000)}{V_{SX}}$	
14)	20C		7.63					0	8.20			
15)	ND27431-1C		7.76					0	4.70			
16)	2C		7.61					0	4.95			
17)	3C		7.61					0	2.90			
18)	4C		7.65					0	3.00			
19)	5C		7.96					0	5.20			
20)	6C		7.60					0	4.90			
	MS ND27459-1E		7.60					0	3.90			
	MSD ↓ 2E		7.72					0	2.45			
	LCS ND27450-2C DUP		8.00					0	1.90			
	ND27431-2C MS		8.23	MST171211B	1mL	0.05N		0	9.80			
	↓ 2C MSD		8.24	↓	↓	↓		0	9.80			

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120771
ASSET #: N027430

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/12/2017

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.		X			X	
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

%Rec of Bromide in N027430-004C MS failed, low bias. However, LCS passed criteria.
Several samples were diluted due to precipitate formed when mixed with eluent.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/17/2017

2nd Level Reviewer: RB 12/22/2017 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120803
ASSET #: N027430 / N027431

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/13/2017

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.		X			X	
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

%Rec of Bromide in N027431-005CMS/MSD failed. However, LCS passed criteria.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/17/2017

2nd Level Reviewer: RB 12/22/2017 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120854
ASSET #: N027430

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/14/2017

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/19/2017

2nd Level Reviewer: RB 12/22/2017 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120937
ASSET #: N027430 / N027485

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/18/2017

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/20/2017

2nd Level Reviewer: RLB 12/22/2017 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Chloride concentration, in mg/L, in the orignal sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N027430-002C** concentration in mg/L is calculated as follows:

Chloride, mg/L = 4.341 * 2000

= 8682

Reporting result in two significant values,

Chloride, mg/L = 8700

rba 12/20/2017

12/22/2017

ANALYSIS RUN LOG

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 25
Created: 11/29/2017 9:35:17 AM by IC-05
Last Update: 11/30/2017 12:33:04 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	ICV,ICV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	ICB,ICB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	N027210-002A,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027232-001A,SAMP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027210-002A,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027210-002ADUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027210-002AMS,MS,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027210-002AMSD,MSD,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027232-001AMS,MS,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027232-001AMSD,MSD,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	N027232-001ADUP,DUP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished



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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 25
Created: 11/29/2017 9:35:17 AM by IC-05
Last Update: 11/30/2017 12:33:04 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	ICV,ICV,1	11/29/2017 12:22:10 PM	ICV
10	ICB,ICB,1	11/29/2017 12:37:28 PM	ICB
11	MB-H2O,MBLK,1	11/29/2017 12:52:47 PM	METHOD BLANK
12	LCS-H2O,LCS,1	11/29/2017 1:08:05 PM	LCS
13	N027210-002A,SAMP,10	11/29/2017 1:23:23 PM	SAMP,1>10mL
14	N027232-001A,SAMP,2	11/29/2017 1:38:41 PM	SAMP,5>10mL
15	N027210-002A,SAMP,50	11/29/2017 2:44:14 PM	SAMP,0.2>10mL
16	N027210-002ADUP,DUP,50	11/29/2017 2:59:31 PM	DUP,0.2>10mL
17	N027210-002AMS,MS,10	11/29/2017 3:14:50 PM	MS,0.2>10mL
18	N027210-002AMSD,MSD,10	11/29/2017 3:30:07 PM	MSD,0.2>10mL
19	N027232-001AMS,MS,2	11/29/2017 3:45:25 PM	MS,5>10mL
20	N027232-001AMSD,MSD,2	11/29/2017 4:00:43 PM	MSD,5>10mL
21	CCV-1,CCV,1	11/29/2017 4:16:01 PM	CCV
22	CCB-1,CCB,1	11/29/2017 4:31:19 PM	CCB
23	N027232-001ADUP,DUP,2	11/29/2017 4:46:38 PM	DUP,5>10mL
24	CCV-2,CCV,1	11/29/2017 5:01:56 PM	CCV
25	CCB-2,CCB,1	11/29/2017 5:17:14 PM	CCB

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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 80
Created: 12/12/2017 8:35:21 AM by IC-05
Last Update: 12/13/2017 1:26:07 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027482-001A,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027482-003A,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027482-002A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027482-004A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027482-001ADUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027482-003A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027482-004AMS,MS,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	N027482-004AMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	N027482-004A,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	N027482-004ADUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
26	N027482-004AMS,MS,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
27	N027482-004AMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
28	N027482-001A,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
29	N027482-002A,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
30	N027482-003A,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
31	N027482-002A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
32	N027482-004ADUP,DUP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
33	N027482-001A,SAMP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
34	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
35	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
36	N027405-001D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
37	N027429-007D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
38	N027429-012D,SAMP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
39	N027429-007DMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
40	N027429-007DMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
41	N027429-012DMS,MS,2	Unknown	1000.0	Anions Default	Anions_171129	Finished

rba 12/17/2017

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 80
Created: 12/12/2017 8:35:21 AM by IC-05
Last Update: 12/13/2017 1:26:07 AM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	BLANK,BLANK,1	12/12/2017 8:36:15 AM	BLANK
10	CCV-1,CCV,1	12/12/2017 8:51:34 AM	CCV
11	CCB-1,CCB,1	12/12/2017 9:06:51 AM	CCB
12	MB-H2O,MBLK,1	12/12/2017 9:22:09 AM	METHOD BLANK
13	LCS-H2O,LCS,1	12/12/2017 9:37:27 AM	LCS
14	N027482-001A,SAMP,1	12/12/2017 10:04:10 AM	SAMP,10mL
15	N027482-003A,SAMP,1	12/12/2017 10:19:28 AM	SAMP,10mL
16	N027482-002A,SAMP,5	12/12/2017 10:34:46 AM	SAMP,2>10mL
17	N027482-004A,SAMP,5	12/12/2017 10:50:04 AM	SAMP,2>10mL
18	N027482-001ADUP,DUP,1	12/12/2017 11:05:22 AM	DUP,10mL
19	N027482-003A,SAMP,5	12/12/2017 11:20:40 AM	SAMP,2>10mL
20	N027482-004AMS,MS,5	12/12/2017 11:35:58 AM	MS,2>10mL
21	N027482-004AMSD,MSD,5	12/12/2017 11:51:16 AM	MSD,2>10mL
22	CCV-2,CCV,1	12/12/2017 12:06:33 PM	CCV
23	CCB-2,CCB,1	12/12/2017 12:21:52 PM	CCB
24	N027482-004A,SAMP,50	12/12/2017 12:37:11 PM	SAMP,0.2>10mL
25	N027482-004ADUP,DUP,50	12/12/2017 12:52:29 PM	DUP,0.2>10mL
26	N027482-004AMS,MS,50	12/12/2017 1:07:47 PM	MS,0.2>10mL
27	N027482-004AMSD,MSD,50	12/12/2017 1:23:05 PM	MSD,0.2>10mL
28	N027482-001A,SAMP,50	12/12/2017 1:38:23 PM	SAMP,0.2>10mL
29	N027482-002A,SAMP,100	12/12/2017 2:06:39 PM	SAMP,0.5>10mL
30	N027482-003A,SAMP,100	12/12/2017 2:21:58 PM	SAMP,0.1>10mL
31	N027482-002A,SAMP,5	12/12/2017 2:37:15 PM	SAMP,2>10mL
32	N027482-004ADUP,DUP,5	12/12/2017 2:52:33 PM	DUP,2>10mL
33	N027482-001A,SAMP,2	12/12/2017 3:07:51 PM	SAMP,5>10mL
34	CCV-3,CCV,1	12/12/2017 3:23:10 PM	CCV
35	CCB-3,CCB,1	12/12/2017 3:38:27 PM	CCB
36	N027405-001D,SAMP,1	12/12/2017 3:53:45 PM	SAMP,10mL
37	N027429-007D,SAMP,1	12/12/2017 4:09:03 PM	SAMP,10mL
38	N027429-012D,SAMP,2	12/12/2017 4:24:21 PM	SAMP,5>10mL
39	N027429-007DMS,MS,1	12/12/2017 4:45:44 PM	SAMP,0.5>10mL
40	N027429-007DMSD,MSD,1	12/12/2017 5:01:02 PM	SAMP,0.005>10mL
41	N027429-012DMS,MS,2	12/12/2017 5:16:20 PM	SAMP,0.05>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 80
Created: 12/12/2017 8:35:21 AM by IC-05
Last Update: 12/13/2017 1:26:07 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027429-007DDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
43	N027429-008D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
44	N027429-005D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
45	N027429-006D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
46	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
47	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
48	N027429-009D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
49	N027429-010D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
50	N027429-013D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
51	N027429-014D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
52	N027429-015D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
53	N027429-016D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
54	N027429-017D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
55	N027429-018D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
56	N027429-020D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
57	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
58	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
59	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
60	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
61	N027430-006C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
62	N027430-006CDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
63	N027430-006CMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
64	N027430-006CMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
65	N027430-004C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
66	N027430-004CMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
67	N027430-012C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
68	N027430-002C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
69	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
70	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
71	N027430-008C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
72	N027430-013C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
73	N027430-014C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
74	N027430-016C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
75	N027430-017C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
76	N027430-015C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
77	N027430-018C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
78	N027430-020C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
79	CCV-7,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
80	CCB-7,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 80
Created: 12/12/2017 8:35:21 AM by IC-05
Last Update: 12/13/2017 1:26:07 AM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027429-007DDUP,DUP,1	12/12/2017 5:31:38 PM	DUP,10mL
43	N027429-008D,SAMP,1	12/12/2017 5:46:56 PM	SAMP,10mL
44	N027429-005D,SAMP,5	12/12/2017 6:02:14 PM	SAMP,2>10mL
45	N027429-006D,SAMP,5	12/12/2017 6:17:32 PM	SAMP,2>10mL
46	CCV-4,CCV,1	12/12/2017 6:32:50 PM	CCV
47	CCB-4,CCB,1	12/12/2017 6:48:08 PM	CCB
48	N027429-009D,SAMP,5	12/12/2017 7:03:25 PM	SAMP,2>10mL
49	N027429-010D,SAMP,10	12/12/2017 7:18:43 PM	SAMP,1>10mL
50	N027429-013D,SAMP,5	12/12/2017 7:34:01 PM	SAMP,2>10mL
51	N027429-014D,SAMP,5	12/12/2017 7:49:19 PM	SAMP,2>10mL
52	N027429-015D,SAMP,5	12/12/2017 8:04:37 PM	SAMP,2>10mL
53	N027429-016D,SAMP,5	12/12/2017 8:19:55 PM	SAMP,2>10mL
54	N027429-017D,SAMP,5	12/12/2017 8:35:12 PM	SAMP,2>10mL
55	N027429-018D,SAMP,5	12/12/2017 8:50:31 PM	SAMP,2>10mL
56	N027429-020D,SAMP,5	12/12/2017 9:05:49 PM	SAMP,2>10mL
57	CCV-5,CCV,1	12/12/2017 9:21:06 PM	CCV
58	CCB-5,CCB,1	12/12/2017 9:36:24 PM	CCB
59	LCS-2,LCS,1	12/12/2017 9:51:42 PM	LCS
60	MB-2,MBLK,1	12/12/2017 10:07:01 PM	METHOD BLANK
61	N027430-006C,SAMP,1	12/12/2017 10:22:19 PM	SAMP,10mL
62	N027430-006CDUP,DUP,1	12/12/2017 10:37:37 PM	DUP,10mL
63	N027430-006CMS,MS,1	12/12/2017 10:52:55 PM	MS,10mL
64	N027430-006CMSD,MSD,1	12/12/2017 11:08:12 PM	MSD,10mL
65	N027430-004C,SAMP,1	12/12/2017 11:23:31 PM	SAMP,10mL
66	N027430-004CMS,MS,1	12/12/2017 11:38:48 PM	MS,10mL
67	N027430-012C,SAMP,1	12/12/2017 11:54:06 PM	SAMP,10mL
68	N027430-002C,SAMP,5	12/13/2017 12:09:24 AM	SAMP,2>10mL
69	CCV-6,CCV,1	12/13/2017 12:24:42 AM	CCV
70	CCB-6,CCB,1	12/13/2017 12:40:00 AM	CCB
71	N027430-008C,SAMP,5	12/13/2017 12:55:18 AM	SAMP,2>10mL
72	N027430-013C,SAMP,5	12/13/2017 1:10:36 AM	SAMP,2>10mL
73	N027430-014C,SAMP,5	12/13/2017 1:25:54 AM	SAMP,2>10mL
74	N027430-016C,SAMP,1	12/13/2017 1:41:11 AM	SAMP,10mL
75	N027430-017C,SAMP,1	12/13/2017 1:56:29 AM	SAMP,10mL
76	N027430-015C,SAMP,5	12/13/2017 2:11:47 AM	SAMP,2>10mL
77	N027430-018C,SAMP,5	12/13/2017 2:27:05 AM	SAMP,2>10mL
78	N027430-020C,SAMP,5	12/13/2017 2:42:23 AM	SAMP,2>10mL
79	CCV-7,CCV,1	12/13/2017 2:57:41 AM	CCV
80	CCB-7,CCB,1	12/13/2017 3:12:58 AM	CCB

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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 81
Created: 12/13/2017 9:09:27 AM by IC-05
Last Update: 12/13/2017 7:11:29 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	MB-SOIL,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	LCS-SOIL,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027418-001D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027418-002D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027418-001D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027418-002D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027418-001DDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027418-001DMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	N027418-001DMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	N027418-001DPS,PS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
26	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
27	N027518-001A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
28	N027510-001B,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
29	N027510-002B,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
30	N027510-003B,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
31	N027482-002A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
32	N027482-002AMS,MS,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
33	N027510-003BMS,MS,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
34	N027510-003BMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
35	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
36	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
37	N027510-003BDUP,DUP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
38	N027510-001B,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
39	N027510-001BDUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
40	N027510-001BMS,MS,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
41	N027510-001BMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_171129	Finished

rba 12/17/2017

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 81
Created: 12/13/2017 9:09:27 AM by IC-05
Last Update: 12/13/2017 7:11:29 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	BLANK,BLANK,1	12/13/2017 9:10:15 AM	BLANK
10	CCV-1,CCV,1	12/13/2017 9:25:33 AM	CCV
11	CCV-1,CCV,1	12/13/2017 9:40:50 AM	CCV
12	CCB-1,CCB,1	12/13/2017 9:56:08 AM	CCB
13	MB-SOIL,MBLK,1	12/13/2017 10:11:26 AM	METHOD BLANK
14	LCS-SOIL,LCS,1	12/13/2017 10:26:44 AM	LCS
15	N027418-001D,SAMP,10	12/13/2017 10:42:02 AM	SAMP,1>10mL
16	N027418-002D,SAMP,10	12/13/2017 10:57:20 AM	SAMP,1>10mL
17	N027418-001D,SAMP,1	12/13/2017 11:12:38 AM	SAMP,10mL
18	N027418-002D,SAMP,1	12/13/2017 11:27:56 AM	SAMP,10mL
19	N027418-001DDUP,DUP,1	12/13/2017 11:43:13 AM	DUP,10mL
20	N027418-001DMS,MS,1	12/13/2017 11:58:31 AM	MS,10mL
21	N027418-001DMSD,MSD,1	12/13/2017 12:13:49 PM	MSD,10mL
22	N027418-001DPS,PS,1	12/13/2017 12:29:07 PM	PS,10mL
23	CCV-2,CCV,1	12/13/2017 12:44:25 PM	CCV
24	CCB-2,CCB,1	12/13/2017 12:59:42 PM	CCB
25	MB-H2O,MBLK,1	12/13/2017 1:15:00 PM	METHOD BLANK
26	LCS-H2O,LCS,1	12/13/2017 1:30:18 PM	LCS
27	N027518-001A,SAMP,5	12/13/2017 1:45:36 PM	SAMP,2>10mL
28	N027510-001B,SAMP,5	12/13/2017 2:00:53 PM	SAMP,2>10mL
29	N027510-002B,SAMP,5	12/13/2017 2:16:11 PM	SAMP,2>10mL
30	N027510-003B,SAMP,5	12/13/2017 2:31:30 PM	SAMP,2>10mL
31	N027482-002A,SAMP,5	12/13/2017 2:46:48 PM	SAMP,2>10mL
32	N027482-002AMS,MS,5	12/13/2017 3:02:05 PM	MS,2>10mL
33	N027510-003BMS,MS,5	12/13/2017 3:17:23 PM	MS,2>10mL
34	N027510-003BMSD,MSD,5	12/13/2017 3:32:41 PM	MSD,2>10mL
35	CCV-3,CCV,1	12/13/2017 3:47:59 PM	CCV
36	CCB-3,CCB,1	12/13/2017 4:03:16 PM	CCB
37	N027510-003BDUP,DUP,5	12/13/2017 4:18:34 PM	DUP,2>10mL
38	N027510-001B,SAMP,50	12/13/2017 4:33:52 PM	SAMP,0.2>10mL
39	N027510-001BDUP,DUP,50	12/13/2017 4:49:10 PM	DUP,0.2>10mL
40	N027510-001BMS,MS,50	12/13/2017 5:04:27 PM	MS,0.2>10mL
41	N027510-001BMSD,MSD,50	12/13/2017 5:19:45 PM	MSD,0.2>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 81
Created: 12/13/2017 9:09:27 AM by IC-05
Last Update: 12/13/2017 7:11:29 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027510-002B,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
43	N027510-003B,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
44	N027431-005C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
45	N027431-005CMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
46	N027431-005CMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
47	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
48	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
49	N027431-001C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
50	N027431-001CDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
51	N027431-001CMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
52	N027431-001CMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
53	N027431-002C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
54	N027431-003C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
55	N027431-004C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
56	N027431-006C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
57	N027430-008C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
58	N027430-008CDUP,DUP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
59	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
60	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
61	N027430-008CMS,MS,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
62	N027430-008CMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
63	N027430-012C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
64	N027430-013C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
65	N027430-014C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
66	N027430-015C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
67	N027539-001C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
68	N027539-001C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
69	N027539-002C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
70	N027539-002C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
71	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
72	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
73	N027539-004C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
74	N027539-004C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
75	N027482-002A,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
76	N027482-002AMS,MS,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
77	N027482-002A,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
78	N027482-002AMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
79	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
80	CCV-7,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
81	CCB-7,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 81
Created: 12/13/2017 9:09:27 AM by IC-05
Last Update: 12/13/2017 7:11:29 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027510-002B,SAMP,100	12/13/2017 5:35:03 PM	SAMP,0.1>10mL
43	N027510-003B,SAMP,100	12/13/2017 5:50:22 PM	SAMP,0.1>10mL
44	N027431-005C,SAMP,1	12/13/2017 6:13:17 PM	SAMP,10mL
45	N027431-005CMS,MS,1	12/13/2017 6:28:35 PM	MS,10mL
46	N027431-005CMSD,MSD,1	12/13/2017 6:43:53 PM	MSD,10mL
47	CCV-4,CCV,1	12/13/2017 6:59:11 PM	CCV
48	CCB-4,CCB,1	12/13/2017 7:14:28 PM	CCB
49	N027431-001C,SAMP,1	12/13/2017 7:29:46 PM	SAMP,10mL
50	N027431-001CDUP,DUP,1	12/13/2017 7:45:04 PM	DUP,10mL
51	N027431-001CMS,MS,1	12/13/2017 8:00:22 PM	MS,10mL
52	N027431-001CMSD,MSD,1	12/13/2017 8:15:40 PM	MSD,10mL
53	N027431-002C,SAMP,5	12/13/2017 8:30:58 PM	SAMP,2>10mL
54	N027431-003C,SAMP,5	12/13/2017 8:46:16 PM	SAMP,2>10mL
55	N027431-004C,SAMP,5	12/13/2017 9:01:34 PM	SAMP,2>10mL
56	N027431-006C,SAMP,5	12/13/2017 9:16:51 PM	SAMP,2>10mL
57	N027430-008C,SAMP,5	12/13/2017 9:32:09 PM	SAMP,2>10mL
58	N027430-008CDUP,DUP,5	12/13/2017 9:47:27 PM	DUP,2>10mL
59	CCV-5,CCV,1	12/13/2017 10:02:45 PM	CCV
60	CCB-5,CCB,1	12/13/2017 10:18:02 PM	CCB
61	N027430-008CMS,MS,5	12/13/2017 10:33:20 PM	MS,2>10mL
62	N027430-008CMSD,MSD,5	12/13/2017 10:48:38 PM	MSD,2>10mL
63	N027430-012C,SAMP,1	12/13/2017 11:03:56 PM	SAMP,10mL
64	N027430-013C,SAMP,5	12/13/2017 11:19:14 PM	SAMP,2>10mL
65	N027430-014C,SAMP,5	12/13/2017 11:34:32 PM	SAMP,2>10mL
66	N027430-015C,SAMP,5	12/13/2017 11:49:50 PM	SAMP,2>10mL
67	N027539-001C,SAMP,5	12/14/2017 12:05:08 AM	SAMP,2>10mL
68	N027539-001C,SAMP,100	12/14/2017 12:20:26 AM	SAMP,0.1>10mL
69	N027539-002C,SAMP,1	12/14/2017 12:35:43 AM	SAMP,10mL
70	N027539-002C,SAMP,50	12/14/2017 12:51:01 AM	SAMP,0.2>10mL
71	CCV-6,CCV,1	12/14/2017 1:06:19 AM	CCV
72	CCB-6,CCB,1	12/14/2017 1:21:37 AM	CCB
73	N027539-004C,SAMP,1	12/14/2017 1:36:55 AM	SAMP,10mL
74	N027539-004C,SAMP,50	12/14/2017 1:52:14 AM	SAMP,0.2>10mL
75	N027482-002A,SAMP,10	12/14/2017 2:07:31 AM	SAMP,1>10mL
76	N027482-002AMS,MS,10	12/14/2017 2:22:49 AM	MS,1>10mL
77	N027482-002A,SAMP,20	12/14/2017 2:38:07 AM	SAMP,0.5>10mL
78	N027482-002AMS,MS,20	12/14/2017 2:53:25 AM	MS,0.5>10mL
79	BLANK,BLANK,1	12/14/2017 3:08:43 AM	BLANK
80	CCV-7,CCV,1	12/14/2017 3:24:00 AM	CCV
81	CCB-7,CCB,1	12/14/2017 3:39:19 AM	CCB

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 113
Created: 12/14/2017 8:36:45 AM by IC-05
Last Update: 12/15/2017 4:10:57 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027429-005D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027429-005D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027429-006D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027429-006D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027429-007D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027429-007D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027429-008D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	N027429-008D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	N027429-008DMS,MS,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	N027429-008DMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
26	N027429-013D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
27	N027429-013DMS,MS,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
28	N027429-013DMSD,MSD,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
29	N027429-013D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
30	N027429-013DMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
31	N027429-013DMSD,MSD,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
32	N027429-009D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
33	N027429-009D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
34	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
35	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
36	N027429-010D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
37	N027429-010D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
38	N027429-012D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
39	N027429-012D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
40	N027429-014D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
41	N027429-014D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 113
Created: 12/14/2017 8:36:45 AM by IC-05
Last Update: 12/15/2017 4:10:57 AM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	BLANK,BLANK,1	12/14/2017 8:37:30 AM	BLANK
10	CCV-1,CCV,1	12/14/2017 8:52:48 AM	CCV
11	CCB-1,CCB,1	12/14/2017 9:08:06 AM	CCB
12	MB-H2O,MBLK,1	12/14/2017 9:23:24 AM	METHOD BLANK
13	LCS-H2O,LCS,1	12/14/2017 9:38:42 AM	LCS
14	N027429-005D,SAMP,2000	12/14/2017 10:12:46 AM	SAMP,0.005>>10mL
15	N027429-005D,SAMP,100	12/14/2017 10:28:05 AM	SAMP,0.1>10mL
16	N027429-006D,SAMP,2000	12/14/2017 10:43:23 AM	SAMP,0.005>>10mL
17	N027429-006D,SAMP,100	12/14/2017 10:58:41 AM	SAMP,0.1>10mL
18	N027429-007D,SAMP,100	12/14/2017 11:13:59 AM	SAMP,0.1>10mL
19	N027429-007D,SAMP,20	12/14/2017 11:29:17 AM	SAMP,0.5>10mL
20	N027429-008D,SAMP,100	12/14/2017 11:44:35 AM	SAMP,0.1>10mL
21	N027429-008D,SAMP,20	12/14/2017 11:59:52 AM	SAMP,0.5>10mL
22	CCV-2,CCV,1	12/14/2017 12:15:10 PM	CCV
23	CCB-2,CCB,1	12/14/2017 12:30:28 PM	CCB
24	N027429-008DMS,MS,100	12/14/2017 12:49:52 PM	MS,0.1>10mL
25	N027429-008DMS,MS,20	12/14/2017 1:05:10 PM	MS,0.5>10mL
26	N027429-013D,SAMP,100	12/14/2017 1:20:28 PM	SAMP,0.1>10mL
27	N027429-013DMS,MS,100	12/14/2017 1:35:46 PM	MS,0.1>10mL
28	N027429-013DMSD,MSD,100	12/14/2017 1:51:03 PM	MSD,0.1>10mL
29	N027429-013D,SAMP,20	12/14/2017 2:06:21 PM	SAMP,0.5>10mL
30	N027429-013DMS,MS,20	12/14/2017 2:21:39 PM	MS,0.5>10mL
31	N027429-013DMSD,MSD,20	12/14/2017 2:36:57 PM	MSD,0.5>10mL
32	N027429-009D,SAMP,2000	12/14/2017 2:52:15 PM	SAMP,0.005>10mL
33	N027429-009D,SAMP,100	12/14/2017 3:07:32 PM	SAMP,0.1>10mL
34	CCV-3,CCV,1	12/14/2017 3:22:50 PM	CCV
35	CCB-3,CCB,1	12/14/2017 3:38:08 PM	CCB
36	N027429-010D,SAMP,1000	12/14/2017 3:53:26 PM	SAMP,0.01>10mL
37	N027429-010D,SAMP,100	12/14/2017 4:08:44 PM	SAMP,0.1>10mL
38	N027429-012D,SAMP,200	12/14/2017 4:24:02 PM	SAMP,0.05>10mL
39	N027429-012D,SAMP,20	12/14/2017 4:39:20 PM	SAMP,05>10mL
40	N027429-014D,SAMP,100	12/14/2017 4:56:46 PM	SAMP,0.1>10mL
41	N027429-014D,SAMP,20	12/14/2017 5:12:04 PM	SAMP,0.5>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 113
Created: 12/14/2017 8:36:45 AM by IC-05
Last Update: 12/15/2017 4:10:57 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027429-015D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
43	N027429-015D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
44	N027429-016D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
45	N027429-016D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
46	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
47	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
48	N027429-015DDUP,DUP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
49	N027429-015DDUP,DUP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
50	N027429-017D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
51	N027429-017D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
52	N027429-018D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
53	N027429-018D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
54	N027429-020D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
55	N027429-020D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
56	N027431-001C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
57	N027431-001C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
58	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
59	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
60	N027431-002C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
61	N027431-002C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
62	N027431-003C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
63	N027431-003C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
64	N027431-004C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
65	N027431-004C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
66	N027431-005C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
67	N027431-005C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
68	N027431-006C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
69	N027431-006C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
70	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
71	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
72	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
73	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
74	N027430-004C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
75	N027430-004CDUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
76	N027430-004CMS,MS,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
77	N027430-004CMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
78	N027430-004C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
79	N027430-004CDUP,DUP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
80	N027430-004CMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
81	N027430-004CMSD,MSD,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
82	CCV-7,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 113
Created: 12/14/2017 8:36:45 AM by IC-05
Last Update: 12/15/2017 4:10:57 AM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027429-015D,SAMP,200	12/14/2017 5:27:22 PM	SAMP,0.05>10mL
43	N027429-015D,SAMP,20	12/14/2017 5:42:40 PM	SAMP,0.5>10mL
44	N027429-016D,SAMP,500	12/14/2017 5:57:57 PM	SAMP,0.02>10mL
45	N027429-016D,SAMP,20	12/14/2017 6:13:16 PM	SAMP,0.5>10mL
46	CCV-4,CCV,1	12/14/2017 6:28:34 PM	CCV
47	CCB-4,CCB,1	12/14/2017 6:43:51 PM	CCB
48	N027429-015DDUP,DUP,200	12/14/2017 6:59:09 PM	DUP,0.05>10mL
49	N027429-015DDUP,DUP,20	12/14/2017 7:14:27 PM	DUP,0.5>10mL
50	N027429-017D,SAMP,500	12/14/2017 7:29:45 PM	SAMP,0.02>10mL
51	N027429-017D,SAMP,20	12/14/2017 7:45:03 PM	SAMP,0.5>10mL
52	N027429-018D,SAMP,1000	12/14/2017 8:00:21 PM	SAMP,0.01>10mL
53	N027429-018D,SAMP,100	12/14/2017 8:15:39 PM	SAMP,0.1>10mL
54	N027429-020D,SAMP,1000	12/14/2017 8:30:57 PM	SAMP,0.01>10mL
55	N027429-020D,SAMP,100	12/14/2017 8:46:15 PM	SAMP,0.1>10mL
56	N027431-001C,SAMP,200	12/14/2017 9:01:34 PM	SAMP,0.05>10mL
57	N027431-001C,SAMP,20	12/14/2017 9:16:52 PM	SAMP,0.5>10mL
58	CCV-5,CCV,1	12/14/2017 9:32:10 PM	CCV
59	CCB-5,CCB,1	12/14/2017 9:47:28 PM	CCB
60	N027431-002C,SAMP,1000	12/14/2017 10:02:46 PM	SAMP,0.01>10mL
61	N027431-002C,SAMP,50	12/14/2017 10:18:04 PM	SAMP,0.2>10mL
62	N027431-003C,SAMP,2000	12/14/2017 10:33:21 PM	SAMP,0.005>10mL
63	N027431-003C,SAMP,100	12/14/2017 10:48:39 PM	SAMP,0.1>10mL
64	N027431-004C,SAMP,2000	12/14/2017 11:03:57 PM	SAMP,0.005>10mL
65	N027431-004C,SAMP,100	12/14/2017 11:19:15 PM	SAMP,0.1>10mL
66	N027431-005C,SAMP,100	12/14/2017 11:34:33 PM	SAMP,0.1>10mL
67	N027431-005C,SAMP,20	12/14/2017 11:49:51 PM	SAMP,0.5>10mL
68	N027431-006C,SAMP,1000	12/15/2017 12:05:09 AM	SAMP,0.01>10mL
69	N027431-006C,SAMP,200	12/15/2017 12:20:27 AM	SAMP,0.05>10mL
70	CCV-6,CCV,1	12/15/2017 12:35:44 AM	CCV
71	CCB-6,CCB,1	12/15/2017 12:51:02 AM	CCB
72	LCS-2,LCS,1	12/15/2017 1:06:20 AM	LCS
73	MB-2,MBLK,1	12/15/2017 1:21:38 AM	METHOD BLANK
74	N027430-004C,SAMP,50	12/15/2017 1:36:55 AM	SAMP,0.2>10mL
75	N027430-004CDUP,DUP,50	12/15/2017 1:52:13 AM	DUP,0.2>10mL
76	N027430-004CMS,MS,50	12/15/2017 2:07:31 AM	MS,0.2>10mL
77	N027430-004CMSD,MSD,50	12/15/2017 2:22:49 AM	MSD,0.2>10mL
78	N027430-004C,SAMP,20	12/15/2017 2:38:07 AM	SAMP,0.5>10mL
79	N027430-004CDUP,DUP,20	12/15/2017 2:53:25 AM	DUP,0.5>10mL
80	N027430-004CMS,MS,20	12/15/2017 3:08:43 AM	MS,0.5>10mL
81	N027430-004CMSD,MSD,20	12/15/2017 3:24:01 AM	MSD,0.5>10mL
82	CCV-7,CCV,1	12/15/2017 3:39:19 AM	CCV

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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 113
Created: 12/14/2017 8:36:45 AM by IC-05
Last Update: 12/15/2017 4:10:57 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
83	CCB-7,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
84	N027430-020C,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
85	N027430-020CMS,MS,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
86	N027430-020C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
87	N027430-020CMS,MS,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
88	N027430-002C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
89	N027430-002C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
90	N027430-006C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
91	N027430-006C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
92	N027430-008C,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
93	N027430-008C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
94	CCV-8,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
95	CCB-8,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
96	N027430-012C,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
97	N027430-012C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
98	N027430-013C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
99	N027430-013C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
100	N027430-014C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
101	N027430-014C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
102	N027430-015C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
103	N027430-015C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
104	N027430-016C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
105	N027430-016C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
106	CCV-9,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
107	CCB-9,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
108	N027430-017C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
109	N027430-017C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
110	N027430-018C,SAMP,5000	Unknown	1000.0	Anions Default	Anions_171129	Finished
111	N027430-018C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
112	CCV-10,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
113	CCB-10,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 113
Created: 12/14/2017 8:36:45 AM by IC-05
Last Update: 12/15/2017 4:10:57 AM by IC-05

No.	Name	Inj. Date/Time	Comment
83	CCB-7,CCB,1	12/15/2017 3:54:37 AM	CCB
84	N027430-020C,SAMP,500	12/15/2017 4:09:54 AM	SAMP,0.02>10mL
85	N027430-020CMS,MS,500	12/15/2017 4:25:12 AM	MS,0.02>10mL
86	N027430-020C,SAMP,50	12/15/2017 4:40:30 AM	SAMP,0.2>10mL
87	N027430-020CMS,MS,50	12/15/2017 4:55:48 AM	MS,0.2>10mL
88	N027430-002C,SAMP,2000	12/15/2017 5:11:06 AM	SAMP,0.005>10mL
89	N027430-002C,SAMP,200	12/15/2017 5:26:23 AM	SAMP,0.05>10mL
90	N027430-006C,SAMP,20	12/15/2017 5:41:41 AM	SAMP,0.5>10mL
91	N027430-006C,SAMP,50	12/15/2017 5:56:59 AM	SAMP,0.2>10mL
92	N027430-008C,SAMP,500	12/15/2017 6:12:17 AM	SAMP,0.02>10mL
93	N027430-008C,SAMP,50	12/15/2017 6:27:35 AM	SAMP,0.2>10mL
94	CCV-8,CCV,1	12/15/2017 6:42:53 AM	CCV
95	CCB-8,CCB,1	12/15/2017 6:58:11 AM	CCB
96	N027430-012C,SAMP,500	12/15/2017 7:13:28 AM	SAMP,0.02>10mL
97	N027430-012C,SAMP,200	12/15/2017 7:28:46 AM	SAMP,0.05>10mL
98	N027430-013C,SAMP,1000	12/15/2017 7:44:04 AM	SAMP,0.01>10mL
99	N027430-013C,SAMP,100	12/15/2017 7:59:22 AM	SAMP,0.1>10mL
100	N027430-014C,SAMP,2000	12/15/2017 8:14:40 AM	SAMP,0.005>10mL
101	N027430-014C,SAMP,100	12/15/2017 8:29:58 AM	SAMP,0.1>10mL
102	N027430-015C,SAMP,2000	12/15/2017 8:45:15 AM	SAMP,0.005>10mL
103	N027430-015C,SAMP,100	12/15/2017 9:00:33 AM	SAMP,0.1>10mL
104	N027430-016C,SAMP,1000	12/15/2017 9:15:51 AM	SAMP,0.01>10mL
105	N027430-016C,SAMP,100	12/15/2017 9:31:09 AM	SAMP,0.1>10mL
106	CCV-9,CCV,1	12/15/2017 9:46:27 AM	CCV
107	CCB-9,CCB,1	12/15/2017 10:01:44 AM	CCB
108	N027430-017C,SAMP,1000	12/15/2017 10:17:03 AM	SAMP,0.01>10mL
109	N027430-017C,SAMP,100	12/15/2017 10:32:21 AM	SAMP,0.1>10mL
110	N027430-018C,SAMP,5000	12/15/2017 10:47:39 AM	SAMP,0.002>10mL
111	N027430-018C,SAMP,200	12/15/2017 11:02:56 AM	SAMP,0.05>10mL
112	CCV-10,CCV,1	12/15/2017 11:18:14 AM	CCV
113	CCB-10,CCB,1	12/15/2017 11:33:32 AM	CCB

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/18/2017 9:15:01 AM by IC-05
Last Update: 12/18/2017 5:39:47 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027430-012C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027430-012C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027430-012CDUP,DUP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027430-012CMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027430-012CMSD,MSD,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027412-001B,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	N027413-001B,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	N027414-001B,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
26	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
27	N027416-001B,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
28	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
29	N027417-001B,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
30	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
31	N027414-001B,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
32	N027412-001B,SAMP,10000	Unknown	1000.0	Anions Default	Anions_171129	Finished
33	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
34	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
35	N027485-002D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
36	N027485-003D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
37	N027485-005D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
38	N027485-006D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
39	N027485-007D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
40	N027485-001D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
41	N027485-001DDUP,DUP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/18/2017 9:15:01 AM by IC-05
Last Update: 12/18/2017 5:39:47 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	BLANK,BLANK,1	12/18/2017 9:15:27 AM	BLANK
10	CCV-1,CCV,1	12/18/2017 9:30:45 AM	CCV
11	CCB-1,CCB,1	12/18/2017 9:46:03 AM	CCB
12	MB-H2O,MBLK,1	12/18/2017 10:01:21 AM	METHOD BLANK
13	LCS-H2O,LCS,1	12/18/2017 10:16:39 AM	LCS
14	N027430-012C,SAMP,10	12/18/2017 10:31:57 AM	SAMP,1>10mL
15	N027430-012C,SAMP,20	12/18/2017 10:49:02 AM	SAMP,0.5>10mL
16	N027430-012CDUP,DUP,20	12/18/2017 11:04:21 AM	DUP,0.5>10mL
17	N027430-012CMS,MS,20	12/18/2017 11:19:38 AM	MS,0.5>10mL
18	N027430-012CMSD,MSD,20	12/18/2017 11:34:56 AM	MSD,0.5>10mL
19	N027412-001B,SAMP,200	12/18/2017 11:50:14 AM	SAMP,0.05>10mL
20	BLANK,BLANK,1	12/18/2017 12:05:32 PM	BLANK
21	CCV-2,CCV,1	12/18/2017 12:20:50 PM	CCV
22	CCB-2,CCB,1	12/18/2017 12:36:08 PM	CCB
23	N027413-001B,SAMP,100	12/18/2017 12:51:25 PM	SAMP,0.1>10mL
24	BLANK,BLANK,1	12/18/2017 1:06:43 PM	BLANK
25	N027414-001B,SAMP,100	12/18/2017 1:22:01 PM	SAMP,0.1>10mL
26	BLANK,BLANK,1	12/18/2017 1:37:19 PM	BLANK
27	N027416-001B,SAMP,200	12/18/2017 1:52:37 PM	SAMP,0.05>10mL
28	BLANK,BLANK,1	12/18/2017 2:07:55 PM	BLANK
29	N027417-001B,SAMP,200	12/18/2017 2:23:12 PM	SAMP,0.05>10mL
30	BLANK,BLANK,1	12/18/2017 2:38:30 PM	BLANK
31	N027414-001B,SAMP,5	12/18/2017 2:53:48 PM	SAMP,2>10mL
32	N027412-001B,SAMP,10000	12/18/2017 3:09:06 PM	SAMP,0.001>10mL
33	CCV-3,CCV,1	12/18/2017 3:24:25 PM	CCV
34	CCB-3,CCB,1	12/18/2017 3:39:43 PM	CCB
35	N027485-002D,SAMP,2000	12/18/2017 3:55:01 PM	SAMP,0.005>10mL
36	N027485-003D,SAMP,2000	12/18/2017 4:10:19 PM	SAMP,0.005>10mL
37	N027485-005D,SAMP,2000	12/18/2017 4:25:37 PM	SAMP,0.005>10mL
38	N027485-006D,SAMP,2000	12/18/2017 4:40:54 PM	SAMP,0.005>10mL
39	N027485-007D,SAMP,2000	12/18/2017 4:56:12 PM	SAMP,0.005>10mL
40	N027485-001D,SAMP,200	12/18/2017 5:11:30 PM	SAMP,0.02>10mL
41	N027485-001DDUP,DUP,200	12/18/2017 5:26:48 PM	SAMP,0.001>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/18/2017 9:15:01 AM by IC-05
Last Update: 12/18/2017 5:39:47 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027485-001DMS,MS,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
43	N027485-001DMSD,MSD,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
44	N027485-001D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
45	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
46	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
47	N027485-001DDUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
48	N027485-001DMS,MS,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
49	N027485-001DMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
50	N027485-011E,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
51	N027485-011EMS,MS,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
52	N027485-011E,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
53	N027485-011EMS,MS,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
54	N027485-004D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
55	N027485-004D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
56	N027485-008D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
57	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
58	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
59	N027485-008D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
60	N027485-009D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
61	N027485-009D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
62	N027485-010D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
63	N027485-010D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
64	N027485-012E,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
65	N027485-012E,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
66	N027413-001B,SAMP,10000	Unknown	1000.0	Anions Default	Anions_171129	Finished
67	N027413-001B,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
68	N027416-001B,SAMP,10000	Unknown	1000.0	Anions Default	Anions_171129	Finished
69	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
70	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
71	N027417-001B,SAMP,10000	Unknown	1000.0	Anions Default	Anions_171129	Finished
72	N027485-002D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
73	N027485-003D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
74	N027485-005D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
75	N027485-006D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
76	N027485-007D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
77	N027417-001B,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
78	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
79	N027414-001B,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
80	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
81	CCV-7,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
82	CCB-7,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/18/2017 9:15:01 AM by IC-05
Last Update: 12/18/2017 5:39:47 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027485-001DMS,MS,200	12/18/2017 5:42:06 PM	MS,0.05>10mL
43	N027485-001DMSD,MSD,200	12/18/2017 5:57:23 PM	MSD,0.05>10mL
44	N027485-001D,SAMP,50	12/18/2017 6:12:41 PM	SAMP,0.2>10mL
45	CCV-4,CCV,1	12/18/2017 6:27:59 PM	CCV
46	CCB-4,CCB,1	12/18/2017 6:43:17 PM	CCB
47	N027485-001DDUP,DUP,50	12/18/2017 6:58:35 PM	DUP,0.2>10mL
48	N027485-001DMS,MS,50	12/18/2017 7:13:53 PM	MS,0.2>10mL
49	N027485-001DMSD,MSD,50	12/18/2017 7:29:11 PM	MSD,0.2>10mL
50	N027485-011E,SAMP,200	12/18/2017 7:44:29 PM	SAMP,0.05>10mL
51	N027485-011EMS,MS,200	12/18/2017 7:59:46 PM	SAMP,0.05>10mL
52	N027485-011E,SAMP,100	12/18/2017 8:15:04 PM	SAMP,0.1>10mL
53	N027485-011EMS,MS,100	12/18/2017 8:30:22 PM	MS,0.1>10mL
54	N027485-004D,SAMP,2000	12/18/2017 8:45:40 PM	SAMP,0.005>10mL
55	N027485-004D,SAMP,50	12/18/2017 9:00:58 PM	SAMP,0.2>10mL
56	N027485-008D,SAMP,200	12/18/2017 9:16:16 PM	SAMP,0.05>10mL
57	CCV-5,CCV,1	12/18/2017 9:31:33 PM	CCV
58	CCB-5,CCB,1	12/18/2017 9:46:51 PM	CCB
59	N027485-008D,SAMP,10	12/18/2017 10:02:09 PM	SAMP,1>10mL
60	N027485-009D,SAMP,500	12/18/2017 10:17:27 PM	SAMP,0.02>10mL
61	N027485-009D,SAMP,100	12/18/2017 10:32:45 PM	SAMP,0.1>10mL
62	N027485-010D,SAMP,1000	12/18/2017 10:48:02 PM	SAMP,0.01>10mL
63	N027485-010D,SAMP,100	12/18/2017 11:03:20 PM	SAMP,0.1>10mL
64	N027485-012E,SAMP,200	12/18/2017 11:18:38 PM	SAMP,0.05>10mL
65	N027485-012E,SAMP,100	12/18/2017 11:33:56 PM	SAMP,0.1>10mL
66	N027413-001B,SAMP,10000	12/18/2017 11:49:14 PM	SAMP,0.001>10mL
67	N027413-001B,SAMP,500	12/19/2017 12:04:31 AM	SAMP,0.05>10mL
68	N027416-001B,SAMP,10000	12/19/2017 12:19:49 AM	SAMP,0.001>10mL
69	CCV-6,CCV,1	12/19/2017 12:35:07 AM	CCV
70	CCB-6,CCB,1	12/19/2017 12:50:25 AM	CCB
71	N027417-001B,SAMP,10000	12/19/2017 1:05:43 AM	SAMP,0.001>10mL
72	N027485-002D,SAMP,100	12/19/2017 1:21:01 AM	SAMP,0.1>10mL
73	N027485-003D,SAMP,100	12/19/2017 1:36:19 AM	SAMP,0.1>10mL
74	N027485-005D,SAMP,100	12/19/2017 1:51:37 AM	SAMP,0.1>10mL
75	N027485-006D,SAMP,100	12/19/2017 2:06:54 AM	SAMP,0.1>10mL
76	N027485-007D,SAMP,100	12/19/2017 2:22:12 AM	SAMP,0.1>10mL
77	N027417-001B,SAMP,500	12/19/2017 2:37:30 AM	SAMP,0.02>10mL
78	BLANK,BLANK,1	12/19/2017 2:52:48 AM	BLANK
79	N027414-001B,SAMP,10	12/19/2017 3:08:06 AM	SAMP,1>10mL
80	BLANK,BLANK,1	12/19/2017 3:23:24 AM	BLANK
81	CCV-7,CCV,1	12/19/2017 3:38:41 AM	CCV
82	CCB-7,CCB,1	12/19/2017 3:53:59 AM	CCB

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/18/2017 9:15:01 AM by IC-05
Last Update: 12/18/2017 5:39:47 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
83	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
84	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
85	N027459-017E,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
86	N027459-018C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
87	N027459-019C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
88	N027459-019CDUP,DUP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
89	N027459-019CMS,MS,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
90	N027459-019CMSD,MSD,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
91	CCV-8,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
92	CCB-8,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/18/2017 9:15:01 AM by IC-05
Last Update: 12/18/2017 5:39:47 PM by IC-05

No.	Name	Inj. Date/Time	Comment
83	LCS-2,LCS,1	12/19/2017 4:09:17 AM	LCS
84	MB-2,MBLK,1	12/19/2017 4:24:35 AM	METHOD BLANK
85	N027459-017E,SAMP,100	12/19/2017 4:39:52 AM	SAMP,0.1>10mL
86	N027459-018C,SAMP,2000	12/19/2017 4:55:10 AM	SAMP,0.005>10mL
87	N027459-019C,SAMP,1000	12/19/2017 5:10:28 AM	SAMP,0.01>10mL
88	N027459-019CDUP,DUP,1000	12/19/2017 5:25:46 AM	DUP,0.01>10mL
89	N027459-019CMS,MS,1000	12/19/2017 5:41:04 AM	MS,0.01>10mL
90	N027459-019CMSD,MSD,1000	12/19/2017 5:56:21 AM	MSD,0.01>10mL
91	CCV-8,CCV,1	12/19/2017 6:11:39 AM	CCV
92	CCB-8,CCB,1	12/19/2017 6:26:57 AM	CCB

INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0709	0.1410	0.2824	0.7275	1.5389	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 12/22/2017

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Bromide	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.05	0.25	0.5	1.25	2.5	R^2
Area,mAU*min	0.0000	0.0033	0.0139	0.0287	0.0714	0.1448	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814D

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 12/22/2017

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0532	0.2181	0.4423	1.1375	2.3683	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RLB 12/22/2017

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Fluoride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.05	0.25	0.5	1.25	2.5	R^2
Area,mAU*min	0.0000	0.0100	0.0509	0.1014	0.2560	0.5201	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814A

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.



12/22/2017

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120771**
Client ID: **ICV**	Batch ID: **R120771**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2863365**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.235	0.50	1.250	0	98.8	90	110				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120771**
Client ID: **CCV**	Batch ID: **R120771**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2863375**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.263	0.50	1.250	0	101	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120771**
Client ID: **CCV**	Batch ID: **R120771**	TestNo: **EPA 300.0**		Analysis Date: **12/13/2017**	SeqNo: **2863387**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.264	0.50	1.250	0	101	90	110				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120771**
Client ID: **CCV**	Batch ID: **R120771**	TestNo: **EPA 300.0**		Analysis Date: **12/13/2017**	SeqNo: **2863397**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.263	0.50	1.250	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **ICV**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2869512**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.042	0.50	2.000	0	102	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCV**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.947	0.50	2.000	0	97.4	90	110				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCV**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.946	0.50	2.000	0	97.3	90	110				

Sample ID **CCV-8**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCV**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.947	0.50	2.000	0	97.4	90	110				

Sample ID **CCV-9**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCV**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869536**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.967	0.50	2.000	0	98.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-10**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCV**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869540**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.954	0.50	2.000	0	97.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **ICV**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2867946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.255	0.10	1.250	0	100	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCV**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/13/2017**	SeqNo: **2867950**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.239	0.10	1.250	0	99.1	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCV**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/13/2017**	SeqNo: **2867954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.213	0.10	1.250	0	97.1	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCV**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/13/2017**	SeqNo: **2867956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.251	0.10	1.250	0	100	90	110				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCV**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/13/2017**	SeqNo: **2867960**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.248	0.10	1.250	0	99.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCV**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2867967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.263	0.10	1.250	0	101	90	110				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCV**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2867969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.270	0.10	1.250	0	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **ICV**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2872490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.255	0.10	1.250	0	100	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCV**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.206	0.10	1.250	0	96.5	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCV**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.215	0.10	1.250	0	97.2	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCV**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.236	0.10	1.250	0	98.8	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCV**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.238	0.10	1.250	0	99.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCV**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.252	0.10	1.250	0	100	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCV**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2872513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.255	0.10	1.250	0	100	90	110				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCV**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2872515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.259	0.10	1.250	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **ICV**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2869542**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.936	0.50	4.000	0	98.4	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCV**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869544**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.750	0.50	4.000	0	93.8	90	110				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCV**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869552**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.787	0.50	4.000	0	94.7	90	110				

Sample ID **CCV-8**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCV**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869559**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.822	0.50	4.000	0	95.5	90	110				

Sample ID **CCV-9**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCV**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869566**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.785	0.50	4.000	0	94.6	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCV-10**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCV**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.812	0.50	4.000	0	95.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	**ICB**	SampType:	**ICB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**120771**
Client ID:	**ICB**	Batch ID:	**R120771**	TestNo:	**EPA 300.0**			Analysis Date:	**11/29/2017**	SeqNo:	**2863366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-5**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**120771**
Client ID:	**CCB**	Batch ID:	**R120771**	TestNo:	**EPA 300.0**			Analysis Date:	**12/12/2017**	SeqNo:	**2863376**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-6**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**120771**
Client ID:	**CCB**	Batch ID:	**R120771**	TestNo:	**EPA 300.0**			Analysis Date:	**12/13/2017**	SeqNo:	**2863388**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-7**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**120771**
Client ID:	**CCB**	Batch ID:	**R120771**	TestNo:	**EPA 300.0**			Analysis Date:	**12/13/2017**	SeqNo:	**2863398**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **ICB**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2869513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCB**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCB**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCB**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-9**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCB**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869537**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCB-10**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCB**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869541**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **ICB**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2867947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCB**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/13/2017**	SeqNo: **2867951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCB**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/13/2017**	SeqNo: **2867955**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCB**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/13/2017**	SeqNo: **2867957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCB**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/13/2017**	SeqNo: **2867961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCB**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2867968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCB**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2867970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **ICB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2872491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872508**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872510**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872512**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2872514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2872516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **ICB**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2869543**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCB**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869545**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCB**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCB**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869560**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-9**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCB**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869567**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCB-10**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCB**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/13/2017

Sample Name		Retention Time	Evaluation
CCV-2	Fluoride	2.970	
CCV-3	Fluoride	2.964	
CCV-4	Fluoride	2.950	
CCV-5	Fluoride	2.947	
CCV-6	Fluoride	2.957	
CCV-7	Fluoride	2.957	
	Average	2.958	
	Applied RT Window	2.758 - 3.158	
MB-R120803_F	Fluoride	N.A.	N.A.
LCS-R120803_F	Fluoride	2.967	PASS
N027430-008C	Fluoride	2.944	PASS
N027430-008CDUP	Fluoride	2.940	PASS
N027430-008CMS	Fluoride	2.950	PASS
N027430-008CMSD	Fluoride	2.950	PASS
N027430-013C	Fluoride	2.947	PASS
N027430-014C	Fluoride	2.930	PASS
N027430-015C	Fluoride	2.907	PASS

rba 12/20/2017

12/22/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/18/2017

Sample Name		Retention Time	Evaluation
CCV-1	Fluoride	2.934	
CCV-2	Fluoride	2.930	
CCV-3	Fluoride	2.930	
CCV-4	Fluoride	2.917	
CCV-5	Fluoride	2.934	
CCV-6	Fluoride	2.937	
CCV-7	Fluoride	2.937	

Average 2.931

Applied RT Window 2.731 - 3.131

MB-R120937_F	Fluoride	N.A.	N.A.
LCS-R120937_F	Fluoride	2.930	PASS
N027430-012C	Fluoride	2.924	PASS
N027430-012CDUP	Fluoride	2.920	PASS
N027430-012CMS	Fluoride	2.923	PASS
N027430-012CMSD	Fluoride	2.924	PASS

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12/22/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/12/2017

Sample Name		Retention Time	Evaluation
CCV-5	Bromide	4.884	
CCV-6	Bromide	4.880	
CCV-7	Bromide	4.880	
Average		4.881	
Applied RT Window		4.681 - 5.081	
LCS-R120771_BR	Bromide	4.883	PASS
MB-R120771_BR	Bromide	N.A.	N.A.
N027430-006C	Bromide	N.A.	N.A.
N027430-006CDUP	Bromide	N.A.	N.A.
N027430-006CMS	Bromide	4.877	PASS
N027430-006CMSD	Bromide	4.877	PASS
N027430-004C	Bromide	N.A.	N.A.
N027430-004CMS	Bromide	4.874	PASS
N027430-012C	Bromide	N.A.	N.A.
N027430-002C	Bromide	N.A.	N.A.
N027430-008C	Bromide	N.A.	N.A.
N027430-013C	Bromide	N.A.	N.A.
N027430-014C	Bromide	N.A.	N.A.
N027430-016C	Bromide	N.A.	N.A.
N027430-017C	Bromide	N.A.	N.A.
N027430-015C	Bromide	N.A.	N.A.
N027430-018C	Bromide	N.A.	N.A.
N027430-020C	Bromide	N.A.	N.A.

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RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/14/2017

Sample Name		Retention Time	Evaluation
CCV-6	Sulfate	7.430	
CCV-7	Sulfate	7.427	
CCV-8	Sulfate	7.417	
CCV-9	Sulfate	7.407	
CCV-10	Sulfate	7.400	
	Average	7.416	
	Applied RT Window	7.216 - 7.616	
LCS-R120854_SO4	Sulfate	7.434	PASS
MB-R120854_SO4	Sulfate	N.A.	N.A.
N027430-004C	Sulfate	7.433	PASS
N027430-004CDUP	Sulfate	7.434	PASS
N027430-004CMS	Sulfate	7.437	PASS
N027430-004CMSD	Sulfate	7.434	PASS
N027430-020C	Sulfate	7.420	PASS
N027430-020CMS	Sulfate	7.423	PASS
N027430-002C	Sulfate	7.423	PASS
N027430-006C	Sulfate	7.434	PASS
N027430-008C	Sulfate	7.420	PASS
N027430-012C	Sulfate	7.414	PASS
N027430-013C	Sulfate	7.420	PASS
N027430-014C	Sulfate	7.413	PASS
N027430-015C	Sulfate	7.417	PASS
N027430-016C	Sulfate	7.417	PASS
N027430-017C	Sulfate	7.413	PASS
N027430-018C	Sulfate	7.404	PASS

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12/22/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/14/2017

Sample Name		Retention Time	Evaluation
CCV-6	Chloride	3.767	
CCV-7	Chloride	3.770	
CCV-8	Chloride	3.767	
CCV-9	Chloride	3.764	
CCV-10	Chloride	3.763	
	Average	3.766	
	Applied RT Window	3.566 - 3.966	
LCS-R120854_CL	Chloride	3.767	PASS
MB-R120854_CL	Chloride	N.A.	N.A.
N027430-004C	Chloride	3.767	PASS
N027430-004CDUP	Chloride	3.764	PASS
N027430-004CMS	Chloride	3.767	PASS
N027430-004CMSD	Chloride	3.770	PASS
N027430-020C	Chloride	3.767	PASS
N027430-020CMS	Chloride	3.767	PASS
N027430-002C	Chloride	3.767	PASS
N027430-006C	Chloride	3.767	PASS
N027430-008C	Chloride	3.764	PASS
N027430-012C	Chloride	3.767	PASS
N027430-013C	Chloride	3.767	PASS
N027430-014C	Chloride	3.767	PASS
N027430-015C	Chloride	3.767	PASS
N027430-016C	Chloride	3.767	PASS
N027430-017C	Chloride	3.767	PASS
N027430-018C	Chloride	3.764	PASS

jrba 12/20/2017

12/22/2017

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 5/23/2017 ; 5/24/2017; 5/25/2017
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Datafile	170523A D36	170523A D37	170523A D38	170524A D17	170524A D18	170525A D45	170525A D46					
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**MDL**	**LOD**	**PQL**
Fluoride	0.020	0.022	0.021	0.020	0.023	0.026	0.024	0.020	0.0021	**0.0065**	0.020	0.10
Chloride	0.133	0.136	0.136	0.133	0.141	0.133	0.136	0.025	0.0029	**0.0091**	0.020	0.50
Nitrite	0.030	0.028	0.027	0.028	0.028	0.027	0.027	0.020	0.0010	**0.0030**	0.010	0.05
Bromide	0.037	0.042	0.043	0.038	0.040	0.032	0.025	0.040	0.0062	**0.0196**	0.040	0.20
Nitrate	0.035	0.034	0.033	0.033	0.033	0.031	0.030	0.020	0.0016	**0.0050**	0.010	0.05
Phosphate	0.047	0.051	0.049	0.046	0.052	0.047	0.059	0.040	0.0043	**0.0135**	0.030	0.10
Sulfate	0.213	0.199	0.208	0.216	0.199	0.201	0.198	0.050	0.0073	**0.0229**	0.050	0.50

MDL/LOD & PQL Verification 2017

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)** Matrix: **WATER**
Method Number: EPA Method 300.0 Unit: mg/L
Analysis Date(s): 5/26/2017
Analyst: Ria Abes

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0065**	0.020	0.024	0.10	0.0906	**91**
Chloride	**0.0091**	0.020	0.130	0.50	0.5635	**113**
Nitrite	**0.0030**	0.010	0.023	0.05	0.0581	**116**
Bromide	**0.0196**	0.040	0.048	0.20	0.194	**97**
Nitrate	**0.0050**	0.010	0.023	0.05	0.0599	**120**
Phosphate	**0.0135**	0.030	0.043	0.10	0.1111	**111**
Sulfate	**0.0229**	0.050	0.195	0.50	0.6178	**124**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121010 **Analyst:** QBM

ASSET #: N027429, N027430, N027431 **Date Analyzed:** 12/21/2017

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 12/22/2017

2nd Level Reviewer RLB 12/22/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N027430-016D**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	1.1064	*	1
	=	1.1064	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 1.1 mg/L

RLB 12/22/2017

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

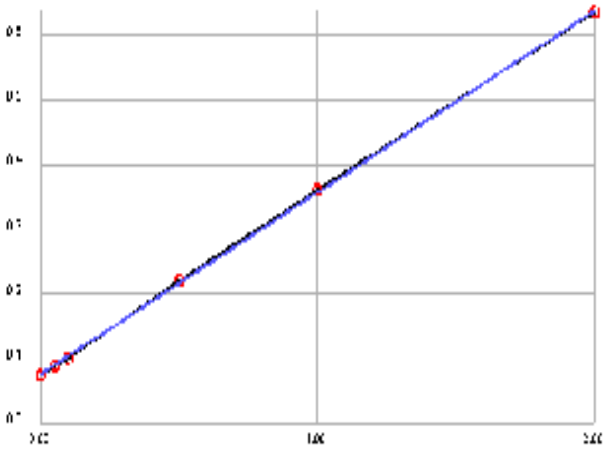
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2815x + 0.076
Correlation	.99987

Calibrant	Energy	Set	Conc
1	0.0736	0.0000	-0.0084
2	0.0899	0.0500	0.0495
3	0.1009	0.1000	0.0886
4	0.2217	0.5000	0.5177
5	0.3611	1.0000	1.0130
6	0.6360	2.0000	1.9897

Notes:

12/22/2017

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **ICV**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.504	0.050	0.5000	0	101	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **CCV**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.512	0.050	0.5000	0	102	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **CCV**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876094**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.465	0.050	0.5000	0	93.0	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **CCV**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.474	0.050	0.5000	0	94.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **ICB**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876072**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **CCB**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **CCB**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876095**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **CCB**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876106**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 12-21-2017 16:29
Time end: 12-21-2017 19:31

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	18:48:51	0.0022		0.0766
2	<BLANK>	18:49:50	-0.0113		0.0728
3	<CAL1>	18:50:45	-0.0084	[0]	0.0736
4	<CAL2>	18:51:47	0.0495	[0.05]	0.0899
5	<CAL3>	18:52:44	0.0886	[0.1]	0.1009
6	<CAL4>	18:53:38	0.5177	[0.5]	0.2217
7	<CAL5>	18:54:33	1.0130	[1]	0.3611
8	<CAL6>	18:55:35	1.9897	[2]	0.6360
9	,BLANK,BLANK,1, NOT REPORTED	18:56:29	0.0168		0.0807
10	,ICV,ICV,1,	18:57:24	0.5035		0.2177
11	,ICB,ICB,1,	18:58:26	-0.0013		0.0756
12	,MB-H2O,MBLK,1,	18:59:21	-0.0148		0.0718
13	,LCS-H2O,LCS,1,	19:00:21	0.5263		0.2241
14	,N027429-007C,SAMP,5,	19:01:17	0.5618		0.2341
15	,N027429-007CMS,MS,5,	19:02:12	1.1242		0.3924
16	,N027429-007CMSD,MSD,5,	19:03:13	1.0968		0.3847
17	,N027429-008C,SAMP,5,	19:04:08	0.5902		0.2421
18	,N027429-008CDUP,DUP,5,	19:05:04	0.6353		0.2548
19	,N027429-009C,SAMP,1,	19:06:00	0.7494		0.2869
20	,N027429-010C,SAMP,5,	19:07:00	0.4527		0.2034
21	,CCV-1,CCV,1, NOT REPORTED	19:07:56	0.5415		0.2284
22	,CCV-1,CCV,1,	19:08:51	0.5117		0.2200
23	,CCB-1,CCB,1,	19:09:51	0.0079		0.0782
24	,N027429-012C,SAMP,10,	19:10:47	1.1313		0.3944
25	,N027429-013C,SAMP,10,	19:11:48	1.2539		0.4289
26	,N027429-014C,SAMP,10,	19:12:44	1.1579		0.4019

RLB 12/22/2017

458

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N027429-015C,SAMP,10,	19:13:44	0.5955		0.2436
28	,N027430-004D,SAMP,1,	19:14:40	0.0211		0.0819
29	,N027430-006D,SAMP,1,	19:15:35	-0.0070		0.0740
30	,N027430-008D,SAMP,1,	19:16:23	-0.0095		0.0733
31	,N027430-012D,SAMP,1,	19:17:07	0.2968		0.1595
32	,BLANK, NOT REPORTED	19:17:56	-0.0116		0.0727
33	,CCV-2,CCV,1, NOT REPORTED	19:18:38	0.5131		0.2204
34	,CCV-2,CCV,1,	19:19:22	0.4648		0.2068
35	,CCB-2,CCB,1,	19:20:10	-0.0184		0.0708
36	,N027430-013D,SAMP,1,	19:20:53	1.1398		0.3968
37	,N027430-014D,SAMP,1,	19:21:41	1.5800		0.5207
38	,N027430-015D,SAMP,2,	19:22:24	0.8801		0.3237
39	,N027430-016D,SAMP,1,	19:23:06	1.1064		0.3874
40	,N027431-001D,SAMP,5,	19:23:56	0.9053		0.3308
41	,N027431-002D,SAMP,1,	19:24:39	0.0235		0.0826
42	,N027431-003D,SAMP,1,	19:25:21	0.0392		0.0870
43	,N027431-004D,SAMP,1,	19:26:10	0.0541		0.0912
44	,BLANK, NOT REPORTED	19:26:52	-0.0312		0.0672
45	,BLANK, NOT REPORTED	19:27:36	-0.0351		0.0661
46	,CCV-3,CCV,1,	19:28:24	0.4744		0.2095
47	,CCV-3,CCV,1, NOT REPORTED	19:29:07	0.4485		0.2022
48	,CCB-3,CCB,1,	19:29:50	-0.0287		0.0679

RLB 12/22/2017

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 12/21/2017
Time Analyzed: 4:23 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171220B
Color reagent: R171220C
2% Copper Sulfate: R171220A
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027429-007C		7.70							
N027429-008C		7.43							
N027429-009C		7.37							
N027429-010C		8.61							
N027429-012C		8.03							
N027429-013C		8.22							
N027429-014C		7.65							
N027429-015C		7.74							
N027430-004D		7.98							
N027430-006D		7.98							
N027430-008D		8.28							
N027430-012D		7.84							
N027430-013D		8.40							
N027430-014D		8.31							
N027430-015D		8.14							
N027430-016D		8.41							
N027431-001D		8.75							
N027431-002D		8.14							
N027431-003D		8.24							
N027431-004D		8.29							

Advanced Technology Laboratories, Inc.
Book # 1

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65993
ASSET #: N027430

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/18/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.		X				
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.		X				
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

Ca in N027430-015B is over linear range. For dilution.
%Rec of Ca, Fe & Mg in N027430-002B PS/MS/MSD failed. However LCS passed criteria.
Dilution test failed for Mg.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/22/17

2nd Level Reviewer 12/22/2017 Date: ~

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65993
ASSET #: N027430

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/19/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .			X			
24. LCS compounds within control limits.			X			
25. MS/MSD, RPD's are within control limits			X			
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For dilution of Ca in N027430-015B only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/22/17

2nd Level Reviewer 12/22/2017 Date: ~

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65993
ASSET #: N027430

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/20/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Na run only.
%Rec of Na in N027430-004B PS/MS/MSD failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/22/17

2nd Level Reviewer 12/22/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N027430-002B** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.05284 * 1 * (25/25) * 1000

Iron , ug/L = 52.84

Reporting results in two significant figures,

Iron , ug/L = 53

% RSD SUMMARY

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	B	0	0.59	15	PASS
Standard1	ICAL	1	B	0.1	1.15	15	PASS
Standard3	ICAL	1	B	1	0.087	15	PASS
Standard4	ICAL	1	B	2.5	0.59	15	PASS
Standard5	ICAL	1	B	3.75	1.54	15	PASS
Standard6	ICAL	1	B	5	0.48	15	PASS
Standard7	ICAL	1	B	10	0.68	15	PASS
ICV	ICV	1	B	4.98	0.36	15	PASS
ICB	ICB	1	B	0.011	11.2	15	PASS
LLICV	CCV1	1	B	0.15	0.7	20	PASS
LLICV	CCV1	1	B	0.097	1.87	20	PASS
ICSA1	ICSA	1	B	0.077	3.84	15	PASS
ICSAB1	ICSAB	1	B	1.17	0.22	15	PASS
CCV1	CCV	1	B	4.8	0.61	15	PASS
CCB1	CCB	1	B	0.017	19.94	15	<PQL
CCV2	CCV	1	B	4.7	0.74	15	PASS
CCB2	CCB	1	B	0.019	18.28	15	<PQL
MB-65993	MBLK	1	B	-0.0022	24.9	15	<PQL
LCS1-65993	LCS	1	B	4.52	1.084	15	PASS
N027430-002B	SAMP	1	B	2.39	0.7	15	PASS
N027430-002B	SAMP	5	B	0.54	0.5	15	PASS
N027430-002B-PS	PS	1	B	6.84	0.76	15	PASS
N027430-002B-MS1	MS	1	B	6.94	0.76	15	PASS
N027430-002B-MSD1	MSD	1	B	6.97	0.45	15	PASS
N027430-004B	SAMP	1	B	0.37	0.86	15	PASS
N027430-006B	SAMP	1	B	0.17	0.78	15	PASS
N027430-008B	SAMP	1	B	0.77	0.26	15	PASS
CCV3	CCV	1	B	4.68	0.68	15	PASS
CCB3	CCB	1	B	0.021	15.084	15	<PQL
N027430-012B	SAMP	1	B	2.16	0.48	15	PASS
N027430-013B	SAMP	1	B	1.088	0.23	15	PASS
N027430-014B	SAMP	1	B	1.04	0.63	15	PASS
N027430-015B	SAMP	1	B	1.4	0.56	15	PASS
N027430-016B	SAMP	1	B	1.88	0.45	15	PASS
N027430-017B	SAMP	1	B	3	0.89	15	PASS
N027430-018B	SAMP	1	B	3.7	0.61	15	PASS
N027430-020B	SAMP	1	B	0.82	0.38	15	PASS
N027431-001B	SAMP	1	B	0.38	0.2	15	PASS
N027431-002B	SAMP	1	B	1.25	0.55	15	PASS
CCV4	CCV	1	B	4.63	0.81	15	PASS
CCB4	CCB	1	B	0.016	20.33	15	<PQL
LLCCV1	CCV2	1	B	0.087	1.74	20	PASS

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
ICSA2	ICSA	1	B	0.078	2.16	15	PASS
ICSAB2	ICSAB	1	B	1.091	0.32	15	PASS
N027431-003B	SAMP	1	B	1.98	0.78	15	PASS
N027431-004B	SAMP	1	B	2.0009	0.49	15	PASS
N027431-005B	SAMP	1	B	0.42	0.33	15	PASS
N027431-006B	SAMP	1	B	1.88	0.38	15	PASS
CCV5	CCV	1	B	4.57	0.88	15	PASS
CCB5	CCB	1	B	0.032	17.76	15	<PQL
CCV6	CCV	1	B	4.54	0.67	15	PASS
CCB6	CCB	1	B	0.026	8.48	15	PASS
LLCCV2	CCV2	1	B	0.097	3.16	20	PASS
ICSA3	ICSA	1	B	0.1	2.31	15	PASS
ICSAB3	ICSAB	1	B	1.077	0.35	15	PASS
CCV7	CCV	1	B	4.87	0.75	15	PASS
CCB7	CCB	1	B	0.03	2.69	15	PASS
LLCCV3	CCV2	1	B	0.1	1.79	20	PASS
ICSA4	ICSA	1	B	0.099	0.24	15	PASS
ICSAB4	ICSAB	1	B	1.17	0.46	15	PASS
CalBlk	IBLK	1	Ca	0	3.65	15	PASS
Standard1	ICAL	1	Ca	0.2	11.17	15	PASS
Standard2	ICAL	1	Ca	1	1.87	15	PASS
Standard3	ICAL	1	Ca	2	2.47	15	PASS
Standard4	ICAL	1	Ca	5	0.83	15	PASS
Standard5	ICAL	1	Ca	7.5	0.61	15	PASS
Standard6	ICAL	1	Ca	10	0.51	15	PASS
Standard7	ICAL	1	Ca	20	0.3	15	PASS
ICV	ICV	1	Ca	10.088	0.21	15	PASS
ICB	ICB	1	Ca	-0.0018	778.17	15	<PQL
LLICV	CCV1	1	Ca	0.34	5.65	20	PASS
LLICV	CCV1	1	Ca	0.2	11.79	20	PASS
ICSA1	ICSA	1	Ca	498.55	0.67	15	PASS
ICSAB1	ICSAB	1	Ca	536.96	0.1	15	PASS
CCV1	CCV	1	Ca	9.97	0.27	15	PASS
CCB1	CCB	1	Ca	0.016	132.15	15	<PQL
CCV2	CCV	1	Ca	9.91	0.43	15	PASS
CCB2	CCB	1	Ca	0.029	24.8	15	<PQL
MB-65993	MBLK	1	Ca	0.049	23.35	15	<PQL
LCS1-65993	LCS	1	Ca	9.59	0.4	15	PASS
N027430-002B	SAMP	1	Ca	211.04	0.51	15	PASS
N027430-002B	SAMP	5	Ca	43.85	0.3	15	PASS
N027430-002B-PS	PS	1	Ca	211.39	0.19	15	PASS
N027430-002B-MS1	MS	1	Ca	214.32	0.13	15	PASS

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027430-002B-MSD1	MSD	1	Ca	215.35	0.023	15	PASS
N027430-004B	SAMP	1	Ca	70.47	0.28	15	PASS
N027430-006B	SAMP	1	Ca	92.97	0.29	15	PASS
N027430-008B	SAMP	1	Ca	181.66	0.1	15	PASS
CCV3	CCV	1	Ca	9.99	0.7	15	PASS
CCB3	CCB	1	Ca	-0.011	317.39	15	<PQL
N027430-012B	SAMP	1	Ca	54.36	0.51	15	PASS
N027430-013B	SAMP	1	Ca	264.05	0.072	15	PASS
N027430-014B	SAMP	1	Ca	370.67	0.31	15	PASS
N027430-015B	SAMP	1	Ca	494.84	0.42	15	PASS
N027430-016B	SAMP	1	Ca	97.77	0.12	15	PASS
N027430-017B	SAMP	1	Ca	104.48	0.24	15	PASS
N027430-018B	SAMP	1	Ca	324.12	0.21	15	PASS
N027430-020B	SAMP	1	Ca	158.46	0.4	15	PASS
N027431-001B	SAMP	1	Ca	79.8	0.12	15	PASS
N027431-002B	SAMP	1	Ca	145.69	0.14	15	PASS
CCV4	CCV	1	Ca	9.89	0.33	15	PASS
CCB4	CCB	1	Ca	-0.0036	655.17	15	<PQL
LLCCV1	CCV2	1	Ca	0.23	25.2	20	<PQL
ICSA2	ICSA	1	Ca	487.27	0.25	15	PASS
ICSAB2	ICSAB	1	Ca	537.05	0.61	15	PASS
N027431-003B	SAMP	1	Ca	307.84	0.38	15	PASS
N027431-004B	SAMP	1	Ca	310.18	0.12	15	PASS
N027431-005B	SAMP	1	Ca	54.46	0.45	15	PASS
N027431-006B	SAMP	1	Ca	243.52	0.21	15	PASS
CCV5	CCV	1	Ca	9.74	0.6	15	PASS
CCB5	CCB	1	Ca	0.015	48.034	15	<PQL
CCV6	CCV	1	Ca	9.73	0.54	15	PASS
CCB6	CCB	1	Ca	0.022	18.88	15	<PQL
LLCCV2	CCV2	1	Ca	0.24	14.45	20	PASS
ICSA3	ICSA	1	Ca	473.64	0.25	15	PASS
ICSAB3	ICSAB	1	Ca	525.29	0.57	15	PASS
CCV7	CCV	1	Ca	10.062	0.85	15	PASS
CCB7	CCB	1	Ca	0.013	111.0015	15	<PQL
LLCCV3	CCV2	1	Ca	0.22	7.62	20	PASS
ICSA4	ICSA	1	Ca	491.53	0.12	15	PASS
ICSAB4	ICSAB	1	Ca	539.93	0.17	15	PASS
CalBlk	IBLK	1	Fe	0	7.094	15	PASS
Standard1	ICAL	1	Fe	0.02	2.33	15	PASS
Standard2	ICAL	1	Fe	0.05	0.25	15	PASS
Standard3	ICAL	1	Fe	2	0.41	15	PASS
Standard4	ICAL	1	Fe	5	0.1	15	PASS

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard5	ICAL	1	Fe	7.5	1.055	15	PASS
Standard6	ICAL	1	Fe	10	0.12	15	PASS
Standard7	ICAL	1	Fe	20	0.043	15	PASS
ICV	ICV	1	Fe	10.026	0.075	15	PASS
ICB	ICB	1	Fe	0.00024	127.55	15	<PQL
LLICV	CCV1	1	Fe	0.035	1.7	20	PASS
LLICV	CCV1	1	Fe	0.023	4.14	20	PASS
ICSA1	ICSA	1	Fe	179.89	0.11	15	PASS
ICSAB1	ICSAB	1	Fe	190.03	0.14	15	PASS
CCV1	CCV	1	Fe	9.78	0.18	15	PASS
CCB1	CCB	1	Fe	0.00026	80.41	15	<PQL
CCV2	CCV	1	Fe	9.64	0.025	15	PASS
CCB2	CCB	1	Fe	0.00052	63.31	15	<PQL
MB-65993	MBLK	1	Fe	0.0012	59.24	15	<PQL
LCS1-65993	LCS	1	Fe	0.11	0.6	15	PASS
N027430-002B	SAMP	1	Fe	0.053	2.32	15	PASS
N027430-002B	SAMP	5	Fe	0.012	3.56	15	PASS
N027430-002B-PS	PS	1	Fe	0.14	0.57	15	PASS
N027430-002B-MS1	MS	1	Fe	0.12	0.75	15	PASS
N027430-002B-MSD1	MSD	1	Fe	0.12	0.24	15	PASS
N027430-004B	SAMP	1	Fe	1.0098	0.061	15	PASS
N027430-006B	SAMP	1	Fe	0.017	4.99	15	PASS
N027430-008B	SAMP	1	Fe	0.5	0.19	15	PASS
CCV3	CCV	1	Fe	9.64	0.14	15	PASS
CCB3	CCB	1	Fe	0.00084	63.96	15	<PQL
N027430-012B	SAMP	1	Fe	0.14	1.1	15	PASS
N027430-013B	SAMP	1	Fe	0.02	3.57	15	PASS
N027430-014B	SAMP	1	Fe	0.019	8.5	15	PASS
N027430-015B	SAMP	1	Fe	0.068	1.91	15	PASS
N027430-016B	SAMP	1	Fe	0.07	0.83	15	PASS
N027430-017B	SAMP	1	Fe	0.014	5.75	15	PASS
N027430-018B	SAMP	1	Fe	0.24	0.7	15	PASS
N027430-020B	SAMP	1	Fe	0.015	2.064	15	PASS
N027431-001B	SAMP	1	Fe	0.023	1.88	15	PASS
N027431-002B	SAMP	1	Fe	0.052	0.72	15	PASS
CCV4	CCV	1	Fe	9.57	0.057	15	PASS
CCB4	CCB	1	Fe	0.0017	65.66	15	<PQL
LLCCV1	CCV2	1	Fe	0.023	3.17	20	PASS
ICSA2	ICSA	1	Fe	171.22	0.055	15	PASS
ICSAB2	ICSAB	1	Fe	177.82	0.22	15	PASS
N027431-003B	SAMP	1	Fe	0.053	1.47	15	PASS
N027431-004B	SAMP	1	Fe	0.045	0.38	15	PASS

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027431-005B	SAMP	1	Fe	0.046	0.85	15	PASS
N027431-006B	SAMP	1	Fe	0.019	3.14	15	PASS
CCV5	CCV	1	Fe	9.54	0.1	15	PASS
CCB5	CCB	1	Fe	0.0016	45.74	15	<PQL
CCV6	CCV	1	Fe	9.53	0.14	15	PASS
CCB6	CCB	1	Fe	0.0022	12.11	15	PASS
LLCCV2	CCV2	1	Fe	0.023	2.84	20	PASS
ICSA3	ICSA	1	Fe	172.78	0.29	15	PASS
ICSAB3	ICSAB	1	Fe	178.26	0.14	15	PASS
CCV7	CCV	1	Fe	10.079	0.16	15	PASS
CCB7	CCB	1	Fe	0.00004	522.00022	15	<PQL
LLCCV3	CCV2	1	Fe	0.023	2.21	20	PASS
ICSA4	ICSA	1	Fe	183.12	0.28	15	PASS
ICSAB4	ICSAB	1	Fe	193.13	0.029	15	PASS
CalBlk	IBLK	1	Mg	0	0.61	15	PASS
Standard1	ICAL	1	Mg	0.1	0.95	15	PASS
Standard2	ICAL	1	Mg	1	1.084	15	PASS
Standard3	ICAL	1	Mg	2	0.64	15	PASS
Standard4	ICAL	1	Mg	5	0.048	15	PASS
Standard5	ICAL	1	Mg	7.5	1.03	15	PASS
Standard6	ICAL	1	Mg	10	0.17	15	PASS
Standard7	ICAL	1	Mg	20	0.096	15	PASS
ICV	ICV	1	Mg	10	0.2	15	PASS
ICB	ICB	1	Mg	0.0014	23.22	15	<PQL
LLICV	CCV1	1	Mg	0.16	1.15	20	PASS
LLICV	CCV1	1	Mg	0.11	0.91	20	PASS
ICSA1	ICSA	1	Mg	485.04	0.27	15	PASS
ICSAB1	ICSAB	1	Mg	511.69	0.39	15	PASS
CCV1	CCV	1	Mg	9.74	0.21	15	PASS
CCB1	CCB	1	Mg	0.0017	20.16	15	<PQL
CCV2	CCV	1	Mg	9.66	0.29	15	PASS
CCB2	CCB	1	Mg	0.0024	41.23	15	<PQL
MB-65993	MBLK	1	Mg	0.0048	9.2	15	PASS
LCS1-65993	LCS	1	Mg	9.31	0.026	15	PASS
N027430-002B	SAMP	1	Mg	4.66	0.55	15	PASS
N027430-002B	SAMP	5	Mg	1.15	0.2	15	PASS
N027430-002B-PS	PS	1	Mg	11.71	0.33	15	PASS
N027430-002B-MS1	MS	1	Mg	11.86	0.04	15	PASS
N027430-002B-MSD1	MSD	1	Mg	11.84	0.13	15	PASS
N027430-004B	SAMP	1	Mg	30.43	0.13	15	PASS
N027430-006B	SAMP	1	Mg	27.48	0.19	15	PASS
N027430-008B	SAMP	1	Mg	37.039	0.25	15	PASS

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV3	CCV	1	Mg	9.72	0.18	15	PASS
CCB3	CCB	1	Mg	0.0014	27.16	15	<PQL
N027430-012B	SAMP	1	Mg	71.73	0.098	15	PASS
N027430-013B	SAMP	1	Mg	23.91	0.14	15	PASS
N027430-014B	SAMP	1	Mg	41.26	0.19	15	PASS
N027430-015B	SAMP	1	Mg	51.51	0.1	15	PASS
N027430-016B	SAMP	1	Mg	2.57	0.35	15	PASS
N027430-017B	SAMP	1	Mg	2.46	0.4	15	PASS
N027430-018B	SAMP	1	Mg	6.46	0.26	15	PASS
N027430-020B	SAMP	1	Mg	36.79	0.44	15	PASS
N027431-001B	SAMP	1	Mg	20.54	0.25	15	PASS
N027431-002B	SAMP	1	Mg	6.65	0.078	15	PASS
CCV4	CCV	1	Mg	9.64	0.14	15	PASS
CCB4	CCB	1	Mg	0.0011	26.28	15	<PQL
LLCCV1	CCV2	1	Mg	0.1	0.46	20	PASS
ICSA2	ICSA	1	Mg	463.52	0.1	15	PASS
ICSAB2	ICSAB	1	Mg	501.44	0.17	15	PASS
N027431-003B	SAMP	1	Mg	11.75	0.13	15	PASS
N027431-004B	SAMP	1	Mg	11.87	0.16	15	PASS
N027431-005B	SAMP	1	Mg	12.52	0.15	15	PASS
N027431-006B	SAMP	1	Mg	21.63	0.16	15	PASS
CCV5	CCV	1	Mg	9.63	0.039	15	PASS
CCB5	CCB	1	Mg	0.0019	35.79	15	<PQL
CCV6	CCV	1	Mg	9.62	0.13	15	PASS
CCB6	CCB	1	Mg	0.0011	28.96	15	<PQL
LLCCV2	CCV2	1	Mg	0.1	2.15	20	PASS
ICSA3	ICSA	1	Mg	451.31	0.71	15	PASS
ICSAB3	ICSAB	1	Mg	504.86	0.33	15	PASS
CCV7	CCV	1	Mg	10.17	0.14	15	PASS
CCB7	CCB	1	Mg	0.0017	60.33	15	<PQL
LLCCV3	CCV2	1	Mg	0.11	1.71	20	PASS
ICSA4	ICSA	1	Mg	474.19	0.6	15	PASS
ICSAB4	ICSAB	1	Mg	522.59	0.21	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Ca	0	4.61	15	PASS
Standard1	ICAL	1	Ca	0.2	11.24	15	PASS
Standard2	ICAL	1	Ca	1	4.85	15	PASS
Standard3	ICAL	1	Ca	2	2.89	15	PASS
Standard4	ICAL	1	Ca	5	0.84	15	PASS
Standard5	ICAL	1	Ca	7.5	0.92	15	PASS
Standard6	ICAL	1	Ca	10	0.58	15	PASS
Standard7	ICAL	1	Ca	20	0.33	15	PASS
ICV	ICV	1	Ca	10.1	0.16	15	PASS
ICB	ICB	1	Ca	0.025	67.56	15	<PQL
LLICV	CCV1	1	Ca	0.23	11.41	20	PASS
ICSA1	ICSA	1	Ca	506.49	0.09	15	PASS
ICSAB1	ICSAB	1	Ca	555.54	0.11	15	PASS
N027430-015B	SAMP	5	Ca	108.86	0.23	15	PASS
CCV1	CCV	1	Ca	10.087	0.51	15	PASS
CCB1	CCB	1	Ca	-0.021	131.14	15	<PQL
CCB1	CCB	1	Ca	0.033	27.36	15	<PQL
CCV2	CCV	1	Ca	9.9	0.58	15	PASS
CCB2	CCB	1	Ca	0.0035	666.54	15	<PQL
CCV3	CCV	1	Ca	10.16	0.48	15	PASS
CCB3	CCB	1	Ca	0.00041	7555.71	15	<PQL
CCB3	CCB	1	Ca	0.018	110.92	15	<PQL
CCV4	CCV	1	Ca	9.88	0.11	15	PASS
CCB4	CCB	1	Ca	0.029	117.34	15	<PQL
LLCCV1	CCV2	1	Ca	0.22	13.79	20	PASS
ICSA2	ICSA	1	Ca	511.76	0.092	15	PASS
ICSAB2	ICSAB	1	Ca	558.43	0.18	15	PASS
CCV5	CCV	1	Ca	10.35	0.77	15	PASS
CCB5	CCB	1	Ca	0.0066	281.14	15	<PQL
CCV6	CCV	1	Ca	10.068	0.64	15	PASS
CCB6	CCB	1	Ca	-0.02	390.28	15	<PQL
CCV7	CCV	1	Ca	9.85	0.94	15	PASS
CCB7	CCB	1	Ca	0.031	61.44	15	<PQL
CCV8	CCV	1	Ca	10.064	0.5	15	PASS
CCB8	CCB	1	Ca	0.048	44.45	15	<PQL
LLCCV2	CCV2	1	Ca	0.27	8.72	20	PASS
ICSA3	ICSA	1	Ca	497.08	0.11	15	PASS
ICSAB3	ICSAB	1	Ca	543.69	0.18	15	PASS
CCV9	CCV	1	Ca	10.13	0.85	15	PASS
CCB9	CCB	1	Ca	0.061	16.2	15	<PQL
CCV10	CCV	1	Ca	9.92	0.49	15	PASS
CCB10	CCB	1	Ca	0.063	30.0053	15	<PQL

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV11	CCV	1	Ca	9.66	0.31	15	PASS
CCB11	CCB	1	Ca	0.049	17.31	15	<PQL
CCB11	CCB	1	Ca	0.053	25.75	15	<PQL
CCV12	CCV	1	Ca	9.88	0.73	15	PASS
CCB12	CCB	1	Ca	0.055	96.22	15	<PQL
LLCCV3	CCV2	1	Ca	0.26	4.53	20	PASS
ICSA4	ICSA	1	Ca	489.73	0.39	15	PASS
ICSAB4	ICSAB	1	Ca	536.67	0.25	15	PASS
CCV13	CCV	1	Ca	9.81	0.84	15	PASS
CCB13	CCB	1	Ca	0.061	71.21	15	<PQL
CCV14	CCV	1	Ca	10.006	0.81	15	PASS
CCB14	CCB	1	Ca	0.021	202	15	<PQL
CCV15	CCV	1	Ca	9.48	0.87	15	PASS
CCB15	CCB	1	Ca	0.038	117.27	15	<PQL
CCV16	CCV	1	Ca	9.47	0.34	15	PASS
CCB16	CCB	1	Ca	0.0024	667.76	15	<PQL
CCB16	CCB	1	Ca	0.044	46.61	15	<PQL
CCV17	CCV	1	Ca	10.46	0.51	15	PASS
CCB17	CCB	1	Ca	-0.019	142.64	15	<PQL
LLCCV4	CCV2	1	Ca	0.27	10.024	20	PASS
LLCCV4	CCV2	1	Ca	0.16	3.77	20	PASS
ICSA5	ICSA	1	Ca	511.39	0.15	15	PASS
ICSAB5	ICSAB	1	Ca	561.62	0.28	15	PASS
ICSAB5	ICSAB	1	Ca	464.82	0.11	15	PASS

RSD SUMMARY: 171220B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	2.95	15	PASS
Standard1	ICAL	1	Na	0.1	6.067	15	PASS
Standard2	ICAL	1	Na	1	0.45	15	PASS
Standard3	ICAL	1	Na	5	0.3	15	PASS
Standard4	ICAL	1	Na	10	0.24	15	PASS
Standard5	ICAL	1	Na	20	0.39	15	PASS
Standard6	ICAL	1	Na	40	0.1	15	PASS
ICV	ICV	1	Na	10.2	0.38	15	PASS
ICB	ICB	1	Na	0.013	38.44	15	<PQL
ICSA1	ICSA	1	Na	0.024	15	15	PASS
ICSAB1	ICSAB	1	Na	10.22	0.24	15	PASS
MB-65993	MBLK	1	Na	0.027	8.25	15	PASS
LCS2-65993	LCS	1	Na	20.34	0.2	15	PASS
N027430-002B	SAMP	250	Na	22.77	0.044	15	PASS
N027430-004B	SAMP	1	Na	217.23	0.39	15	PASS
N027430-004B	SAMP	5	Na	46.47	0.48	15	PASS
N027430-004B-PS	PS	1	Na	241.81	0.25	15	PASS
N027430-004B-MS2	MS	1	Na	246.08	0.33	15	PASS
N027430-004B-MSD2	MSD	1	Na	247.07	0.12	15	PASS
N027430-004B	SAMP	10	Na	22.67	0.035	15	PASS
N027430-004B	SAMP	50	Na	4.76	0.097	15	PASS
CCV1	CCV	1	Na	17.3	0.17	15	PASS
CCV1	CCV	1	Na	10.19	0.36	15	PASS
CCB1	CCB	1	Na	0.062	2.87	15	PASS
N027430-004B-PS	PS	10	Na	25.3	0.26	15	PASS
N027430-004B-MS2	MS	10	Na	26.12	0.15	15	PASS
N027430-004B-MSD2	MSD	10	Na	25.89	0.32	15	PASS
N027430-006B	SAMP	10	Na	10.69	1.29	15	PASS
N027430-008B	SAMP	100	Na	12.27	0.054	15	PASS
N027430-012B	SAMP	100	Na	30.38	0.22	15	PASS
N027430-013B	SAMP	100	Na	18.84	0.26	15	PASS
N027430-014B	SAMP	100	Na	30.53	0.18	15	PASS
N027430-015B	SAMP	250	Na	15.39	0.16	15	PASS
N027430-016B	SAMP	250	Na	16.26	0.14	15	PASS
CCV2	CCV	1	Na	10.31	0.25	15	PASS
CCB2	CCB	1	Na	0.05	2.62	15	PASS
N027430-017B	SAMP	250	Na	20.09	0.047	15	PASS
N027430-018B	SAMP	500	Na	16.79	0.18	15	PASS
N027430-020B	SAMP	100	Na	11.28	0.39	15	PASS
N027431-001B	SAMP	25	Na	13.68	0.17	15	PASS
N027431-002B	SAMP	100	Na	18.43	0.14	15	PASS
N027431-003B	SAMP	250	Na	14.87	0.39	15	PASS

RSD SUMMARY: 171220B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027431-004B	SAMP	250	Na	15.39	0.24	15	PASS
N027431-005B	SAMP	1	Na	290.31	0.81	15	PASS
N027431-005B	SAMP	25	Na	12.35	0.11	15	PASS
N027431-006B	SAMP	1	Na	1411.8	0.24	15	PASS
CCV3	CCV	1	Na	10.46	0.35	15	PASS
CCB3	CCB	1	Na	0.17	2.12	15	PASS
N027431-006B	SAMP	100	Na	16.31	0.25	15	PASS
CCV4	CCV	1	Na	10.33	0.15	15	PASS
CCB4	CCB	1	Na	0.098	3.11	15	PASS
ICSA2	ICSA	1	Na	0.085	7.067	15	PASS
ICSAB2	ICSAB	1	Na	10.32	0.067	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 171218C

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201K/MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201K/-171030G/-171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/18/2017	10:32:48 PM
2	Standard1	ICAL	1	12/18/2017	10:42:09 PM
3	Standard2	ICAL	1	12/18/2017	10:47:29 PM
11	Standard3	ICAL	1	12/18/2017	10:52:47 PM
12	Standard4	ICAL	1	12/18/2017	10:58:08 PM
6	Standard5	ICAL	1	12/18/2017	11:05:01 PM
7	Standard6	ICAL	1	12/18/2017	11:12:21 PM
8	Standard7	ICAL	1	12/18/2017	11:19:11 PM
9	ICV	ICV	1	12/18/2017	11:26:02 PM
1	ICB	ICB	1	12/18/2017	11:32:54 PM
2	LLICV	CCV1	1	12/18/2017	11:37:43 PM
2	LLICV	CCV1	1	12/18/2017	11:42:16 PM
4	ICSA1	ICSA	1	12/18/2017	11:47:34 PM
5	ICSAB1	ICSAB	1	12/18/2017	11:55:02 PM
64	MB-65992	MBLK	1	12/19/2017	12:02:34 AM
65	LCS1-65992	LCS	1	12/19/2017	12:07:25 AM
66	N027429-010B	SAMP	1	12/19/2017	12:14:46 AM
67	N027429-012B	SAMP	1	12/19/2017	12:21:46 AM
68	N027429-013B	SAMP	1	12/19/2017	12:28:38 AM
69	N027429-014B	SAMP	1	12/19/2017	12:35:29 AM
70	N027429-015B	SAMP	1	12/19/2017	12:42:20 AM
71	N027429-016C	SAMP	1	12/19/2017	12:49:12 AM
72	N027429-017C	SAMP	1	12/19/2017	12:56:03 AM
73	N027429-018C	SAMP	1	12/19/2017	01:02:55 AM
7	CCV1	CCV	1	12/19/2017	01:09:48 AM
1	CCB1	CCB	1	12/19/2017	01:16:38 AM
74	N027429-020C	SAMP	1	12/19/2017	01:21:27 AM
75	N027437-001B	SAMP	1	12/19/2017	01:28:19 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
76	N027437-002B	SAMP	1	12/19/2017	01:33:41 AM
77	N027437-002B	SAMP	5	12/19/2017	01:40:33 AM
78	N027437-002B-PS	PS	1	12/19/2017	01:45:55 AM
79	N027437-002BMS1	MS	1	12/19/2017	01:53:18 AM
80	N027437-002BMSD1	MSD	1	12/19/2017	02:00:10 AM
81	N027437-003D	SAMP	1	12/19/2017	02:07:02 AM
82	N027437-004B	SAMP	1	12/19/2017	02:11:55 AM
83	N027437-005B	SAMP	1	12/19/2017	02:17:17 AM
7	CCV2	CCV	1	12/19/2017	02:22:08 AM
1	CCB2	CCB	1	12/19/2017	02:28:59 AM
84	MB-65993	MBLK	1	12/19/2017	02:33:47 AM
85	LCS1-65993	LCS	1	12/19/2017	02:38:38 AM
86	N027430-002B	SAMP	1	12/19/2017	02:46:00 AM
87	N027430-002B	SAMP	5	12/19/2017	02:52:53 AM
88	N027430-002B-PS	PS	1	12/19/2017	02:57:45 AM
89	N027430-002B-MS1	MS	1	12/19/2017	03:04:37 AM
90	N027430-002B-MSD1	MSD	1	12/19/2017	03:11:30 AM
91	N027430-004B	SAMP	1	12/19/2017	03:18:23 AM
92	N027430-006B	SAMP	1	12/19/2017	03:23:16 AM
93	N027430-008B	SAMP	1	12/19/2017	03:28:09 AM
7	CCV3	CCV	1	12/19/2017	03:35:01 AM
1	CCB3	CCB	1	12/19/2017	03:41:52 AM
94	N027430-012B	SAMP	1	12/19/2017	03:46:40 AM
95	N027430-013B	SAMP	1	12/19/2017	03:53:31 AM
96	N027430-014B	SAMP	1	12/19/2017	04:00:23 AM
97	N027430-015B	SAMP	1	12/19/2017	04:07:15 AM
98	N027430-016B	SAMP	1	12/19/2017	04:14:08 AM
99	N027430-017B	SAMP	1	12/19/2017	04:20:59 AM
100	N027430-018B	SAMP	1	12/19/2017	04:27:52 AM
101	N027430-020B	SAMP	1	12/19/2017	04:34:45 AM
102	N027431-001B	SAMP	1	12/19/2017	04:41:38 AM
103	N027431-002B	SAMP	1	12/19/2017	04:46:31 AM
7	CCV4	CCV	1	12/19/2017	04:53:25 AM
1	CCB4	CCB	1	12/19/2017	05:00:16 AM
2	LLCCV1	CCV2	1	12/19/2017	05:05:04 AM
4	ICSA2	ICSA	1	12/19/2017	05:10:23 AM
5	ICSAB2	ICSAB	1	12/19/2017	05:17:50 AM
104	N027431-003B	SAMP	1	12/19/2017	05:25:19 AM
105	N027431-004B	SAMP	1	12/19/2017	05:32:11 AM
106	N027431-005B	SAMP	1	12/19/2017	05:39:05 AM
107	N027431-006B	SAMP	1	12/19/2017	05:45:58 AM
108	MB-65991	MBLK	1	12/19/2017	05:52:51 AM
109	LCS1-65991	LCS	1	12/19/2017	05:57:43 AM
110	N027437-001A	SAMP	1	12/19/2017	06:04:35 AM
111	N027437-002A	SAMP	1	12/19/2017	06:09:57 AM
112	N027437-002A	SAMP	5	12/19/2017	06:16:50 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
113	N027437-002A-PS	PS	1	12/19/2017	06:22:12 AM
7	CCV5	CCV	1	12/19/2017	06:29:05 AM
1	CCB5	CCB	1	12/19/2017	06:35:56 AM
114	N027437-002AMS1	MS	1	12/19/2017	06:41:14 AM
115	N027437-002AMSD1	MSD	1	12/19/2017	06:48:08 AM
116	N027437-003C	SAMP	1	12/19/2017	06:55:02 AM
117	N027437-004A	SAMP	1	12/19/2017	07:01:56 AM
118	N027437-005A	SAMP	1	12/19/2017	07:07:18 AM
119	N027405-013B	SAMP	5	12/19/2017	07:12:10 AM
120	N027429-010B	SAMP	5	12/19/2017	07:17:03 AM
7	CCV6	CCV	1	12/19/2017	07:23:56 AM
1	CCB6	CCB	1	12/19/2017	07:30:48 AM
2	LLCCV2	CCV2	1	12/19/2017	07:35:36 AM
4	ICSA3	ICSA	1	12/19/2017	07:40:54 AM
5	ICSAB3	ICSAB	1	12/19/2017	07:48:24 AM
121	N027405-012B	SAMP	5	12/19/2017	08:01:04 AM
38	MB-65994	MBLK	1	12/19/2017	08:07:56 AM
39	LCS1-65994	LCS	1	12/19/2017	08:12:45 AM
40	N027459-001C	SAMP	1	12/19/2017	08:20:04 AM
41	N027459-001C	SAMP	5	12/19/2017	08:26:54 AM
42	N027459-001C-PS	PS	1	12/19/2017	08:31:43 AM
43	N027459-001C-MS1	MS	1	12/19/2017	08:38:34 AM
44	N027459-001C-MSD1	MSD	1	12/19/2017	08:45:25 AM
45	N027459-002C	SAMP	1	12/19/2017	08:52:15 AM
46	N027459-003B	SAMP	1	12/19/2017	08:59:06 AM
7	CCV7	CCV	1	12/19/2017	09:07:07 AM
1	CCB7	CCB	1	12/19/2017	09:17:06 AM
2	LLCCV3	CCV2	1	12/19/2017	09:24:34 AM
4	ICSA4	ICSA	1	12/19/2017	09:34:26 AM
5	ICSAB4	ICSAB	1	12/19/2017	09:41:57 AM

INJECTION LOG: 171219A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201K/MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201K/-171030G/-171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/19/2017	10:23:34 AM
2	Standard1	ICAL	1	12/19/2017	10:28:24 AM
3	Standard2	ICAL	1	12/19/2017	10:33:45 AM
11	Standard3	ICAL	1	12/19/2017	10:39:04 AM
12	Standard4	ICAL	1	12/19/2017	10:44:25 AM
6	Standard5	ICAL	1	12/19/2017	10:51:46 AM
7	Standard6	ICAL	1	12/19/2017	10:59:06 AM
8	Standard7	ICAL	1	12/19/2017	11:06:41 AM
9	ICV	ICV	1	12/19/2017	11:10:28 AM
1	ICB	ICB	1	12/19/2017	11:21:16 AM
2	LLICV	CCV1	1	12/19/2017	11:26:34 AM
4	ICSA1	ICSA	1	12/19/2017	11:40:02 AM
5	ICSAB1	ICSAB	1	12/19/2017	11:47:34 AM
122	N027429-010B	SAMP	5	12/19/2017	11:55:06 AM
123	N027430-015B	SAMP	5	12/19/2017	12:02:00 PM
108	MB-65991	MBLK	1	12/19/2017	12:08:53 PM
109	LCS1-65991	LCS	1	12/19/2017	12:13:44 PM
110	N027437-001A	SAMP	1	12/19/2017	12:21:07 PM
111	N027437-002A	SAMP	1	12/19/2017	12:26:28 PM
112	N027437-002A	SAMP	5	12/19/2017	12:33:22 PM
113	N027437-002A-PS	PS	1	12/19/2017	12:38:43 PM
114	N027437-002AMS1	MS	1	12/19/2017	12:45:38 PM
115	N027437-002AMSD1	MSD	1	12/19/2017	12:52:31 PM
7	CCV1	CCV	1	12/19/2017	12:59:24 PM
1	CCB1	CCB	1	12/19/2017	01:06:15 PM
1	CCB1	CCB	1	12/19/2017	01:14:21 PM
116	N027437-003C	SAMP	1	12/19/2017	01:19:09 PM
117	N027437-004A	SAMP	1	12/19/2017	01:24:04 PM
118	N027437-005A	SAMP	1	12/19/2017	01:29:27 PM
38	MB-65994	MBLK	1	12/19/2017	01:34:18 PM
39	LCS1-65994	LCS	1	12/19/2017	01:39:09 PM
40	N027459-001C	SAMP	1	12/19/2017	01:46:29 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
41	N027459-001C	SAMP	5	12/19/2017	01:53:19 PM
42	N027459-001C-PS	PS	1	12/19/2017	01:58:11 PM
43	N027459-001C-MS1	MS	1	12/19/2017	02:05:02 PM
44	N027459-001C-MSD1	MSD	1	12/19/2017	02:11:54 PM
7	CCV2	CCV	1	12/19/2017	02:18:46 PM
1	CCB2	CCB	1	12/19/2017	02:25:37 PM
45	N027459-002C	SAMP	1	12/19/2017	02:30:56 PM
46	N027459-003B	SAMP	1	12/19/2017	02:37:46 PM
47	N027459-004B	SAMP	1	12/19/2017	02:44:38 PM
48	N027459-005B	SAMP	1	12/19/2017	02:51:28 PM
49	N027459-006B	SAMP	1	12/19/2017	02:58:20 PM
50	N027459-007B	SAMP	1	12/19/2017	03:05:13 PM
51	N027459-008C	SAMP	1	12/19/2017	03:12:46 PM
52	N027459-009B	SAMP	1	12/19/2017	03:20:08 PM
53	N027459-010B	SAMP	1	12/19/2017	03:26:58 PM
54	N027459-011B	SAMP	1	12/19/2017	03:33:50 PM
7	CCV3	CCV	1	12/19/2017	03:40:40 PM
1	CCB3	CCB	1	12/19/2017	03:48:03 PM
55	N027459-012B	SAMP	1	12/19/2017	03:53:21 PM
1	CCB3	CCB	1	12/19/2017	03:58:33 PM
55	N027459-012B	SAMP	1	12/19/2017	04:03:22 PM
56	N027459-013B	SAMP	1	12/19/2017	04:08:43 PM
57	N027459-014B	SAMP	1	12/19/2017	04:15:34 PM
58	N027459-015B	SAMP	1	12/19/2017	04:22:24 PM
59	N027459-016C	SAMP	1	12/19/2017	04:29:17 PM
60	N027459-017C	SAMP	1	12/19/2017	04:36:09 PM
61	N027459-018B	SAMP	1	12/19/2017	04:43:02 PM
62	N027459-019B	SAMP	1	12/19/2017	04:50:27 PM
63	MB-66042	MBLK	1	12/19/2017	04:57:19 PM
64	LCS1-66042	LCS	1	12/19/2017	05:02:10 PM
7	CCV4	CCV	1	12/19/2017	05:09:31 PM
1	CCB4	CCB	1	12/19/2017	05:34:54 PM
2	LLCCV1	CCV2	1	12/19/2017	05:39:42 PM
4	ICSA2	ICSA	1	12/19/2017	05:45:03 PM
5	ICSAB2	ICSAB	1	12/19/2017	05:52:35 PM
65	N027485-001B	SAMP	1	12/19/2017	06:00:08 PM
66	N027485-001B	SAMP	5	12/19/2017	06:05:00 PM
67	N027485-001B-PS	PS	1	12/19/2017	06:10:22 PM
68	N027485-001B-MS1	MS	1	12/19/2017	06:17:41 PM
69	N027485-001B-MSD1	MSD	1	12/19/2017	06:24:34 PM
70	N027485-002B	SAMP	1	12/19/2017	06:31:26 PM
71	N027485-003B	SAMP	1	12/19/2017	06:38:18 PM
72	N027485-004B	SAMP	1	12/19/2017	06:45:10 PM
73	N027485-005B	SAMP	1	12/19/2017	06:52:03 PM
74	N027485-006B	SAMP	1	12/19/2017	06:58:55 PM
7	CCV5	CCV	1	12/19/2017	07:05:47 PM
1	CCB5	CCB	1	12/19/2017	07:15:36 PM
75	N027485-007B	SAMP	1	12/19/2017	07:20:24 PM
76	N027485-008B	SAMP	1	12/19/2017	07:27:16 PM
77	N027485-009B	SAMP	1	12/19/2017	07:34:47 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
78	N027485-010B	SAMP	1	12/19/2017	07:41:39 PM
79	N027485-011C	SAMP	1	12/19/2017	07:48:31 PM
80	N027485-012C	SAMP	1	12/19/2017	07:55:53 PM
81	N027523-001B	SAMP	1	12/19/2017	08:03:16 PM
82	N027523-002B	SAMP	1	12/19/2017	08:10:40 PM
83	N027523-003B	SAMP	1	12/19/2017	08:16:01 PM
84	N027523-004B	SAMP	1	12/19/2017	08:21:22 PM
7	CCV6	CCV	1	12/19/2017	08:26:44 PM
1	CCB6	CCB	1	12/19/2017	08:33:35 PM
85	N027523-005C	SAMP	1	12/19/2017	08:38:25 PM
86	N027523-006C	SAMP	1	12/19/2017	08:45:18 PM
87	N027523-007C	SAMP	1	12/19/2017	08:52:10 PM
88	N027523-008B	SAMP	1	12/19/2017	08:59:02 PM
14	N027459-003B	SAMP	5	12/19/2017	09:05:54 PM
15	N027459-004B	SAMP	5	12/19/2017	09:12:43 PM
16	N027459-006B	SAMP	5	12/19/2017	09:19:32 PM
17	N027459-018B	SAMP	5	12/19/2017	09:24:22 PM
89	MB-66081	MBLK	1	12/19/2017	09:31:12 PM
90	LCS1-66081	LCS	1	12/19/2017	09:36:14 PM
7	CCV7	CCV	1	12/19/2017	09:43:36 PM
1	CCB7	CCB	1	12/19/2017	09:53:44 PM
91	N027523-009B	SAMP	1	12/19/2017	09:58:31 PM
92	N027523-009B	SAMP	5	12/19/2017	10:05:24 PM
93	N027523-009B-PS	PS	1	12/19/2017	10:12:17 PM
94	N027523-009B-MS1	MS	1	12/19/2017	10:19:10 PM
95	N027523-009B-MSD1	MSD	1	12/19/2017	10:26:03 PM
96	N027523-012B	SAMP	1	12/19/2017	10:32:56 PM
97	N027546-001B	SAMP	1	12/19/2017	10:39:51 PM
98	N027546-002B	SAMP	1	12/19/2017	10:47:14 PM
99	N027546-003B	SAMP	1	12/19/2017	10:54:08 PM
100	N027546-004B	SAMP	1	12/19/2017	11:01:01 PM
7	CCV8	CCV	1	12/19/2017	11:07:54 PM
1	CCB8	CCB	1	12/19/2017	11:15:16 PM
2	LLCCV2	CCV2	1	12/19/2017	11:20:35 PM
4	ICSA3	ICSA	1	12/19/2017	11:25:54 PM
5	ICSAB3	ICSAB	1	12/19/2017	11:33:27 PM
101	N027546-005B	SAMP	1	12/19/2017	11:40:59 PM
102	N027546-006B	SAMP	1	12/19/2017	11:47:52 PM
103	N027546-007B	SAMP	1	12/19/2017	11:55:15 PM
104	N027546-008B	SAMP	1	12/20/2017	12:02:08 AM
105	N027546-009B	SAMP	1	12/20/2017	12:09:00 AM
106	N027546-010B	SAMP	1	12/20/2017	12:15:53 AM
107	MB-66082	MBLK	1	12/20/2017	12:22:46 AM
108	LCS1-66082	LCS	1	12/20/2017	12:27:38 AM
109	N027557-001B	SAMP	1	12/20/2017	12:35:02 AM
110	N027557-001B	SAMP	5	12/20/2017	12:41:54 AM
7	CCV9	CCV	1	12/20/2017	12:46:48 AM
1	CCB9	CCB	1	12/20/2017	12:54:10 AM
111	N027557-001B-PS	PS	1	12/20/2017	12:59:28 AM
112	N027557-001B-MS1	MS	1	12/20/2017	01:06:23 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
113	N027557-001B-MSD1	MSD	1	12/20/2017	01:13:17 AM
114	N027557-002B	SAMP	1	12/20/2017	01:20:11 AM
115	N027557-003B	SAMP	1	12/20/2017	01:27:03 AM
116	N027557-004B	SAMP	1	12/20/2017	01:33:56 AM
117	N027557-005B	SAMP	1	12/20/2017	01:40:49 AM
118	N027557-006B	SAMP	1	12/20/2017	01:47:42 AM
119	N027557-007B	SAMP	1	12/20/2017	01:54:34 AM
120	N027557-008B	SAMP	1	12/20/2017	02:01:28 AM
7	CCV10	CCV	1	12/20/2017	02:06:50 AM
1	CCB10	CCB	1	12/20/2017	02:14:12 AM
121	N027557-009B	SAMP	1	12/20/2017	02:19:30 AM
122	N027557-010B	SAMP	1	12/20/2017	02:26:54 AM
123	MB-66080	MBLK	1	12/20/2017	02:32:17 AM
124	LCS1-66080	LCS	1	12/20/2017	02:37:09 AM
125	N027524-001E	SAMP	1	12/20/2017	02:44:33 AM
126	N027524-001E	SAMP	5	12/20/2017	02:51:26 AM
127	N027524-001E-PS	PS	1	12/20/2017	02:56:47 AM
128	N027524-001E-MS1	MS	1	12/20/2017	03:03:41 AM
129	N027524-001E-MSD1	MSD	1	12/20/2017	03:10:35 AM
130	N027524-002E	SAMP	1	12/20/2017	03:17:29 AM
7	CCV11	CCV	1	12/20/2017	03:24:21 AM
1	CCB11	CCB	1	12/20/2017	03:31:12 AM
131	N027524-003E	SAMP	1	12/20/2017	03:36:30 AM
1	CCB11	CCB	1	12/20/2017	03:47:23 AM
131	N027524-003E	SAMP	1	12/20/2017	03:52:10 AM
132	N027524-004E	SAMP	1	12/20/2017	03:59:04 AM
133	N027524-005E	SAMP	1	12/20/2017	04:05:57 AM
134	N027524-006E	SAMP	1	12/20/2017	04:12:49 AM
135	N027524-007E	SAMP	1	12/20/2017	04:17:42 AM
136	N027524-008E	SAMP	1	12/20/2017	04:22:35 AM
137	N027524-009E	SAMP	1	12/20/2017	04:29:28 AM
138	N027524-010E	SAMP	1	12/20/2017	04:36:21 AM
139	N027524-011E	SAMP	1	12/20/2017	04:43:14 AM
140	N027524-011E-MS1	MS	1	12/20/2017	04:50:07 AM
7	CCV12	CCV	1	12/20/2017	04:57:01 AM
1	CCB12	CCB	1	12/20/2017	05:07:37 AM
2	LLCCV3	CCV2	1	12/20/2017	05:12:57 AM
4	ICSA4	ICSA	1	12/20/2017	05:18:16 AM
5	ICSAB4	ICSAB	1	12/20/2017	05:25:48 AM
141	N027524-012E	SAMP	1	12/20/2017	05:33:21 AM
142	N027524-013E	SAMP	1	12/20/2017	05:40:14 AM
143	N027556-001E	SAMP	1	12/20/2017	05:47:07 AM
144	N027556-002E	SAMP	1	12/20/2017	05:54:00 AM
145	N027556-003E	SAMP	1	12/20/2017	06:00:53 AM
146	N027556-004D	SAMP	1	12/20/2017	06:07:46 AM
147	N027556-005D	SAMP	1	12/20/2017	06:14:39 AM
148	N027556-006E	SAMP	1	12/20/2017	06:21:32 AM
18	N027485-002B	SAMP	5	12/20/2017	06:28:25 AM
19	N027485-003B	SAMP	5	12/20/2017	06:35:15 AM
7	CCV13	CCV	1	12/20/2017	06:42:05 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CCB13	CCB	1	12/20/2017	06:49:25 AM
20	N027485-010B	SAMP	5	12/20/2017	06:54:44 AM
149	N027523-009B	SAMP	25	12/20/2017	07:43:23 AM
150	N027523-009B-PS	PS	5	12/20/2017	07:48:17 AM
151	N027523-009B-MS1	MS	5	12/20/2017	07:55:12 AM
152	N027523-009B-MSD1	MSD	5	12/20/2017	08:02:06 AM
153	N027557-005B	SAMP	5	12/20/2017	08:05:46 AM
154	N027557-007B	SAMP	5	12/20/2017	08:12:39 AM
38	MB-66083	MBLK	1	12/20/2017	08:19:33 AM
39	LCS1-66083	LCS	1	12/20/2017	08:23:38 AM
40	N027524-001F	SAMP	1	12/20/2017	08:29:29 AM
7	CCV14	CCV	1	12/20/2017	08:34:48 AM
1	CCB14	CCB	1	12/20/2017	08:47:22 AM
41	N027524-001F	SAMP	5	12/20/2017	08:51:40 AM
42	N027524-001F-PS	PS	1	12/20/2017	08:56:29 AM
43	N027524-001F-MS1	MS	1	12/20/2017	09:01:50 AM
44	N027524-001F-MSD1	MSD	1	12/20/2017	09:07:11 AM
45	N027524-002F	SAMP	1	12/20/2017	09:12:32 AM
46	N027524-003F	SAMP	1	12/20/2017	09:17:54 AM
47	N027524-004F	SAMP	1	12/20/2017	09:23:15 AM
48	N027524-005F	SAMP	1	12/20/2017	09:28:37 AM
49	N027524-006F	SAMP	1	12/20/2017	09:33:59 AM
50	N027524-007F	SAMP	1	12/20/2017	09:39:21 AM
7	CCV15	CCV	1	12/20/2017	09:50:33 AM
1	CCB15	CCB	1	12/20/2017	10:04:37 AM
51	N027524-008F	SAMP	1	12/20/2017	10:09:24 AM
52	N027524-009F	SAMP	1	12/20/2017	10:14:46 AM
53	N027524-010F	SAMP	1	12/20/2017	10:20:08 AM
54	N027524-011F	SAMP	1	12/20/2017	10:25:39 AM
55	N027524-012F	SAMP	1	12/20/2017	10:31:01 AM
56	N027524-013F	SAMP	1	12/20/2017	10:36:21 AM
57	N027556-001F	SAMP	1	12/20/2017	10:41:41 AM
58	N027556-002F	SAMP	1	12/20/2017	10:47:03 AM
59	N027556-003F	SAMP	1	12/20/2017	10:52:24 AM
60	N027556-006F	SAMP	1	12/20/2017	10:57:45 AM
7	CCV16	CCV	1	12/20/2017	11:03:06 AM
1	CCB16	CCB	1	12/20/2017	11:08:59 AM
1	CCB16	CCB	1	12/20/2017	11:17:02 AM
61	N027556-008E	SAMP	1	12/20/2017	11:20:47 AM
62	N027556-009E	SAMP	1	12/20/2017	11:25:39 AM
63	N027556-010F	SAMP	1	12/20/2017	11:31:31 AM
7	CCV17	CCV	1	12/20/2017	11:40:26 AM
1	CCB17	CCB	1	12/20/2017	11:46:17 AM
2	LLCCV4	CCV2	1	12/20/2017	11:51:05 AM
2	LLCCV4	CCV2	1	12/20/2017	12:04:06 PM
4	ICSA5	ICSA	1	12/20/2017	12:08:54 PM
5	ICSAB5	ICSAB	1	12/20/2017	12:14:57 PM
5	ICSAB5	ICSAB	1	12/20/2017	12:24:11 PM

INJECTION LOG: 171220B

Instrument ID: ICP-02

STANDARD CODE		
Standard1	MWST-170601A,0.025<50mL	MWST-171201R
Standard2	MWST-170601A,0.25<50mL	
Standard3	MWST-170601A,1.25<50mL	
Standard4	MWST-170601A,2.5<50mL	
Standard5	MWST-170601A,5<50mL	
Standard6	MWST-170601A,10<50mL	
ICV	MWST-171030L	
CCV	MWST-170601A,2.5<50mL	MWST-171201R
ICSA/ICSAB	MWST-170601L/MWST-170601B	MWST-171201P/ MWST-171201S
Int. Std. (Sc):	MSST-171009C/B	
PS Spike	MSST-130329D/E	

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/20/2017	06:47:08 PM
26	Standard1	ICAL	1	12/20/2017	06:50:25 PM
27	Standard2	ICAL	1	12/20/2017	06:53:42 PM
28	Standard3	ICAL	1	12/20/2017	06:57:31 PM
29	Standard4	ICAL	1	12/20/2017	07:01:22 PM
30	Standard5	ICAL	1	12/20/2017	07:06:47 PM
31	Standard6	ICAL	1	12/20/2017	07:10:51 PM
32	ICV	ICV	1	12/20/2017	07:15:00 PM
1	ICB	ICB	1	12/20/2017	07:18:55 PM
33	ICSA1	ICSA	1	12/20/2017	07:24:12 PM
34	ICSAB1	ICSAB	1	12/20/2017	07:27:31 PM
98	MB-65993	MBLK	1	12/20/2017	07:35:18 PM
99	LCS2-65993	LCS	1	12/20/2017	07:39:03 PM
100	N027430-002B	SAMP	250	12/20/2017	07:44:07 PM
101	N027430-004B	SAMP	1	12/20/2017	07:47:27 PM
102	N027430-004B	SAMP	5	12/20/2017	07:52:21 PM
103	N027430-004B-PS	PS	1	12/20/2017	07:56:13 PM
104	N027430-004B-MS2	MS	1	12/20/2017	07:59:33 PM
105	N027430-004B-MSD2	MSD	1	12/20/2017	08:04:40 PM
106	N027430-004B	SAMP	10	12/20/2017	08:09:48 PM
107	N027430-004B	SAMP	50	12/20/2017	08:13:07 PM
8	CCV1	CCV	1	12/20/2017	08:16:27 PM
29	CCV1	CCV	1	12/20/2017	08:19:28 PM
1	CCB1	CCB	1	12/20/2017	08:23:22 PM
108	N027430-004B-PS	PS	10	12/20/2017	08:26:40 PM
109	N027430-004B-MS2	MS	10	12/20/2017	08:30:32 PM
110	N027430-004B-MSD2	MSD	10	12/20/2017	08:34:24 PM
111	N027430-006B	SAMP	10	12/20/2017	08:38:17 PM
112	N027430-008B	SAMP	100	12/20/2017	08:41:38 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
113	N027430-012B	SAMP	100	12/20/2017	08:44:59 PM
114	N027430-013B	SAMP	100	12/20/2017	08:48:21 PM
115	N027430-014B	SAMP	100	12/20/2017	08:51:42 PM
116	N027430-015B	SAMP	250	12/20/2017	08:55:03 PM
117	N027430-016B	SAMP	250	12/20/2017	08:58:24 PM
29	CCV2	CCV	1	12/20/2017	09:01:45 PM
1	CCB2	CCB	1	12/20/2017	09:05:40 PM
118	N027430-017B	SAMP	250	12/20/2017	09:08:58 PM
119	N027430-018B	SAMP	500	12/20/2017	09:12:20 PM
120	N027430-020B	SAMP	100	12/20/2017	09:16:18 PM
121	N027431-001B	SAMP	25	12/20/2017	09:19:39 PM
122	N027431-002B	SAMP	100	12/20/2017	09:23:01 PM
123	N027431-003B	SAMP	250	12/20/2017	09:26:23 PM
124	N027431-004B	SAMP	250	12/20/2017	09:29:45 PM
125	N027431-005B	SAMP	1	12/20/2017	09:33:07 PM
126	N027431-005B	SAMP	25	12/20/2017	09:38:01 PM
127	N027431-006B	SAMP	1	12/20/2017	09:41:20 PM
29	CCV3	CCV	1	12/20/2017	09:46:36 PM
1	CCB3	CCB	1	12/20/2017	09:50:31 PM
128	N027431-006B	SAMP	100	12/20/2017	09:53:49 PM
29	CCV4	CCV	1	12/20/2017	09:57:11 PM
1	CCB4	CCB	1	12/20/2017	10:01:06 PM
33	ICSA2	ICSA	1	12/20/2017	10:04:23 PM
34	ICSAB2	ICSAB	1	12/20/2017	10:07:42 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/11/2017 7:56:26**
Prep End Date: **12/11/2017 3:00:00**
Reviewed/ Date: 12/22/2017
Initials/ Date: for MG

Prep Batch **65993** Prep Code: **3010_W_DISS** Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-48**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-65993	Aqueous		25	☐	0	0	25	1.000		
LCS2-65993	Aqueous		25	☐	0	0	25	1.000		
MB-65993	Aqueous		25	☐	0	0	25	1.000		
N027430-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-004B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-004B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-014B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9589	HYDROCHLORIC ACID
9601	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/11/2017 7:56:26**
Prep End Date: **12/11/2017 3:00:00**
Prep Batch **65993** Prep Code: **3010_W_DISS**

Reviewed/ Date: 12/22/2017
Initials/ Date: for MG
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-48**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027430-015B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-016B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-017B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-018B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-020B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-006B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9589	HYDROCHLORIC ACID
9601	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 171218C

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Boron								
CalBlk	12/18/2017	10:32:48 PM	B	249.677	5579	0.00	mg/L	
Standard1	12/18/2017	10:42:09 PM	B	249.677	5366	0.1000	mg/L	
Standard3	12/18/2017	10:52:47 PM	B	249.677	37786	1.000	mg/L	
Standard4	12/18/2017	10:58:08 PM	B	249.677	92149	2.500	mg/L	
Standard5	12/18/2017	11:05:01 PM	B	249.677	145677	3.750	mg/L	
Standard6	12/18/2017	11:12:21 PM	B	249.677	188926	5.000	mg/L	
Standard7	12/18/2017	11:19:11 PM	B	249.677	380951	10.000	mg/L	0.9999
Magnesium								
CalBlk	12/18/2017	10:32:48 PM	Mg	279.079	227	0.00	mg/L	
Standard1	12/18/2017	10:42:09 PM	Mg	279.079	2071	0.1000	mg/L	
Standard2	12/18/2017	10:47:29 PM	Mg	279.079	12904	1.000	mg/L	
Standard3	12/18/2017	10:52:47 PM	Mg	279.079	27082	2.000	mg/L	
Standard4	12/18/2017	10:58:08 PM	Mg	279.079	64266	5.000	mg/L	
Standard5	12/18/2017	11:05:01 PM	Mg	279.079	101143	7.500	mg/L	
Standard6	12/18/2017	11:12:21 PM	Mg	279.079	129171	10.000	mg/L	
Standard7	12/18/2017	11:19:11 PM	Mg	279.079	257123	20.000	mg/L	0.9999
Calcium								
CalBlk	12/18/2017	10:32:48 PM	Ca	227.546	-142	0.00	mg/L	
Standard1	12/18/2017	10:42:09 PM	Ca	227.546	97	0.2000	mg/L	
Standard2	12/18/2017	10:47:29 PM	Ca	227.546	304	1.000	mg/L	
Standard3	12/18/2017	10:52:47 PM	Ca	227.546	661	2.000	mg/L	
Standard4	12/18/2017	10:58:08 PM	Ca	227.546	1578	5.000	mg/L	
Standard5	12/18/2017	11:05:01 PM	Ca	227.546	2445	7.500	mg/L	
Standard6	12/18/2017	11:12:21 PM	Ca	227.546	3145	10.000	mg/L	
Standard7	12/18/2017	11:19:11 PM	Ca	227.546	6220	20.000	mg/L	0.9999
Iron								
CalBlk	12/18/2017	10:32:48 PM	Fe	273.953	-156	0.00	mg/L	
Standard1	12/18/2017	10:42:09 PM	Fe	273.953	739	0.0200	mg/L	
Standard2	12/18/2017	10:47:29 PM	Fe	273.953	1640	0.050	mg/L	
Standard3	12/18/2017	10:52:47 PM	Fe	273.953	44945	2.000	mg/L	
Standard4	12/18/2017	10:58:08 PM	Fe	273.953	107029	5.000	mg/L	
Standard5	12/18/2017	11:05:01 PM	Fe	273.953	168392	7.500	mg/L	
Standard6	12/18/2017	11:12:21 PM	Fe	273.953	214592	10.000	mg/L	
Standard7	12/18/2017	11:19:11 PM	Fe	273.953	426001	20.000	mg/L	0.9999

INITIAL CALIBRATION SUMMARY: 171219A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Calcium								
CalBlk	12/19/2017	10:23:34 AM	Ca	227.546	-144	0.00	mg/L	
Standard1	12/19/2017	10:28:24 AM	Ca	227.546	62	0.2000	mg/L	
Standard2	12/19/2017	10:33:45 AM	Ca	227.546	278	1.000	mg/L	
Standard3	12/19/2017	10:39:04 AM	Ca	227.546	591	2.000	mg/L	
Standard4	12/19/2017	10:44:25 AM	Ca	227.546	1444	5.000	mg/L	
Standard5	12/19/2017	10:51:46 AM	Ca	227.546	2153	7.500	mg/L	
Standard6	12/19/2017	10:59:06 AM	Ca	227.546	2875	10.000	mg/L	
Standard7	12/19/2017	11:06:41 AM	Ca	227.546	5631	20.000	mg/L	0.9999

INITIAL CALIBRATION SUMMARY: 171220B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	12/20/2017	06:47:08 PM	Na	589.594	416	0.00	mg/L	
Standard1	12/20/2017	06:50:25 PM	Na	589.594	456	0.1000	mg/L	
Standard2	12/20/2017	06:53:42 PM	Na	589.594	4185	1.000	mg/L	
Standard3	12/20/2017	06:57:31 PM	Na	589.594	21120	5.000	mg/L	
Standard4	12/20/2017	07:01:22 PM	Na	589.594	41806	10.000	mg/L	
Standard5	12/20/2017	07:06:47 PM	Na	589.594	83648	20.000	mg/L	
Standard6	12/20/2017	07:10:51 PM	Na	589.594	163117	40.000	mg/L	0.9999

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4981.624	100	5000	0	99.6	90	110				
Calcium	10088.062	500	10000	0	101	90	110				
Iron	10025.747	20	10000	0	100	90	110				
Magnesium	9999.066	100	10000	0	100	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	96.642	100	100.0	0	96.6	80	120				
Calcium	204.883	500	200.0	0	102	80	120				
Iron	23.129	20	20.00	0	116	80	120				
Magnesium	106.139	100	100.0	0	106	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871592**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4800.518	100	5000	0	96.0	90	110				
Calcium	9969.207	500	10000	0	99.7	90	110				
Iron	9776.470	20	10000	0	97.8	90	110				
Magnesium	9740.502	100	10000	0	97.4	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871604**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4702.076	100	5000	0	94.0	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **CCV** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2871604**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9908.640	500	10000	0	99.1	90	110				
Iron	9641.235	20	10000	0	96.4	90	110				
Magnesium	9655.505	100	10000	0	96.6	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **CCV** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2871616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4675.269	100	5000	0	93.5	90	110				
Calcium	9993.795	500	10000	0	99.9	90	110				
Iron	9644.149	20	10000	0	96.4	90	110				
Magnesium	9720.978	100	10000	0	97.2	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **CCV** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2871628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4627.448	100	5000	0	92.5	90	110				
Calcium	9894.698	500	10000	0	98.9	90	110				
Iron	9566.690	20	10000	0	95.7	90	110				
Magnesium	9638.896	100	10000	0	96.4	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **ZZZZZZ** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2871630**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	86.971	100	100.0	0	87.0	70	130				
Calcium	231.543	500	200.0	0	116	70	130				
Iron	23.093	20	20.00	0	115	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871630**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	102.266	100	100.0	0	102	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871643**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4565.887	100	5000	0	91.3	90	110				
Calcium	9735.929	500	10000	0	97.4	90	110				
Iron	9541.151	20	10000	0	95.4	90	110				
Magnesium	9628.434	100	10000	0	96.3	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871652**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4537.337	100	5000	0	90.7	90	110				
Calcium	9734.042	500	10000	0	97.3	90	110				
Iron	9531.319	20	10000	0	95.3	90	110				
Magnesium	9621.434	100	10000	0	96.2	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871654**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	96.701	100	100.0	0	96.7	70	130				
Calcium	240.192	500	200.0	0	120	70	130				
Iron	22.875	20	20.00	0	114	70	130				
Magnesium	103.462	100	100.0	0	103	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871667**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4870.263	100	5000	0	97.4	90	110				
Calcium	10062.017	500	10000	0	101	90	110				
Iron	10079.268	20	10000	0	101	90	110				
Magnesium	10170.430	100	10000	0	102	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871669**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	104.049	100	100.0	0	104	70	130				
Calcium	222.727	500	200.0	0	111	70	130				
Iron	23.158	20	20.00	0	116	70	130				
Magnesium	110.310	100	100.0	0	110	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICV	SampType:	ICV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	ICV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872867

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10101.951	500	10000	0	101	90	110				

Sample ID	LLICV	SampType:	CCV1	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	ZZZZZZ	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872869

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	225.252	500	200.0	0	113	80	120				

Sample ID	CCV1	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872882

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10087.496	500	10000	0	101	90	110				

Sample ID	CCV2	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872895

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9904.520	500	10000	0	99.0	90	110				

Sample ID	CCV3	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872907

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10165.050	500	10000	0	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCV4	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872921

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9876.655	500	10000	0	98.8	90	110				

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	ZZZZZZ	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872923

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	220.353	500	200.0	0	110	70	130				

Sample ID	CCV5	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872936

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10352.156	500	10000	0	104	90	110				

Sample ID	CCV6	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872948

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10068.129	500	10000	0	101	90	110				

Sample ID	CCV7	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872960

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9847.946	500	10000	0	98.5	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCV8	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872972

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10063.850	500	10000	0	101	90	110				

Sample ID	LLCCV2	SampType:	CCV2	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	ZZZZZZ	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872974

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	266.163	500	200.0	0	133	70	130				S

Sample ID	CCV9	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873638

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10125.639	500	10000	0	101	90	110				

Sample ID	CCV10	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873650

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9918.903	500	10000	0	99.2	90	110				

Sample ID	CCV11	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873662

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9659.769	500	10000	0	96.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

12/22/2017

Ca on LLCCV2 is biased high however, sample N027430-015 Calcium concentration is greater than the regular CCV which passed QC criteria.

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCV12	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873676

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9875.510	500	10000	0	98.8	90	110				

Sample ID	LLCCV3	SampType:	CCV2	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	ZZZZZZ	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873678

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	258.351	500	200.0	0	129	70	130				

Sample ID	CCV13	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873691

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9814.263	500	10000	0	98.1	90	110				

Sample ID	CCV14	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873703

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10006.400	500	10000	0	100	90	110				

Sample ID	CCV15	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873715

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9477.839	500	10000	0	94.8	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCV16	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873727

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9474.062	500	10000	0	94.7	90	110				

Sample ID	CCV17	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873733

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10458.405	500	10000	0	105	90	110				

Sample ID	LLCCV4	SampType:	CCV2	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	ZZZZZZ	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873736

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	164.854	500	200.0	0	82.4	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **ICV**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874504**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10199.627	500	10000	0	102	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **CCV**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10193.558	500	10000	0	102	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **CCV**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874531**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10312.936	500	10000	0	103	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **CCV**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874543**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10462.425	500	10000	0	105	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **CCV**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874546**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10332.651	500	10000	0	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	11.230	100									
Calcium	-1.802075	500									
Iron	0.239	20									
Magnesium	1.384	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871593**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	17.004	100									
Calcium	16.292	500									
Iron	0.264	20									
Magnesium	1.657	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871605**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	18.575	100									
Calcium	29.130	500									
Iron	0.524	20									
Magnesium	2.381	100									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	20.882	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-10.673498	500									
Iron	0.841	20									
Magnesium	1.354	100									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	16.066	100									
Calcium	-3.575705	500									
Iron	1.730	20									
Magnesium	1.130	100									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	32.298	100									
Calcium	15.024	500									
Iron	1.554	20									
Magnesium	1.859	100									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871653**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	26.422	100									
Calcium	21.639	500									
Iron	2.167	20									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871653**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	1.109	100									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871668**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	30.018	100									
Calcium	13.349	500									
Iron	0.043	20									
Magnesium	1.712	100									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872868**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	25.289	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	33.130	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	3.457	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	17.578	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	29.385	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCB5	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872937

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	6.563	500									

Sample ID	CCB6	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872949

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-20.165979	500									

Sample ID	CCB7	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872961

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	31.182	500									

Sample ID	CCB8	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872973

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	48.382	500									

Sample ID	CCB9	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873639

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	61.218	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCB10	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873651

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	63.322	500									

Sample ID	CCB11	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873665

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	53.447	500									

Sample ID	CCB12	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873677

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	54.893	500									

Sample ID	CCB13	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873692

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	60.610	500									

Sample ID	CCB14	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873704

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	21.048	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCB15	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873716

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	37.689	500									

Sample ID	CCB16	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873729

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	43.740	500									

Sample ID	CCB17	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873734

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-18.816967	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **ICB**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	12.902	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **CCB**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	62.235	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **CCB**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874532**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	49.622	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **CCB**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874544**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	172.283	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **CCB**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	98.184	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICSA**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871580**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	499606.293	50	500000	0	99.9	80	120				
Boron	77.045	100									
Calcium	498548.809	500	500000	0	99.7	80	120				
Iron	179892.137	20	200000	0	89.9	80	120				
Magnesium	485043.587	100	500000	0	97.0	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICSAB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871581**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	549867.041	50	500000	0	110	80	120				
Boron	1174.793	100	1000	0	117	80	120				
Calcium	536964.037	500	500000	0	107	80	120				
Iron	190028.308	20	200000	0	95.0	80	120				
Magnesium	511694.882	100	500000	0	102	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICSA**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871631**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	484031.618	50	500000	0	96.8	80	120				
Boron	78.420	100									
Calcium	487269.052	500	500000	0	97.5	80	120				
Iron	171216.397	20	200000	0	85.6	80	120				
Magnesium	463520.732	100	500000	0	92.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	ICSAB	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871632

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	526793.741	50	500000	0	105	80	120				
Boron	1090.925	100	1000	0	109	80	120				
Calcium	537053.293	500	500000	0	107	80	120				
Iron	177822.006	20	200000	0	88.9	80	120				
Magnesium	501435.284	100	500000	0	100	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	ICSA	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871655

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	484725.819	50	500000	0	96.9	80	120				
Boron	103.973	100									
Calcium	473640.507	500	500000	0	94.7	80	120				
Iron	172781.452	20	200000	0	86.4	80	120				
Magnesium	451305.649	100	500000	0	90.3	80	120				

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	ICSAB	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871656

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	525073.791	50	500000	0	105	80	120				
Boron	1076.987	100	1000	0	108	80	120				
Calcium	525291.517	500	500000	0	105	80	120				
Iron	178260.199	20	200000	0	89.1	80	120				
Magnesium	504862.836	100	500000	0	101	80	120				

B on ICSA3 is biased high however, samples for B were closed by CCV4/CCB4/LLCCV1/ICSA2/ICSAB2.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

12/22/2017

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	ICSA	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872870

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	498329.453	50	500000	0	99.7	80	120				
Calcium	506490.713	500	500000	0	101	80	120				
Iron	179793.677	20	200000	0	89.9	80	120				
Magnesium	475935.929	100	500000	0	95.2	80	120				

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	ICSAB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872871

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	546782.249	50	500000	0	109	80	120				
Calcium	555538.618	500	500000	0	111	80	120				
Iron	187588.653	20	200000	0	93.8	80	120				
Magnesium	503556.663	100	500000	0	101	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	ICSA	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872924

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	505775.123	50	500000	0	101	80	120				
Calcium	511760.390	500	500000	0	102	80	120				
Iron	181783.344	20	200000	0	90.9	80	120				
Magnesium	481219.806	100	500000	0	96.2	80	120				

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	ICSAB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872925

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	551426.519	50	500000	0	110	80	120				
Calcium	558431.588	500	500000	0	112	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSAB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	188992.776	20	200000	0	94.5	80	120				
Magnesium	506616.951	100	500000	0	101	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	494366.698	50	500000	0	98.9	80	120				
Calcium	497081.940	500	500000	0	99.4	80	120				
Iron	176987.327	20	200000	0	88.5	80	120				
Magnesium	476524.153	100	500000	0	95.3	80	120				

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSAB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	541047.279	50	500000	0	108	80	120				
Calcium	543688.104	500	500000	0	109	80	120				
Iron	184653.505	20	200000	0	92.3	80	120				
Magnesium	500595.553	100	500000	0	100	80	120				

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873679**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	491037.277	50	500000	0	98.2	80	120				
Calcium	489727.156	500	500000	0	97.9	80	120				
Iron	175817.995	20	200000	0	87.9	80	120				
Magnesium	473899.027	100	500000	0	94.8	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB4** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **ICSAB** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873680**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	538707.628	50	500000	0	108	80	120				
Calcium	536671.907	500	500000	0	107	80	120				
Iron	183946.460	20	200000	0	92.0	80	120				
Magnesium	500154.534	100	500000	0	100	80	120				

Sample ID **ICSA5** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **ICSA** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	519089.326	50	500000	0	104	80	120				
Calcium	511388.117	500	500000	0	102	80	120				
Iron	187834.978	20	200000	0	93.9	80	120				
Magnesium	504975.878	100	500000	0	101	80	120				

Sample ID **ICSAB5** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **ICSAB** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	473861.160	50	500000	0	94.8	80	120				
Calcium	464818.220	500	500000	0	93.0	80	120				
Iron	200609.345	20	200000	0	100	80	120				
Magnesium	447746.521	100	500000	0	89.5	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **ICSA**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874506**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	23.807	500									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **ICSAB**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10216.986	500	10000	0	102	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **ICSA**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874548**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	85.340	500									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **ICSAB**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874549**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10321.702	500	10000	0	103	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.01	101.02	65-125	PASS
Standard2	ICAL	1	1.0028	100.28	65-125	PASS
Standard3	ICAL	1	1.048	104.75	65-125	PASS
Standard4	ICAL	1	1.088	108.84	65-125	PASS
Standard5	ICAL	1	1.19	118.58	65-125	PASS
Standard6	ICAL	1	0.96	96.25	65-125	PASS
Standard7	ICAL	1	0.95	94.86	65-125	PASS
ICV	ICV	1	0.97	96.72	65-125	PASS
ICB	ICB	1	1	99.76	65-125	PASS
LLICV	CCV1	1	1.0008	100.08	65-125	PASS
LLICV	CCV1	1	1	99.79	65-125	PASS
ICSA1	ICSA	1	0.87	86.92	65-125	PASS
ICSAB1	ICSAB	1	0.79	78.77	65-125	PASS
CCV1	CCV	1	0.97	96.66	65-125	PASS
CCB1	CCB	1	1.0021	100.21	65-125	PASS
CCV2	CCV	1	0.98	97.53	65-125	PASS
CCB2	CCB	1	1.0038	100.38	65-125	PASS
MB-65993	MBLK	1	1.056	105.55	65-125	PASS
LCS1-65993	LCS	1	0.92	92.37	65-125	PASS
N027430-002B	SAMP	1	0.8	80.15	65-125	PASS
N027430-002B	SAMP	5	0.9	90.019	65-125	PASS
N027430-002B-PS	PS	1	0.81	81.11	65-125	PASS
N027430-002B-MS1	MS	1	0.8	80.48	65-125	PASS
N027430-002B-MSD1	MSD	1	0.82	81.7	65-125	PASS
N027430-004B	SAMP	1	1.035	103.54	65-125	PASS
N027430-006B	SAMP	1	1.015	101.47	65-125	PASS
N027430-008B	SAMP	1	0.94	93.84	65-125	PASS
CCV3	CCV	1	0.97	96.71	65-125	PASS
CCB3	CCB	1	1	99.8	65-125	PASS
N027430-012B	SAMP	1	0.86	85.96	65-125	PASS
N027430-013B	SAMP	1	0.89	89.086	65-125	PASS
N027430-014B	SAMP	1	0.84	83.56	65-125	PASS
N027430-015B	SAMP	1	0.82	82.4	65-125	PASS
N027430-016B	SAMP	1	0.85	84.58	65-125	PASS
N027430-017B	SAMP	1	0.83	82.71	65-125	PASS
N027430-018B	SAMP	1	0.74	73.87	65-125	PASS
N027430-020B	SAMP	1	0.92	92.28	65-125	PASS
N027431-001B	SAMP	1	0.96	96.36	65-125	PASS
N027431-002B	SAMP	1	0.87	87.35	65-125	PASS
CCV4	CCV	1	0.98	97.87	65-125	PASS

INTERNAL STANDARD: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCB4	CCB	1	1	99.62	65-125	PASS
LLCCV1	CCV2	1	1.016	101.59	65-125	PASS
ICSA2	ICSA	1	0.87	86.98	65-125	PASS
ICSAB2	ICSAB	1	0.79	78.92	65-125	PASS
N027431-003B	SAMP	1	0.84	84.34	65-125	PASS
N027431-004B	SAMP	1	0.86	85.75	65-125	PASS
N027431-005B	SAMP	1	0.99	98.83	65-125	PASS
N027431-006B	SAMP	1	0.89	89.26	65-125	PASS
CCV5	CCV	1	0.98	97.84	65-125	PASS
CCB5	CCB	1	1.015	101.51	65-125	PASS
CCV6	CCV	1	0.98	98.036	65-125	PASS
CCB6	CCB	1	1.0083	100.83	65-125	PASS
LLCCV2	CCV2	1	1.018	101.82	65-125	PASS
ICSA3	ICSA	1	0.88	88.075	65-125	PASS
ICSAB3	ICSAB	1	0.8	79.74	65-125	PASS
CCV7	CCV	1	0.98	97.56	65-125	PASS
CCB7	CCB	1	0.99	99.13	65-125	PASS
LLCCV3	CCV2	1	1.0075	100.75	65-125	PASS
ICSA4	ICSA	1	0.87	87.1	65-125	PASS
ICSAB4	ICSAB	1	0.8	79.67	65-125	PASS

INTERNAL STANDARD: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	98.9	65-125	PASS
Standard2	ICAL	1	1.053	105.31	65-125	PASS
Standard3	ICAL	1	1.046	104.59	65-125	PASS
Standard4	ICAL	1	1.074	107.38	65-125	PASS
Standard5	ICAL	1	0.99	98.63	65-125	PASS
Standard6	ICAL	1	0.93	93.39	65-125	PASS
Standard7	ICAL	1	0.95	94.61	65-125	PASS
ICV	ICV	1	0.94	94.18	65-125	PASS
ICB	ICB	1	1.015	101.49	65-125	PASS
LLICV	CCV1	1	1.034	103.35	65-125	PASS
ICSA1	ICSA	1	1.015	101.5	65-125	PASS
ICSAB1	ICSAB	1	0.82	81.74	65-125	PASS
N027430-015B	SAMP	5	0.85	85.095	65-125	PASS
CCV1	CCV	1	0.98	97.92	65-125	PASS
CCB1	CCB	1	1	99.98	65-125	PASS
CCB1	CCB	1	1.031	103.1	65-125	PASS
CCV2	CCV	1	1.03	102.97	65-125	PASS
CCB2	CCB	1	1.042	104.16	65-125	PASS
CCV3	CCV	1	0.98	97.7	65-125	PASS
CCB3	CCB	1	1.042	104.17	65-125	PASS
CCB3	CCB	1	1.022	102.22	65-125	PASS
CCV4	CCV	1	1.011	101.06	65-125	PASS
CCB4	CCB	1	1	99.81	65-125	PASS
LLCCV1	CCV2	1	1.033	103.33	65-125	PASS
ICSA2	ICSA	1	1.045	104.52	65-125	PASS
ICSAB2	ICSAB	1	0.84	84.43	65-125	PASS
CCV5	CCV	1	0.99	98.91	65-125	PASS
CCB5	CCB	1	1.0069	100.69	65-125	PASS
CCV6	CCV	1	1.028	102.84	65-125	PASS
CCB6	CCB	1	1.0096	100.96	65-125	PASS
CCV7	CCV	1	1.037	103.74	65-125	PASS
CCB7	CCB	1	1.037	103.7	65-125	PASS
CCV8	CCV	1	1.072	107.21	65-125	PASS
CCB8	CCB	1	1.094	109.41	65-125	PASS
LLCCV2	CCV2	1	1.15	115.04	65-125	PASS
ICSA3	ICSA	1	1.15	114.65	65-125	PASS
ICSAB3	ICSAB	1	0.9	90.38	65-125	PASS
CCV9	CCV	1	1.075	107.45	65-125	PASS
CCB9	CCB	1	1.085	108.54	65-125	PASS
CCV10	CCV	1	1.088	108.83	65-125	PASS

INTERNAL STANDARD: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCB10	CCB	1	1.11	110.82	65-125	PASS
CCV11	CCV	1	1.11	110.54	65-125	PASS
CCB11	CCB	1	1.095	109.54	65-125	PASS
CCB11	CCB	1	1.1	110.07	65-125	PASS
CCV12	CCV	1	1.079	107.91	65-125	PASS
CCB12	CCB	1	1.11	110.73	65-125	PASS
LLCCV3	CCV2	1	1.17	116.58	65-125	PASS
ICSA4	ICSA	1	1.16	115.81	65-125	PASS
ICSAB4	ICSAB	1	0.91	91.32	65-125	PASS
CCV13	CCV	1	1.073	107.34	65-125	PASS
CCB13	CCB	1	1.097	109.65	65-125	PASS
CCV14	CCV	1	1.074	107.42	65-125	PASS
CCB14	CCB	1	1.048	104.82	65-125	PASS
CCV15	CCV	1	1.029	102.92	65-125	PASS
CCB15	CCB	1	1.038	103.82	65-125	PASS
CCV16	CCV	1	1.033	103.32	65-125	PASS
CCB16	CCB	1	1.042	104.16	65-125	PASS
CCB16	CCB	1	1.043	104.26	65-125	PASS
CCV17	CCV	1	1.023	102.26	65-125	PASS
CCB17	CCB	1	1.012	101.22	65-125	PASS
LLCCV4	CCV2	1	1.12	111.89	65-125	PASS
LLCCV4	CCV2	1	1.047	104.73	65-125	PASS
ICSA5	ICSA	1	1.11	111.01	65-125	PASS
ICSAB5	ICSAB	1	0.88	87.76	65-125	PASS
ICSAB5	ICSAB	1	1.043	104.34	65-125	PASS

INTERNAL STANDARD: 171220B

Instrument ID: ICP-02

Scandium

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1	99.73	65-125	PASS
Standard2	ICAL	1	1.0062	100.62	65-125	PASS
Standard3	ICAL	1	0.99	98.52	65-125	PASS
Standard4	ICAL	1	0.97	97.31	65-125	PASS
Standard5	ICAL	1	0.96	96.35	65-125	PASS
Standard6	ICAL	1	0.95	95.47	65-125	PASS
ICV	ICV	1	0.97	96.67	65-125	PASS
ICB	ICB	1	1	99.53	65-125	PASS
ICSA1	ICSA	1	1.0002	100.02	65-125	PASS
ICSAB1	ICSAB	1	0.97	96.83	65-125	PASS
MB-65993	MBLK	1	0.99	98.85	65-125	PASS
LCS2-65993	LCS	1	1.036	103.55	65-125	PASS
N027430-002B	SAMP	250	0.98	97.68	65-125	PASS
N027430-004B	SAMP	1	1	99.74	65-125	PASS
N027430-004B	SAMP	5	0.98	98.26	65-125	PASS
N027430-004B-PS	PS	1	0.98	98.31	65-125	PASS
N027430-004B-MS2	MS	1	0.98	98.33	65-125	PASS
N027430-004B-MSD2	MSD	1	0.98	97.95	65-125	PASS
N027430-004B	SAMP	10	0.97	96.6	65-125	PASS
N027430-004B	SAMP	50	0.98	97.63	65-125	PASS
CCV1	CCV	1	1.015	101.53	65-125	PASS
CCV1	CCV	1	0.96	96.11	65-125	PASS
CCB1	CCB	1	0.98	97.78	65-125	PASS
N027430-004B-PS	PS	10	0.97	96.97	65-125	PASS
N027430-004B-MS2	MS	10	0.97	97.098	65-125	PASS
N027430-004B-MSD2	MSD	10	0.97	96.96	65-125	PASS
N027430-006B	SAMP	10	0.97	97.4	65-125	PASS
N027430-008B	SAMP	100	0.97	96.8	65-125	PASS
N027430-012B	SAMP	100	0.96	96.11	65-125	PASS
N027430-013B	SAMP	100	0.97	96.71	65-125	PASS
N027430-014B	SAMP	100	0.96	96.025	65-125	PASS
N027430-015B	SAMP	250	0.96	95.93	65-125	PASS
N027430-016B	SAMP	250	0.97	96.73	65-125	PASS
CCV2	CCV	1	0.95	95.46	65-125	PASS
CCB2	CCB	1	0.98	97.96	65-125	PASS
N027430-017B	SAMP	250	0.97	96.66	65-125	PASS
N027430-018B	SAMP	500	0.97	96.56	65-125	PASS
N027430-020B	SAMP	100	0.96	96.37	65-125	PASS
N027431-001B	SAMP	25	0.96	96.072	65-125	PASS
N027431-002B	SAMP	100	0.97	97.16	65-125	PASS

12/22/2017

INTERNAL STANDARD: 171220B

Instrument ID: ICP-02

Scandium

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N027431-003B	SAMP	250	0.96	96.05	65-125	PASS
N027431-004B	SAMP	250	0.97	97.12	65-125	PASS
N027431-005B	SAMP	1	0.95	95.025	65-125	PASS
N027431-005B	SAMP	25	0.96	96.36	65-125	PASS
N027431-006B	SAMP	1	0.9	90.062	65-125	PASS
CCV3	CCV	1	0.95	95.48	65-125	PASS
CCB3	CCB	1	0.97	97.064	65-125	PASS
N027431-006B	SAMP	100	0.96	96.25	65-125	PASS
CCV4	CCV	1	0.95	95.4	65-125	PASS
CCB4	CCB	1	0.98	97.55	65-125	PASS
ICSA2	ICSA	1	0.97	96.79	65-125	PASS
ICSAB2	ICSAB	1	0.95	95.45	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N027430
Test Method: EPA 6010B
Analysis Date: 12/18/2017 & 12/20/2017

Matrix: Groundwater
Batch No.: 65993

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B & Fe. The calculated concentration is <25RL.
Dilution test failed for Mg.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027430-002B DT 5X	Boron	ug/L	2691.515	NA	2388.723	12.68%	10
N027430-002B DT 5X	Calcium	ug/L	219251	PASS	211040.5	3.89%	10
N027430-002B DT 5X	Iron	ug/L	60.30838	NA	52.83901	14.14%	10
N027430-002B DT 5X	Magnesium	ug/L	5739.538	FAIL	4660.336	23.16%	10
N027430-004B DT 50X	Sodium	ug/L	238153.7	PASS	226728.1	5.04%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N027430-002B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871610**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6840.260	100	5000	2389	89.0	80	120				
Calcium	211388.844	500	10000	211000	3.48	80	120				S
Iron	135.616	20	100.0	52.84	82.8	80	120				
Magnesium	11715.362	100	10000	4660	70.6	80	120				S

Sample ID **N027430-004B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **ZZZZZZ**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2874521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	253014.845	5000	20000	226700	131	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

LOD & PQL VERIFICATION

Analytical Method: EPA 6010B / 200.7 **Matrix:** Water
Date of Analysis: 2/21/2017 **Units:** mg/L
Instrument Name: ICP2
Analyst: MI

Compound	MDL	LOD		PQL		
		Spike	Recovered	Spike	Recovered	% Recovery
Sodium	0.02621	0.10	0.08408	0.5	0.52080	104.2
Potassium	0.03815	0.10	0.13587	0.5	0.48231	96.5
Strontium	0.00545	0.02	0.02459	0.05	0.06052	121.0

Method Detection Limit

Analytical Method: EPA 6010B / 200.7
Digestion Method: EPA 3010A
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: mg/L

Analyte	1	2	3	4	5	6	7	SD	Ave	AMT SPIKED	%RSD	MDL	PQL
Potassium	0.15443	0.16201	0.14301	0.16141	0.16124	0.12965	0.14652	0.01215	0.15118	0.1000	8.0	0.03815	0.5
Sodium	0.11445	0.11459	0.11678	0.11286	0.11394	0.09515	0.10066	0.00835	0.10978	0.1000	7.6	0.02621	0.5
Strontium	0.02939	0.03046	0.0307	0.02962	0.03209	0.02708	0.02772	0.00174	0.02958	0.0250	5.9	0.00545	0.05

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66020
ASSET #: N027430

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 12/19/2017

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X			X	
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?		X			X	
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X	X		X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).		X			X	
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of Mn & Mo in N027430-002B PS/MS/MSD failed. However LCS & DT passed criteria.
%Rec of IS in N027430-018B failed. Se for rerun.
For Confirmation:
N027430-002B (6020) = 3.5 ug/L :confirmation: 3.4 ug/L ; N027430-002A (218.6) = 0.37 ug/L :confirmation: 0.07 ug/L
N027430-012B (6020) = 1.7 ug/L :confirmation: 1.5 ug/L ; N027430-012A (218.6) = <0.20 ug/L :confirmation: 0.0 ug/L

	Yes	No	N/A
1. All assigned sample(s) analyzed	/		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/22/17
2nd Level Reviewer [signature] 12/22/2017 Date: ——

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66020
ASSET #: N027430

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 12/20/2017

Method:

- [ ] EPA 6010B / 200.7
- [ ] EPA 7470A / 7471A/245.1
- [X] EPA 6020 / 200.8
- [ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)		X		X	X	
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X	X	
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		X
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			X
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .			X			X
24. LCS compounds within control limits.			X			X
25. MS/MSD, RPD's are within control limits			X			X
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For Se in N027430-018B rerun only.
%Rec of Se in LLICV failed, bias high. However %Rec within limit 80-120%, thus reported.
% RSD

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/22/17

2nd Level Reviewer 12/22/2017 Date: _____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N027430-002B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 3.54563 * 1 * (25/25)

Chromium , ug/L = 3.54563

Reporting results in two significant figures,

Chromium , ug/L = 3.5

% RSD SUMMARY

PERCENT RSD SUMMARY: 171219B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.088	13.13	15	PASS	0.12	6.39	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.51	4.38	15	PASS	0.54	2.038	15	PASS
Std3-5/50 ppb	ICAL	1	5.2	1.061	15	PASS	5.2	2.85	15	PASS
Std4-10/100 ppb	ICAL	1	10.23	2.049	15	PASS	10.23	0.85	15	PASS
Std5-20/200 ppb	ICAL	1	20.49	1.95	15	PASS	20.22	3.05	15	PASS
Std6-40/400 ppb	ICAL	1	40.45	1.58	15	PASS	40.2	2.63	15	PASS
Std7-100/1000 ppb	ICAL	1	100.78	1.69	15	PASS	99.84	2.055	15	PASS
Std8-200/2000 ppb	ICAL	1	199.45	1.54	15	PASS	195.18	1.2	15	PASS
ICV	ICV	1	10.077	1.33	15	PASS	99.24	1.43	15	PASS
ICB	ICB	1	0.00089	482.47	15	<PQL	0.0012	121.89	15	<PQL
LLICV	CCV1	1	1.025	7.46	20	PASS	0.53	5.12	20	PASS
ICSA1	ICSA	1	0.072	17.77	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.064	1.4	15	PASS	22.99	1.51	15	PASS
LLICV	CCV1	1	1.057	3.027	20	PASS	0.53	4.35	20	PASS
MB-66020	MBLK	1	0.0043	317.14	15	<PQL	0.0057	54.56	15	<PQL
LCS-66020	LCS	1	10.17	1.7	15	PASS	100.074	1.65	15	PASS
N027430-002B	SAMP	1	3.55	1.19	15	PASS	307.96	1.0031	15	PASS
N027430-002B	SAMP	5	0.82	2.47	15	PASS	67.15	0.99	15	PASS
N027430-002B	SAMP	25	0.15	2.39	15	PASS	14.64	1.61	15	PASS
N027430-002B-PS	PS	1	12.69	2.72	15	PASS	379.39	1.16	15	PASS
N027430-002B-PS	PS	5	2.89	0.38	15	PASS	89.24	1.79	15	PASS
N027430-002B-MS	MS	1	13.2	0.61	15	PASS	391.17	2.17	15	PASS
N027430-002B-MS	MS	5	2.96	1.53	15	PASS	93.55	1.24	15	PASS
N027430-002B-MSD	MSD	1	13.18	0.98	15	PASS	382.6	0.88	15	PASS
CCV1	CCV	1	20.65	2.47	15	PASS	20.52	2.44	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.022	24.38	15	<PQL
N027430-002B-MSD	MSD	5	2.91	1.34	15	PASS	95.34	1.69	15	PASS
N027430-004B	SAMP	1	0.074	2.73	15	PASS	193.078	0.65	15	PASS
N027430-004B	SAMP	5	<0.000	N/A	15	<PQL	40.68	2.3	15	PASS
N027430-006B	SAMP	1	0.21	10.4	15	PASS	<0.000	N/A	15	<PQL
N027430-006B	SAMP	5	0.021	34.29	15	<PQL	<0.000	N/A	15	<PQL
N027430-008B	SAMP	1	0.23	2.69	15	PASS	128.42	0.6	15	PASS
N027430-008B	SAMP	5	0.019	12.32	15	PASS	27.63	0.71	15	PASS
N027430-012B	SAMP	1	1.67	1.24	15	PASS	14.097	0.64	15	PASS
N027430-012B	SAMP	5	0.33	9.077	15	PASS	3.12	3.2	15	PASS
N027430-013B	SAMP	1	5.037	1.21	15	PASS	5.43	2.86	15	PASS
CCV2	CCV	1	20.48	1.64	15	PASS	20.49	2.19	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.0018	658.49	15	<PQL
N027430-013B	SAMP	5	1.038	1.64	15	PASS	1.24	4.69	15	PASS
N027430-014B	SAMP	1	7.24	1.13	15	PASS	3.79	3.023	15	PASS

PERCENT RSD SUMMARY: 171219B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027430-014B	SAMP	5	1.54	2.58	15	PASS	0.82	1.97	15	PASS
N027430-015B	SAMP	1	15.33	0.77	15	PASS	18.27	0.12	15	PASS
N027430-015B	SAMP	5	3.44	0.37	15	PASS	4.0031	2.86	15	PASS
N027430-016B	SAMP	1	11.13	1.017	15	PASS	17.33	0.54	15	PASS
N027430-016B	SAMP	5	2.3	4.62	15	PASS	3.79	2.16	15	PASS
N027430-017B	SAMP	1	0.53	1.24	15	PASS	39.13	0.61	15	PASS
N027430-017B	SAMP	5	0.12	2.19	15	PASS	8.56	1.31	15	PASS
N027430-018B	SAMP	1	0.15	10.69	15	PASS	237.53	0.88	15	PASS
CCV3	CCV	1	20.56	1.11	15	PASS	20.65	2	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.057	9.21	15	PASS
N027430-018B	SAMP	5	<0.000	N/A	15	<PQL	60.25	0.45	15	PASS
N027430-020B	SAMP	1	92.88	0.33	15	PASS	24.0048	0.56	15	PASS
N027430-020B	SAMP	5	20.28	1.79	15	PASS	5.38	1.64	15	PASS
N027430-002B	SAMP	1	3.61	0.74	15	PASS	307.3	0.58	15	PASS
N027430-002B-MSD	MSD	1	12.45	2.36	15	PASS	391.23	2.8	15	PASS
N027430-006B	SAMP	1	0.2	6.44	15	PASS	<0.000	N/A	15	<PQL
N027430-018B	SAMP	25	<0.000	N/A	15	<PQL	60.87	2.068	15	PASS
CCV4	CCV	1	20.14	1.36	15	PASS	20.3	0.95	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.026	41.76	15	<PQL
LLCCV1	CCV2	1	0.99	4.082	20	PASS	0.59	1.45	20	PASS
ICSA2	ICSA	1	0.14	20.79	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.42	1.52	15	PASS	23.64	1.8	15	PASS

PERCENT RSD SUMMARY: 171219B

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	11.062	15	PASS	0.1	62.68	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.51	11.66	15	PASS	0.46	26.55	15	<PQL
Std3-5/50 ppb	ICAL	1	4.91	1.71	15	PASS	5.061	7.67	15	PASS
Std4-10/100 ppb	ICAL	1	10.18	1.78	15	PASS	10.096	2.8	15	PASS
Std5-20/200 ppb	ICAL	1	20.26	1.34	15	PASS	20.58	4.57	15	PASS
Std6-40/400 ppb	ICAL	1	40.24	0.5	15	PASS	41.13	0.7	15	PASS
Std7-100/1000 ppb	ICAL	1	101.089	0.48	15	PASS	100.57	2.26	15	PASS
Std8-200/2000 ppb	ICAL	1	199.37	0.58	15	PASS	199.42	0.42	15	PASS
ICV	ICV	1	10	1.79	15	PASS	10	3.84	15	PASS
ICB	ICB	1	0.018	174.79	15	<PQL	0.022	41.3	15	<PQL
LLICV	CCV1	1	0.093	15.86	20	PASS	0.52	28.63	20	NR!
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.0063	145.48	15	<PQL
ICSAB1	ICSAB	1	20.18	1.87	15	PASS	18.98	1.5	15	PASS
LLICV	CCV1	1	0.11	26.19	20	NR!	0.55	14.92	20	PASS
MB-66020	MBLK	1	0.001	1396.17	15	<PQL	0.012	135.49	15	<PQL
LCS-66020	LCS	1	9.68	1.18	15	PASS	9.65	1.36	15	PASS
N027430-002B	SAMP	1	2.4	6.87	15	PASS	0.71	36.39	15	NR!
N027430-002B	SAMP	5	0.44	9.6	15	PASS	0.054	52.097	15	<PQL
N027430-002B	SAMP	25	0.083	18.28	15	<PQL	0.032	129.51	15	<PQL
N027430-002B-PS	PS	1	12.12	1.84	15	PASS	9.81	4.16	15	PASS
N027430-002B-PS	PS	5	2.65	1.17	15	PASS	1.91	5.96	15	PASS
N027430-002B-MS	MS	1	12.23	2.51	15	PASS	9.62	2.99	15	PASS
N027430-002B-MS	MS	5	2.61	3.66	15	PASS	1.96	8.22	15	PASS
N027430-002B-MSD	MSD	1	12.12	2.49	15	PASS	10.097	2.67	15	PASS
CCV1	CCV	1	20.24	0.31	15	PASS	21.5	3.95	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.023	76.49	15	<PQL
N027430-002B-MSD	MSD	5	2.8	3.26	15	PASS	2.22	9.83	15	PASS
N027430-004B	SAMP	1	9.22	1.74	15	PASS	0.29	9.37	15	PASS
N027430-004B	SAMP	5	1.9	4.093	15	PASS	0.056	37.35	15	<PQL
N027430-006B	SAMP	1	0.77	2.12	15	PASS	1.2	15.45	15	NR!
N027430-006B	SAMP	5	0.16	12.54	15	PASS	0.16	9.4	15	PASS
N027430-008B	SAMP	1	1.71	3.019	15	PASS	0.035	110.51	15	<PQL
N027430-008B	SAMP	5	0.39	6.93	15	PASS	0.018	86.17	15	<PQL
N027430-012B	SAMP	1	9.7	1.64	15	PASS	0.6	28.25	15	NR!
N027430-012B	SAMP	5	2.061	5.45	15	PASS	0.074	75.16	15	<PQL
N027430-013B	SAMP	1	1.13	5.47	15	PASS	0.13	39.54	15	<PQL
CCV2	CCV	1	19.94	0.9	15	PASS	21.53	5.21	15	PASS
CCB2	CCB	1	0.0021	649.075	15	<PQL	0.013	56.71	15	<PQL
N027430-013B	SAMP	5	0.21	5.41	15	PASS	0.035	48.35	15	<PQL
N027430-014B	SAMP	1	1.63	10.085	15	PASS	0.78	16.11	15	NR!

PERCENT RSD SUMMARY: 171219B

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027430-014B	SAMP	5	0.36	10.67	15	PASS	0.18	28.68	15	<PQL
N027430-015B	SAMP	1	1.048	9.65	15	PASS	0.6	17.54	15	NR!
N027430-015B	SAMP	5	0.21	9.78	15	PASS	0.12	7.6	15	PASS
N027430-016B	SAMP	1	1.97	1.35	15	PASS	0.7	26.32	15	NR!
N027430-016B	SAMP	5	0.43	8.92	15	PASS	0.092	56.3	15	<PQL
N027430-017B	SAMP	1	2.32	3.57	15	PASS	0.78	15.014	15	NR!
N027430-017B	SAMP	5	0.43	13.94	15	PASS	0.16	25.51	15	<PQL
N027430-018B	SAMP	1	2.76	2.93	15	PASS	0.13	53.77	15	<PQL
CCV3	CCV	1	20.82	1.97	15	PASS	20.92	3.12	15	PASS
CCB3	CCB	1	0.0034	495.11	15	<PQL	0.027	99.49	15	<PQL
N027430-018B	SAMP	5	0.57	5.54	15	PASS	0.014	131.23	15	<PQL
N027430-020B	SAMP	1	1.86	1.18	15	PASS	1.41	11.9	15	PASS
N027430-020B	SAMP	5	0.38	6.6	15	PASS	0.26	6.26	15	PASS
N027430-002B	SAMP	1	2.11	3.87	15	PASS	0.29	21.57	15	<PQL
N027430-002B-MSD	MSD	1	11.63	3.99	15	PASS	11.6	5.29	15	PASS
N027430-006B	SAMP	1	0.71	2.99	15	PASS	1.17	7.85	15	PASS
N027430-018B	SAMP	25	0.63	10.32	15	PASS	0.051	37.58	15	<PQL
CCV4	CCV	1	20.5	0.59	15	PASS	21.3	2.035	15	PASS
CCB4	CCB	1	0.00058	3627.63	15	<PQL	0.029	116.079	15	<PQL
LLCCV1	CCV2	1	0.08	22.4	20	<PQL	0.55	13.68	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.056	69.87	15	<PQL
ICSAB2	ICSAB	1	20.12	1.5	15	PASS	17.59	4.63	15	PASS

PERCENT RSD SUMMARY: 171219B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.087	4.21	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.49	7.44	15	PASS
Std3-5/50 ppb	ICAL	1	5.051	1.83	15	PASS
Std4-10/100 ppb	ICAL	1	9.85	0.66	15	PASS
Std5-20/200 ppb	ICAL	1	19.99	0.43	15	PASS
Std6-40/400 ppb	ICAL	1	40.018	1.14	15	PASS
Std7-100/1000 ppb	ICAL	1	100.55	0.54	15	PASS
Std8-200/2000 ppb	ICAL	1	199.73	0.91	15	PASS
ICV	ICV	1	10.41	1.58	15	PASS
ICB	ICB	1	0.16	7.63	15	PASS
LLICV	CCV1	1	0.53	3.49	20	PASS
ICSA1	ICSA	1	0.062	13.11	15	PASS
ICSAB1	ICSAB	1	22.013	1.53	15	PASS
LLICV	CCV1	1	0.5	3.27	20	PASS
MB-66020	MBLK	1	0.014	49.21	15	<PQL
LCS-66020	LCS	1	9.98	1.37	15	PASS
N027430-002B	SAMP	1	275.029	0.48	15	PASS
N027430-002B	SAMP	5	50.74	0.66	15	PASS
N027430-002B	SAMP	25	10.11	1.32	15	PASS
N027430-002B-PS	PS	1	281.33	0.69	15	PASS
N027430-002B-PS	PS	5	55.63	0.79	15	PASS
N027430-002B-MS	MS	1	296.66	0.76	15	PASS
N027430-002B-MS	MS	5	58.53	0.74	15	PASS
N027430-002B-MSD	MSD	1	294.89	0.69	15	PASS
CCV1	CCV	1	20.59	1.17	15	PASS
CCB1	CCB	1	0.17	14.23	15	PASS
N027430-002B-MSD	MSD	5	60.28	0.45	15	PASS
N027430-004B	SAMP	1	4.83	3.22	15	PASS
N027430-004B	SAMP	5	0.95	1.59	15	PASS
N027430-006B	SAMP	1	4.41	1.91	15	PASS
N027430-006B	SAMP	5	0.85	0.92	15	PASS
N027430-008B	SAMP	1	23.034	1.4	15	PASS
N027430-008B	SAMP	5	4.45	2.38	15	PASS
N027430-012B	SAMP	1	356.059	1.98	15	PASS
N027430-012B	SAMP	5	67.5	0.17	15	PASS
N027430-013B	SAMP	1	10.68	0.7	15	PASS
CCV2	CCV	1	20.16	0.58	15	PASS
CCB2	CCB	1	0.11	9.14	15	PASS
N027430-013B	SAMP	5	1.98	1.9	15	PASS
N027430-014B	SAMP	1	44.66	1.51	15	PASS

PERCENT RSD SUMMARY: 171219B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N027430-014B	SAMP	5	8.16	1.9	15	PASS
N027430-015B	SAMP	1	18.91	0.11	15	PASS
N027430-015B	SAMP	5	3.45	0.96	15	PASS
N027430-016B	SAMP	1	199.19	0.58	15	PASS
N027430-016B	SAMP	5	36.32	0.52	15	PASS
N027430-017B	SAMP	1	352.41	0.89	15	PASS
N027430-017B	SAMP	5	63.59	0.62	15	PASS
N027430-018B	SAMP	1	213.24	1.32	15	PASS
CCV3	CCV	1	20.42	0.65	15	PASS
CCB3	CCB	1	0.16	9.64	15	PASS
N027430-018B	SAMP	5	38.53	0.037	15	PASS
N027430-020B	SAMP	1	13.82	1.17	15	PASS
N027430-020B	SAMP	5	3.42	6.053	15	PASS
N027430-002B	SAMP	1	275.39	0.82	15	PASS
N027430-002B-MSD	MSD	1	295.074	0.46	15	PASS
N027430-006B	SAMP	1	4.32	2.31	15	PASS
N027430-018B	SAMP	25	37.54	1.48	15	PASS
CCV4	CCV	1	20.18	0.85	15	PASS
CCB4	CCB	1	0.11	18.88	15	<PQL
LLCCV1	CCV2	1	0.52	3.46	20	PASS
ICSA2	ICSA	1	0.2	9.37	15	PASS
ICSAB2	ICSAB	1	21.91	1.26	15	PASS

PERCENT RSD SUMMARY: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	16.17	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.55	2.81	15	PASS
Std3-5/50 ppb	ICAL	1	5.015	4.6	15	PASS
Std4-10/100 ppb	ICAL	1	9.49	2.22	15	PASS
Std5-20/200 ppb	ICAL	1	20.37	2.35	15	PASS
Std6-40/400 ppb	ICAL	1	40.84	1.63	15	PASS
Std7-100/1000 ppb	ICAL	1	99.64	0.32	15	PASS
Std8-200/2000 ppb	ICAL	1	201.36	2.67	15	PASS
ICV	ICV	1	10.49	0.58	15	PASS
ICB	ICB	1	0.15	18.32	15	<PQL
LLICV	CCV1	1	0.6	3.93	20	PASS
ICSA1	ICSA	1	0.099	12.53	15	PASS
ICSAB1	ICSAB	1	17.94	4.031	15	PASS
LLICV	CCV1	1	0.58	22.6	20	NR!
CCV1	CCV	1	21.21	3.2	15	PASS
CCB1	CCB	1	0.12	25.82	15	<PQL
CCV2	CCV	1	19.6	4.59	15	PASS
CCB2	CCB	1	0.061	33.78	15	<PQL
CCV3	CCV	1	20.82	2.77	15	PASS
CCB3	CCB	1	0.02	165.52	15	<PQL
LLCCV1	CCV2	1	0.56	15.32	20	PASS
ICSA2	ICSA	1	0.014	79.34	15	<PQL
ICSAB2	ICSAB	1	19.52	0.87	15	PASS
CCV4	CCV	1	21.13	3.11	15	PASS
CCB4	CCB	1	0.017	85.8	15	<PQL
N027430-018B	SAMP	25	0.0062	413.29	15	<PQL
CCV5	CCV	1	21.54	0.98	15	PASS
CCB5	CCB	1	0.014	39.42	15	<PQL
LLCCV2	CCV2	1	0.49	10.76	20	PASS
ICSA3	ICSA	1	0.027	59.64	15	<PQL
ICSAB3	ICSAB	1	16.25	0.63	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 171219B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B1219001.D	RINSE	RINSE	1	12/19/17 4:48 PM
B1219002.D	Cal Blank	IBLK	1	12/19/17 4:53 PM
B1219003.D	Std1-0.1/1 ppb	ICAL	1	12/19/17 4:59 PM
B1219004.D	Std2-0.5/5 ppb	ICAL	1	12/19/17 5:04 PM
B1219005.D	Std3-5/50 ppb	ICAL	1	12/19/17 5:10 PM
B1219006.D	Std4-10/100 ppb	ICAL	1	12/19/17 5:15 PM
B1219007.D	Std5-20/200 ppb	ICAL	1	12/19/17 5:21 PM
B1219008.D	Std6-40/400 ppb	ICAL	1	12/19/17 5:26 PM
B1219009.D	Std7-100/1000 ppb	ICAL	1	12/19/17 5:32 PM
B1219010.D	Std8-200/2000 ppb	ICAL	1	12/19/17 5:38 PM
B1219011.D	ICV	ICV	1	12/19/17 5:43 PM
B1219012.D	ICB	ICB	1	12/19/17 5:49 PM
B1219013.D	LLICV	CCV1	1	12/19/17 5:54 PM
B1219014.D	ICSA1	ICSA	1	12/19/17 6:00 PM
B1219015.D	ICSAB1	ICSAB	1	12/19/17 6:05 PM
B1219016.D	LLICV	CCV1	1	12/19/17 6:11 PM
B1219017.D	MB-66020	MBLK	1	12/19/17 6:15 PM
B1219018.D	LCS-66020	LCS	1	12/19/17 6:21 PM
B1219019.D	N027430-002B	SAMP	1	12/19/17 6:26 PM
B1219020.D	N027430-002B	SAMP	5	12/19/17 6:33 PM
B1219021.D	N027430-002B	SAMP	25	12/19/17 6:38 PM
B1219022.D	N027430-002B-PS	PS	1	12/19/17 6:44 PM
B1219023.D	N027430-002B-PS	PS	5	12/19/17 6:49 PM
B1219024.D	N027430-002B-MS	MS	1	12/19/17 6:55 PM
B1219025.D	N027430-002B-MS	MS	5	12/19/17 7:00 PM
B1219026.D	N027430-002B-MSD	MSD	1	12/19/17 7:06 PM
B1219027.D	CCV1	CCV	1	12/19/17 7:12 PM
B1219028.D	CCB1	CCB	1	12/19/17 7:17 PM
B1219029.D	N027430-002B-MSD	MSD	5	12/19/17 7:23 PM
B1219030.D	N027430-004B	SAMP	1	12/19/17 7:28 PM
B1219031.D	N027430-004B	SAMP	5	12/19/17 7:34 PM
B1219032.D	N027430-006B	SAMP	1	12/19/17 7:43 PM
B1219033.D	N027430-006B	SAMP	5	12/19/17 7:49 PM
B1219034.D	N027430-008B	SAMP	1	12/19/17 7:54 PM
B1219035.D	N027430-008B	SAMP	5	12/19/17 8:00 PM
B1219036.D	N027430-012B	SAMP	1	12/19/17 8:05 PM
B1219037.D	N027430-012B	SAMP	5	12/19/17 8:11 PM
B1219038.D	N027430-013B	SAMP	1	12/19/17 8:17 PM
B1219039.D	CCV2	CCV	1	12/19/17 8:22 PM
B1219040.D	CCB2	CCB	1	12/19/17 8:28 PM
B1219041.D	N027430-013B	SAMP	5	12/19/17 8:33 PM
B1219042.D	N027430-014B	SAMP	1	12/19/17 8:39 PM

INJECTION LOG: 171219B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B1219043.D	N027430-014B	SAMP	5	12/19/17 8:44 PM
B1219044.D	N027430-015B	SAMP	1	12/19/17 8:50 PM
B1219045.D	N027430-015B	SAMP	5	12/19/17 8:55 PM
B1219046.D	N027430-016B	SAMP	1	12/19/17 9:01 PM
B1219047.D	N027430-016B	SAMP	5	12/19/17 9:07 PM
B1219048.D	N027430-017B	SAMP	1	12/19/17 9:12 PM
B1219049.D	N027430-017B	SAMP	5	12/19/17 9:18 PM
B1219050.D	N027430-018B	SAMP	1	12/19/17 9:24 PM
B1219051.D	CCV3	CCV	1	12/19/17 9:29 PM
B1219052.D	CCB3	CCB	1	12/19/17 9:35 PM
B1219053.D	N027430-018B	SAMP	5	12/19/17 9:41 PM
B1219054.D	N027430-020B	SAMP	1	12/19/17 9:46 PM
B1219055.D	N027430-020B	SAMP	5	12/19/17 9:52 PM
B1219056.D	N027430-002B	SAMP	1	12/19/17 9:57 PM
B1219057.D	N027430-002B-MSD	MSD	1	12/19/17 10:03 PM
B1219058.D	N027430-006B	SAMP	1	12/19/17 10:09 PM
B1219059.D	N027430-018B	SAMP	25	12/19/17 10:14 PM
B1219060.D	N027429-001B	SAMP	25	12/19/17 10:19 PM
B1219061.D	N027429-001B-PS	PS	1	12/19/17 10:25 PM
B1219062.D	N027429-001B-PS	PS	5	12/19/17 10:30 PM
B1219063.D	CCV4	CCV	1	12/19/17 10:36 PM
B1219064.D	CCB4	CCB	1	12/19/17 10:41 PM
B1219065.D	LLCCV1	CCV2	1	12/19/17 10:47 PM
B1219066.D	ICSA2	ICSA	1	12/19/17 10:53 PM
B1219067.D	ICSAB2	ICSAB	1	12/19/17 10:58 PM

INJECTION LOG: 171220A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1220001.D	RINSE	RINSE	1	12/20/17 3:01 PM
A1220002.D	Cal Blank	IBLK	1	12/20/17 3:07 PM
A1220003.D	Std1-0.1/1 ppb	ICAL	1	12/20/17 3:13 PM
A1220004.D	Std2-0.5/5 ppb	ICAL	1	12/20/17 3:18 PM
A1220005.D	Std3-5/50 ppb	ICAL	1	12/20/17 3:24 PM
A1220006.D	Std4-10/100 ppb	ICAL	1	12/20/17 3:29 PM
A1220007.D	Std5-20/200 ppb	ICAL	1	12/20/17 3:35 PM
A1220008.D	Std6-40/400 ppb	ICAL	1	12/20/17 3:40 PM
A1220009.D	Std7-100/1000 ppb	ICAL	1	12/20/17 3:46 PM
A1220010.D	Std8-200/2000 ppb	ICAL	1	12/20/17 3:51 PM
A1220011.D	ICV	ICV	1	12/20/17 3:57 PM
A1220012.D	ICB	ICB	1	12/20/17 4:03 PM
A1220013.D	LLICV	CCV1	1	12/20/17 4:09 PM
A1220014.D	ICSA1	ICSA	1	12/20/17 4:14 PM
A1220015.D	ICSAB1	ICSAB	1	12/20/17 4:20 PM
A1220016.D	LLICV	CCV1	1	12/20/17 4:25 PM
A1220017.D	MB-65978	MBLK	1	12/20/17 4:31 PM
A1220018.D	LCS-65978	LCS	1	12/20/17 4:37 PM
A1220019.D	N027429-001B	SAMP	1	12/20/17 4:42 PM
A1220020.D	N027429-001B	SAMP	5	12/20/17 4:48 PM
A1220021.D	N027429-001B	SAMP	25	12/20/17 4:53 PM
A1220022.D	N027429-001B-PS	PS	1	12/20/17 4:59 PM
A1220023.D	N027429-001B-PS	PS	5	12/20/17 5:04 PM
A1220024.D	N027429-001B-MS	MS	1	12/20/17 5:10 PM
A1220025.D	N027429-001B-MS	MS	5	12/20/17 5:15 PM
A1220026.D	N027429-001B-MSD	MSD	1	12/20/17 5:21 PM
A1220027.D	CCV1	CCV	1	12/20/17 5:27 PM
A1220028.D	CCB1	CCB	1	12/20/17 5:32 PM
A1220029.D	N027429-001B-MSD	MSD	5	12/20/17 5:38 PM
A1220030.D	N027429-002B	SAMP	1	12/20/17 5:43 PM
A1220031.D	N027429-002B	SAMP	5	12/20/17 5:49 PM
A1220032.D	N027429-003B	SAMP	1	12/20/17 5:54 PM
A1220033.D	N027429-003B	SAMP	5	12/20/17 6:00 PM
A1220034.D	N027429-010B	SAMP	1	12/20/17 6:05 PM
A1220035.D	N027429-010B	SAMP	5	12/20/17 6:11 PM
A1220036.D	N027429-013B	SAMP	1	12/20/17 6:17 PM
A1220037.D	N027429-013B	SAMP	5	12/20/17 6:22 PM
A1220038.D	N027429-014B	SAMP	1	12/20/17 6:28 PM
A1220039.D	CCV2	CCV	1	12/20/17 6:36 PM
A1220040.D	CCB2	CCB	1	12/20/17 6:41 PM
A1220041.D	N027429-014B	SAMP	5	12/20/17 6:47 PM
A1220042.D	N027429-010B	SAMP	5	12/20/17 6:53 PM

INJECTION LOG: 171220A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1220043.D	N027429-001B	SAMP	1	12/20/17 6:58 PM
A1220044.D	N027429-005B	SAMP	1	12/20/17 7:04 PM
A1220045.D	N027429-005B	SAMP	5	12/20/17 7:09 PM
A1220046.D	N027429-006B	SAMP	1	12/20/17 7:15 PM
A1220047.D	N027429-006B	SAMP	5	12/20/17 7:20 PM
A1220048.D	CCV3	CCV	1	12/20/17 7:26 PM
A1220049.D	CCB3	CCB	1	12/20/17 7:32 PM
A1220050.D	LLCCV1	CCV2	1	12/20/17 7:37 PM
A1220051.D	ICSA2	ICSA	1	12/20/17 7:43 PM
A1220052.D	ICSAB2	ICSAB	1	12/20/17 7:48 PM
A1220053.D	N027429-007B	SAMP	1	12/20/17 7:54 PM
A1220054.D	N027429-007B	SAMP	5	12/20/17 7:59 PM
A1220055.D	N027429-008B	SAMP	1	12/20/17 8:05 PM
A1220056.D	N027429-008B	SAMP	5	12/20/17 8:10 PM
A1220057.D	N027429-009B	SAMP	1	12/20/17 8:16 PM
A1220058.D	N027429-009B	SAMP	5	12/20/17 8:21 PM
A1220059.D	N027429-012B	SAMP	1	12/20/17 8:27 PM
A1220060.D	N027429-012B	SAMP	5	12/20/17 8:33 PM
A1220061.D	N027429-015B	SAMP	1	12/20/17 8:38 PM
A1220062.D	N027429-015B	SAMP	5	12/20/17 8:44 PM
A1220063.D	CCV4	CCV	1	12/20/17 8:49 PM
A1220064.D	CCB4	CCB	1	12/20/17 8:55 PM
A1220065.D	N027429-016C	SAMP	1	12/20/17 9:00 PM
A1220066.D	N027429-016C	SAMP	5	12/20/17 9:06 PM
A1220067.D	N027429-017C	SAMP	1	12/20/17 9:12 PM
A1220068.D	N027429-017C	SAMP	5	12/20/17 9:17 PM
A1220069.D	N027429-018C	SAMP	1	12/20/17 9:23 PM
A1220070.D	N027429-018C	SAMP	5	12/20/17 9:28 PM
A1220071.D	N027429-020C	SAMP	1	12/20/17 9:34 PM
A1220072.D	N027429-020C	SAMP	5	12/20/17 9:39 PM
A1220073.D	N027429-010B	SAMP	25	12/20/17 9:45 PM
A1220074.D	N027430-018B	SAMP	25	12/20/17 9:51 PM
A1220075.D	CCV5	CCV	1	12/20/17 9:56 PM
A1220076.D	CCB5	CCB	1	12/20/17 10:02 PM
A1220077.D	LLCCV2	CCV2	1	12/20/17 10:07 PM
A1220078.D	ICSA3	ICSA	1	12/20/17 10:13 PM
A1220079.D	ICSAB3	ICSAB	1	12/20/17 10:19 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/12/2017 12:45:1**
Prep End Date: **12/12/2017 6:00:00**
Reviewed/ Date: 12/22/2017
Initials/ Date: 12/22/2017

Prep Batch **66020** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.6**	**02-14**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66020	Aqueous		25	☐	0	0	25	1.000		
MB-66020	Aqueous		25	☐	0	0	25	1.000		
N027430-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-008B	Unknown	<2	25	☐	0	0	25	1.000		
N027430-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-015B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-016B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-017B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/12/2017 12:45:1**
Prep End Date: **12/12/2017 6:00:00**
Reviewed/ Date: 12/22/2017
Initials/ Date: 12/22/2017

Prep Batch **66020** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.6**	**02-14**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027430-018B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-020B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 19 Dec 2017 11:23:55 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	92961.80	0.00	
24 Mg	265522.00	0.00	
25 Mg	35031.40	0.00	
26 Mg	41235.30	0.00	
59 Co	383642.00	0.00	
115 In	673609.00	0.00	
206 Pb	196601.00	0.00	
207 Pb	170749.00	0.00	
208 Pb	417665.00	0.00	

RSD (%)

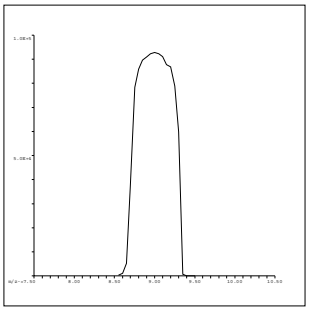
Element	Actual	Required	Flag
9 Be	1.37	5.00	
24 Mg	2.23	5.00	
25 Mg	1.65	5.00	
26 Mg	2.49	5.00	
59 Co	0.70	5.00	
115 In	0.16	5.00	
206 Pb	0.54	5.00	
207 Pb	0.50	5.00	
208 Pb	0.72	5.00	

Ion Ratio

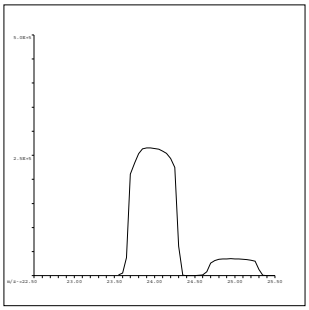
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

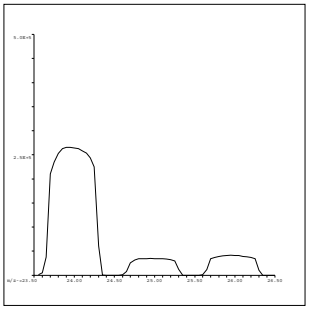
Element	Actual	Required	Flag



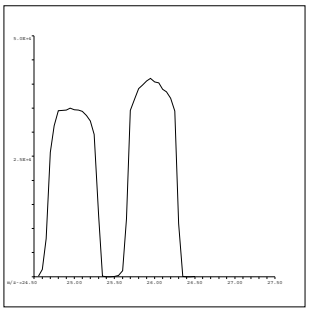
9 Be
Mass Calib.
   Actual: 9.00
   Required: 8.90-9.10
   Flag:
Peak Width
   Actual: 0.65
   Required: 0.75
   Flag:



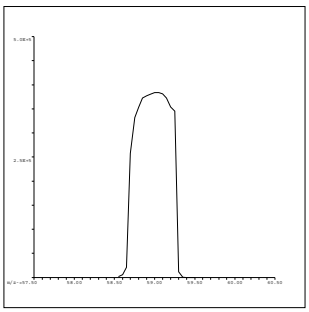
24 Mg
Mass Calib.
   Actual: 23.95
   Required: 23.90-24.10
   Flag:
Peak Width
   Actual: 0.65
   Required: 0.75
   Flag:



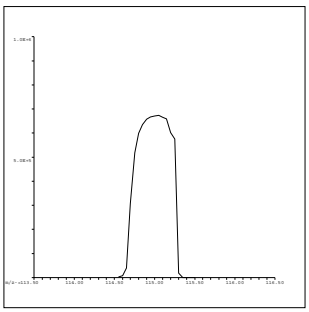
25 Mg
Mass Calib.
   Actual: 24.95
   Required: 24.90-25.10
   Flag:
Peak Width
   Actual: 0.65
   Required: 0.75
   Flag:



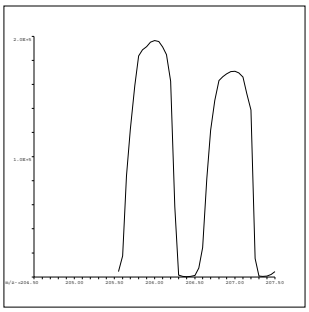
26 Mg
Mass Calib.
   Actual: 25.95
   Required: 25.90-26.10
   Flag:
Peak Width
   Actual: 0.65
   Required: 0.75
   Flag:



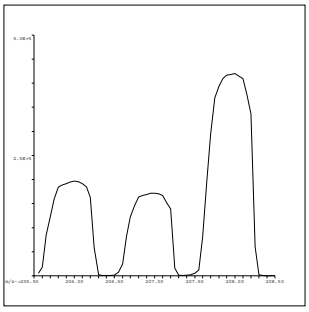
59 Co
Mass Calib.
   Actual: 59.00
   Required: 58.90-59.10
   Flag:
Peak Width
   Actual: 0.60
   Required: 0.75
   Flag:



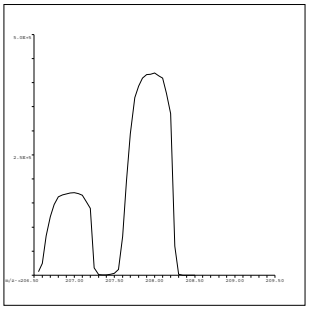
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 20 Dec 2017 02:10:17 pm
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	160949.00	0.00	
24	Mg	535541.00	0.00	
25	Mg	71149.60	0.00	
26	Mg	82622.80	0.00	
59	Co	731408.00	0.00	
115	In	1360180.00	0.00	
206	Pb	371476.00	0.00	
207	Pb	322046.00	0.00	
208	Pb	786938.00	0.00	

RSD (%)

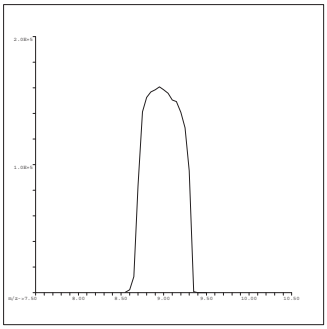
Element		Actual	Required	Flag
9	Be	1.30	5.00	
24	Mg	1.01	5.00	
25	Mg	0.97	5.00	
26	Mg	1.45	5.00	
59	Co	1.10	5.00	
115	In	1.40	5.00	
206	Pb	0.91	5.00	
207	Pb	0.87	5.00	
208	Pb	0.50	5.00	

Ion Ratio

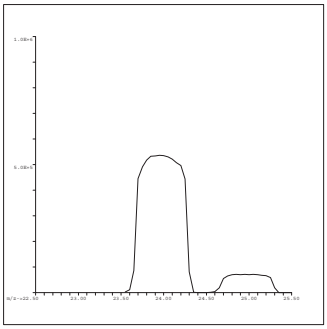
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

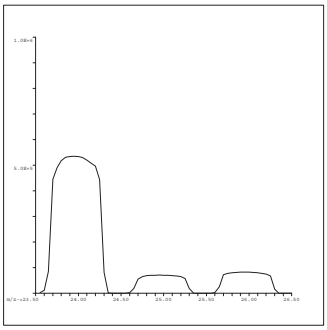
Element	Actual	Required	Flag



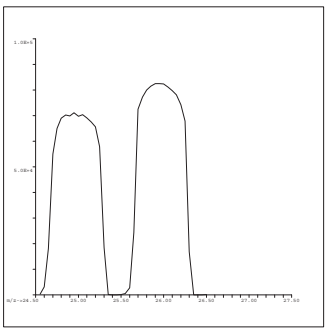
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



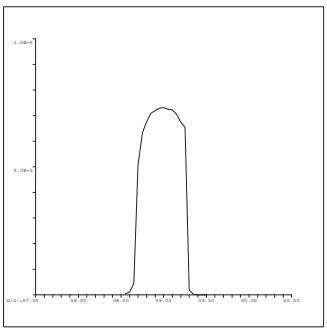
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



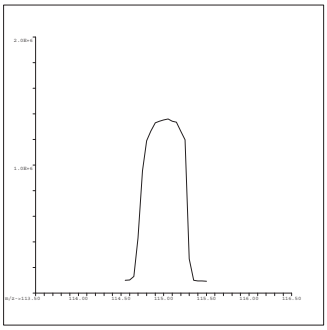
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



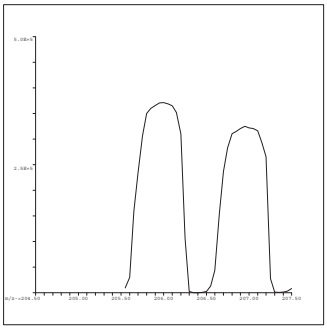
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



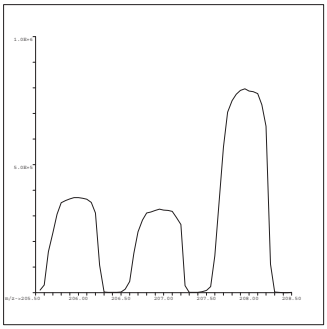
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



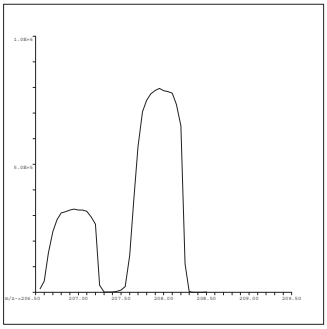
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 171219B

Instrument ID: ICPMS-02

Analyte	Data File	B1219002.D	B1219003.D	B1219004.D	B1219005.D	B1219006.D	B1219007.D	B1219008.D	B1219009.D	B1219010.D	
	Acq. Date-Time	12/19/2017 04:53 PM	12/19/2017 04:59 PM	12/19/2017 05:04 PM	12/19/2017 05:10 PM	12/19/2017 05:15 PM	12/19/2017 05:21 PM	12/19/2017 05:26 PM	12/19/2017 05:32 PM	12/19/2017 05:38 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	78977.5		75222.5	73219.2	72524	71879.1	71309.6	69593.5	67017.7	
55 Mn [2]	CPS	123.9		1760.2	15642.5	30356.6	59343.4	116954.6	283390.8	533495.1	1.0000
52 Cr [2]	CPS	379.8		3423.6	30469.4	59069.5	116838.4	228544.5	555159.7	1057880.9	1.0000
72 Ge (ISTD) [1]	CPS	62963.1		60656.8	59227	57718.2	56926.7	56013.6	55351.5	53411.4	
78 Se [1]	CPS	1.1		115.6	1240.1	2410.3	4845.3	9527.6	23020.3	44043	1.0000
72 Ge (ISTD) [2]	CPS	53389.2	53049.2	51629.1	51569.9	49624.1	49178.2	48535.1	47106.5	45184.6	
75 As [2]	CPS	17.3	80.4	329.8	3031.9	6032.7	11877.3	23268.6	56710.7	107272.4	1.0000
103 Rh (ISTD) [2]	CPS	1693983.8		1643831.8	1626802	1606315.6	1582386.9	1556812.9	1528897.9	1475501	
95 Mo [2]	CPS	103.3		1960.2	18899.5	36279.8	72471.8	142625.3	351805.3	674323.7	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 171220A

Instrument ID: ICPMS-02

Analyte	Data File	A1220002.D	A1220004.D	A1220005.D	A1220006.D	A1220007.D	A1220008.D	A1220009.D	A1220010.D	
	Acq. Date-Time	12/20/2017 03:07 PM	12/20/2017 03:18 PM	12/20/2017 03:24 PM	12/20/2017 03:29 PM	12/20/2017 03:35 PM	12/20/2017 03:40 PM	12/20/2017 03:46 PM	12/20/2017 03:51 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
72 Ge (ISTD) [1]	CPS	80026.1	82030.9	82674	81502	78272.6	77364.2	75878.8	73386.3	
78 Se [1]	CPS	3.3	224.5	2026.9	3777.3	7784.4	15421.2	36896.2	72110.8	0.9999

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICV**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873393**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.997	0.10	10.00	0	100	90	110				
Manganese	99.236	0.50	100.0	0	99.2	90	110				
Molybdenum	10.413	0.50	10.00	0	104	90	110				
Selenium	9.999	0.50	10.00	0	100	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ZZZZZZ**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873395**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.093	0.10	0.1000	0	93.4	80	120				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ZZZZZZ**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873398**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.534	0.50	0.5000	0	107	80	120				
Molybdenum	0.497	0.50	0.5000	0	99.3	80	120				
Selenium	0.551	0.50	0.5000	0	110	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCV**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873409**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.243	0.10	20.00	0	101	90	110				
Manganese	20.520	0.50	20.00	0	103	90	110				
Molybdenum	20.594	0.50	20.00	0	103	90	110				
Selenium	21.499	0.50	20.00	0	107	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCV**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873421**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.937	0.10	20.00	0	99.7	90	110				
Manganese	20.487	0.50	20.00	0	102	90	110				
Molybdenum	20.156	0.50	20.00	0	101	90	110				
Selenium	21.530	0.50	20.00	0	108	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCV**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873433**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.821	0.10	20.00	0	104	90	110				
Manganese	20.654	0.50	20.00	0	103	90	110				
Molybdenum	20.418	0.50	20.00	0	102	90	110				
Selenium	20.917	0.50	20.00	0	105	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCV**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873445**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.503	0.10	20.00	0	103	90	110				
Manganese	20.297	0.50	20.00	0	101	90	110				
Molybdenum	20.185	0.50	20.00	0	101	90	110				
Selenium	21.301	0.50	20.00	0	107	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ZZZZZZ**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873447**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.080	0.10	0.1000	0	80.2	70	130				
Manganese	0.589	0.50	0.5000	0	118	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ZZZZZZ**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873447**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.517	0.50	0.5000	0	103	70	130				
Selenium	0.551	0.50	0.5000	0	110	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ICV**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.948	0.10	10.00	0	99.5	90	110				
Manganese	97.834	0.50	100.0	0	97.8	90	110				
Molybdenum	10.937	0.50	10.00	0	109	90	110				
Selenium	10.490	0.50	10.00	0	105	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ZZZZZZ**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874741**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.564	0.50	0.5000	0	113	80	120				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ZZZZZZ**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874744**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.101	0.10	0.1000	0	101	80	120				
Manganese	0.563	0.50	0.5000	0	113	80	120				
Selenium	0.579	0.50	0.5000	0	116	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCV**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.206	0.10	20.00	0	101	90	110				
Manganese	20.432	0.50	20.00	0	102	90	110				
Molybdenum	20.343	0.50	20.00	0	102	90	110				
Selenium	21.212	0.50	20.00	0	106	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCV**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.077	0.10	20.00	0	100	90	110				
Manganese	20.092	0.50	20.00	0	100	90	110				
Molybdenum	19.763	0.50	20.00	0	98.8	90	110				
Selenium	19.598	0.50	20.00	0	98.0	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCV**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874776**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.252	0.10	20.00	0	101	90	110				
Manganese	20.621	0.50	20.00	0	103	90	110				
Molybdenum	19.945	0.50	20.00	0	99.7	90	110				
Selenium	20.817	0.50	20.00	0	104	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ZZZZZZ**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874778**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.095	0.10	0.1000	0	94.8	70	130				
Manganese	0.555	0.50	0.5000	0	111	70	130				
Molybdenum	0.519	0.50	0.5000	0	104	70	130				
Selenium	0.564	0.50	0.5000	0	113	70	130				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCV**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874791**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.744	0.10	20.00	0	104	90	110				
Manganese	20.729	0.50	20.00	0	104	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCV**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874791**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	19.715	0.50	20.00	0	98.6	90	110				
Selenium	21.132	0.50	20.00	0	106	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCV**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874803**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.679	0.10	20.00	0	103	90	110				
Manganese	21.364	0.50	20.00	0	107	90	110				
Molybdenum	19.557	0.50	20.00	0	97.8	90	110				
Selenium	21.539	0.50	20.00	0	108	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ZZZZZZ**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874805**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.073	0.10	0.1000	0	73.3	70	130				
Manganese	0.595	0.50	0.5000	0	119	70	130				
Molybdenum	0.493	0.50	0.5000	0	98.6	70	130				
Selenium	0.495	0.50	0.5000	0	99.0	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICV**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873336**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.077	1.0	10.00	0	101	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ZZZZZZ**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873341**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.057	1.0	1.000	0	106	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCV**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873352**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.646	1.0	20.00	0	103	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCV**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.479	1.0	20.00	0	102	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCV**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873376**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.563	1.0	20.00	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCV**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873388**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.143	1.0	20.00	0	101	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ZZZZZZ**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873390**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.987	1.0	1.000	0	98.7	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873394**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.159	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.175	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873422**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.108	0.50									
Selenium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.057	0.50									
Molybdenum	0.162	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873446**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.109	0.50									
Selenium	0.029	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ICB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874740**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.188	0.50									
Selenium	0.146	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874756**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.255	0.50									
Selenium	0.124	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874768**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.141	0.50									
Selenium	0.061	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874777**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874777**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.077	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.057	0.50									
Selenium	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874804**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.046	0.50									
Selenium	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873337**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873353**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873365**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873377**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873389**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICSA**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873396**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.062	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICSAB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873397**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.178	0.10	20.00	0	101	80	120				
Manganese	22.989	0.50	20.00	0	115	80	120				
Molybdenum	22.013	0.50	20.00	0	110	80	120				
Selenium	18.983	0.50	20.00	0	94.9	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICSA**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873448**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.200	0.50									
Selenium	0.056	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICSAB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873449**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.116	0.10	20.00	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICSAB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873449**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	23.641	0.50	20.00	0	118	80	120				
Molybdenum	21.915	0.50	20.00	0	110	80	120				
Selenium	17.589	0.50	20.00	0	87.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	120980
Client ID:	ICSA	Batch ID:	R120980	TestNo:	EPA 6020			Analysis Date:	12/20/2017	SeqNo:	2874742

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.099	0.50									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	120980
Client ID:	ICSAB	Batch ID:	R120980	TestNo:	EPA 6020			Analysis Date:	12/20/2017	SeqNo:	2874743

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	17.938	0.50	20.00	0	89.7	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	120980
Client ID:	ICSA	Batch ID:	R120980	TestNo:	EPA 6020			Analysis Date:	12/20/2017	SeqNo:	2874779

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	120980
Client ID:	ICSAB	Batch ID:	R120980	TestNo:	EPA 6020			Analysis Date:	12/20/2017	SeqNo:	2874780

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.521	0.50	20.00	0	97.6	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	120980
Client ID:	ICSA	Batch ID:	R120980	TestNo:	EPA 6020			Analysis Date:	12/20/2017	SeqNo:	2874806

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ICSAB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874807**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	16.247	0.50	20.00	0	81.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICSA**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.072	1.0									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICSAB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873340**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.064	1.0	20.00	0	100	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICSA**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873391**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.138	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICSAB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873392**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.418	1.0	20.00	0	97.1	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 171219B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	78977.5	78977.5	100	PASS	70-125	53389.2	53389.2	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	77468	78977.5	98.089	PASS	70-125	53049.2	53389.2	99.36	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	75222.5	78977.5	95.25	PASS	70-125	51629.1	53389.2	96.7	PASS	70-125
Std3-5/50 ppb	ICAL	1	73219.2	78977.5	92.71	PASS	70-125	51569.9	53389.2	96.59	PASS	70-125
Std4-10/100 ppb	ICAL	1	72524	78977.5	91.83	PASS	70-125	49624.1	53389.2	92.95	PASS	70-125
Std5-20/200 ppb	ICAL	1	71879.1	78977.5	91.012	PASS	70-125	49178.2	53389.2	92.11	PASS	70-125
Std6-40/400 ppb	ICAL	1	71309.6	78977.5	90.29	PASS	70-125	48535.1	53389.2	90.91	PASS	70-125
Std7-100/1000 ppb	ICAL	1	69593.5	78977.5	88.12	PASS	70-125	47106.5	53389.2	88.23	PASS	70-125
Std8-200/2000 ppb	ICAL	1	67017.7	78977.5	84.86	PASS	70-125	45184.6	53389.2	84.63	PASS	70-125
ICV	ICV	1	77952.8	78977.5	98.7	PASS	70-125	53651.2	53389.2	100.49	PASS	70-125
ICB	ICB	1	63019.6	78977.5	79.79	PASS	70-125	43352.9	53389.2	81.2	PASS	70-125
LLICV	CCV1	1	62643.1	78977.5	79.32	PASS	70-125	44244.3	53389.2	82.87	PASS	70-125
ICSA1	ICSA	1	67499.5	78977.5	85.47	PASS	70-125	45231.2	53389.2	84.72	PASS	70-125
ICSAB1	ICSAB	1	70773.1	78977.5	89.61	PASS	70-125	45873.1	53389.2	85.92	PASS	70-125
LLICV	CCV1	1	66457.3	78977.5	84.15	PASS	70-125	46789.9	53389.2	87.64	PASS	70-125
MB-66020	MBLK	1	60271.8	78977.5	76.32	PASS	70-125	42251.2	53389.2	79.14	PASS	70-125
LCS-66020	LCS	1	73393.1	78977.5	92.93	PASS	70-125	51670.4	53389.2	96.78	PASS	70-125
N027430-002B	SAMP	1	55504.4	78977.5	70.28	PASS	70-125	31822.9	53389.2	59.61	NR!	70-125
N027430-002B	SAMP	5	71361	78977.5	90.36	PASS	70-125	43799.7	53389.2	82.039	PASS	70-125
N027430-002B	SAMP	25	77347.4	78977.5	97.94	PASS	70-125	51014.9	53389.2	95.55	PASS	70-125
N027430-002B-PS	PS	1	69518.5	78977.5	88.023	PASS	70-125	38734.4	53389.2	72.55	PASS	70-125
N027430-002B-PS	PS	5	80186.6	78977.5	101.53	PASS	70-125	48967.4	53389.2	91.72	PASS	70-125
N027430-002B-MS	MS	1	69729.3	78977.5	88.29	PASS	70-125	38038.4	53389.2	71.25	PASS	70-125
N027430-002B-MS	MS	5	78812	78977.5	99.79	PASS	70-125	49955.9	53389.2	93.57	PASS	70-125
N027430-002B-MSD	MSD	1	68000.2	78977.5	86.1	PASS	70-125	37275.5	53389.2	69.82	NR!	70-125
CCV1	CCV	1	87832.7	78977.5	111.21	PASS	70-125	59610.6	53389.2	111.65	PASS	70-125
CCB1	CCB	1	85622.1	78977.5	108.41	PASS	70-125	58449.6	53389.2	109.48	PASS	70-125
N027430-002B-MSD	MSD	5	78087.5	78977.5	98.87	PASS	70-125	48557.6	53389.2	90.95	PASS	70-125
N027430-004B	SAMP	1	86979.3	78977.5	110.13	PASS	70-125	57070.3	53389.2	106.89	PASS	70-125
N027430-004B	SAMP	5	88385	78977.5	111.91	PASS	70-125	58185.6	53389.2	108.98	PASS	70-125
N027430-006B	SAMP	1	74519.2	78977.5	94.35	PASS	70-125	48334.5	53389.2	90.53	PASS	70-125
N027430-006B	SAMP	5	81493.9	78977.5	103.19	PASS	70-125	54682.3	53389.2	102.42	PASS	70-125
N027430-008B	SAMP	1	71483.7	78977.5	90.51	PASS	70-125	43307.2	53389.2	81.12	PASS	70-125
N027430-008B	SAMP	5	81975.9	78977.5	103.8	PASS	70-125	53015.7	53389.2	99.3	PASS	70-125
N027430-012B	SAMP	1	69057	78977.5	87.44	PASS	70-125	39435.1	53389.2	73.86	PASS	70-125
N027430-012B	SAMP	5	78387.7	78977.5	99.25	PASS	70-125	50275.9	53389.2	94.17	PASS	70-125
N027430-013B	SAMP	1	72190.4	78977.5	91.41	PASS	70-125	43213.7	53389.2	80.94	PASS	70-125
CCV2	CCV	1	85390.8	78977.5	108.12	PASS	70-125	57997.2	53389.2	108.63	PASS	70-125
CCB2	CCB	1	81890.3	78977.5	103.69	PASS	70-125	56226.3	53389.2	105.31	PASS	70-125
N027430-013B	SAMP	5	75478.8	78977.5	95.57	PASS	70-125	49276.2	53389.2	92.3	PASS	70-125
N027430-014B	SAMP	1	63046.4	78977.5	79.83	PASS	70-125	36948.2	53389.2	69.21	NR!	70-125

INTERNAL STANDARD: 171219B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027430-014B	SAMP	5	74533.7	78977.5	94.37	PASS	70-125	47700.5	53389.2	89.34	PASS	70-125
N027430-015B	SAMP	1	62778.9	78977.5	79.49	PASS	70-125	35591.8	53389.2	66.66	NR!	70-125
N027430-015B	SAMP	5	68234.4	78977.5	86.4	PASS	70-125	43919.9	53389.2	82.26	PASS	70-125
N027430-016B	SAMP	1	58370.7	78977.5	73.91	PASS	70-125	33941.6	53389.2	63.57	NR!	70-125
N027430-016B	SAMP	5	63642.3	78977.5	80.58	PASS	70-125	42028.4	53389.2	78.72	PASS	70-125
N027430-017B	SAMP	1	56664.2	78977.5	71.75	PASS	70-125	29918.2	53389.2	56.038	NR!	70-125
N027430-017B	SAMP	5	84868.1	78977.5	107.46	PASS	70-125	49939.4	53389.2	93.54	PASS	70-125
N027430-018B	SAMP	1	56983.6	78977.5	72.15	PASS	70-125	26136.1	53389.2	48.95	NR!	70-125
CCV3	CCV	1	60609.9	78977.5	76.74	PASS	70-125	43409.8	53389.2	81.31	PASS	70-125
CCB3	CCB	1	62232.7	78977.5	78.8	PASS	70-125	43762.8	53389.2	81.97	PASS	70-125
N027430-018B	SAMP	5	79341	78977.5	100.46	PASS	70-125	44655	53389.2	83.64	PASS	70-125
N027430-020B	SAMP	1	91094.7	78977.5	115.34	PASS	70-125	51034.8	53389.2	95.59	PASS	70-125
N027430-020B	SAMP	5	85816.3	78977.5	108.66	PASS	70-125	53053.5	53389.2	99.37	PASS	70-125
N027430-002B	SAMP	1	52385.3	78977.5	66.33	NR!	70-125	29323.7	53389.2	54.92	NR!	70-125
N027430-002B-MSD	MSD	1	57753.9	78977.5	73.13	PASS	70-125	31184.9	53389.2	58.41	NR!	70-125
N027430-006B	SAMP	1	71809.7	78977.5	90.92	PASS	70-125	48081.3	53389.2	90.058	PASS	70-125
N027430-018B	SAMP	25	66602.6	78977.5	84.33	PASS	70-125	41259.5	53389.2	77.28	PASS	70-125
CCV4	CCV	1	63631.1	78977.5	80.57	PASS	70-125	44299.8	53389.2	82.98	PASS	70-125
CCB4	CCB	1	61127.4	78977.5	77.4	PASS	70-125	43124.5	53389.2	80.77	PASS	70-125
LLCCV1	CCV2	1	61817.6	78977.5	78.27	PASS	70-125	44219.6	53389.2	82.82	PASS	70-125
ICSA2	ICSA	1	77109.6	78977.5	97.63	PASS	70-125	47987.8	53389.2	89.88	PASS	70-125
ICSAB2	ICSAB	1	75819.3	78977.5	96.001	PASS	70-125	47932.4	53389.2	89.78	PASS	70-125

INTERNAL STANDARD: 171219B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	62963.1	62963.1	100	PASS	70-125	1693983.8	1693983.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	62065.2	62963.1	98.57	PASS	70-125	1688177.2	1693983.8	99.66	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	60656.8	62963.1	96.34	PASS	70-125	1643831.8	1693983.8	97.039	PASS	70-125
Std3-5/50 ppb	ICAL	1	59227	62963.1	94.066	PASS	70-125	1626802	1693983.8	96.034	PASS	70-125
Std4-10/100 ppb	ICAL	1	57718.2	62963.1	91.67	PASS	70-125	1606315.6	1693983.8	94.82	PASS	70-125
Std5-20/200 ppb	ICAL	1	56926.7	62963.1	90.41	PASS	70-125	1582386.9	1693983.8	93.41	PASS	70-125
Std6-40/400 ppb	ICAL	1	56013.6	62963.1	88.96	PASS	70-125	1556812.9	1693983.8	91.9	PASS	70-125
Std7-100/1000 ppb	ICAL	1	55351.5	62963.1	87.91	PASS	70-125	1528897.9	1693983.8	90.25	PASS	70-125
Std8-200/2000 ppb	ICAL	1	53411.4	62963.1	84.83	PASS	70-125	1475501	1693983.8	87.1	PASS	70-125
ICV	ICV	1	62831.4	62963.1	99.79	PASS	70-125	1781513.8	1693983.8	105.17	PASS	70-125
ICB	ICB	1	50920.1	62963.1	80.87	PASS	70-125	1471989.3	1693983.8	86.9	PASS	70-125
LLICV	CCV1	1	51462	62963.1	81.73	PASS	70-125	1452270.8	1693983.8	85.73	PASS	70-125
ICSA1	ICSA	1	50705.1	62963.1	80.53	PASS	70-125	1368700.1	1693983.8	80.8	PASS	70-125
ICSAB1	ICSAB	1	49447.7	62963.1	78.53	PASS	70-125	1407963.4	1693983.8	83.12	PASS	70-125
LLICV	CCV1	1	57148.3	62963.1	90.76	PASS	70-125	1514615.2	1693983.8	89.41	PASS	70-125
MB-66020	MBLK	1	48960.8	62963.1	77.76	PASS	70-125	1421396.4	1693983.8	83.91	PASS	70-125
LCS-66020	LCS	1	60641.1	62963.1	96.31	PASS	70-125	1717805.7	1693983.8	101.41	PASS	70-125
N027430-002B	SAMP	1	31024.7	62963.1	49.27	NR!	70-125	839709.6	1693983.8	49.57	NR!	70-125
N027430-002B	SAMP	5	46407.9	62963.1	73.71	PASS	70-125	1272783.9	1693983.8	75.14	PASS	70-125
N027430-002B	SAMP	25	59153.3	62963.1	93.95	PASS	70-125	1519356.6	1693983.8	89.69	PASS	70-125
N027430-002B-PS	PS	1	40186.9	62963.1	63.83	NR!	70-125	1009539.8	1693983.8	59.6	NR!	70-125
N027430-002B-PS	PS	5	55152.6	62963.1	87.6	PASS	70-125	1407045.8	1693983.8	83.061	PASS	70-125
N027430-002B-MS	MS	1	39914.2	62963.1	63.39	NR!	70-125	990160.5	1693983.8	58.45	NR!	70-125
N027430-002B-MS	MS	5	55745.8	62963.1	88.54	PASS	70-125	1404806	1693983.8	82.93	PASS	70-125
N027430-002B-MSD	MSD	1	39122.1	62963.1	62.13	NR!	70-125	977205.8	1693983.8	57.69	NR!	70-125
CCV1	CCV	1	66695.5	62963.1	105.93	PASS	70-125	1906975.9	1693983.8	112.57	PASS	70-125
CCB1	CCB	1	67592.4	62963.1	107.35	PASS	70-125	1866990.2	1693983.8	110.21	PASS	70-125
N027430-002B-MSD	MSD	5	53033.6	62963.1	84.23	PASS	70-125	1371066.7	1693983.8	80.94	PASS	70-125
N027430-004B	SAMP	1	63537.5	62963.1	100.91	PASS	70-125	1646294.7	1693983.8	97.18	PASS	70-125
N027430-004B	SAMP	5	66629.9	62963.1	105.82	PASS	70-125	1747318.4	1693983.8	103.15	PASS	70-125
N027430-006B	SAMP	1	53531.8	62963.1	85.021	PASS	70-125	1483631.7	1693983.8	87.58	PASS	70-125
N027430-006B	SAMP	5	63673.4	62963.1	101.13	PASS	70-125	1686723.2	1693983.8	99.57	PASS	70-125
N027430-008B	SAMP	1	48217.6	62963.1	76.58	PASS	70-125	1255337.9	1693983.8	74.11	PASS	70-125
N027430-008B	SAMP	5	59298.3	62963.1	94.18	PASS	70-125	1557691.4	1693983.8	91.95	PASS	70-125
N027430-012B	SAMP	1	41943.6	62963.1	66.62	NR!	70-125	1085692.5	1693983.8	64.091	NR!	70-125
N027430-012B	SAMP	5	54920.9	62963.1	87.23	PASS	70-125	1477259.6	1693983.8	87.21	PASS	70-125
N027430-013B	SAMP	1	45963.3	62963.1	73	PASS	70-125	1211780.3	1693983.8	71.53	PASS	70-125
CCV2	CCV	1	64458.6	62963.1	102.38	PASS	70-125	1852498.2	1693983.8	109.36	PASS	70-125
CCB2	CCB	1	63410.4	62963.1	100.71	PASS	70-125	1789864.7	1693983.8	105.66	PASS	70-125
N027430-013B	SAMP	5	54492.7	62963.1	86.55	PASS	70-125	1463553.3	1693983.8	86.4	PASS	70-125
N027430-014B	SAMP	1	38779.1	62963.1	61.59	NR!	70-125	991488.6	1693983.8	58.53	NR!	70-125

INTERNAL STANDARD: 171219B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027430-014B	SAMP	5	51976.8	62963.1	82.55	PASS	70-125	1416653.1	1693983.8	83.63	PASS	70-125
N027430-015B	SAMP	1	36644.1	62963.1	58.2	NR!	70-125	952492.1	1693983.8	56.23	NR!	70-125
N027430-015B	SAMP	5	48272.1	62963.1	76.67	PASS	70-125	1313169	1693983.8	77.52	PASS	70-125
N027430-016B	SAMP	1	36269.9	62963.1	57.61	NR!	70-125	931080.8	1693983.8	54.96	NR!	70-125
N027430-016B	SAMP	5	47383.9	62963.1	75.26	PASS	70-125	1246193.4	1693983.8	73.57	PASS	70-125
N027430-017B	SAMP	1	34479.4	62963.1	54.76	NR!	70-125	840801.7	1693983.8	49.63	NR!	70-125
N027430-017B	SAMP	5	53998.9	62963.1	85.76	PASS	70-125	1523061.7	1693983.8	89.91	PASS	70-125
N027430-018B	SAMP	1	24645.9	62963.1	39.14	NR!	70-125	720433.3	1693983.8	42.53	NR!	70-125
CCV3	CCV	1	49258.7	62963.1	78.23	PASS	70-125	1379483.2	1693983.8	81.43	PASS	70-125
CCB3	CCB	1	51192.1	62963.1	81.3	PASS	70-125	1385098.4	1693983.8	81.77	PASS	70-125
N027430-018B	SAMP	5	43844	62963.1	69.63	NR!	70-125	1381554	1693983.8	81.56	PASS	70-125
N027430-020B	SAMP	1	53111.3	62963.1	84.35	PASS	70-125	1563624.7	1693983.8	92.3	PASS	70-125
N027430-020B	SAMP	5	54624.1	62963.1	86.76	PASS	70-125	1767687.3	1693983.8	104.35	PASS	70-125
N027430-002B	SAMP	1	27288	62963.1	43.34	NR!	70-125	813259.7	1693983.8	48.009	NR!	70-125
N027430-002B-MSD	MSD	1	30648.4	62963.1	48.68	NR!	70-125	874513.3	1693983.8	51.62	NR!	70-125
N027430-006B	SAMP	1	47778.3	62963.1	75.88	PASS	70-125	1506262.1	1693983.8	88.92	PASS	70-125
N027430-018B	SAMP	25	43573.3	62963.1	69.2	NR!	70-125	1246370.9	1693983.8	73.58	PASS	70-125
CCV4	CCV	1	51883.2	62963.1	82.4	PASS	70-125	1403482.2	1693983.8	82.85	PASS	70-125
CCB4	CCB	1	49258.5	62963.1	78.23	PASS	70-125	1371556.2	1693983.8	80.97	PASS	70-125
LLCCV1	CCV2	1	50880.2	62963.1	80.81	PASS	70-125	1395677.8	1693983.8	82.39	PASS	70-125
ICSA2	ICSA	1	62099.5	62963.1	98.63	PASS	70-125	1503655.8	1693983.8	88.76	PASS	70-125
ICSAB2	ICSAB	1	60607.2	62963.1	96.26	PASS	70-125	1483045.4	1693983.8	87.55	PASS	70-125

INTERNAL STANDARD: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	80026.1	80026.1	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	83729.5	80026.1	104.63	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	82030.9	80026.1	102.51	PASS	70-125
Std3-5/50 ppb	ICAL	1	82674	80026.1	103.31	PASS	70-125
Std4-10/100 ppb	ICAL	1	81502	80026.1	101.84	PASS	70-125
Std5-20/200 ppb	ICAL	1	78272.6	80026.1	97.81	PASS	70-125
Std6-40/400 ppb	ICAL	1	77364.2	80026.1	96.67	PASS	70-125
Std7-100/1000 ppb	ICAL	1	75878.8	80026.1	94.82	PASS	70-125
Std8-200/2000 ppb	ICAL	1	73386.3	80026.1	91.7	PASS	70-125
ICV	ICV	1	87124.5	80026.1	108.87	PASS	70-125
ICB	ICB	1	73432.3	80026.1	91.76	PASS	70-125
LLICV	CCV1	1	70814.1	80026.1	88.49	PASS	70-125
ICSA1	ICSA	1	63373.6	80026.1	79.19	PASS	70-125
ICSAB1	ICSAB	1	75429.7	80026.1	94.26	PASS	70-125
LLICV	CCV1	1	67442	80026.1	84.28	PASS	70-125
CCV1	CCV	1	76199.2	80026.1	95.22	PASS	70-125
CCB1	CCB	1	71894	80026.1	89.84	PASS	70-125
CCV2	CCV	1	92019.8	80026.1	114.99	PASS	70-125
CCB2	CCB	1	88320.8	80026.1	110.36	PASS	70-125
CCV3	CCV	1	73868.3	80026.1	92.31	PASS	70-125
CCB3	CCB	1	72090.6	80026.1	90.084	PASS	70-125
LLCCV1	CCV2	1	75979.4	80026.1	94.94	PASS	70-125
ICSA2	ICSA	1	70685.9	80026.1	88.33	PASS	70-125
ICSAB2	ICSAB	1	63967	80026.1	79.93	PASS	70-125
CCV4	CCV	1	74498.6	80026.1	93.093	PASS	70-125
CCB4	CCB	1	70534	80026.1	88.14	PASS	70-125
N027430-018B	SAMP	25	62415.6	80026.1	77.99	PASS	70-125
CCV5	CCV	1	74899.9	80026.1	93.59	PASS	70-125
CCB5	CCB	1	70671.4	80026.1	88.31	PASS	70-125
LLCCV2	CCV2	1	74736.8	80026.1	93.39	PASS	70-125
ICSA3	ICSA	1	64316.3	80026.1	80.37	PASS	70-125
ICSAB3	ICSAB	1	59026.5	80026.1	73.76	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N027430
Test Method: EPA 6020
Analysis Date: 12/19/2017

Matrix: Groundwater
Batch No.: 66020

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr & Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027430-002B DT 25X	Arsenic	ug/L	2.077801	NA	2.214615	6.18%	10
N027430-002B DT 5X	Chromium	ug/L	4.079344	NA	3.545633	15.05%	10
N027430-002B DT 25X	Manganese	ug/L	366.0267	PASS	335.7654	9.01%	10
N027430-002B DT 25X	Molybdenum	ug/L	252.7964	PASS	253.7041	0.36%	10
N027430-002B DT 25X	Selenium	ug/L	0.803246	NA	0.270273	197.20%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N027430-002B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **120962**
Client ID: **ZZZZZZ** Batch ID: **66020** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/19/2017** SeqNo: **2873405**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.249	0.50	10.00	2.215	110	80	120				
Manganese	446.178	2.5	100.0	335.8	110	80	120				
Molybdenum	278.153	2.5	10.00	253.7	244	80	120				S
Selenium	9.572	2.5	10.00	0.2703	93.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N027430-002B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	120962
Client ID:	ZZZZZZ	Batch ID:	66020	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2873347

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.690	1.0	10.00	3.546	91.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

ARCADIS

Project: PG&E Topock - GMP

Project No.: RC000753.801B

ASSET Laboratories Work Order:

N027430_Amended

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

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January 09, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027430

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 07, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburdi for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027430

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Subcontracted Analyses:

Oxygen/Deuterium was subcontracted to Zymax- Pittsburg,PA.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (3.5 ug/L) and hexavalent chromium (0 ug/L) for sample N027430-002 (MW-49-275-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (1.7 ug/L) and hexavalent chromium (0 ug/L) for sample N027430-012 (MW-33-040-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Dilution was necessary for samples N027430-002, -012, -014, -017 and -018 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 300.0:

Dilution was necessary for some samples due to precipitation upon the addition of eluent.

Matrix Spike (MS) is outside recovery criteria for Bromide in QC sample N027430-004CMS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N027430-002B-MS1 and N027430-002B-MSD1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N027430-002B-MS1 and N027430-002B-MSD1 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N027430-004B-MS2 and N027430-004B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Molybdenum in QC samples N027430-002B-MS and N027430-002B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Manganese in QC samples N027430-002B-MS and N027430-002B-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary on some analytes for samples N027430-002, -012, -014, -015, -016, -017 and -018 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Because the results for total dissolved chromium (3.5 ug/L) and hexavalent chromium (0 ug/L) for sample N027430-002 (MW-49-275-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 3.4 and 0.07 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (1.7 ug/L) and hexavalent chromium (0 ug/L) for sample N027430-012 (MW-33-040-Q417) are discrepant, sample from both the total dissolved

chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.5 and 0 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

ASSET Laboratories

Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027430
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027430-001A	MW-49-275-EB-Q417	Groundwater	12/7/2017 1:15:00 PM	12/7/2017	12/22/2017
N027430-002A	MW-49-275-Q417	Groundwater	12/7/2017 1:47:00 PM	12/7/2017	12/22/2017
N027430-002B	MW-49-275-Q417	Groundwater	12/7/2017 1:47:00 PM	12/7/2017	12/22/2017
N027430-002C	MW-49-275-Q417	Groundwater	12/7/2017 1:47:00 PM	12/7/2017	12/22/2017
N027430-002D	MW-49-275-Q417	Groundwater	12/7/2017 1:47:00 PM	12/7/2017	12/22/2017
N027430-003A	MW-29-EB-Q417	Groundwater	12/7/2017 12:20:00 PM	12/7/2017	12/22/2017
N027430-004A	MW-29-Q417	Groundwater	12/7/2017 1:00:00 PM	12/7/2017	12/22/2017
N027430-004B	MW-29-Q417	Groundwater	12/7/2017 1:00:00 PM	12/7/2017	12/22/2017
N027430-004C	MW-29-Q417	Groundwater	12/7/2017 1:00:00 PM	12/7/2017	12/22/2017
N027430-004D	MW-29-Q417	Groundwater	12/7/2017 1:00:00 PM	12/7/2017	12/22/2017
N027430-005A	MW-28-025-EB-Q417	Groundwater	12/7/2017 11:25:00 AM	12/7/2017	12/22/2017
N027430-006A	MW-28-025-Q417	Groundwater	12/7/2017 12:01:00 PM	12/7/2017	12/22/2017
N027430-006B	MW-28-025-Q417	Groundwater	12/7/2017 12:01:00 PM	12/7/2017	12/22/2017
N027430-006C	MW-28-025-Q417	Groundwater	12/7/2017 12:01:00 PM	12/7/2017	12/22/2017
N027430-006D	MW-28-025-Q417	Groundwater	12/7/2017 12:01:00 PM	12/7/2017	12/22/2017
N027430-007A	MW-28-090-EB-Q417	Groundwater	12/7/2017 12:20:00 PM	12/7/2017	12/22/2017
N027430-008A	MW-28-090-Q417	Groundwater	12/7/2017 12:10:00 PM	12/7/2017	12/22/2017
N027430-008B	MW-28-090-Q417	Groundwater	12/7/2017 12:10:00 PM	12/7/2017	12/22/2017
N027430-008C	MW-28-090-Q417	Groundwater	12/7/2017 12:10:00 PM	12/7/2017	12/22/2017
N027430-008D	MW-28-090-Q417	Groundwater	12/7/2017 12:10:00 PM	12/7/2017	12/22/2017
N027430-009A	MW-723-Q417	Groundwater	12/7/2017 3:25:00 PM	12/7/2017	12/22/2017
N027430-010A	MW-724-Q417	Groundwater	12/7/2017 3:30:00 PM	12/7/2017	12/22/2017
N027430-011A	MW-33-040-EB-Q417	Groundwater	12/7/2017 9:15:00 AM	12/7/2017	12/22/2017
N027430-012A	MW-33-040-Q417	Groundwater	12/7/2017 9:55:00 AM	12/7/2017	12/22/2017
N027430-012B	MW-33-040-Q417	Groundwater	12/7/2017 9:55:00 AM	12/7/2017	12/22/2017
N027430-012C	MW-33-040-Q417	Groundwater	12/7/2017 9:55:00 AM	12/7/2017	12/22/2017
N027430-012D	MW-33-040-Q417	Groundwater	12/7/2017 9:55:00 AM	12/7/2017	12/22/2017
N027430-012E	MW-33-040-Q417	Groundwater	12/7/2017 9:55:00 AM	12/7/2017	12/22/2017
N027430-013A	MW-33-090-Q417	Groundwater	12/7/2017 8:47:00 AM	12/7/2017	12/22/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027430
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027430-013B	MW-33-090-Q417	Groundwater	12/7/2017 8:47:00 AM	12/7/2017	12/22/2017
N027430-013C	MW-33-090-Q417	Groundwater	12/7/2017 8:47:00 AM	12/7/2017	12/22/2017
N027430-013D	MW-33-090-Q417	Groundwater	12/7/2017 8:47:00 AM	12/7/2017	12/22/2017
N027430-013E	MW-33-090-Q417	Groundwater	12/7/2017 8:47:00 AM	12/7/2017	12/22/2017
N027430-014A	MW-33-150-Q417	Groundwater	12/7/2017 9:44:00 AM	12/7/2017	12/22/2017
N027430-014B	MW-33-150-Q417	Groundwater	12/7/2017 9:44:00 AM	12/7/2017	12/22/2017
N027430-014C	MW-33-150-Q417	Groundwater	12/7/2017 9:44:00 AM	12/7/2017	12/22/2017
N027430-014D	MW-33-150-Q417	Groundwater	12/7/2017 9:44:00 AM	12/7/2017	12/22/2017
N027430-014E	MW-33-150-Q417	Groundwater	12/7/2017 9:44:00 AM	12/7/2017	12/22/2017
N027430-015A	MW-33-210-Q417	Groundwater	12/7/2017 9:00:00 AM	12/7/2017	12/22/2017
N027430-015B	MW-33-210-Q417	Groundwater	12/7/2017 9:00:00 AM	12/7/2017	12/22/2017
N027430-015C	MW-33-210-Q417	Groundwater	12/7/2017 9:00:00 AM	12/7/2017	12/22/2017
N027430-015D	MW-33-210-Q417	Groundwater	12/7/2017 9:00:00 AM	12/7/2017	12/22/2017
N027430-015E	MW-33-210-Q417	Groundwater	12/7/2017 9:00:00 AM	12/7/2017	12/22/2017
N027430-016A	MW-46-175-1217	Groundwater	12/7/2017 10:44:00 AM	12/7/2017	12/22/2017
N027430-016B	MW-46-175-1217	Groundwater	12/7/2017 10:44:00 AM	12/7/2017	12/22/2017
N027430-016C	MW-46-175-1217	Groundwater	12/7/2017 10:44:00 AM	12/7/2017	12/22/2017
N027430-016D	MW-46-175-1217	Groundwater	12/7/2017 10:44:00 AM	12/7/2017	12/22/2017
N027430-016E	MW-46-175-1217	Groundwater	12/7/2017 10:44:00 AM	12/7/2017	12/22/2017
N027430-017A	MW-46-205-Q417	Groundwater	12/7/2017 10:45:00 AM	12/7/2017	12/22/2017
N027430-017B	MW-46-205-Q417	Groundwater	12/7/2017 10:45:00 AM	12/7/2017	12/22/2017
N027430-017C	MW-46-205-Q417	Groundwater	12/7/2017 10:45:00 AM	12/7/2017	12/22/2017
N027430-018A	MW-49-365-Q417	Groundwater	12/7/2017 1:05:00 PM	12/7/2017	12/22/2017
N027430-018B	MW-49-365-Q417	Groundwater	12/7/2017 1:05:00 PM	12/7/2017	12/22/2017
N027430-018C	MW-49-365-Q417	Groundwater	12/7/2017 1:05:00 PM	12/7/2017	12/22/2017
N027430-018D	MW-49-365-Q417	Groundwater	12/7/2017 1:05:00 PM	12/7/2017	12/22/2017
N027430-019A	MW-722-Q417	Groundwater	12/7/2017 3:30:00 PM	12/7/2017	12/22/2017
N027430-020A	TW-02D-1217	Groundwater	12/7/2017 12:58:00 PM	12/7/2017	12/22/2017
N027430-020B	TW-02D-1217	Groundwater	12/7/2017 12:58:00 PM	12/7/2017	12/22/2017
N027430-020C	TW-02D-1217	Groundwater	12/7/2017 12:58:00 PM	12/7/2017	12/22/2017

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-275-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	18000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	1400	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-006

Client Sample ID: MW-28-025-Q417
Collection Date: 12/7/2017 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-008

Client Sample ID: MW-28-090-Q417
Collection Date: 12/7/2017 12:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	5400	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-012

Client Sample ID: MW-33-040-Q417
Collection Date: 12/7/2017 9:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-013

Client Sample ID: MW-33-090-Q417
Collection Date: 12/7/2017 8:47:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	7700	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-014

Client Sample ID: MW-33-150-Q417
Collection Date: 12/7/2017 9:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-1217
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-018

Client Sample ID: MW-49-365-Q417
Collection Date: 12/7/2017 1:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	25000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-020

Client Sample ID: TW-02D-1217
Collection Date: 12/7/2017 12:58:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	4800	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N027429-005DDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **120747**
Client ID: **ZZZZZZ**	Batch ID: **R120747**	TestNo: **EPA 120.1**		Analysis Date: **12/8/2017**	SeqNo: **2860676**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	15840.000	0.10						15870	0.189	10	

Sample ID **N027430-002CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **120747**
Client ID: **ZZZZZZ**	Batch ID: **R120747**	TestNo: **EPA 120.1**		Analysis Date: **12/8/2017**	SeqNo: **2860691**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	17930.000	0.10						17890	0.223	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N027430-018CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120750
Client ID:	ZZZZZZ	Batch ID:	R120750	TestNo:	EPA 120.1			Analysis Date:	12/8/2017	SeqNo:	2860752

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	24900.000	0.10						24700	0.806	10	

Sample ID	N027459-003CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120750
Client ID:	ZZZZZZ	Batch ID:	R120750	TestNo:	EPA 120.1			Analysis Date:	12/8/2017	SeqNo:	2860769

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	11670.000	0.10						11690	0.171	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-275-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**			PrepDate	**12/12/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	14000	100	100		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	970	10	10		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	780	10	10		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**			PrepDate	**12/12/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3900	50	50		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	8400	100	100		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 8:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**			PrepDate	**12/12/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	5700	50	50		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-014

Client Sample ID: MW-33-150-Q417
Collection Date: 12/7/2017 9:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	9000	100	100		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	11000	100	100		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-1217
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**				PrepDate	**12/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	10000	100	100		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	12000	100	100		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-365-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	22000	200	200		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-1217
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:58:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3300	33	33		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-66025	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/12/2017	RunNo:	120818
Client ID:	LCSW	Batch ID:	66025	TestNo:	SM2540C			Analysis Date:	12/12/2017	SeqNo:	2865479

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	936.000	10	1000	0	93.6	80	120				

Sample ID	MB-66025	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/12/2017	RunNo:	120818
Client ID:	PBW	Batch ID:	66025	TestNo:	SM2540C			Analysis Date:	12/12/2017	SeqNo:	2865480

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N027430-002CDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/12/2017	RunNo:	120818
Client ID:	ZZZZZZ	Batch ID:	66025	TestNo:	SM2540C			Analysis Date:	12/12/2017	SeqNo:	2865485

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	14560.000	100						13930	4.42	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66055**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/13/2017**	RunNo: **120820**
Client ID: **LCSW**	Batch ID: **66055**	TestNo: **SM2540C**		Analysis Date: **12/13/2017**	SeqNo: **2865495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	953.000	10	1000	0	95.3	80	120				

Sample ID **MB-66055**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/13/2017**	RunNo: **120820**
Client ID: **PBW**	Batch ID: **66055**	TestNo: **SM2540C**		Analysis Date: **12/13/2017**	SeqNo: **2865496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N027430-018CDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/13/2017**	RunNo: **120820**
Client ID: **ZZZZZZ**	Batch ID: **66055**	TestNo: **SM2540C**		Analysis Date: **12/13/2017**	SeqNo: **2865501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	22760.000	200						21820	4.22	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-275-EB-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:15:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 11:07 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-275-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A** QC Batch: **R120833**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/11/2017 11:45 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	3.5	0.019	1.0		µg/L	1	12/19/2017 06:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-EB-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 12:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_171211A** QC Batch: **R120833**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 12:23 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/19/2017 07:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-EB-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 11:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 12:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-006

Client Sample ID: MW-28-025-Q417
Collection Date: 12/7/2017 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 01:01 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/19/2017 10:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-EB-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 01:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A** QC Batch: **R120833**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 01:57 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/19/2017 07:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-723-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 3:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 02:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-724-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 02:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-011

Client Sample ID: MW-33-040-EB-Q417
Collection Date: 12/7/2017 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 04:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-012

Client Sample ID: MW-33-040-Q417
Collection Date: 12/7/2017 9:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A** QC Batch: **R120833**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/11/2017 07:41 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	1.7	0.019	1.0		µg/L	1	12/19/2017 08:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-013

Client Sample ID: MW-33-090-Q417
Collection Date: 12/7/2017 8:47:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A** QC Batch: **R120833**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	5.5	0.17	1.0		µg/L	5	12/11/2017 04:29 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate **12/12/2017**			Analyst: **CEI**
Chromium	5.0	0.019	1.0		µg/L	1	12/19/2017 08:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-014

Client Sample ID: MW-33-150-Q417
Collection Date: 12/7/2017 9:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A** QC Batch: **R120833**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	7.0	0.17	1.0		µg/L	5	12/11/2017 04:48 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	7.2	0.019	1.0		µg/L	1	12/19/2017 08:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_171211A** QC Batch: **R120833**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	14	0.17	1.0		µg/L	5	12/11/2017 05:26 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	15	0.019	1.0		µg/L	1	12/19/2017 08:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-016

Client Sample ID: MW-46-175-1217
Collection Date: 12/7/2017 10:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211B** QC Batch: **R120834**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	11	0.17	1.0		µg/L	5	12/11/2017 09:53 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A	**EPA 6020**			
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	11	0.019	1.0		µg/L	1	12/19/2017 09:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_171211B** QC Batch: **R120834**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/11/2017 10:12 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/19/2017 09:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-365-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_171211B** QC Batch: **R120834**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/11/2017 10:31 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/19/2017 09:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-722-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 03:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-020

Client Sample ID: TW-02D-1217
Collection Date: 12/7/2017 12:58:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	110	0.66	4.0		µg/L	20	12/11/2017 02:54 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	93	0.019	1.0		µg/L	1	12/19/2017 09:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R120833**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **PBW**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R120833**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **LCSW**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866007**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.161	0.20	5.000	0	103	90	110				

Sample ID **N027405-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866008**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.424	1.0	5.000	4.203	104	90	110				

Sample ID **N027405-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.452	1.0	5.000	0	109	90	110				

Sample ID **N027405-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.692	1.0	5.000	1.529	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027430-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.068	0.20	1.000	0	107	90	110				

Sample ID **N027430-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.905	1.0	5.000	0.3715	90.7	90	110				

Sample ID **N027430-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.074	0.20	1.000	0	107	90	110				

Sample ID **N027430-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Sample ID **N027430-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866025**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0	107	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027430-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866027**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.097	0.20	1.000	0	110	90	110				

Sample ID **N027430-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866031**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.056	0.20	1.000	0	106	90	110				

Sample ID **N027430-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866033**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.976	0.20	1.000	0	97.6	90	110				

Sample ID **N027430-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.057	0.20	1.000	0	106	90	110				

Sample ID **N027430-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866037**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.040	0.20	1.000	0	104	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027430-020AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866039**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	211.092	4.0	100.0	105.8	105	90	110				

Sample ID **N027430-019AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866043**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Sample ID **N027430-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866045**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.068	0.20	1.000	0	107	90	110				

Sample ID **N027430-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866047**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.554	1.0	5.000	5.490	101	90	110				

Sample ID **N027430-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866049**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.171	1.0	5.000	6.955	104	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027430-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833	
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866053	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	18.580	1.0	5.000	13.88	94.0	90	110					

Sample ID	N027405-006ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833	
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866054	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	4.215	1.0						4.203	0.273	20		

Sample ID	N027430-020AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833	
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866055	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	210.110	4.0	100.0	105.8	104	90	110	211.1	0.466	20		

Sample ID	N027430-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833	
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866059	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	5.371	1.0	5.000	0	107	90	110					

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	LCS-R120834	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834	
Client ID:	LCSW	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866068	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	5.175	0.20	5.000	0	104	90	110					

Sample ID	MB-R120834	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834	
Client ID:	PBW	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866069	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	ND	0.20										

Sample ID	N027431-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834	
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866071	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	9591.600	200	5000	4141	109	90	110					

Sample ID	N027431-006AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834	
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866072	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	9630.200	200	5000	4141	110	90	110	9592	0.402	20		

Sample ID	N027428-002ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834	
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866076	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	546.890	20						549.7	0.509	20		

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027428-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1059.800	20	500.0	549.7	102	90	110				

Sample ID **N027428-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0	108	90	110				

Sample ID **N027430-016AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866081**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	16.573	1.0	5.000	11.46	102	90	110				

Sample ID **N027430-017AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.899	1.0	5.000	0.8090	102	90	110				

Sample ID **N027430-018AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.580	1.0	5.000	0	91.6	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027431-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866089

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.637	1.0	5.000	0.3545	106	90	110				

Sample ID	N027431-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866091

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.256	1.0	5.000	0.2550	100	90	110				

Sample ID	N027431-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866093

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.104	1.0	5.000	0.2855	96.4	90	110				

Sample ID	N027431-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866095

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2844.640	40	1000	1798	105	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66020	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	120962
Client ID:	PBW	Batch ID:	66020	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2873342

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66020	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	120962
Client ID:	LCSW	Batch ID:	66020	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2873343

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.165	1.0	10.00	0	102	85	115				

Sample ID	N027430-002B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	120962
Client ID:	ZZZZZZ	Batch ID:	66020	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2873349

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	13.198	1.0	10.00	3.546	96.5	75	125				

Sample ID	N027430-002B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	120962
Client ID:	ZZZZZZ	Batch ID:	66020	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2873351

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	13.183	1.0	10.00	3.546	96.4	75	125	13.20	0.112	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-275-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	38	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-004

Client Sample ID: MW-29-Q417
Collection Date: 12/7/2017 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	460	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-006

Client Sample ID: MW-28-025-Q417
Collection Date: 12/7/2017 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	210	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-008

Client Sample ID: MW-28-090-Q417
Collection Date: 12/7/2017 12:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	280	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	420	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 8:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	120	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	58	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-015

Client Sample ID: MW-33-210-Q417
Collection Date: 12/7/2017 9:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	59	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-1217
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	44	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	47	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-365-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	44	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-020

Client Sample ID: TW-02D-1217
Collection Date: 12/7/2017 12:58:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	160	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R120816**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **LCSW**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	98.394	5.0	100.0	0	98.4	85	115				

Sample ID **MB-R120816**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **PBW**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N027430-002CDDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **ZZZZZZ**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865286**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	38.153	5.0						38.15	0	30	

Sample ID **N027431-002CMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **ZZZZZZ**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865300**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	196.787	5.0	100.0	99.40	97.4	75	125				

Sample ID **N027431-002CMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **ZZZZZZ**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	196.787	5.0	100.0	99.40	97.4	75	125	196.8	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-002

Client Sample ID: MW-49-275-Q417
Collection Date: 12/7/2017 1:47:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 12:09 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	8700	18	1000		mg/L	2000	12/15/2017 05:11 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	1400	4.6	100		mg/L	200	12/15/2017 05:26 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-004

Client Sample ID: MW-29-Q417
Collection Date: 12/7/2017 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/12/2017 11:23 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	210	0.46	25		mg/L	50	12/15/2017 01:36 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	140	0.46	10		mg/L	20	12/15/2017 02:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-006

Client Sample ID: MW-28-025-Q417
Collection Date: 12/7/2017 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/12/2017 10:22 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	110	0.18	10		mg/L	20	12/15/2017 05:41 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	270	0.46	10		mg/L	20	12/15/2017 05:41 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-008

Client Sample ID: MW-28-090-Q417
Collection Date: 12/7/2017 12:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 12:55 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	1900	4.6	250		mg/L	500	12/15/2017 06:12 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**				PrepDate			Analyst: **RAB**
Fluoride	1.9	0.032	0.50		mg/L	5	12/13/2017 09:32 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	570	1.1	25		mg/L	50	12/15/2017 06:27 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-012

Client Sample ID: MW-33-040-Q417
Collection Date: 12/7/2017 9:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/12/2017 11:54 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	4000	4.6	250		mg/L	500	12/15/2017 07:13 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Fluoride	12	0.13	2.0		mg/L	20	12/18/2017 10:49 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	1500	4.6	100		mg/L	200	12/15/2017 07:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-013

Client Sample ID: MW-33-090-Q417
Collection Date: 12/7/2017 8:47:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 01:10 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	2900	9.1	500		mg/L	1000	12/15/2017 07:44 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**				PrepDate			Analyst: **RAB**
Fluoride	2.2	0.032	0.50		mg/L	5	12/13/2017 11:19 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	730	2.3	50		mg/L	100	12/15/2017 07:59 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-014

Client Sample ID: MW-33-150-Q417
Collection Date: 12/7/2017 9:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 01:25 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	5100	18	1000		mg/L	2000	12/15/2017 08:14 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**				PrepDate			Analyst: **RAB**
Fluoride	2.4	0.032	0.50		mg/L	5	12/13/2017 11:34 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	840	2.3	50		mg/L	100	12/15/2017 08:29 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-015

Client Sample ID: MW-33-210-Q417
Collection Date: 12/7/2017 9:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 02:11 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	6400	18	1000		mg/L	2000	12/15/2017 08:45 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**				PrepDate			Analyst: **RAB**
Fluoride	1.8	0.032	0.50		mg/L	5	12/13/2017 11:49 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	1200	2.3	50		mg/L	100	12/15/2017 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-016

Client Sample ID: MW-46-175-1217
Collection Date: 12/7/2017 10:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/13/2017 01:41 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	6100	9.1	500		mg/L	1000	12/15/2017 09:15 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	900	2.3	50		mg/L	100	12/15/2017 09:31 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-017

Client Sample ID: MW-46-205-Q417
Collection Date: 12/7/2017 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/13/2017 01:56 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	7700	9.1	500		mg/L	1000	12/15/2017 10:17 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	900	2.3	50		mg/L	100	12/15/2017 10:32 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-018

Client Sample ID: MW-49-365-Q417
Collection Date: 12/7/2017 1:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 02:27 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	14000	46	2500		mg/L	5000	12/15/2017 10:47 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	1300	4.6	100		mg/L	200	12/15/2017 11:02 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-020

Client Sample ID: TW-02D-1217
Collection Date: 12/7/2017 12:58:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 02:42 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	1800	4.6	250		mg/L	500	12/15/2017 04:09 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	370	1.1	25		mg/L	50	12/15/2017 04:40 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	LCS-R120771_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120771
Client ID:	LCSW	Batch ID:	R120771	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2863377

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.251	0.50	1.250	0	100	90	110				

Sample ID	MB-R120771_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120771
Client ID:	PBW	Batch ID:	R120771	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2863378

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	N027430-006CDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120771
Client ID:	ZZZZZZ	Batch ID:	R120771	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2863380

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50						0	0	20	

Sample ID	N027430-006CMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120771
Client ID:	ZZZZZZ	Batch ID:	R120771	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2863381

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.003	0.50	1.250	0	80.2	80	120				

Sample ID	N027430-006CMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120771
Client ID:	ZZZZZZ	Batch ID:	R120771	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2863382

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.036	0.50	1.250	0	82.9	80	120	1.003	3.25	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	N027430-004CMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120771
Client ID:	ZZZZZZ	Batch ID:	R120771	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2863384

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.799	0.50	1.250	0	63.9	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	LCS-R120854_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	LCSW	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869516

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.989	0.50	2.000	0	99.4	90	110				

Sample ID	MB-R120854_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	PBW	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869517

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	N027430-004CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	ZZZZZZ	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869519

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	209.355	25						210.2	0.398	20	

Sample ID	N027430-004CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	ZZZZZZ	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869520

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	316.325	25	100.0	210.2	106	80	120				

Sample ID	N027430-004CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	ZZZZZZ	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869521

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	317.025	25	100.0	210.2	107	80	120	316.3	0.221	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N027430-020CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	ZZZZZZ	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869525

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2813.150	250	1000	1774	104	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	MB-R120803_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120803
Client ID:	PBW	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867952

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID	LCS-R120803_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120803
Client ID:	LCSW	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867953

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.228	0.10	1.250	0	98.2	90	110				

Sample ID	N027430-008CDUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120803
Client ID:	ZZZZZZ	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867959

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.790	0.50						1.929	7.48	20	

Sample ID	N027430-008CMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120803
Client ID:	ZZZZZZ	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867962

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	7.748	0.50	6.250	1.929	93.1	80	120				

Sample ID	N027430-008CMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120803
Client ID:	ZZZZZZ	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867963

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	8.353	0.50	6.250	1.929	103	80	120	7.748	7.51	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	MB-R120937_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	PBW	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872494

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID	LCS-R120937_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	LCSW	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872495

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.181	0.10	1.250	0	94.5	90	110				

Sample ID	N027430-012CDUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872497

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	11.460	2.0						11.66	1.71	20	

Sample ID	N027430-012CMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872498

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	37.536	2.0	25.00	11.66	104	80	120				

Sample ID	N027430-012CMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872499

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	35.016	2.0	25.00	11.66	93.4	80	120	37.54	6.95	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **LCS-R120854_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120854**
Client ID: **LCSW** Batch ID: **R120854** TestNo: **EPA 300.0** Analysis Date: **12/15/2017** SeqNo: **2869546**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.730	0.50	4.000	0	93.3	90	110				

Sample ID **MB-R120854_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120854**
Client ID: **PBW** Batch ID: **R120854** TestNo: **EPA 300.0** Analysis Date: **12/15/2017** SeqNo: **2869547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **N027430-004CDUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120854**
Client ID: **ZZZZZZ** Batch ID: **R120854** TestNo: **EPA 300.0** Analysis Date: **12/15/2017** SeqNo: **2869549**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	139.038	10						139.8	0.532	20	

Sample ID **N027430-004CMS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120854**
Client ID: **ZZZZZZ** Batch ID: **R120854** TestNo: **EPA 300.0** Analysis Date: **12/15/2017** SeqNo: **2869550**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	221.892	10	80.00	139.8	103	80	120				

Sample ID **N027430-004CMSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120854**
Client ID: **ZZZZZZ** Batch ID: **R120854** TestNo: **EPA 300.0** Analysis Date: **12/15/2017** SeqNo: **2869551**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	220.132	10	80.00	139.8	100	80	120	221.9	0.796	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N027430-020CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	ZZZZZZ	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869555

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	573.715	25	200.0	373.2	100	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-004

Client Sample ID: MW-29-Q417
Collection Date: 12/7/2017 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-006

Client Sample ID: MW-28-025-Q417
Collection Date: 12/7/2017 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-008

Client Sample ID: MW-28-090-Q417
Collection Date: 12/7/2017 12:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.30	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 8:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.1	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.6	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.8	0.044	0.10		mg/L	2	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-1217
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.1	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R121010	**MBLK**	**4500N03F_W**	**mg/L**		**121010**
Client ID: **PBW**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876073**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-R121010	**LCS**	**4500N03F_W**	**mg/L**		**121010**
Client ID: **LCSW**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.526	0.050	0.5000	0	105	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027429-007CMS	**MS**	**4500N03F_W**	**mg/L**		**121010**
Client ID: **ZZZZZZ**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.621	0.25	2.500	2.809	112	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027429-007CMSD	**MSD**	**4500N03F_W**	**mg/L**		**121010**
Client ID: **ZZZZZZ**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.484	0.25	2.500	2.809	107	75	125	5.621	2.47	20	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027429-008CDUP	**DUP**	**4500N03F_W**	**mg/L**		**121010**
Client ID: **ZZZZZZ**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.177	0.25						2.951	7.36	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-002

Client Sample ID: MW-49-275-Q417
Collection Date: 12/7/2017 1:47:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_171218B** QC Batch: **65993** PrepDate **12/11/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	2400	38	100		ug/L	1	12/19/2017 02:46 AM
Calcium	210000	28	500		ug/L	1	12/19/2017 02:46 AM
Iron	53	1.8	20		ug/L	1	12/19/2017 02:46 AM
Magnesium	4700	4.4	100		ug/L	1	12/19/2017 02:46 AM
Sodium	5700000	6600	120000		ug/L	250	12/20/2017 07:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-004

Client Sample ID: MW-29-Q417
Collection Date: 12/7/2017 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	370	38	100		ug/L	1	12/19/2017 03:18 AM
Calcium	70000	28	500		ug/L	1	12/19/2017 03:18 AM
Iron	1000	1.8	20		ug/L	1	12/19/2017 03:18 AM
Magnesium	30000	4.4	100		ug/L	1	12/19/2017 03:18 AM
Sodium	230000	260	5000		ug/L	10	12/20/2017 08:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-006

Client Sample ID: MW-28-025-Q417
Collection Date: 12/7/2017 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	170	38	100		ug/L	1	12/19/2017 03:23 AM
Calcium	93000	28	500		ug/L	1	12/19/2017 03:23 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 03:23 AM
Magnesium	27000	4.4	100		ug/L	1	12/19/2017 03:23 AM
Sodium	110000	260	5000		ug/L	10	12/20/2017 08:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-008

Client Sample ID: MW-28-090-Q417
Collection Date: 12/7/2017 12:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	770	38	100		ug/L	1	12/19/2017 03:28 AM
Calcium	180000	28	500		ug/L	1	12/19/2017 03:28 AM
Iron	500	1.8	20		ug/L	1	12/19/2017 03:28 AM
Magnesium	37000	4.4	100		ug/L	1	12/19/2017 03:28 AM
Sodium	1200000	2600	50000		ug/L	100	12/20/2017 08:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-012

Client Sample ID: MW-33-040-Q417
Collection Date: 12/7/2017 9:55:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_171218B** QC Batch: **65993** PrepDate **12/11/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	2200	38	100		ug/L	1	12/19/2017 03:46 AM
Calcium	54000	28	500		ug/L	1	12/19/2017 03:46 AM
Iron	140	1.8	20		ug/L	1	12/19/2017 03:46 AM
Magnesium	72000	4.4	100		ug/L	1	12/19/2017 03:46 AM
Sodium	3000000	2600	50000		ug/L	100	12/20/2017 08:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-013

Client Sample ID: MW-33-090-Q417
Collection Date: 12/7/2017 8:47:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1100	38	100		ug/L	1	12/19/2017 03:53 AM
Calcium	260000	28	500		ug/L	1	12/19/2017 03:53 AM
Iron	20	1.8	20		ug/L	1	12/19/2017 03:53 AM
Magnesium	24000	4.4	100		ug/L	1	12/19/2017 03:53 AM
Sodium	1900000	2600	50000		ug/L	100	12/20/2017 08:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-014

Client Sample ID: MW-33-150-Q417
Collection Date: 12/7/2017 9:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1000	38	100		ug/L	1	12/19/2017 04:00 AM
Calcium	370000	28	500		ug/L	1	12/19/2017 04:00 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 04:00 AM
Magnesium	41000	4.4	100		ug/L	1	12/19/2017 04:00 AM
Sodium	3100000	2600	50000		ug/L	100	12/20/2017 08:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-015

Client Sample ID: MW-33-210-Q417
Collection Date: 12/7/2017 9:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1400	38	100		ug/L	1	12/19/2017 04:07 AM
Calcium	540000	140	2500		ug/L	5	12/19/2017 12:02 PM
Iron	68	1.8	20		ug/L	1	12/19/2017 04:07 AM
Magnesium	52000	4.4	100		ug/L	1	12/19/2017 04:07 AM
Sodium	3800000	6600	120000		ug/L	250	12/20/2017 08:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-016

Client Sample ID: MW-46-175-1217
Collection Date: 12/7/2017 10:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1900	38	100		ug/L	1	12/19/2017 04:14 AM
Calcium	98000	28	500		ug/L	1	12/19/2017 04:14 AM
Iron	70	1.8	20		ug/L	1	12/19/2017 04:14 AM
Magnesium	2600	4.4	100		ug/L	1	12/19/2017 04:14 AM
Sodium	4100000	6600	120000		ug/L	250	12/20/2017 08:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-017

Client Sample ID: MW-46-205-Q417
Collection Date: 12/7/2017 10:45:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_171218B** QC Batch: **65993** PrepDate **12/11/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	3000	38	100		ug/L	1	12/19/2017 04:20 AM
Calcium	100000	28	500		ug/L	1	12/19/2017 04:20 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 04:20 AM
Magnesium	2500	4.4	100		ug/L	1	12/19/2017 04:20 AM
Sodium	5000000	6600	120000		ug/L	250	12/20/2017 09:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-018

Client Sample ID: MW-49-365-Q417
Collection Date: 12/7/2017 1:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	3700	38	100		ug/L	1	12/19/2017 04:27 AM
Calcium	320000	28	500		ug/L	1	12/19/2017 04:27 AM
Iron	240	1.8	20		ug/L	1	12/19/2017 04:27 AM
Magnesium	6500	4.4	100		ug/L	1	12/19/2017 04:27 AM
Sodium	8400000	13000	250000		ug/L	500	12/20/2017 09:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-020

Client Sample ID: TW-02D-1217
Collection Date: 12/7/2017 12:58:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_171218B** QC Batch: **65993** PrepDate **12/11/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	820	38	100		ug/L	1	12/19/2017 04:34 AM
Calcium	160000	28	500		ug/L	1	12/19/2017 04:34 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 04:34 AM
Magnesium	37000	4.4	100		ug/L	1	12/19/2017 04:34 AM
Sodium	1100000	2600	50000		ug/L	100	12/20/2017 09:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-65993**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **PBW**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	48.972	500									
Iron	ND	20									
Magnesium	4.804	100									

Sample ID **LCS1-65993**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **LCSW**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871607**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4518.810	100	5000	0	90.4	85	115				
Calcium	9590.941	500	10000	0	95.9	85	115				
Iron	109.266	20	100.0	0	109	85	115				
Magnesium	9312.753	100	10000	0	93.1	85	115				

Sample ID **N027430-002B-MS1**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6944.229	100	5000	2389	91.1	75	125				
Calcium	214316.917	500	10000	211000	32.8	75	125				S
Iron	120.528	20	100.0	52.84	67.7	75	125				S
Magnesium	11862.775	100	10000	4660	72.0	75	125				S

Sample ID **N027430-002B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6971.693	100	5000	2389	91.7	75	125	6944	0.395	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N027430-002B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	215346.305	500	10000	211000	43.1	75	125	214300	0.479	20	S
Iron	119.359	20	100.0	52.84	66.5	75	125	120.5	0.974	20	S
Magnesium	11837.119	100	10000	4660	71.8	75	125	11860	0.217	20	S

Sample ID **MB-65993**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120973**
Client ID: **PBW**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2874508**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	26.536	500									

Sample ID **LCS2-65993**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120973**
Client ID: **LCSW**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2874509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20336.418	500	20000	0	102	85	115				

Sample ID **N027430-004B-MS2**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120973**
Client ID: **ZZZZZZ**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2874522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	261208.893	5000	20000	226700	172	75	125				S

Sample ID **N027430-004B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120973**
Client ID: **ZZZZZZ**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2874523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	258902.013	5000	20000	226700	161	75	125	261200	0.887	20	S

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-002

Client Sample ID: MW-49-275-Q417
Collection Date: 12/7/2017 1:47:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**	Analyst: **CEI**	
Manganese	340	0.28	2.5		µg/L	5	12/19/2017 06:33 PM
Molybdenum	250	0.19	2.5		µg/L	5	12/19/2017 06:33 PM
Selenium	ND	0.14	2.5		µg/L	5	12/19/2017 06:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-004

Client Sample ID: MW-29-Q417
Collection Date: 12/7/2017 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**	Analyst: **CEI**	
Arsenic	9.2	0.025	0.10		µg/L	1	12/19/2017 07:28 PM
Manganese	200	0.28	2.5		µg/L	5	12/19/2017 07:34 PM
Molybdenum	4.8	0.039	0.50		µg/L	1	12/19/2017 07:28 PM
Selenium	ND	0.028	0.50		µg/L	1	12/19/2017 07:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-006

Client Sample ID: MW-28-025-Q417
Collection Date: 12/7/2017 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**	Analyst: **CEI**	
Arsenic	0.71	0.025	0.10		µg/L	1	12/19/2017 10:09 PM
Manganese	ND	0.056	0.50		µg/L	1	12/19/2017 10:09 PM
Molybdenum	4.3	0.039	0.50		µg/L	1	12/19/2017 10:09 PM
Selenium	1.2	0.028	0.50		µg/L	1	12/19/2017 10:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-008

Client Sample ID: MW-28-090-Q417
Collection Date: 12/7/2017 12:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**	Analyst: **CEI**	
Arsenic	1.7	0.025	0.10		µg/L	1	12/19/2017 07:54 PM
Manganese	130	0.056	0.50		µg/L	1	12/19/2017 07:54 PM
Molybdenum	23	0.039	0.50		µg/L	1	12/19/2017 07:54 PM
Selenium	ND	0.028	0.50		µg/L	1	12/19/2017 07:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-012

Client Sample ID: MW-33-040-Q417
Collection Date: 12/7/2017 9:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Arsenic	9.7	0.025	0.10		µg/L	1	12/19/2017 08:05 PM
Manganese	14	0.056	0.50		µg/L	1	12/19/2017 08:05 PM
Molybdenum	340	0.19	2.5		µg/L	5	12/19/2017 08:11 PM
Selenium	ND	0.14	2.5		µg/L	5	12/19/2017 08:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-013

Client Sample ID: MW-33-090-Q417
Collection Date: 12/7/2017 8:47:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**	Analyst: **CEI**	
Arsenic	1.1	0.025	0.10		µg/L	1	12/19/2017 08:17 PM
Manganese	5.4	0.056	0.50		µg/L	1	12/19/2017 08:17 PM
Molybdenum	11	0.039	0.50		µg/L	1	12/19/2017 08:17 PM
Selenium	ND	0.028	0.50		µg/L	1	12/19/2017 08:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-014

Client Sample ID: MW-33-150-Q417
Collection Date: 12/7/2017 9:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**	Analyst: **CEI**	
Arsenic	1.8	0.12	0.50		µg/L	5	12/19/2017 08:44 PM
Manganese	3.8	0.056	0.50		µg/L	1	12/19/2017 08:39 PM
Molybdenum	41	0.19	2.5		µg/L	5	12/19/2017 08:44 PM
Selenium	ND	0.14	2.5		µg/L	5	12/19/2017 08:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-015

Client Sample ID: MW-33-210-Q417
Collection Date: 12/7/2017 9:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**	Analyst: **CEI**	
Arsenic	1.0	0.12	0.50		µg/L	5	12/19/2017 08:55 PM
Manganese	18	0.056	0.50		µg/L	1	12/19/2017 08:50 PM
Molybdenum	17	0.19	2.5		µg/L	5	12/19/2017 08:55 PM
Selenium	ND	0.14	2.5		µg/L	5	12/19/2017 08:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-016

Client Sample ID: MW-46-175-1217
Collection Date: 12/7/2017 10:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**	Analyst: **CEI**	
Manganese	17	0.056	0.50		µg/L	1	12/19/2017 09:01 PM
Molybdenum	180	0.19	2.5		µg/L	5	12/19/2017 09:07 PM
Selenium	ND	0.14	2.5		µg/L	5	12/19/2017 09:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**				PrepDate	**12/12/2017**	Analyst: **CEI**
Manganese	39	0.056	0.50		µg/L	1	12/19/2017 09:12 PM
Molybdenum	320	0.19	2.5		µg/L	5	12/19/2017 09:18 PM
Selenium	ND	0.14	2.5		µg/L	5	12/19/2017 09:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-018

Client Sample ID: MW-49-365-Q417
Collection Date: 12/7/2017 1:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	300	0.28	2.5		µg/L	5	12/19/2017 09:41 PM
Molybdenum	190	0.19	2.5		µg/L	5	12/19/2017 09:41 PM
Selenium	ND	0.69	12		µg/L	25	12/20/2017 09:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-020

Client Sample ID: TW-02D-1217
Collection Date: 12/7/2017 12:58:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	24	0.056	0.50		µg/L	1	12/19/2017 09:46 PM
Molybdenum	14	0.039	0.50		µg/L	1	12/19/2017 09:46 PM
Selenium	1.4	0.028	0.50		µg/L	1	12/19/2017 09:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66020**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120962**
Client ID: **PBW**	Batch ID: **66020**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2873399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-66020**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120962**
Client ID: **LCSW**	Batch ID: **66020**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2873400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.679	0.10	10.00	0	96.8	85	115				
Manganese	100.074	0.50	100.0	0	100	85	115				
Molybdenum	9.982	0.50	10.00	0	99.8	85	115				
Selenium	9.653	0.50	10.00	0	96.5	85	115				

Sample ID **N027430-002B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120962**
Client ID: **ZZZZZZ**	Batch ID: **66020**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2873407**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.028	0.50	10.00	2.215	108	75	125				
Manganese	467.773	2.5	100.0	335.8	132	75	125				S
Molybdenum	292.655	2.5	10.00	253.7	390	75	125				S
Selenium	9.785	2.5	10.00	0.2703	95.2	75	125				

Sample ID **N027430-002B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120962**
Client ID: **ZZZZZZ**	Batch ID: **66020**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2873411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.986	0.50	10.00	2.215	118	75	125	13.03	7.09	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027430-002B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	120962
Client ID:	ZZZZZZ	Batch ID:	66020	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2873411

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	476.720	2.5	100.0	335.8	141	75	125	467.8	1.89	20	S
Molybdenum	301.417	2.5	10.00	253.7	477	75	125	292.7	2.95	20	S
Selenium	11.103	2.5	10.00	0.2703	108	75	125	9.785	12.6	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD		RTNE				
			Geotracker		RWQCB	✓	1. Chilled		
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Labspec		CalTrans		2. Headspace		
			Others	✓	LEVEL III		3. Container Intact		
Phone: 916-786-3302 / Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com / P.O.#	Specify: RWQCB		LEVEL IV		4. Seal Present		
					Regulatory		5. IR number	2	
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 / Fax:	Global ID:		Specify State:		6. Method of Cooling: Ice		
Title: Geologist II	Phone: 916-786-3302 / Fax:						Sample Temp: 3.9°C		
Signature: Date: 12/7/2017	Sampled By: Gantt Jeffers						Courier:		
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*						Tracking No.:		
Project Name: PG&E Topock - GMP	Signature: / Date: 12/7/2017								
Project Number: RC000753.801B									

Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Oxygen and Deuterium Stable Isotopes SFIRM (250 mL poly)	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) Potassium; HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3 (500 mL poly)	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 (500 mL poly)	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3 (500 mL poly)	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3 (500 mL poly)	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3 (500 mL poly)	Mercury, Dissolved (EPA 7470A); HNO3 (500 mL poly)	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4 (250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM2540C) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Fluoride (EPA 300.0) (1 liter poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027430-01 ✓	MW-49-275-EB-Q417	12/7/2017	13:15		X																			E	1	P	B	
2	-02 ✓	MW-49-275-Q417	12/7/2017	13:47			X	X			X							X			X	X	X	X		E	5	P	BN	
3	-03 ✓	MW-29-EB-Q417	12/7/2017	12:20		X																			E	1	P	B	
4	-04 ✓	MW-29-Q417	12/7/2017	13:00			X		X		X									X	X	X	X	X	E	5	P	BNS	
5	-05 ✓	MW-28-025-EB-Q417	12/7/2017	11:25		X																			E	1	P	B	
6	-06 ✓	MW-28-025-Q417	12/7/2017	12:01			X		X		X									X	X	X	X	X	E	5	P	BNS	
7	-07 ✓	MW-28-090-EB-Q417	12/7/2017	11:20		X																			E	1	P	B	
8	-08 ✓	MW-28-090-Q417	12/7/2017	12:10			X		X		X									X	X	X	X	X	E	5	P	BNS	
9	-09 ✓	MW-723-Q417	12/7/2017	15:25		X																			E	1	P	B	
10	-10 ✓	MW-724-Q417	12/7/2017	15:30		X																			E	1	P	B	

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
G. Jeffers	12.7.17 1626	pmgalang	12/7/17 1626
pmgalang	12/7/17 1842	pmgalang	12/7/17 1842

Turn Around Time (TAT)

- A = < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis.
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B = (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition: 1. Chilled; 2. Headspace; 3. Container Intact; 4. Seal Present; 5. IR number 2
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	6. Method of Cooling: ice
Submitted By: Gantt Jeffers	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	Global ID: Specify State:
Title: Geologist II			Sample Temp: 2-9°C
Signature: Date: 12/7/2017	Sampled By: Gantt Jeffers	Matrix: Ground x Sediment; Potable Soil; NPDES Other Solid; Surface	Courier: Tracking No.:
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*		
Project Name: PG&E Topock - GMP	Signature: Date: 12/7/2017		
Project Number: RC000753.801B			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM; 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3; 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4; 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0); 1 liter poly	Specific Conductance (EPA 120.1); 1 liter poly	Total Dissolved Solids (SM2540C); 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B); 1 liter poly	Fluoride (EPA 300.0); 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027430-11 ✓	MW-33-040-EB-Q417	12/7/2017	9:15		X																	E	1	P	B	
2	-12 ✓	MW-33-040-Q417	12/7/2017	9:55			X	X	X		X							X	X	X	X	X	E	6	P	BNS	
3	-13 ✓	MW-33-090-Q417	12/7/2017	8:47		X		X	X		X							X	X	X	X	X	E	5	P	BNS	
4	-14 ✓	MW-33-150-Q417	12/7/2017	9:44		X		X	X		X							X	X	X	X	X	E	5	P	BNS	
5	-15 ✓	MW-33-210-Q417	12/7/2017	9:00		X		X	X		X							X	X	X	X	X	E	5	P	BNS	
6	-16 ✓	MW-46-175-Q417	12/7/2017	10:44		X		X			X						X	X	X	X	X		E	5	P	BNS	
7	-17 ✓	MW-46-205-Q417	12/7/2017	10:45		X					X						X	X	X	X	X		E	3	P	BN	
8	-18 ✓	MW-49-365-Q417	12/7/2017	13:05			X	X			X						X	X	X	X	X		E	5	P	BN	
9	-19 ✓	MW-722-Q417	12/7/2017	15:30		X												X	X	X	X		E	1	P	B	
10	-20 ✓	TW-02D-Q417	12/7/2017	12:58		X					X						X	X	X	X	X		E	3	P	BN	

Relinquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
G. Jeffers	12.7.17 1626		
			12/7/17 1626
	12/7/17 1642		
			12/7/17 1642

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
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	C	= 2 Workdays
	D	= 3 Workdays
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TAT Starts at 8 AM the following day if samples received after 3:00PM.

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Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B = (NH4)2SO4/NH4OH		

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/7/2017	Workorder:	N027430
Rep sample Temp (Deg C):	3.9/2.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	N/A	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 12/21/2017

Reviewed By: 12/21/2017

nancy@assetlaboratories.com

From: Tina Rice [Tina.Rice@critigen.com]
Sent: Wednesday, December 27, 2017 10:59 AM
To: 'nancy@assetlaboratories.com'
Subject: RE: Data uploaded to EQUIS 12/26/17 Topock

Hey Nancy,

Another batch with a duplicate sample IDs. I updated the EDD and reloaded but could you please update the lab reports as follows:

ClientSampID	NewClientSampID	DateCollected	WorkOrder
MW-46-175-Q417	MW-46-175-1217	12/7/2017	N027430
TW-02D-Q417	TW-02D-1217	12/7/2017	N027430

Thanks!
Tina

From: nancy@assetlaboratories.com [mailto:nancy@assetlaboratories.com]
Sent: Tuesday, December 26, 2017 6:19 PM
To: Jennifer.Singer@arcadis.com; Dan.Bush@arcadis.com
Cc: Daniel Moore <Daniel.Moore@critigen.com>; Tina Rice <Tina.Rice@critigen.com>; Laura.Madsen@arcadis.com; Sean.Maurel@arcadis.com; Kalib Sumter <Kalib.Sumter@critigen.com>; marlon@assetlaboratories.com; Serna, Erica <Erica.Serna@arcadis.com>
Subject: Data uploaded to EQUIS 12/26/17 Topock

N027430–Level 4 PDF uploaded.

Thanks,
Nancy

From: nancy@assetlaboratories.com [mailto:nancy@assetlaboratories.com]
Sent: Friday, December 22, 2017 7:07 PM
To: 'Jennifer.Singer@arcadis.com'; 'Dan.Bush@arcadis.com'
Cc: 'Daniel.Moore@critigen.com'; 'Tina.Rice@critigen.com'; 'Laura.Madsen@arcadis.com'; 'Sean.Maurel@arcadis.com'; 'Kalib Sumter'; 'marlon@assetlaboratories.com'; Serna, Erica
Subject: Data uploaded to EQUIS 12/22/17 Topock

N027430–EDD uploaded.

Thanks,
Nancy

From: nancy@assetlaboratories.com [mailto:nancy@assetlaboratories.com]
Sent: Friday, December 22, 2017 6:40 PM
To: 'Jennifer.Singer@arcadis.com'; 'Dan.Bush@arcadis.com'
Cc: 'Daniel.Moore@critigen.com'; 'Tina.Rice@critigen.com'; 'Laura.Madsen@arcadis.com'; 'Sean.Maurel@arcadis.com'; 'Kalib Sumter'; 'marlon@assetlaboratories.com'; Serna, Erica
Subject: Data uploaded to EQUIS 12/22/17 Topock

N027430–Level 2 PDF uploaded.

Thanks,

Nancy Sibucao
Project Manager
Nevada: 3151 W. Post Road, Las Vegas, NV 89118 | P: 702.307.2659 Ext. 412 | F: 702.307.2691
California: 11060 Artesia Blvd., Ste. C, Cerritos, CA 90703 | P: 562.219.7435 | F: 562.219.7436
www.assetlaboratories.com



ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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nancy@assetlaboratories.com

From: Quennie Manimtim [quennie@assetlaboratories.com]
Sent: Friday, December 08, 2017 10:01 AM
To: 'Daniel Moore'; 'Madsen, Laura'; 'Marlon B. Cartin'
Cc: 'Kalib Sumter'; 'Bush, Dan'; 'Kellogg, Lisa'; nancy@assetlaboratories.com; 'Sample Control'; 'Bloes, Marty'
Subject: RE: Magnesium

Thanks Dan!

From: Daniel Moore [mailto:Daniel.Moore@critigen.com]
Sent: Friday, December 08, 2017 9:54 AM
To: 'Quennie Manimtim'; 'Madsen, Laura'; 'Marlon B. Cartin'
Cc: Kalib Sumter; 'Bush, Dan'; 'Kellogg, Lisa'; nancy@assetlaboratories.com; 'Sample Control'; 'Bloes, Marty'
Subject: RE: Magnesium

You bet. Thanks for letting us know.

From: Quennie Manimtim [mailto:quennie@assetlaboratories.com]
Sent: Friday, December 08, 2017 10:31 AM
To: Daniel Moore <Daniel.Moore@critigen.com>; 'Madsen, Laura' <Laura.Madsen@arcadis.com>; 'Marlon B. Cartin' <marlon@assetlaboratories.com>
Cc: Kalib Sumter <Kalib.Sumter@critigen.com>; 'Bush, Dan' <Dan.Bush@arcadis.com>; 'Kellogg, Lisa' <Lisa.Kellogg@arcadis.com>; nancy@assetlaboratories.com; 'Sample Control' <samplecontrol.lv@assetlaboratories.com>; 'Bloes, Marty' <mbloes@pivox.com>
Subject: RE: Magnesium

Hi Dan,

Thank you for your response on this matter. We will change the method for magnesium to 6010 instead of 6020. We also noticed some samples being requested for Cu and Ni by 6010 and the rest of the other metals (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn) by 6020. Historically the Cu and Ni was analyzed by 6020, can we change the method from 6010 to 6020?

Thanks,
Quennie

From: Daniel Moore [mailto:Daniel.Moore@critigen.com]
Sent: Friday, December 08, 2017 9:09 AM
To: 'Madsen, Laura'; Marlon B. Cartin
Cc: Kalib Sumter; Bush, Dan; Kellogg, Lisa; nancy@assetlaboratories.com; 'Quennie Manimtim'; 'Sample Control'; Bloes, Marty
Subject: RE: Magnesium

Hi Laura/Marlon –

The methods that are included in the COC should be coming from our sampling planning efforts. The methods on the CoC should be what we are expecting to receive from the laboratory. However, as we discussed there would be times that the laboratory would request such method/analyte changes. The QAPP allows for the use of either 6010 or 6020 for the analysis of magnesium. Changing this to 6010 is not an issue from a quality standpoint.

My vote is Asset can change the method for these samples and we will update the database to reflect the change during the login review process.

Dan

From: Madsen, Laura [mailto:Laura.Madsen@arcadis.com]
Sent: Friday, December 08, 2017 9:57 AM
To: Marlon B. Cartin <marlon@assetlaboratories.com>; Daniel Moore <Daniel.Moore@critigen.com>
Cc: Kalib Sumter <Kalib.Sumter@critigen.com>; Bush, Dan <Dan.Bush@arcadis.com>; Kellogg, Lisa <Lisa.Kellogg@arcadis.com>; nancy@assetlaboratories.com; 'Quennie Manimtim' <quennie@assetlaboratories.com>; 'Sample Control' <samplecontrol.lv@assetlaboratories.com>; Bloes, Marty <mbloes@pivox.com>
Subject: RE: Magnesium

Hi,
Dan I had thought some time ago you and Kalib had said you had worked through all the sample analyte methods with Marlon and verified which ones we needed. That is what I was referring to when I spoke to Marlon yesterday. Can you confirm which method should be used for magnesium?

Thanks,
Laura

From: Marlon B. Cartin [mailto:marlon@assetlaboratories.com]
Sent: Friday, December 8, 2017 10:53 AM
To: Dan Moore <Daniel.Moore@critigen.com>
Cc: Kalib Sumter <Kalib.Sumter@critigen.com>; Bush, Dan <Dan.Bush@arcadis.com>; Madsen, Laura <Laura.Madsen@arcadis.com>; Kellogg, Lisa <Lisa.Kellogg@arcadis.com>; nancy@assetlaboratories.com; 'Quennie Manimtim' <quennie@assetlaboratories.com>; 'Sample Control' <samplecontrol.lv@assetlaboratories.com>; Bloes, Marty <mbloes@pivox.com>
Subject: Magnesium

Hi Dan,

We've been receiving COC's recently from Topock for the annual sampling event where Magnesium was being requested for EPA 6020-ICP-MS. Magnesium detection is generally high on Topock samples, if we run by ICP-MS, we will have a high DF due to low detection limit. Also, Mg was historically being done by EPA 6010-ICP. I called Laura about this and she advised me to consult this to you.
Please confirm which method to use so we can start working on the samples. Attached is an example of COC.

Thanks,

Marlon Cartin
Project Manager
California: 11110 Artesia Blvd., Ste. B, Cerritos, CA 90703 | P: 562.219.7435 | F: 562.219.7436
Nevada: 3151 W. Post Road, Las Vegas, NV 89118 | P: 702.307.2659 Ext. 410 | F: 702.307.2691 | M: 702.439.0421
www.assetlaboratories.com

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-001A	MW-49-275-EB-Q417	12/7/2017 1:15:00 PM	12/21/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-002A	MW-49-275-Q417	12/7/2017 1:47:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-002B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-002C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-002D			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027430-003A	MW-29-EB-Q417	12/7/2017 12:20:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-004A	MW-29-Q417	12/7/2017 1:00:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-004B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-004B	MW-29-Q417	12/7/2017 1:00:00 PM	12/21/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-004C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-004D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-005A	MW-28-025-EB-Q417	12/7/2017 11:25:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-006A	MW-28-025-Q417	12/7/2017 12:01:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-006B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-006C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-006C	MW-28-025-Q417	12/7/2017 12:01:00 PM	12/21/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-006D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-007A	MW-28-090-EB-Q417	12/7/2017 12:20:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-008A	MW-028-090-Q417	12/7/2017 12:10:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-008B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-008C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-008D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-009A	MW-723-Q417	12/7/2017 3:25:00 PM	12/21/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-010A	MW-724-Q417	12/7/2017 3:30:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-011A	MW-33-040-EB-Q417	12/7/2017 9:15:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-012A	MW-33-040-Q417	12/7/2017 9:55:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-012B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-012C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-012D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-012E			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	WW
N027430-013A	MW-33-090-Q417	12/7/2017 8:47:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-013B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-013B	MW-33-090-Q417	12/7/2017 8:47:00 AM	12/21/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-013C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-013D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-013E			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	WW
N027430-014A	MW-33-150-Q417	12/7/2017 9:44:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-014B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-014C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-014C	MW-33-150-Q417	12/7/2017 9:44:00 AM	12/21/2017	Groundwater	SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-014D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-014E			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	WW
N027430-015A	MW-33-210-Q417	12/7/2017 9:00:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-015B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-015C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-015C	MW-33-210-Q417	12/7/2017 9:00:00 AM	12/21/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-015D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-015E			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	WW
N027430-016A	MW-46-175-Q417 1217	12/7/2017 10:44:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-016B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-016C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-016D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-016E			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB

Mary 12/27/2017

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-017A	MW-46-205-Q417	12/7/2017 10:45:00 AM	12/21/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-017B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-017C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-018A	MW-49-365-Q417	12/7/2017 1:05:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-018B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-018C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-018C	MW-49-365-Q417	12/7/2017 1:05:00 PM	12/21/2017	Groundwater		Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-018D			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027430-019A	MW-722-Q417	12/7/2017 3:30:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-020A	TW-02D-Q417	12/7/2017 12:58:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-020B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-020C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW

1217

12/27/2017

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-021A	FOLDER	12/21/2017	12/21/2017		EDD	RWQCB	☐	☐	☐	LAB
			12/21/2017		Folder	Folder	☐	☐	☐	LAB
			12/21/2017		Folder	Folder	☐	☐	☐	LAB

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (760) 781 3338
FAX: (805) 544-8226
Acct #:

Field Sampler: Signed

11-Dec-17

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: OXY_DEUT		
N027430-002D / MW-49-275-Q417	Groundwater	12/7/2017 1:47:00 PM	8OZP	1		
N027430-012E / MW-33-040-Q417	Groundwater	12/7/2017 9:55:00 AM	8OZP	1		
N027430-013E / MW-33-090-Q417	Groundwater	12/7/2017 8:47:00 AM	16OZP	1		
N027430-014E / MW-33-150-Q417	Groundwater	12/7/2017 9:44:00 AM	8OZP	1		
N027430-015E / MW-33-210-Q417	Groundwater	12/7/2017 9:00:00 AM	8OZP	1		
N027430-016E / MW-46-175-~~Q417~~ 1217	Groundwater	12/7/2017 10:44:00 AM	8OZP	1		
N027430-018D / MW-49-365-Q417	Groundwater	12/7/2017 1:05:00 PM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N27430A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Oxygen and Deuterium Stable Isotopes SFIRM. EDD Requirement Labspec7 edata.

Fedex #: 770961567484

		Date/Time			Date/Time
Relinquished by:		12/11/2017 16:00		**Received by:**	
Relinquished by:				**Received by:**	

List of Analysts

ASSET Laboratories Work Order: N027430

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6010B_Dissolved, EPA 6020_Dissolved
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	EPA 120.1, SM 2540C, SM 2320 B

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120747/R120750 **Analyst:** LSR

ASSET #: N027430 **Date Analyzed:** 12/8/2017

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 12/21/2017

2nd Level Reviewer: RLB 12/22/2017 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 12/8/17 1700

Analyst: LSR CONTD

Standard	Std ID	Reading	Comments
9.43 us/cm	CINV - 171018A	9.42 @ 21.1°C	% Rec: (90-110%)
1410	170822C	1429 @ 21.3°C	
9906	171018B	10020 @ 21.4°C	
99672	170822E	99300 @ 21.4°C	

	Sample ID	Matrix	Reading	Comments
1	N027429-010D	H_2O	10246 @ 20.2°C	
2	12D		2530 @ 20.2°C	
3	13D		1974 @ 20.3°C	
4	14D		1971 @ 20.2°C	
5	15D		1979 @ 20.2°C	
6	16D		3630 @ 20.2°C	
7	17D		3640 @ 20.4°C	
8	18D		10290 @ 20.6°C	
9	20D		10180 @ 20.7°C	
10	N027430-002C		17890 @ 20.6°C	
Dup	2C DUP		17930 @ 20.8°C	Accept: 10% water, 20% soil
20	Std Chk:			% Rec: (90-110%)

Julia Ramit 12/21/2017

RB 12/22/2017

Date: CONTD

Analyst:

Standard	Std ID	Reading	Comments
1413 us/cm	CINV - 170615G	1474 @ 22.0°C	% Rec: (90-110%)
10000	170822F	10210 @ 22.2°C	
99672	170831B	98500 @ 22.0°C	

	Sample ID	Matrix	Reading	Comments
1	N027430-004C	H_2O	1424 @ 20.2°C	
2	6C		1019 @ 20.4°C	
3	8C		5430 @ 20.7°C	1413 CINV 170615G
4	12C		10930 @ 20.8°C	= 1419 @ 20.7°C
5	13C		7720 @ 21.0°C	10000 CINV 170822F
6	14C		11740 @ 21.0°C	= 10260 @ 21.1°C
7	15C		13810 @ 20.8°C	99672 CINV 170831B
8	16C		13970 @ 20.8°C	= 99100 @ 21.3°C
9	17C		16670 @ 20.5°C	
10	18C		24700 @ 20.7°C	
Dup	18C DUP		24900 @ 20.4°C	Accept: 10% water, 20% soil
30	Std Chk:			% Rec: (90-110%)

Logbook # 6

Conductivity Logbook

Date: 12/5/17 1700
Analyst: LSR

CONT'D

Standard	Std ID	Reading	Comments
9.43 uS/cm	CNW-1710KA	9.41 @ 21.1°C	% Rec: (90-110%)
1410	1708226	1421 @ 21.3°C	
9986	1710183	10070 @ 21.4°C	
99672	1710226E	99730 @ 21.4°C	

	Sample ID	Matrix	Reading	Comments
1	NO27430-020C	H2O	4780 @ 20.9°C	
2	NO27431-001C		2030 @ 20.7°C	
3	2C		7430 @ 20.9°C	
4	3C		13350 @ 21.1°C	
5	4C		13300 @ 21.1°C	
6	5C		1658 @ 20.8°C	
7	6C		7120 @ 20.9°C	
8	NO27459-001E		5280 @ 20.8°C	
9	2E		8080 @ 20.0°C	
10	3C		11690 @ 19.8°C	
Dup	3C DUP		11670 @ 19.8°C	Accept: 10% water, 20% soil
40	Std Chk:			% Rec: (90-110%)

Date: CONT'D
Analyst:

Silvia Ramit 12/21/2017
RB 12/22/2017

Standard	Std ID	Reading	Comments
1413 uS/cm	CNW-1706156	1473 @ 20.6°C	% Rec: (90-110%)
10000	170822F	10190 @ 20.9°C	
99672	170831B	97900 @ 21.1°C	

	Sample ID	Matrix	Reading	Comments
1	NO27459-004C	H2O	11950 @ 20.2°C	
2	5C		4460 @ 20.1°C	
3	6C		14570 @ 20.1°C	1413 CNW 1706156
4	6C DUP		14560 @ 20.0°C	= 1464 @ 21.1°C
5	7C		1788 @ 20.2°C	10000 CNW 170822F
6	8E		1647 @ 20.1°C	= 10250 @ 21.6°C
7	9C		7140 @ 20.2°C	99672 CNW 170831B
8	10C		7330 @ 20.2°C	= 98500 @ 21.6°C
9	11C		5200 @ 20.6°C	
10	12C		1269 @ 20.7°C	
Dup	13C		10580 @ 20.4°C	Accept: 10% water, 20% soil
50	Std Chk:			% Rec: (90-110%)

Logbook # 6

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 60025/60055 **Analyst:** LSR

ASSET #: N027430 **Date Analyzed:** 12/12,12/13/17

Method: EPA 160.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 12/21/2017

2nd Level Reviewer: RB 12/22/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N027430-002C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(59.2740 - 59.1347)*1000000}{10}$$

= 13930 mg/L

Reporting result in two significant figures,

TDS = 14000 mg/L

Julia Ramit 12/21/2017

RLB 12/22/2017

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/12/2017 12:55:5**
Prep End Date:

Reviewed/ Date: RB 12/22/2017
Initials/ Date: Lilia Ramit 12/21/2017

Prep Batch **66025** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66025	Water	12/17/2017	100	☐	0	0	100	1.000		
MB-66025	Water		100	☐	0	0	100	1.000		
N027429-017D	Groundwater	3640	100 /40	☐	0	0	100	1.000		
N027429-018D	Groundwater	10290	100 /10	☐	0	0	100	1.000		
N027429-020D	Groundwater	10180	100 /10	☐	0	0	100	1.000		
N027430-002C	Groundwater	17890	100 /10	☐	0	0	100	1.000		
N027430-002C-DU	Groundwater	1	100 /10	☐	0	0	100	1.000		
N027430-004C	Groundwater	1424	100	☐	0	0	100	1.000		
N027430-006C	Groundwater	1019	100	☐	0	0	100	1.000		
N027430-008C	Unknown	5430	100 /20	☐	0	0	100	1.000		
N027430-012C	Groundwater	10930	100 /10	☐	0	0	100	1.000		
N027430-013C	Groundwater	7720	100 /20	☐	0	0	100	1.000		
N027430-014C	Groundwater	11740	100 /10	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9466

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/12/2017 12:55:5**
Prep End Date: **12/13/2017 11:55:0**
Reviewed/ Date: RLB 12/22/2017
Initials/ Date: Lilia Ramit 12/21/2017
Prep Batch **66025** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**
Prep Factor Units: **mL / mL** Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66025	Water		100	☐	0	0	100	1.000		
MB-66025	Water		100	☐	0	0	100	1.000		
N027429-017D	Groundwater		40	☐	0	0	100	2.500		
N027429-018D	Groundwater		10	☐	0	0	100	10.000		
N027429-020D	Groundwater		10	☐	0	0	100	10.000		
N027430-002C	Groundwater		10	☐	0	0	100	10.000		
N027430-002C-DU	Groundwater		10	☐	0	0	100	10.000		
N027430-004C	Groundwater		100	☐	0	0	100	1.000		
N027430-006C	Groundwater		100	☐	0	0	100	1.000		
N027430-008C	Unknown		20	☐	0	0	100	5.000		
N027430-012C	Groundwater		10	☐	0	0	100	10.000		
N027430-013C	Groundwater		20	☐	0	0	100	5.000		
N027430-014C	Groundwater		10	☐	0	0	100	10.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9666	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171211C	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/13/2017 1:09:28**
Prep End Date:

Reviewed/ Date: RB 12/22/2017

Initials/ Date: Lilia Ramit 12/21/2017

Prep Batch **66055** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH (cond)	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66055	Water	lwsil 77211C	100	☐	0	0	100	1.000		
MB-66055	Water		100	☐	0	0	100	1.000		
N027430-015C	Groundwater	13810	100 /10	☐	0	0	100	1.000		
N027430-016C	Groundwater	13970	100 /10	☐	0	0	100	1.000		
N027430-017C	Groundwater	16670	100 /10	☐	0	0	100	1.000		
N027430-018C	Groundwater	24700	100 /5	☐	0	0	100	1.000		
N027430-018C-DU	Groundwater	1	100 /5	☐	0	0	100	1.000		
N027430-020C	Groundwater	4780	100 /30	☐	0	0	100	1.000		
N027459-001E	Groundwater	5280	100 /20	☐	0	0	100	1.000		
N027459-002E	Groundwater	8080	100 /20	☐	0	0	100	1.000		
N027459-003C	Groundwater	11690	100 /10	☐	0	0	100	1.000		
N027459-004C	Groundwater	11950	100 /10	☐	0	0	100	1.000		
N027459-005C	Groundwater	4460	100 /30	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

96616

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/13/2017 1:09:28**
Prep End Date: **12/14/2017 11:00:0**

Reviewed/ Date: RB 12/22/2017

Initials/ Date: Lilia Ramit 12/21/2017

Prep Batch **66055** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66055	Water		100	☐	0	0	100	1.000		
MB-66055	Water		100	☐	0	0	100	1.000		
N027430-015C	Groundwater		10	☐	0	0	100	10.000		
N027430-016C	Groundwater		10	☐	0	0	100	10.000		
N027430-017C	Groundwater		10	☐	0	0	100	10.000		
N027430-018C	Groundwater		5	☐	0	0	100	20.000		
N027430-018C-DU	Groundwater		5	☐	0	0	100	20.000		
N027430-020C	Groundwater		30	☐	0	0	100	3.333		
N027459-001E	Groundwater		20	☐	0	0	100	5.000		
N027459-002E	Groundwater		20	☐	0	0	100	5.000		
N027459-003C	Groundwater		10	☐	0	0	100	10.000		
N027459-004C	Groundwater		10	☐	0	0	100	10.000		
N027459-005C	Groundwater		30	☐	0	0	100	3.333		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9666	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171211C	1000 ppm NaCl	LCS	100

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/20/17 1255 FF	MB 66025	100	68.3657 68.3658	68.3656 68.3659	
KL	LCS 66025	100	70.7429 70.7432	70.8364 70.8368	
T	NO27429-0170	40	46.0434 46.0435	46.1466 46.1470	
IF	18D	10	60.6246 60.6243	60.7044 60.7047	
S	20D	10	45.7302 45.7301	45.8040 45.8041	
A	NO27430-0020	10	59.1348 59.1347	59.2741 59.2740	
M	2C dup	10	49.0617 49.0615	49.2074 49.2071	
IX	4C	100	76.5869 76.5872	76.6838 76.6839	
IS	6C	100	53.6844 53.6848	53.7631 53.7630	
31	8C	20	63.3144 63.3147	63.3933 63.3931	

Julia Ramit 12/21/2017 ASSET Laboratories Logbook#8

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/12/17 RR	N027430-012C	10	62.3273 62.3277	62.4112 62.4113	
(-)	13C	20	60.5871 60.5875	60.7023 60.7022	
8	14C	10	53.6990 53.6993	53.7893 53.7891	

Julia Ramit 12/21/2017

Closing out : 49.9999 12/13/17 RB 12/22/2017 1157

ASSET Laboratories

Logbook#8

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
12/13/2017									
MB-66025	100	68.3658	68.3659	1	1	1			MBLK
LCS-66025	100	70.7432	70.8368	936	1	936			LCS
N027429-017D	40	46.0435	46.147	1035	2.5	2587.5	3640	0.711	SAMP
N027429-018D	10	60.6243	60.7047	804	10	8040	10290	0.781	SAMP
N027429-020D	10	45.7301	45.8041	740	10	7400	10180	0.727	SAMP
N027430-002C	10	59.1347	59.274	1393	10	13930	17890	0.779	SAMP
N027430-002CDUP	10	49.0615	49.2071	1456	10	14560	17890	0.814	DUP
N027430-004C	100	76.5872	76.6839	967	1	967	1424	0.679	SAMP
N027430-006C	100	53.6848	53.763	782	1	782	1019	0.767	SAMP
N027430-008C	20	63.3147	63.3931	784	5	3920	5430	0.722	SAMP
N027430-012C	10	62.3277	62.4113	836	10	8360	10930	0.765	SAMP
N027430-013C	20	60.5875	60.7022	1147	5	5735	7720	0.743	SAMP
N027430-014C	10	53.6993	53.7891	898	10	8980	11740	0.765	SAMP

Julia Ramit 12/21/2017

RB 12/22/2017

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/13/17 1309 CC	MB 66055	100	70.0663 70.0661	70.0662 70.0663	
EE	LCS 66055	100	68.2178 68.2175	68.3125 68.3128	
1K	NO27430-015C	10	62.4357 62.4353	62.5478 62.5482	
1J	16C	10	61.5250 61.5249	61.6290 61.6294	
A	17C	10	59.1298 59.1297	59.2537 59.2541	
16	18C	5	49.3552 49.3549	49.4636 49.4640	
C	18C DUP	5	50.3707 50.3706	50.4846 50.4844	
12	20C	30	53.6901 53.6905	53.7897 53.7901	
8	NO27459-001E	20	53.6969 53.6972	53.7717 53.7721	
CB	2E	20	53.5406 53.5406	53.6652 53.6655	

Julia Ramit 12/21/2017

ASSET LABORATORIES
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922

RJB 12/22/2017

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/13/17 IF	NO 459-003C	10	60.6241 60.6238	60.7199 60.7203	
T	4C	10	46.0447 46.0443	46.1439 46.1442	
31	5C	30	63.3092 63.3089	63.4000 63.4004	
Julia Ramit	12/21/2017				
	12/22/2017				

ASSET LABORATORIES
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
12/14/2017									
MB-66055	100	70.0661	70.0663	2	1	2			MBLK
LCS-66055	100	68.2175	68.3128	953	1	953			LCS
N027430-015C	10	62.4353	62.5482	1129	10	11290	13810	0.818	SAMP
N027430-016C	10	61.5249	61.6294	1045	10	10450	13970	0.748	SAMP
N027430-017C	10	59.1297	59.2541	1244	10	12440	16670	0.746	SAMP
N027430-018C	5	49.3549	49.464	1091	20	21820	24700	0.883	SAMP
N027430-018CDUP	5	50.3706	50.4844	1138	20	22760	24700	0.921	DUP
N027430-020C	30	53.6905	53.7901	996	3.33333333	3320	4780	0.695	SAMP
N027459-001E	20	53.6972	53.7721	749	5	3745	5280	0.709	SAMP
N027459-002E	20	53.5406	53.6655	1249	5	6245	8080	0.773	SAMP
N027459-003C	10	60.6238	60.7203	965	10	9650	11690	0.825	SAMP
N027459-004C	10	46.0443	46.1442	999	10	9990	11950	0.836	SAMP
N027459-005C	30	63.3089	63.4004	915	3.33333333	3050	4460	0.684	SAMP

Silvia Ramit 12/21/2017

RB 12/22/2017

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120833
ASSET #: N027430

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 12/11/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	~~X~~	X			X	
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?	X		~~X~~			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments: Dilution was necessary for N027430-002A, -012A, -013A, and -014A due to matrix interference.

N027430-002A (218.6) = 0.37 ppb , N027430-002B (6020) = 3.5 ppb
N027430-012A (218.6) = 0 ppb , N027430-012B (6020) = 1.7 ppb
MS confirmation performed; recovery within criteria.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 12/16/2017

2nd Level Reviewer RLB 12/22/2017 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120834
ASSET #: N027430

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 12/11/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X		X			X
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

017A and -018A

Dilution were necessary in N027430-~~002A/12A/13A/14A/15A~~ due to matrix interference.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 12/16/2017

2nd Level Reviewer RLB 12/22/2017 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N027430-013A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 1.0980 * 5$$

$$Cr^{+6}, \mu g/L = 5.49$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 5.5}$$

rba 12/16/2017

RLB 12/22/2017

ANALYSIS RUN LOG

INJECTION LOG: 171128A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/28/17 10:57 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/28/17 11:08 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/28/17 11:17 AM	Reported
13	MB-R120468	MBLK	1	Hexavalent Chromium	11/28/17 11:27 AM	Reported
14	LCS-R120468	LCS	1	Hexavalent Chromium	11/28/17 11:36 AM	Reported
15	N027215-001A	SAMP	1	Hexavalent Chromium	11/28/17 11:47 AM	Reported
16	N027215-002A	SAMP	1	Hexavalent Chromium	11/28/17 11:59 AM	Reported
17	N027215-003A	SAMP	1	Hexavalent Chromium	11/28/17 12:08 PM	Reported
18	N027215-004A	SAMP	1	Hexavalent Chromium	11/28/17 12:18 PM	Reported
19	N027215-005A	SAMP	1	Hexavalent Chromium	11/28/17 12:27 PM	Reported
20	N027215-002ADUP	DUP	1	Hexavalent Chromium	11/28/17 12:37 PM	Reported
21	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 12:46 PM	Not Reported
22	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 12:56 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	11/28/17 1:05 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/28/17 1:14 PM	Reported
25	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:04 PM	Not Reported
26	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:16 PM	Not Reported
27	N027215-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:29 PM	Reported
28	N027215-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:41 PM	Reported
29	CCV-2	CCV	1	Hexavalent Chromium	11/28/17 2:50 PM	Reported
30	CCB-2	CCB	1	Hexavalent Chromium	11/28/17 3:00 PM	Reported



Injection Log Summary

Sequence Details

Name:	**IC-07_171128A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**28/Nov/17 15:47:35**
No. of Injections:	**33**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		11/28/2017 10:57	Finished	ICV @5ppb, IWST-171002A
11	PQL@0.2ppb,CCV2,1	12	1000	Unknown		11/28/2017 11:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		11/28/2017 11:17	Finished	ICB R171114C
13	MB-H2O,MBLK,1	14	1000	Unknown		11/28/2017 11:27	Finished	MB R171114C
14	LCS-H2O,LCS,1	15	1000	Unknown		11/28/2017 11:36	Finished	LCS, IWST-171002B
15	N027215-001A,SAMP	17	1000	Unknown		11/28/2017 11:47	Finished	SAMP,10mL
16	N027215-002A,SAMP	18	1000	Unknown		11/28/2017 11:59	Finished	SAMP,10mL
17	N027215-003A,SAMP	19	1000	Unknown		11/28/2017 12:08	Finished	SAMP,10mL
18	N027215-004A,SAMP	20	1000	Unknown		11/28/2017 12:18	Finished	SAMP,10mL
19	N027215-005A,SAMP	21	1000	Unknown		11/28/2017 12:27	Finished	SAMP,10mL
20	N027215-002ADUP,D	22	1000	Unknown		11/28/2017 12:37	Finished	DUP,10mL
21	N027157-001AMS,MS	23	1000	Unknown		11/28/2017 12:46	Finished	MS (5ppb), IWST-171002B,10
22	N027157-001AMSD,M	24	1000	Unknown		11/28/2017 12:56	Finished	MSD (5ppb), IWST-171002B,1(
23	CCV-1,CCV1,1,	25	1000	Unknown		11/28/2017 13:05	Finished	CCV @10ppb, IWST-171002A
24	CCB-1,CCB,1,	26	1000	Unknown		11/28/2017 13:14	Finished	CCB R171031A
25	N027157-001AMS,MS	28	1000	Unknown		11/28/2017 14:04	Finished	MS (5ppb), IWST-171002B,10
26	N027157-001AMSD,M	29	1000	Unknown		11/28/2017 14:16	Finished	MSD (5ppb), IWST-171002B,1(
27	N027215-001AMS,MS	31	1000	Unknown		11/28/2017 14:29	Finished	MS (5ppb), IWST-171002B,10
28	N027215-001AMSD,M	32	1000	Unknown		11/28/2017 14:41	Finished	MSD (5ppb), IWST-171002B,1(
29	CCV-2,CCV,1,	33	1000	Unknown		11/28/2017 14:50	Finished	CCV @5ppb, IWST-171002A
30	CCB-2,CCB,1,	34	1000	Unknown		11/28/2017 15:00	Finished	CCB R171031A
31	SHUTDOWN	35	1000	Unknown		11/28/2017 15:09	Finished	
32	Eluent: R171128A	36	1000	Unknown		n.a.	Finished	Eluent
33	PCR: R171128B	37	1000	Unknown		n.a.	Finished	Post-Column Reagent

rba 11/29/2017

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 8:57 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 9:08 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/11/17 9:18 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/11/17 9:27 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/11/17 9:37 AM	Reported
15	MB-R120833	MBLK	1	Hexavalent Chromium	12/11/17 9:46 AM	Reported
16	LCS-R120833	LCS	1	Hexavalent Chromium	12/11/17 9:56 AM	Reported
17	N027405-006AMS	MS	5	Hexavalent Chromium	12/11/17 10:09 AM	Reported
18	N027405-006A	SAMP	5	Hexavalent Chromium	12/11/17 10:20 AM	Reported
19	N027405-007AMS	MS	5	Hexavalent Chromium	12/11/17 10:29 AM	Reported
20	N027405-007A	SAMP	5	Hexavalent Chromium	12/11/17 10:39 AM	Reported
21	N027405-008AMS	MS	5	Hexavalent Chromium	12/11/17 10:48 AM	Reported
22	N027405-008A	SAMP	5	Hexavalent Chromium	12/11/17 10:58 AM	Reported
23	N027430-001A	SAMP	1	Hexavalent Chromium	12/11/17 11:07 AM	Reported
24	N027430-001AMS	MS	1	Hexavalent Chromium	12/11/17 11:17 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/11/17 11:26 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/11/17 11:36 AM	Reported
27	N027430-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:45 AM	Reported
28	N027430-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:54 AM	Reported
29	N027430-003A	SAMP	1	Hexavalent Chromium	12/11/17 12:04 PM	Reported
30	N027430-003AMS	MS	1	Hexavalent Chromium	12/11/17 12:13 PM	Reported
31	N027430-004A	SAMP	1	Hexavalent Chromium	12/11/17 12:23 PM	Reported
32	N027430-004AMS	MS	1	Hexavalent Chromium	12/11/17 12:32 PM	Reported
33	N027430-005A	SAMP	1	Hexavalent Chromium	12/11/17 12:42 PM	Reported
34	N027430-005AMS	MS	1	Hexavalent Chromium	12/11/17 12:51 PM	Reported
35	N027430-006A	SAMP	1	Hexavalent Chromium	12/11/17 1:01 PM	Reported
36	N027430-006AMS	MS	1	Hexavalent Chromium	12/11/17 1:10 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/11/17 1:20 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/11/17 1:29 PM	Reported
39	N027430-007A	SAMP	1	Hexavalent Chromium	12/11/17 1:38 PM	Reported
40	N027430-007AMS	MS	1	Hexavalent Chromium	12/11/17 1:48 PM	Reported
41	N027430-008A	SAMP	1	Hexavalent Chromium	12/11/17 1:57 PM	Reported
42	N027430-008AMS	MS	1	Hexavalent Chromium	12/11/17 2:07 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027430-009A	SAMP	1	Hexavalent Chromium	12/11/17 2:16 PM	Reported
44	N027430-009AMS	MS	1	Hexavalent Chromium	12/11/17 2:26 PM	Reported
45	N027430-010A	SAMP	1	Hexavalent Chromium	12/11/17 2:35 PM	Reported
46	N027430-010AMS	MS	1	Hexavalent Chromium	12/11/17 2:45 PM	Reported
47	N027430-020A	SAMP	20	Hexavalent Chromium	12/11/17 2:54 PM	Reported
48	N027430-020AMS	MS	20	Hexavalent Chromium	12/11/17 3:04 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/11/17 3:13 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/11/17 3:23 PM	Reported
51	N027430-012A	SAMP	1	Hexavalent Chromium	12/11/17 3:32 PM	Not Reported
52	N027430-012AMS	MS	1	Hexavalent Chromium	12/11/17 3:41 PM	Not Reported
53	N027430-019A	SAMP	1	Hexavalent Chromium	12/11/17 3:51 PM	Reported
54	N027430-019AMS	MS	1	Hexavalent Chromium	12/11/17 4:00 PM	Reported
55	N027430-011A	SAMP	1	Hexavalent Chromium	12/11/17 4:10 PM	Reported
56	N027430-011AMS	MS	1	Hexavalent Chromium	12/11/17 4:19 PM	Reported
57	N027430-013A	SAMP	5	Hexavalent Chromium	12/11/17 4:29 PM	Reported
58	N027430-013AMS	MS	5	Hexavalent Chromium	12/11/17 4:38 PM	Reported
59	N027430-014A	SAMP	5	Hexavalent Chromium	12/11/17 4:48 PM	Reported
60	N027430-014AMS	MS	5	Hexavalent Chromium	12/11/17 4:57 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/11/17 5:07 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/11/17 5:16 PM	Reported
63	N027430-015A	SAMP	5	Hexavalent Chromium	12/11/17 5:26 PM	Reported
64	N027430-015AMS	MS	5	Hexavalent Chromium	12/11/17 5:35 PM	Reported
65	N027405-006ADUP	DUP	5	Hexavalent Chromium	12/11/17 5:44 PM	Reported
66	N027430-020AMSD	MSD	20	Hexavalent Chromium	12/11/17 5:54 PM	Reported
67	N027430-002A	SAMP	1	Hexavalent Chromium	12/11/17 6:05 PM	Not Reported
68	N027430-002AMS	MS	1	Hexavalent Chromium	12/11/17 6:16 PM	Not Reported
69	N027430-013A	SAMP	1	Hexavalent Chromium	12/11/17 6:25 PM	Not Reported
70	N027430-013AMS	MS	1	Hexavalent Chromium	12/11/17 6:35 PM	Not Reported
71	N027430-014A	SAMP	1	Hexavalent Chromium	12/11/17 6:44 PM	Not Reported
72	N027430-014AMS	MS	1	Hexavalent Chromium	12/11/17 6:54 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	12/11/17 7:03 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	12/11/17 7:13 PM	Reported
75	N027430-015A	SAMP	1	Hexavalent Chromium	12/11/17 7:22 PM	Not Reported
76	N027430-015AMS	MS	1	Hexavalent Chromium	12/11/17 7:32 PM	Not Reported
77	N027430-012A	SAMP	5	Hexavalent Chromium	12/11/17 7:41 PM	Reported
78	N027430-012AMS	MS	5	Hexavalent Chromium	12/11/17 7:50 PM	Reported
79	LCS-R120834	LCS	1	Hexavalent Chromium	12/11/17 8:00 PM	Reported
80	MB-R120834	MBLK	1	Hexavalent Chromium	12/11/17 8:09 PM	Reported
81	N027431-006A	SAMP	1000	Hexavalent Chromium	12/11/17 8:19 PM	Reported
82	N027431-006AMS	MS	1000	Hexavalent Chromium	12/11/17 8:28 PM	Reported
83	N027431-006AMSD	MSD	1000	Hexavalent Chromium	12/11/17 8:38 PM	Reported
84	N027428-002A	SAMP	100	Hexavalent Chromium	12/11/17 8:47 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	12/11/17 8:57 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	12/11/17 9:06 PM	Reported
87	N027428-002ADUP	DUP	100	Hexavalent Chromium	12/11/17 9:16 PM	Reported
88	N027428-002AMS	MS	100	Hexavalent Chromium	12/11/17 9:25 PM	Reported
89	N027428-001A	SAMP	1	Hexavalent Chromium	12/11/17 9:35 PM	Reported
90	N027428-001AMS	MS	1	Hexavalent Chromium	12/11/17 9:44 PM	Reported
91	N027430-016A	SAMP	5	Hexavalent Chromium	12/11/17 9:53 PM	Reported
92	N027430-016AMS	MS	5	Hexavalent Chromium	12/11/17 10:03 PM	Reported
93	N027430-017A	SAMP	5	Hexavalent Chromium	12/11/17 10:12 PM	Reported
94	N027430-017AMS	MS	5	Hexavalent Chromium	12/11/17 10:22 PM	Reported
95	N027430-018A	SAMP	5	Hexavalent Chromium	12/11/17 10:31 PM	Reported
96	N027430-018AMS	MS	5	Hexavalent Chromium	12/11/17 10:41 PM	Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	12/11/17 10:50 PM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	12/11/17 11:00 PM	Reported
99	N027431-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:09 PM	Reported
100	N027431-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:19 PM	Reported
101	N027431-003A	SAMP	5	Hexavalent Chromium	12/11/17 11:28 PM	Reported
102	N027431-003AMS	MS	5	Hexavalent Chromium	12/11/17 11:38 PM	Reported
103	N027431-004A	SAMP	5	Hexavalent Chromium	12/11/17 11:47 PM	Reported
104	N027431-004AMS	MS	5	Hexavalent Chromium	12/11/17 11:56 PM	Reported
105	N027431-001A	SAMP	10	Hexavalent Chromium	12/12/17 12:06 AM	Not Reported
106	N027431-001AMS	MS	10	Hexavalent Chromium	12/12/17 12:15 AM	Not Reported
107	N027431-005A	SAMP	200	Hexavalent Chromium	12/12/17 12:25 AM	Reported
108	N027431-005AMS	MS	200	Hexavalent Chromium	12/12/17 12:34 AM	Reported
109	CCV-9	CCV	1	Hexavalent Chromium	12/12/17 12:44 AM	Reported
110	CCB-9	CCB	1	Hexavalent Chromium	12/12/17 12:53 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171211A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**12/Dec/17 01:24:03**
No. of Injections:	**113**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/11/2017 08:57	Finished	BLANK
11	BLANK	2	1000	Unknown		12/11/2017 09:08	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/11/2017 09:18	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/11/2017 09:27	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/11/2017 09:37	Finished	CCB R171129A
15	MB-1,MBLK,1	6	1000	Unknown		12/11/2017 09:46	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/11/2017 09:56	Finished	LCS, IWST-171002B
17	N027405-006AMS,MS	1	1000	Unknown		12/11/2017 10:09	Finished	MS (1ppb), IWST-171002B,2>1
18	N027405-006A,SAMP	2	1000	Unknown		12/11/2017 10:20	Finished	SAMP,2>10mL
19	N027405-007AMS,MS	3	1000	Unknown		12/11/2017 10:29	Finished	MS (1ppb), IWST-171002B,2>1
20	N027405-007A,SAMP	4	1000	Unknown		12/11/2017 10:39	Finished	SAMP,2>10mL
21	N027405-008AMS,MS	5	1000	Unknown		12/11/2017 10:48	Finished	SAMP,2>10mL
22	N027405-008A,SAMP	6	1000	Unknown		12/11/2017 10:58	Finished	MS (1ppb), IWST-171002B,2>1
23	N027430-001A,SAMP	7	1000	Unknown		12/11/2017 11:07	Finished	SAMP,10mL
24	N027430-001AMS,MS	8	1000	Unknown		12/11/2017 11:17	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	9	1000	Unknown		12/11/2017 11:26	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	10	1000	Unknown		12/11/2017 11:36	Finished	CCB R171129A
27	N027430-002A,SAMP	11	1000	Unknown		12/11/2017 11:45	Finished	SAMP,2>10mL
28	N027430-002AMS,MS	12	1000	Unknown		12/11/2017 11:54	Finished	MS (1ppb), IWST-171002B,2>1
29	N027430-003A,SAMP	13	1000	Unknown		12/11/2017 12:04	Finished	SAMP,10mL
30	N027430-003AMS,MS	14	1000	Unknown		12/11/2017 12:13	Finished	MS (1ppb), IWST-171002B,10
31	N027430-004A,SAMP	15	1000	Unknown		12/11/2017 12:23	Finished	SAMP,10mL
32	N027430-004AMS,MS	16	1000	Unknown		12/11/2017 12:32	Finished	MS (1ppb), IWST-171002B,10
33	N027430-005A,SAMP	17	1000	Unknown		12/11/2017 12:42	Finished	SAMP,10mL
34	N027430-005AMS,MS	18	1000	Unknown		12/11/2017 12:51	Finished	MS (1ppb), IWST-171002B,10
35	N027430-006A,SAMP	19	1000	Unknown		12/11/2017 13:01	Finished	SAMP,10mL
36	N027430-006AMS,MS	20	1000	Unknown		12/11/2017 13:10	Finished	MS (1ppb), IWST-171002B,10
37	CCV-3,CCV,1,	21	1000	Unknown		12/11/2017 13:20	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	22	1000	Unknown		12/11/2017 13:29	Finished	CCB R171129A
39	N027430-007A,SAMP	23	1000	Unknown		12/11/2017 13:38	Finished	SAMP,10mL
40	N027430-007AMS,MS	24	1000	Unknown		12/11/2017 13:48	Finished	MS (1ppb), IWST-171002B,10
41	N027430-008A,SAMP	25	1000	Unknown		12/11/2017 13:57	Finished	SAMP,10mL
42	N027430-008AMS,MS	26	1000	Unknown		12/11/2017 14:07	Finished	MS (1ppb), IWST-171002B,10
43	N027430-009A,SAMP	27	1000	Unknown		12/11/2017 14:16	Finished	SAMP,10mL
44	N027430-009AMS,MS	28	1000	Unknown		12/11/2017 14:26	Finished	MS (1ppb), IWST-171002B,10
45	N027430-010A,SAMP	29	1000	Unknown		12/11/2017 14:35	Finished	SAMP,10mL
46	N027430-010AMS,MS	30	1000	Unknown		12/11/2017 14:45	Finished	MS (1ppb), IWST-171002B,10
47	N027430-020A,SAMP	31	1000	Unknown		12/11/2017 14:54	Finished	SAMP,0.5>10mL
48	N027430-020AMS,MS	32	1000	Unknown		12/11/2017 15:04	Finished	MS (5ppb), IWST-171002B,0.5
49	CCV-4,CCV1,1,	33	1000	Unknown		12/11/2017 15:13	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	34	1000	Unknown		12/11/2017 15:23	Finished	CCB R171129A
51	N027430-012A,SAMP	35	1000	Unknown		12/11/2017 15:32	Finished	SAMP,10mL
52	N027430-012AMS,MS	36	1000	Unknown		12/11/2017 15:41	Finished	MS (1ppb), IWST-171002B,10
53	N027430-019A,SAMP	37	1000	Unknown		12/11/2017 15:51	Finished	SAMP,10mL
54	N027430-019AMS,MS	38	1000	Unknown		12/11/2017 16:00	Finished	MS (1ppb), IWST-171002B,10
55	N027430-011A,SAMP	39	1000	Unknown		12/11/2017 16:10	Finished	SAMP,10mL
56	N027430-011AMS,MS	40	1000	Unknown		12/11/2017 16:19	Finished	MS (1ppb), IWST-171002B,10
57	N027430-013A,SAMP	41	1000	Unknown		12/11/2017 16:29	Finished	SAMP,2>10mL
58	N027430-013AMS,MS	42	1000	Unknown		12/11/2017 16:38	Finished	MS (1ppb), IWST-171002B,2>1
59	N027430-014A,SAMP	43	1000	Unknown		12/11/2017 16:48	Finished	SAMP,2>10mL
60	N027430-014AMS,MS	44	1000	Unknown		12/11/2017 16:57	Finished	MS (1ppb), IWST-171002B,2>1

61	CCV-5,CCV,1,	45	1000	Unknown		12/11/2017 17:07	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	46	1000	Unknown		12/11/2017 17:16	Finished	CCB R171129A
63	N027430-015A,SAMP	47	1000	Unknown		12/11/2017 17:26	Finished	SAMP,2>10mL
64	N027430-015AMS,MS	48	1000	Unknown		12/11/2017 17:35	Finished	MS (1ppb), IWST-171002B,2>1
65	N027405-006ADUP,D	49	1000	Unknown		12/11/2017 17:44	Finished	DUP,2>10mL
66	N027430-020AMSD,M	50	1000	Unknown		12/11/2017 17:54	Finished	MSD (5ppb), IWST-171002B,0.
67	N027430-002A,SAMP	1	1000	Unknown		12/11/2017 18:05	Finished	MSD (5ppb), IWST-171002B,0.
68	N027430-002AMS,MS	2	1000	Unknown		12/11/2017 18:16	Finished	DUP,2>10mL
69	N027430-013A,SAMP	3	1000	Unknown		12/11/2017 18:25	Finished	SAMP,2>10mL
70	N027430-013AMS,MS	4	1000	Unknown		12/11/2017 18:35	Finished	MS (1ppb), IWST-171002B,2>1
71	N027430-014A,SAMP	5	1000	Unknown		12/11/2017 18:44	Finished	SAMP,10mL
72	N027430-014AMS,MS	6	1000	Unknown		12/11/2017 18:54	Finished	MS (1ppb), IWST-171002B,10
73	CCV-6,CCV1,1,	7	1000	Unknown		12/11/2017 19:03	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	8	1000	Unknown		12/11/2017 19:13	Finished	CCB R171129A
75	N027430-015A,SAMP	9	1000	Unknown		12/11/2017 19:22	Finished	LCS, IWST-171002B
76	N027430-015AMS,MS	10	1000	Unknown		12/11/2017 19:32	Finished	MB R171129A
77	N027430-012A,SAMP	11	1000	Unknown		12/11/2017 19:41	Finished	SAMP,2>10mL
78	N027430-012AMS,MS	12	1000	Unknown		12/11/2017 19:50	Finished	MS (1ppb), IWST-171002B,2>1
79	LCS-2,LCS,1	13	1000	Unknown		12/11/2017 20:00	Finished	LCS, IWST-171002B
80	MB-2,MBLK,1	14	1000	Unknown		12/11/2017 20:09	Finished	MB R171129A
81	N027431-006A,SAMP	15	1000	Unknown		12/11/2017 20:19	Finished	DUP,0.1>10mL
82	N027431-006AMS,MS	16	1000	Unknown		12/11/2017 20:28	Finished	SAMP,10mL
83	N027431-006AMSD,M	17	1000	Unknown		12/11/2017 20:38	Finished	SAMP,5>10mL
84	N027428-002A,SAMP	18	1000	Unknown		12/11/2017 20:47	Finished	SAMP,0.2>10mL
85	CCV-7,CCV,1,	19	1000	Unknown		12/11/2017 20:57	Finished	CCV @5ppb, IWST-171002A
86	CCB-7,CCB,1,	20	1000	Unknown		12/11/2017 21:06	Finished	CCB R171114C
87	N027428-002ADUP,D	21	1000	Unknown		12/11/2017 21:16	Finished	SAMP,0.2>10mL
88	N027428-002AMS,MS	22	1000	Unknown		12/11/2017 21:25	Finished	SAMP,1>10mL
89	N027428-001A,SAMP	23	1000	Unknown		12/11/2017 21:35	Finished	SAMP,0.5>10mL
90	N027428-001AMS,MS	24	1000	Unknown		12/11/2017 21:44	Finished	SAMP,5>10mL
91	N027430-016A,SAMP	25	1000	Unknown		12/11/2017 21:53	Finished	SAMP,10mL
92	N027430-016AMS,MS	26	1000	Unknown		12/11/2017 22:03	Finished	SAMP,2>10mL
93	N027430-017A,SAMP	27	1000	Unknown		12/11/2017 22:12	Finished	MS (5ppb), IWST-171002B,2>1
94	N027430-017AMS,MS	28	1000	Unknown		12/11/2017 22:22	Finished	MSD (5ppb), IWST-171002B,2>
95	N027430-018A,SAMP	29	1000	Unknown		12/11/2017 22:31	Finished	SAMP,10mL
96	N027430-018AMS,MS	30	1000	Unknown		12/11/2017 22:41	Finished	MS (1ppb), IWST-171002B,10
97	CCV-8,CCV1,1,	31	1000	Unknown		12/11/2017 22:50	Finished	CCV @10ppb, IWST-171002A
98	CCB-8,CCB,1,	32	1000	Unknown		12/11/2017 23:00	Finished	CCB R171129A
99	N027431-002A,SAMP	33	1000	Unknown		12/11/2017 23:09	Finished	SAMP,10mL
100	N027431-002AMS,MS	34	1000	Unknown		12/11/2017 23:19	Finished	MS (1ppb), IWST-171002B,10
101	N027431-003A,SAMP	35	1000	Unknown		12/11/2017 23:28	Finished	SAMP,10mL
102	N027431-003AMS,MS	36	1000	Unknown		12/11/2017 23:38	Finished	MS (1ppb), IWST-171002B,10
103	N027431-004A,SAMP	37	1000	Unknown		12/11/2017 23:47	Finished	SAMP,10mL
104	N027431-004AMS,MS	38	1000	Unknown		12/11/2017 23:56	Finished	MS (1ppb), IWST-171002B,10
105	N027431-001A,SAMP	39	1000	Unknown		12/12/2017 00:06	Finished	SAMP,10mL
106	N027431-001AMS,MS	40	1000	Unknown		12/12/2017 00:15	Finished	MS (1ppb), IWST-171002B,10
107	N027431-005A,SAMP	41	1000	Unknown		12/12/2017 00:25	Finished	SAMP,10mL
108	N027431-005AMS,MS	42	1000	Unknown		12/12/2017 00:34	Finished	MS (1ppb), IWST-171002B,10
109	CCV-9,CCV,1,	43	1000	Unknown		12/12/2017 00:44	Finished	CCV @5ppb, IWST-171002A
110	CCB-9,CCB,1,	44	1000	Unknown		12/12/2017 00:53	Finished	CCB R171114C
111	SHUTDOWN	45	1000	Unknown		12/12/2017 01:03	Finished	
112	Eluent: R171211B	46	1000	Unknown		n.a.	Finished	Eluent
113	PCR: R171211C	47	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 12/7/17
Time Prepared: 1510H
Prepared By: MDA

Reagent ID:
Sulfuric Acid: 9465
Diphenylcarbazide: CINV - 171116A
NH4OH + NH4SO4 eluent: M71208A
NH4OH + NH4SO4 buffer: M71114C

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N027388-001A	7.32	9.40	~250 ml	~250 ml	5 ml	M71114C
2)	2A	7.51	9.35				
3)	3A	7.14	9.32				
4)	4A	7.36	9.43				
5)	5A	7.45	9.46				
6)	6A	7.53	9.38				
7)	7A	7.12	9.31				
8)	8A	7.18	9.36				
9)	9A	7.44	9.33				
10)	10A	7.37	9.38				
11)							
12)							
13)							
14)							
15)							

Sample Preparation

MC

Date Prepared: 12/8/17
Time Prepared: 0:38
Prepared By: MC

Slope ~~99.2~~ 97.8%
pH 4: ~~3.96~~ 4.02 25°C
7: ~~6.97~~ 6.97 25°C
10: ~~9.87~~ 9.98 25°C

Reagent ID:
Sulfuric Acid: 9465
Diphenylcarbazide: CINV - 171116A
NH4OH + NH4SO4 eluent: M71211B
NH4OH + NH4SO4 buffer: M71129A

Press calibrate when arrow blinking.

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N027430 - 1A	9.50	—	250 ml	250 ml		M71129A
2)	2A	9.50	—				1/2
3)	2A	9.50	—				2/2
4)	3A	9.50	—				
5)	4A	9.21	9.33			3 drops	1/2
6)	4A	9.23	9.36			3 drops	2/2
7)	5A	9.52	—				
8)	6A	9.27	9.38			2 drops	1/2
9)	6A	9.28	9.40			2 drops	2/2
10)	7A	9.49	—				
11)	8A	9.01	9.51			6 drops.	1/2
12)	8A	9.17	9.34			3 drops.	2/2
13)	9A	9.56	—				
14)	10A	9.52	—				
15)	11A	9.47	—				
	12A	9.30	—				1/2

Logbook No. 13

rba 12/16/2017
RB 12/22/2017

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 12/8/17
Time Prepared: 4:40
Prepared By: MC

Reagent ID:
Sulfuric Acid: 9465
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: ~~M71718~~ M71211B
NH4OH + NH4SO4 buffer: M71129A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N027430-12A	9.32	—	250	250		2/2 M71129A
2)	13A	9.33	—				
3)	14A	9.43	—				
4)	MC ~~14E~~	~~7.55~~					
5)	15A	9.45	—				
6)	16A	9.56	—				
7)	17A	9.52	—				
8)	18A	9.49	—				1/2
9)	18A	9.49	—				2/2
10)							
11)							
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 12/11/17
Time Prepared: 1437H
Prepared By: MDA

Reagent ID:
Sulfuric Acid: 9465
Diphenylcarbazide: CINV-170620A
NH4OH + NH4SO4 eluent: M71211B
NH4OH + NH4SO4 buffer: M71129A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N027431-1A	9.31	-	~250ml	~250ml		M71129A
2)	2A	9.31	-				
3)	3A	9.32	-				
4)	4A	9.34	-				
5)	5A	9.37	-				
6)	6A	9.33	-				
7)	N027465-1A	9.50	-				
8)	2A	9.51	-				
9)	3A	9.48	-				
10)	N027428-1A	9.38					
11)	2A	9.42					
12)							
13)							
14)							
15)							

Logbook No. 13

rba 12/16/2017

ASSET LABORATORIES 12/22/2017
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CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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81 of 100
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INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 11/28/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0529	0.2484	1.2584	2.5328	3.7596	5.0155	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-171002A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RJB 12/22/2017

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ICV**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.092	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.185	0.20	0.2000	0	92.6	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCV**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.077	0.20	5.000	0	102	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866004**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.215	0.20	0.2000	0	108	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866016**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.152	0.20	10.00	0	102	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCV**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.030	0.20	5.000	0	101	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866040**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.193	0.20	10.00	0	102	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCV**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.045	0.20	5.000	0	101	95	105				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866056**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.294	0.20	10.00	0	103	95	105				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCV**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866060**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.109	0.20	5.000	0	102	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ICV**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866062**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.092	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.185	0.20	0.2000	0	92.6	80	120				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866065**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.215	0.20	0.2000	0	108	80	120				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.294	0.20	10.00	0	103	95	105				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **CCV**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.109	0.20	5.000	0	102	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-8**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866086**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.160	0.20	10.00	0	102	95	105				

Sample ID **CCV-9**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **CCV**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866096**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.072	0.20	5.000	0	101	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ICB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866005**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866041**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866051**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **CCB**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866061**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ICB**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **CCB**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **CCB**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866075**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **CCB**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-9**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **CCB**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.148	
CCV-7	4.148	
CCV-8	4.140	
CCV-9	4.148	

Average	4.143
Actual RT Window	4.063 - 4.223
Applied RT Window	3.943 - 4.343

MB-R120833	N.A.	N.A.
LCS-R120833	4.140	PASS
N027405-006AMS	4.090	PASS
N027405-006A	4.090	PASS
N027405-007AMS	4.090	PASS
N027405-007A	N.A.	N.A.
N027405-008AMS	4.090	PASS
N027405-008A	4.090	PASS
N027430-001A	N.A.	N.A.
N027430-001AMS	4.140	PASS
N027430-002A	4.031	PASS
N027430-002AMS	4.056	PASS
N027430-003A	N.A.	N.A.
N027430-003AMS	4.140	PASS
N027430-004A	N.A.	N.A.
N027430-004AMS	4.131	PASS
N027430-005A	N.A.	N.A.
N027430-005AMS	4.148	PASS
N027430-006A	N.A.	N.A.
N027430-006AMS	4.131	PASS



12/22/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.148	
CCV-7	4.148	
CCV-8	4.140	
CCV-9	4.148	
Average	4.143	
Actual RT Window	4.063 - 4.223	
Applied RT Window	3.943 - 4.343	
N027430-007A	N.A.	N.A.
N027430-007AMS	4.140	PASS
N027430-008A	N.A.	N.A.
N027430-008AMS	4.040	PASS
N027430-009A	N.A.	N.A.
N027430-009AMS	4.140	PASS
N027430-010A	N.A.	N.A.
N027430-010AMS	4.140	PASS
N027430-020A	4.140	PASS
N027430-020AMS	4.140	PASS
N027430-012A	N.A.	N.A.
N027430-012AMS	3.848	FAIL
N027430-019A	N.A.	N.A.
N027430-019AMS	4.140	PASS
N027430-011A	N.A.	N.A.
N027430-011AMS	4.140	PASS
N027430-013A	4.115	PASS
N027430-013AMS	4.115	PASS
N027430-014A	4.098	PASS
N027430-014AMS	4.098	PASS

RB 12/22/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.148	
CCV-7	4.148	
CCV-8	4.140	
CCV-9	4.148	
Average	4.143	
Actual RT Window	4.063 - 4.223	
Applied RT Window	3.943 - 4.343	
N027430-015A	4.081	PASS
N027430-015AMS	4.081	PASS
N027405-006ADUP	4.090	PASS
N027430-020AMSD	4.140	PASS
N027430-002A	N.A.	N.A.
N027430-002AMS	N.A.	N.A.
N027430-013A	3.956	PASS
N027430-013AMS	3.965	PASS
N027430-014A	3.723	FAIL
N027430-014AMS	3.723	FAIL
N027430-015A	N.A.	N.A.
N027430-015AMS	N.A.	N.A.
N027430-012A	N.A.	N.A.
N027430-012AMS	4.106	PASS
LCS-R120834	4.148	PASS
MB-R120834	N.A.	N.A.
N027431-006A	4.140	PASS
N027431-006AMS	4.140	PASS
N027431-006AMSD	4.140	PASS
N027428-002A	4.140	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.148	
CCV-7	4.148	
CCV-8	4.140	
CCV-9	4.148	
Average	4.143	
Actual RT Window	4.063 - 4.223	
Applied RT Window	3.943 - 4.343	
N027428-002ADUP	4.140	PASS
N027428-002AMS	4.140	PASS
N027428-001A	N.A.	N.A.
N027428-001AMS	4.131	PASS
N027430-016A	4.081	PASS
N027430-016AMS	4.081	PASS
N027430-017A	4.056	PASS
N027430-017AMS	4.073	PASS
N027430-018A	N.A.	N.A.
N027430-018AMS	3.998	PASS
N027431-002A	4.115	PASS
N027431-002AMS	4.115	PASS
N027431-003A	4.090	PASS
N027431-003AMS	4.081	PASS
N027431-004A	4.081	PASS
N027431-004AMS	4.090	PASS
N027431-001A	4.140	PASS
N027431-001AMS	4.140	PASS
N027431-005A	4.140	PASS
N027431-005AMS	4.140	PASS

RB 12/22/2017

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 Unit: ug/L
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

MDL/LOD & PQL Verification 2017

Method Name: **Hexavalent Chromium by IC**
Method Number: EPA Method 218.6
Analysis Date(s): 5/31/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: µg/L

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.103

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.194	**97**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 171128A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/28/17 10:57 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/28/17 11:08 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/28/17 11:17 AM	Reported
13	MB-R120468	MBLK	1	Hexavalent Chromium	11/28/17 11:27 AM	Reported
14	LCS-R120468	LCS	1	Hexavalent Chromium	11/28/17 11:36 AM	Reported
15	N027215-001A	SAMP	1	Hexavalent Chromium	11/28/17 11:47 AM	Reported
16	N027215-002A	SAMP	1	Hexavalent Chromium	11/28/17 11:59 AM	Reported
17	N027215-003A	SAMP	1	Hexavalent Chromium	11/28/17 12:08 PM	Reported
18	N027215-004A	SAMP	1	Hexavalent Chromium	11/28/17 12:18 PM	Reported
19	N027215-005A	SAMP	1	Hexavalent Chromium	11/28/17 12:27 PM	Reported
20	N027215-002ADUP	DUP	1	Hexavalent Chromium	11/28/17 12:37 PM	Reported
21	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 12:46 PM	Not Reported
22	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 12:56 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	11/28/17 1:05 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/28/17 1:14 PM	Reported
25	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:04 PM	Not Reported
26	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:16 PM	Not Reported
27	N027215-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:29 PM	Reported
28	N027215-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:41 PM	Reported
29	CCV-2	CCV	1	Hexavalent Chromium	11/28/17 2:50 PM	Reported
30	CCB-2	CCB	1	Hexavalent Chromium	11/28/17 3:00 PM	Reported

rba 11/29/2017

RB 12/11/2017

Injection Log Summary

Sequence Details

Name:	**IC-07_171128A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**28/Nov/17 15:47:35**
No. of Injections:	**33**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		11/28/2017 10:57	Finished	ICV @5ppb, IWST-171002A
11	PQL@0.2ppb,CCV2,	12	1000	Unknown		11/28/2017 11:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		11/28/2017 11:17	Finished	ICB R171114C
13	MB-H2O,MBLK,1	14	1000	Unknown		11/28/2017 11:27	Finished	MB R171114C
14	LCS-H2O,LCS,1	15	1000	Unknown		11/28/2017 11:36	Finished	LCS, IWST-171002B
15	N027215-001A,SAMF	17	1000	Unknown		11/28/2017 11:47	Finished	SAMP,10mL
16	N027215-002A,SAMF	18	1000	Unknown		11/28/2017 11:59	Finished	SAMP,10mL
17	N027215-003A,SAMF	19	1000	Unknown		11/28/2017 12:08	Finished	SAMP,10mL
18	N027215-004A,SAMF	20	1000	Unknown		11/28/2017 12:18	Finished	SAMP,10mL
19	N027215-005A,SAMF	21	1000	Unknown		11/28/2017 12:27	Finished	SAMP,10mL
20	N027215-002ADUP,D	22	1000	Unknown		11/28/2017 12:37	Finished	DUP,10mL
21	N027157-001AMS,MS	23	1000	Unknown		11/28/2017 12:46	Finished	MS (5ppb), IWST-171002B,10
22	N027157-001AMSD,M	24	1000	Unknown		11/28/2017 12:56	Finished	MSD (5ppb), IWST-171002B,1
23	CCV-1,CCV1,1,	25	1000	Unknown		11/28/2017 13:05	Finished	CCV @10ppb, IWST-171002A
24	CCB-1,CCB,1,	26	1000	Unknown		11/28/2017 13:14	Finished	CCB R171031A
25	N027157-001AMS,MS	28	1000	Unknown		11/28/2017 14:04	Finished	MS (5ppb), IWST-171002B,10
26	N027157-001AMSD,M	29	1000	Unknown		11/28/2017 14:16	Finished	MSD (5ppb), IWST-171002B,1
27	N027215-001AMS,MS	31	1000	Unknown		11/28/2017 14:29	Finished	MS (5ppb), IWST-171002B,10
28	N027215-001AMSD,M	32	1000	Unknown		11/28/2017 14:41	Finished	MSD (5ppb), IWST-171002B,1
29	CCV-2,CCV,1,	33	1000	Unknown		11/28/2017 14:50	Finished	CCV @5ppb, IWST-171002A
30	CCB-2,CCB,1,	34	1000	Unknown		11/28/2017 15:00	Finished	CCB R171031A
31	SHUTDOWN	35	1000	Unknown		11/28/2017 15:09	Finished	
32	Eluent: R171128A	36	1000	Unknown		n.a.	Finished	Eluent
33	PCR: R171128B	37	1000	Unknown		n.a.	Finished	Post-Column Reagent

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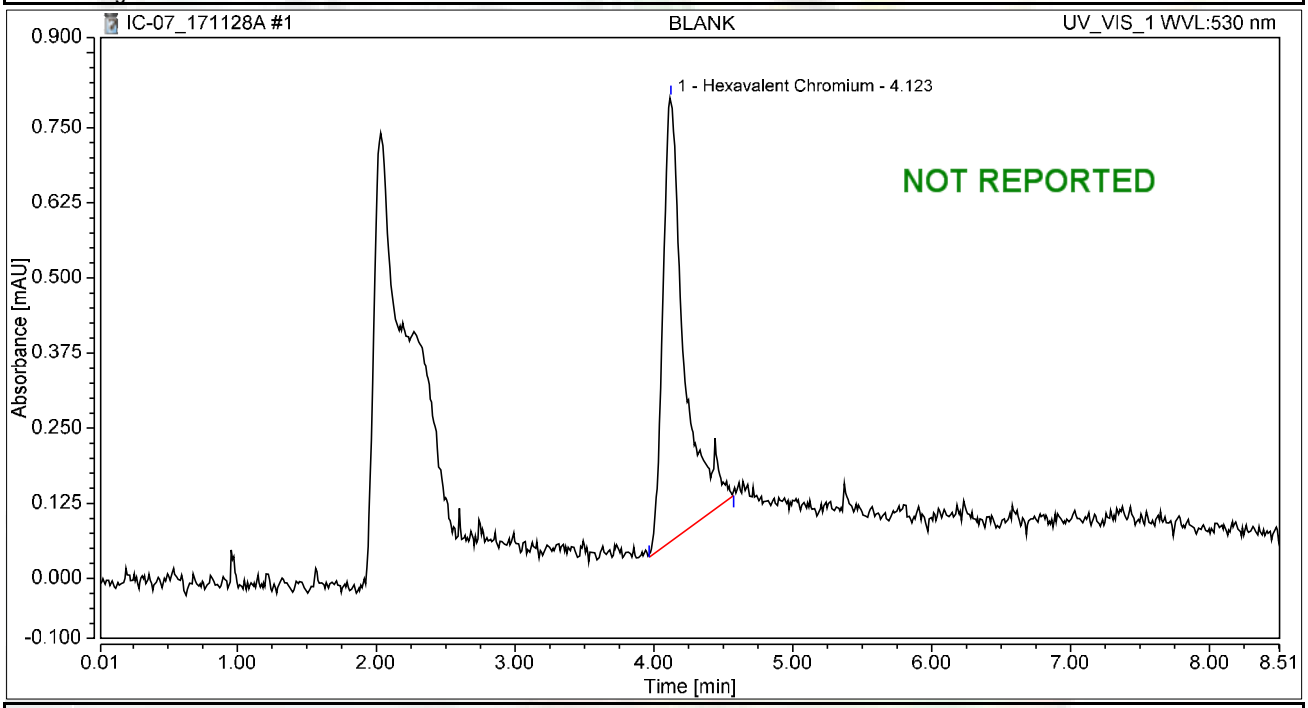
Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

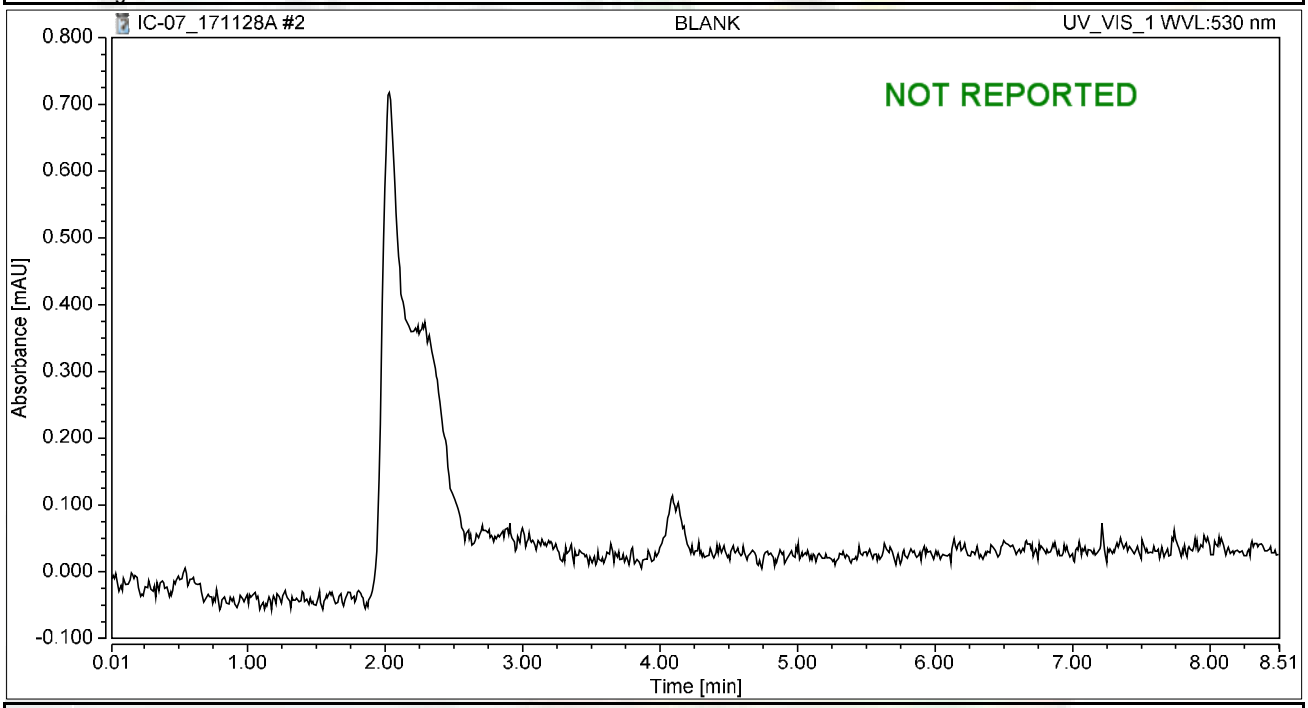
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.130	0.738	100.00	100.00	0.5193
Total:			**0.130**	**0.738**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

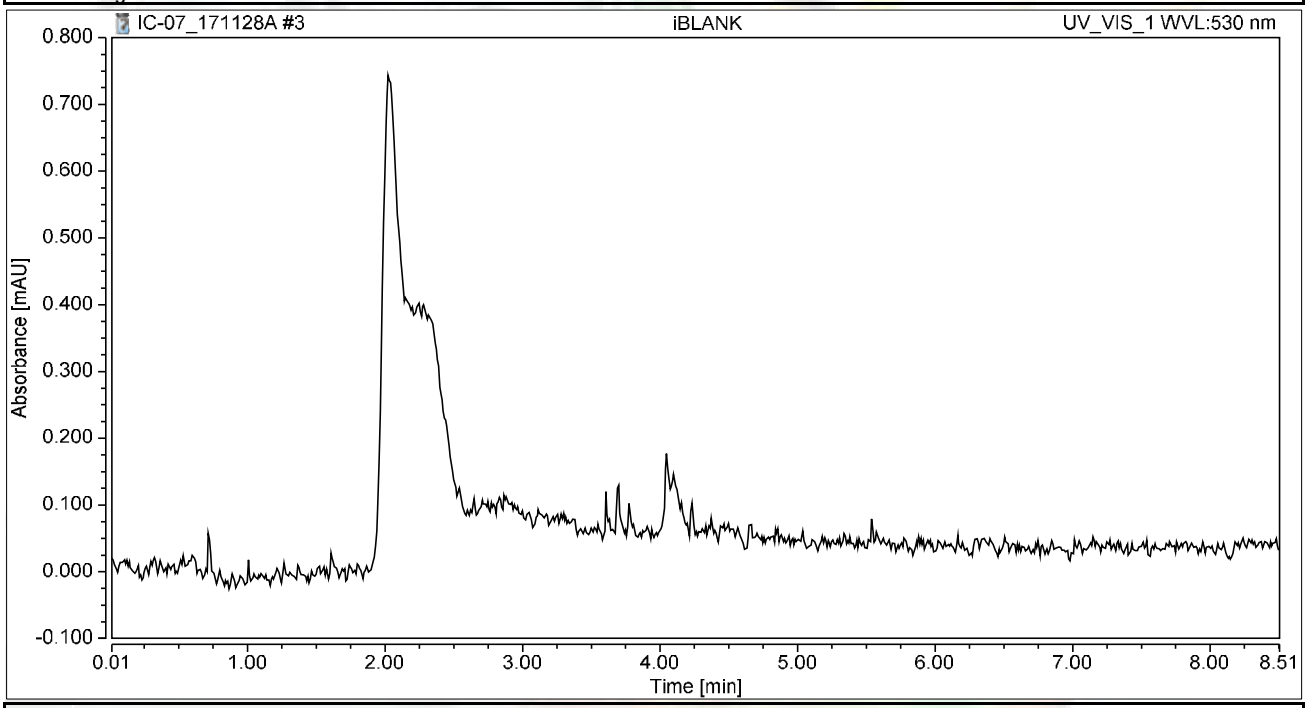
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

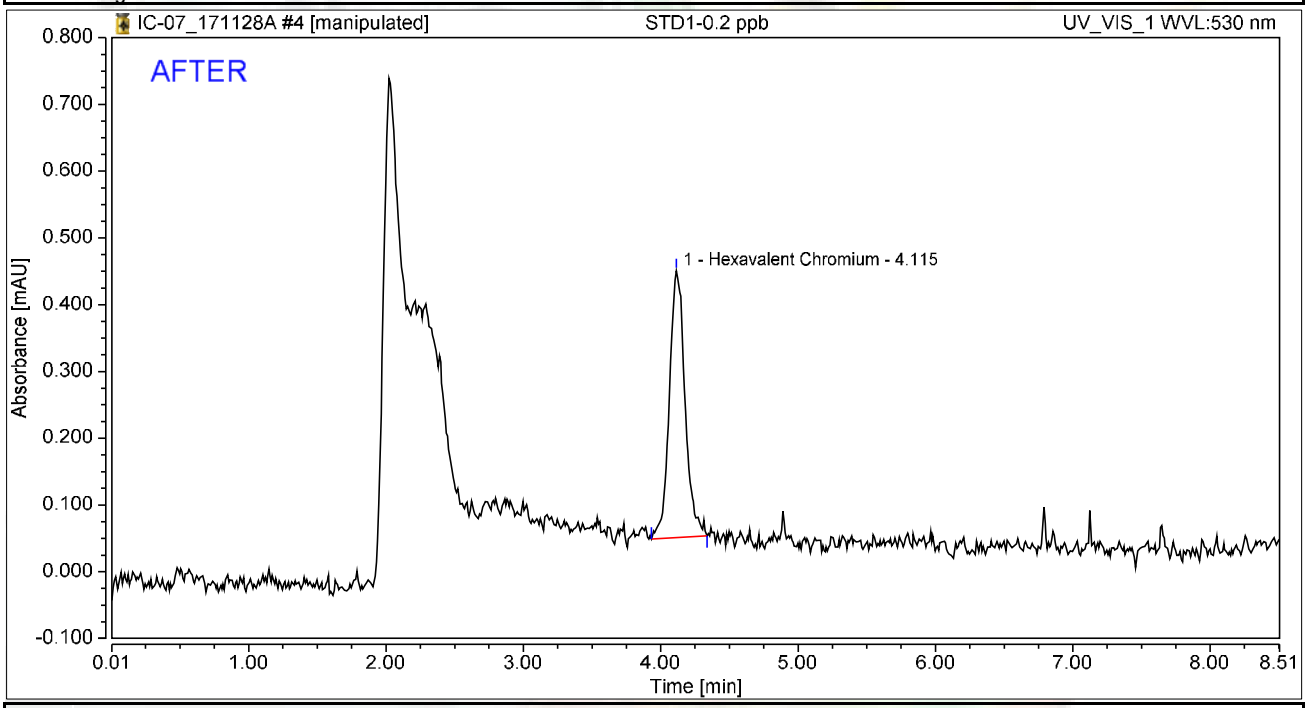
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.053	0.400	100.00	100.00	0.2108
Total:			**0.053**	**0.400**	**100.00**	**100.00**	

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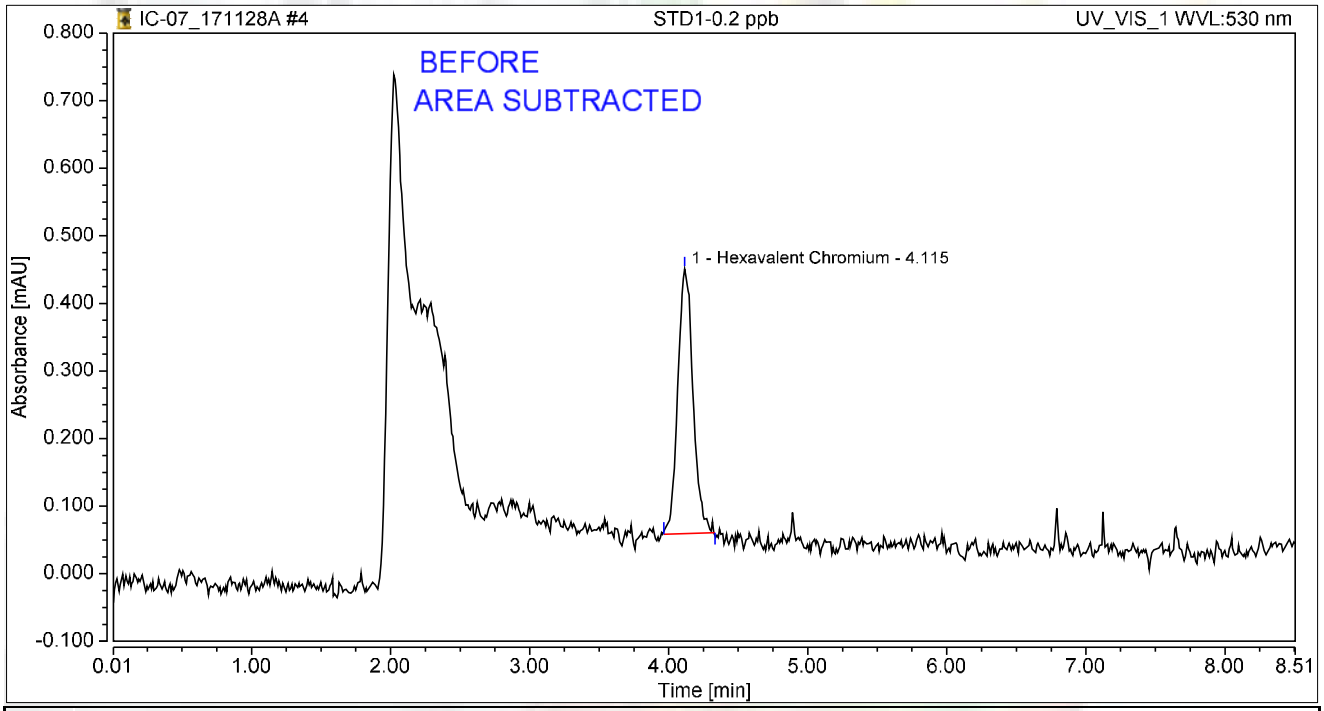
Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.050	0.391	100.00	100.00	0.1957
Total:			**0.050**	**0.391**	**100.00**	**100.00**	

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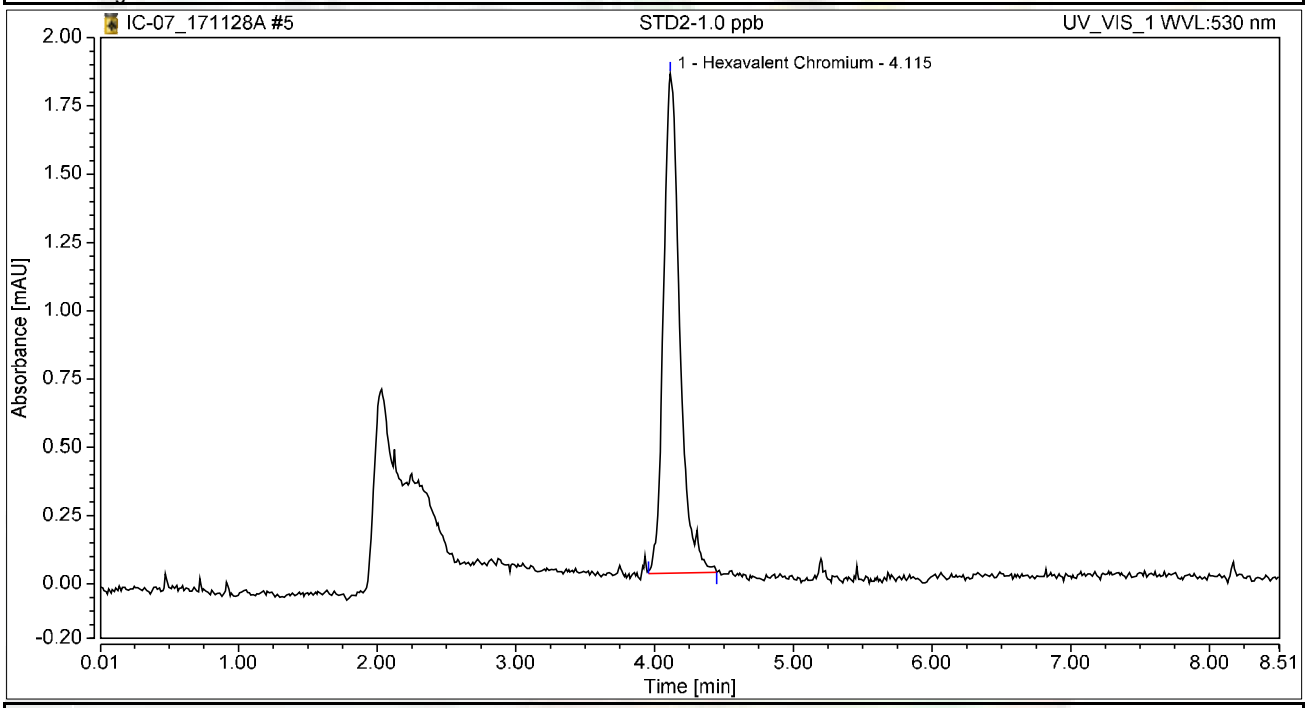
Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

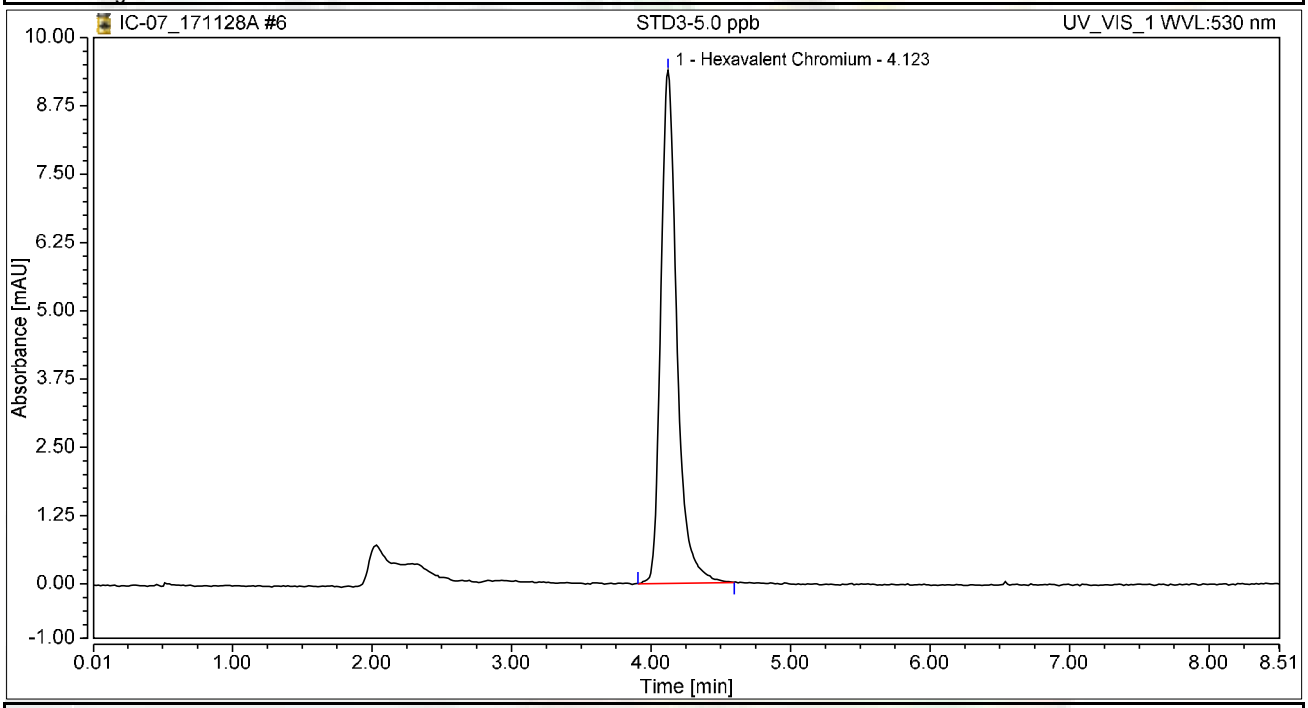
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.248	1.827	100.00	100.00	0.9892
Total:			**0.248**	**1.827**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

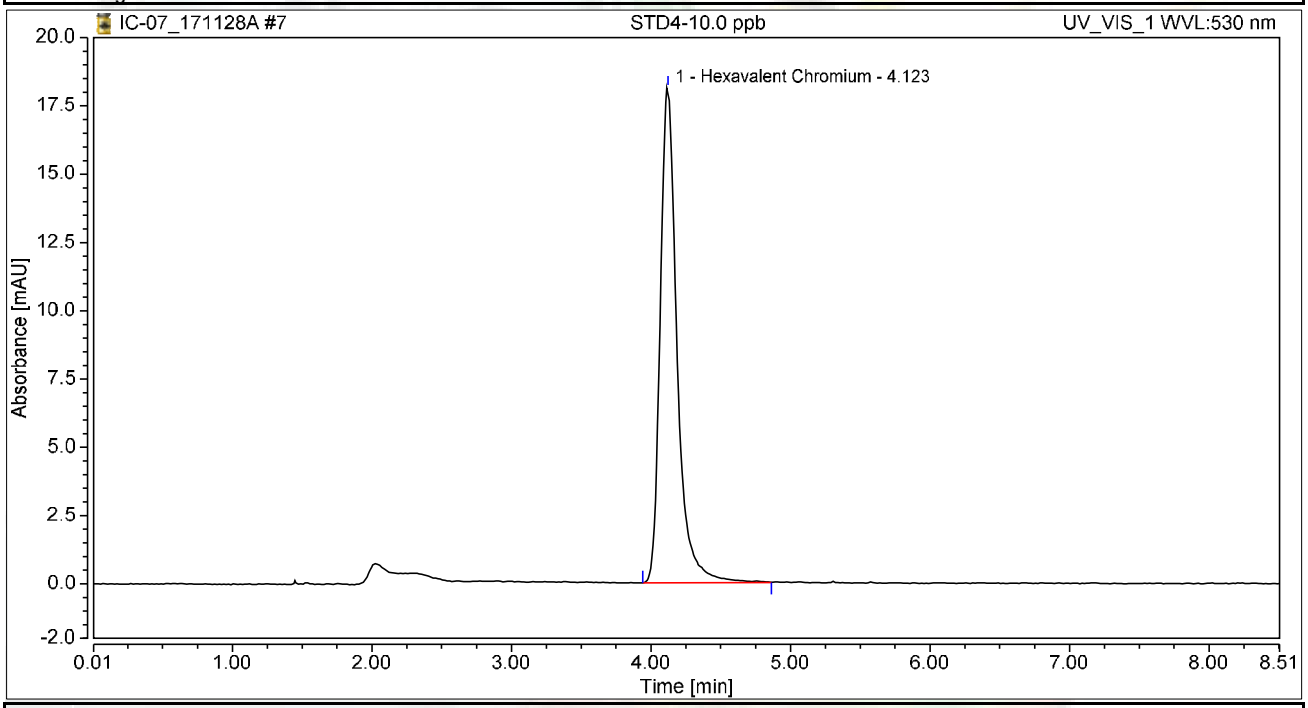
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.258	9.388	100.00	100.00	5.0118
Total:			**1.258**	**9.388**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

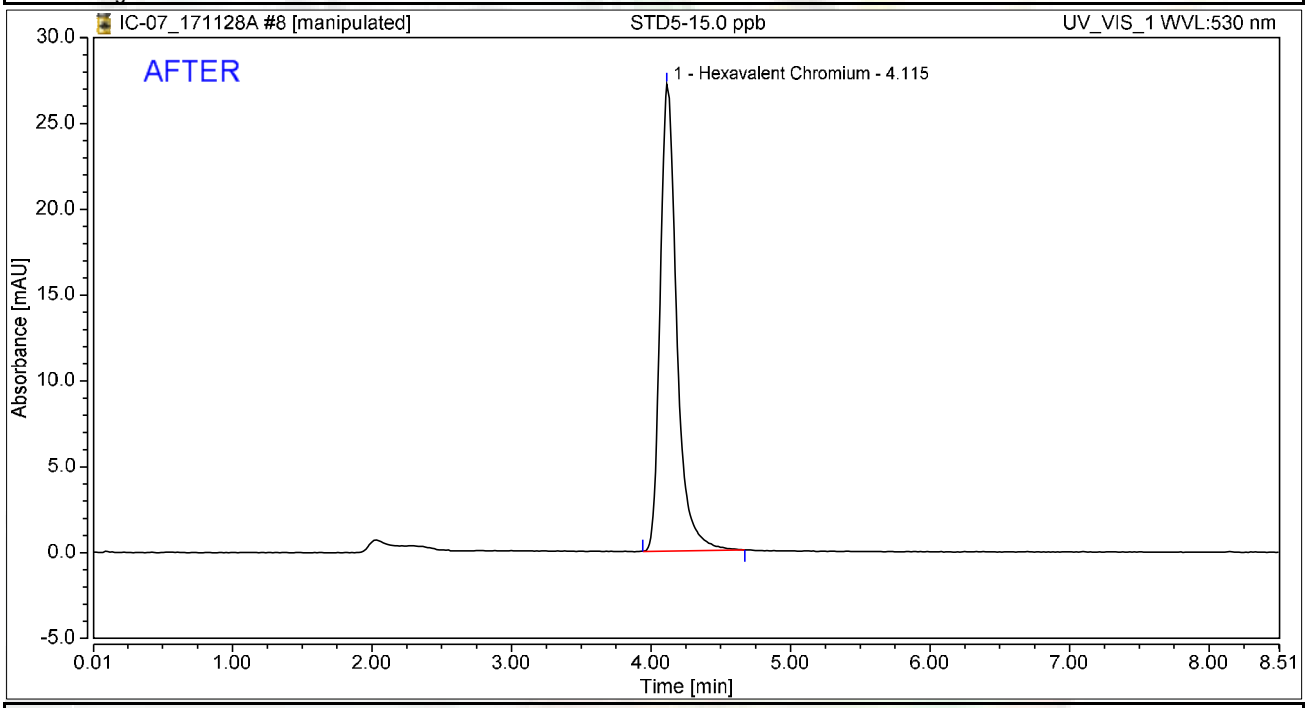
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	2.533	18.115	100.00	100.00	10.0869
Total:			**2.533**	**18.115**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	3.760	27.183	100.00	100.00	14.9728
Total:			**3.760**	**27.183**	**100.00**	**100.00**	

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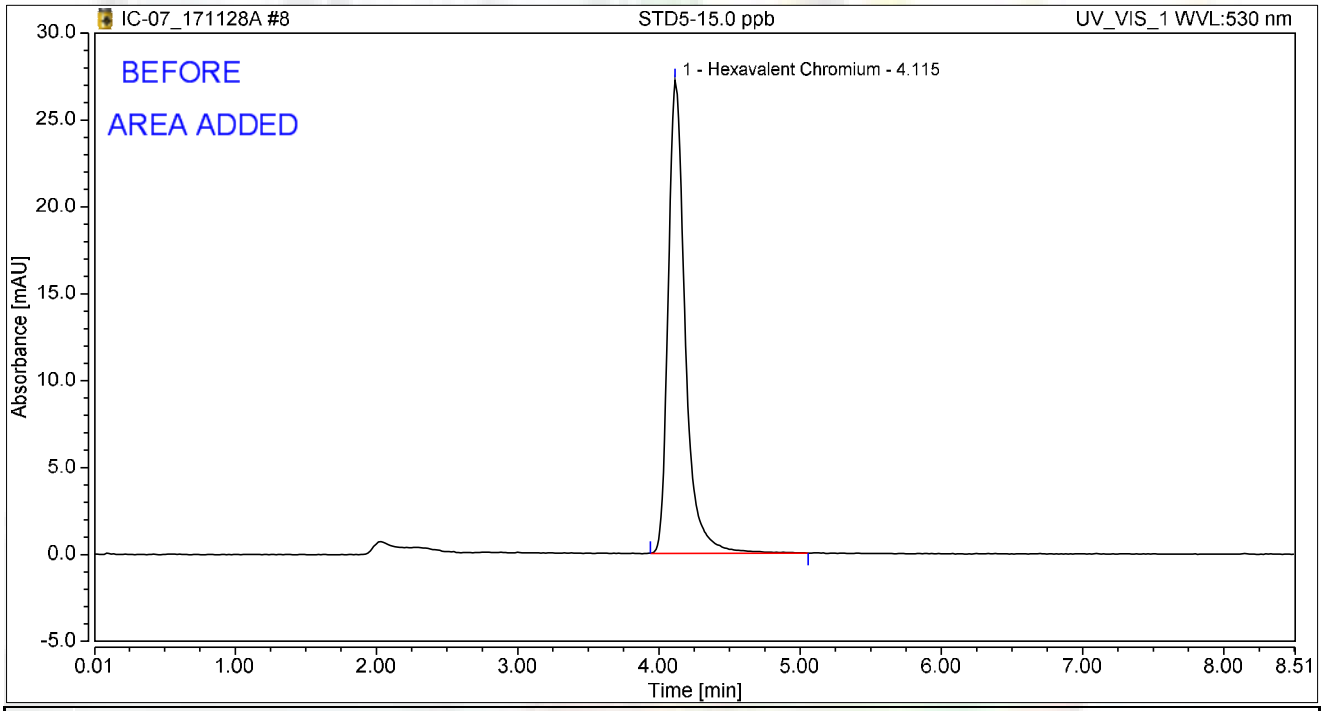
Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	3.807	27.204	100.00	100.00	14.9839
Total:			**3.807**	**27.204**	**100.00**	**100.00**	

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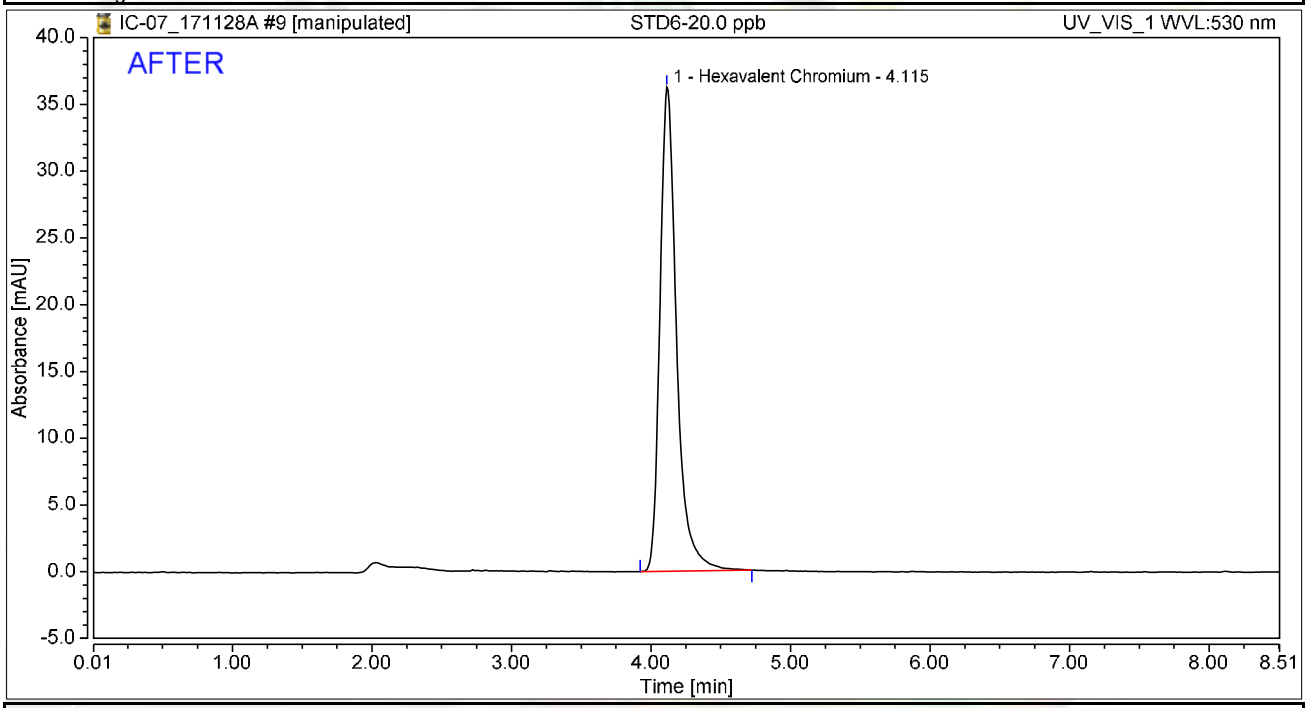
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	5.015	36.251	100.00	100.00	19.9744
Total:			**5.015**	**36.251**	**100.00**	**100.00**	

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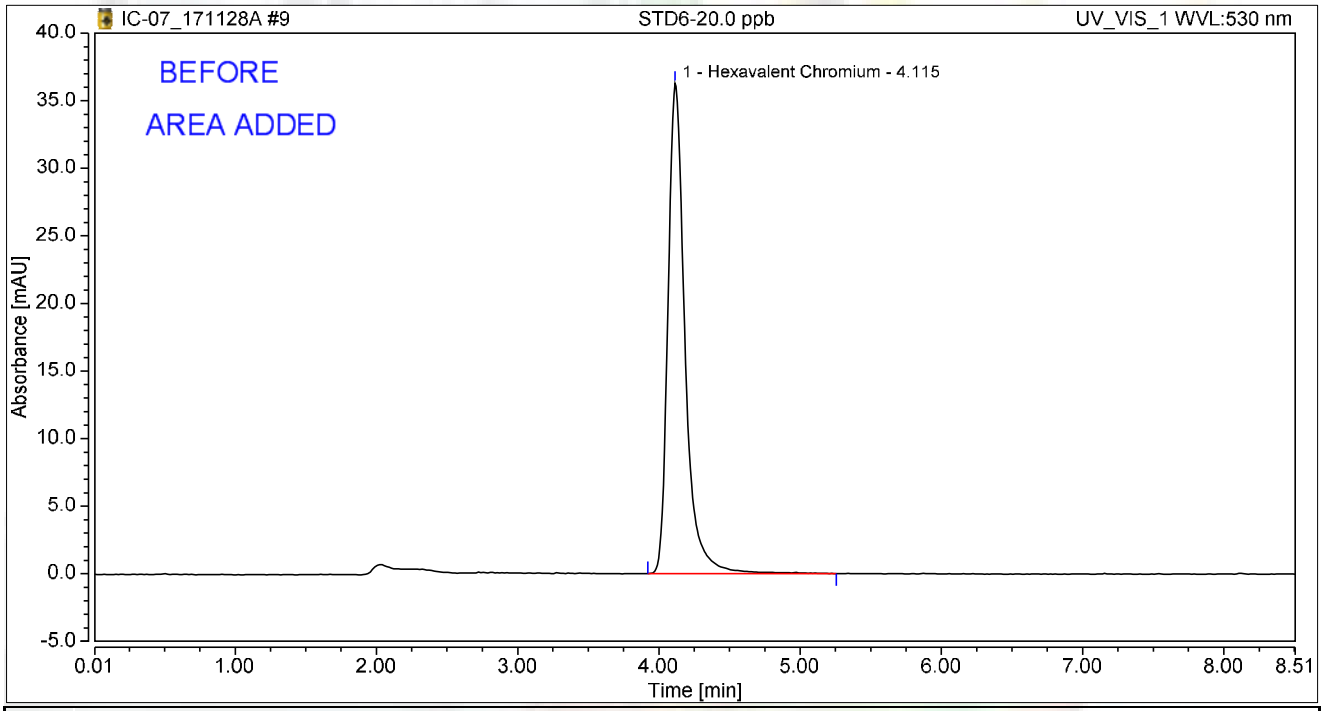
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	5.092	36.279	100.00	100.00	20.0407
Total:			**5.092**	**36.279**	**100.00**	**100.00**	

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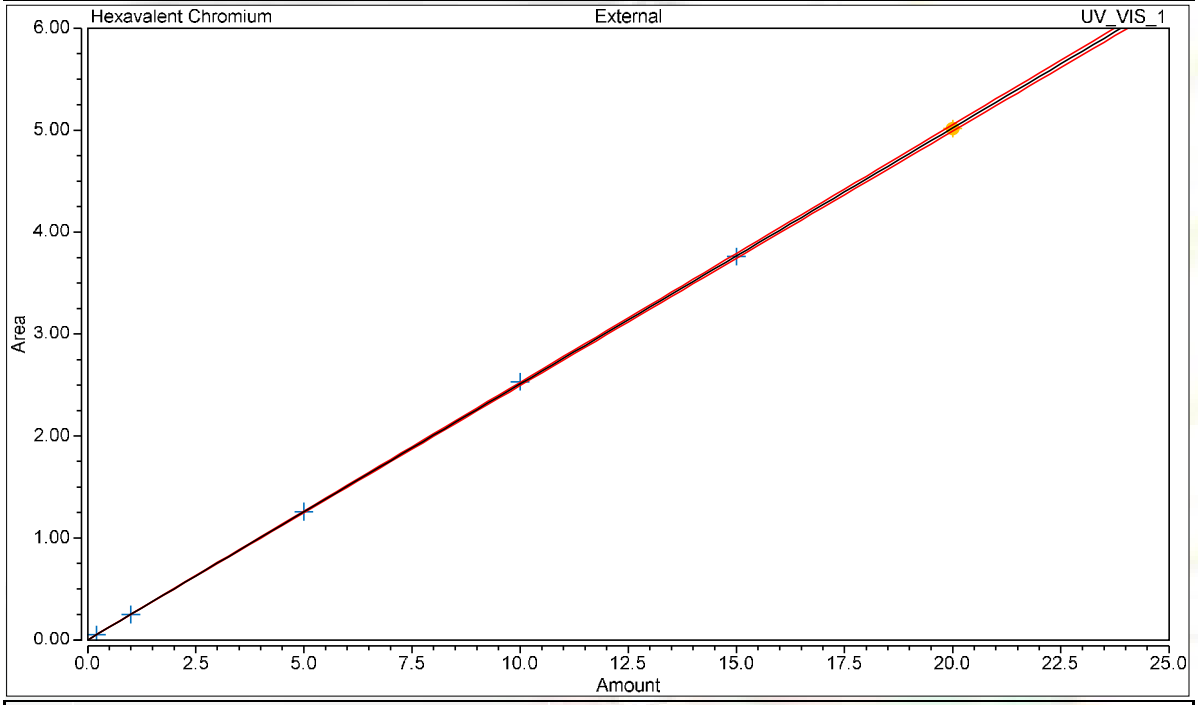
Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2511
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99997

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

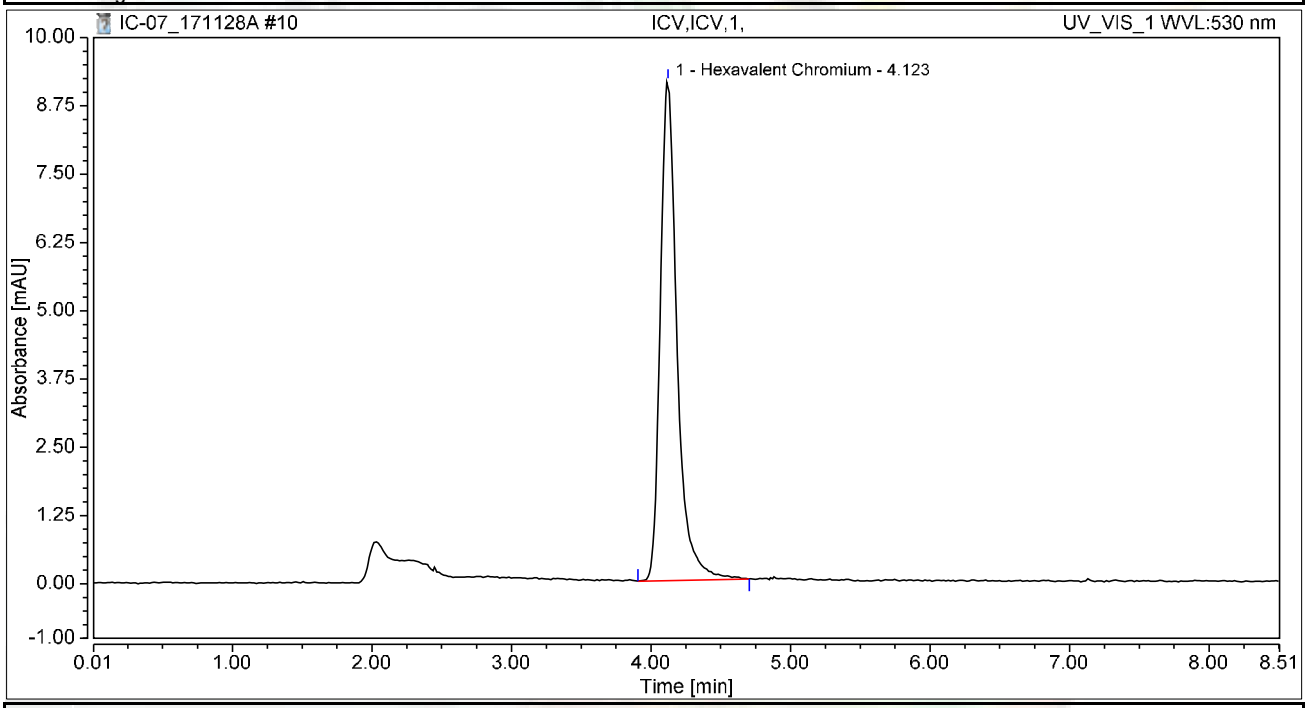
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0529	0.053	0.400
5	STD2-1.0 ppb	02	1.0000	0.2484	0.248	1.827
6	STD3-5.0 ppb	03	5.0000	1.2584	1.258	9.388
7	STD4-10.0 ppb	04	10.0000	2.5328	2.533	18.115
8	STD5-15.0 ppb	05	15.0000	3.7596	3.760	27.183
9	STD6-20.0 ppb	06	20.0000	5.0155	5.015	36.251

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

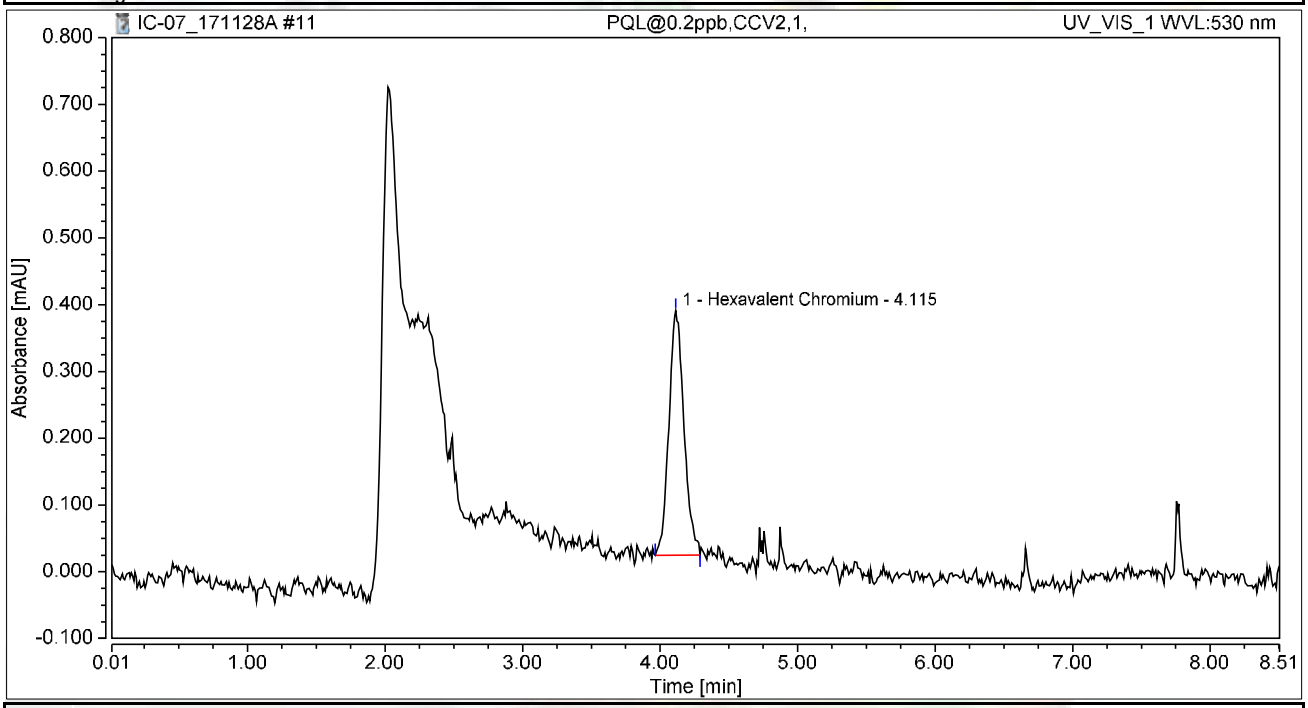
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.279	9.143	100.00	100.00	5.0922
Total:			**1.279**	**9.143**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

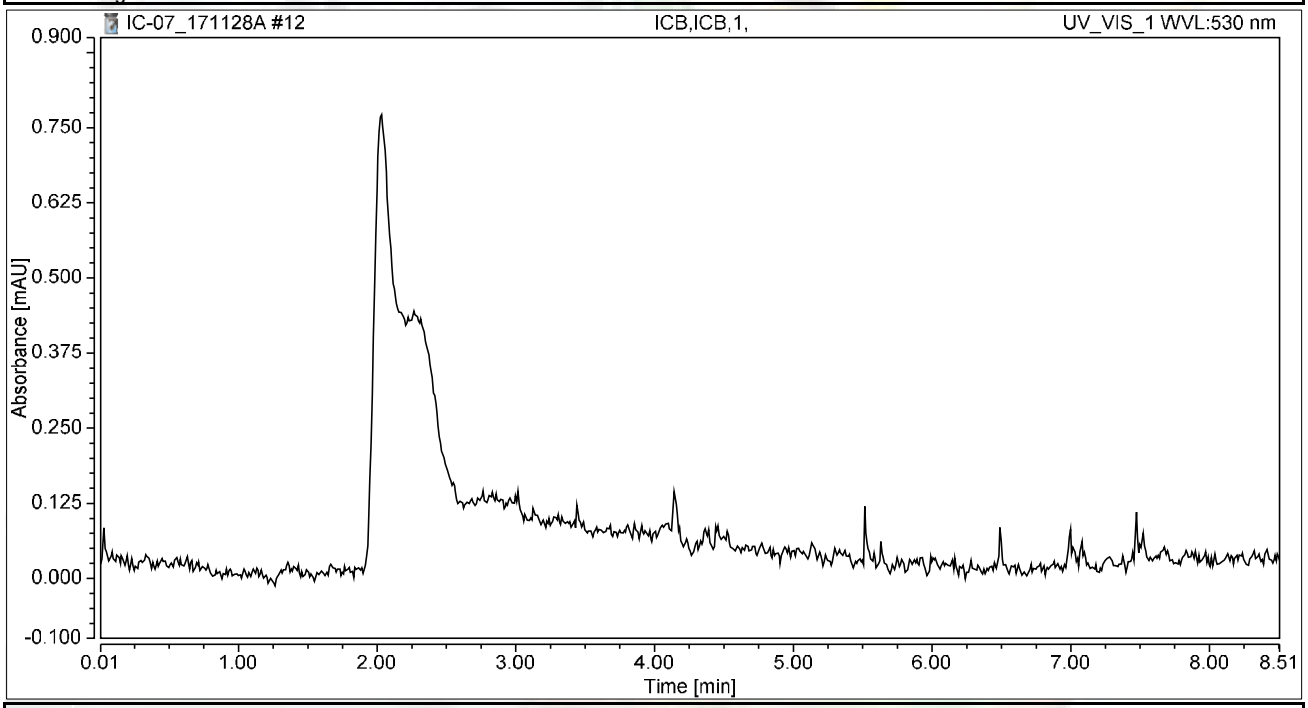
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.046	0.367	100.00	100.00	0.1851
Total:			**0.046**	**0.367**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 8:57 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 9:08 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/11/17 9:18 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/11/17 9:27 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/11/17 9:37 AM	Reported
15	MB-R120833	MBLK	1	Hexavalent Chromium	12/11/17 9:46 AM	Reported
16	LCS-R120833	LCS	1	Hexavalent Chromium	12/11/17 9:56 AM	Reported
17	N027405-006AMS	MS	5	Hexavalent Chromium	12/11/17 10:09 AM	Reported
18	N027405-006A	SAMP	5	Hexavalent Chromium	12/11/17 10:20 AM	Reported
19	N027405-007AMS	MS	5	Hexavalent Chromium	12/11/17 10:29 AM	Reported
20	N027405-007A	SAMP	5	Hexavalent Chromium	12/11/17 10:39 AM	Reported
21	N027405-008AMS	MS	5	Hexavalent Chromium	12/11/17 10:48 AM	Reported
22	N027405-008A	SAMP	5	Hexavalent Chromium	12/11/17 10:58 AM	Reported
23	N027430-001A	SAMP	1	Hexavalent Chromium	12/11/17 11:07 AM	Reported
24	N027430-001AMS	MS	1	Hexavalent Chromium	12/11/17 11:17 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/11/17 11:26 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/11/17 11:36 AM	Reported
27	N027430-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:45 AM	Reported
28	N027430-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:54 AM	Reported
29	N027430-003A	SAMP	1	Hexavalent Chromium	12/11/17 12:04 PM	Reported
30	N027430-003AMS	MS	1	Hexavalent Chromium	12/11/17 12:13 PM	Reported
31	N027430-004A	SAMP	1	Hexavalent Chromium	12/11/17 12:23 PM	Reported
32	N027430-004AMS	MS	1	Hexavalent Chromium	12/11/17 12:32 PM	Reported
33	N027430-005A	SAMP	1	Hexavalent Chromium	12/11/17 12:42 PM	Reported
34	N027430-005AMS	MS	1	Hexavalent Chromium	12/11/17 12:51 PM	Reported
35	N027430-006A	SAMP	1	Hexavalent Chromium	12/11/17 1:01 PM	Reported
36	N027430-006AMS	MS	1	Hexavalent Chromium	12/11/17 1:10 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/11/17 1:20 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/11/17 1:29 PM	Reported
39	N027430-007A	SAMP	1	Hexavalent Chromium	12/11/17 1:38 PM	Reported
40	N027430-007AMS	MS	1	Hexavalent Chromium	12/11/17 1:48 PM	Reported
41	N027430-008A	SAMP	1	Hexavalent Chromium	12/11/17 1:57 PM	Reported
42	N027430-008AMS	MS	1	Hexavalent Chromium	12/11/17 2:07 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027430-009A	SAMP	1	Hexavalent Chromium	12/11/17 2:16 PM	Reported
44	N027430-009AMS	MS	1	Hexavalent Chromium	12/11/17 2:26 PM	Reported
45	N027430-010A	SAMP	1	Hexavalent Chromium	12/11/17 2:35 PM	Reported
46	N027430-010AMS	MS	1	Hexavalent Chromium	12/11/17 2:45 PM	Reported
47	N027430-020A	SAMP	20	Hexavalent Chromium	12/11/17 2:54 PM	Reported
48	N027430-020AMS	MS	20	Hexavalent Chromium	12/11/17 3:04 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/11/17 3:13 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/11/17 3:23 PM	Reported
51	N027430-012A	SAMP	1	Hexavalent Chromium	12/11/17 3:32 PM	Not Reported
52	N027430-012AMS	MS	1	Hexavalent Chromium	12/11/17 3:41 PM	Not Reported
53	N027430-019A	SAMP	1	Hexavalent Chromium	12/11/17 3:51 PM	Reported
54	N027430-019AMS	MS	1	Hexavalent Chromium	12/11/17 4:00 PM	Reported
55	N027430-011A	SAMP	1	Hexavalent Chromium	12/11/17 4:10 PM	Reported
56	N027430-011AMS	MS	1	Hexavalent Chromium	12/11/17 4:19 PM	Reported
57	N027430-013A	SAMP	5	Hexavalent Chromium	12/11/17 4:29 PM	Reported
58	N027430-013AMS	MS	5	Hexavalent Chromium	12/11/17 4:38 PM	Reported
59	N027430-014A	SAMP	5	Hexavalent Chromium	12/11/17 4:48 PM	Reported
60	N027430-014AMS	MS	5	Hexavalent Chromium	12/11/17 4:57 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/11/17 5:07 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/11/17 5:16 PM	Reported
63	N027430-015A	SAMP	5	Hexavalent Chromium	12/11/17 5:26 PM	Reported
64	N027430-015AMS	MS	5	Hexavalent Chromium	12/11/17 5:35 PM	Reported
65	N027405-006ADUP	DUP	5	Hexavalent Chromium	12/11/17 5:44 PM	Reported
66	N027430-020AMSD	MSD	20	Hexavalent Chromium	12/11/17 5:54 PM	Reported
67	N027430-002A	SAMP	1	Hexavalent Chromium	12/11/17 6:05 PM	Not Reported
68	N027430-002AMS	MS	1	Hexavalent Chromium	12/11/17 6:16 PM	Not Reported
69	N027430-013A	SAMP	1	Hexavalent Chromium	12/11/17 6:25 PM	Not Reported
70	N027430-013AMS	MS	1	Hexavalent Chromium	12/11/17 6:35 PM	Not Reported
71	N027430-014A	SAMP	1	Hexavalent Chromium	12/11/17 6:44 PM	Not Reported
72	N027430-014AMS	MS	1	Hexavalent Chromium	12/11/17 6:54 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	12/11/17 7:03 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	12/11/17 7:13 PM	Reported
75	N027430-015A	SAMP	1	Hexavalent Chromium	12/11/17 7:22 PM	Not Reported
76	N027430-015AMS	MS	1	Hexavalent Chromium	12/11/17 7:32 PM	Not Reported
77	N027430-012A	SAMP	5	Hexavalent Chromium	12/11/17 7:41 PM	Reported
78	N027430-012AMS	MS	5	Hexavalent Chromium	12/11/17 7:50 PM	Reported
79	LCS-R120834	LCS	1	Hexavalent Chromium	12/11/17 8:00 PM	Reported
80	MB-R120834	MBLK	1	Hexavalent Chromium	12/11/17 8:09 PM	Reported
81	N027431-006A	SAMP	1000	Hexavalent Chromium	12/11/17 8:19 PM	Reported
82	N027431-006AMS	MS	1000	Hexavalent Chromium	12/11/17 8:28 PM	Reported
83	N027431-006AMSD	MSD	1000	Hexavalent Chromium	12/11/17 8:38 PM	Reported
84	N027428-002A	SAMP	100	Hexavalent Chromium	12/11/17 8:47 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	12/11/17 8:57 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	12/11/17 9:06 PM	Reported
87	N027428-002ADUP	DUP	100	Hexavalent Chromium	12/11/17 9:16 PM	Reported
88	N027428-002AMS	MS	100	Hexavalent Chromium	12/11/17 9:25 PM	Reported
89	N027428-001A	SAMP	1	Hexavalent Chromium	12/11/17 9:35 PM	Reported
90	N027428-001AMS	MS	1	Hexavalent Chromium	12/11/17 9:44 PM	Reported
91	N027430-016A	SAMP	5	Hexavalent Chromium	12/11/17 9:53 PM	Reported
92	N027430-016AMS	MS	5	Hexavalent Chromium	12/11/17 10:03 PM	Reported
93	N027430-017A	SAMP	5	Hexavalent Chromium	12/11/17 10:12 PM	Reported
94	N027430-017AMS	MS	5	Hexavalent Chromium	12/11/17 10:22 PM	Reported
95	N027430-018A	SAMP	5	Hexavalent Chromium	12/11/17 10:31 PM	Reported
96	N027430-018AMS	MS	5	Hexavalent Chromium	12/11/17 10:41 PM	Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	12/11/17 10:50 PM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	12/11/17 11:00 PM	Reported
99	N027431-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:09 PM	Reported
100	N027431-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:19 PM	Reported
101	N027431-003A	SAMP	5	Hexavalent Chromium	12/11/17 11:28 PM	Reported
102	N027431-003AMS	MS	5	Hexavalent Chromium	12/11/17 11:38 PM	Reported
103	N027431-004A	SAMP	5	Hexavalent Chromium	12/11/17 11:47 PM	Reported
104	N027431-004AMS	MS	5	Hexavalent Chromium	12/11/17 11:56 PM	Reported
105	N027431-001A	SAMP	10	Hexavalent Chromium	12/12/17 12:06 AM	Not Reported
106	N027431-001AMS	MS	10	Hexavalent Chromium	12/12/17 12:15 AM	Not Reported
107	N027431-005A	SAMP	200	Hexavalent Chromium	12/12/17 12:25 AM	Reported
108	N027431-005AMS	MS	200	Hexavalent Chromium	12/12/17 12:34 AM	Reported
109	CCV-9	CCV	1	Hexavalent Chromium	12/12/17 12:44 AM	Reported
110	CCB-9	CCB	1	Hexavalent Chromium	12/12/17 12:53 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171211A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**12/Dec/17 01:24:03**
No. of Injections:	**113**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/11/2017 08:57	Finished	BLANK
11	BLANK	2	1000	Unknown		12/11/2017 09:08	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/11/2017 09:18	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/11/2017 09:27	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/11/2017 09:37	Finished	CCB R171129A
15	MB-1,MBLK,1	6	1000	Unknown		12/11/2017 09:46	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/11/2017 09:56	Finished	LCS, IWST-171002B
17	N027405-006AMS,MS	1	1000	Unknown		12/11/2017 10:09	Finished	MS (1ppb), IWST-171002B,2>1
18	N027405-006A,SAMP	2	1000	Unknown		12/11/2017 10:20	Finished	SAMP,2>10mL
19	N027405-007AMS,MS	3	1000	Unknown		12/11/2017 10:29	Finished	MS (1ppb), IWST-171002B,2>1
20	N027405-007A,SAMP	4	1000	Unknown		12/11/2017 10:39	Finished	SAMP,2>10mL
21	N027405-008AMS,MS	5	1000	Unknown		12/11/2017 10:48	Finished	SAMP,2>10mL
22	N027405-008A,SAMP	6	1000	Unknown		12/11/2017 10:58	Finished	MS (1ppb), IWST-171002B,2>1
23	N027430-001A,SAMP	7	1000	Unknown		12/11/2017 11:07	Finished	SAMP,10mL
24	N027430-001AMS,MS	8	1000	Unknown		12/11/2017 11:17	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	9	1000	Unknown		12/11/2017 11:26	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	10	1000	Unknown		12/11/2017 11:36	Finished	CCB R171129A
27	N027430-002A,SAMP	11	1000	Unknown		12/11/2017 11:45	Finished	SAMP,2>10mL
28	N027430-002AMS,MS	12	1000	Unknown		12/11/2017 11:54	Finished	MS (1ppb), IWST-171002B,2>1
29	N027430-003A,SAMP	13	1000	Unknown		12/11/2017 12:04	Finished	SAMP,10mL
30	N027430-003AMS,MS	14	1000	Unknown		12/11/2017 12:13	Finished	MS (1ppb), IWST-171002B,10
31	N027430-004A,SAMP	15	1000	Unknown		12/11/2017 12:23	Finished	SAMP,10mL
32	N027430-004AMS,MS	16	1000	Unknown		12/11/2017 12:32	Finished	MS (1ppb), IWST-171002B,10
33	N027430-005A,SAMP	17	1000	Unknown		12/11/2017 12:42	Finished	SAMP,10mL
34	N027430-005AMS,MS	18	1000	Unknown		12/11/2017 12:51	Finished	MS (1ppb), IWST-171002B,10
35	N027430-006A,SAMP	19	1000	Unknown		12/11/2017 13:01	Finished	SAMP,10mL
36	N027430-006AMS,MS	20	1000	Unknown		12/11/2017 13:10	Finished	MS (1ppb), IWST-171002B,10
37	CCV-3,CCV,1,	21	1000	Unknown		12/11/2017 13:20	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	22	1000	Unknown		12/11/2017 13:29	Finished	CCB R171129A
39	N027430-007A,SAMP	23	1000	Unknown		12/11/2017 13:38	Finished	SAMP,10mL
40	N027430-007AMS,MS	24	1000	Unknown		12/11/2017 13:48	Finished	MS (1ppb), IWST-171002B,10
41	N027430-008A,SAMP	25	1000	Unknown		12/11/2017 13:57	Finished	SAMP,10mL
42	N027430-008AMS,MS	26	1000	Unknown		12/11/2017 14:07	Finished	MS (1ppb), IWST-171002B,10
43	N027430-009A,SAMP	27	1000	Unknown		12/11/2017 14:16	Finished	SAMP,10mL
44	N027430-009AMS,MS	28	1000	Unknown		12/11/2017 14:26	Finished	MS (1ppb), IWST-171002B,10
45	N027430-010A,SAMP	29	1000	Unknown		12/11/2017 14:35	Finished	SAMP,10mL
46	N027430-010AMS,MS	30	1000	Unknown		12/11/2017 14:45	Finished	MS (1ppb), IWST-171002B,10
47	N027430-020A,SAMP	31	1000	Unknown		12/11/2017 14:54	Finished	SAMP,0.5>10mL
48	N027430-020AMS,MS	32	1000	Unknown		12/11/2017 15:04	Finished	MS (5ppb), IWST-171002B,0.5
49	CCV-4,CCV1,1,	33	1000	Unknown		12/11/2017 15:13	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	34	1000	Unknown		12/11/2017 15:23	Finished	CCB R171129A
51	N027430-012A,SAMP	35	1000	Unknown		12/11/2017 15:32	Finished	SAMP,10mL
52	N027430-012AMS,MS	36	1000	Unknown		12/11/2017 15:41	Finished	MS (1ppb), IWST-171002B,10
53	N027430-019A,SAMP	37	1000	Unknown		12/11/2017 15:51	Finished	SAMP,10mL
54	N027430-019AMS,MS	38	1000	Unknown		12/11/2017 16:00	Finished	MS (1ppb), IWST-171002B,10
55	N027430-011A,SAMP	39	1000	Unknown		12/11/2017 16:10	Finished	SAMP,10mL
56	N027430-011AMS,MS	40	1000	Unknown		12/11/2017 16:19	Finished	MS (1ppb), IWST-171002B,10
57	N027430-013A,SAMP	41	1000	Unknown		12/11/2017 16:29	Finished	SAMP,2>10mL
58	N027430-013AMS,MS	42	1000	Unknown		12/11/2017 16:38	Finished	MS (1ppb), IWST-171002B,2>1
59	N027430-014A,SAMP	43	1000	Unknown		12/11/2017 16:48	Finished	SAMP,2>10mL
60	N027430-014AMS,MS	44	1000	Unknown		12/11/2017 16:57	Finished	MS (1ppb), IWST-171002B,2>1

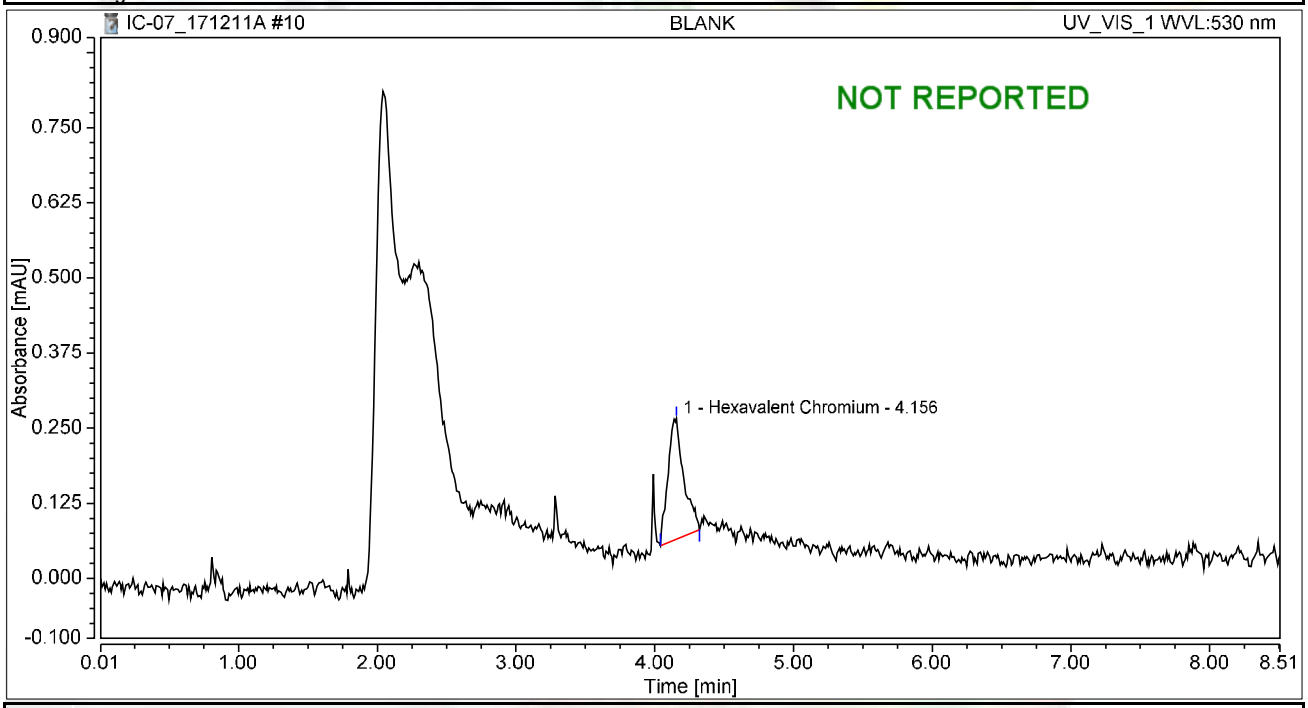
61	CCV-5,CCV,1,	45	1000	Unknown		12/11/2017 17:07	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	46	1000	Unknown		12/11/2017 17:16	Finished	CCB R171129A
63	N027430-015A,SAMF	47	1000	Unknown		12/11/2017 17:26	Finished	SAMP,2>10mL
64	N027430-015AMS,MS	48	1000	Unknown		12/11/2017 17:35	Finished	MS (1ppb), IWST-171002B,2>1
65	N027405-006ADUP,D	49	1000	Unknown		12/11/2017 17:44	Finished	DUP,2>10mL
66	N027430-020AMSD,M	50	1000	Unknown		12/11/2017 17:54	Finished	MSD (5ppb), IWST-171002B,0.
67	N027430-002A,SAMF	1	1000	Unknown		12/11/2017 18:05	Finished	MSD (5ppb), IWST-171002B,0.
68	N027430-002AMS,MS	2	1000	Unknown		12/11/2017 18:16	Finished	DUP,2>10mL
69	N027430-013A,SAMF	3	1000	Unknown		12/11/2017 18:25	Finished	SAMP,2>10mL
70	N027430-013AMS,MS	4	1000	Unknown		12/11/2017 18:35	Finished	MS (1ppb), IWST-171002B,2>1
71	N027430-014A,SAMF	5	1000	Unknown		12/11/2017 18:44	Finished	SAMP,10mL
72	N027430-014AMS,MS	6	1000	Unknown		12/11/2017 18:54	Finished	MS (1ppb), IWST-171002B,10
73	CCV-6,CCV1,1,	7	1000	Unknown		12/11/2017 19:03	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	8	1000	Unknown		12/11/2017 19:13	Finished	CCB R171129A
75	N027430-015A,SAMF	9	1000	Unknown		12/11/2017 19:22	Finished	LCS, IWST-171002B
76	N027430-015AMS,MS	10	1000	Unknown		12/11/2017 19:32	Finished	MB R171129A
77	N027430-012A,SAMF	11	1000	Unknown		12/11/2017 19:41	Finished	SAMP,2>10mL
78	N027430-012AMS,MS	12	1000	Unknown		12/11/2017 19:50	Finished	MS (1ppb), IWST-171002B,2>1
79	LCS-2,LCS,1	13	1000	Unknown		12/11/2017 20:00	Finished	LCS, IWST-171002B
80	MB-2,MBLK,1	14	1000	Unknown		12/11/2017 20:09	Finished	MB R171129A
81	N027431-006A,SAMF	15	1000	Unknown		12/11/2017 20:19	Finished	DUP,0.1>10mL
82	N027431-006AMS,MS	16	1000	Unknown		12/11/2017 20:28	Finished	SAMP,10mL
83	N027431-006AMSD,M	17	1000	Unknown		12/11/2017 20:38	Finished	SAMP,5>10mL
84	N027428-002A,SAMF	18	1000	Unknown		12/11/2017 20:47	Finished	SAMP,0.2>10mL
85	CCV-7,CCV,1,	19	1000	Unknown		12/11/2017 20:57	Finished	CCV @5ppb, IWST-171002A
86	CCB-7,CCB,1,	20	1000	Unknown		12/11/2017 21:06	Finished	CCB R171114C
87	N027428-002ADUP,D	21	1000	Unknown		12/11/2017 21:16	Finished	SAMP,0.2>10mL
88	N027428-002AMS,MS	22	1000	Unknown		12/11/2017 21:25	Finished	SAMP,1>10mL
89	N027428-001A,SAMF	23	1000	Unknown		12/11/2017 21:35	Finished	SAMP,0.5>10mL
90	N027428-001AMS,MS	24	1000	Unknown		12/11/2017 21:44	Finished	SAMP,5>10mL
91	N027430-016A,SAMF	25	1000	Unknown		12/11/2017 21:53	Finished	SAMP,10mL
92	N027430-016AMS,MS	26	1000	Unknown		12/11/2017 22:03	Finished	SAMP,2>10mL
93	N027430-017A,SAMF	27	1000	Unknown		12/11/2017 22:12	Finished	MS (5ppb), IWST-171002B,2>1
94	N027430-017AMS,MS	28	1000	Unknown		12/11/2017 22:22	Finished	MSD (5ppb), IWST-171002B,2
95	N027430-018A,SAMF	29	1000	Unknown		12/11/2017 22:31	Finished	SAMP,10mL
96	N027430-018AMS,MS	30	1000	Unknown		12/11/2017 22:41	Finished	MS (1ppb), IWST-171002B,10
97	CCV-8,CCV1,1,	31	1000	Unknown		12/11/2017 22:50	Finished	CCV @10ppb, IWST-171002A
98	CCB-8,CCB,1,	32	1000	Unknown		12/11/2017 23:00	Finished	CCB R171129A
99	N027431-002A,SAMF	33	1000	Unknown		12/11/2017 23:09	Finished	SAMP,10mL
100	N027431-002AMS,MS	34	1000	Unknown		12/11/2017 23:19	Finished	MS (1ppb), IWST-171002B,10
101	N027431-003A,SAMF	35	1000	Unknown		12/11/2017 23:28	Finished	SAMP,10mL
102	N027431-003AMS,MS	36	1000	Unknown		12/11/2017 23:38	Finished	MS (1ppb), IWST-171002B,10
103	N027431-004A,SAMF	37	1000	Unknown		12/11/2017 23:47	Finished	SAMP,10mL
104	N027431-004AMS,MS	38	1000	Unknown		12/11/2017 23:56	Finished	MS (1ppb), IWST-171002B,10
105	N027431-001A,SAMF	39	1000	Unknown		12/12/2017 00:06	Finished	SAMP,10mL
106	N027431-001AMS,MS	40	1000	Unknown		12/12/2017 00:15	Finished	MS (1ppb), IWST-171002B,10
107	N027431-005A,SAMF	41	1000	Unknown		12/12/2017 00:25	Finished	SAMP,10mL
108	N027431-005AMS,MS	42	1000	Unknown		12/12/2017 00:34	Finished	MS (1ppb), IWST-171002B,10
109	CCV-9,CCV,1,	43	1000	Unknown		12/12/2017 00:44	Finished	CCV @5ppb, IWST-171002A
110	CCB-9,CCB,1,	44	1000	Unknown		12/12/2017 00:53	Finished	CCB R171114C
111	SHUTDOWN	45	1000	Unknown		12/12/2017 01:03	Finished	
112	Eluent: R171211B	46	1000	Unknown		n.a.	Finished	Eluent
113	PCR: R171211C	47	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 08:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

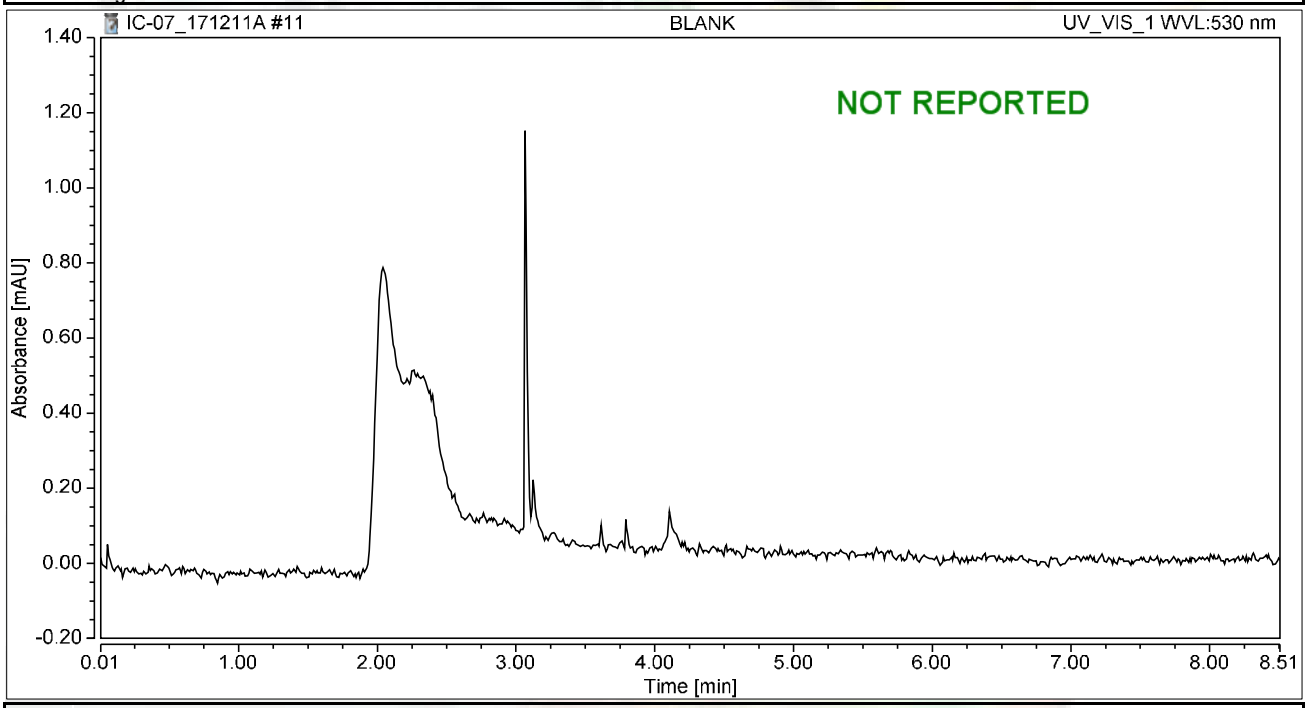
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.027	0.201	100.00	100.00	0.1065
Total:			**0.027**	**0.201**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

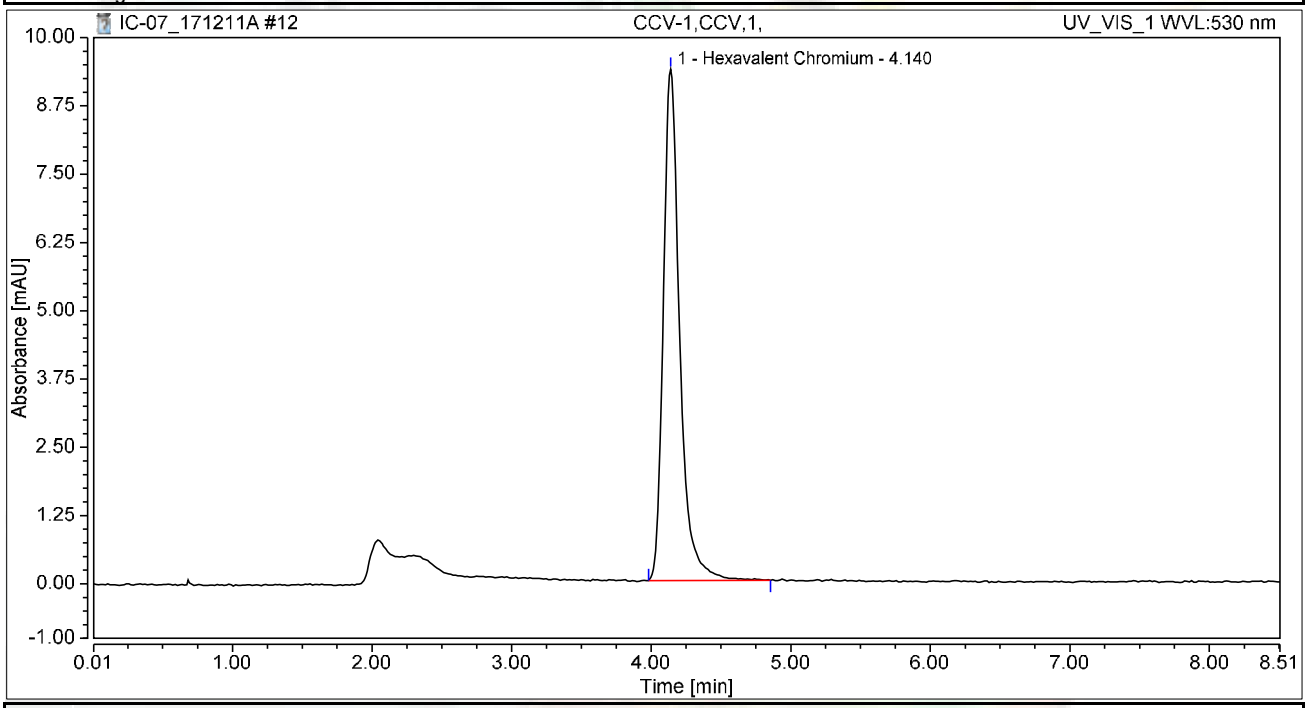
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

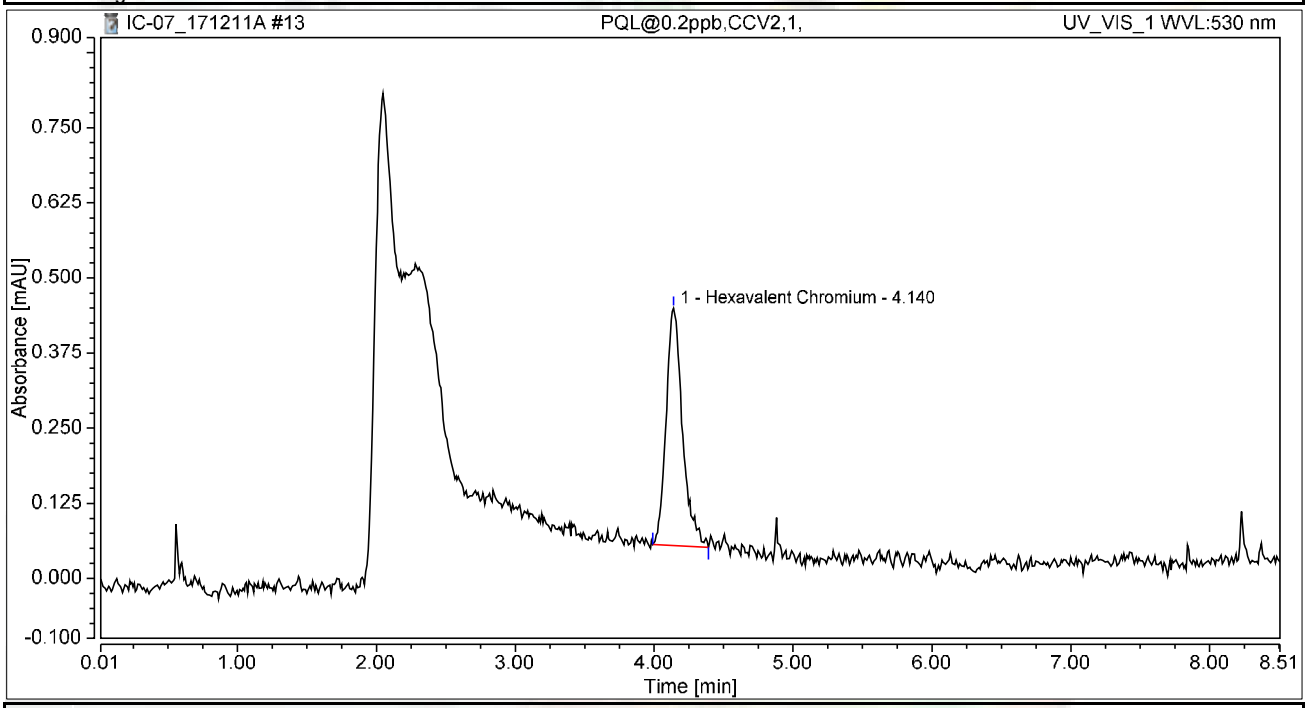
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.275	9.355	100.00	100.00	5.0770
Total:			**1.275**	**9.355**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

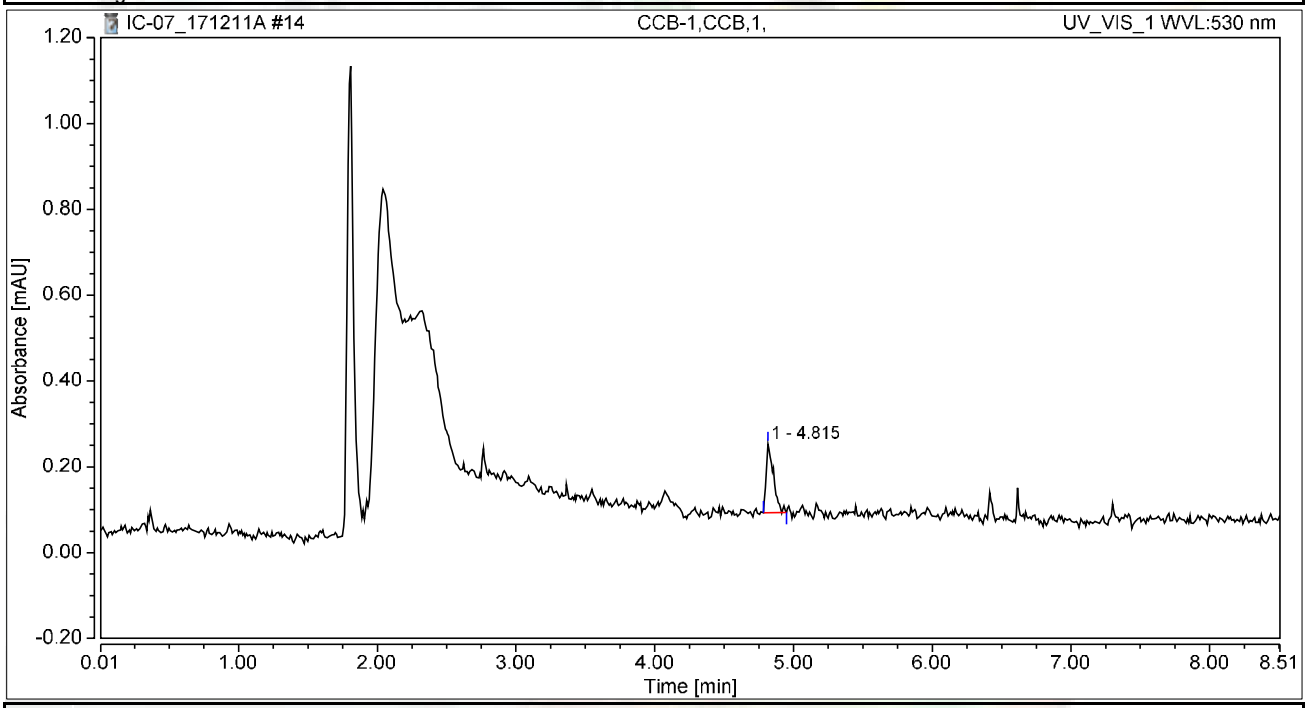
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.054	0.395	100.00	100.00	0.2151
Total:			**0.054**	**0.395**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

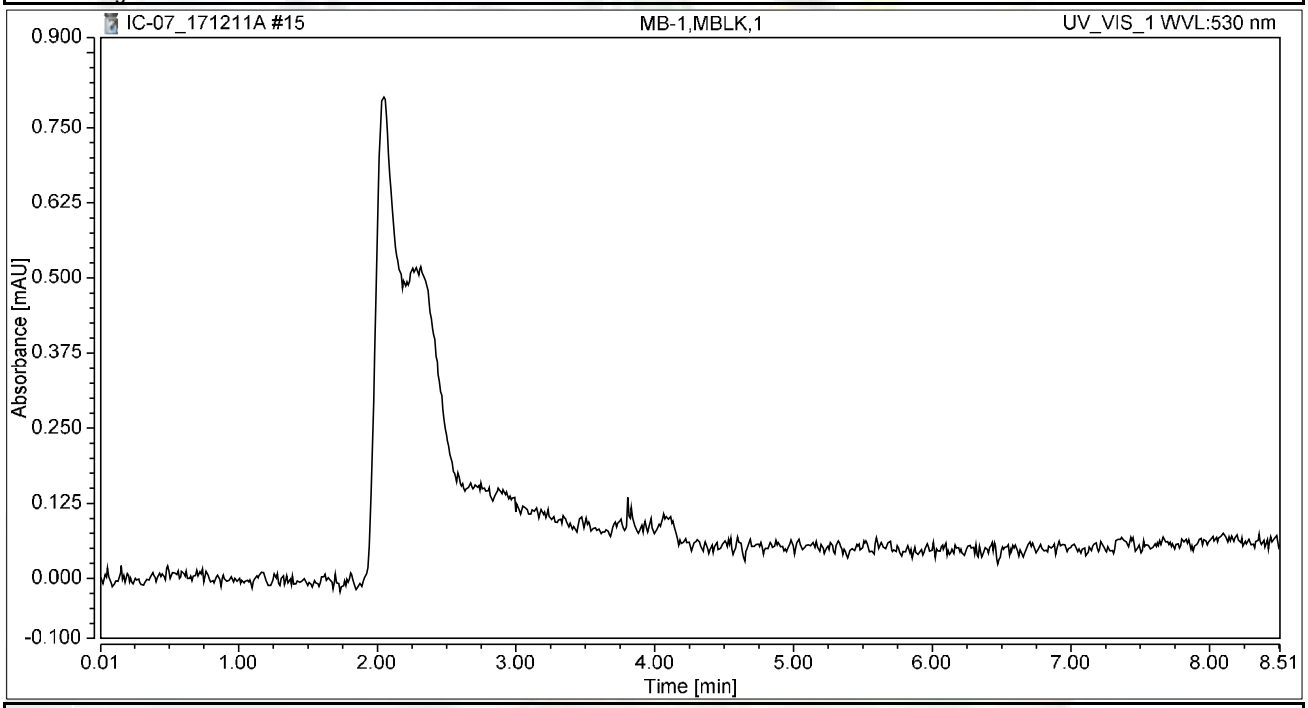
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		4.815	0.010	0.160	100.00	100.00	n.a.
Total:			**0.010**	**0.160**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-1,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

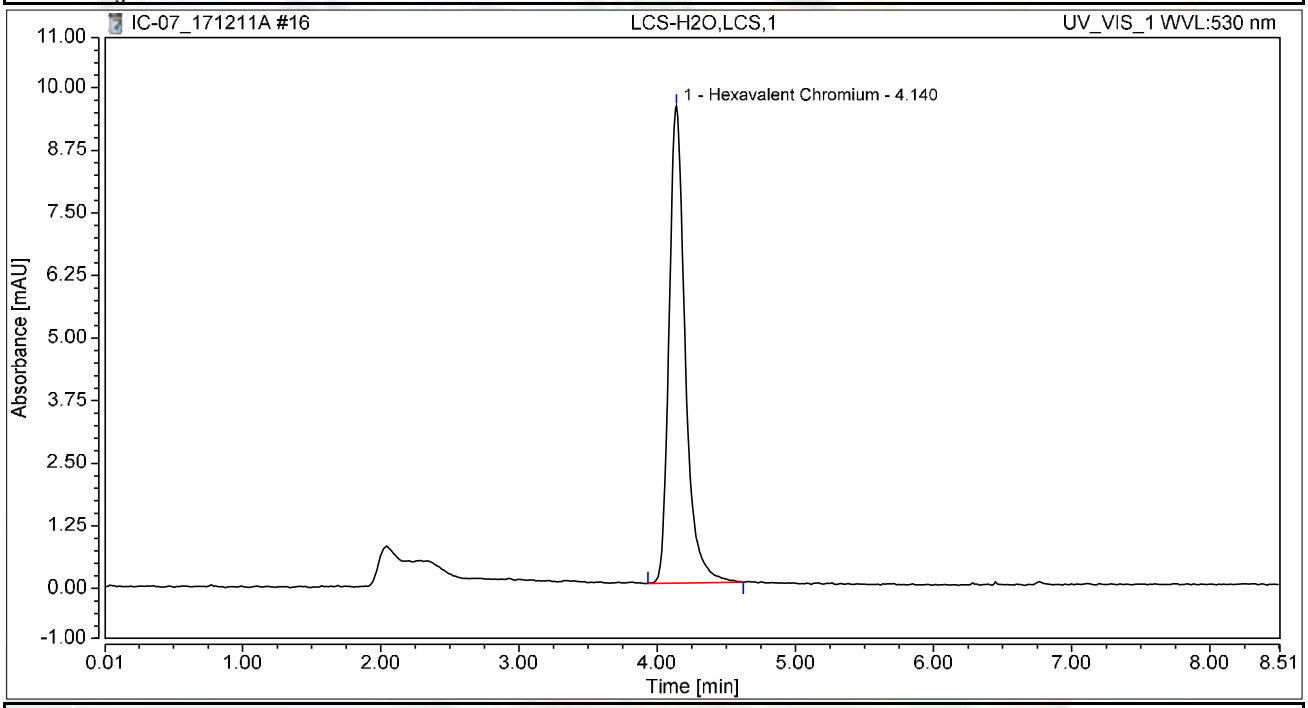
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

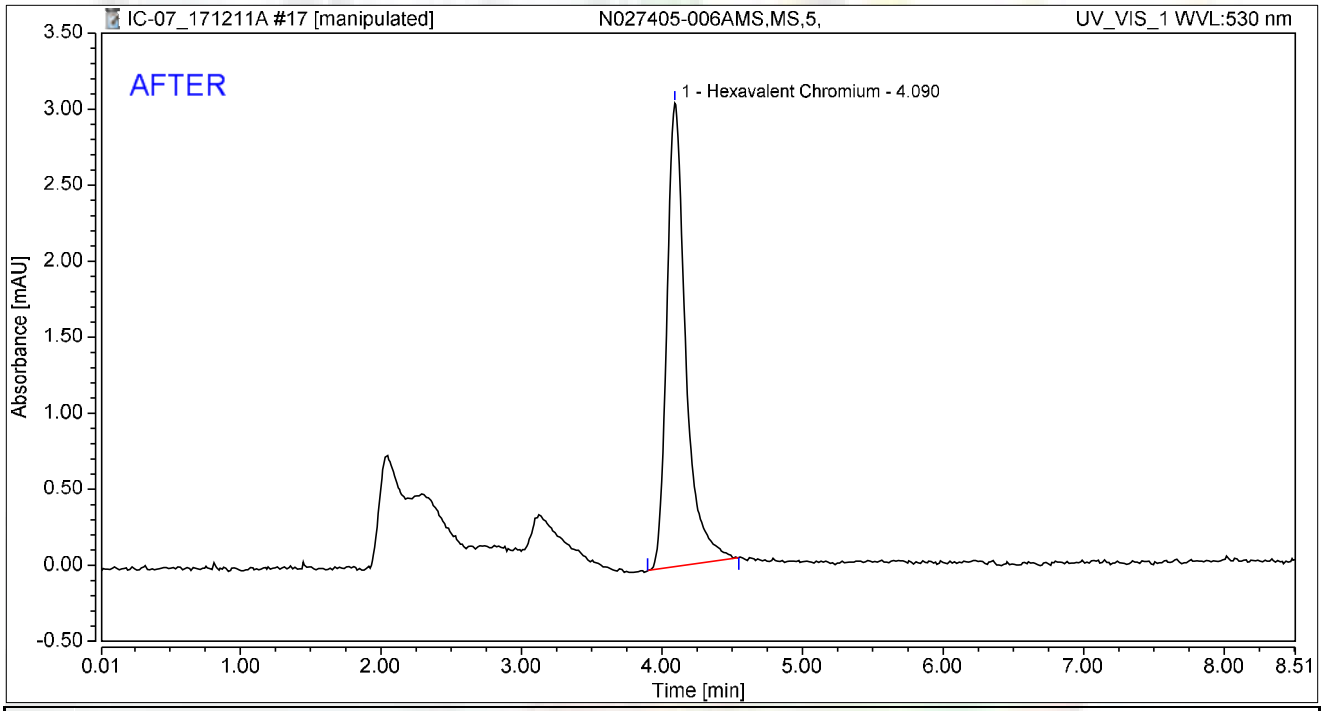
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.296	9.528	100.00	100.00	5.1607
Total:			**1.296**	**9.528**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-006AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.473	3.048	100.00	100.00	1.8848
Total:			**0.473**	**3.048**	**100.00**	**100.00**	

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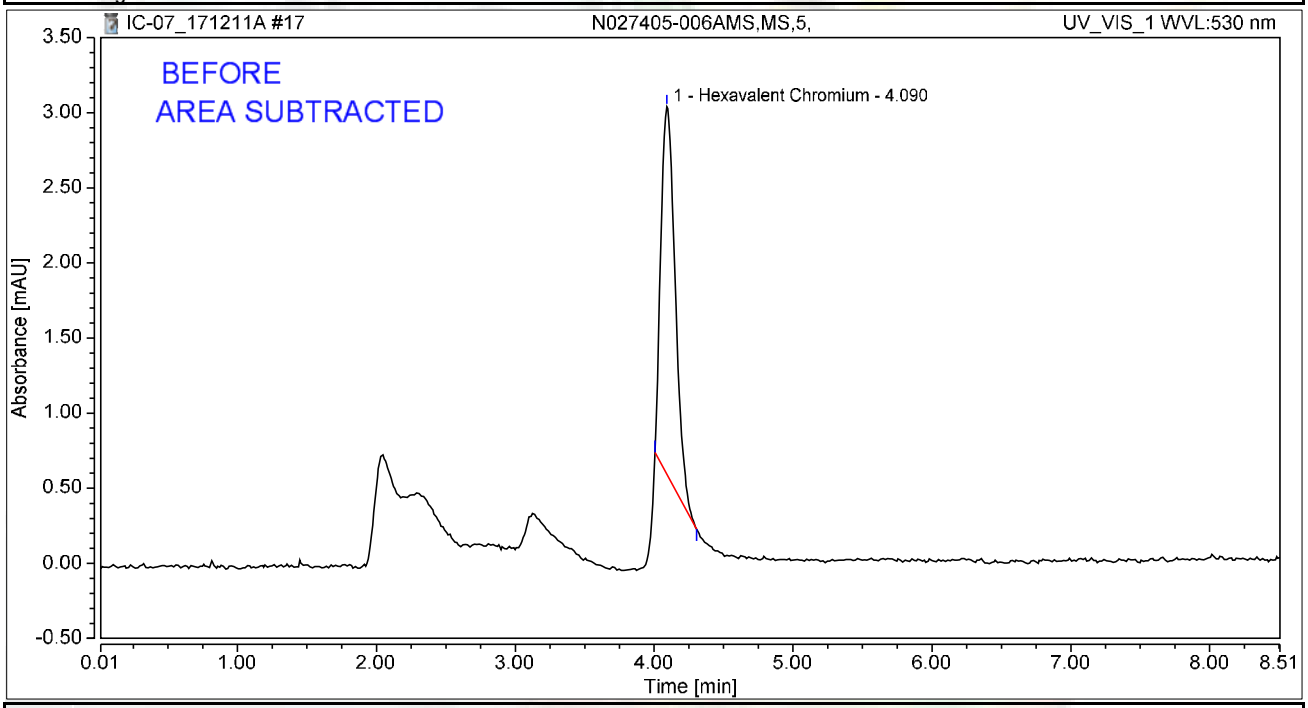
Chromatogram and Results

Injection Details

Injection Name:	**N027405-006AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.293	2.442	100.00	100.00	1.1666
Total:			**0.293**	**2.442**	**100.00**	**100.00**	

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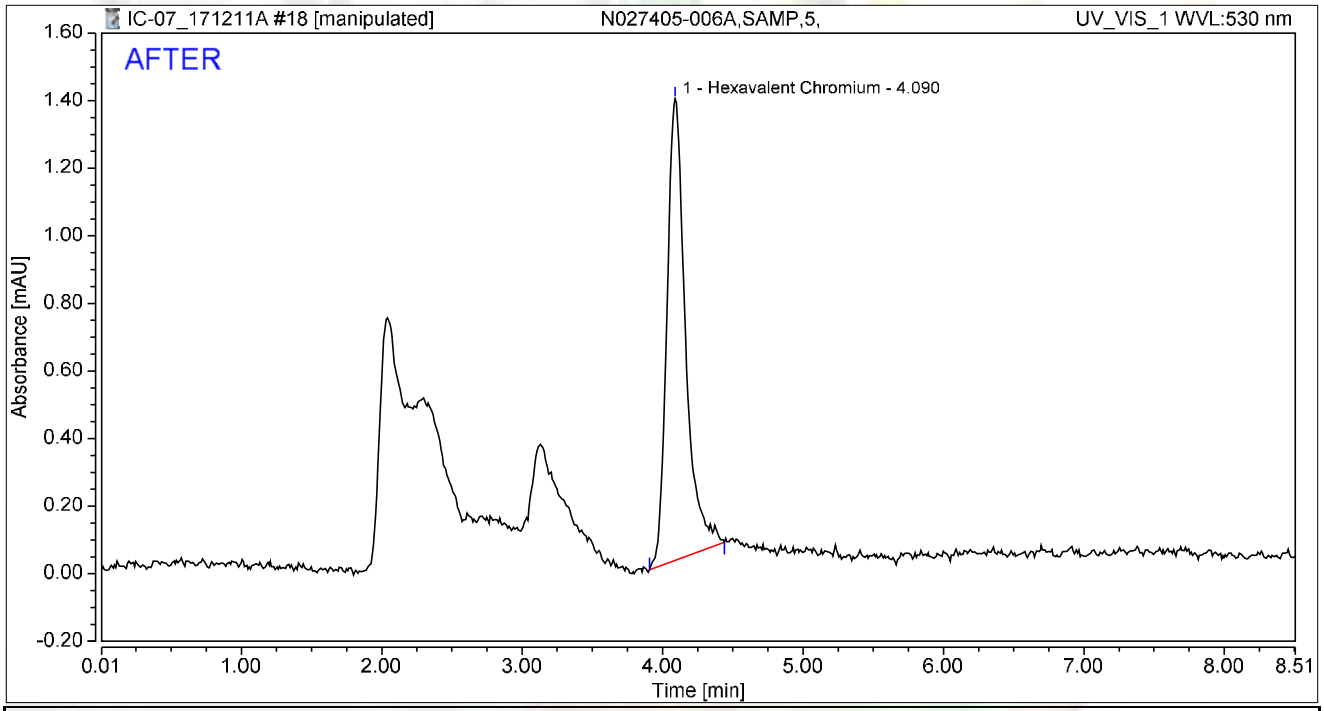
Chromatogram and Results

Injection Details

Injection Name:	**N027405-006A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.211	1.365	100.00	100.00	0.8406
Total:			**0.211**	**1.365**	**100.00**	**100.00**	

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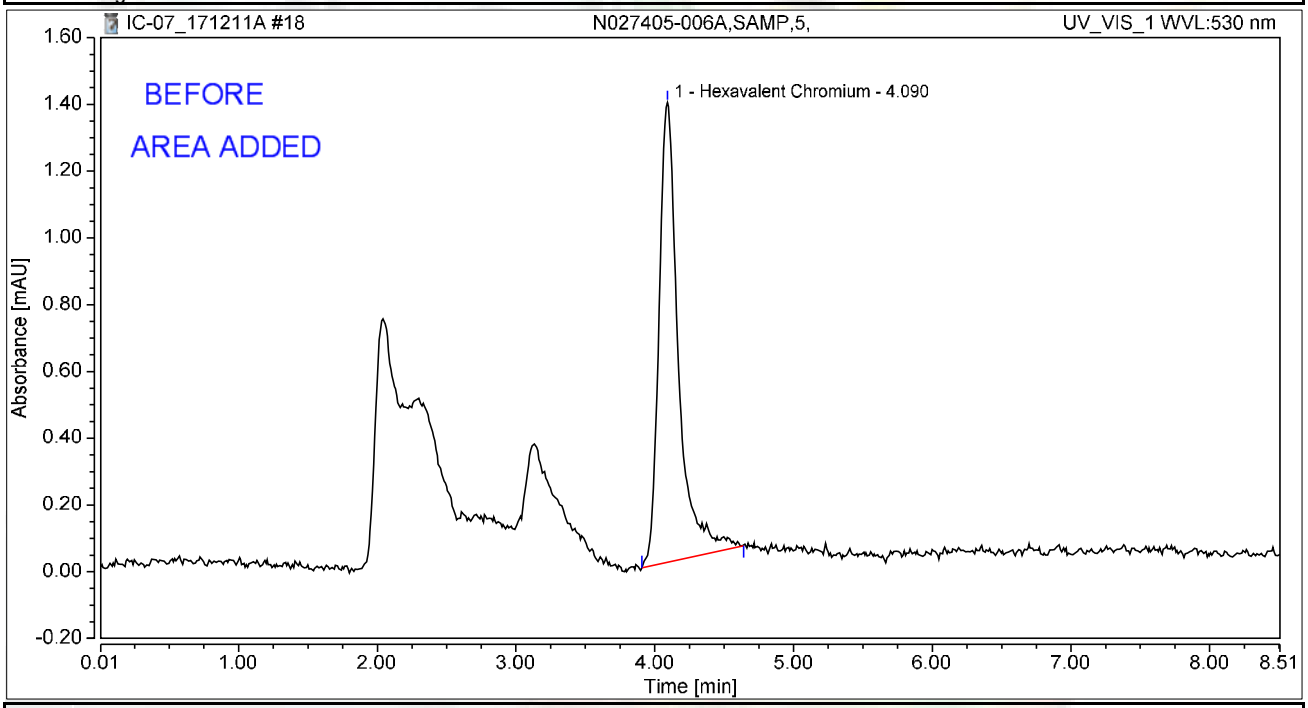
Chromatogram and Results

Injection Details

Injection Name:	**N027405-006A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.225	1.377	100.00	100.00	0.8948
Total:			**0.225**	**1.377**	**100.00**	**100.00**	

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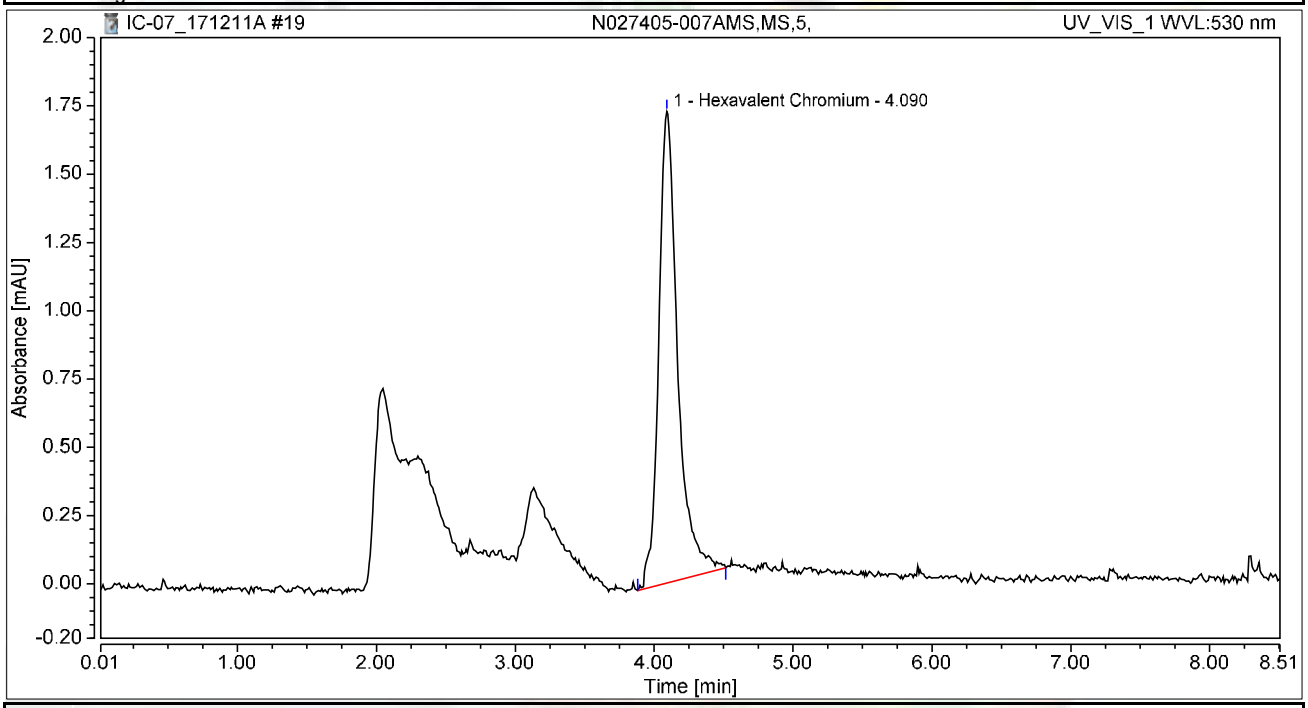
Chromatogram and Results

Injection Details

Injection Name:	**N027405-007AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

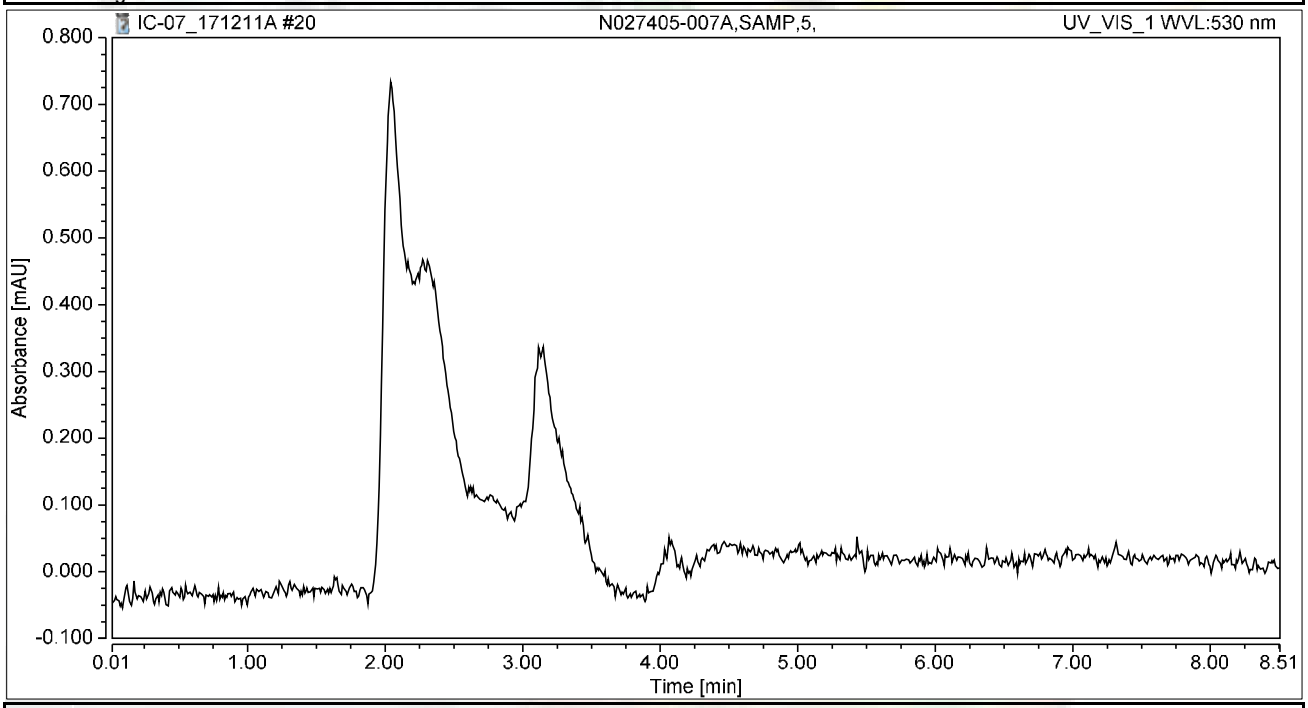
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.274	1.727	100.00	100.00	1.0903
Total:			**0.274**	**1.727**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-007A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

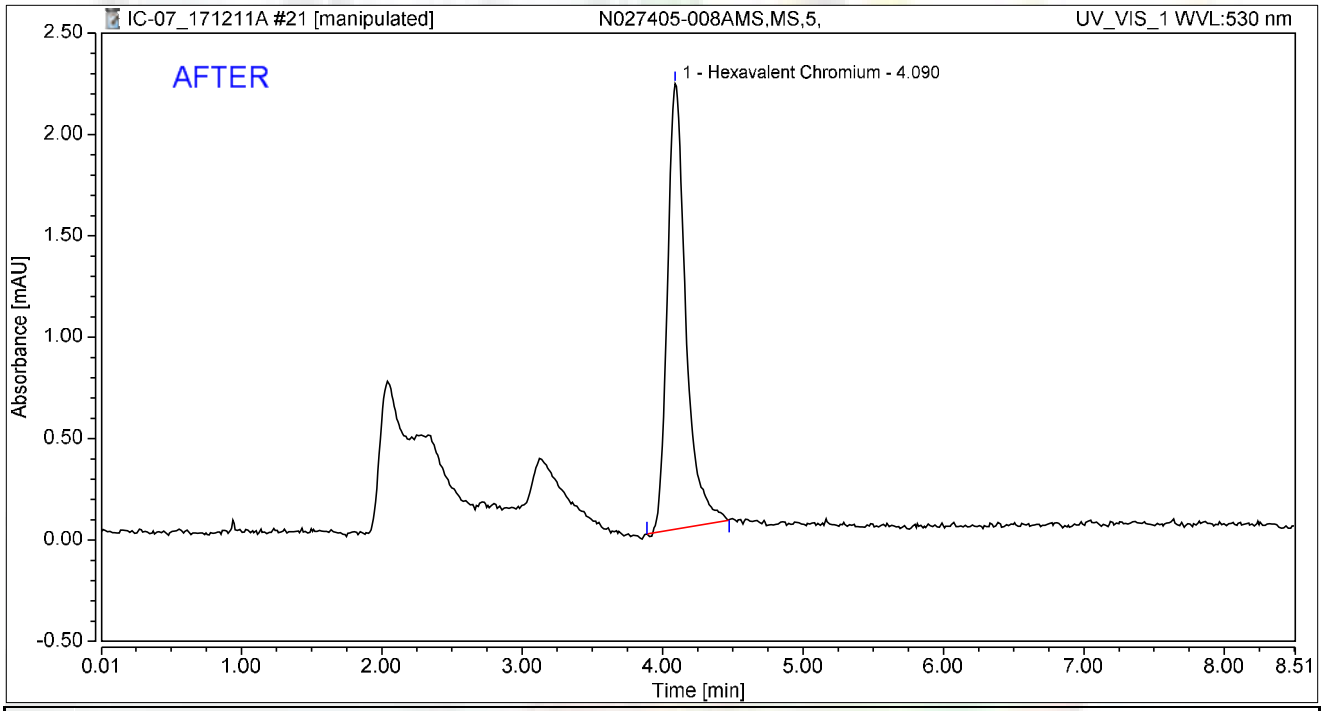
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027405-008AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.336	2.197	100.00	100.00	1.3384
Total:			**0.336**	**2.197**	**100.00**	**100.00**	

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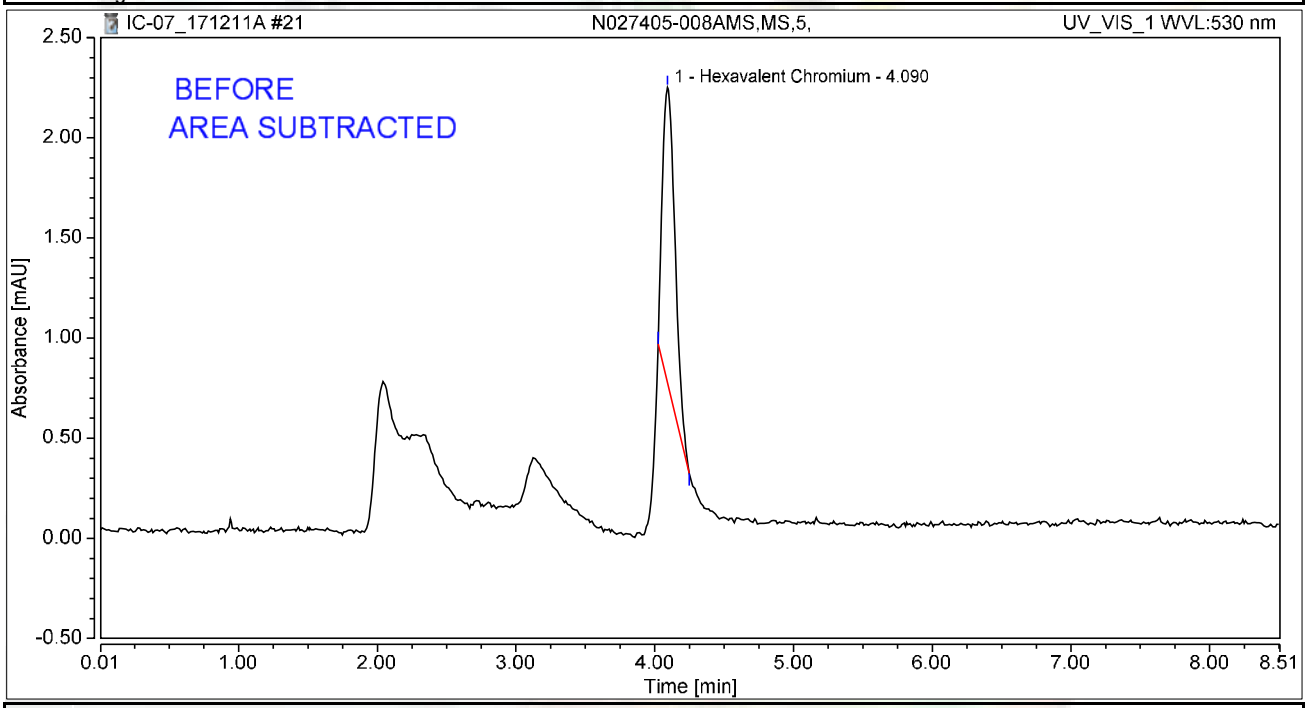
Chromatogram and Results

Injection Details

Injection Name:	**N027405-008AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.158	1.471	100.00	100.00	0.6275
Total:			**0.158**	**1.471**	**100.00**	**100.00**	

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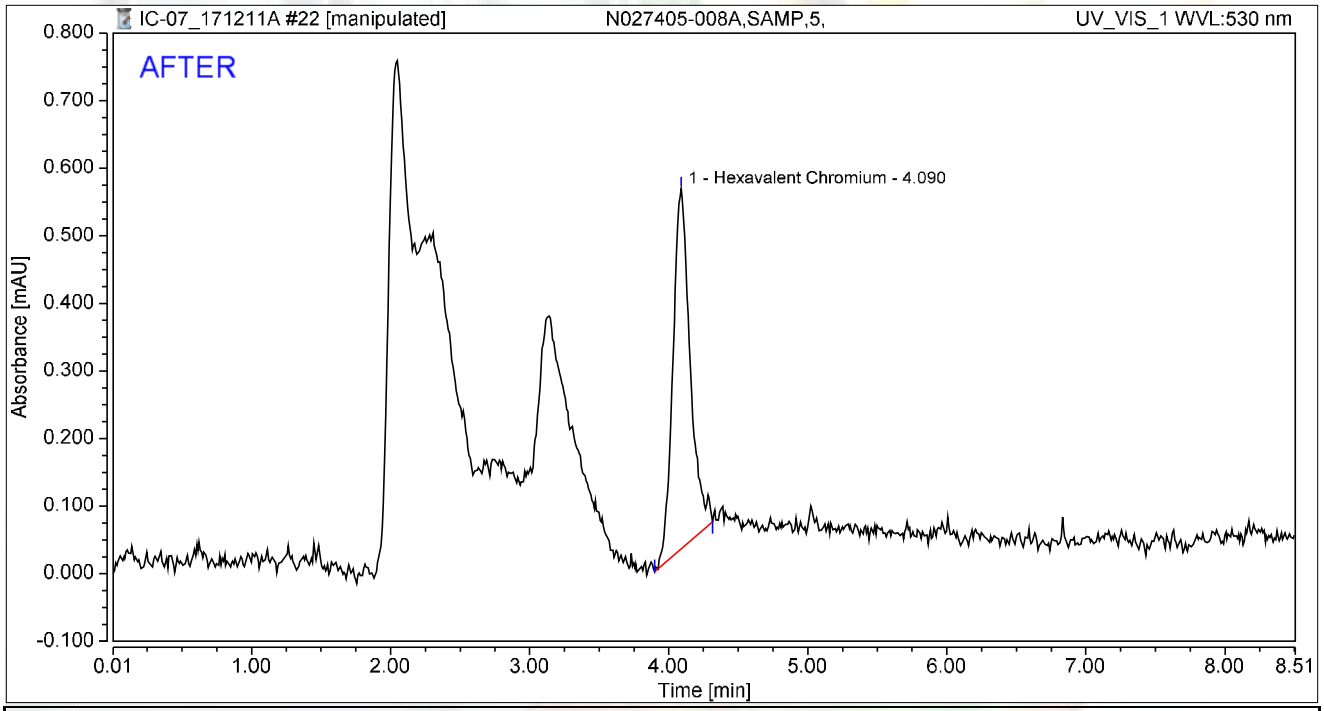
Chromatogram and Results

Injection Details

Injection Name:	**N027405-008A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.077	0.532	100.00	100.00	0.3057
Total:			**0.077**	**0.532**	**100.00**	**100.00**	

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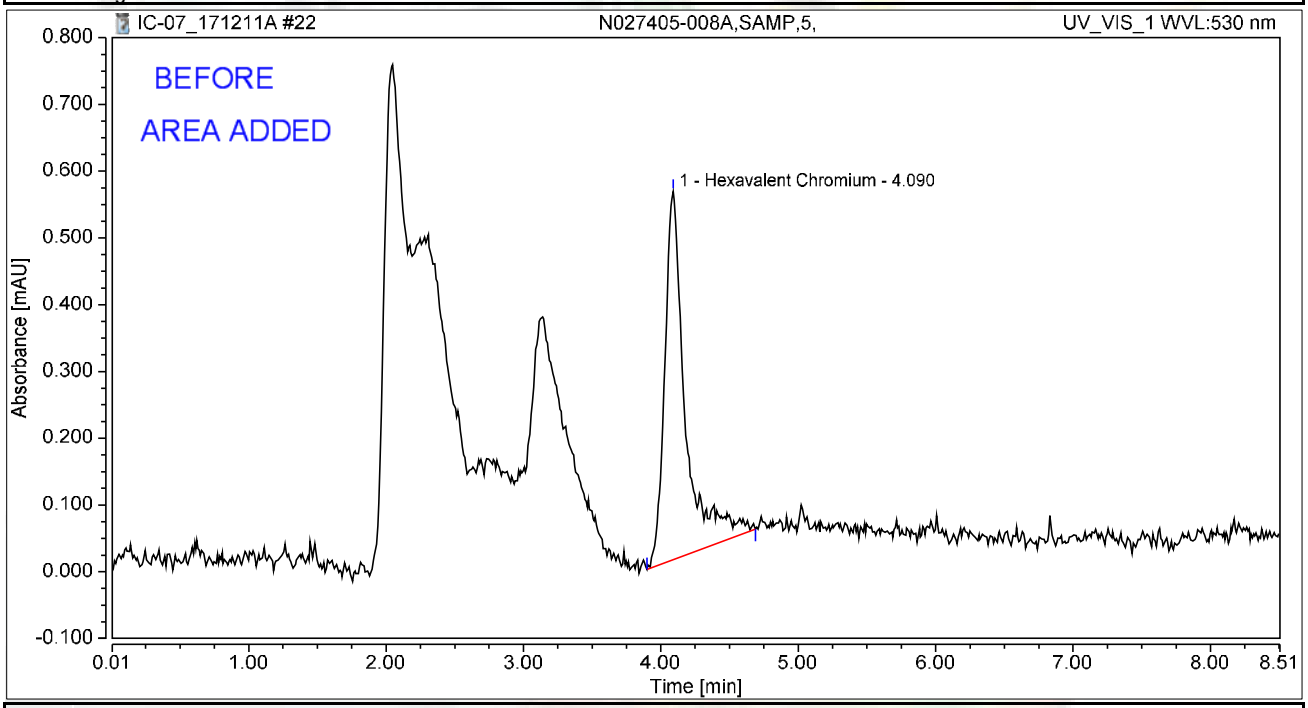
Chromatogram and Results

Injection Details

Injection Name:	**N027405-008A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.097	0.552	100.00	100.00	0.3848
Total:			**0.097**	**0.552**	**100.00**	**100.00**	

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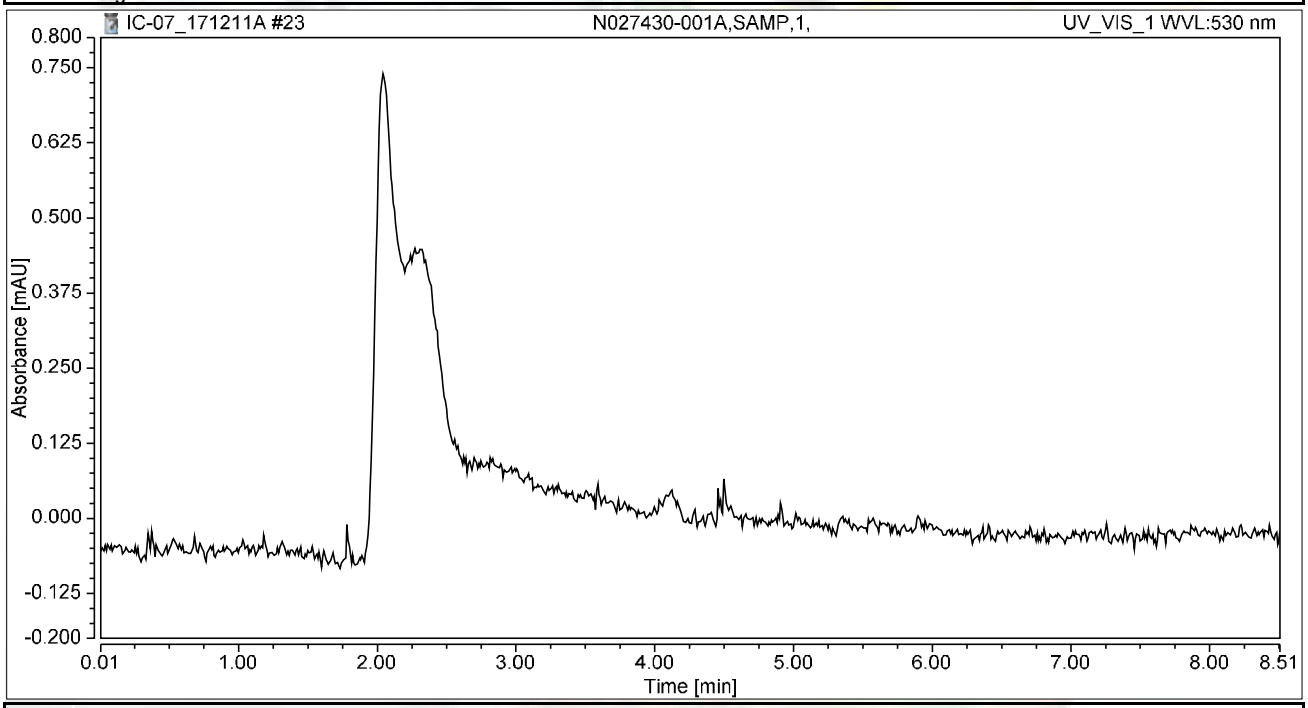
Chromatogram and Results

Injection Details

Injection Name:	**N027430-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

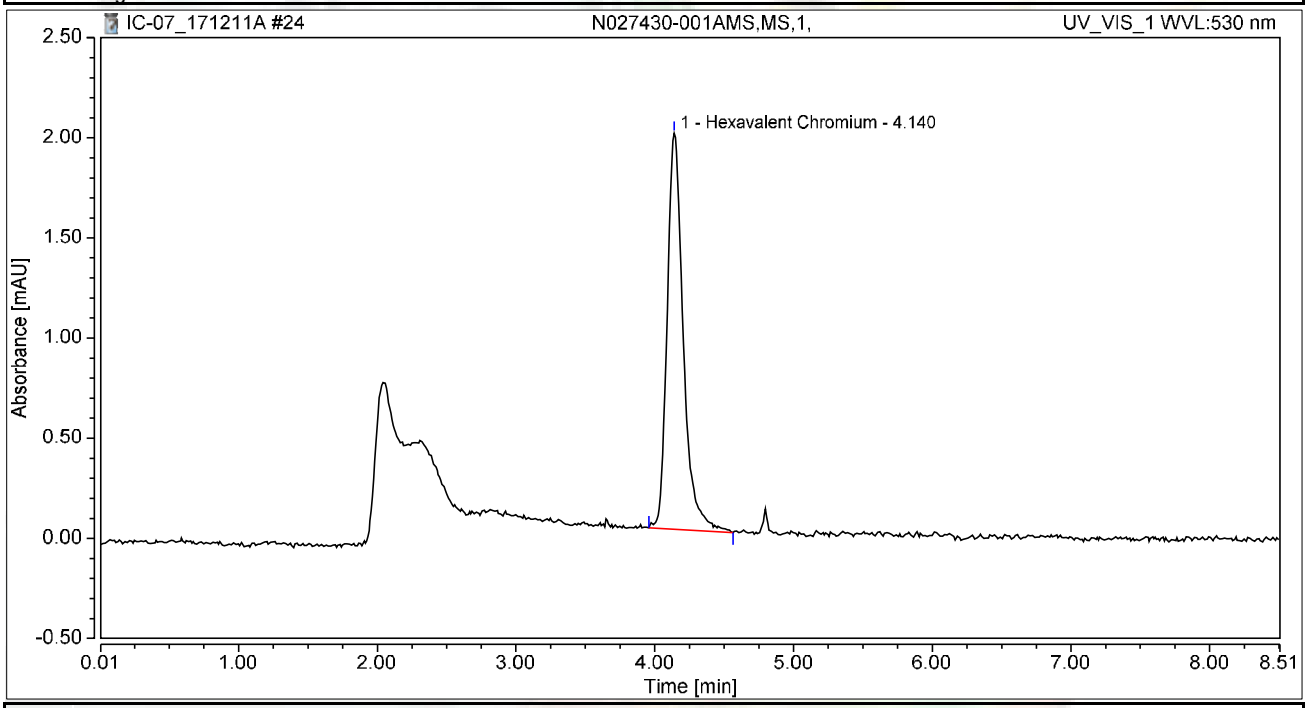
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

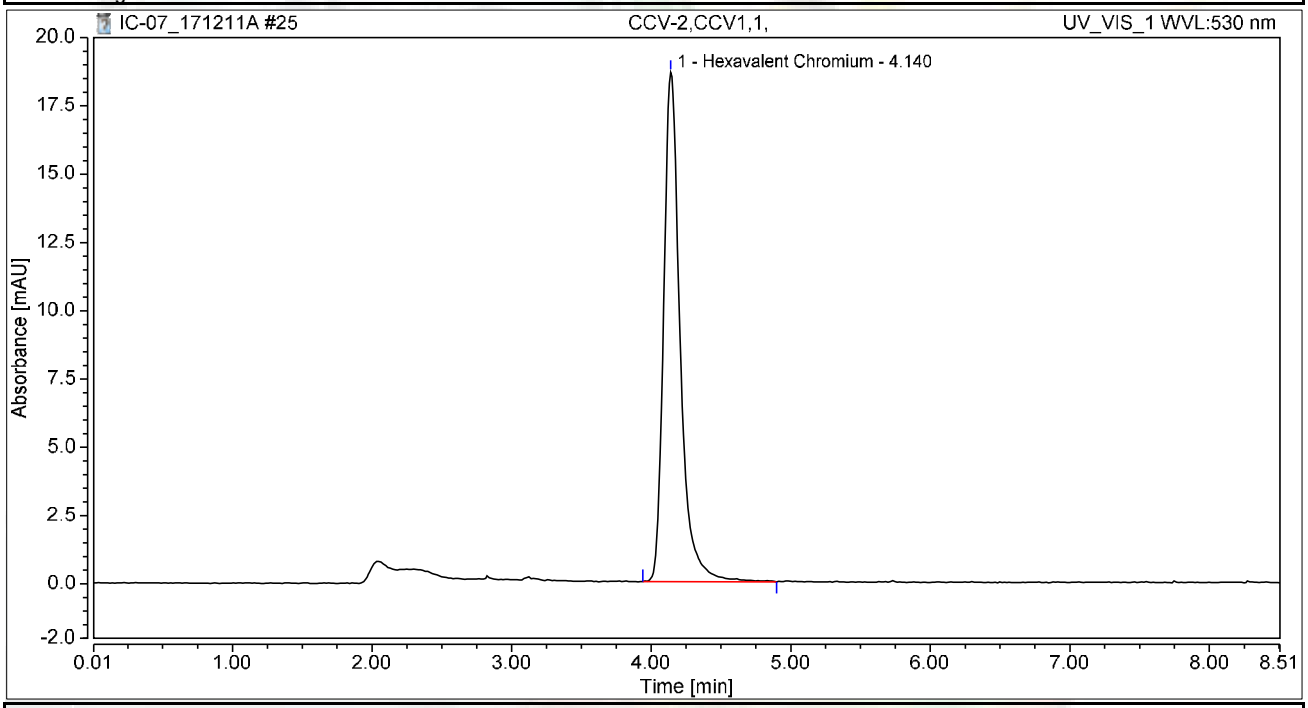
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.268	1.978	100.00	100.00	1.0677
Total:			**0.268**	**1.978**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

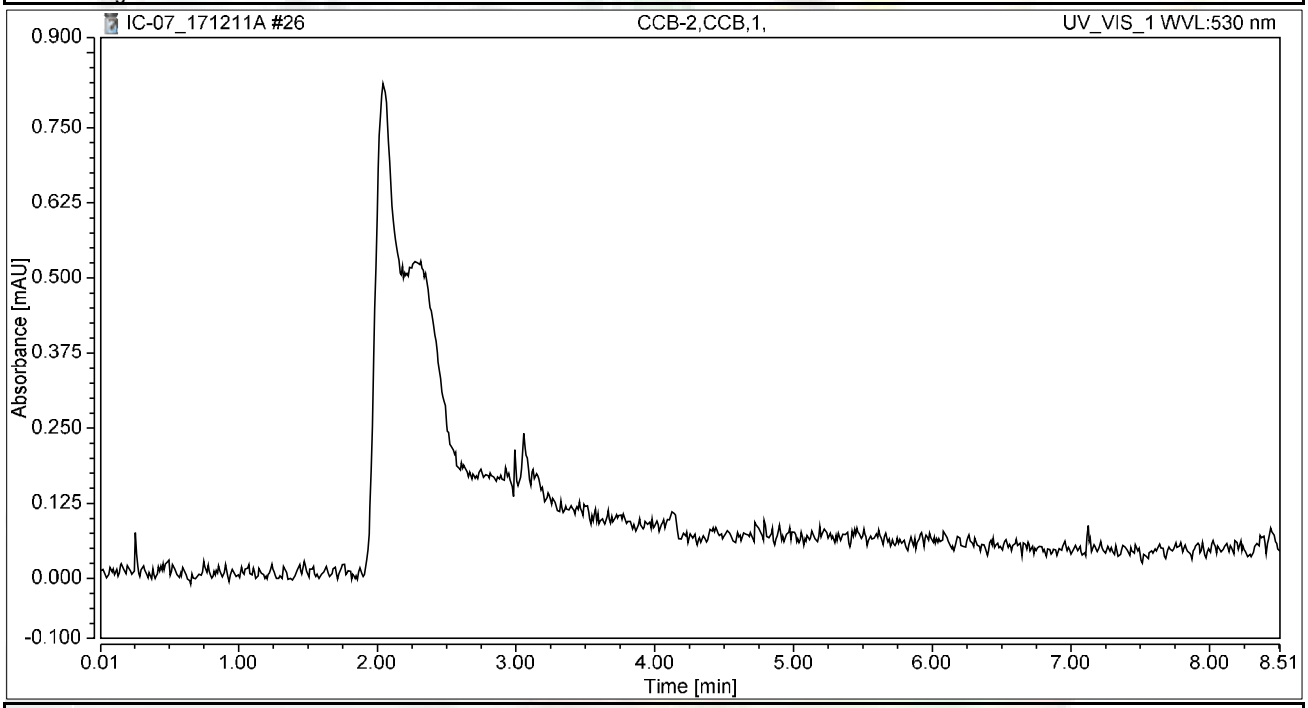
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.549	18.640	100.00	100.00	10.1518
Total:			**2.549**	**18.640**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

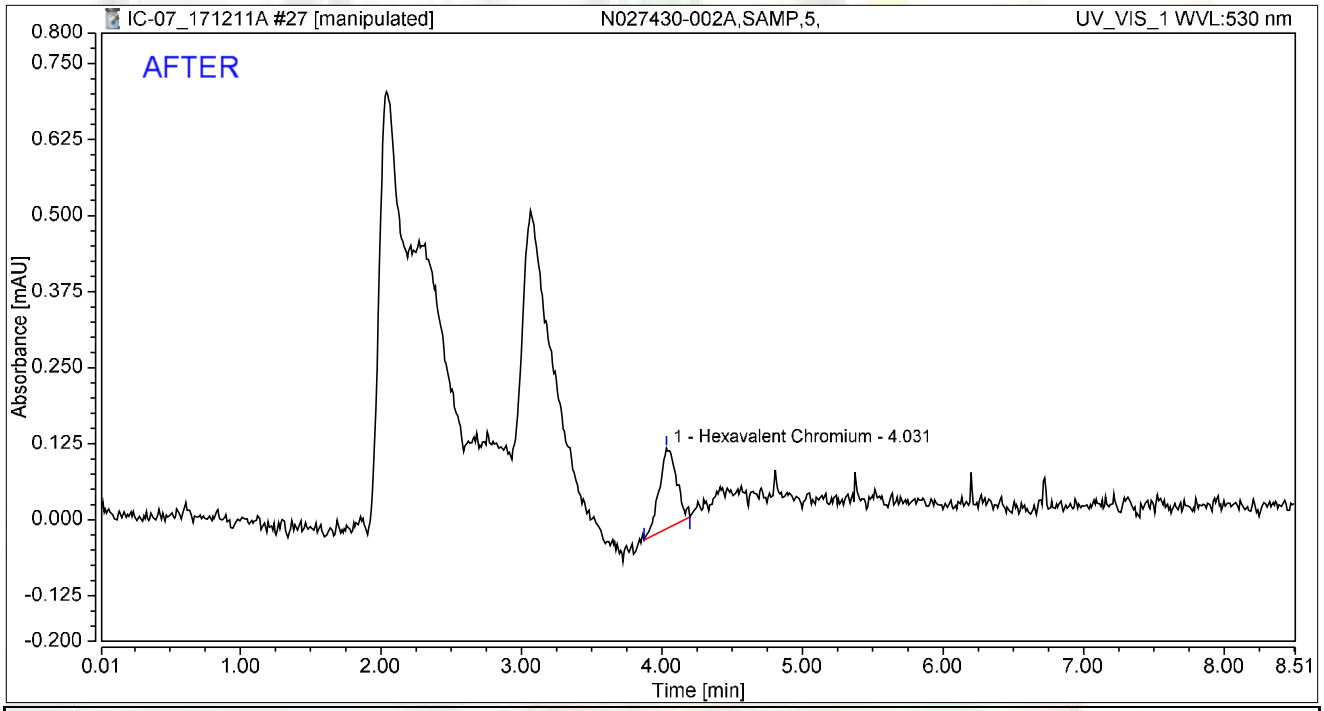
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-002A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.031	0.019	0.133	100.00	100.00	0.0743
Total:			**0.019**	**0.133**	**100.00**	**100.00**	

rba 12/16/2017

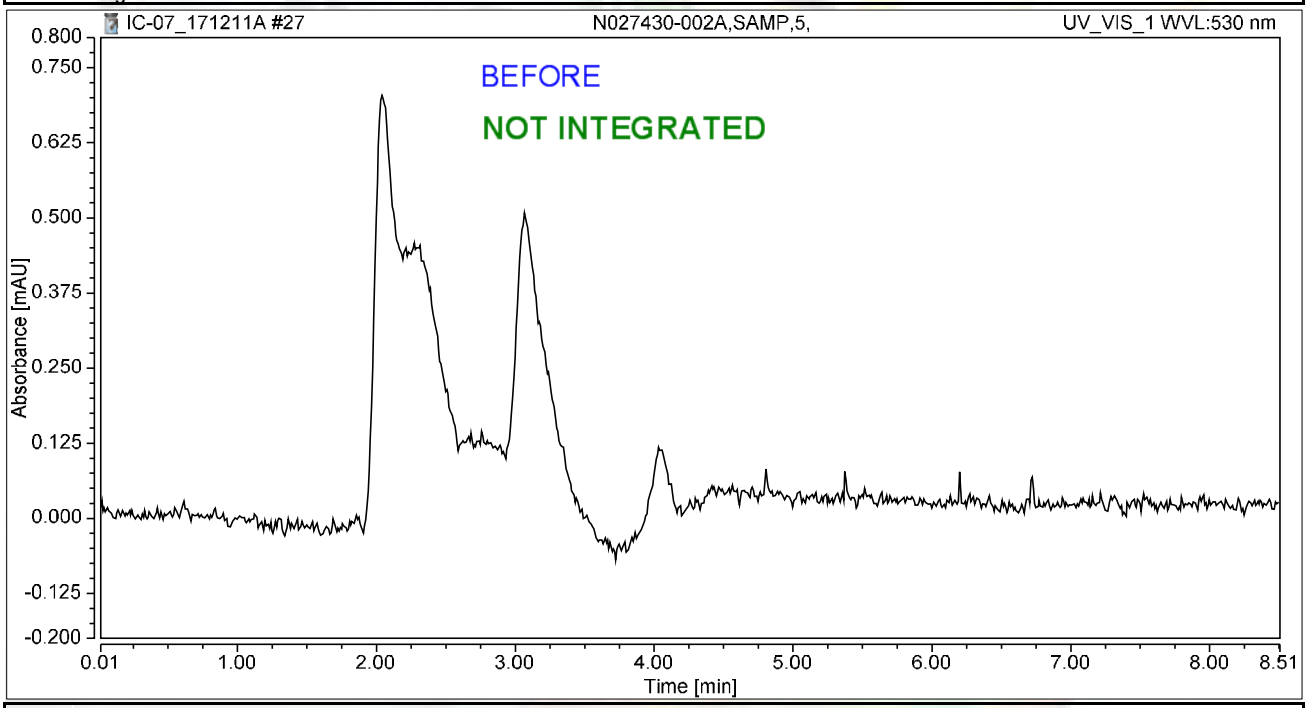
RLB 12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027430-002A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

rba 12/16/2017

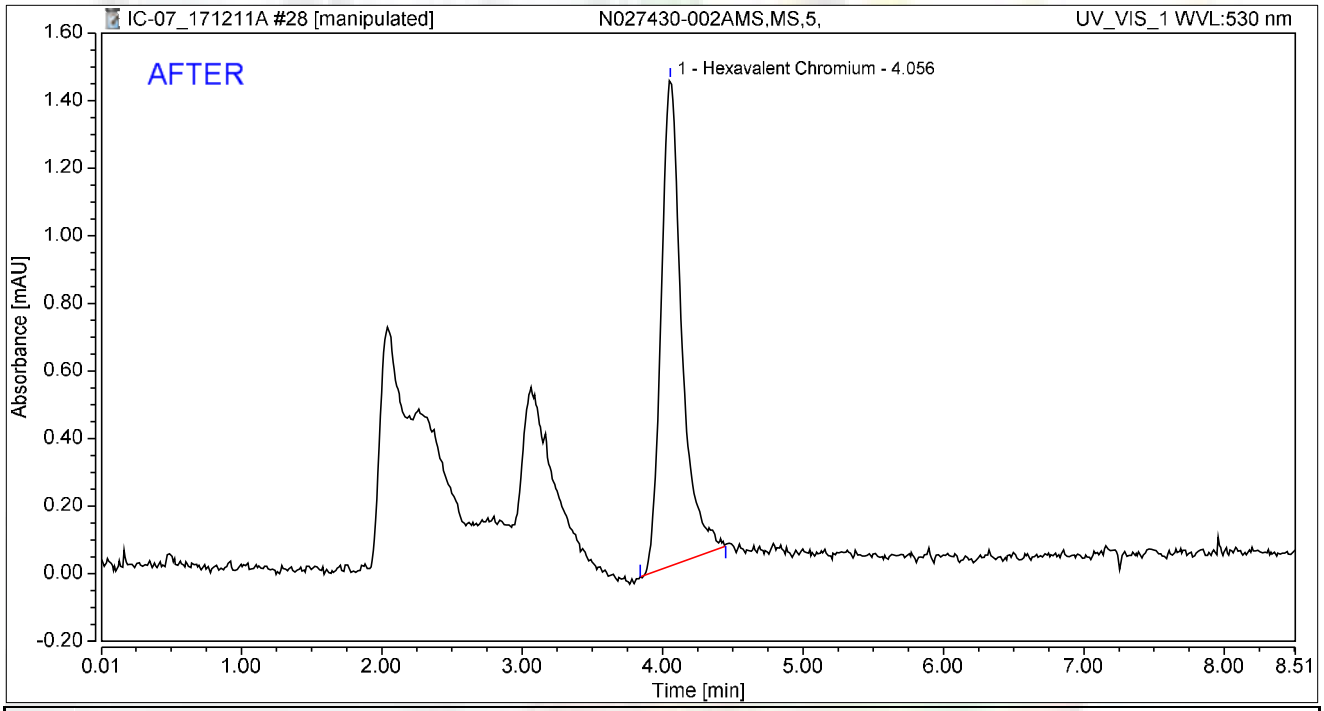
12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027430-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.246	1.438	100.00	100.00	0.9810
Total:			**0.246**	**1.438**	**100.00**	**100.00**	

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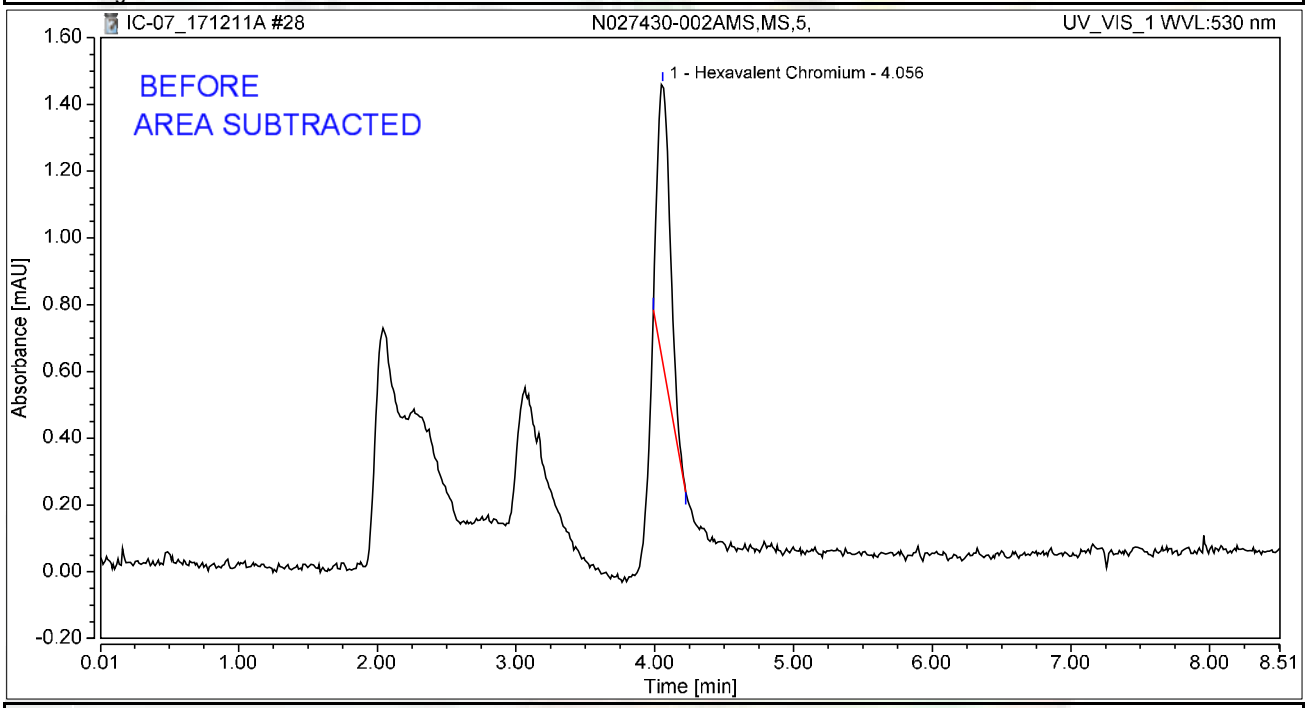
RB 12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027430-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 11:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.090	0.832	100.00	100.00	0.3580
Total:			**0.090**	**0.832**	**100.00**	**100.00**	

rba 12/16/2017

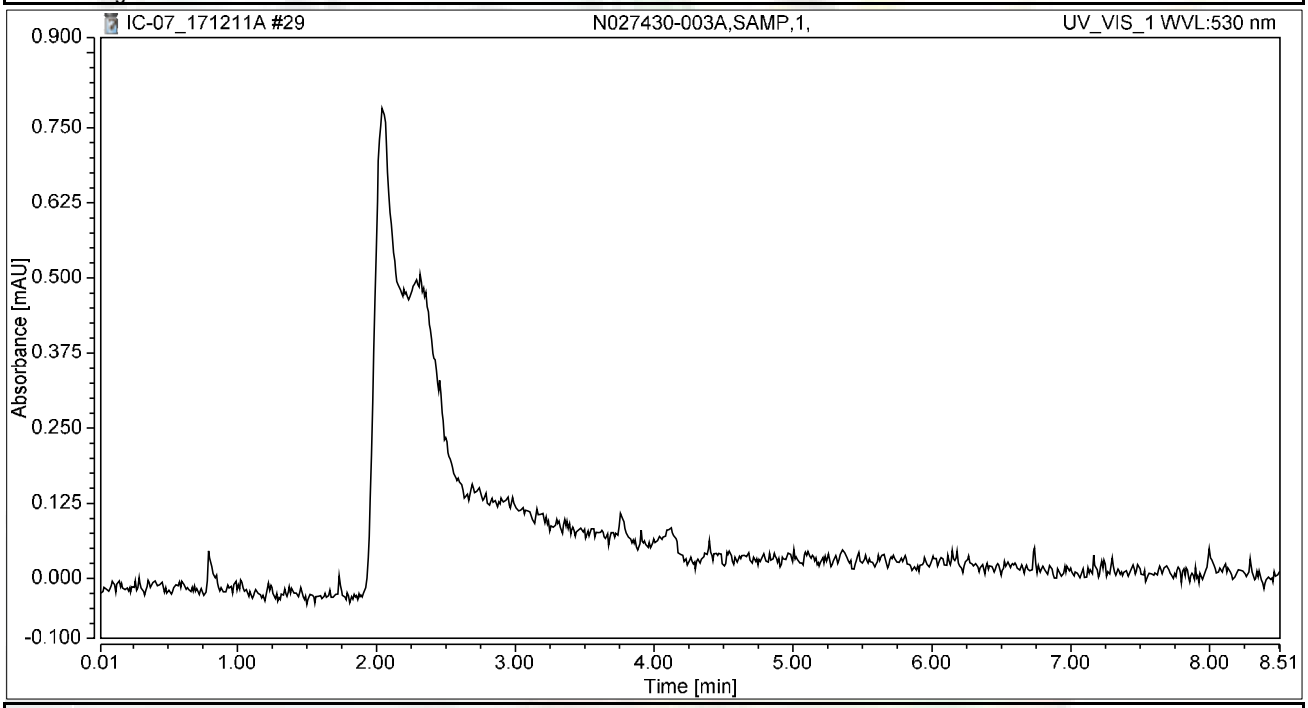
RB 12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027430-003A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 12:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

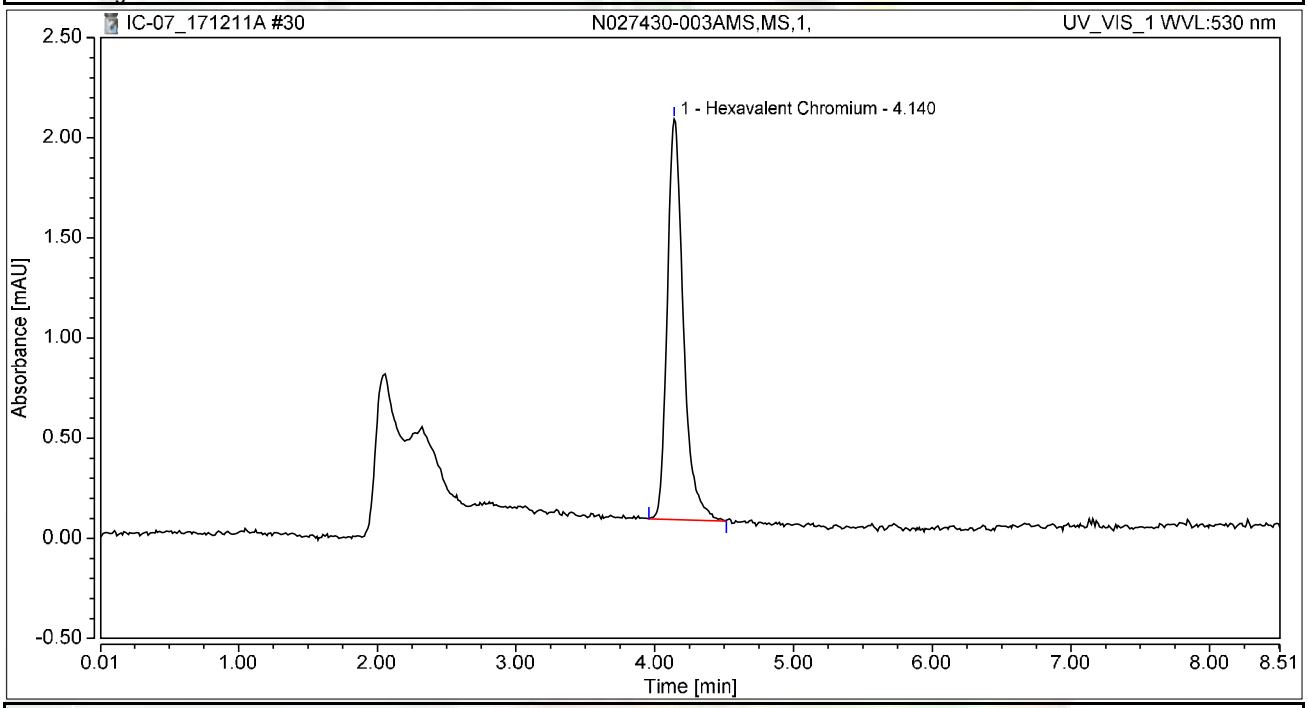
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

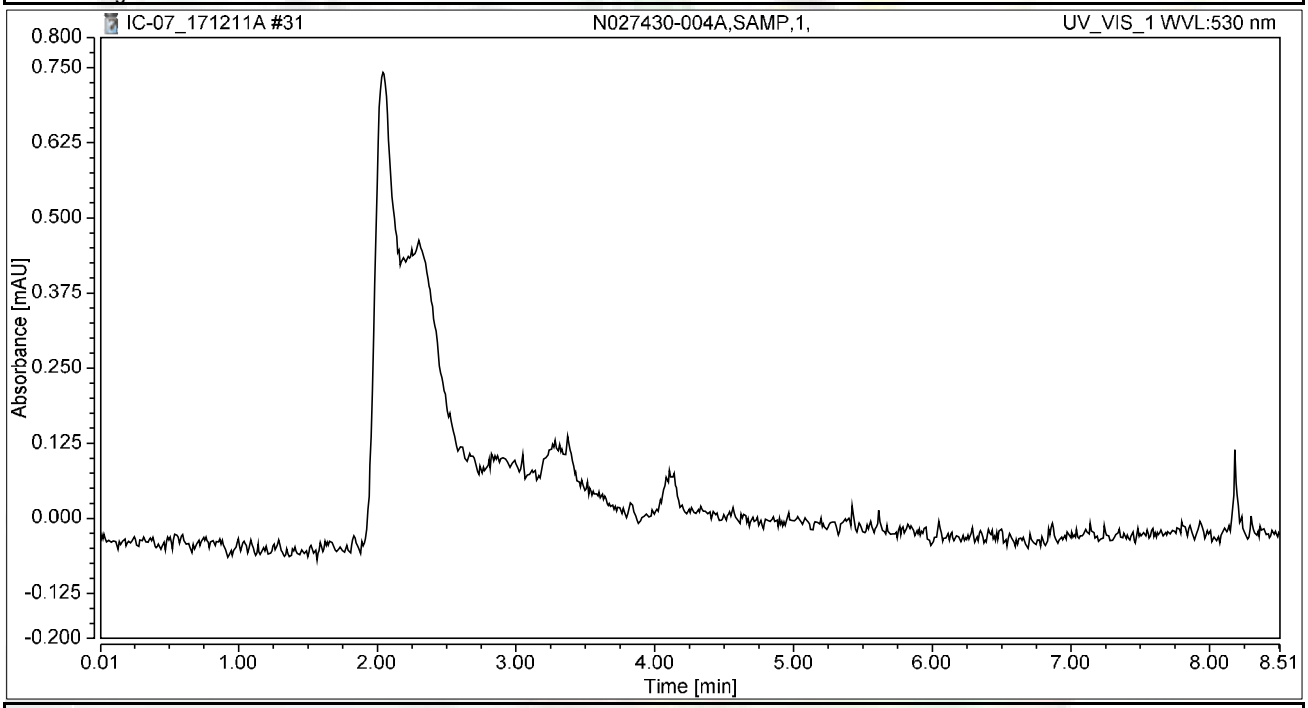
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.270	1.999	100.00	100.00	1.0741
Total:			**0.270**	**1.999**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 12:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

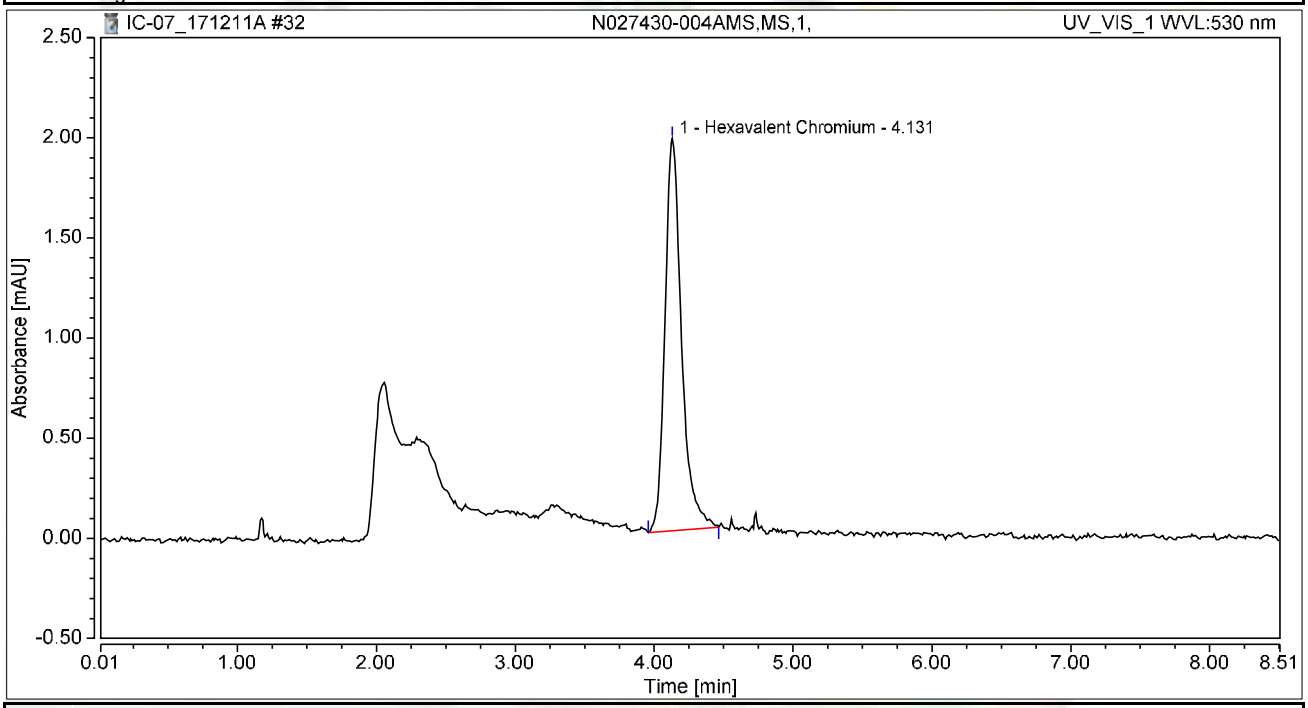
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-004AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 12:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

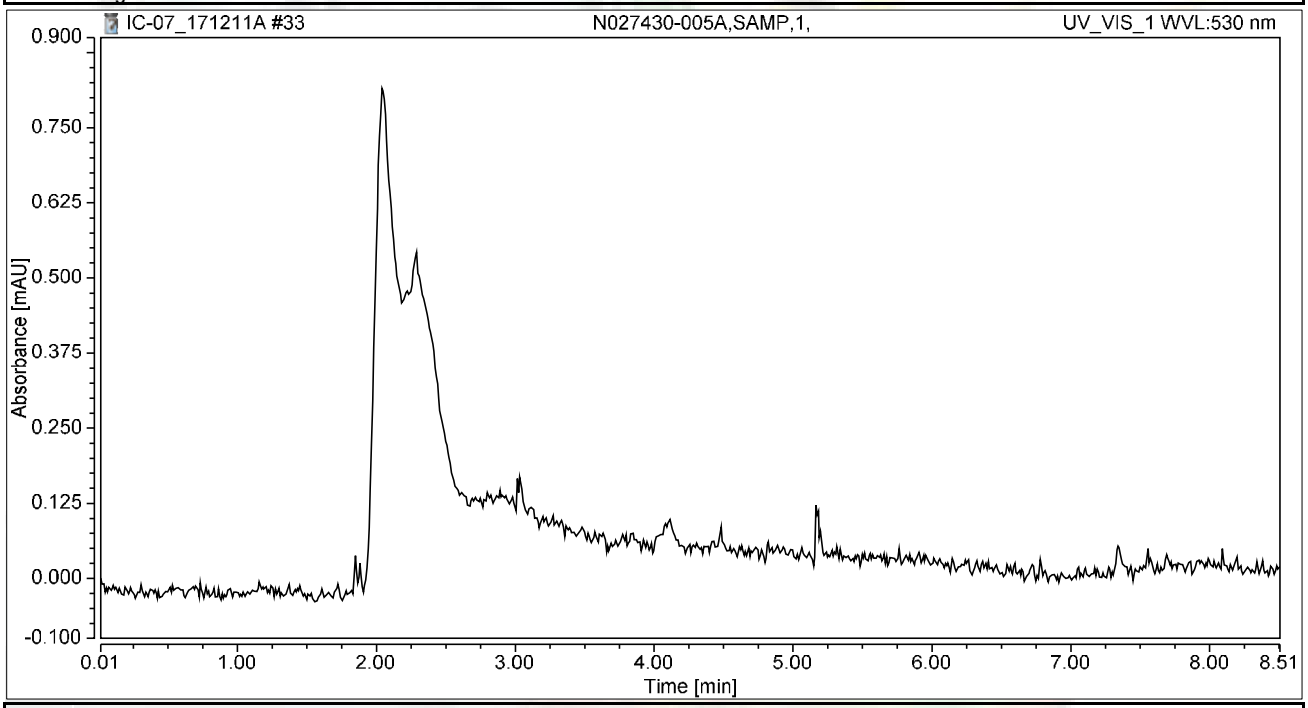
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.270	1.958	100.00	100.00	1.0766
Total:			**0.270**	**1.958**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-005A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 12:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

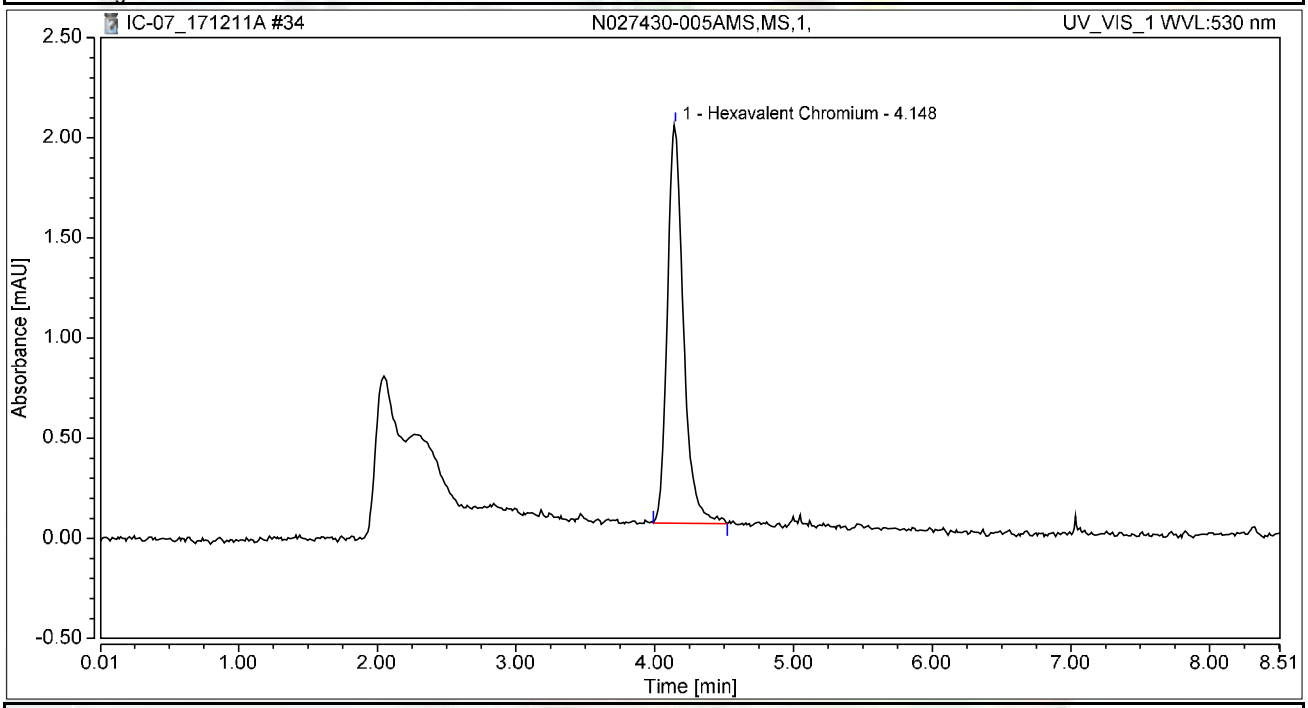
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-005AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 12:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

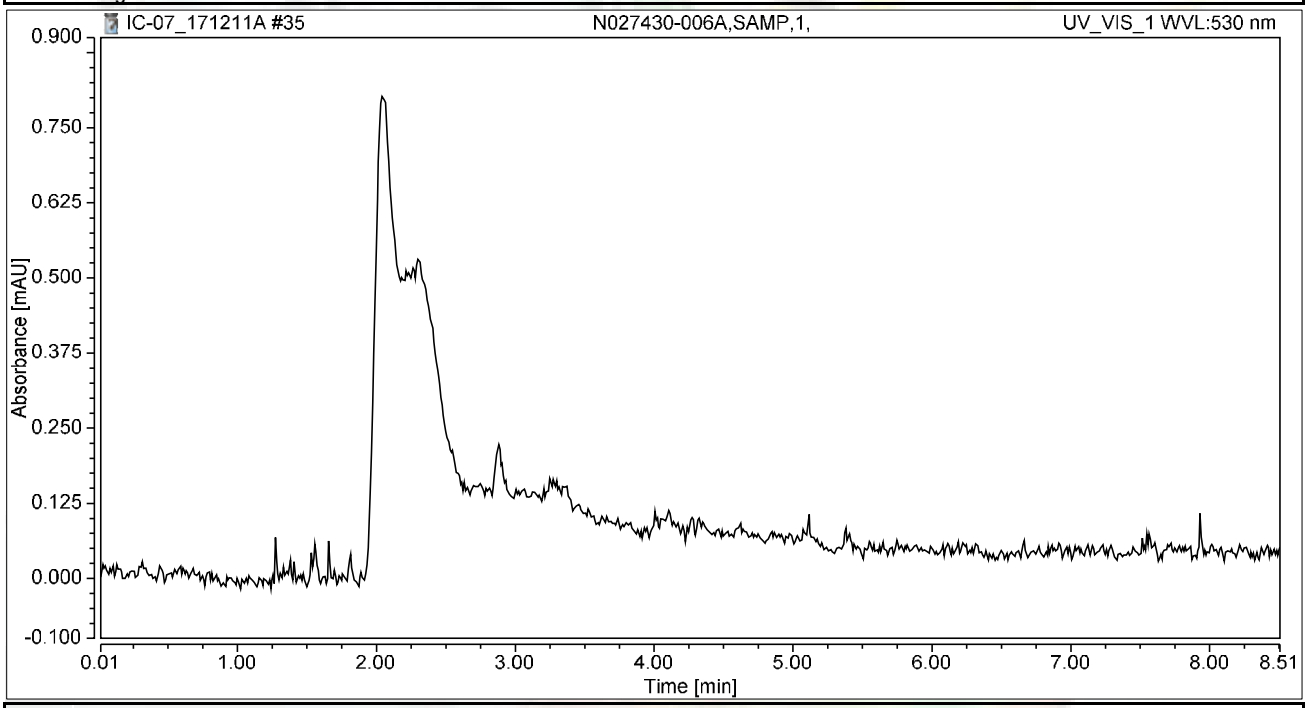
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.269	1.991	100.00	100.00	1.0694
Total:			**0.269**	**1.991**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-006A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

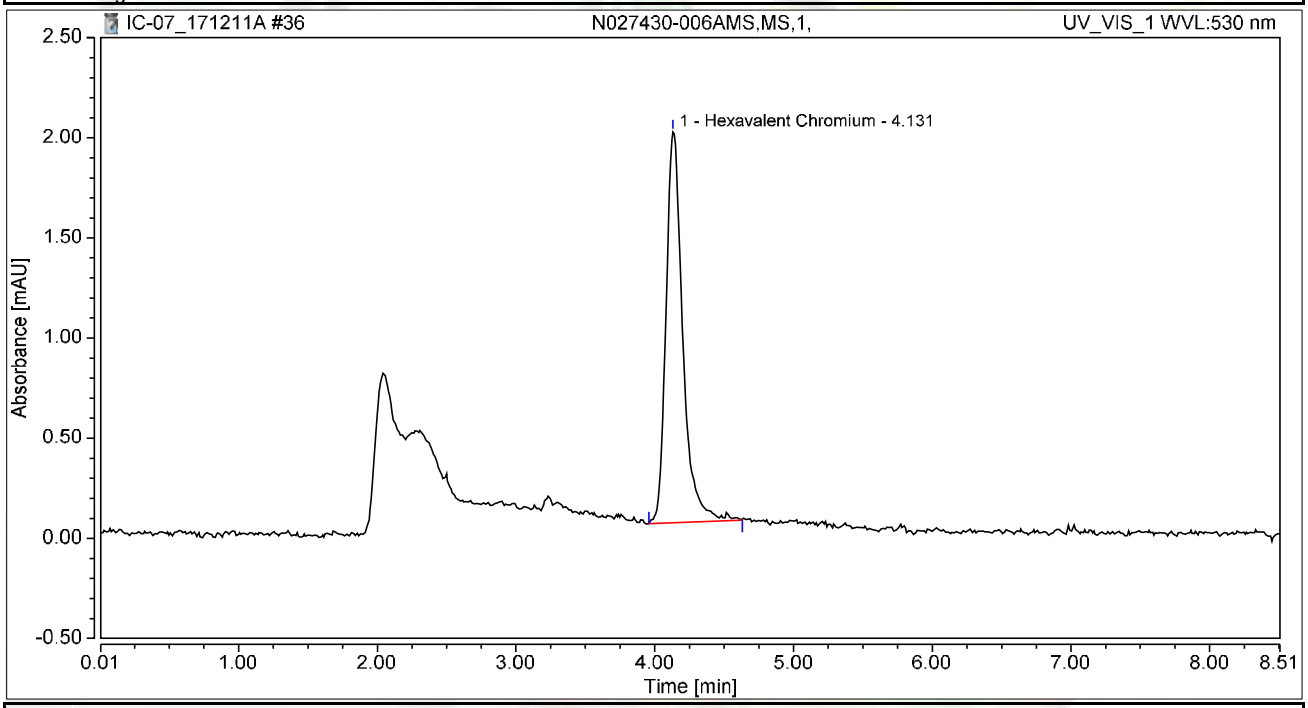
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

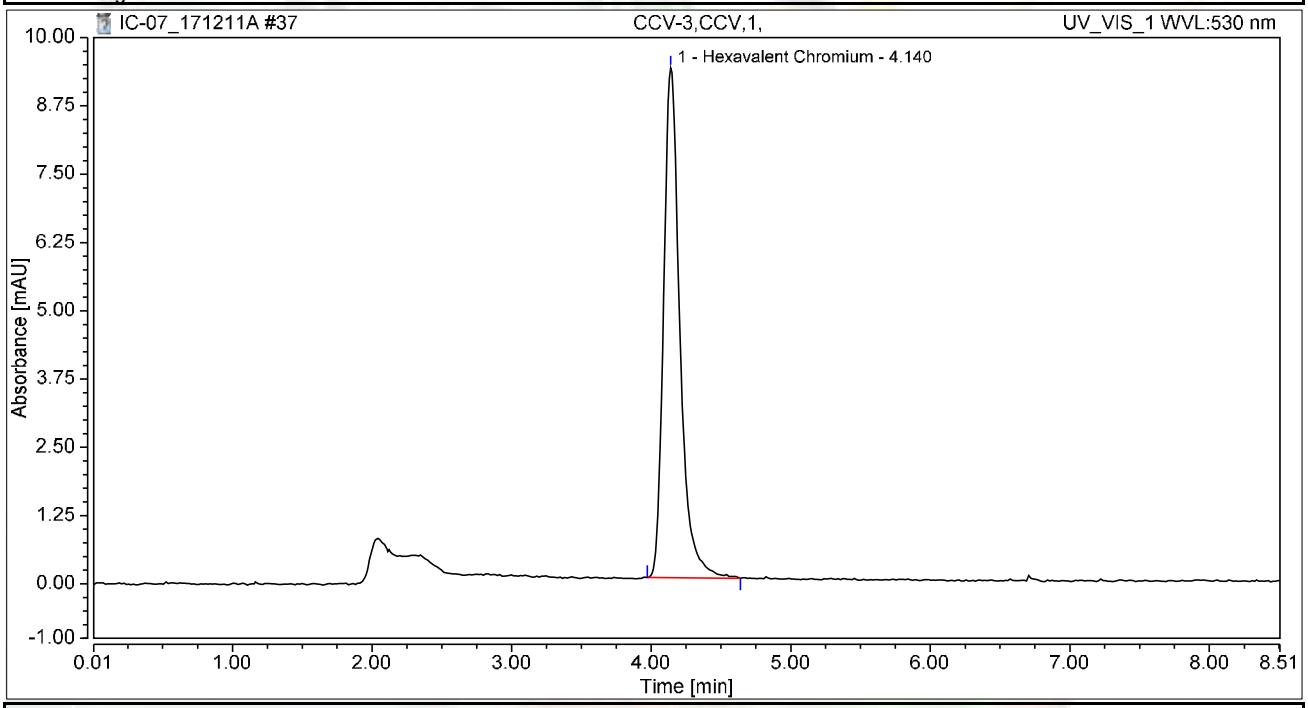
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.275	1.952	100.00	100.00	1.0966
Total:			**0.275**	**1.952**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

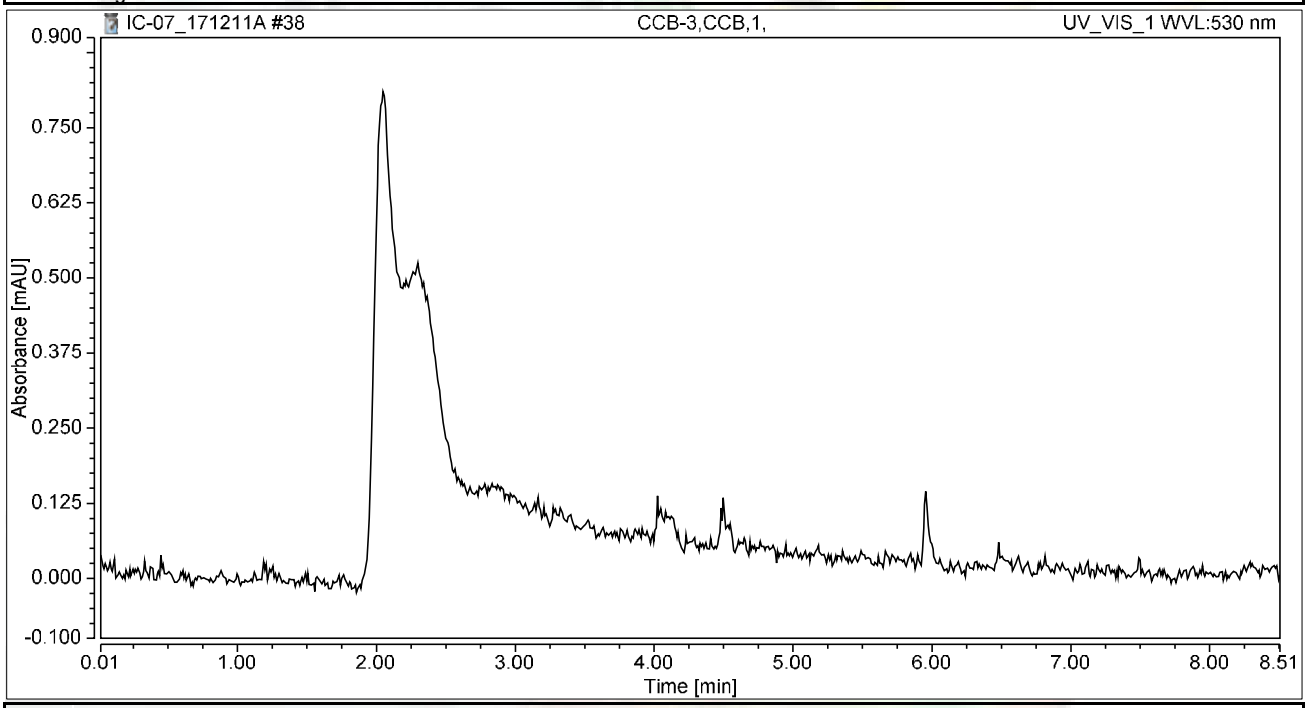
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.263	9.333	100.00	100.00	5.0296
Total:			**1.263**	**9.333**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

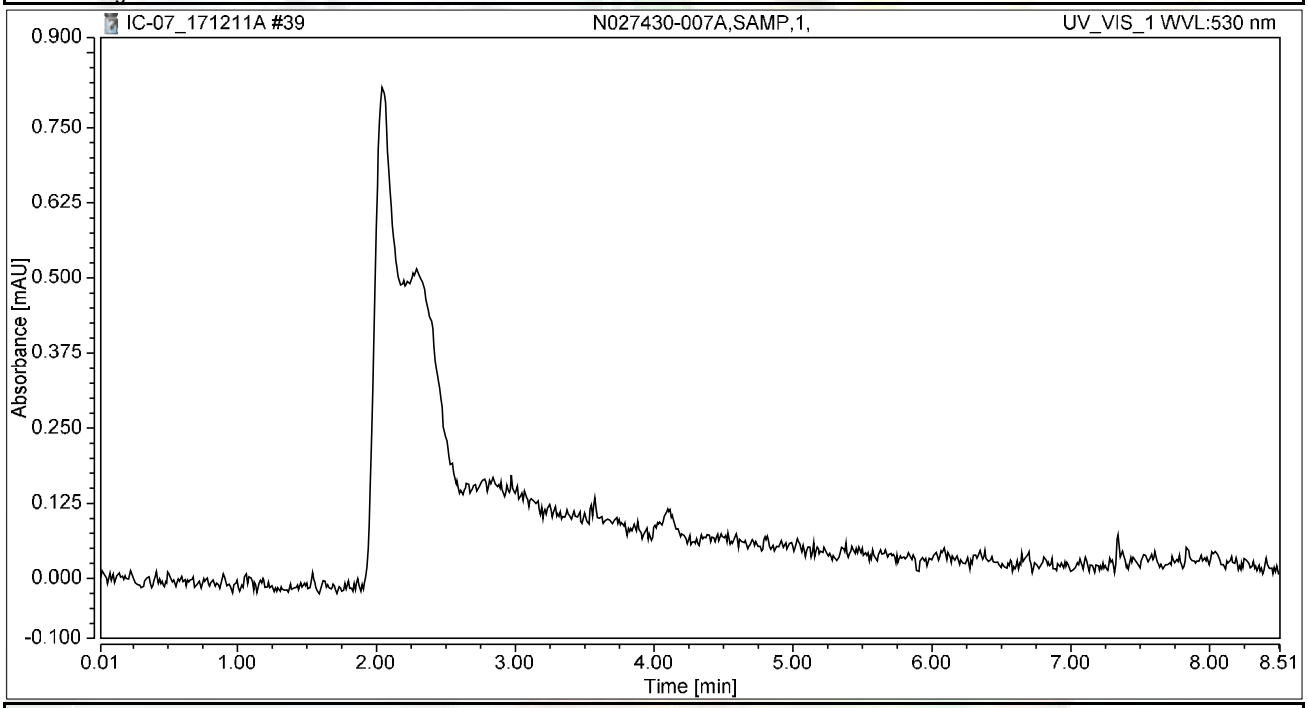
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-007A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

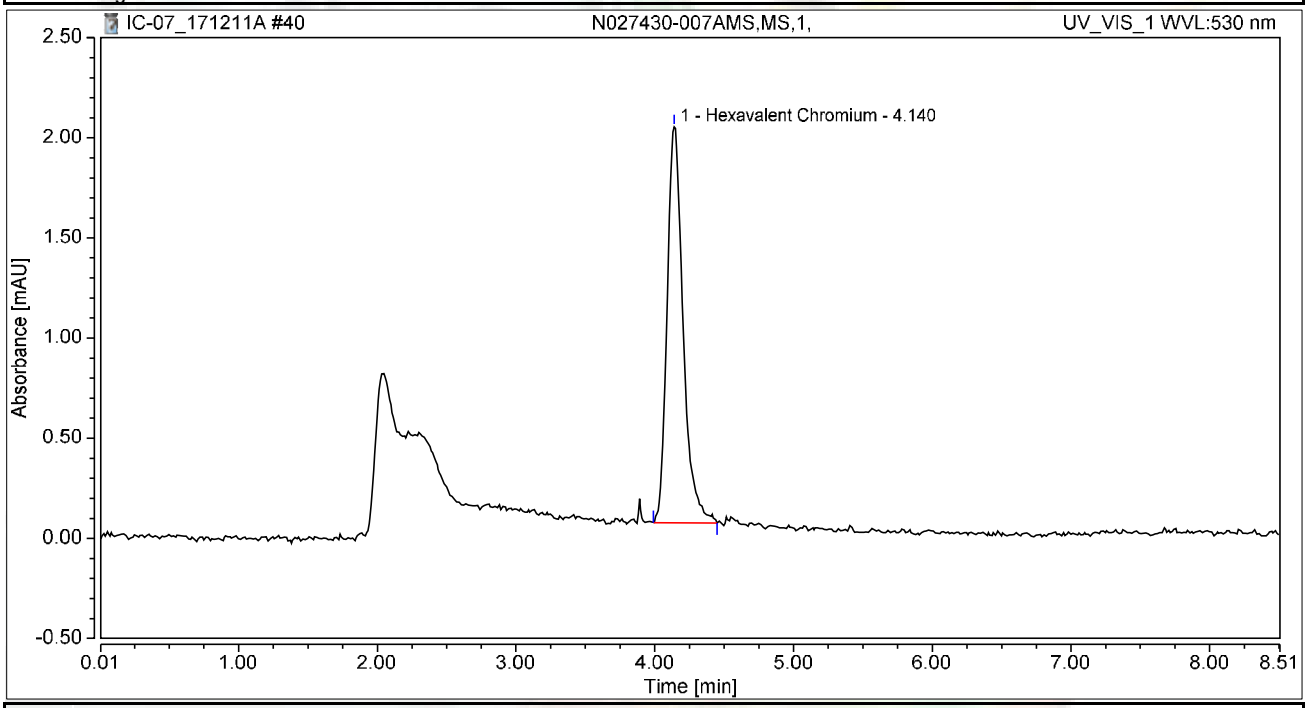
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

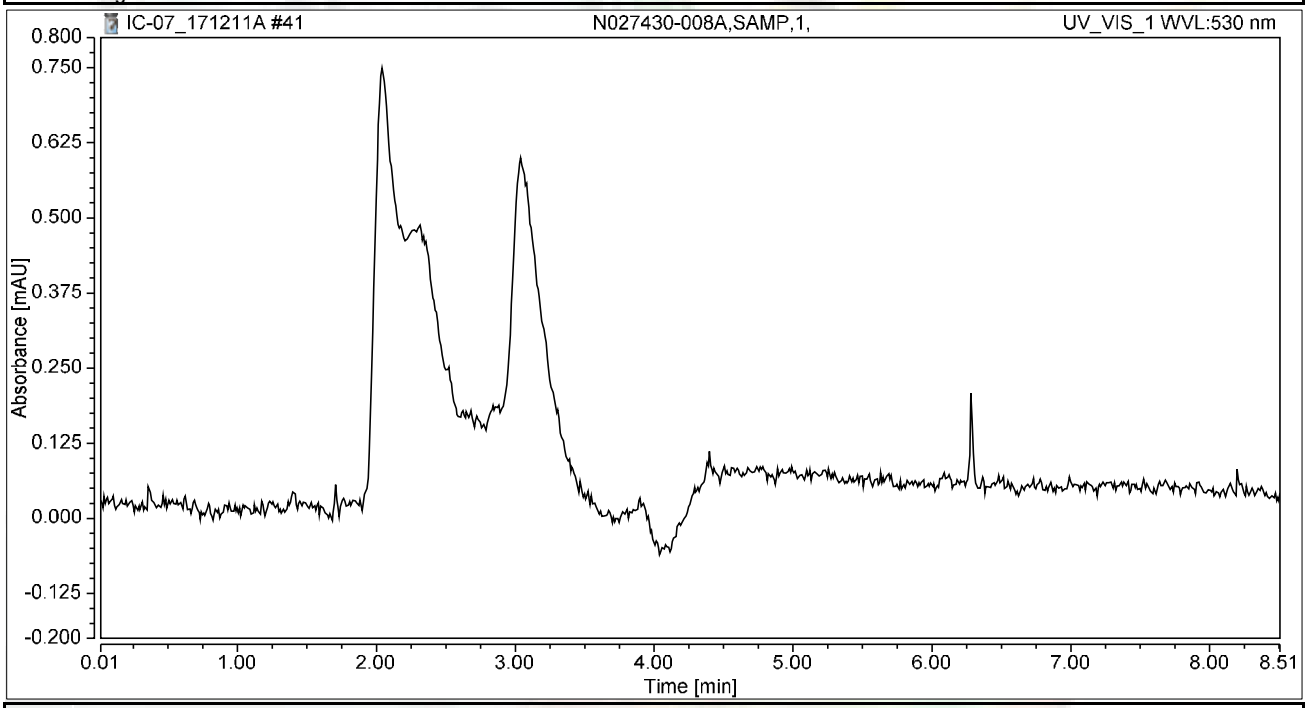
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.265	1.976	100.00	100.00	1.0563
Total:			**0.265**	**1.976**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-008A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 13:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

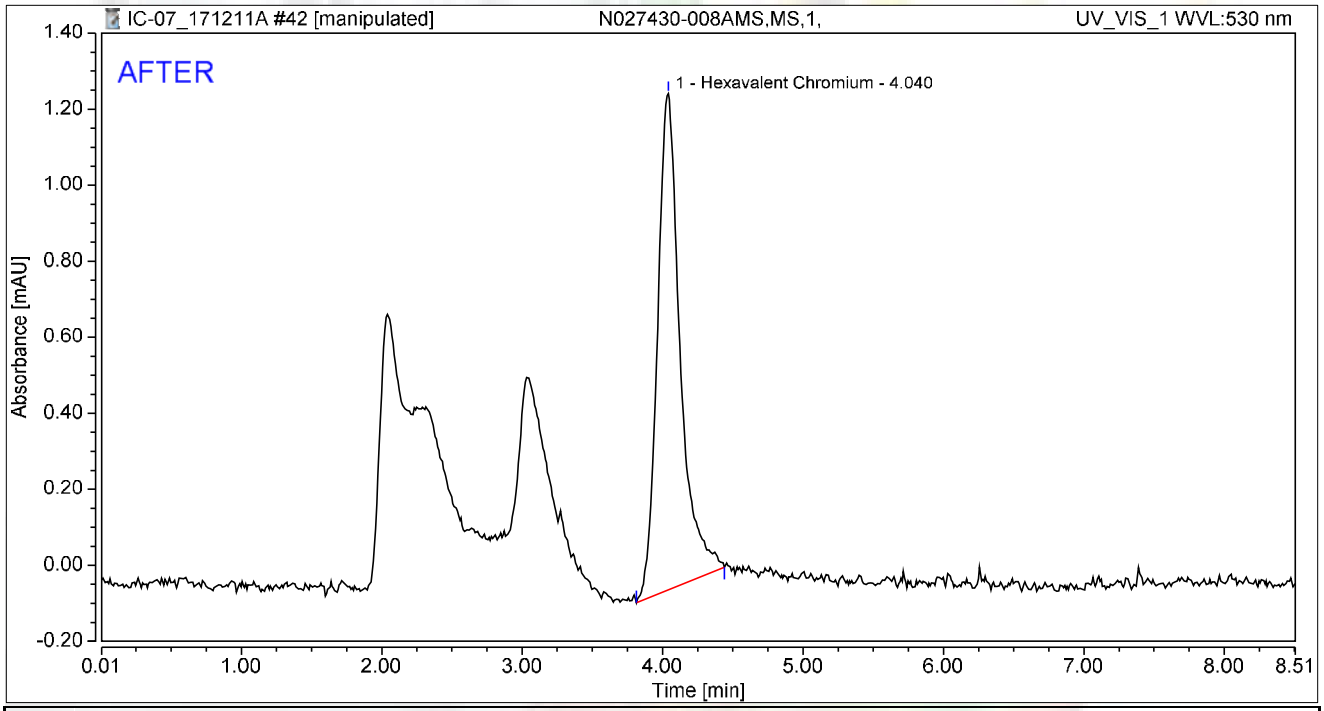
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.040	0.245	1.305	100.00	100.00	0.9757
Total:			**0.245**	**1.305**	**100.00**	**100.00**	

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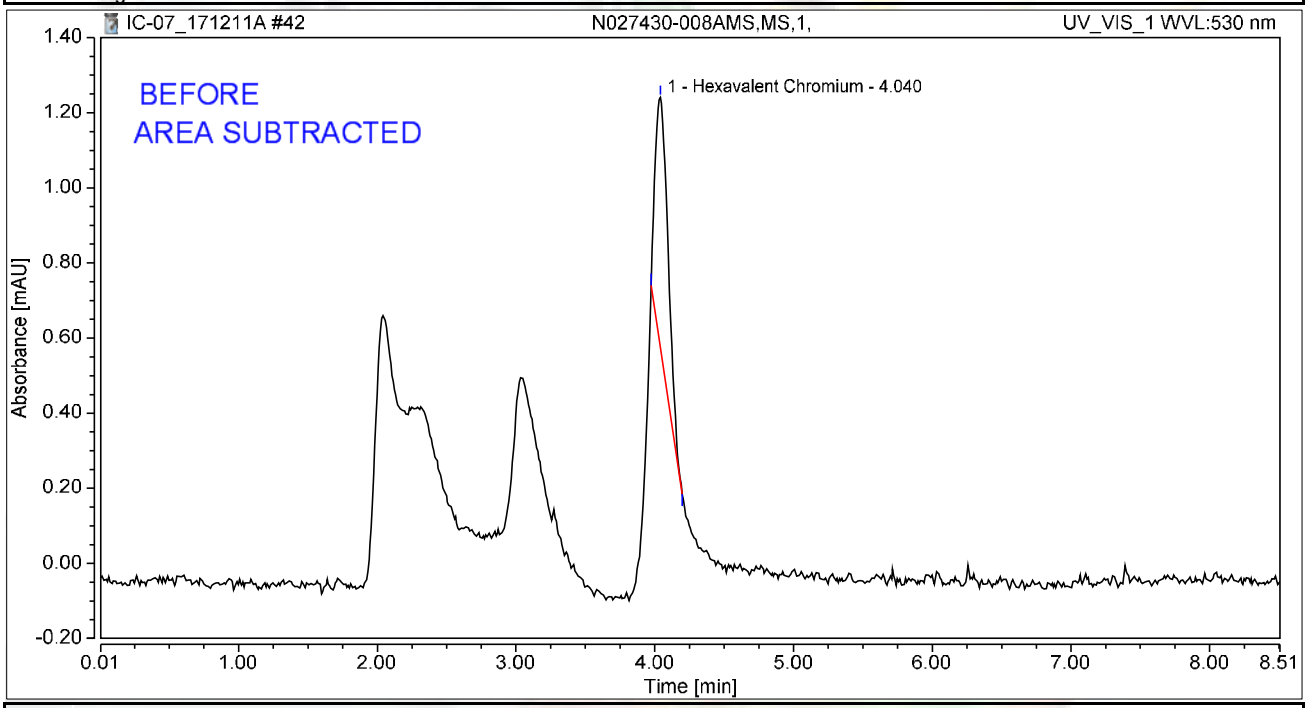
Chromatogram and Results

Injection Details

Injection Name:	**N027430-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.040	0.072	0.665	100.00	100.00	0.2850
Total:			**0.072**	**0.665**	**100.00**	**100.00**	

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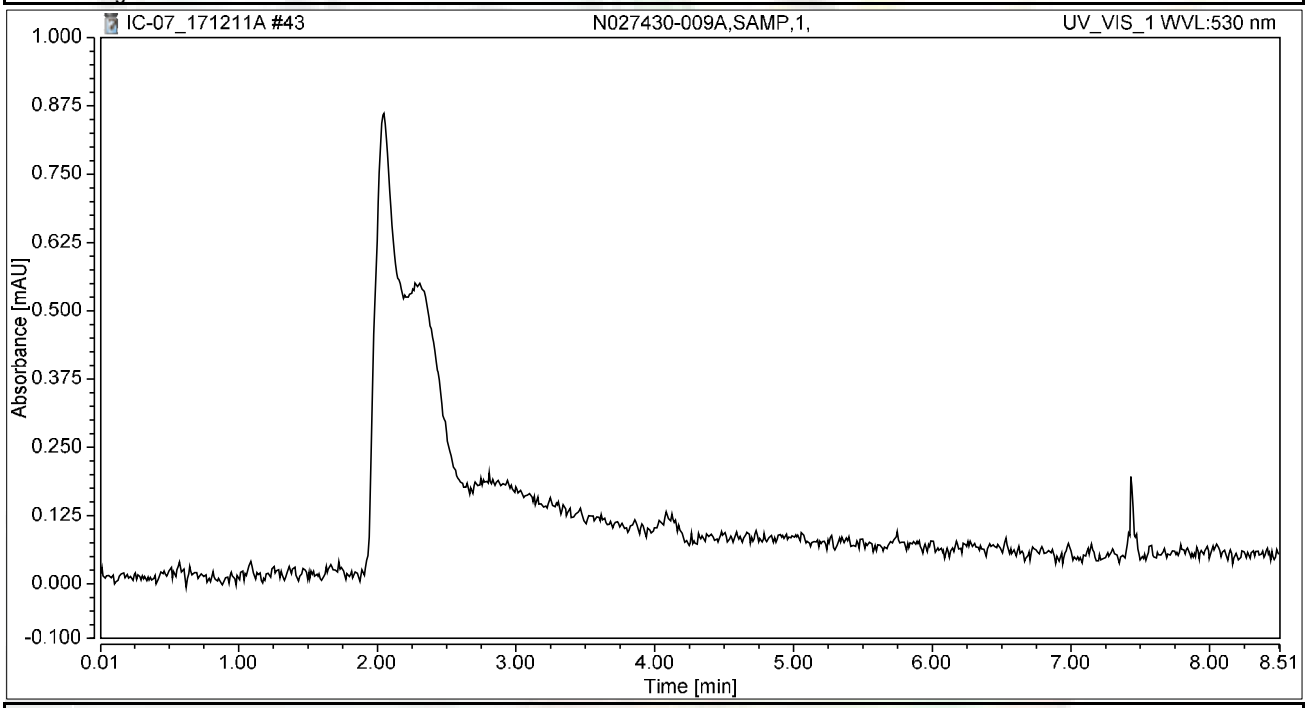
Chromatogram and Results

Injection Details

Injection Name:	**N027430-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

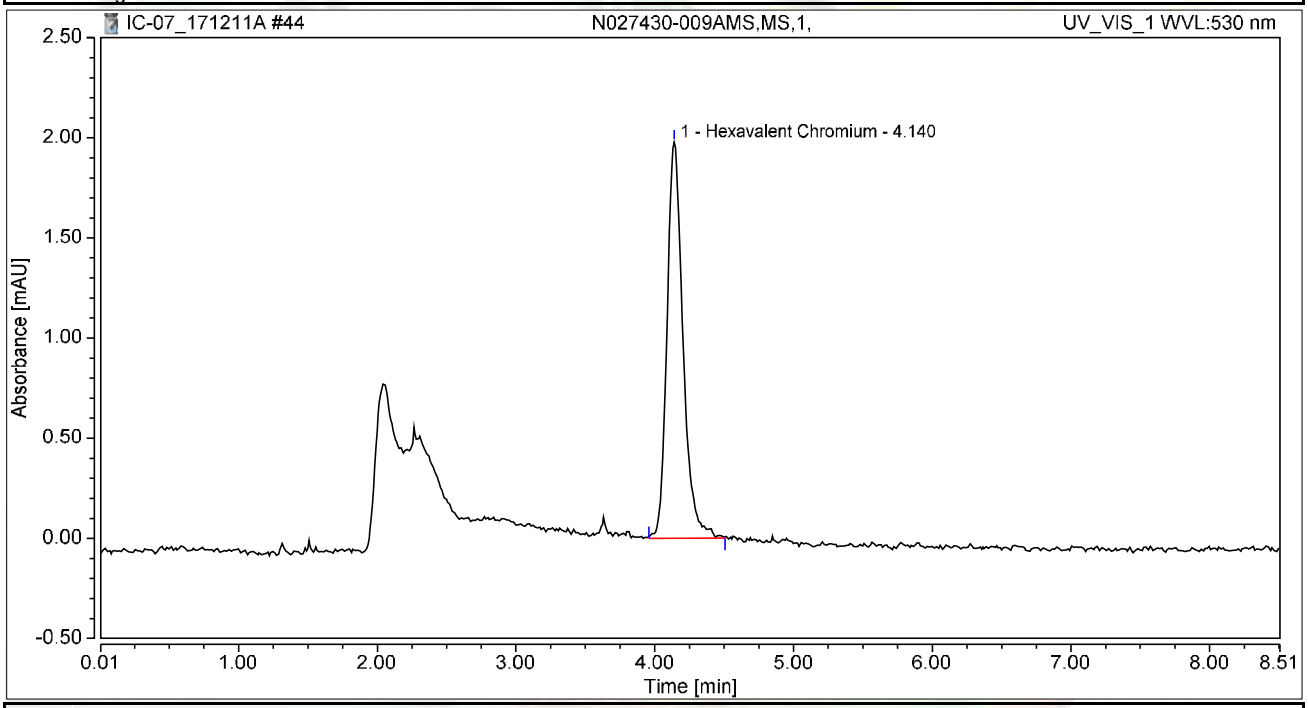
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

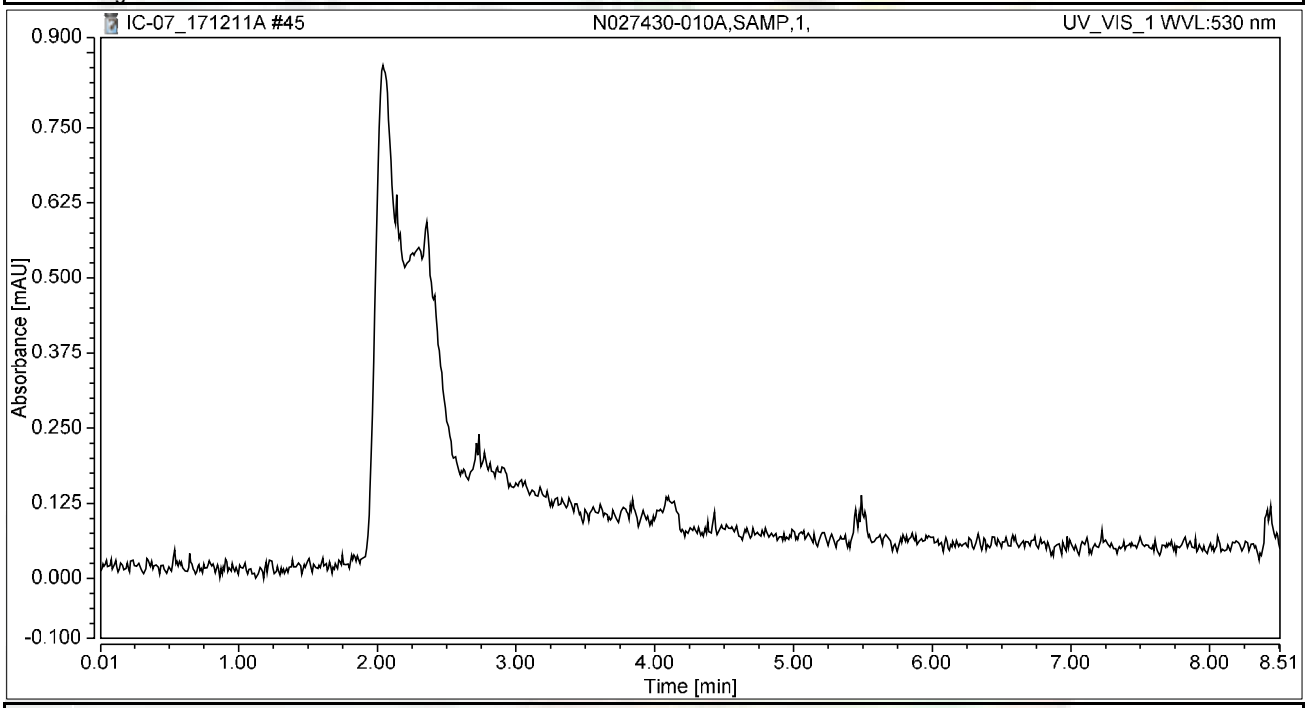
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.265	1.978	100.00	100.00	1.0572
Total:			**0.265**	**1.978**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

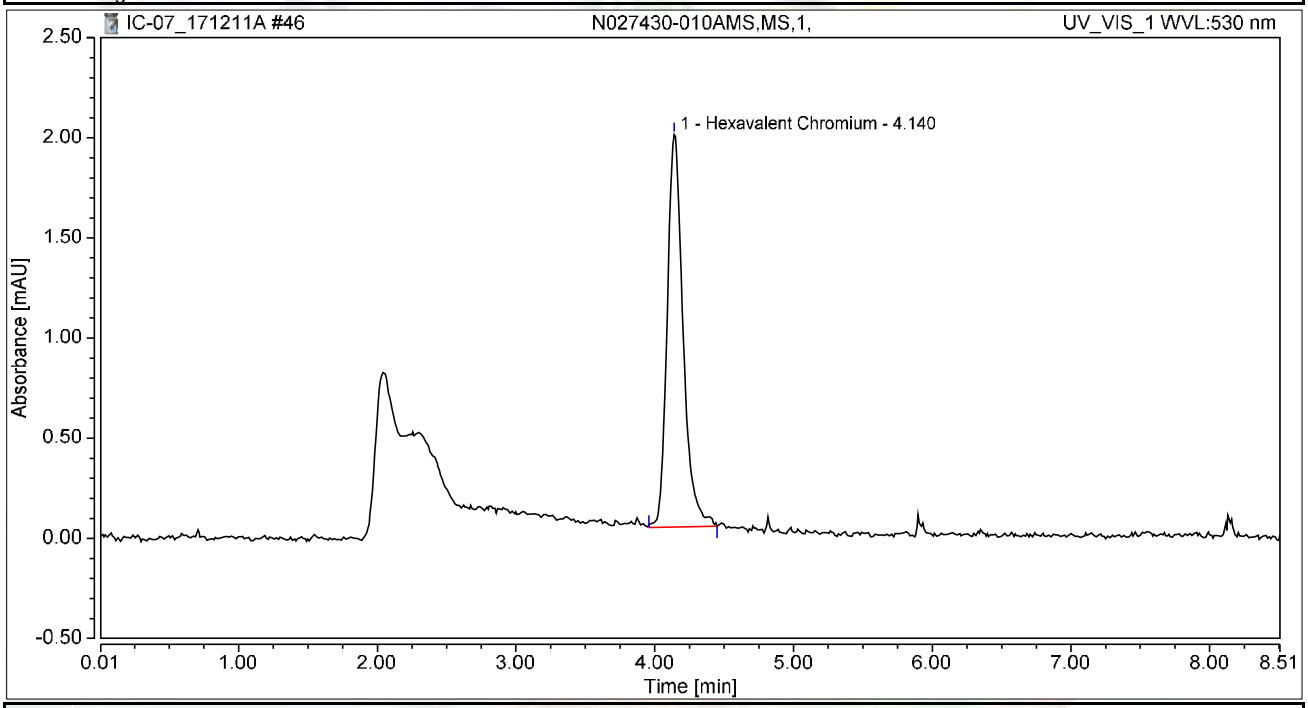
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-010AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

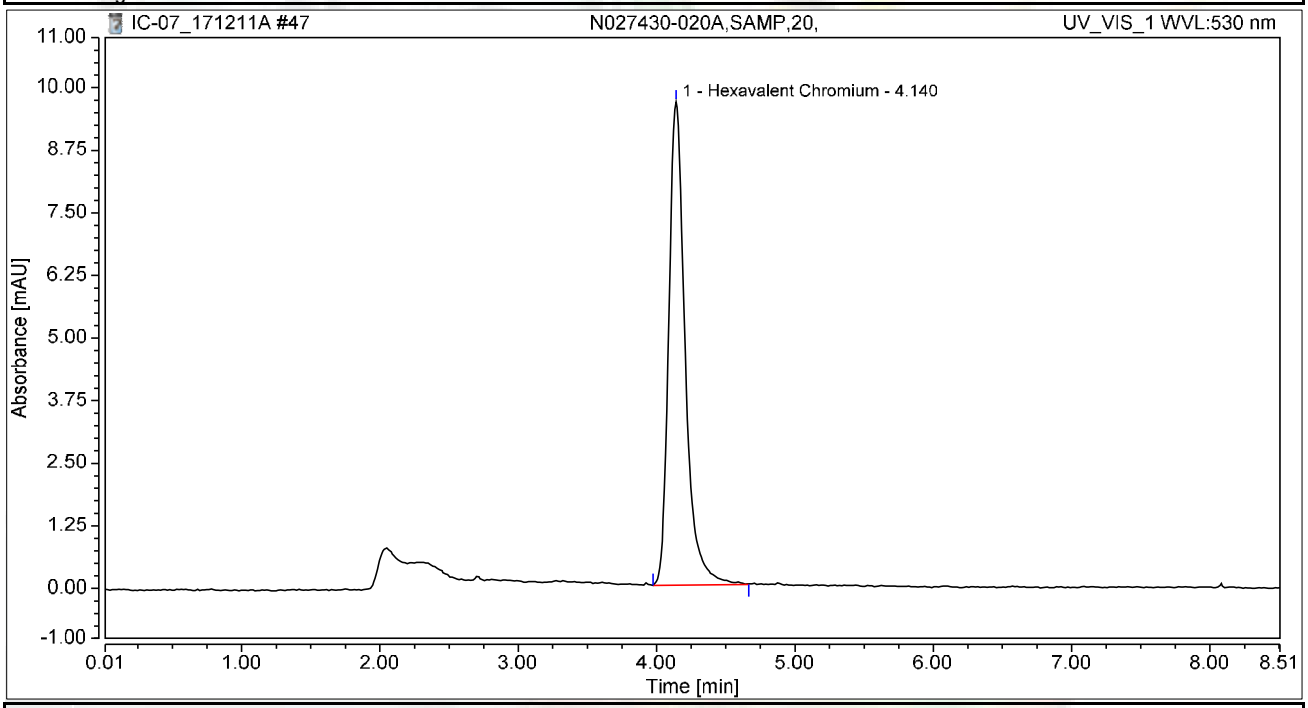
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.261	1.959	100.00	100.00	1.0401
Total:			**0.261**	**1.959**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-020A,SAMP,20,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 14:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

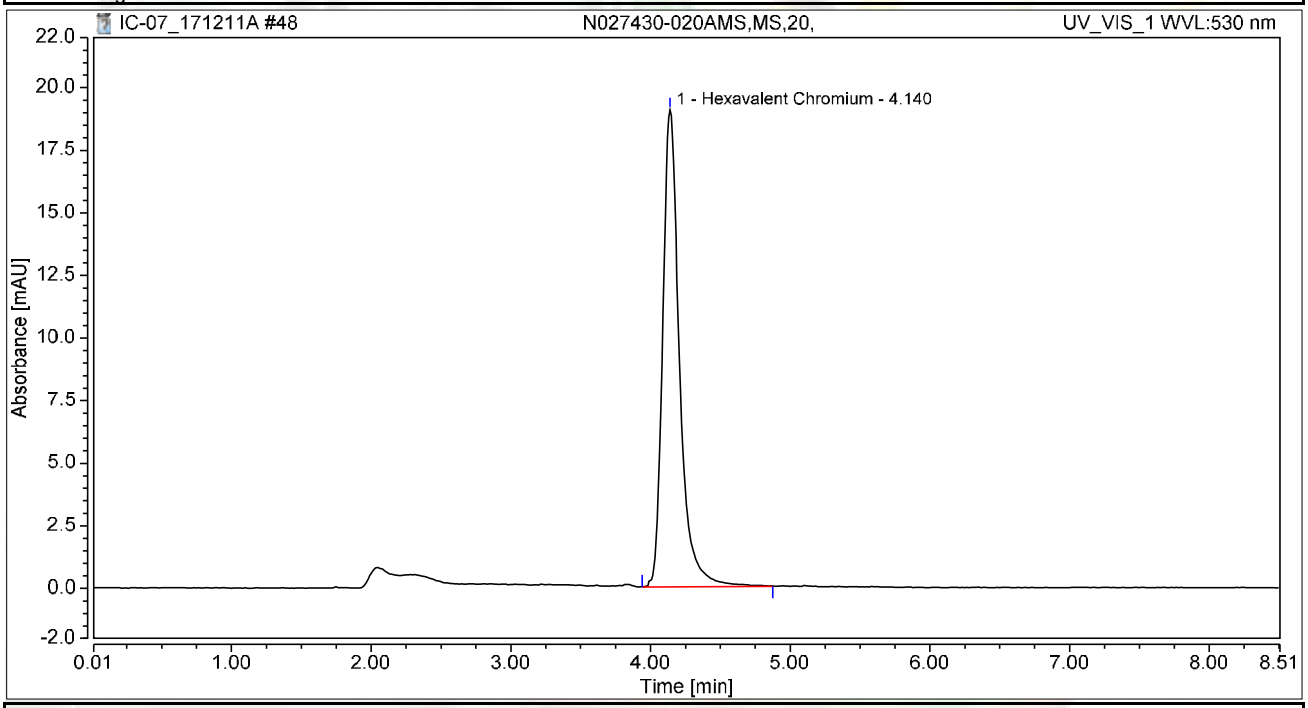
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.328	9.652	100.00	100.00	5.2893
Total:			**1.328**	**9.652**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-020AMS,MS,20,**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

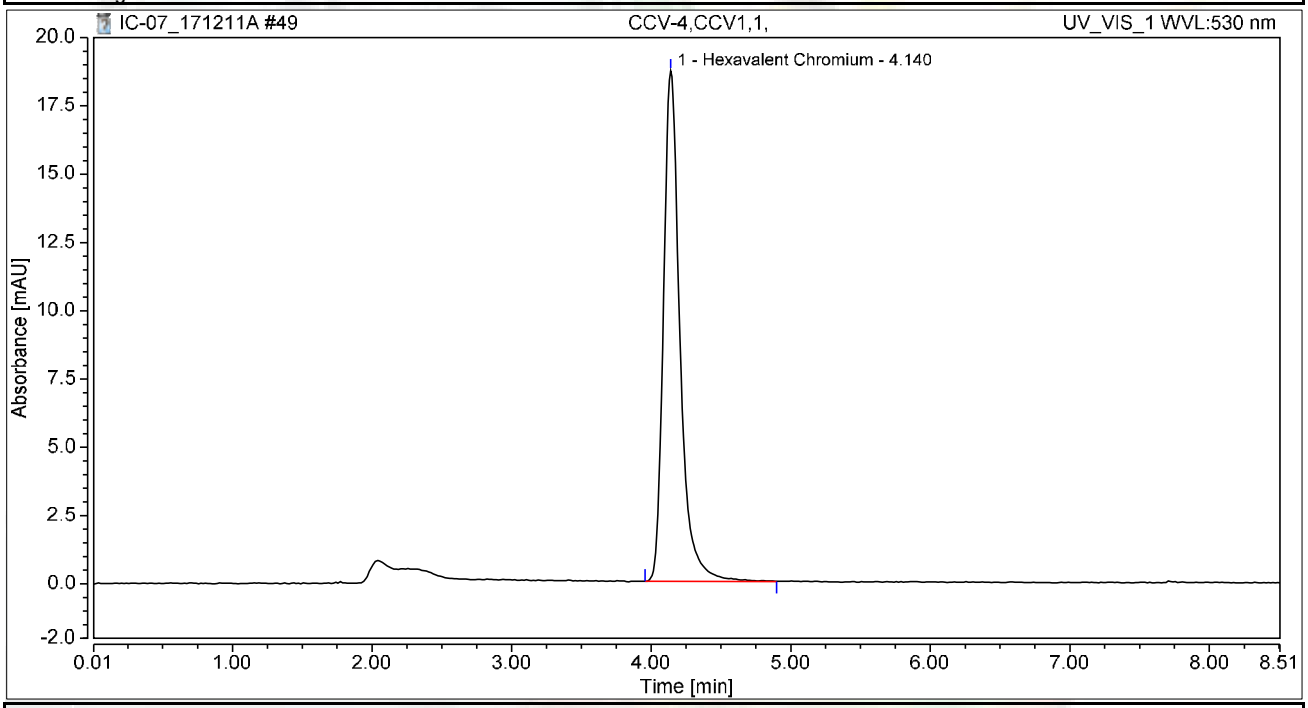
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.650	19.050	100.00	100.00	10.5546
Total:			**2.650**	**19.050**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

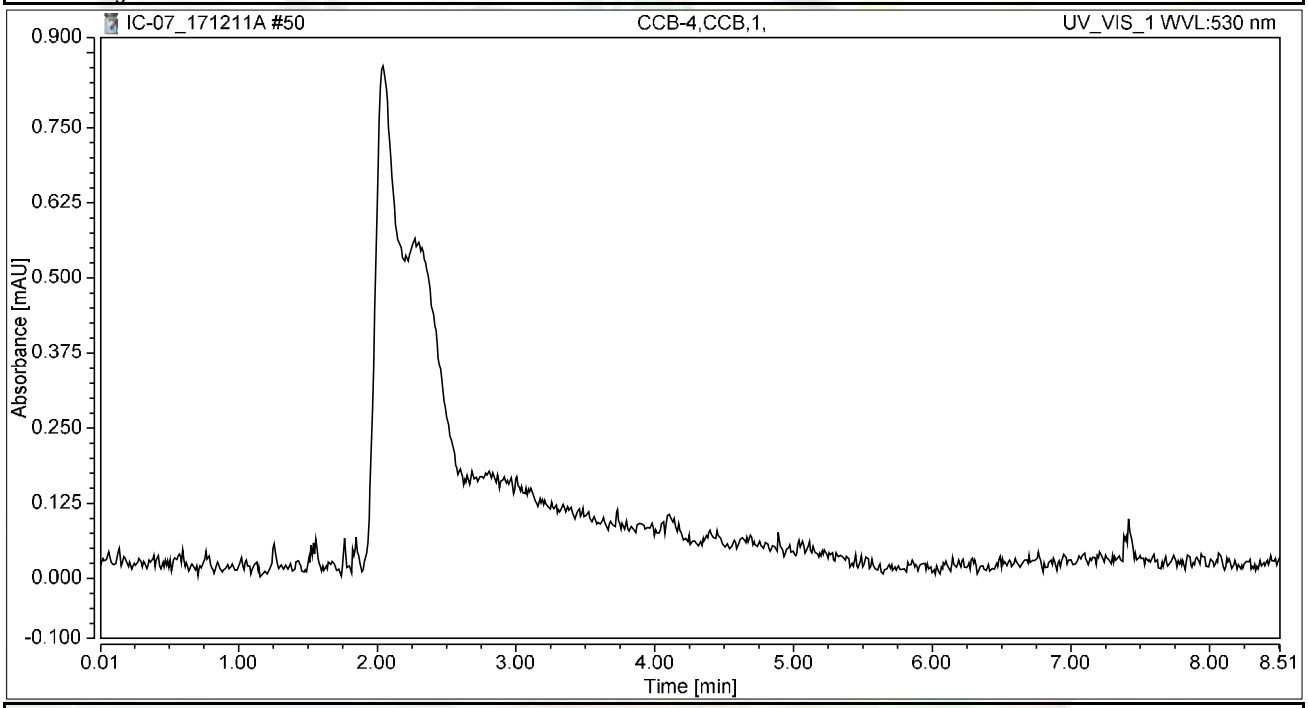
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.559	18.685	100.00	100.00	10.1931
Total:			**2.559**	**18.685**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

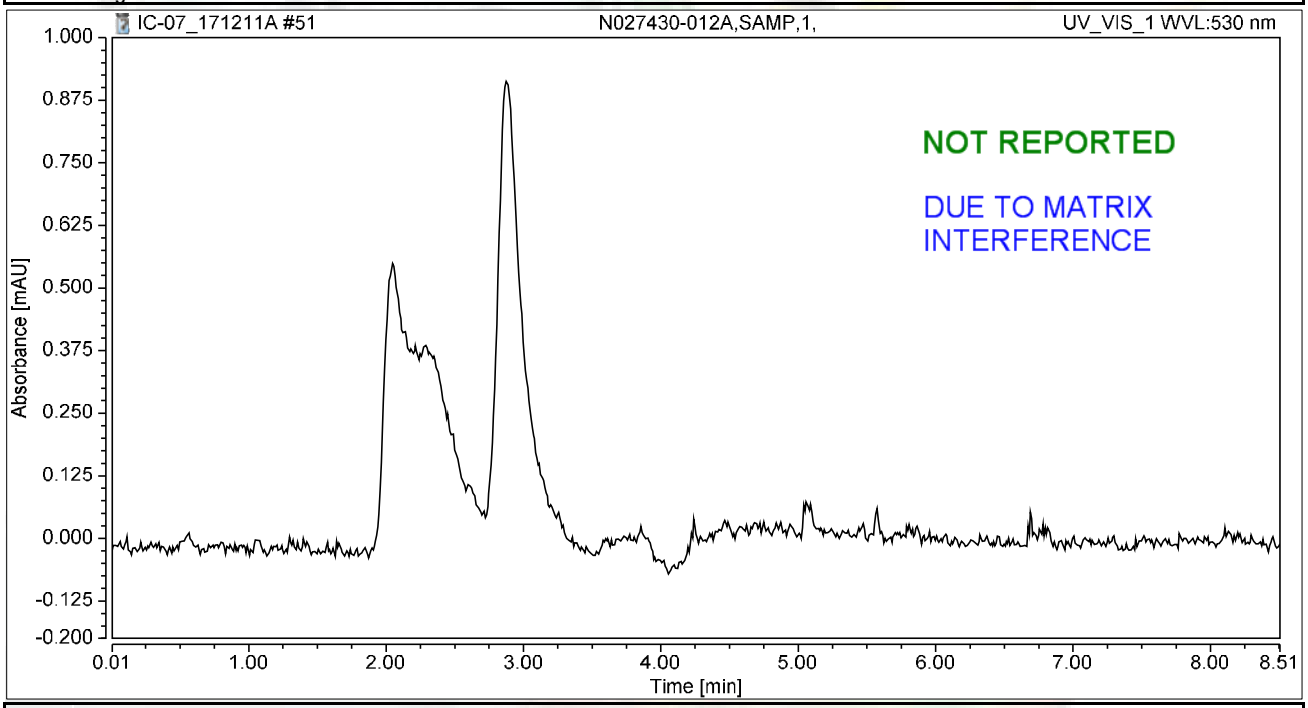
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-012A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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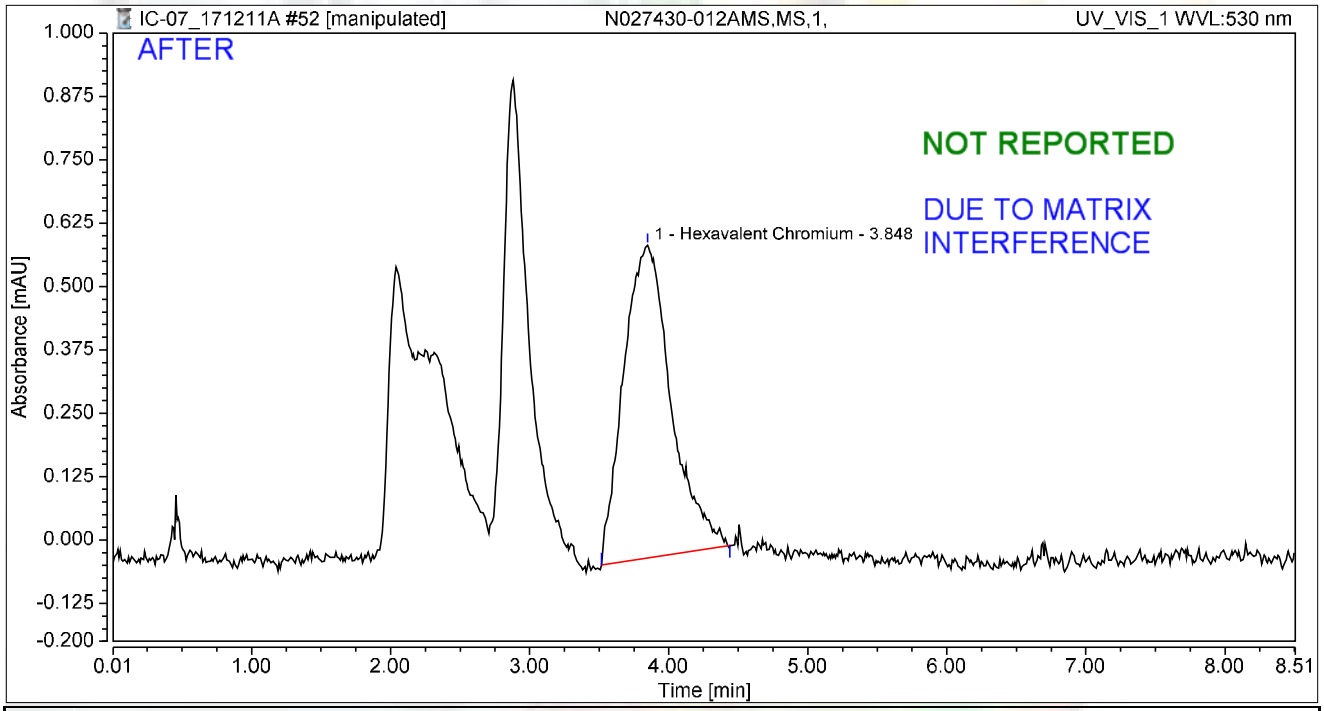
Chromatogram and Results

Injection Details

Injection Name:	**N027430-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.848	0.243	0.616	100.00	100.00	0.9692
Total:			**0.243**	**0.616**	**100.00**	**100.00**	

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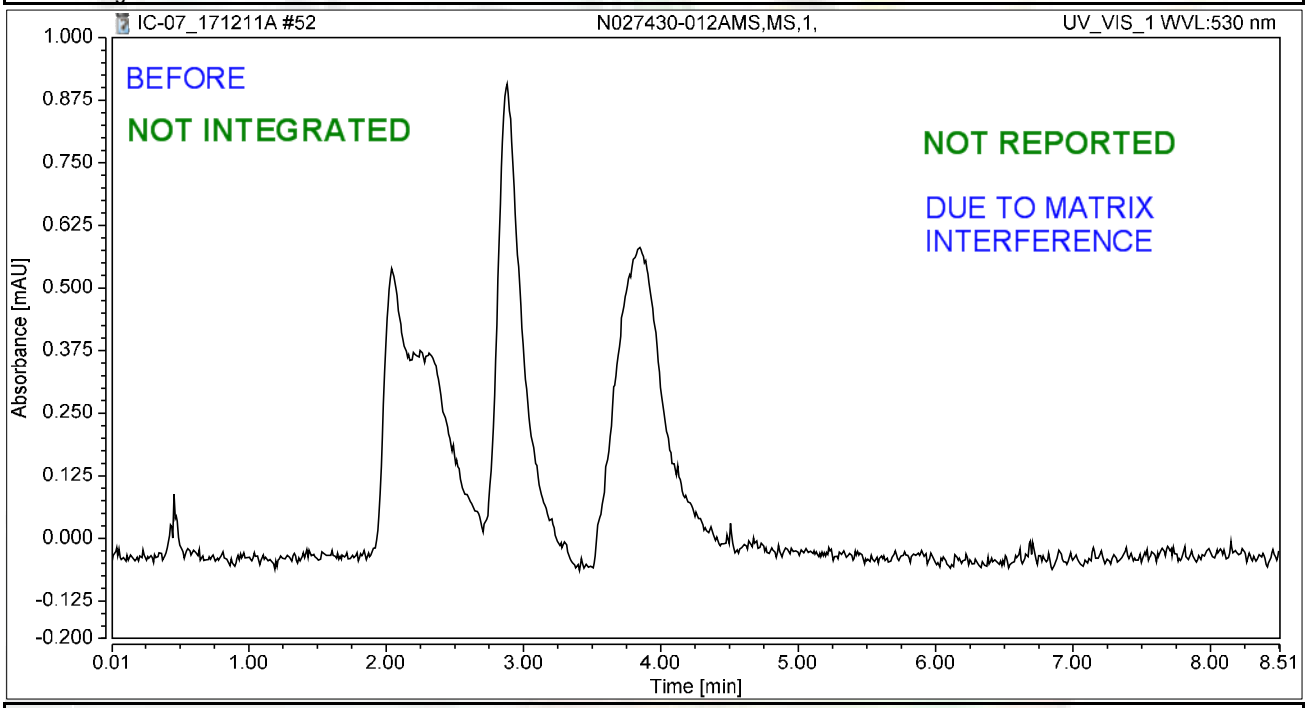
Chromatogram and Results

Injection Details

Injection Name:	**N027430-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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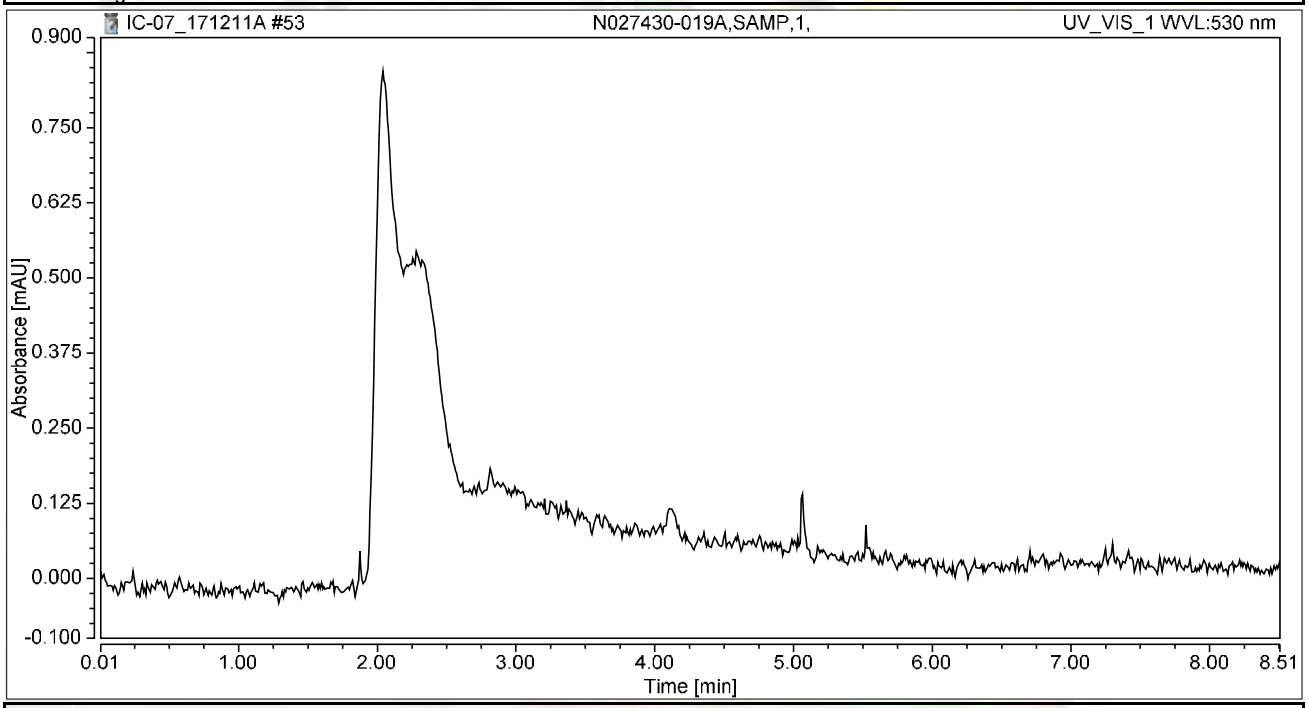
Chromatogram and Results

Injection Details

Injection Name:	**N027430-019A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 15:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

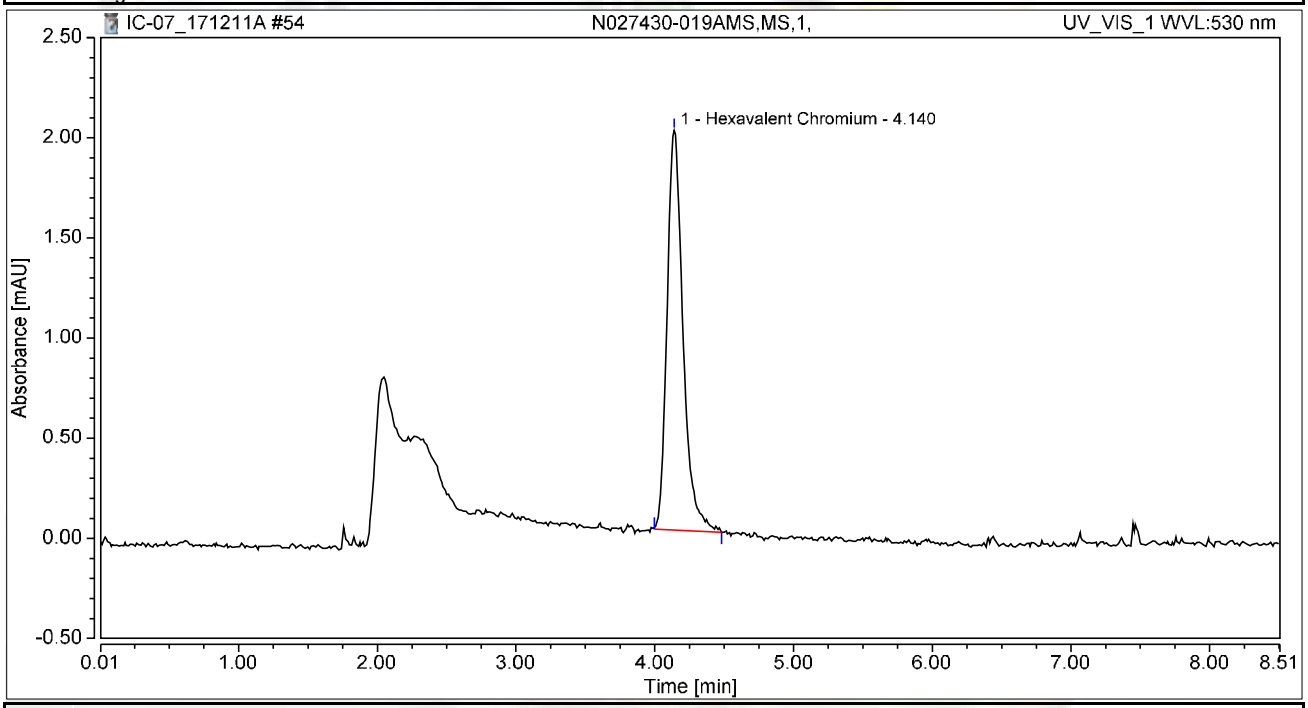
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-019AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

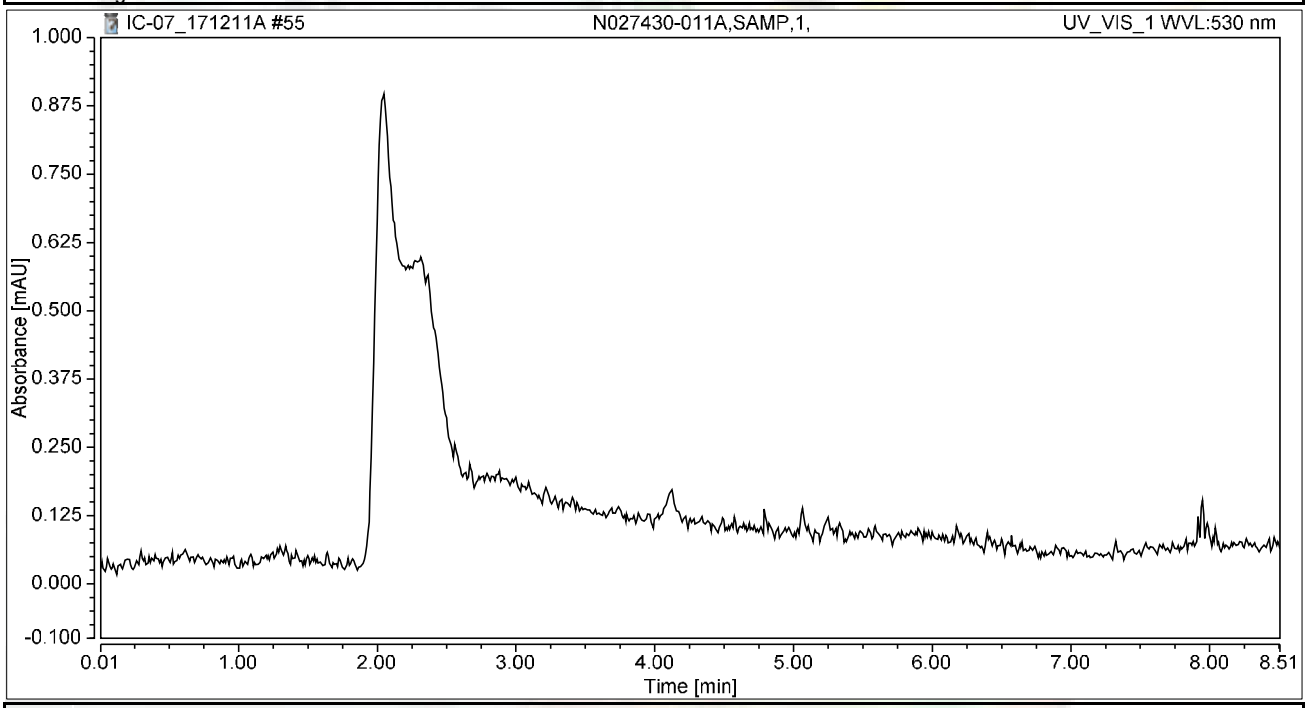
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.266	1.995	100.00	100.00	1.0592
Total:			**0.266**	**1.995**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

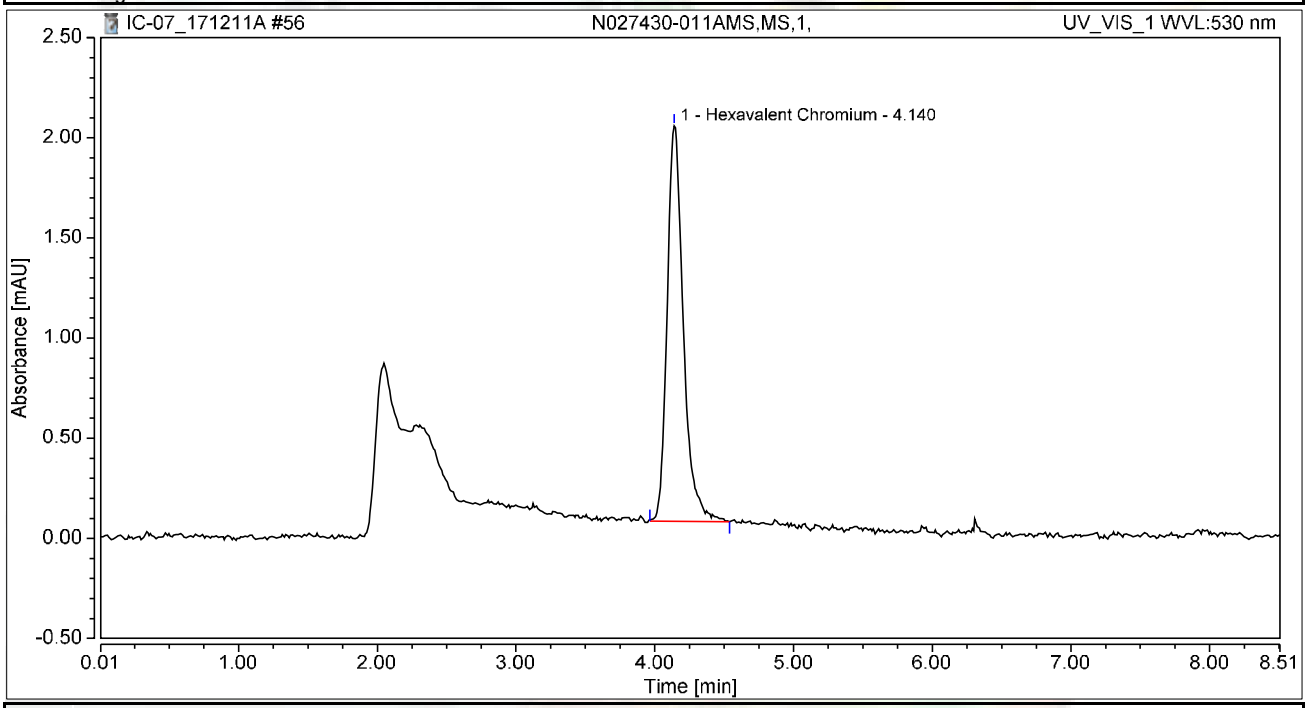
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

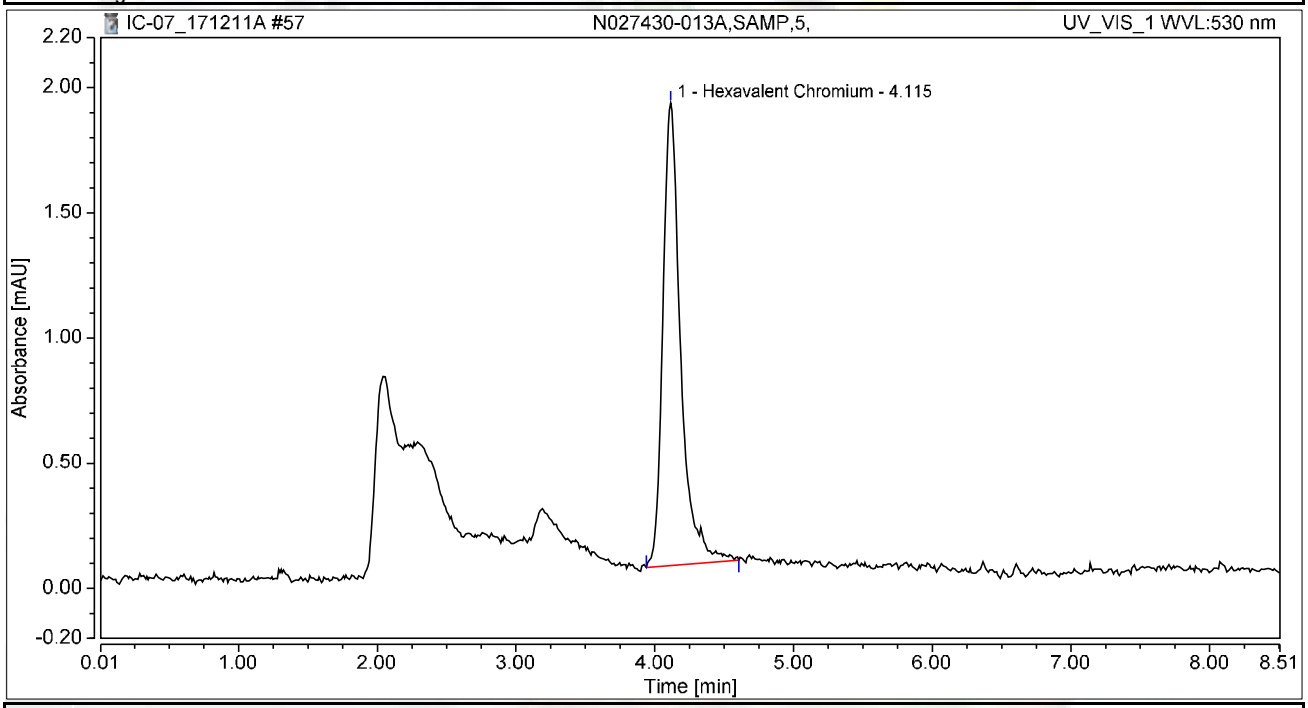
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.268	1.975	100.00	100.00	1.0679
Total:			**0.268**	**1.975**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-013A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

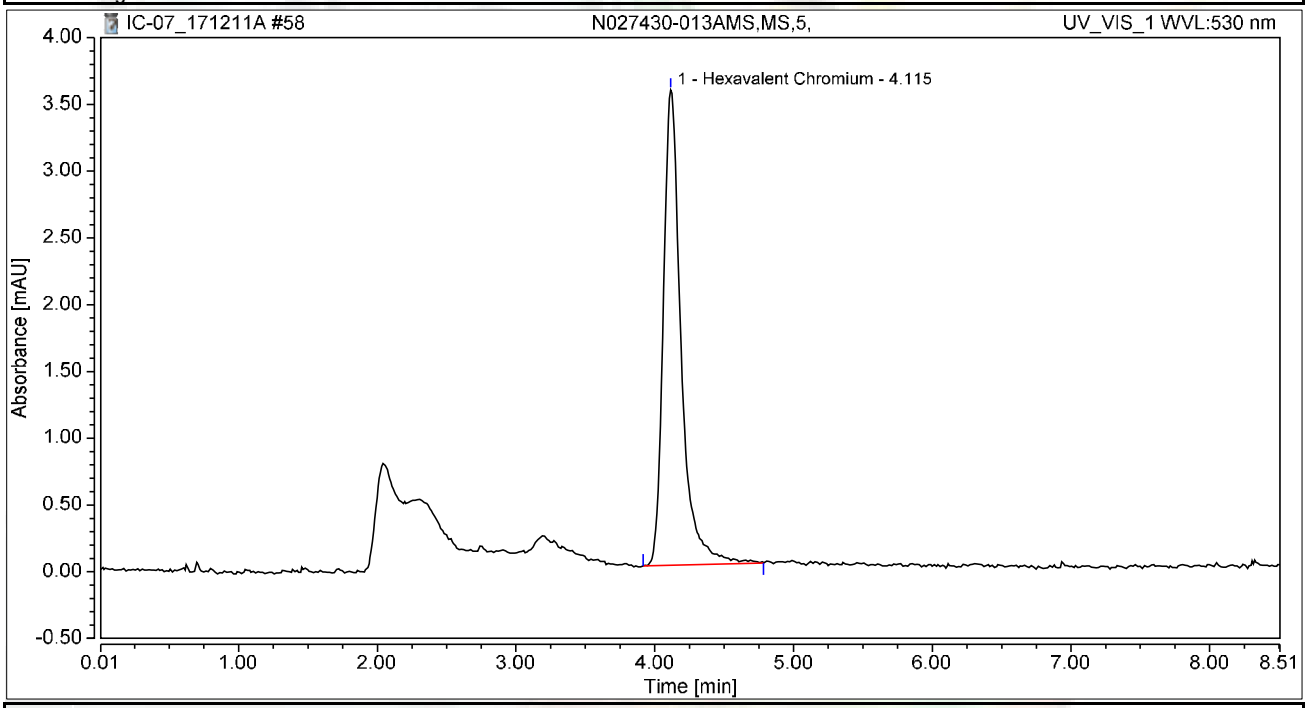
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.276	1.848	100.00	100.00	1.0980
Total:			**0.276**	**1.848**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-013AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

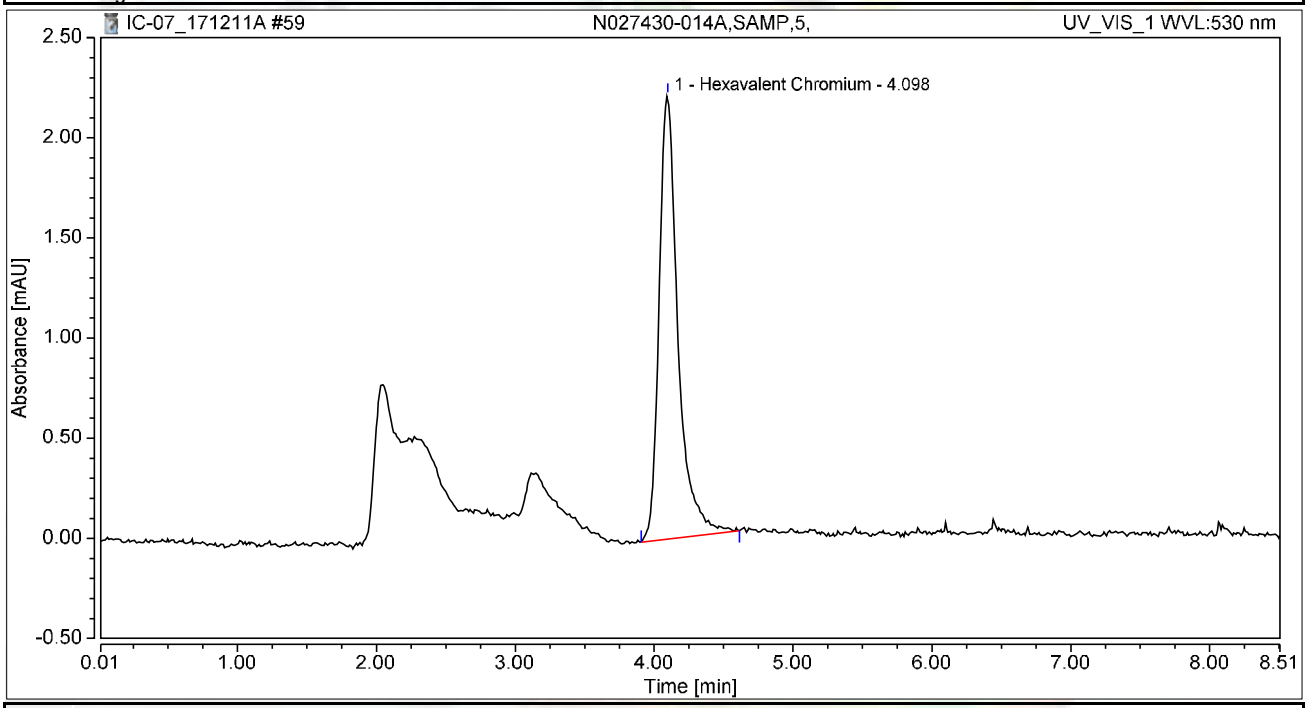
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.530	3.560	100.00	100.00	2.1108
Total:			**0.530**	**3.560**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-014A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

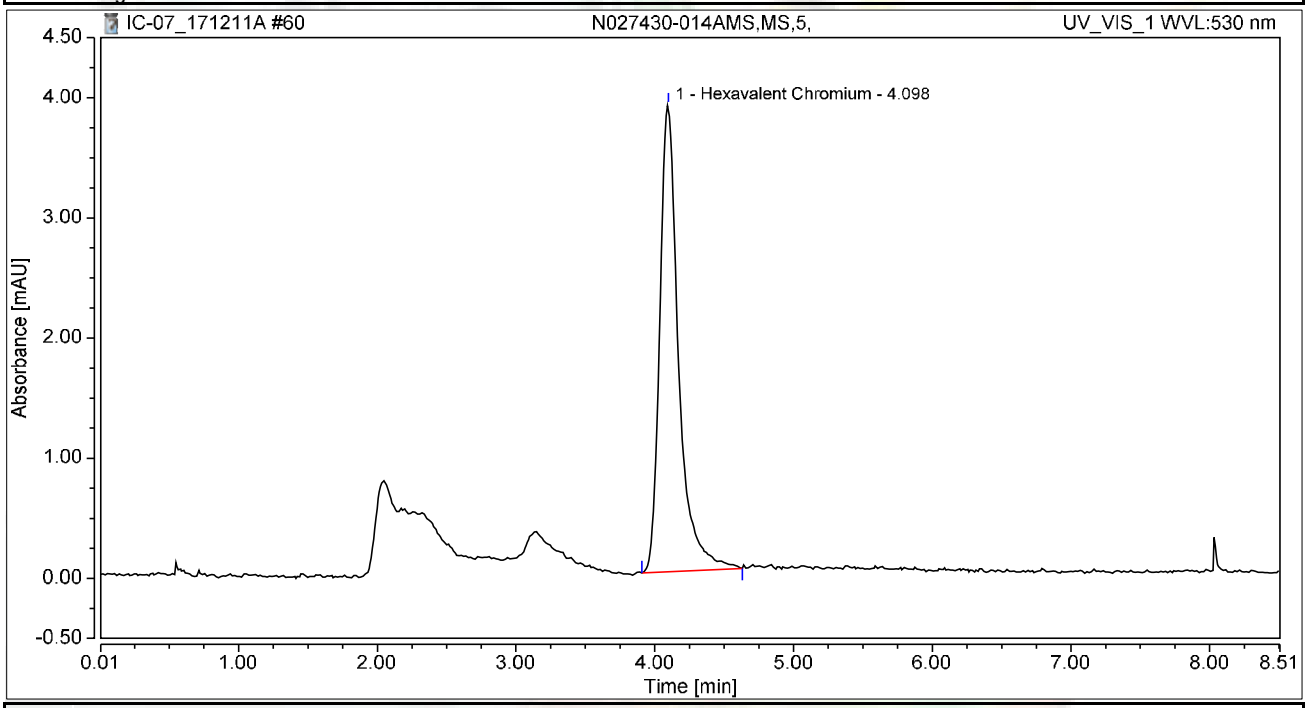
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.349	2.216	100.00	100.00	1.3910
Total:			**0.349**	**2.216**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-014AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 16:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

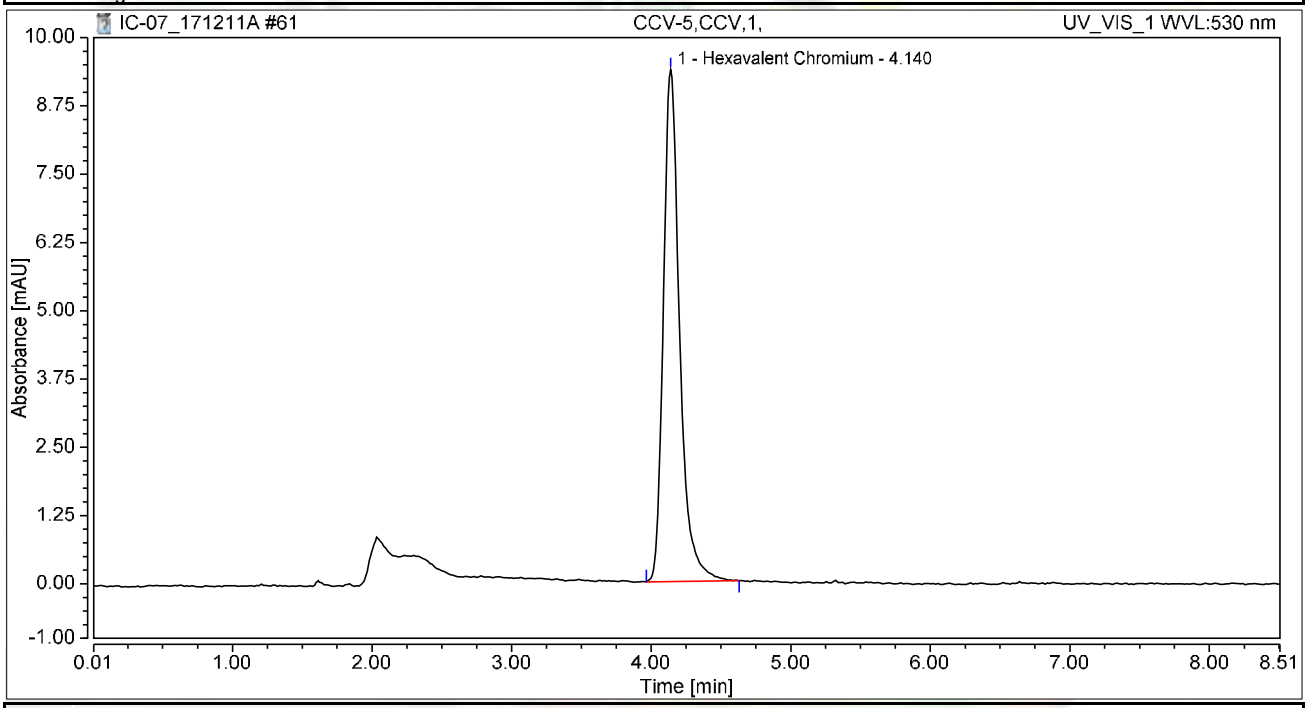
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.611	3.884	100.00	100.00	2.4341
Total:			**0.611**	**3.884**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

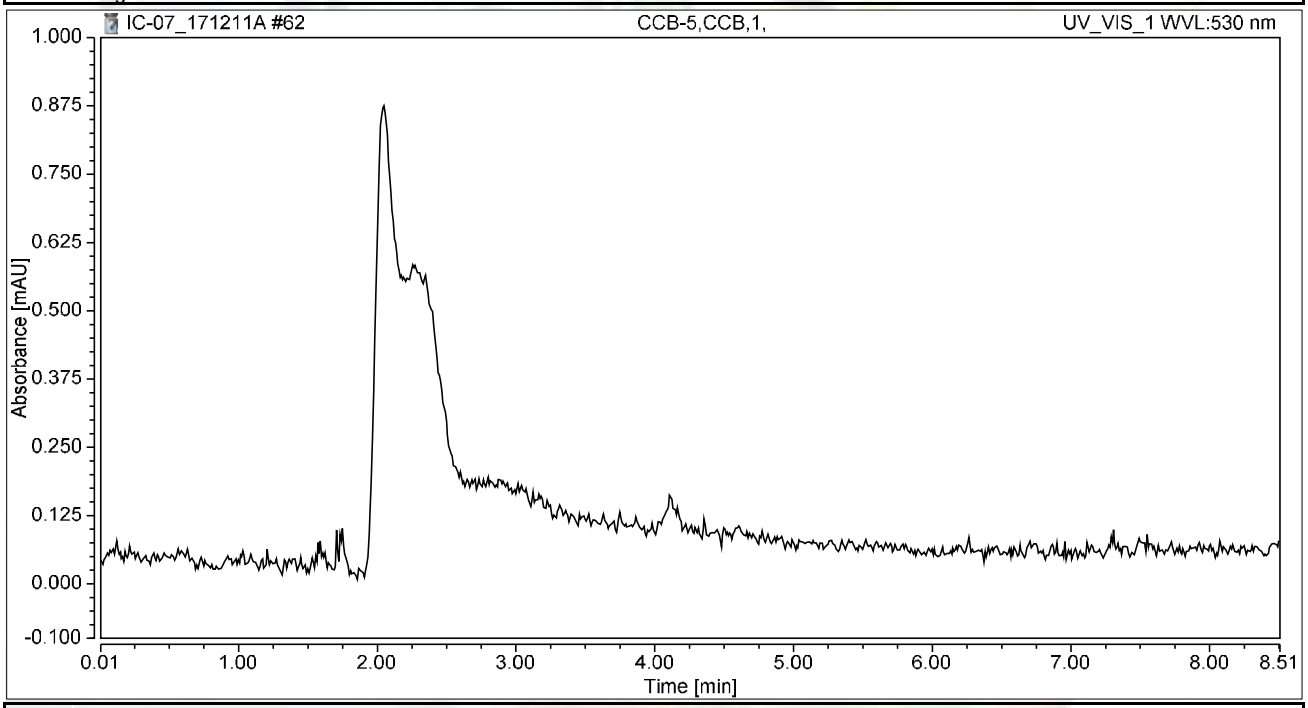
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.267	9.371	100.00	100.00	5.0451
Total:			**1.267**	**9.371**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

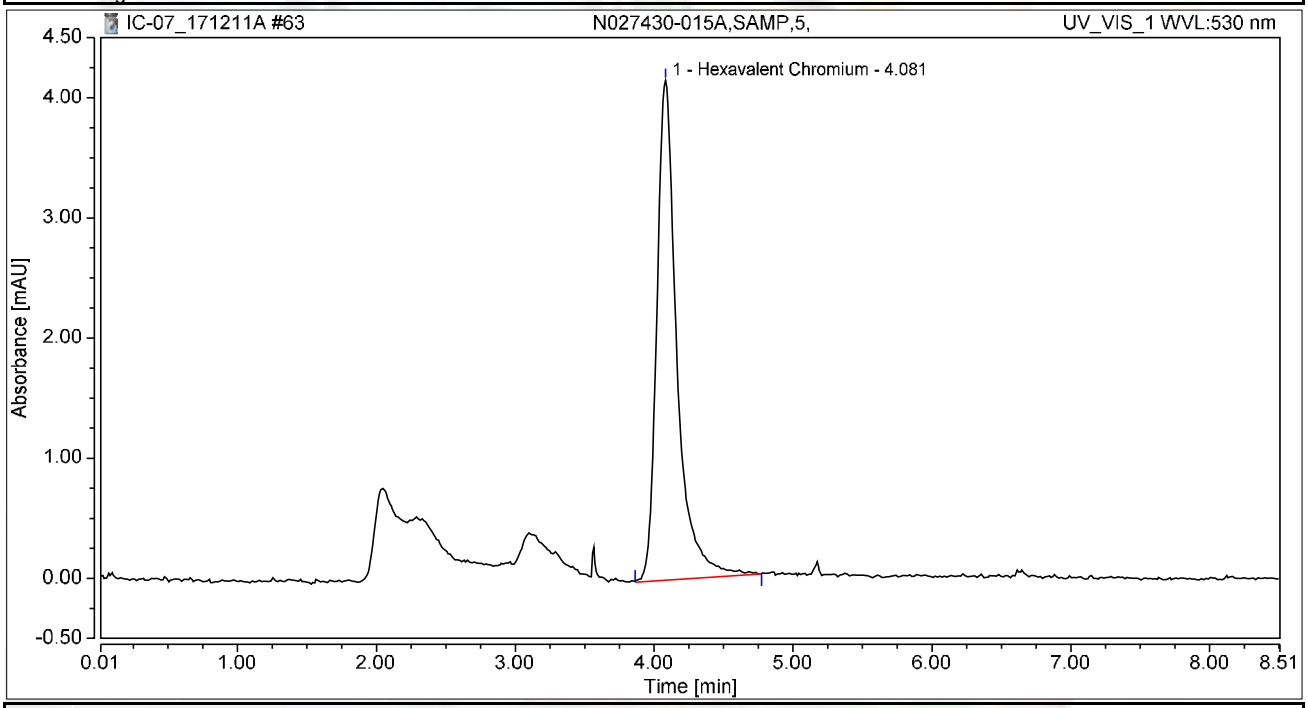
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-015A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

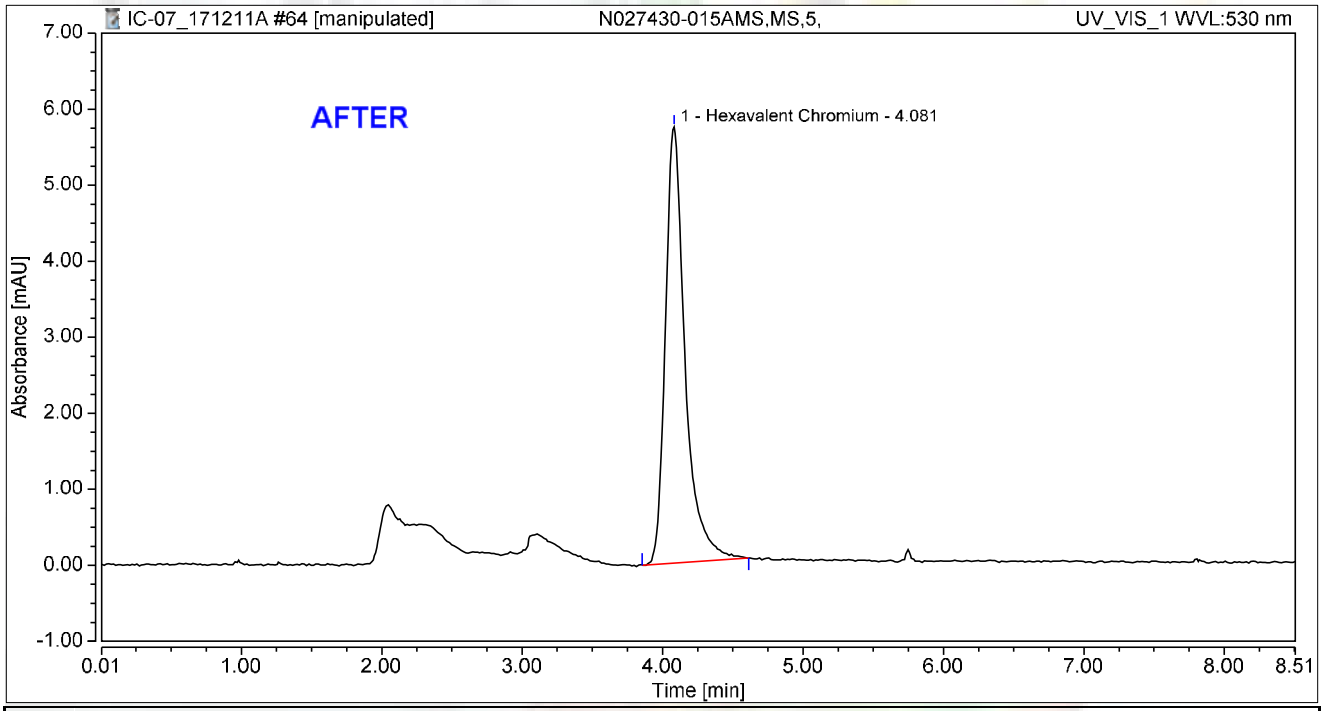
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.697	4.158	100.00	100.00	2.7763
Total:			**0.697**	**4.158**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-015AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.933	5.734	100.00	100.00	3.7159
Total:			**0.933**	**5.734**	**100.00**	**100.00**	

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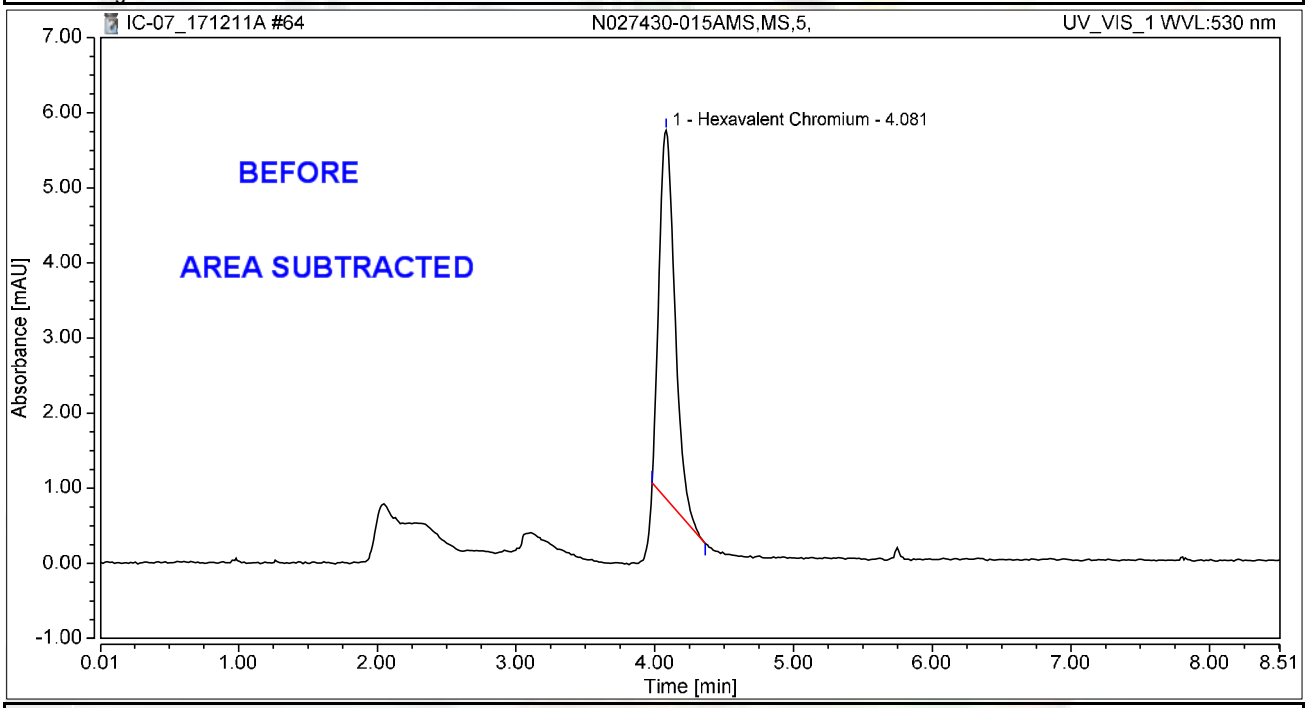
Chromatogram and Results

Injection Details

Injection Name:	**N027430-015AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.652	4.903	100.00	100.00	2.5956
Total:			**0.652**	**4.903**	**100.00**	**100.00**	

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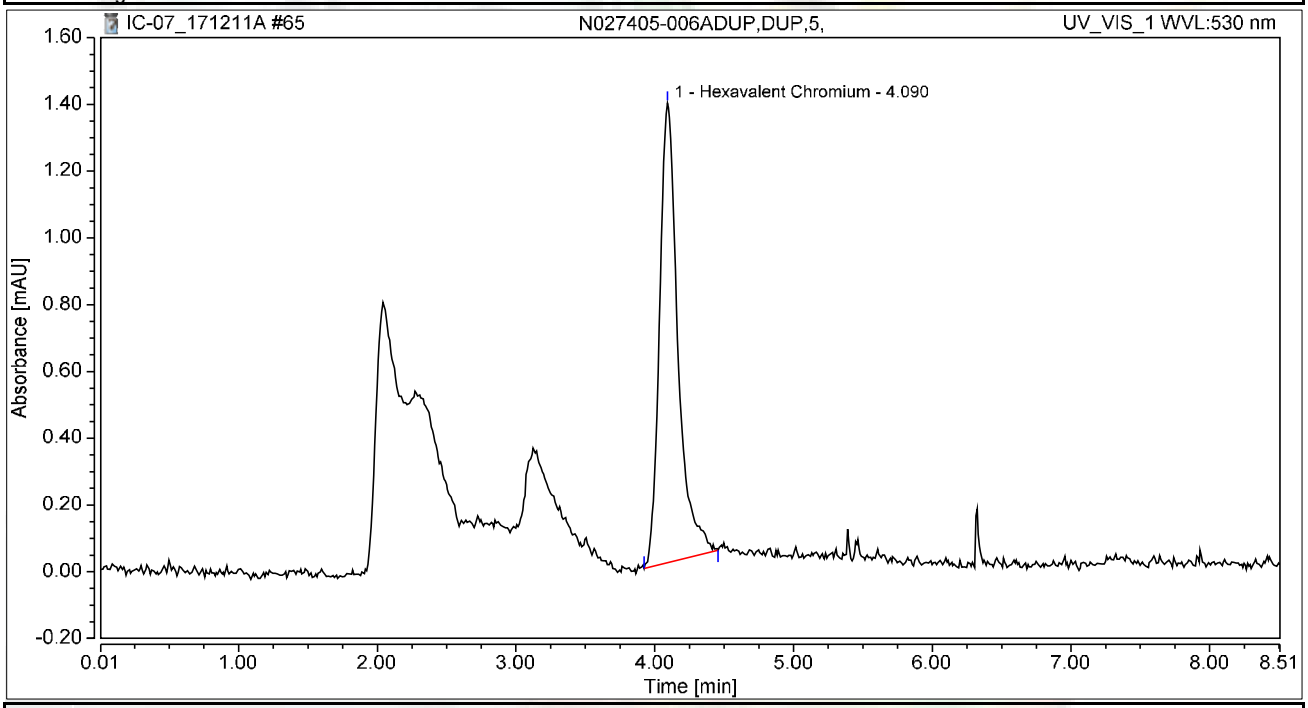
Chromatogram and Results

Injection Details

Injection Name:	**N027405-006ADUP,DUP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**49**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

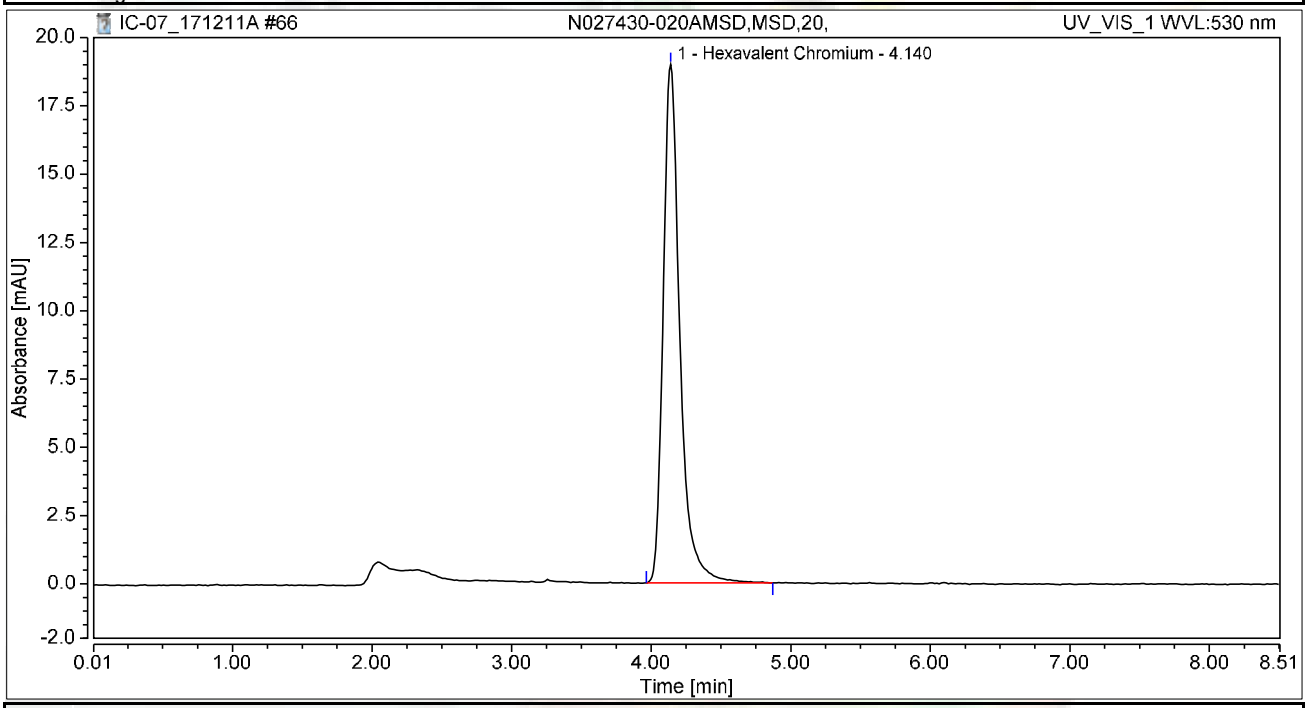
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.212	1.377	100.00	100.00	0.8429
Total:			**0.212**	**1.377**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-020AMSD,MSD,20,**	*Run Time (min):*	**8.50**
Vial Number:	**50**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 17:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

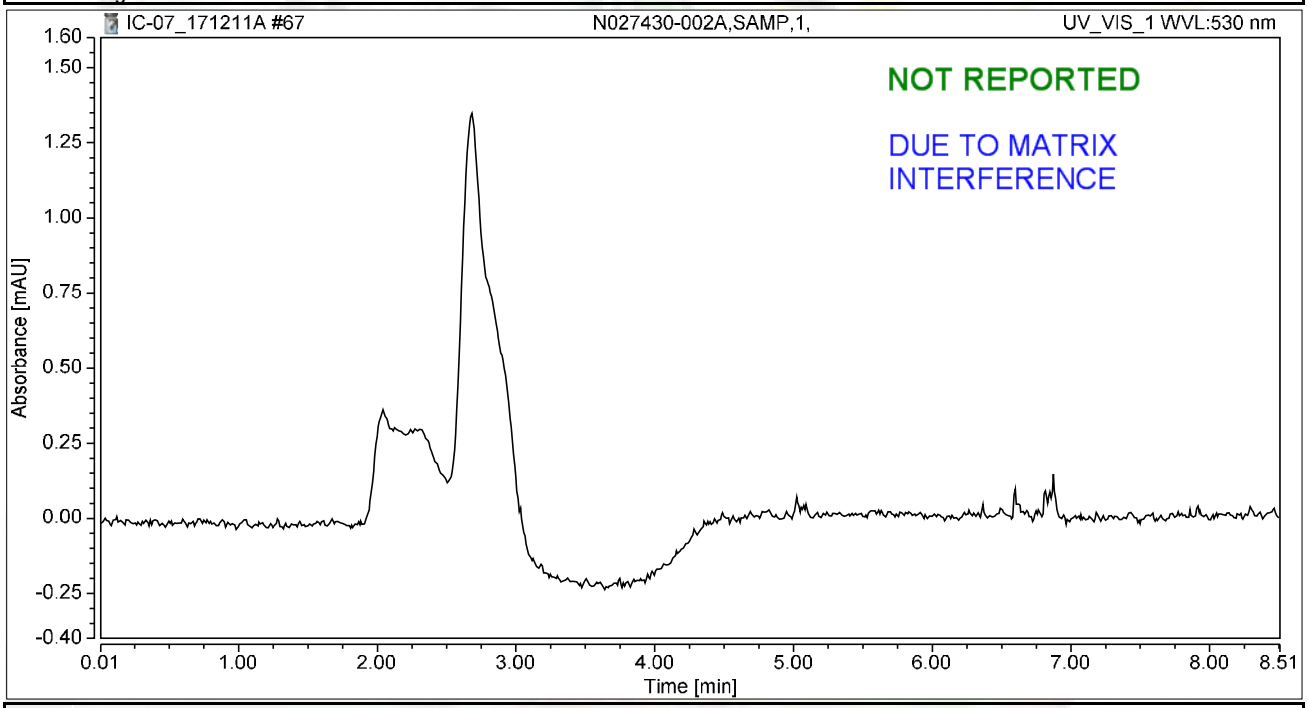
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.638	18.984	100.00	100.00	10.5055
Total:			**2.638**	**18.984**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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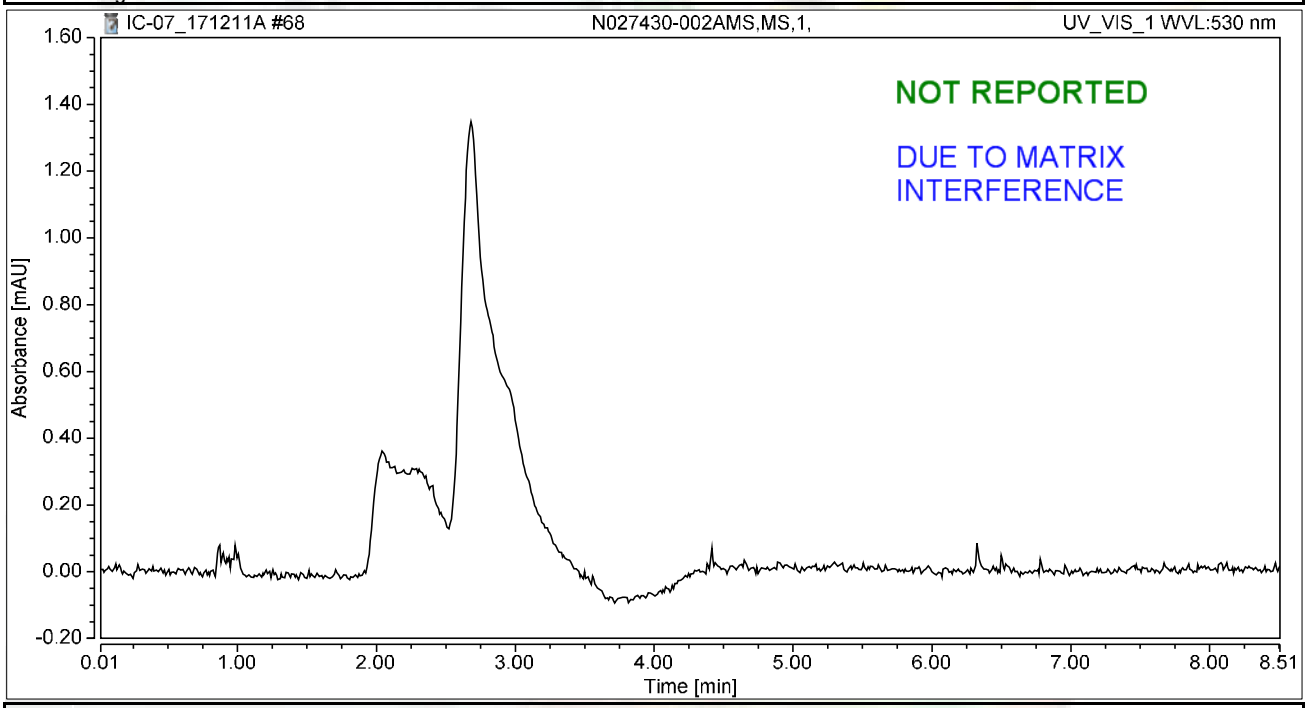
Chromatogram and Results

Injection Details

Injection Name:	**N027430-002AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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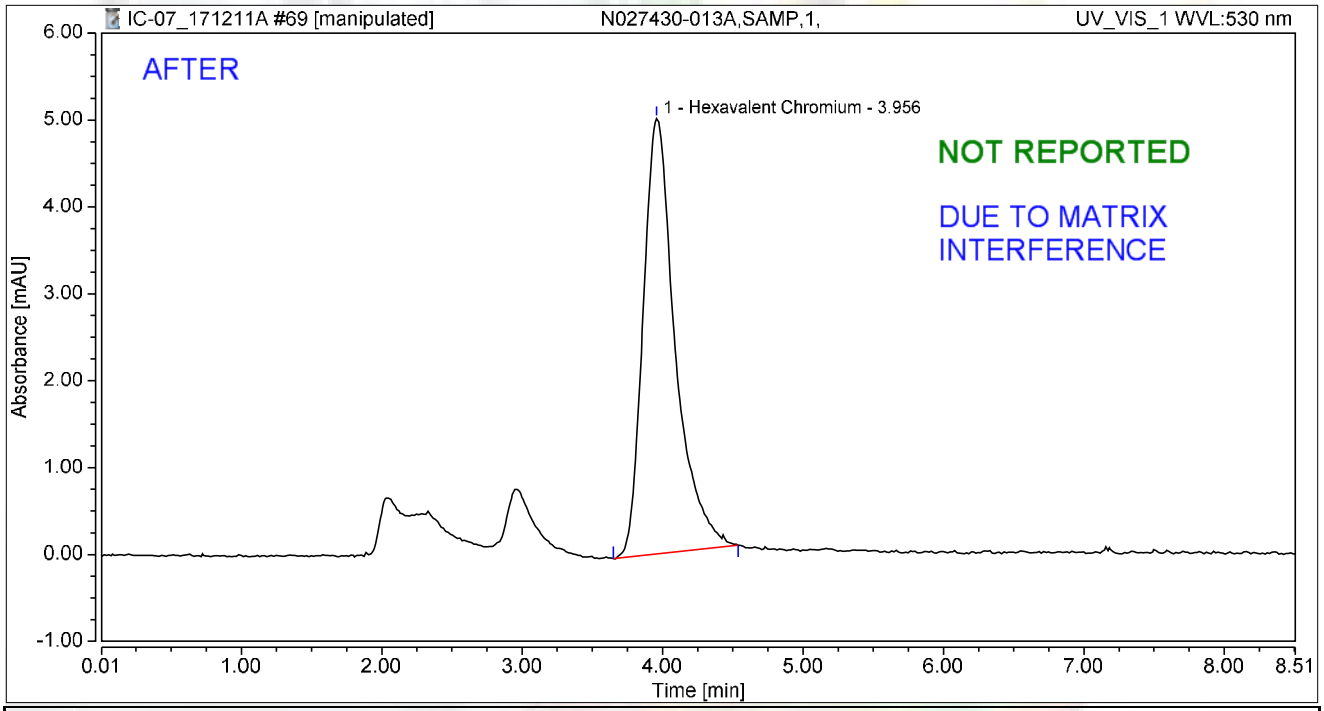
Chromatogram and Results

Injection Details

Injection Name:	**N027430-013A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.956	1.323	5.011	100.00	100.00	5.2695
Total:			**1.323**	**5.011**	**100.00**	**100.00**	

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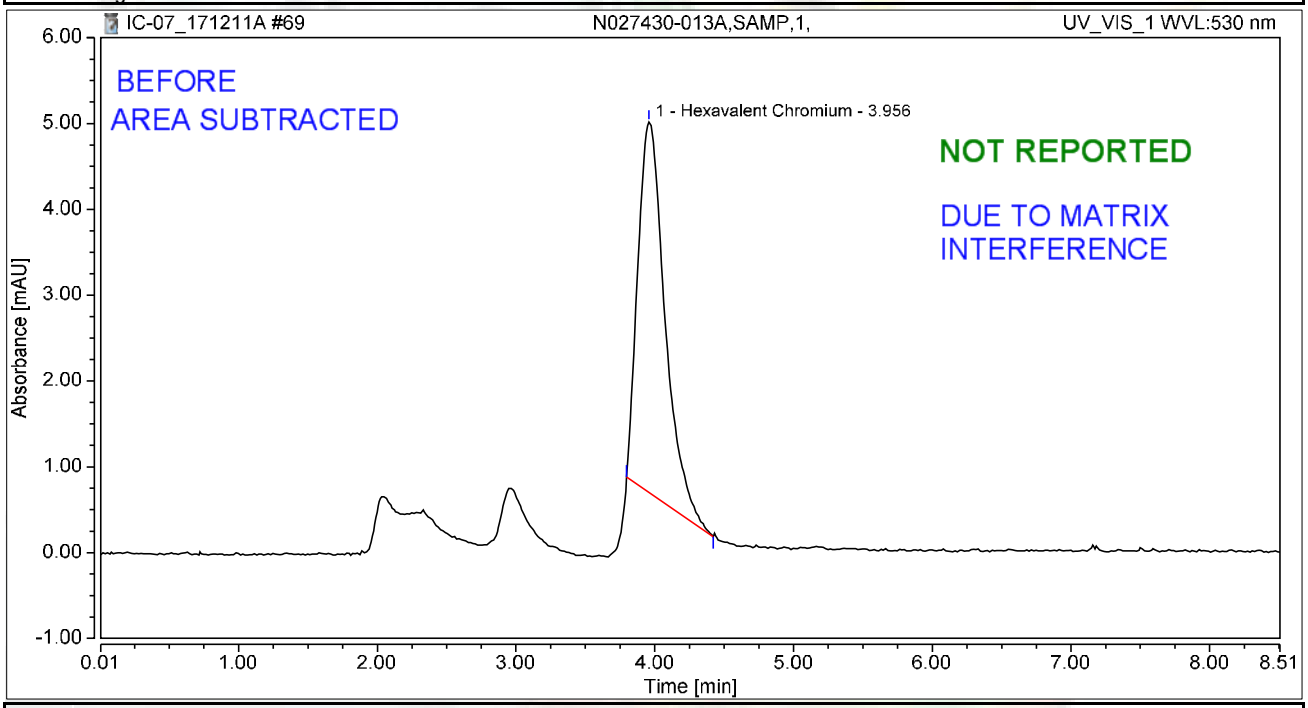
Chromatogram and Results

Injection Details

Injection Name:	**N027430-013A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.956	0.975	4.312	100.00	100.00	3.8839
Total:			**0.975**	**4.312**	**100.00**	**100.00**	

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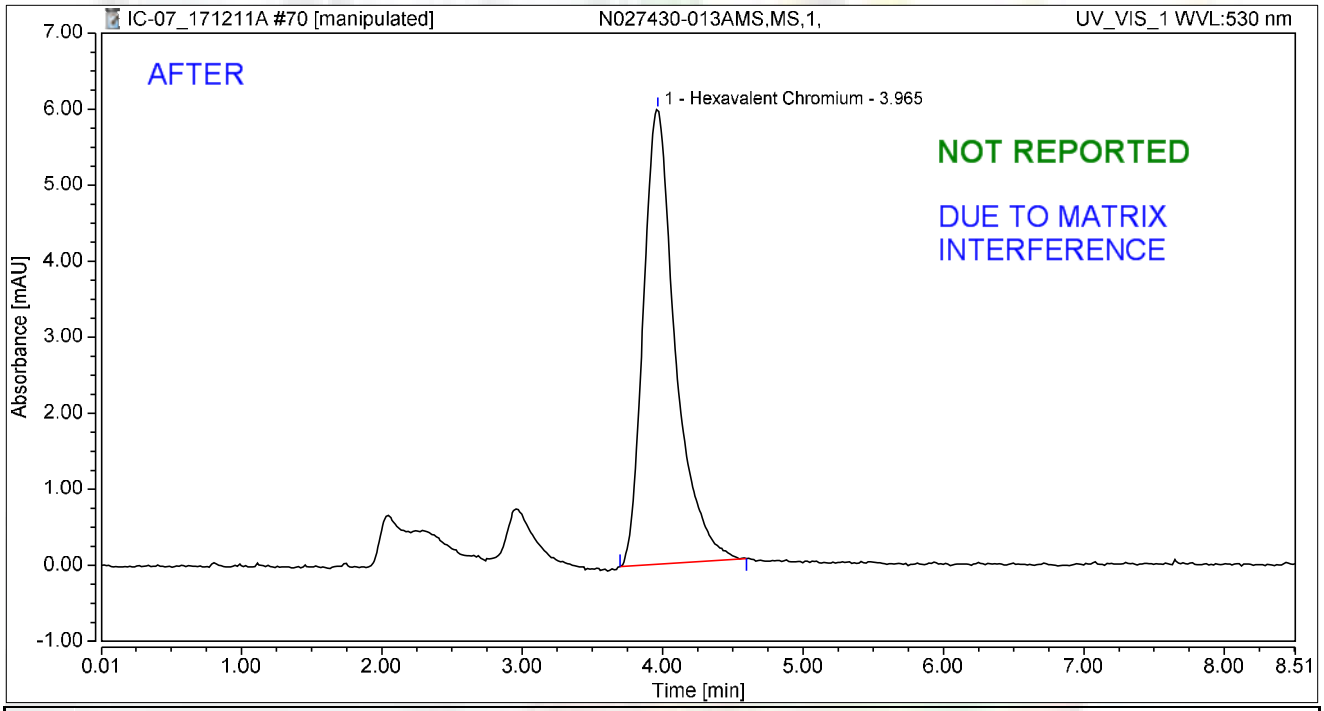
Chromatogram and Results

Injection Details

Injection Name:	**N027430-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.965	1.578	5.981	100.00	100.00	6.2829
Total:			**1.578**	**5.981**	**100.00**	**100.00**	

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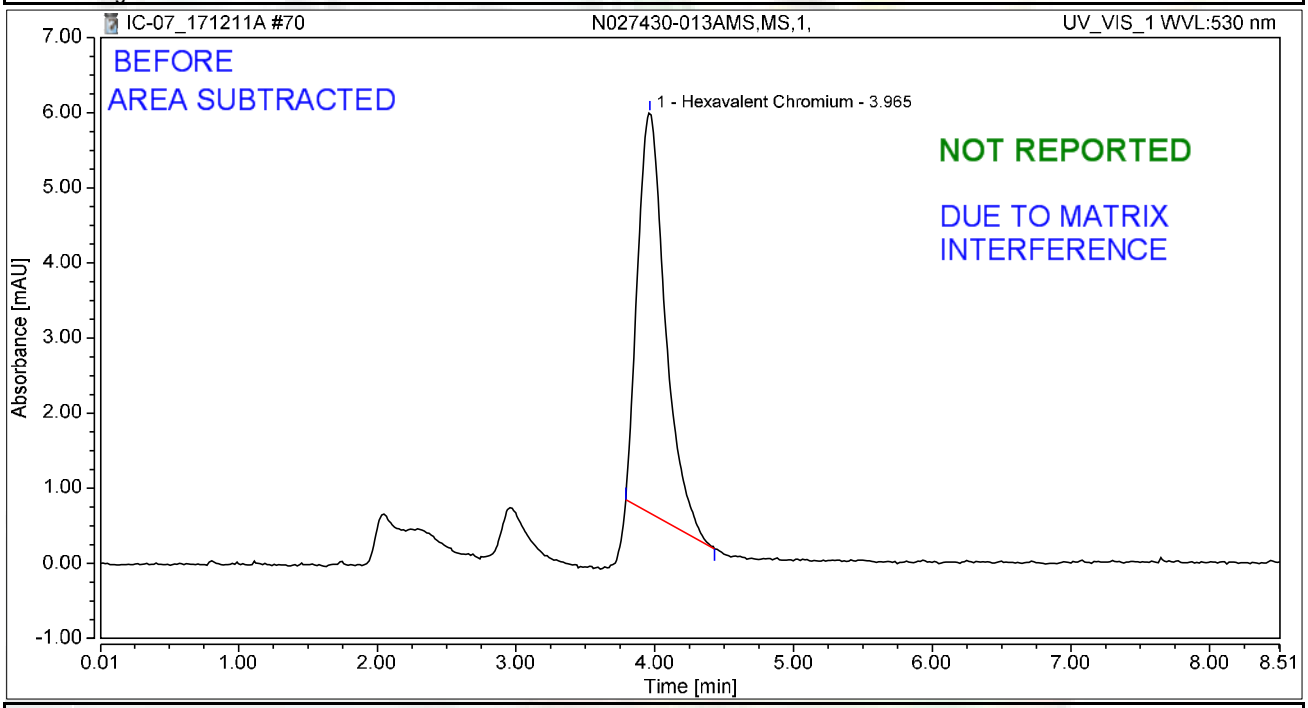
Chromatogram and Results

Injection Details

Injection Name:	**N027430-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.965	1.232	5.326	100.00	100.00	4.9056
Total:			**1.232**	**5.326**	**100.00**	**100.00**	

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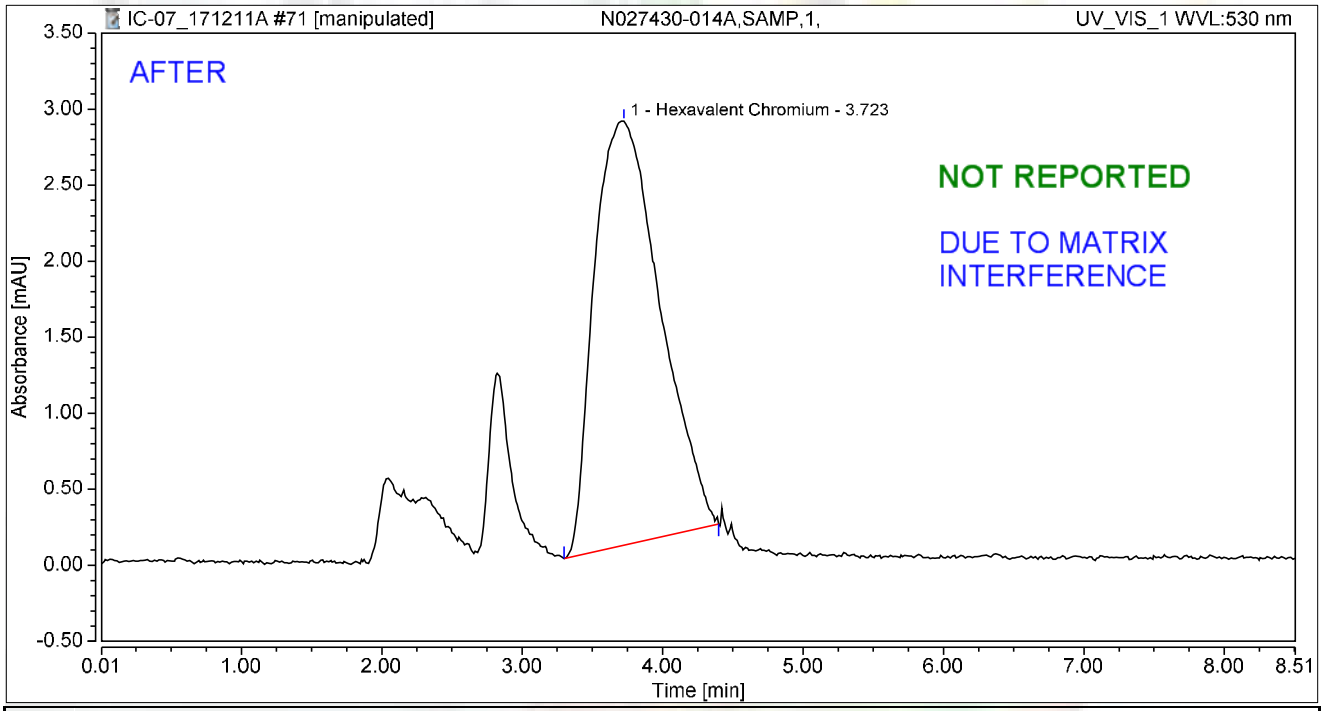
Chromatogram and Results

Injection Details

Injection Name:	**N027430-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	1.515	2.788	100.00	100.00	6.0348
Total:			**1.515**	**2.788**	**100.00**	**100.00**	

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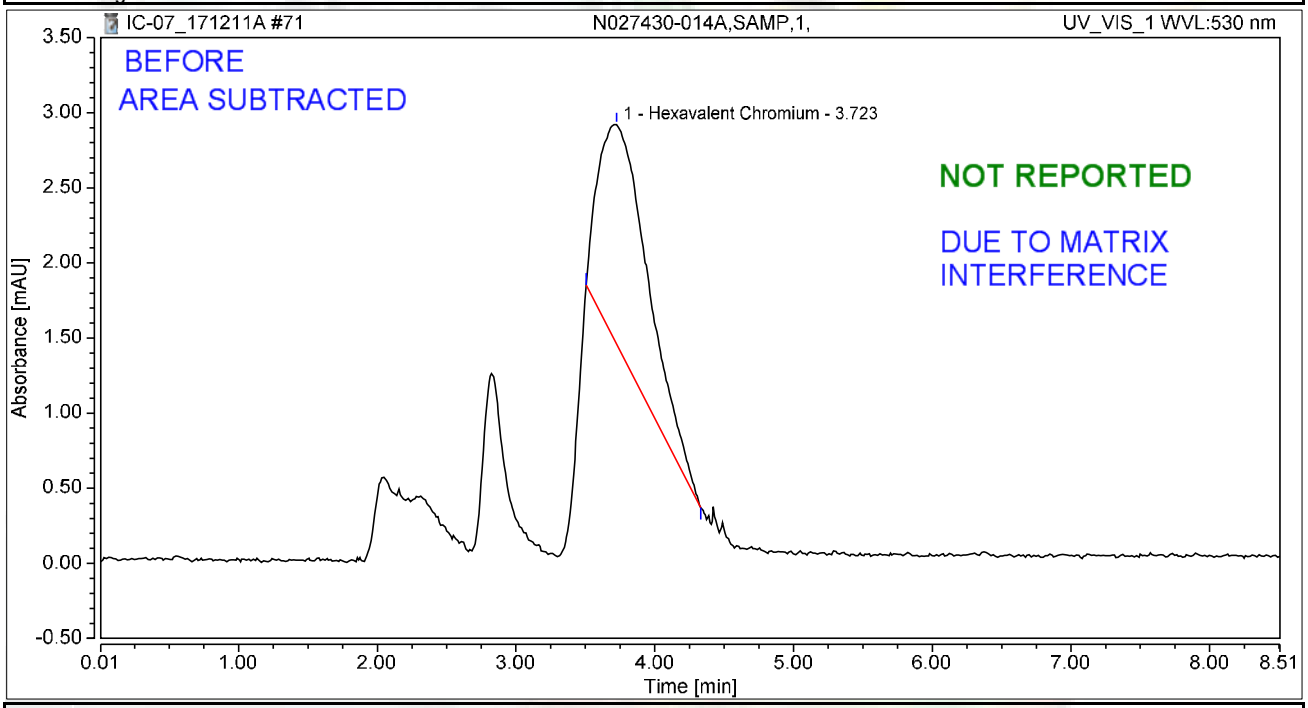
Chromatogram and Results

Injection Details

Injection Name:	**N027430-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	0.615	1.457	100.00	100.00	2.4504
Total:			**0.615**	**1.457**	**100.00**	**100.00**	

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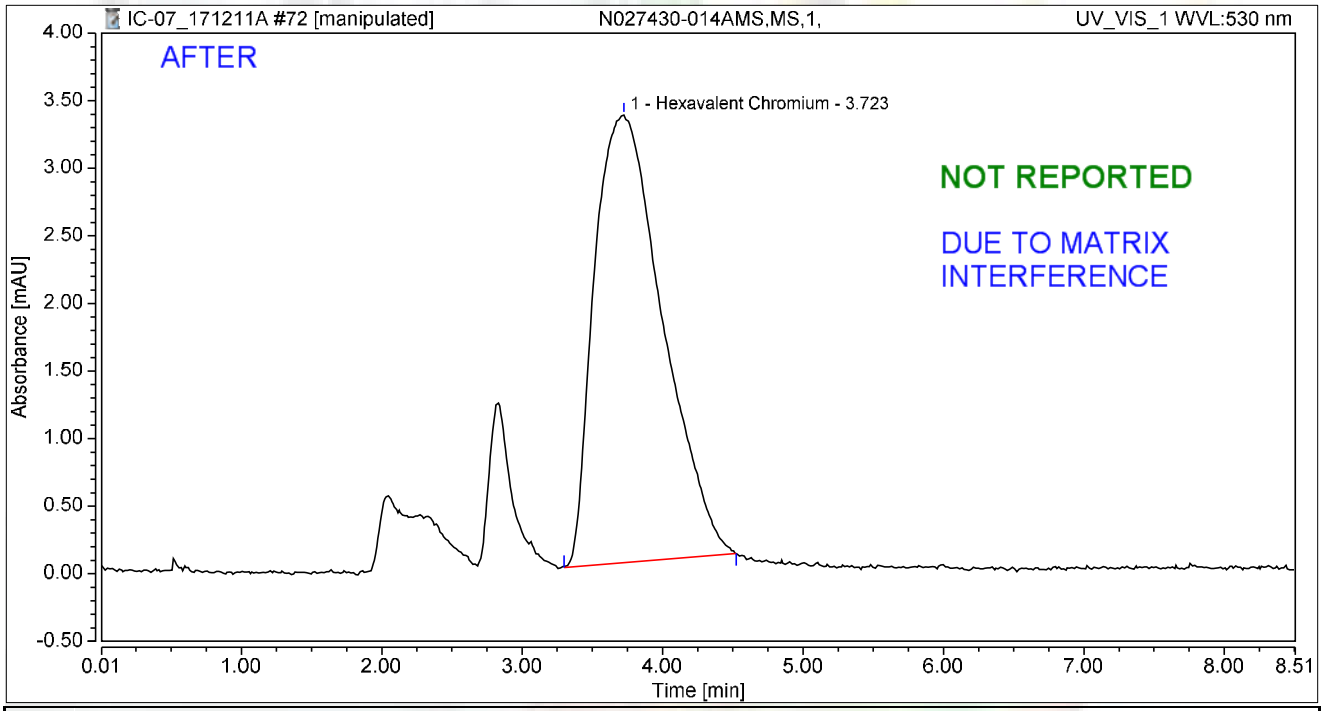
Chromatogram and Results

Injection Details

Injection Name:	**N027430-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	1.860	3.313	100.00	100.00	7.4083
Total:			**1.860**	**3.313**	**100.00**	**100.00**	

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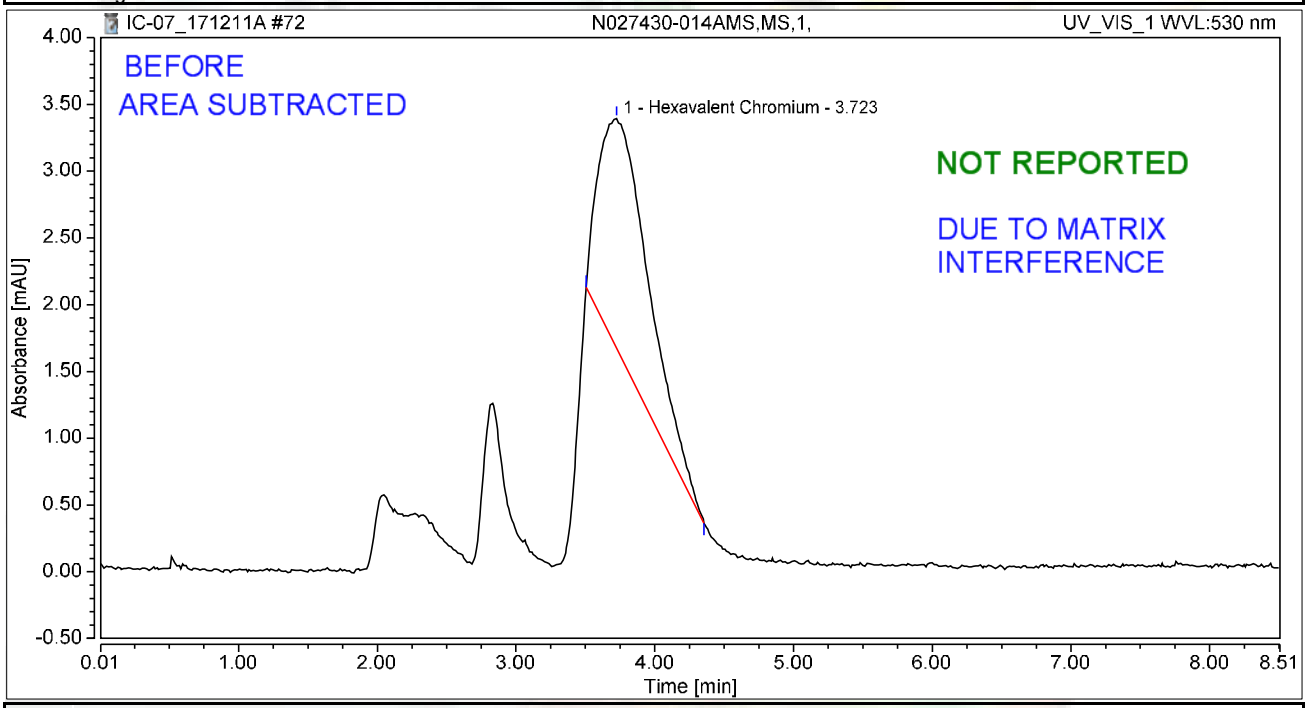
Chromatogram and Results

Injection Details

Injection Name:	**N027430-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 18:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	0.727	1.714	100.00	100.00	2.8964
Total:			**0.727**	**1.714**	**100.00**	**100.00**	

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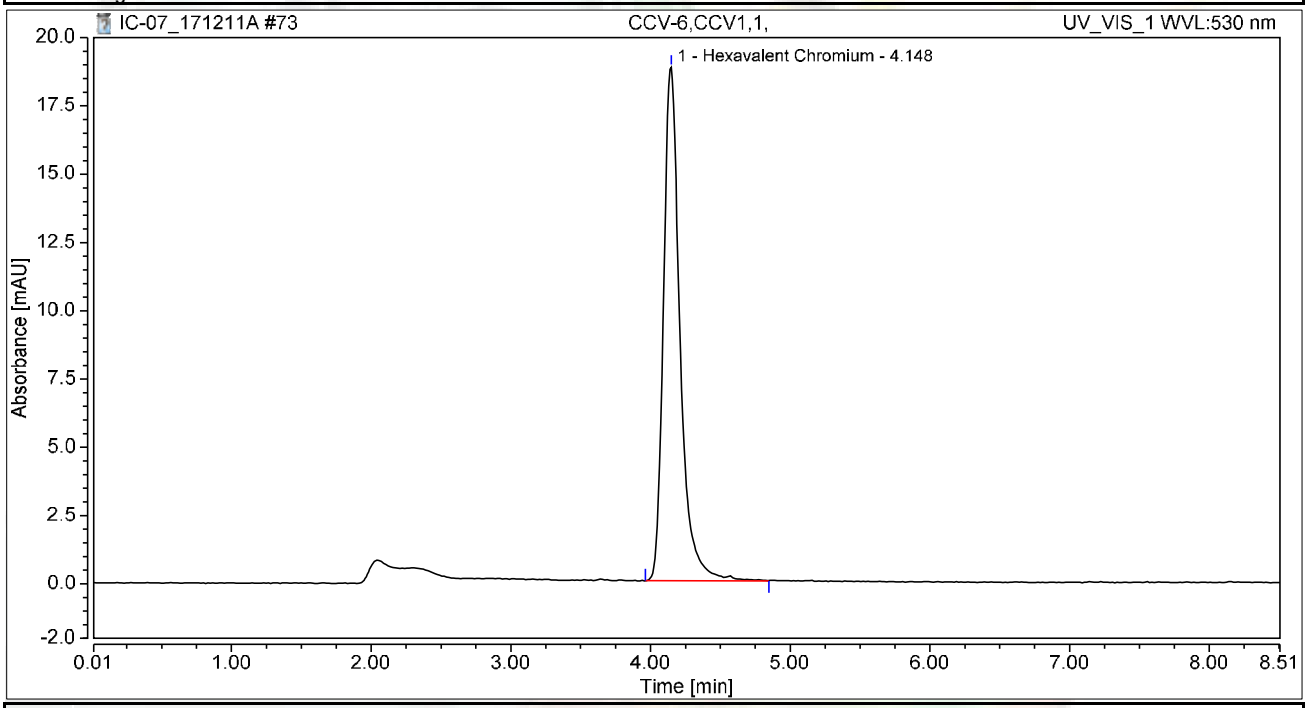
Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

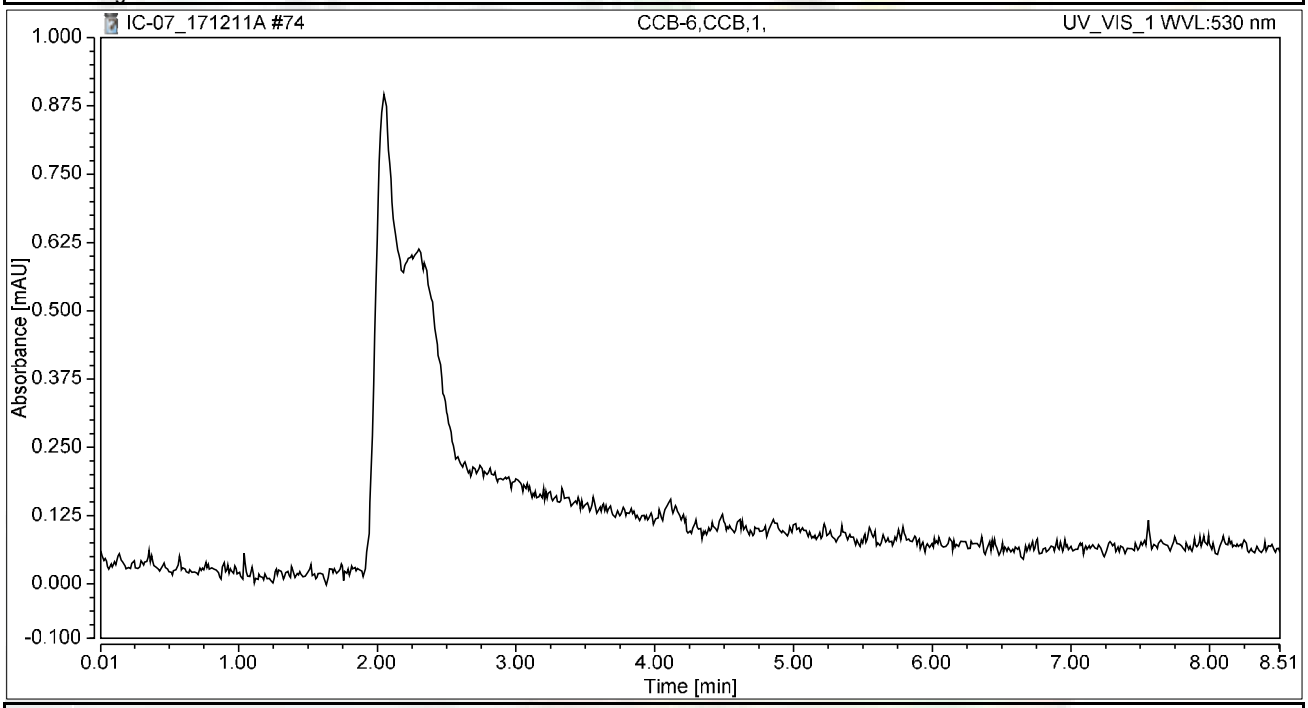
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.585	18.801	100.00	100.00	10.2939
Total:			**2.585**	**18.801**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

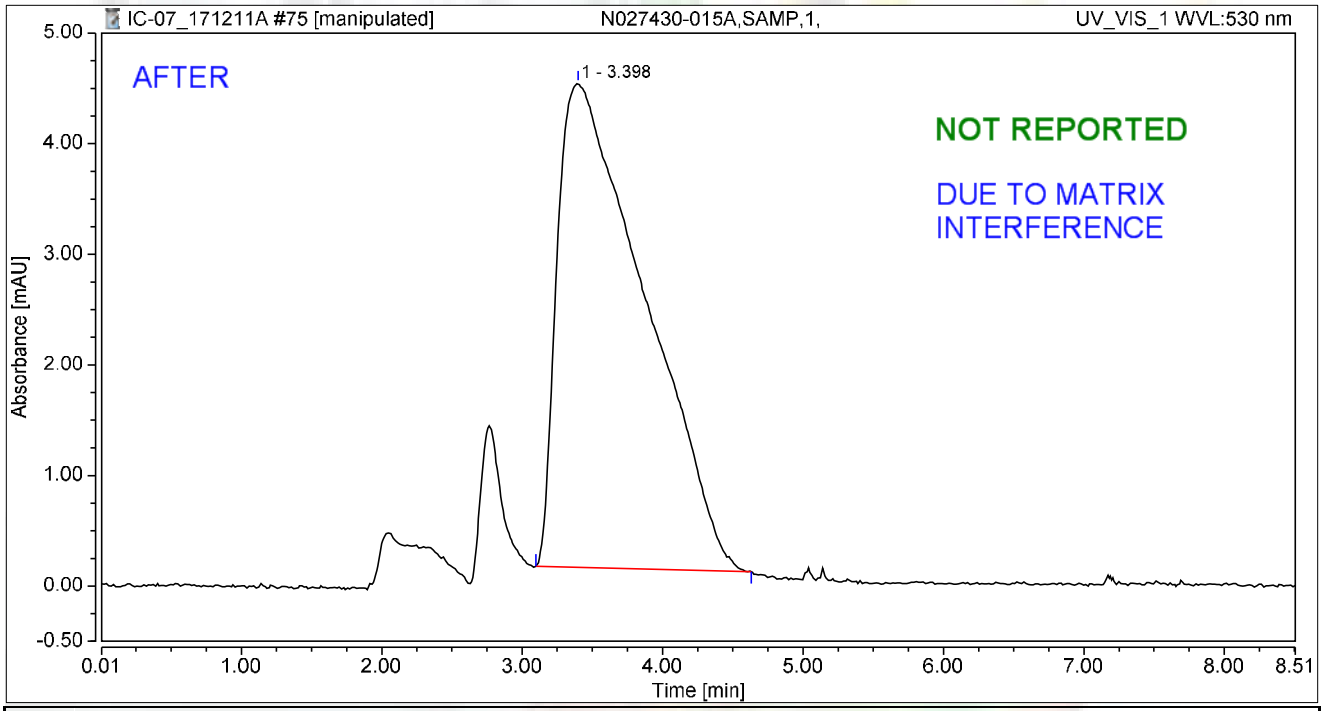
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.398	3.144	4.377	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**3.144**	**4.377**	**100.00**	**100.00**	

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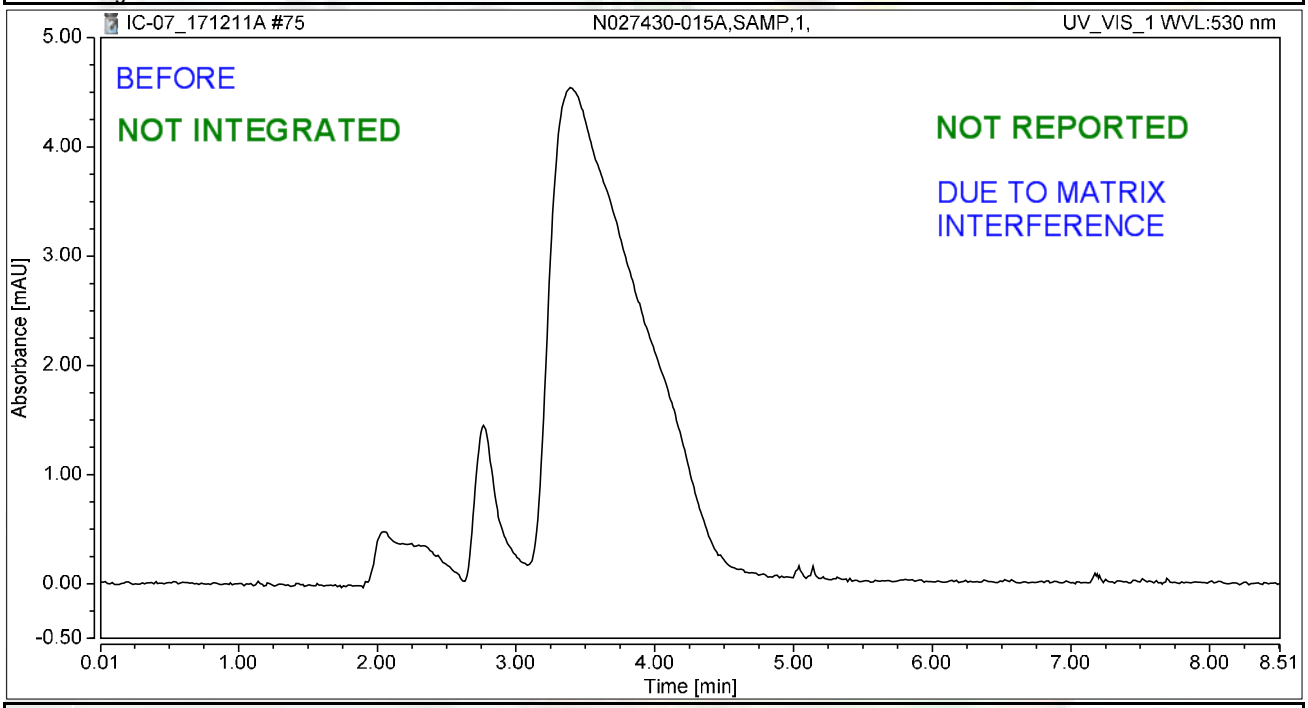
Chromatogram and Results

Injection Details

Injection Name:	**N027430-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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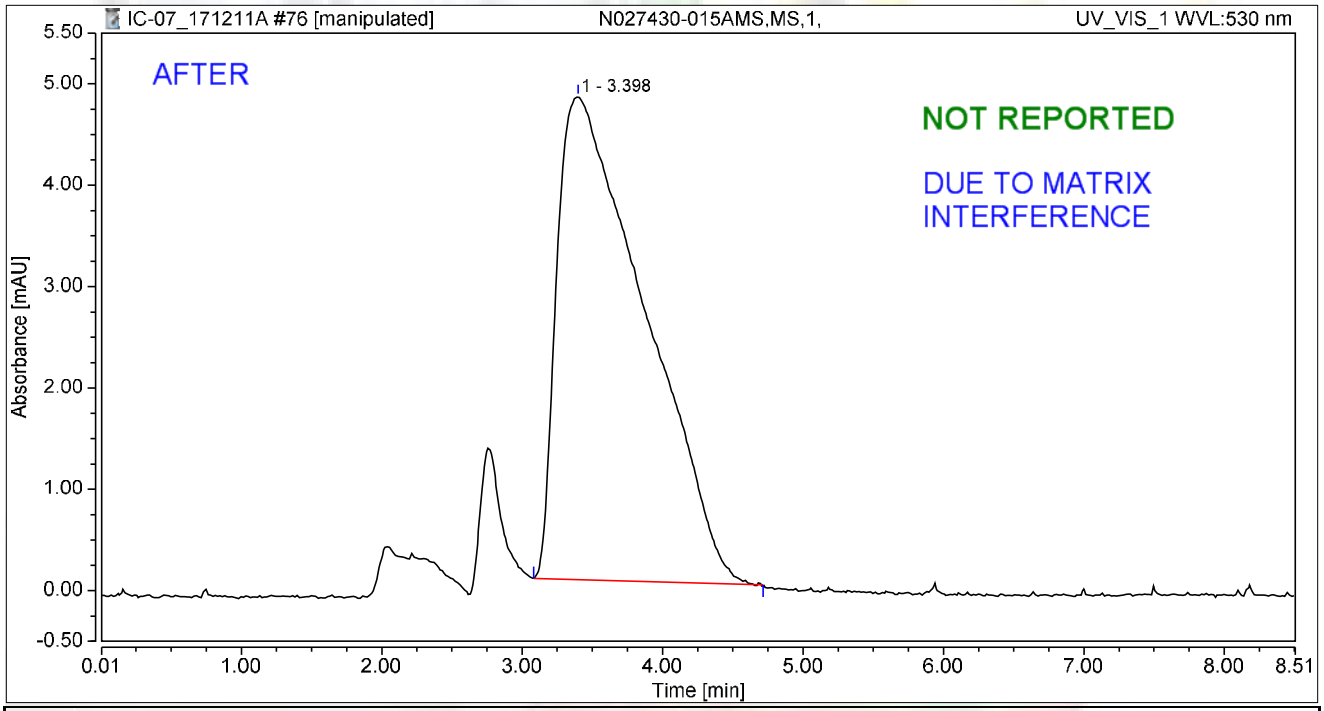
Chromatogram and Results

Injection Details

Injection Name:	**N027430-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.398	3.441	4.762	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**3.441**	**4.762**	**100.00**	**100.00**	

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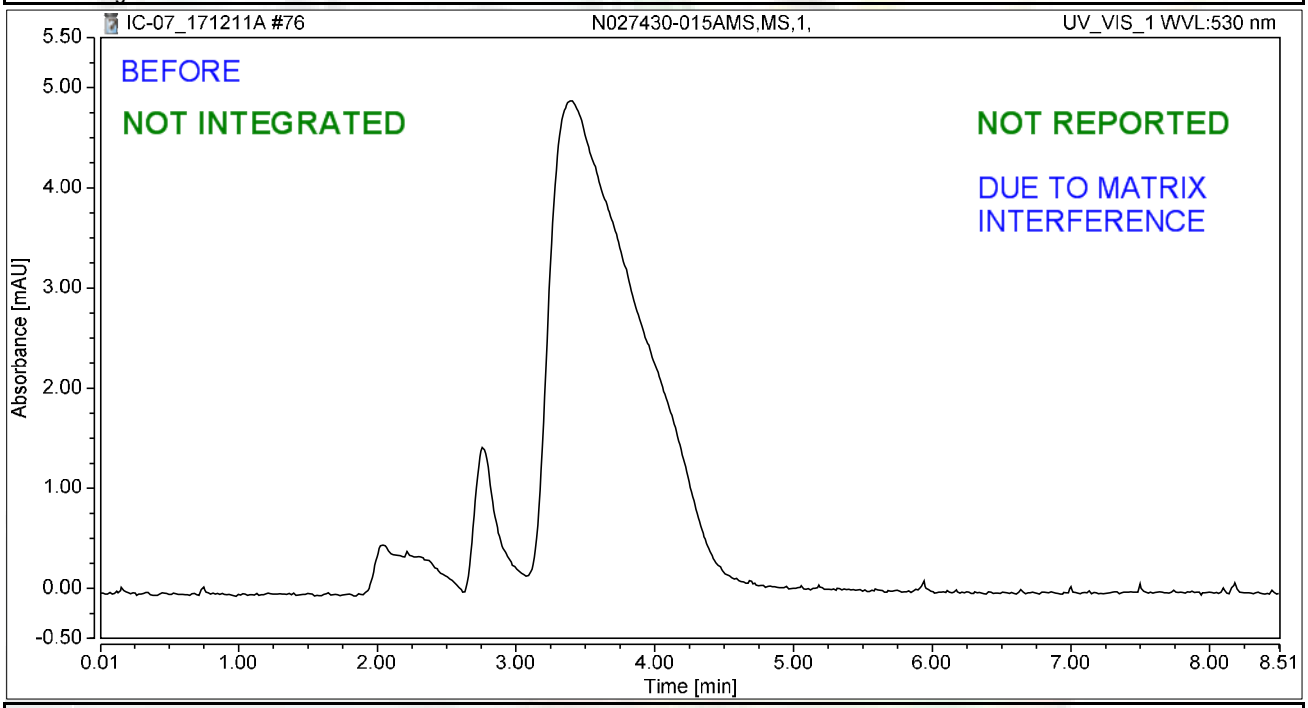
Chromatogram and Results

Injection Details

Injection Name:	**N027430-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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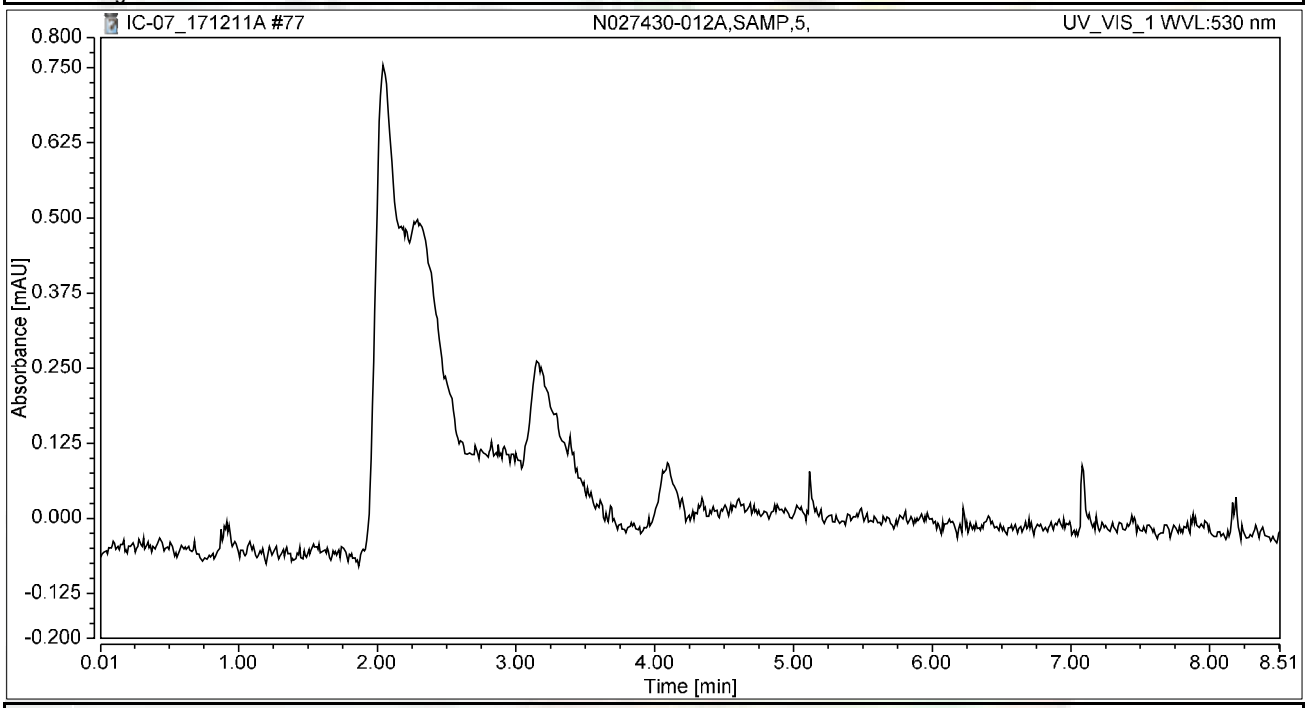
Chromatogram and Results

Injection Details

Injection Name:	**N027430-012A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

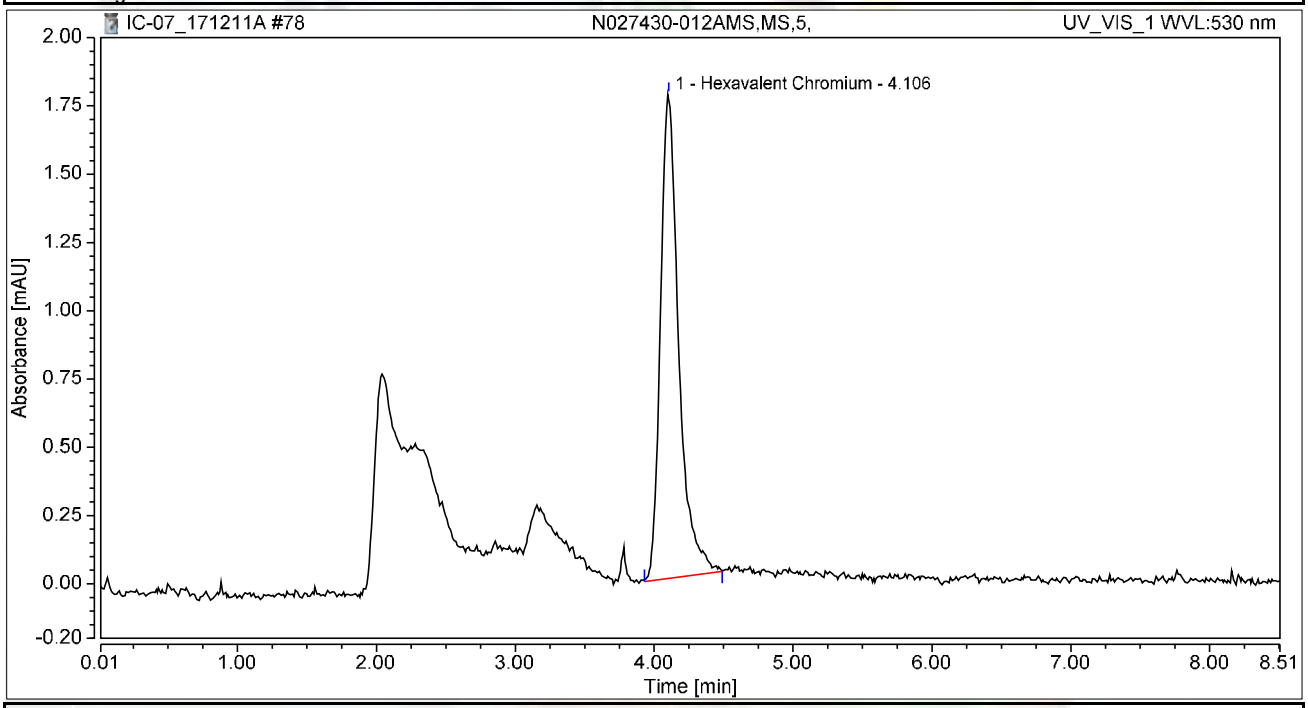
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-012AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

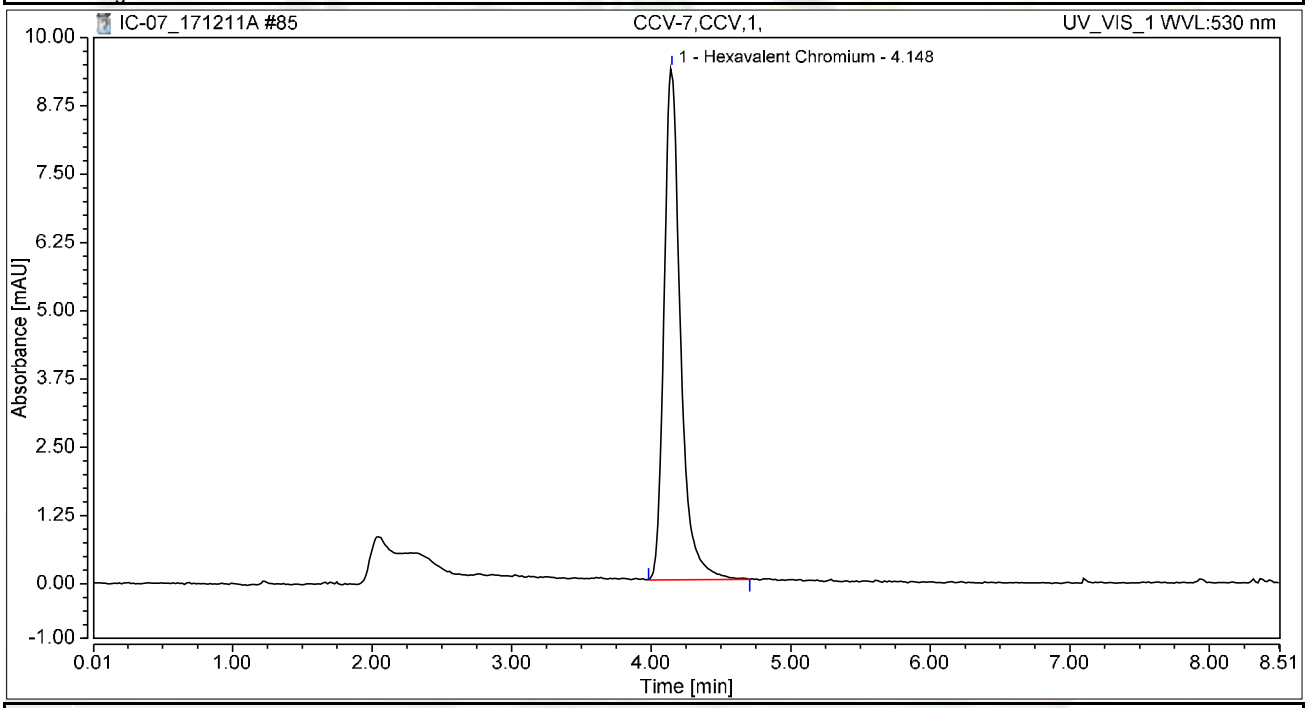
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.270	1.772	100.00	100.00	1.0741
Total:			**0.270**	**1.772**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

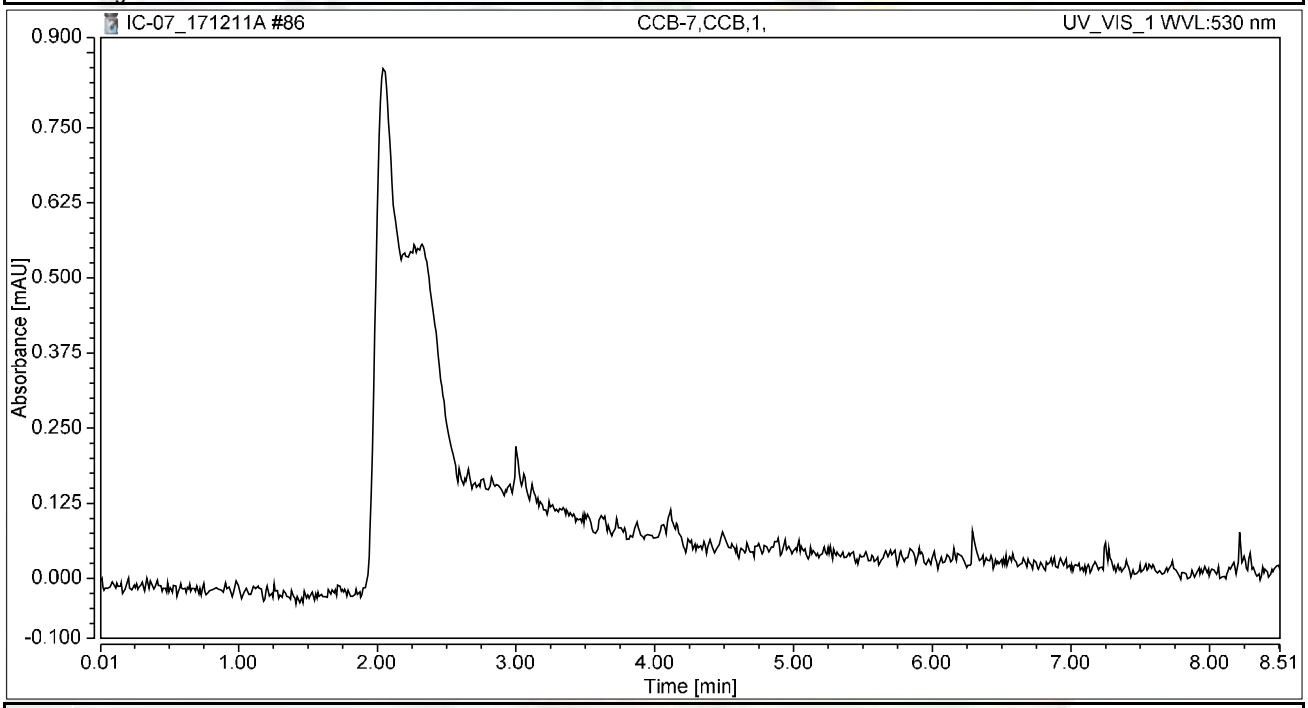
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.283	9.373	100.00	100.00	5.1094
Total:			**1.283**	**9.373**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 8:57 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 9:08 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/11/17 9:18 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/11/17 9:27 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/11/17 9:37 AM	Reported
15	MB-R120833	MBLK	1	Hexavalent Chromium	12/11/17 9:46 AM	Reported
16	LCS-R120833	LCS	1	Hexavalent Chromium	12/11/17 9:56 AM	Reported
17	N027405-006AMS	MS	5	Hexavalent Chromium	12/11/17 10:09 AM	Reported
18	N027405-006A	SAMP	5	Hexavalent Chromium	12/11/17 10:20 AM	Reported
19	N027405-007AMS	MS	5	Hexavalent Chromium	12/11/17 10:29 AM	Reported
20	N027405-007A	SAMP	5	Hexavalent Chromium	12/11/17 10:39 AM	Reported
21	N027405-008AMS	MS	5	Hexavalent Chromium	12/11/17 10:48 AM	Reported
22	N027405-008A	SAMP	5	Hexavalent Chromium	12/11/17 10:58 AM	Reported
23	N027430-001A	SAMP	1	Hexavalent Chromium	12/11/17 11:07 AM	Reported
24	N027430-001AMS	MS	1	Hexavalent Chromium	12/11/17 11:17 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/11/17 11:26 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/11/17 11:36 AM	Reported
27	N027430-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:45 AM	Reported
28	N027430-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:54 AM	Reported
29	N027430-003A	SAMP	1	Hexavalent Chromium	12/11/17 12:04 PM	Reported
30	N027430-003AMS	MS	1	Hexavalent Chromium	12/11/17 12:13 PM	Reported
31	N027430-004A	SAMP	1	Hexavalent Chromium	12/11/17 12:23 PM	Reported
32	N027430-004AMS	MS	1	Hexavalent Chromium	12/11/17 12:32 PM	Reported
33	N027430-005A	SAMP	1	Hexavalent Chromium	12/11/17 12:42 PM	Reported
34	N027430-005AMS	MS	1	Hexavalent Chromium	12/11/17 12:51 PM	Reported
35	N027430-006A	SAMP	1	Hexavalent Chromium	12/11/17 1:01 PM	Reported
36	N027430-006AMS	MS	1	Hexavalent Chromium	12/11/17 1:10 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/11/17 1:20 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/11/17 1:29 PM	Reported
39	N027430-007A	SAMP	1	Hexavalent Chromium	12/11/17 1:38 PM	Reported
40	N027430-007AMS	MS	1	Hexavalent Chromium	12/11/17 1:48 PM	Reported
41	N027430-008A	SAMP	1	Hexavalent Chromium	12/11/17 1:57 PM	Reported
42	N027430-008AMS	MS	1	Hexavalent Chromium	12/11/17 2:07 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027430-009A	SAMP	1	Hexavalent Chromium	12/11/17 2:16 PM	Reported
44	N027430-009AMS	MS	1	Hexavalent Chromium	12/11/17 2:26 PM	Reported
45	N027430-010A	SAMP	1	Hexavalent Chromium	12/11/17 2:35 PM	Reported
46	N027430-010AMS	MS	1	Hexavalent Chromium	12/11/17 2:45 PM	Reported
47	N027430-020A	SAMP	20	Hexavalent Chromium	12/11/17 2:54 PM	Reported
48	N027430-020AMS	MS	20	Hexavalent Chromium	12/11/17 3:04 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/11/17 3:13 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/11/17 3:23 PM	Reported
51	N027430-012A	SAMP	1	Hexavalent Chromium	12/11/17 3:32 PM	Not Reported
52	N027430-012AMS	MS	1	Hexavalent Chromium	12/11/17 3:41 PM	Not Reported
53	N027430-019A	SAMP	1	Hexavalent Chromium	12/11/17 3:51 PM	Reported
54	N027430-019AMS	MS	1	Hexavalent Chromium	12/11/17 4:00 PM	Reported
55	N027430-011A	SAMP	1	Hexavalent Chromium	12/11/17 4:10 PM	Reported
56	N027430-011AMS	MS	1	Hexavalent Chromium	12/11/17 4:19 PM	Reported
57	N027430-013A	SAMP	5	Hexavalent Chromium	12/11/17 4:29 PM	Reported
58	N027430-013AMS	MS	5	Hexavalent Chromium	12/11/17 4:38 PM	Reported
59	N027430-014A	SAMP	5	Hexavalent Chromium	12/11/17 4:48 PM	Reported
60	N027430-014AMS	MS	5	Hexavalent Chromium	12/11/17 4:57 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/11/17 5:07 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/11/17 5:16 PM	Reported
63	N027430-015A	SAMP	5	Hexavalent Chromium	12/11/17 5:26 PM	Reported
64	N027430-015AMS	MS	5	Hexavalent Chromium	12/11/17 5:35 PM	Reported
65	N027405-006ADUP	DUP	5	Hexavalent Chromium	12/11/17 5:44 PM	Reported
66	N027430-020AMSD	MSD	20	Hexavalent Chromium	12/11/17 5:54 PM	Reported
67	N027430-002A	SAMP	1	Hexavalent Chromium	12/11/17 6:05 PM	Not Reported
68	N027430-002AMS	MS	1	Hexavalent Chromium	12/11/17 6:16 PM	Not Reported
69	N027430-013A	SAMP	1	Hexavalent Chromium	12/11/17 6:25 PM	Not Reported
70	N027430-013AMS	MS	1	Hexavalent Chromium	12/11/17 6:35 PM	Not Reported
71	N027430-014A	SAMP	1	Hexavalent Chromium	12/11/17 6:44 PM	Not Reported
72	N027430-014AMS	MS	1	Hexavalent Chromium	12/11/17 6:54 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	12/11/17 7:03 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	12/11/17 7:13 PM	Reported
75	N027430-015A	SAMP	1	Hexavalent Chromium	12/11/17 7:22 PM	Not Reported
76	N027430-015AMS	MS	1	Hexavalent Chromium	12/11/17 7:32 PM	Not Reported
77	N027430-012A	SAMP	5	Hexavalent Chromium	12/11/17 7:41 PM	Reported
78	N027430-012AMS	MS	5	Hexavalent Chromium	12/11/17 7:50 PM	Reported
79	LCS-R120834	LCS	1	Hexavalent Chromium	12/11/17 8:00 PM	Reported
80	MB-R120834	MBLK	1	Hexavalent Chromium	12/11/17 8:09 PM	Reported
81	N027431-006A	SAMP	1000	Hexavalent Chromium	12/11/17 8:19 PM	Reported
82	N027431-006AMS	MS	1000	Hexavalent Chromium	12/11/17 8:28 PM	Reported
83	N027431-006AMSD	MSD	1000	Hexavalent Chromium	12/11/17 8:38 PM	Reported
84	N027428-002A	SAMP	100	Hexavalent Chromium	12/11/17 8:47 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	12/11/17 8:57 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	12/11/17 9:06 PM	Reported
87	N027428-002ADUP	DUP	100	Hexavalent Chromium	12/11/17 9:16 PM	Reported
88	N027428-002AMS	MS	100	Hexavalent Chromium	12/11/17 9:25 PM	Reported
89	N027428-001A	SAMP	1	Hexavalent Chromium	12/11/17 9:35 PM	Reported
90	N027428-001AMS	MS	1	Hexavalent Chromium	12/11/17 9:44 PM	Reported
91	N027430-016A	SAMP	5	Hexavalent Chromium	12/11/17 9:53 PM	Reported
92	N027430-016AMS	MS	5	Hexavalent Chromium	12/11/17 10:03 PM	Reported
93	N027430-017A	SAMP	5	Hexavalent Chromium	12/11/17 10:12 PM	Reported
94	N027430-017AMS	MS	5	Hexavalent Chromium	12/11/17 10:22 PM	Reported
95	N027430-018A	SAMP	5	Hexavalent Chromium	12/11/17 10:31 PM	Reported
96	N027430-018AMS	MS	5	Hexavalent Chromium	12/11/17 10:41 PM	Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	12/11/17 10:50 PM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	12/11/17 11:00 PM	Reported
99	N027431-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:09 PM	Reported
100	N027431-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:19 PM	Reported
101	N027431-003A	SAMP	5	Hexavalent Chromium	12/11/17 11:28 PM	Reported
102	N027431-003AMS	MS	5	Hexavalent Chromium	12/11/17 11:38 PM	Reported
103	N027431-004A	SAMP	5	Hexavalent Chromium	12/11/17 11:47 PM	Reported
104	N027431-004AMS	MS	5	Hexavalent Chromium	12/11/17 11:56 PM	Reported
105	N027431-001A	SAMP	10	Hexavalent Chromium	12/12/17 12:06 AM	Not Reported
106	N027431-001AMS	MS	10	Hexavalent Chromium	12/12/17 12:15 AM	Not Reported
107	N027431-005A	SAMP	200	Hexavalent Chromium	12/12/17 12:25 AM	Reported
108	N027431-005AMS	MS	200	Hexavalent Chromium	12/12/17 12:34 AM	Reported
109	CCV-9	CCV	1	Hexavalent Chromium	12/12/17 12:44 AM	Reported
110	CCB-9	CCB	1	Hexavalent Chromium	12/12/17 12:53 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171211A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**12/Dec/17 01:24:03**
No. of Injections:	**113**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/11/2017 08:57	Finished	BLANK
11	BLANK	2	1000	Unknown		12/11/2017 09:08	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/11/2017 09:18	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/11/2017 09:27	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/11/2017 09:37	Finished	CCB R171129A
15	MB-1,MBLK,1	6	1000	Unknown		12/11/2017 09:46	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/11/2017 09:56	Finished	LCS, IWST-171002B
17	N027405-006AMS,MS	1	1000	Unknown		12/11/2017 10:09	Finished	MS (1ppb), IWST-171002B,2>1
18	N027405-006A,SAMP	2	1000	Unknown		12/11/2017 10:20	Finished	SAMP,2>10mL
19	N027405-007AMS,MS	3	1000	Unknown		12/11/2017 10:29	Finished	MS (1ppb), IWST-171002B,2>1
20	N027405-007A,SAMP	4	1000	Unknown		12/11/2017 10:39	Finished	SAMP,2>10mL
21	N027405-008AMS,MS	5	1000	Unknown		12/11/2017 10:48	Finished	SAMP,2>10mL
22	N027405-008A,SAMP	6	1000	Unknown		12/11/2017 10:58	Finished	MS (1ppb), IWST-171002B,2>1
23	N027430-001A,SAMP	7	1000	Unknown		12/11/2017 11:07	Finished	SAMP,10mL
24	N027430-001AMS,MS	8	1000	Unknown		12/11/2017 11:17	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	9	1000	Unknown		12/11/2017 11:26	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	10	1000	Unknown		12/11/2017 11:36	Finished	CCB R171129A
27	N027430-002A,SAMP	11	1000	Unknown		12/11/2017 11:45	Finished	SAMP,2>10mL
28	N027430-002AMS,MS	12	1000	Unknown		12/11/2017 11:54	Finished	MS (1ppb), IWST-171002B,2>1
29	N027430-003A,SAMP	13	1000	Unknown		12/11/2017 12:04	Finished	SAMP,10mL
30	N027430-003AMS,MS	14	1000	Unknown		12/11/2017 12:13	Finished	MS (1ppb), IWST-171002B,10
31	N027430-004A,SAMP	15	1000	Unknown		12/11/2017 12:23	Finished	SAMP,10mL
32	N027430-004AMS,MS	16	1000	Unknown		12/11/2017 12:32	Finished	MS (1ppb), IWST-171002B,10
33	N027430-005A,SAMP	17	1000	Unknown		12/11/2017 12:42	Finished	SAMP,10mL
34	N027430-005AMS,MS	18	1000	Unknown		12/11/2017 12:51	Finished	MS (1ppb), IWST-171002B,10
35	N027430-006A,SAMP	19	1000	Unknown		12/11/2017 13:01	Finished	SAMP,10mL
36	N027430-006AMS,MS	20	1000	Unknown		12/11/2017 13:10	Finished	MS (1ppb), IWST-171002B,10
37	CCV-3,CCV,1,	21	1000	Unknown		12/11/2017 13:20	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	22	1000	Unknown		12/11/2017 13:29	Finished	CCB R171129A
39	N027430-007A,SAMP	23	1000	Unknown		12/11/2017 13:38	Finished	SAMP,10mL
40	N027430-007AMS,MS	24	1000	Unknown		12/11/2017 13:48	Finished	MS (1ppb), IWST-171002B,10
41	N027430-008A,SAMP	25	1000	Unknown		12/11/2017 13:57	Finished	SAMP,10mL
42	N027430-008AMS,MS	26	1000	Unknown		12/11/2017 14:07	Finished	MS (1ppb), IWST-171002B,10
43	N027430-009A,SAMP	27	1000	Unknown		12/11/2017 14:16	Finished	SAMP,10mL
44	N027430-009AMS,MS	28	1000	Unknown		12/11/2017 14:26	Finished	MS (1ppb), IWST-171002B,10
45	N027430-010A,SAMP	29	1000	Unknown		12/11/2017 14:35	Finished	SAMP,10mL
46	N027430-010AMS,MS	30	1000	Unknown		12/11/2017 14:45	Finished	MS (1ppb), IWST-171002B,10
47	N027430-020A,SAMP	31	1000	Unknown		12/11/2017 14:54	Finished	SAMP,0.5>10mL
48	N027430-020AMS,MS	32	1000	Unknown		12/11/2017 15:04	Finished	MS (5ppb), IWST-171002B,0.5
49	CCV-4,CCV1,1,	33	1000	Unknown		12/11/2017 15:13	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	34	1000	Unknown		12/11/2017 15:23	Finished	CCB R171129A
51	N027430-012A,SAMP	35	1000	Unknown		12/11/2017 15:32	Finished	SAMP,10mL
52	N027430-012AMS,MS	36	1000	Unknown		12/11/2017 15:41	Finished	MS (1ppb), IWST-171002B,10
53	N027430-019A,SAMP	37	1000	Unknown		12/11/2017 15:51	Finished	SAMP,10mL
54	N027430-019AMS,MS	38	1000	Unknown		12/11/2017 16:00	Finished	MS (1ppb), IWST-171002B,10
55	N027430-011A,SAMP	39	1000	Unknown		12/11/2017 16:10	Finished	SAMP,10mL
56	N027430-011AMS,MS	40	1000	Unknown		12/11/2017 16:19	Finished	MS (1ppb), IWST-171002B,10
57	N027430-013A,SAMP	41	1000	Unknown		12/11/2017 16:29	Finished	SAMP,2>10mL
58	N027430-013AMS,MS	42	1000	Unknown		12/11/2017 16:38	Finished	MS (1ppb), IWST-171002B,2>1
59	N027430-014A,SAMP	43	1000	Unknown		12/11/2017 16:48	Finished	SAMP,2>10mL
60	N027430-014AMS,MS	44	1000	Unknown		12/11/2017 16:57	Finished	MS (1ppb), IWST-171002B,2>1

IC-07 RBA 12/14/2017 7:32:55 PM rba 12/16/2017 12/21/2017

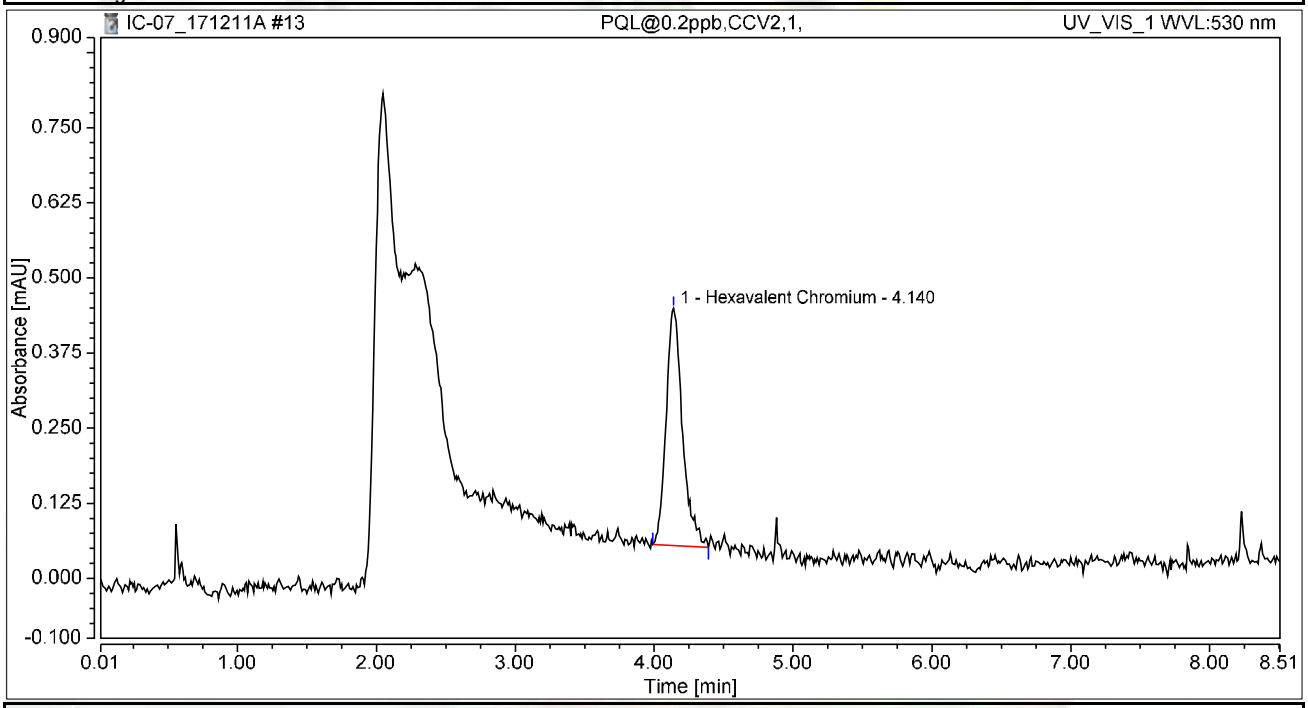
61	CCV-5,CCV,1,	45	1000	Unknown		12/11/2017 17:07	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	46	1000	Unknown		12/11/2017 17:16	Finished	CCB R171129A
63	N027430-015A,SAMF	47	1000	Unknown		12/11/2017 17:26	Finished	SAMP,2>10mL
64	N027430-015AMS,MS	48	1000	Unknown		12/11/2017 17:35	Finished	MS (1ppb), IWST-171002B,2>1
65	N027405-006ADUP,D	49	1000	Unknown		12/11/2017 17:44	Finished	DUP,2>10mL
66	N027430-020AMSD,M	50	1000	Unknown		12/11/2017 17:54	Finished	MSD (5ppb), IWST-171002B,0.
67	N027430-002A,SAMF	1	1000	Unknown		12/11/2017 18:05	Finished	MSD (5ppb), IWST-171002B,0.
68	N027430-002AMS,MS	2	1000	Unknown		12/11/2017 18:16	Finished	DUP,2>10mL
69	N027430-013A,SAMF	3	1000	Unknown		12/11/2017 18:25	Finished	SAMP,2>10mL
70	N027430-013AMS,MS	4	1000	Unknown		12/11/2017 18:35	Finished	MS (1ppb), IWST-171002B,2>1
71	N027430-014A,SAMF	5	1000	Unknown		12/11/2017 18:44	Finished	SAMP,10mL
72	N027430-014AMS,MS	6	1000	Unknown		12/11/2017 18:54	Finished	MS (1ppb), IWST-171002B,10
73	CCV-6,CCV1,1,	7	1000	Unknown		12/11/2017 19:03	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	8	1000	Unknown		12/11/2017 19:13	Finished	CCB R171129A
75	N027430-015A,SAMF	9	1000	Unknown		12/11/2017 19:22	Finished	LCS, IWST-171002B
76	N027430-015AMS,MS	10	1000	Unknown		12/11/2017 19:32	Finished	MB R171129A
77	N027430-012A,SAMF	11	1000	Unknown		12/11/2017 19:41	Finished	SAMP,2>10mL
78	N027430-012AMS,MS	12	1000	Unknown		12/11/2017 19:50	Finished	MS (1ppb), IWST-171002B,2>1
79	LCS-2,LCS,1	13	1000	Unknown		12/11/2017 20:00	Finished	LCS, IWST-171002B
80	MB-2,MBLK,1	14	1000	Unknown		12/11/2017 20:09	Finished	MB R171129A
81	N027431-006A,SAMF	15	1000	Unknown		12/11/2017 20:19	Finished	DUP,0.1>10mL
82	N027431-006AMS,MS	16	1000	Unknown		12/11/2017 20:28	Finished	SAMP,10mL
83	N027431-006AMSD,M	17	1000	Unknown		12/11/2017 20:38	Finished	SAMP,5>10mL
84	N027428-002A,SAMF	18	1000	Unknown		12/11/2017 20:47	Finished	SAMP,0.2>10mL
85	CCV-7,CCV,1,	19	1000	Unknown		12/11/2017 20:57	Finished	CCV @5ppb, IWST-171002A
86	CCB-7,CCB,1,	20	1000	Unknown		12/11/2017 21:06	Finished	CCB R171114C
87	N027428-002ADUP,D	21	1000	Unknown		12/11/2017 21:16	Finished	SAMP,0.2>10mL
88	N027428-002AMS,MS	22	1000	Unknown		12/11/2017 21:25	Finished	SAMP,1>10mL
89	N027428-001A,SAMF	23	1000	Unknown		12/11/2017 21:35	Finished	SAMP,0.5>10mL
90	N027428-001AMS,MS	24	1000	Unknown		12/11/2017 21:44	Finished	SAMP,5>10mL
91	N027430-016A,SAMF	25	1000	Unknown		12/11/2017 21:53	Finished	SAMP,10mL
92	N027430-016AMS,MS	26	1000	Unknown		12/11/2017 22:03	Finished	SAMP,2>10mL
93	N027430-017A,SAMF	27	1000	Unknown		12/11/2017 22:12	Finished	MS (5ppb), IWST-171002B,2>1
94	N027430-017AMS,MS	28	1000	Unknown		12/11/2017 22:22	Finished	MSD (5ppb), IWST-171002B,2
95	N027430-018A,SAMF	29	1000	Unknown		12/11/2017 22:31	Finished	SAMP,10mL
96	N027430-018AMS,MS	30	1000	Unknown		12/11/2017 22:41	Finished	MS (1ppb), IWST-171002B,10
97	CCV-8,CCV1,1,	31	1000	Unknown		12/11/2017 22:50	Finished	CCV @10ppb, IWST-171002A
98	CCB-8,CCB,1,	32	1000	Unknown		12/11/2017 23:00	Finished	CCB R171129A
99	N027431-002A,SAMF	33	1000	Unknown		12/11/2017 23:09	Finished	SAMP,10mL
100	N027431-002AMS,MS	34	1000	Unknown		12/11/2017 23:19	Finished	MS (1ppb), IWST-171002B,10
101	N027431-003A,SAMF	35	1000	Unknown		12/11/2017 23:28	Finished	SAMP,10mL
102	N027431-003AMS,MS	36	1000	Unknown		12/11/2017 23:38	Finished	MS (1ppb), IWST-171002B,10
103	N027431-004A,SAMF	37	1000	Unknown		12/11/2017 23:47	Finished	SAMP,10mL
104	N027431-004AMS,MS	38	1000	Unknown		12/11/2017 23:56	Finished	MS (1ppb), IWST-171002B,10
105	N027431-001A,SAMF	39	1000	Unknown		12/12/2017 00:06	Finished	SAMP,10mL
106	N027431-001AMS,MS	40	1000	Unknown		12/12/2017 00:15	Finished	MS (1ppb), IWST-171002B,10
107	N027431-005A,SAMF	41	1000	Unknown		12/12/2017 00:25	Finished	SAMP,10mL
108	N027431-005AMS,MS	42	1000	Unknown		12/12/2017 00:34	Finished	MS (1ppb), IWST-171002B,10
109	CCV-9,CCV,1,	43	1000	Unknown		12/12/2017 00:44	Finished	CCV @5ppb, IWST-171002A
110	CCB-9,CCB,1,	44	1000	Unknown		12/12/2017 00:53	Finished	CCB R171114C
111	SHUTDOWN	45	1000	Unknown		12/12/2017 01:03	Finished	
112	Eluent: R171211B	46	1000	Unknown		n.a.	Finished	Eluent
113	PCR: R171211C	47	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

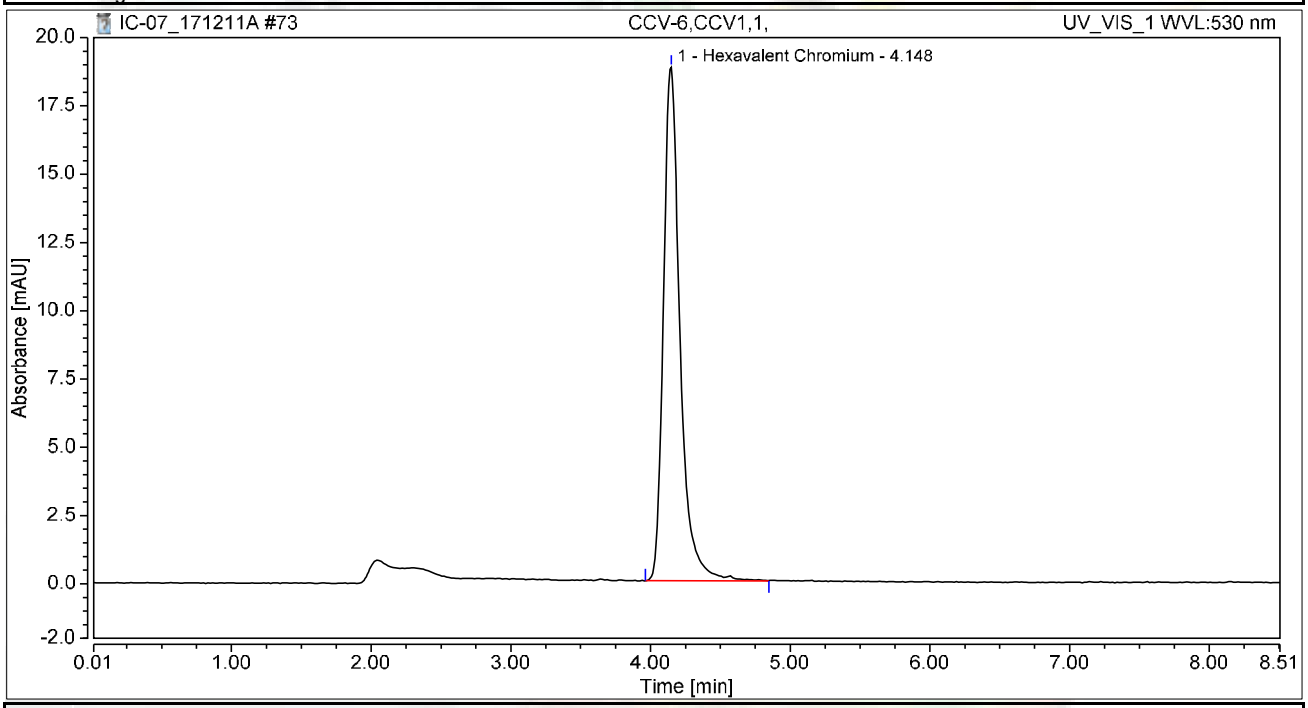
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.054	0.395	100.00	100.00	0.2151
Total:			**0.054**	**0.395**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

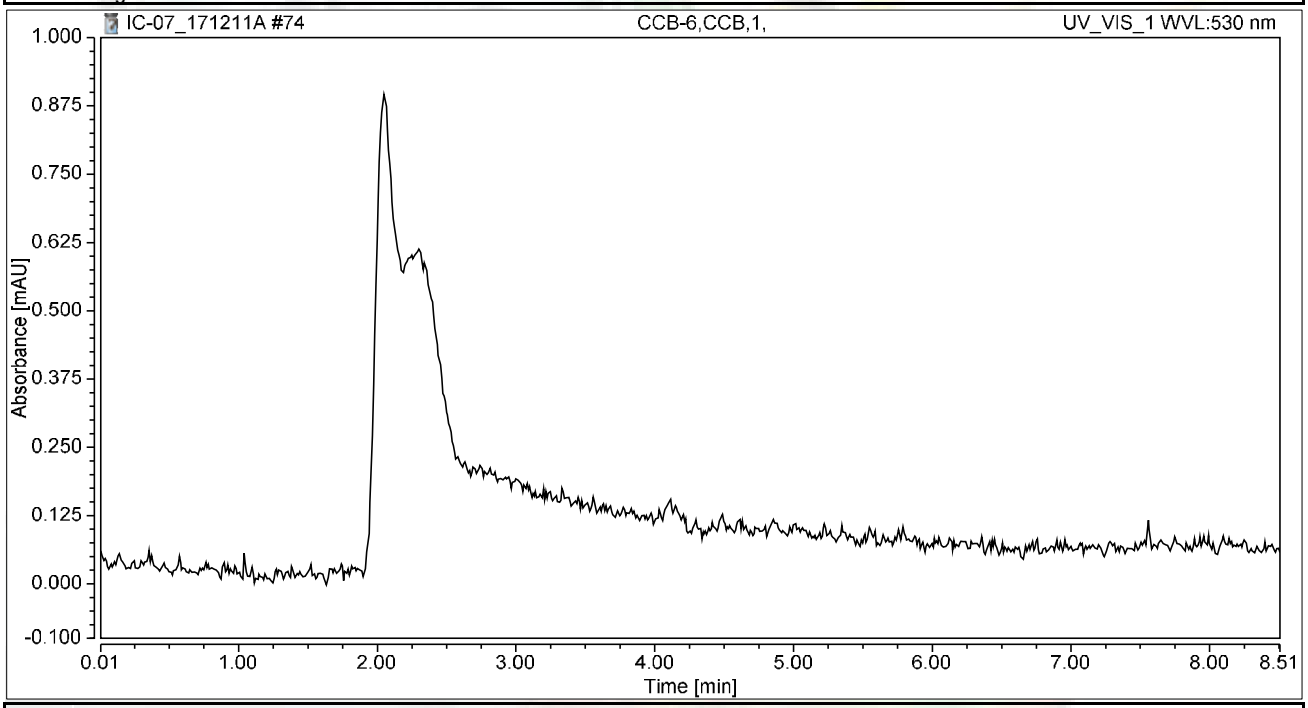
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.585	18.801	100.00	100.00	10.2939
Total:			**2.585**	**18.801**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

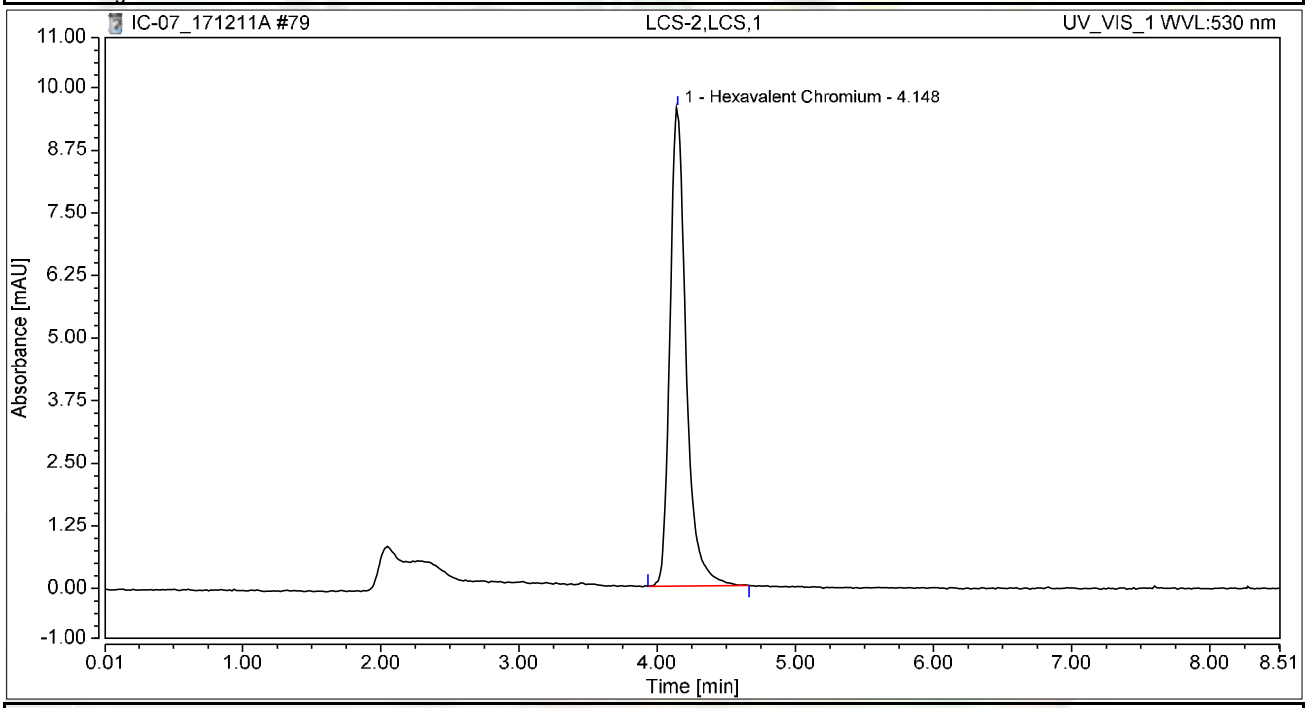
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-2,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

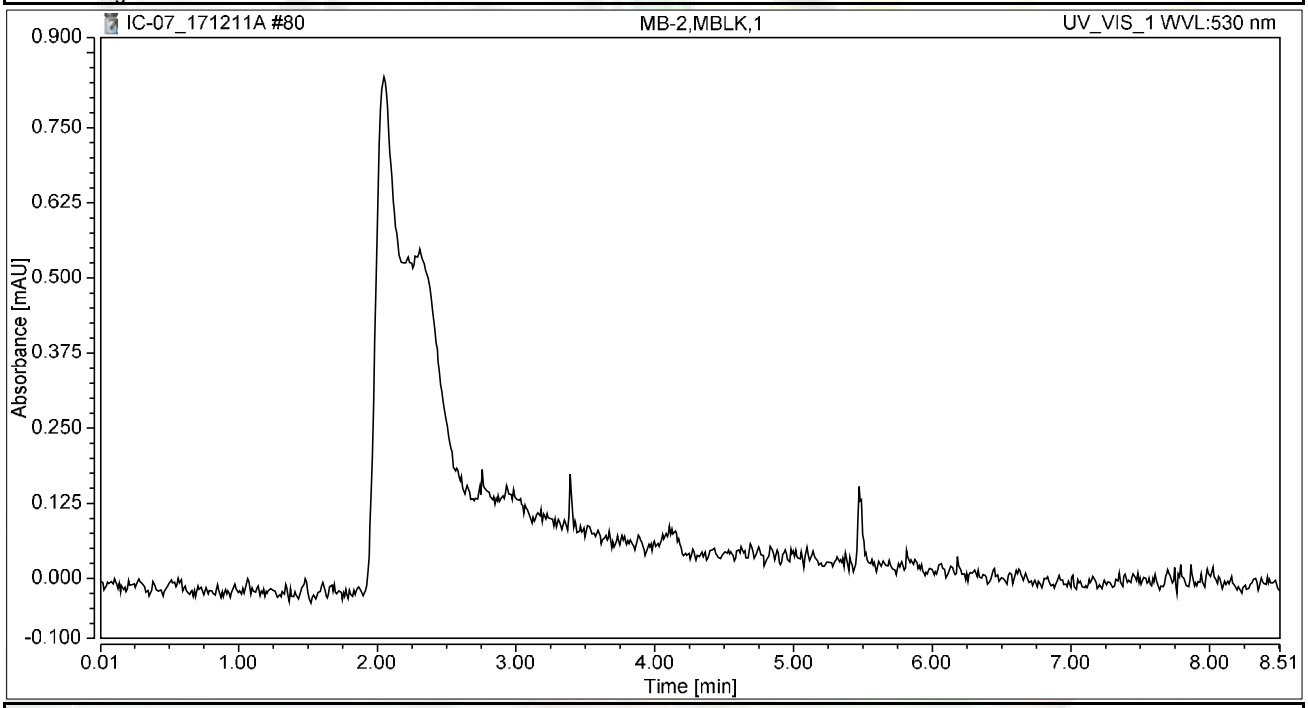
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.299	9.550	100.00	100.00	5.1752
Total:			**1.299**	**9.550**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-2,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

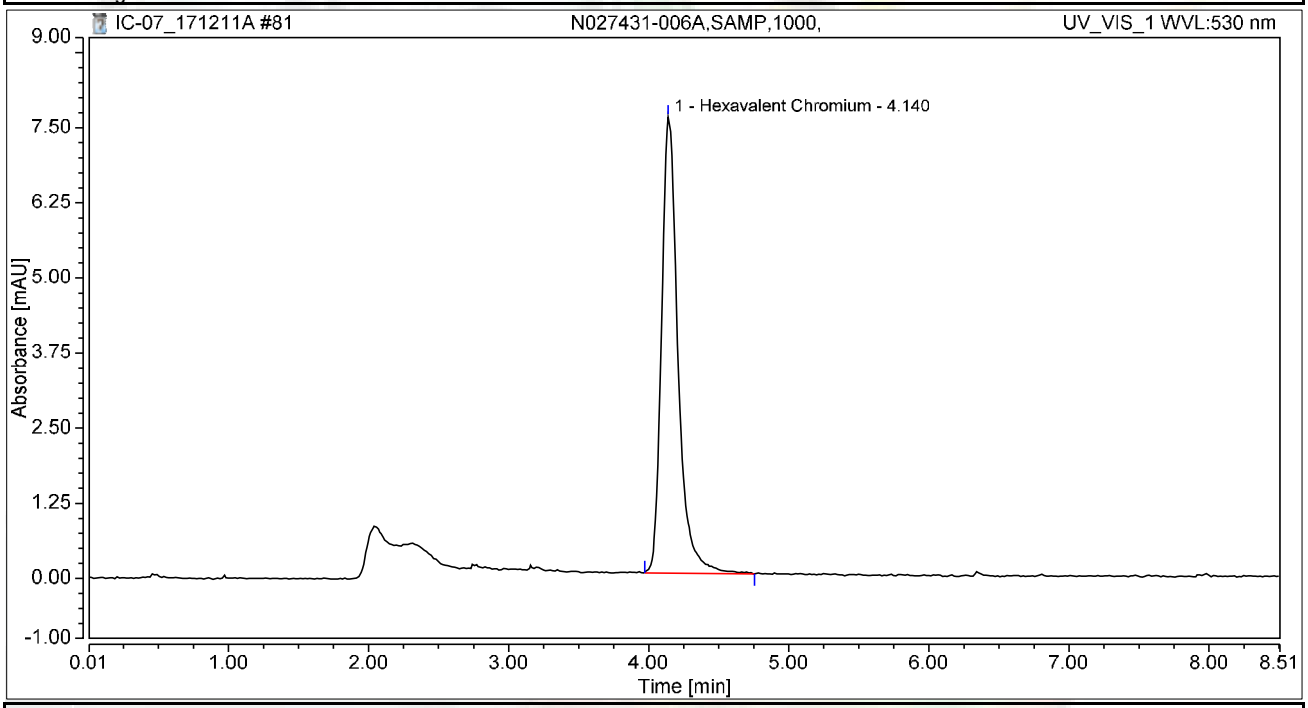
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-006A,SAMP,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

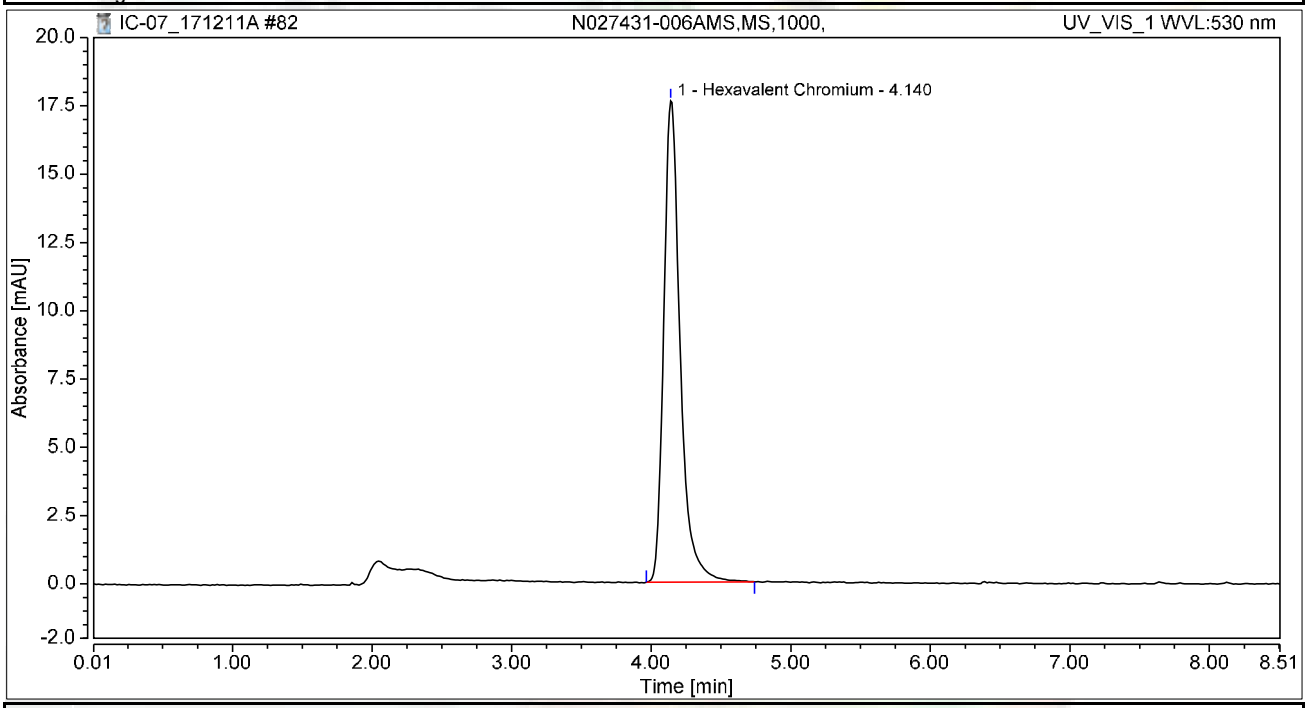
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.040	7.590	100.00	100.00	4.1412
Total:			**1.040**	**7.590**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-006AMS,MS,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

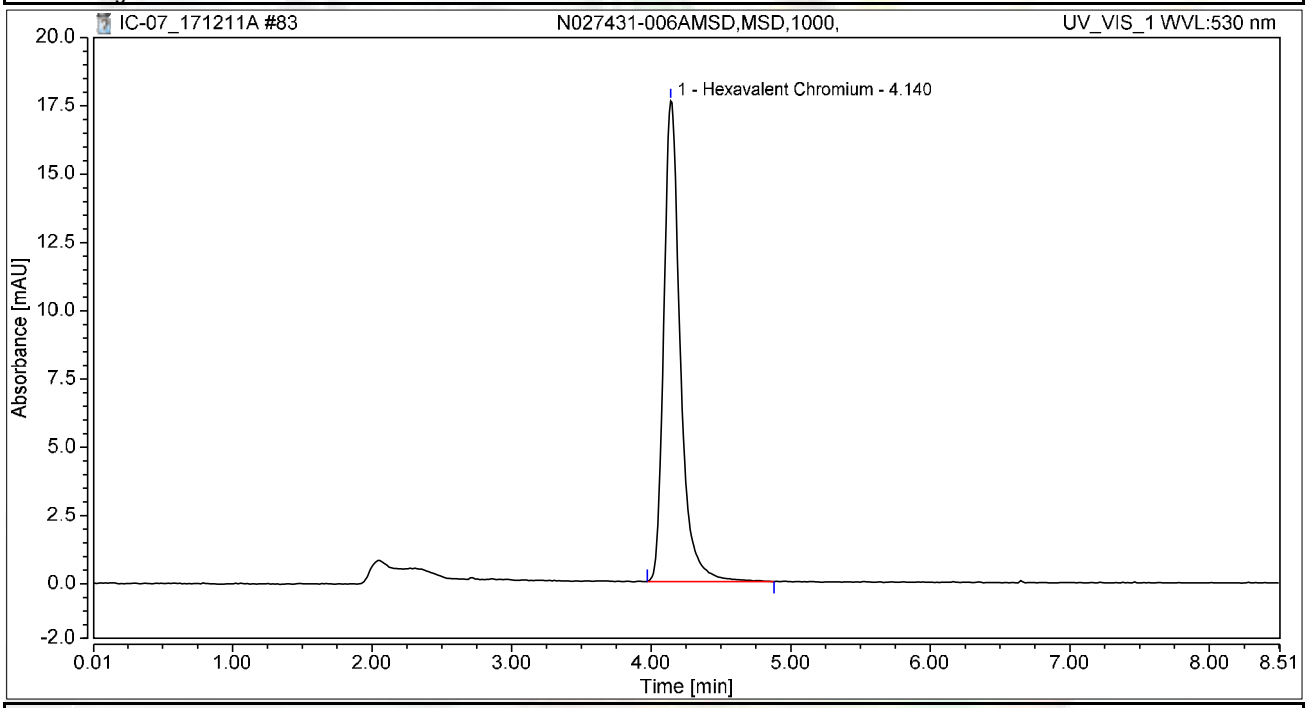
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.408	17.620	100.00	100.00	9.5916
Total:			**2.408**	**17.620**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-006AMSD,MSD,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

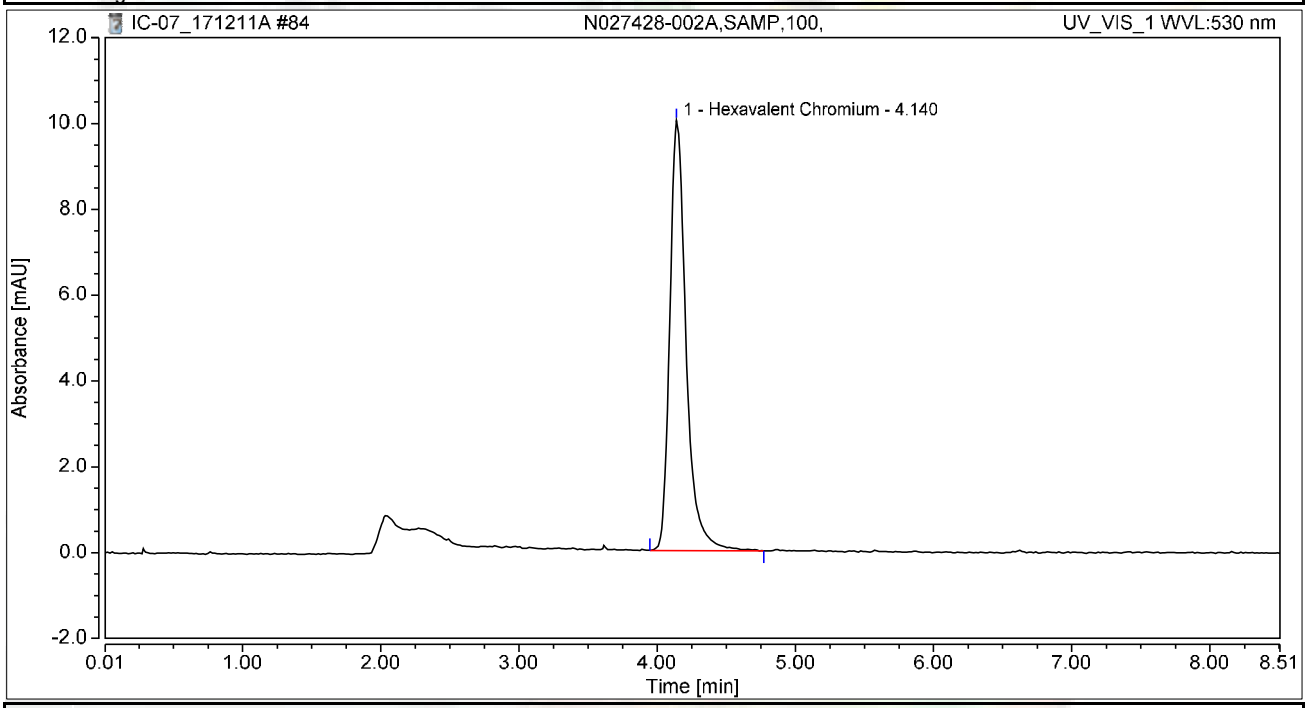
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.418	17.606	100.00	100.00	9.6302
Total:			**2.418**	**17.606**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027428-002A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

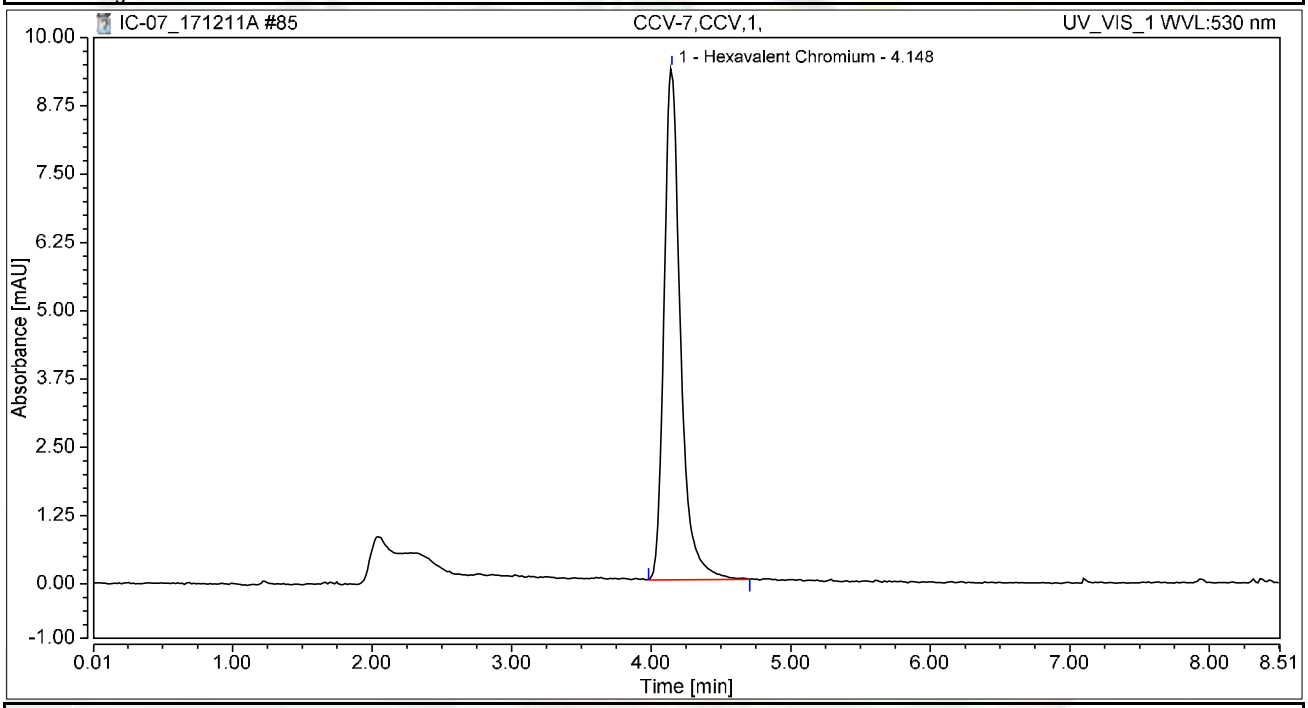
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.380	10.020	100.00	100.00	5.4968
Total:			**1.380**	**10.020**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

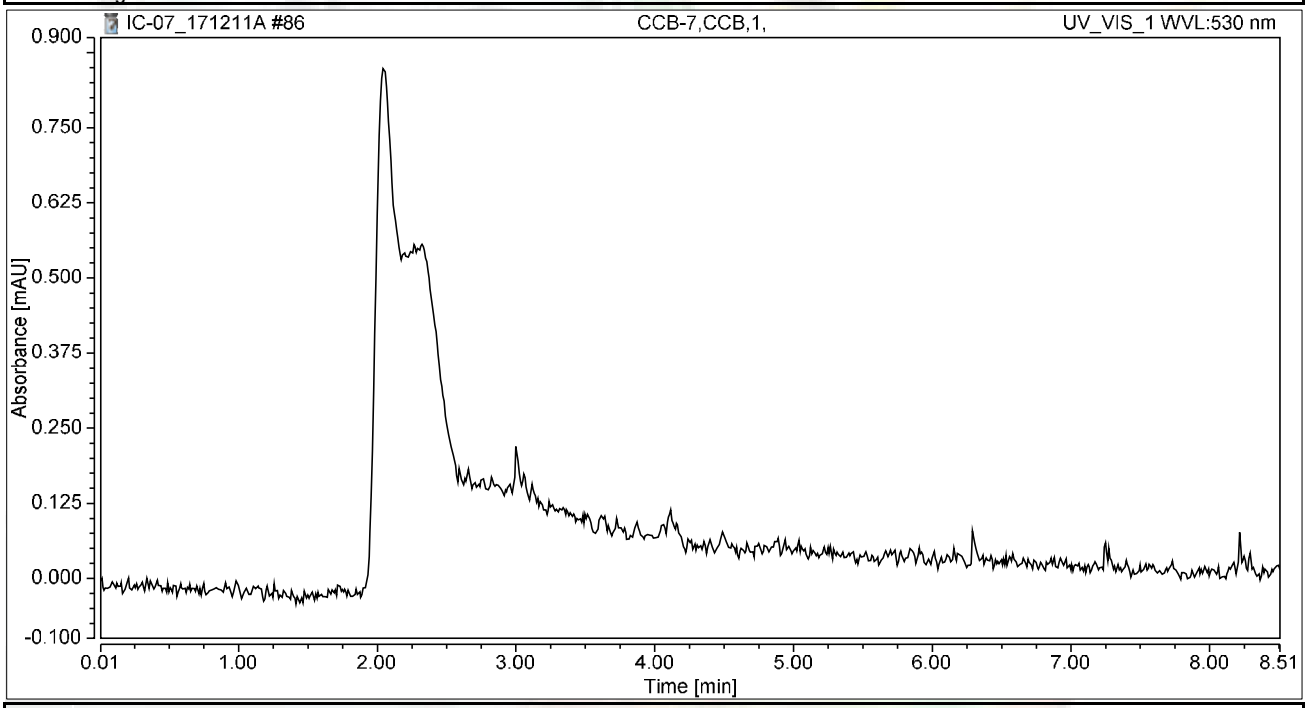
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.283	9.373	100.00	100.00	5.1094
Total:			**1.283**	**9.373**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

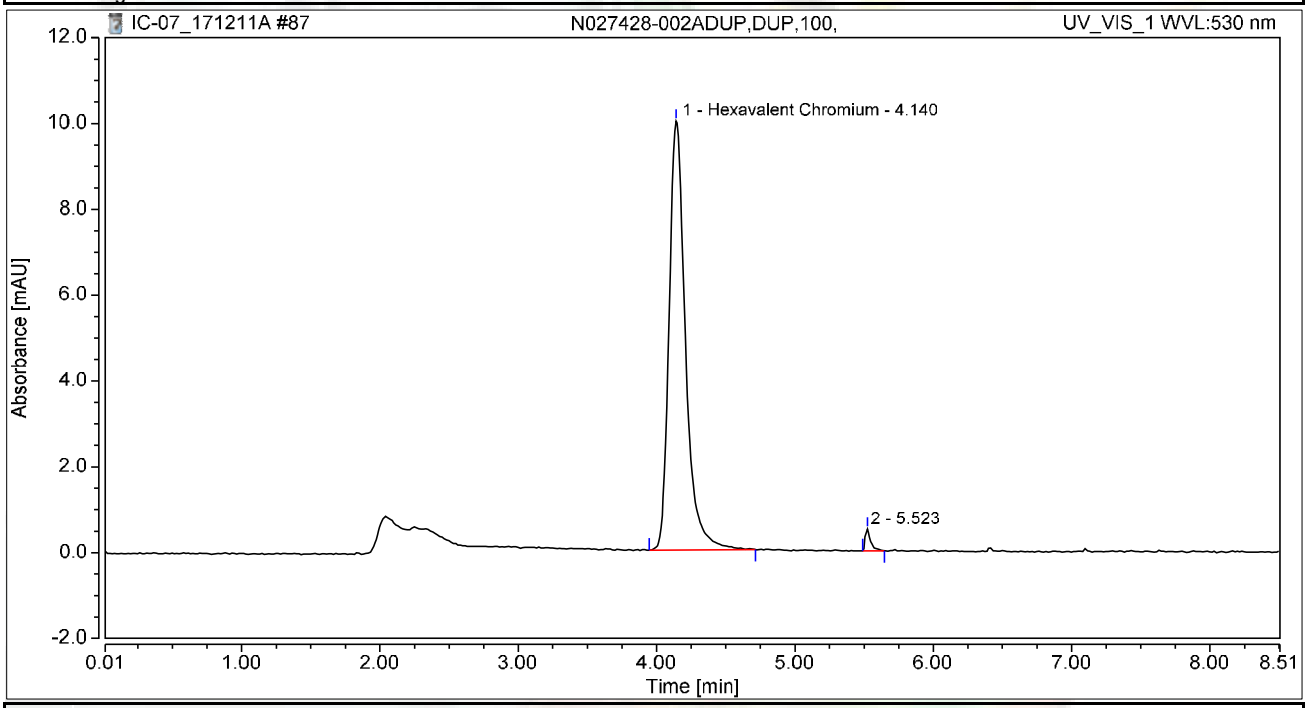
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027428-002ADUP,DUP,100,**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

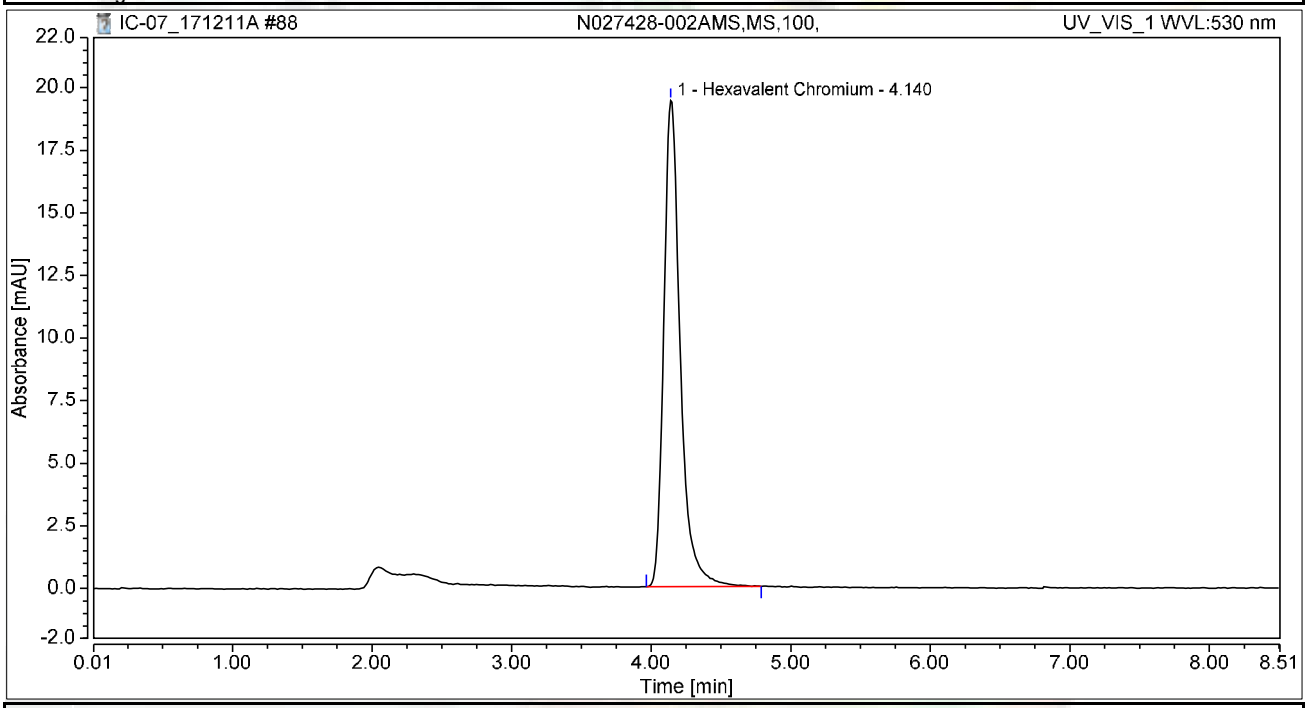
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.373	9.989	98.33	95.21	5.4689
2		5.523	0.023	0.502	1.67	4.79	n.a.
Total:			**1.397**	**10.491**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027428-002AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

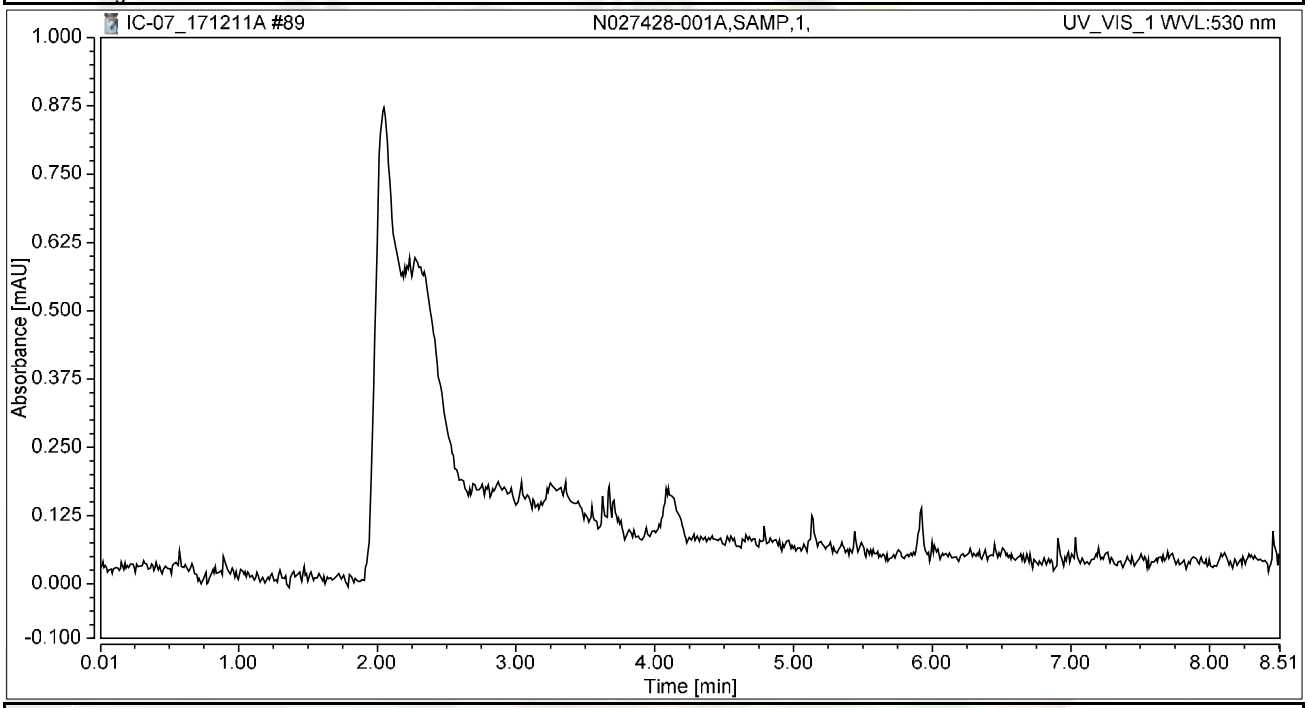
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.661	19.412	100.00	100.00	10.5980
Total:			**2.661**	**19.412**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027428-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

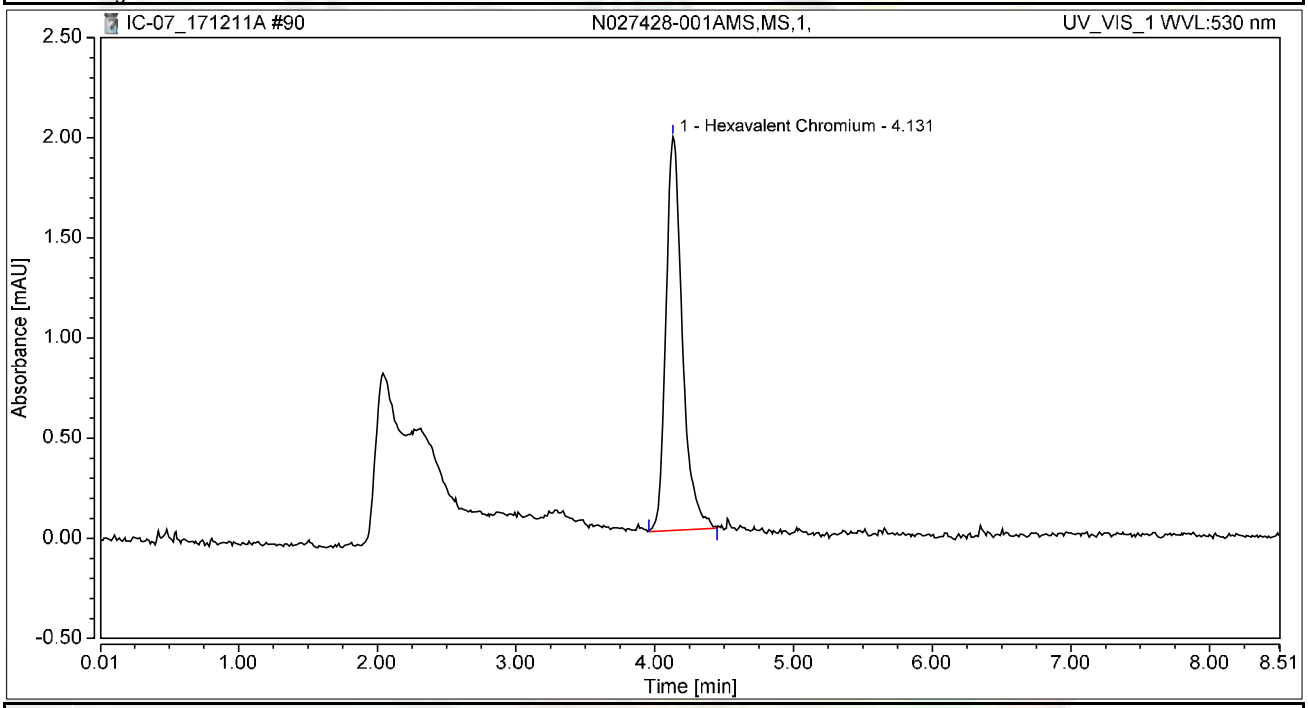
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027428-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

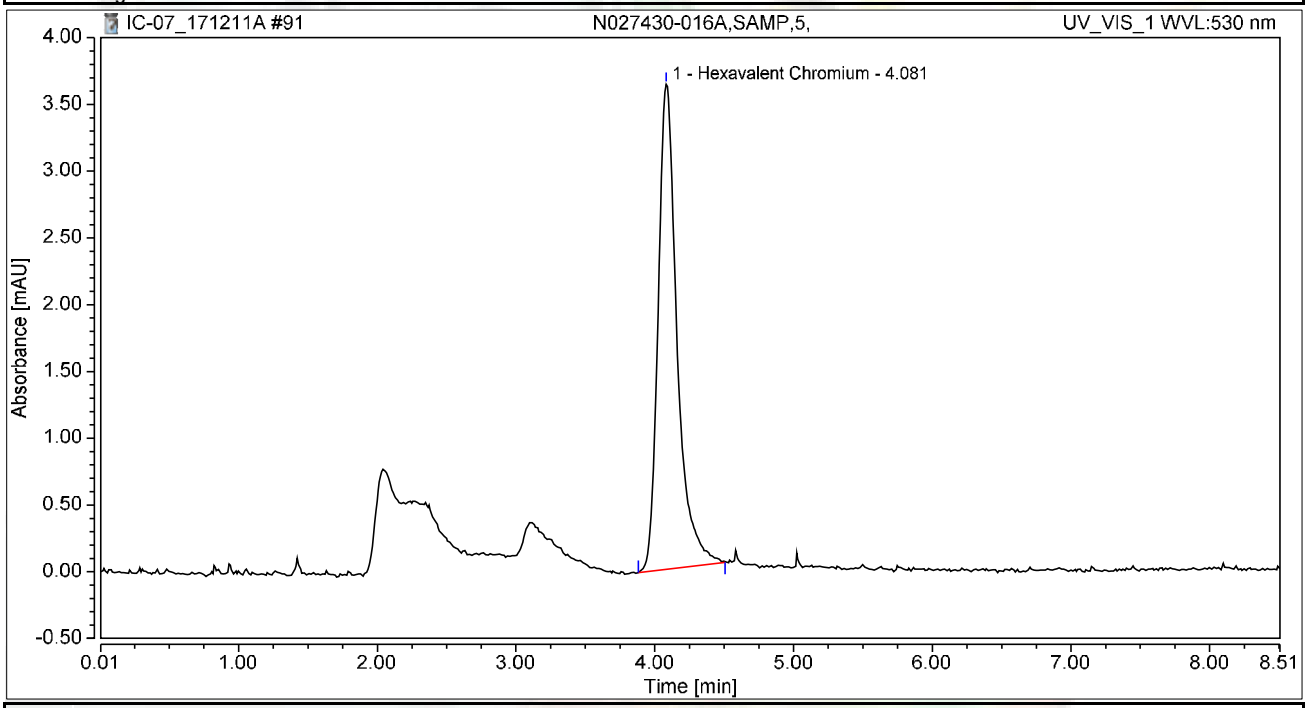
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.271	1.965	100.00	100.00	1.0787
Total:			**0.271**	**1.965**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-016A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

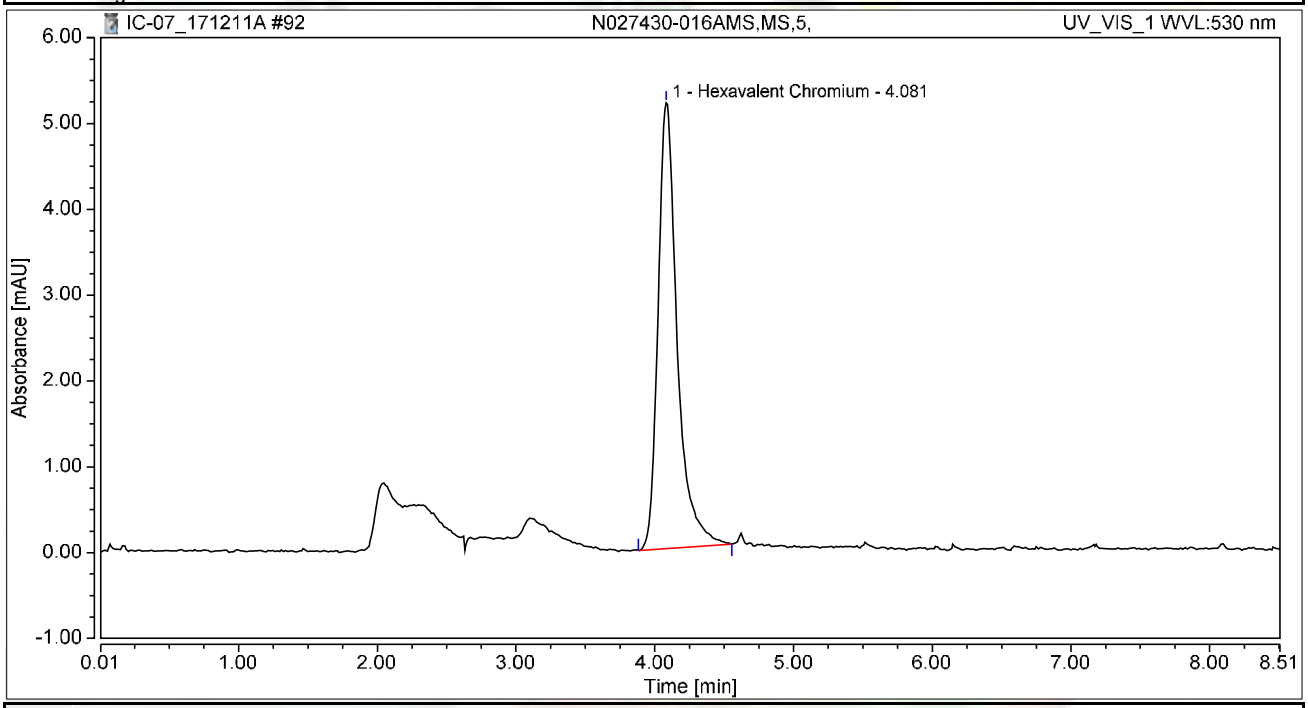
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.575	3.632	100.00	100.00	2.2917
Total:			**0.575**	**3.632**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-016AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

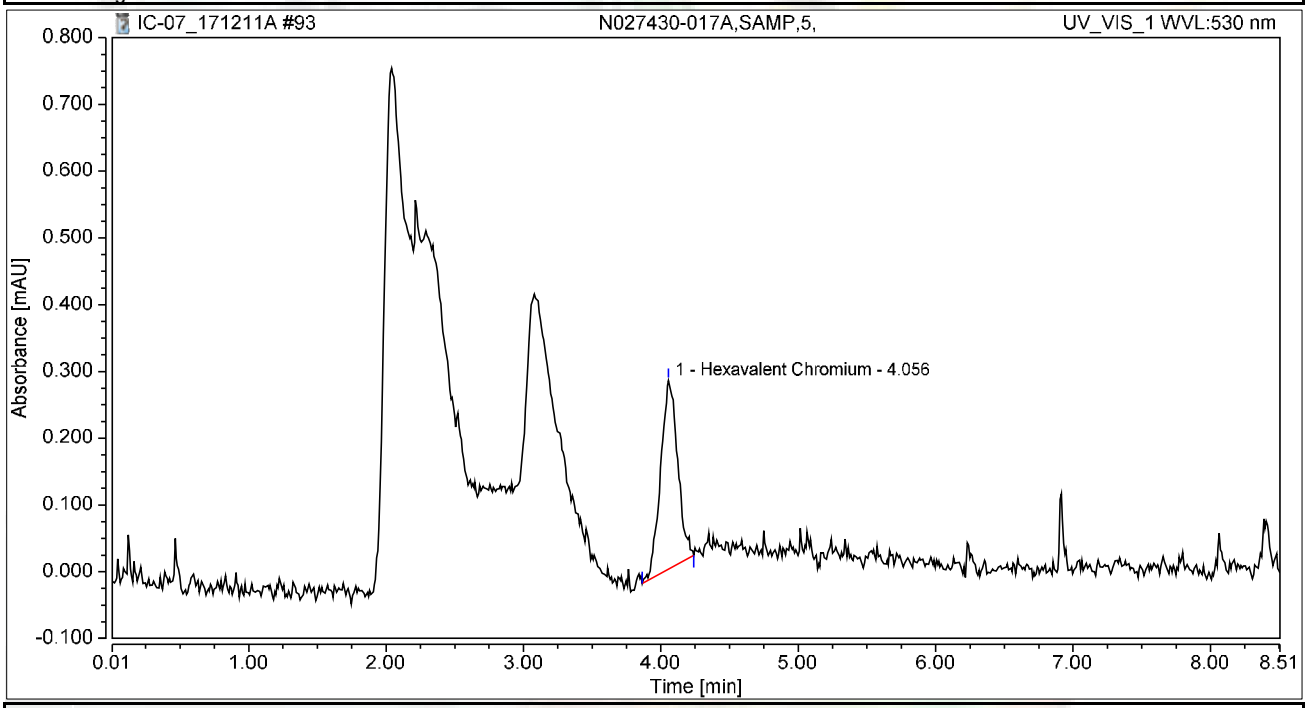
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.832	5.194	100.00	100.00	3.3146
Total:			**0.832**	**5.194**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-017A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

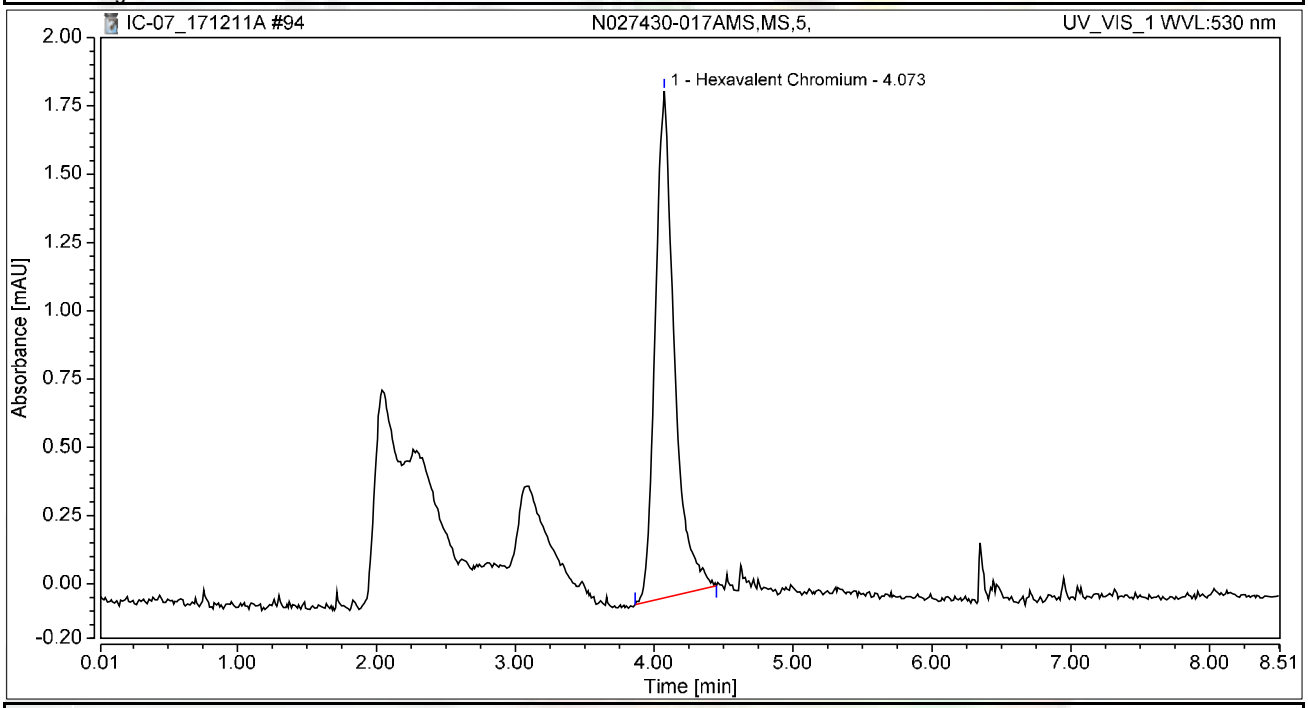
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.041	0.283	100.00	100.00	0.1618
Total:			**0.041**	**0.283**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-017AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

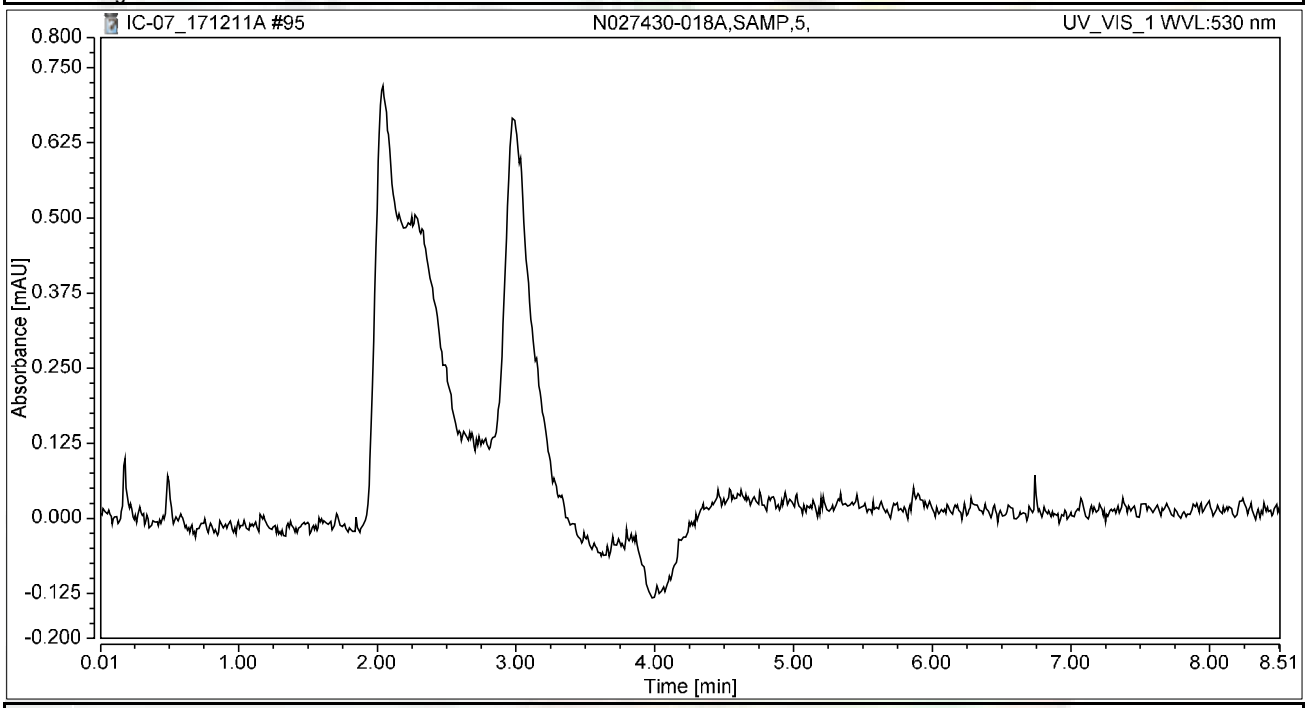
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	0.296	1.856	100.00	100.00	1.1798
Total:			**0.296**	**1.856**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-018A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

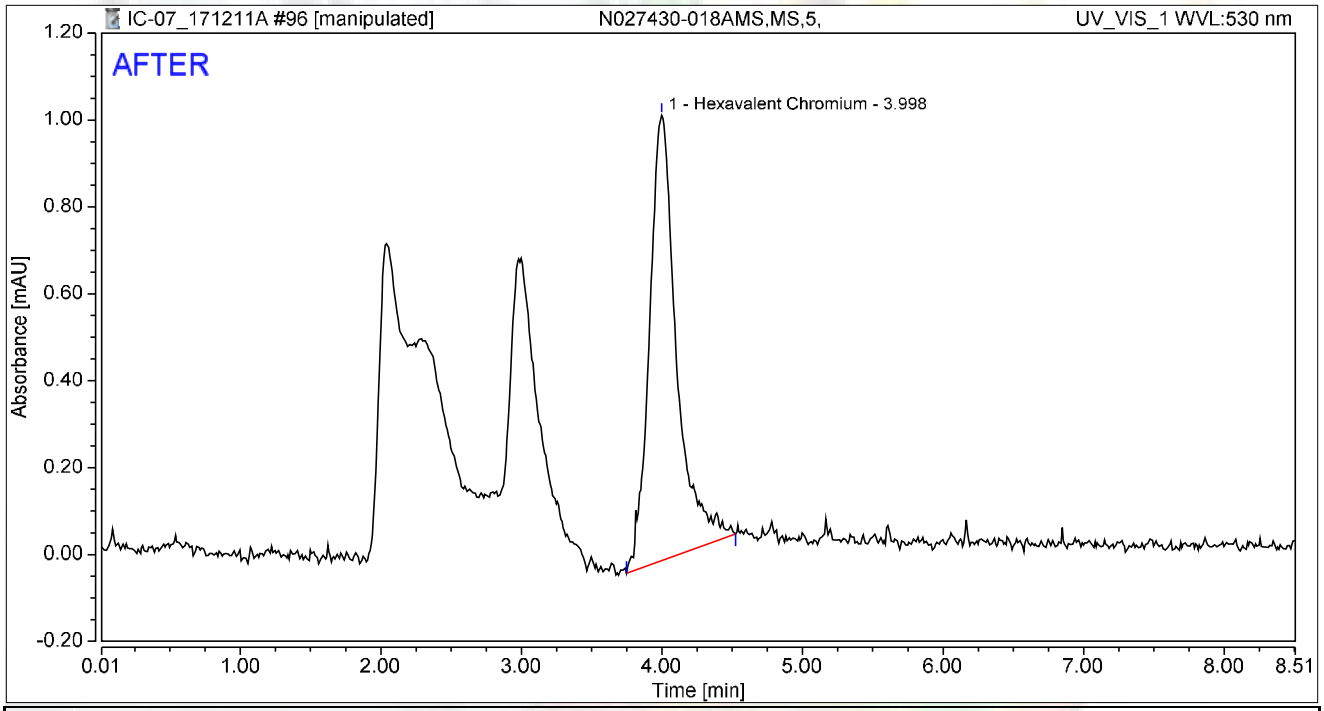
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-018AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.998	0.230	1.025	100.00	100.00	0.9160
Total:			**0.230**	**1.025**	**100.00**	**100.00**	

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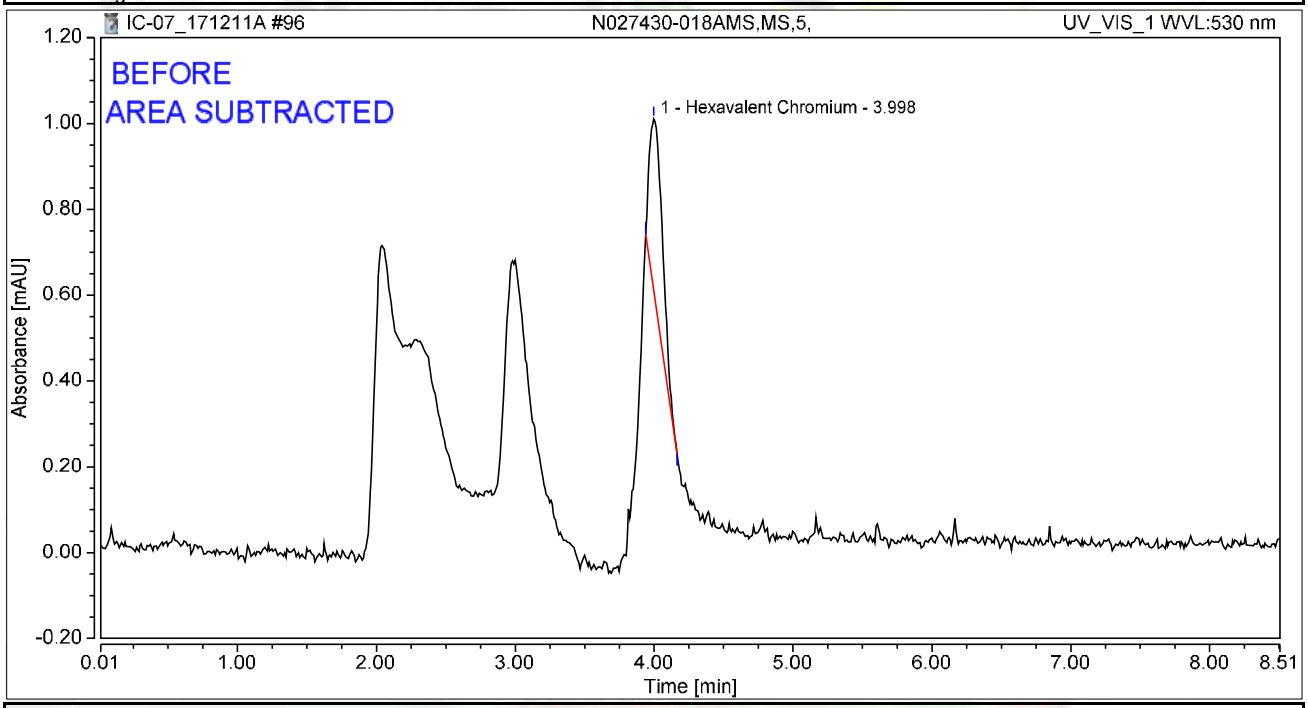
Chromatogram and Results

Injection Details

Injection Name:	**N027430-018AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.998	0.045	0.401	100.00	100.00	0.1811
Total:			**0.045**	**0.401**	**100.00**	**100.00**	

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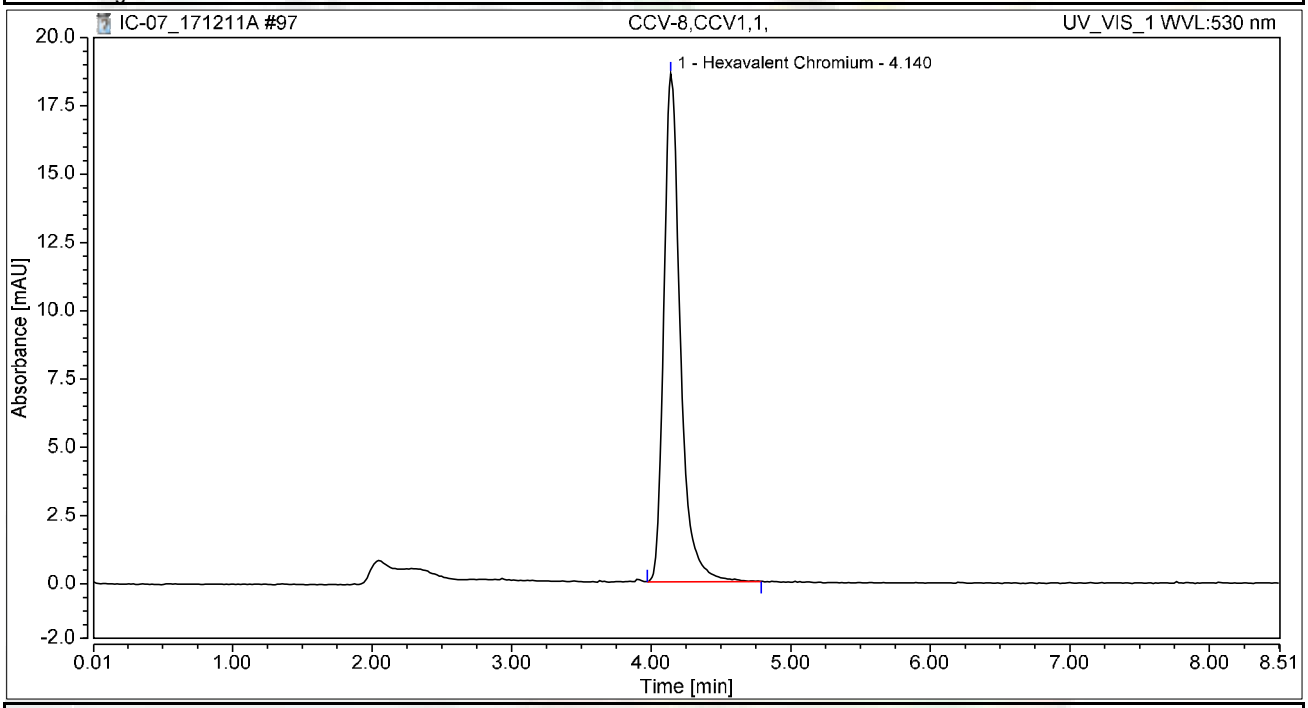
Chromatogram and Results

Injection Details

Injection Name:	**CCV-8,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

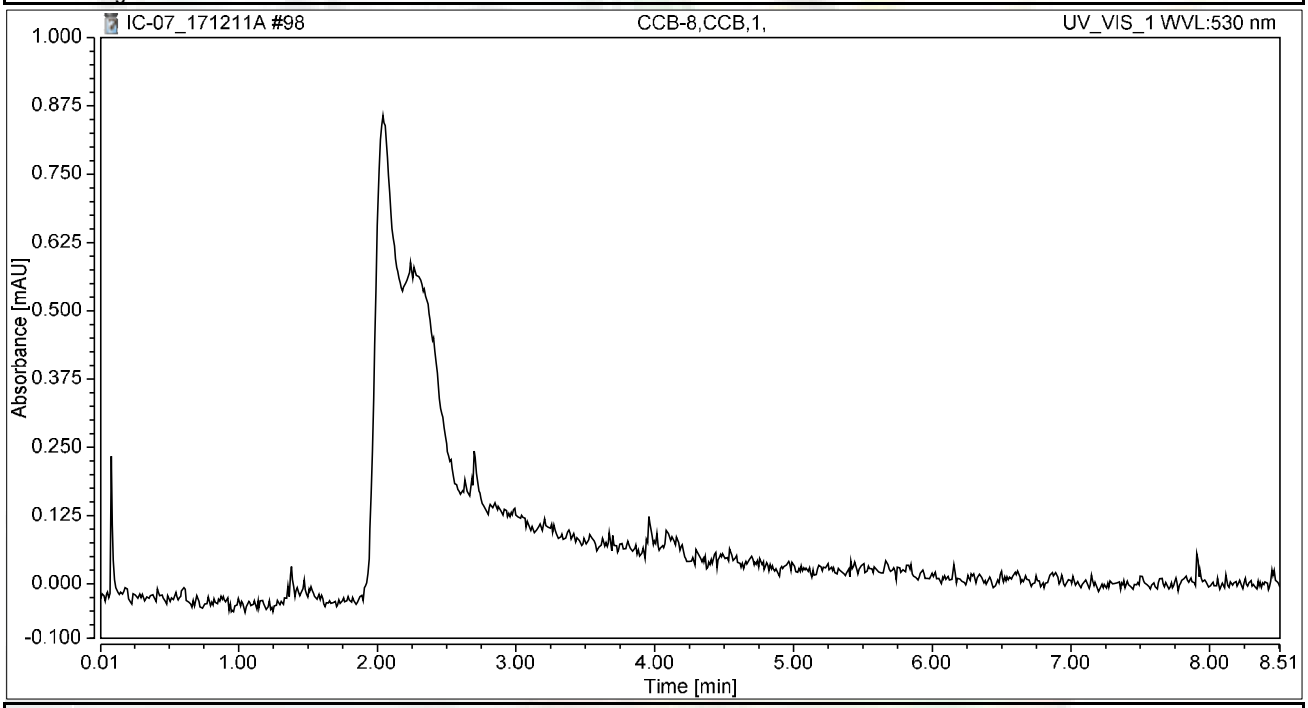
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.551	18.593	100.00	100.00	10.1602
Total:			**2.551**	**18.593**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-8,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

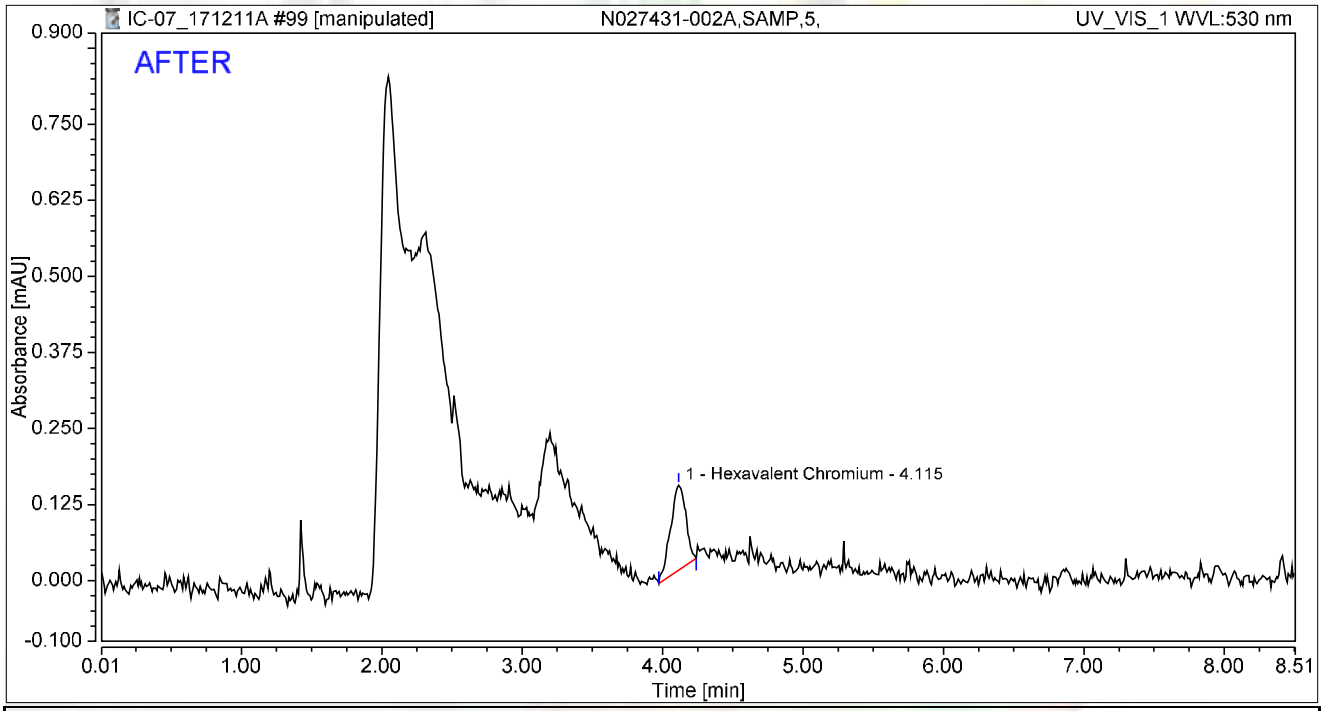
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.018	0.140	100.00	100.00	0.0709
Total:			**0.018**	**0.140**	**100.00**	**100.00**	

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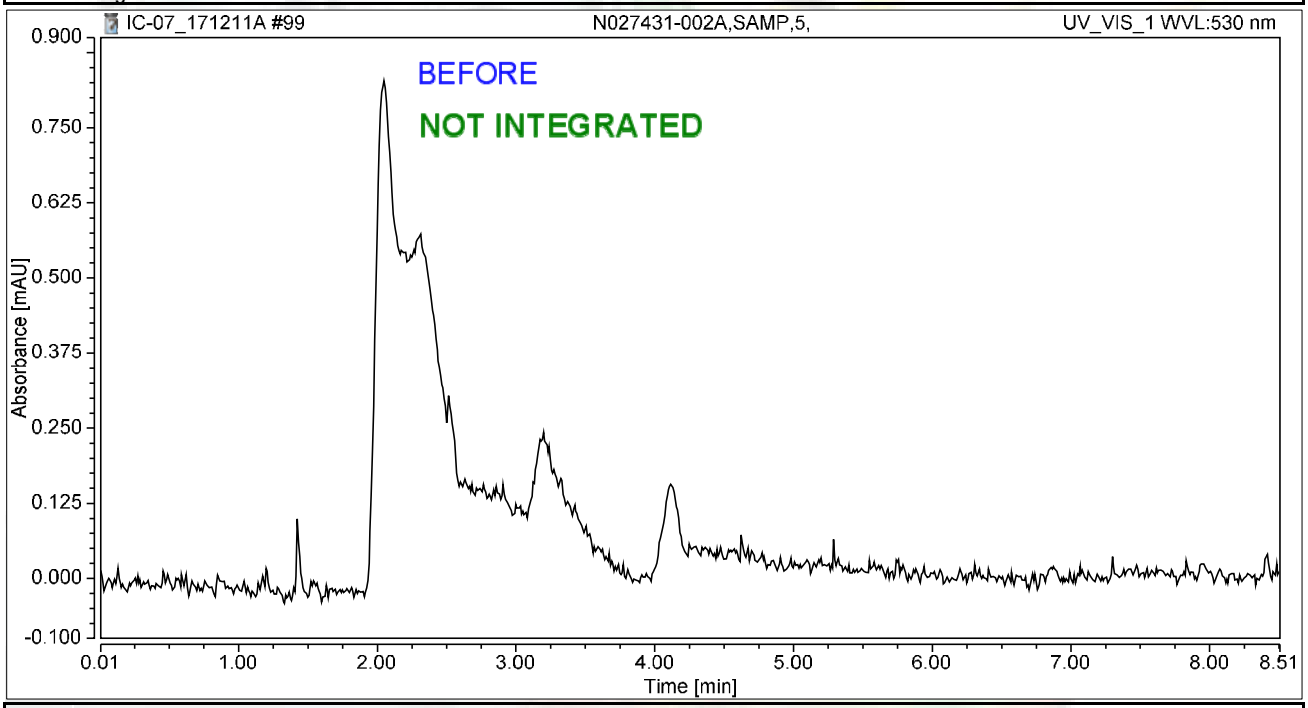
Chromatogram and Results

Injection Details

Injection Name:	**N027431-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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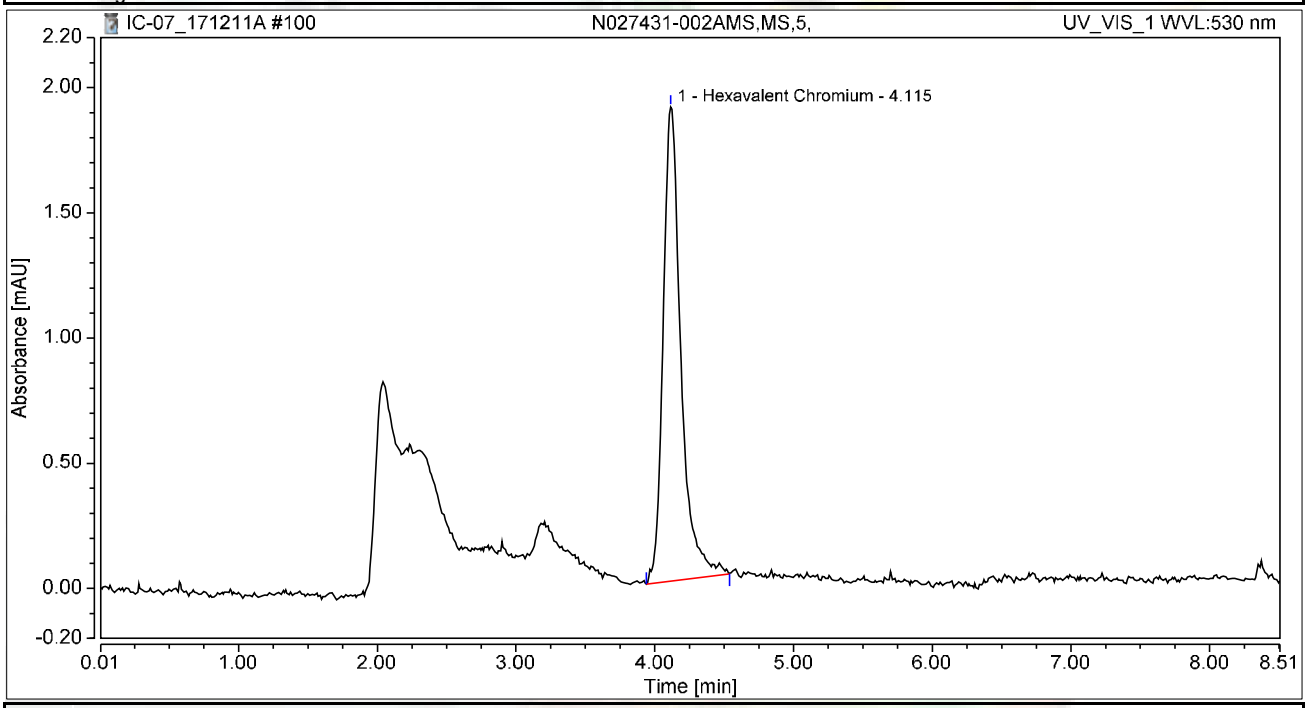
Chromatogram and Results

Injection Details

Injection Name:	**N027431-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

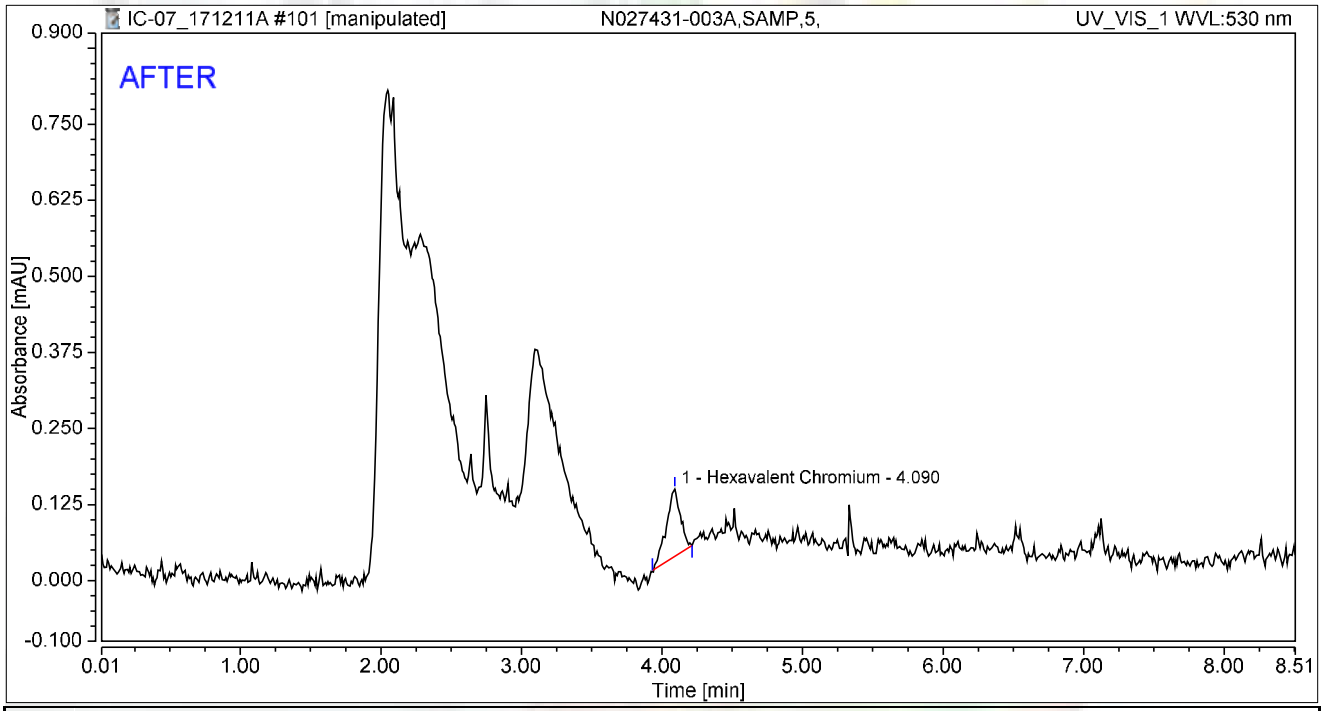
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.283	1.894	100.00	100.00	1.1274
Total:			**0.283**	**1.894**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-003A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.013	0.111	100.00	100.00	0.0510
Total:			**0.013**	**0.111**	**100.00**	**100.00**	

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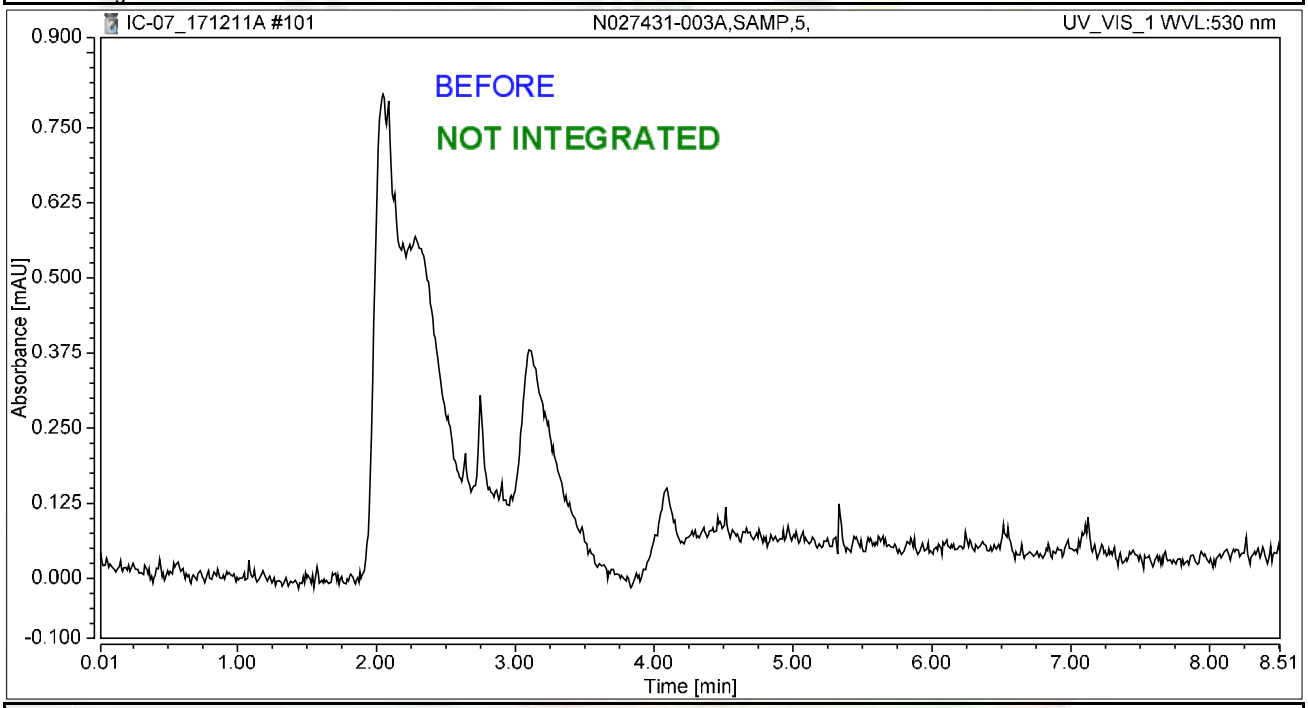
Chromatogram and Results

Injection Details

Injection Name:	**N027431-003A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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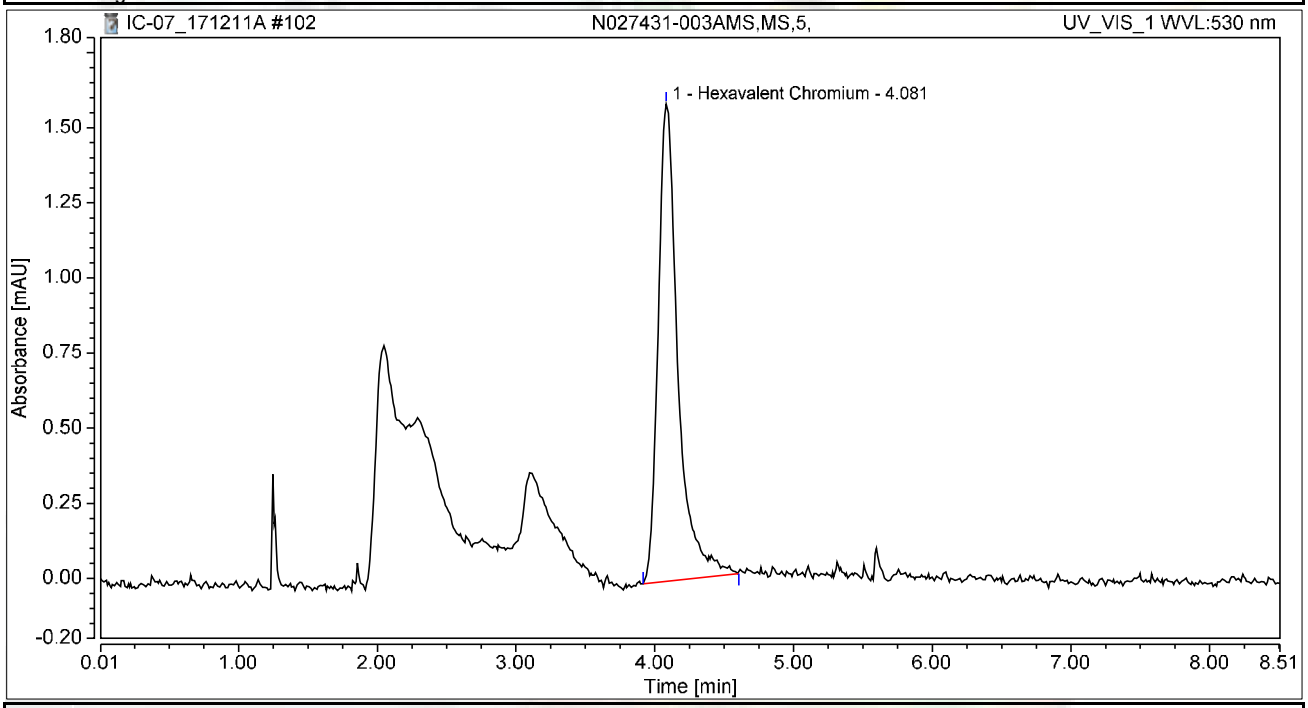
Chromatogram and Results

Injection Details

Injection Name:	**N027431-003AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

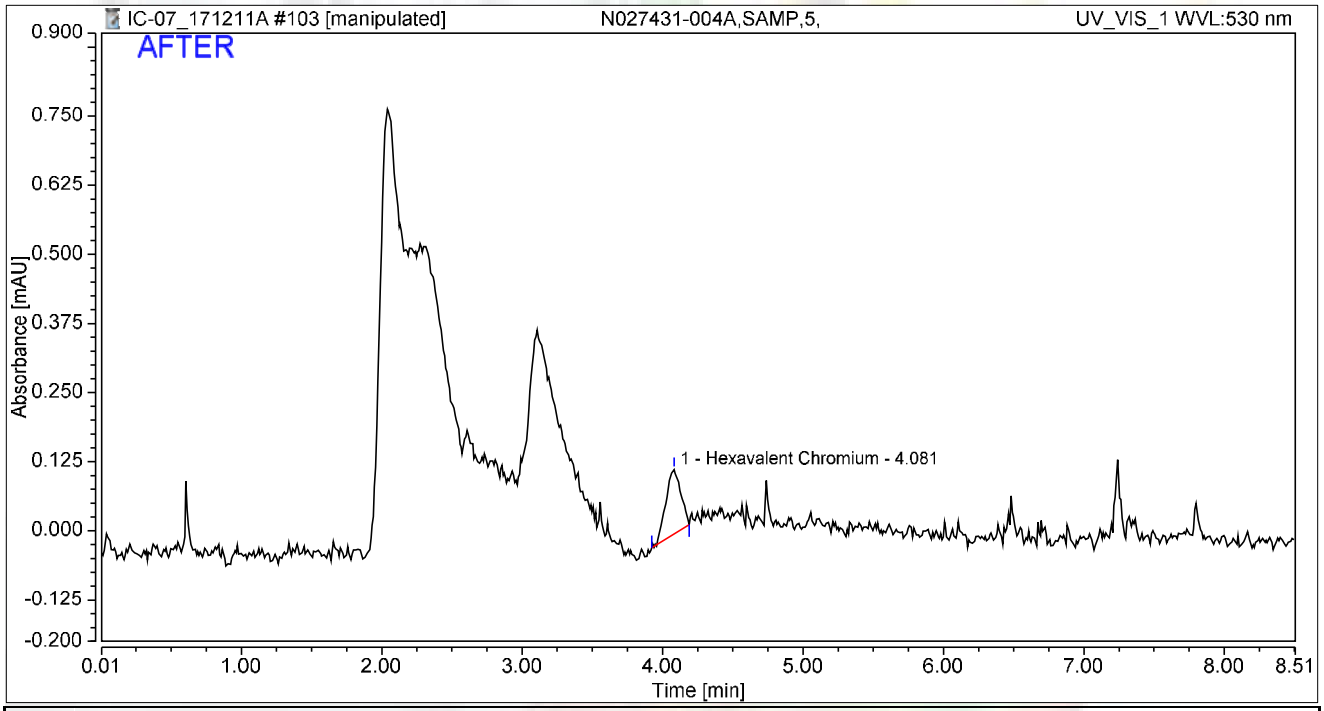
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.264	1.589	100.00	100.00	1.0512
Total:			**0.264**	**1.589**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.014	0.117	100.00	100.00	0.0571
Total:			**0.014**	**0.117**	**100.00**	**100.00**	

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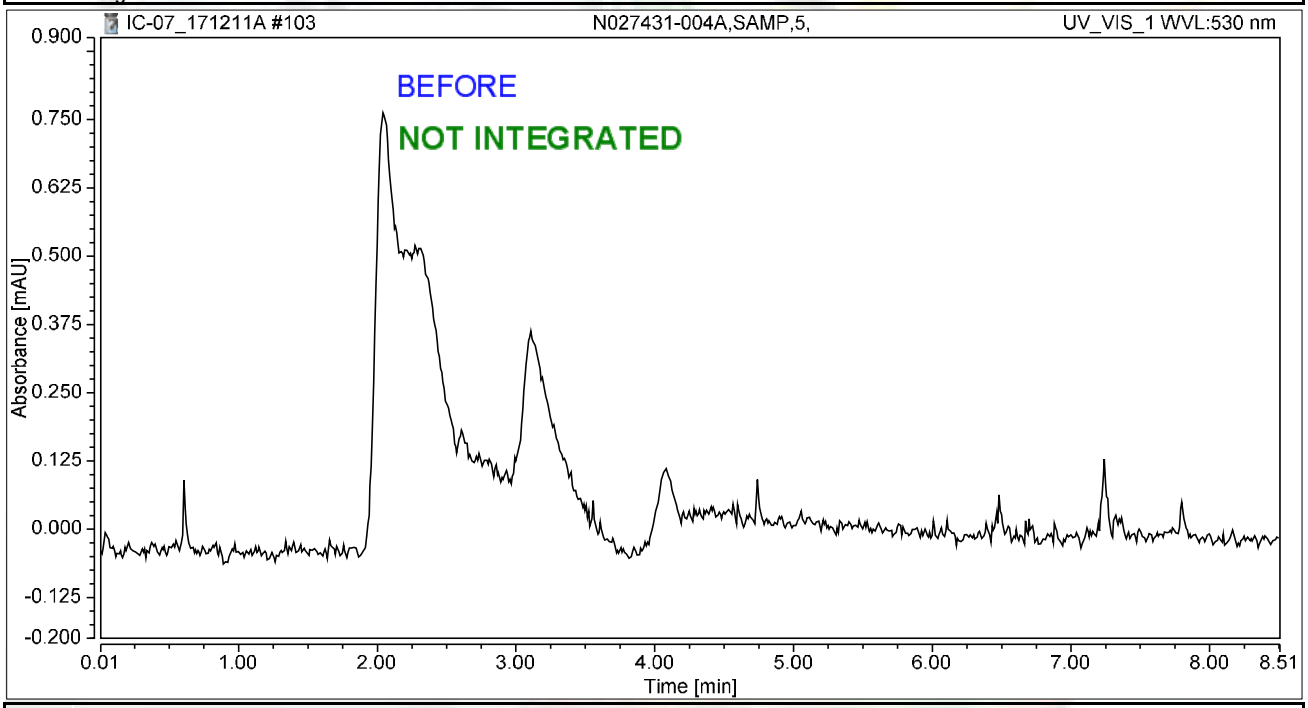
Chromatogram and Results

Injection Details

Injection Name:	**N027431-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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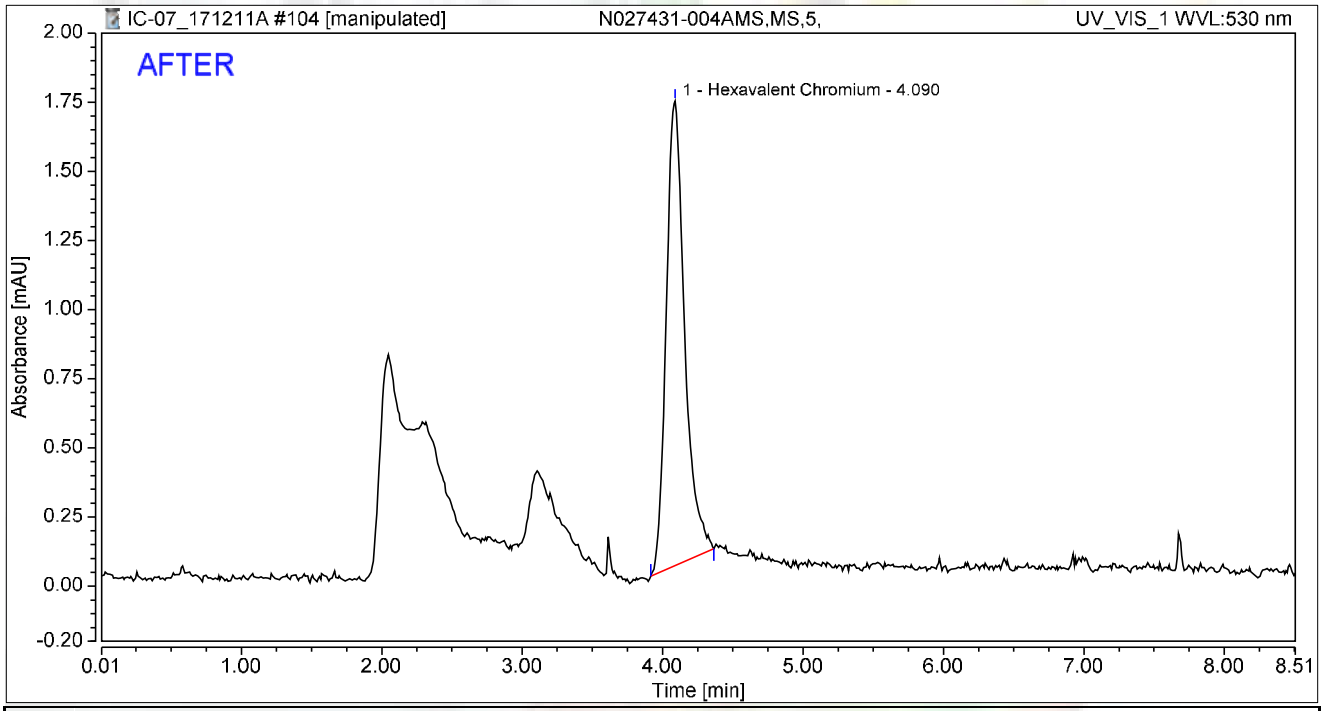
Chromatogram and Results

Injection Details

Injection Name:	**N027431-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.256	1.679	100.00	100.00	1.0207
Total:			**0.256**	**1.679**	**100.00**	**100.00**	

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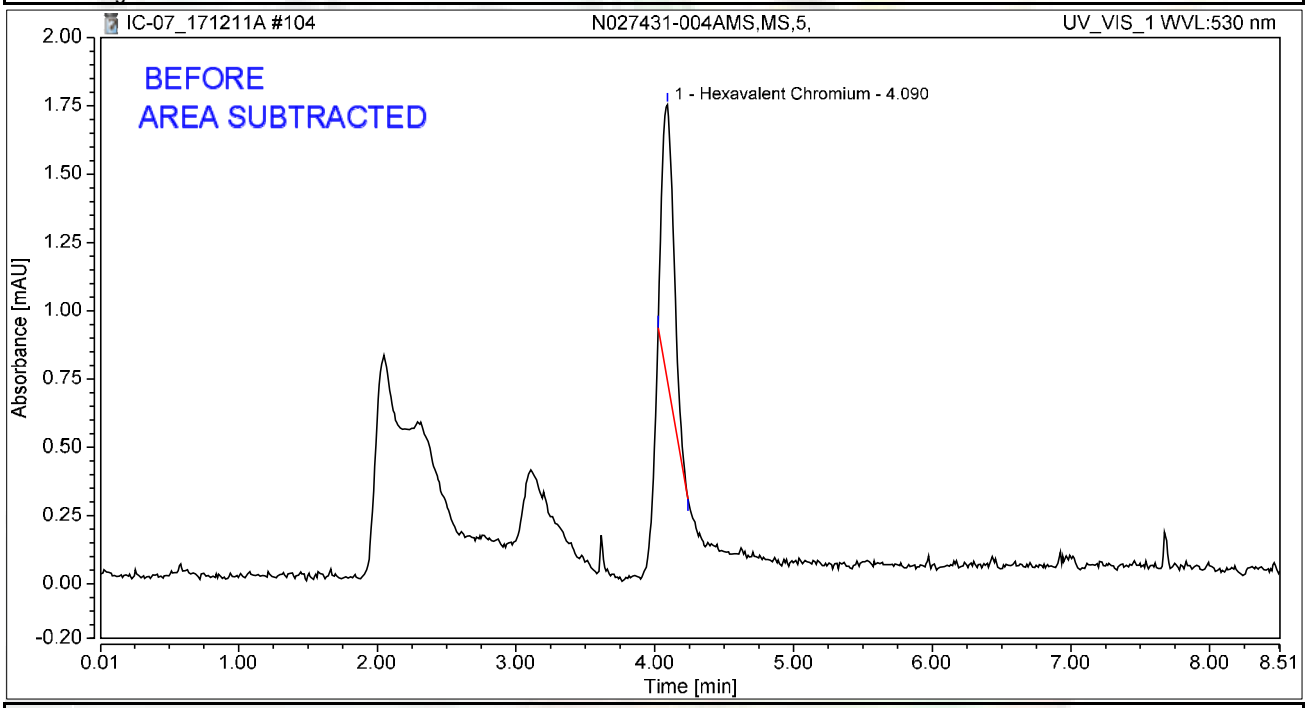
Chromatogram and Results

Injection Details

Injection Name:	**N027431-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.101	1.009	100.00	100.00	0.4041
Total:			**0.101**	**1.009**	**100.00**	**100.00**	

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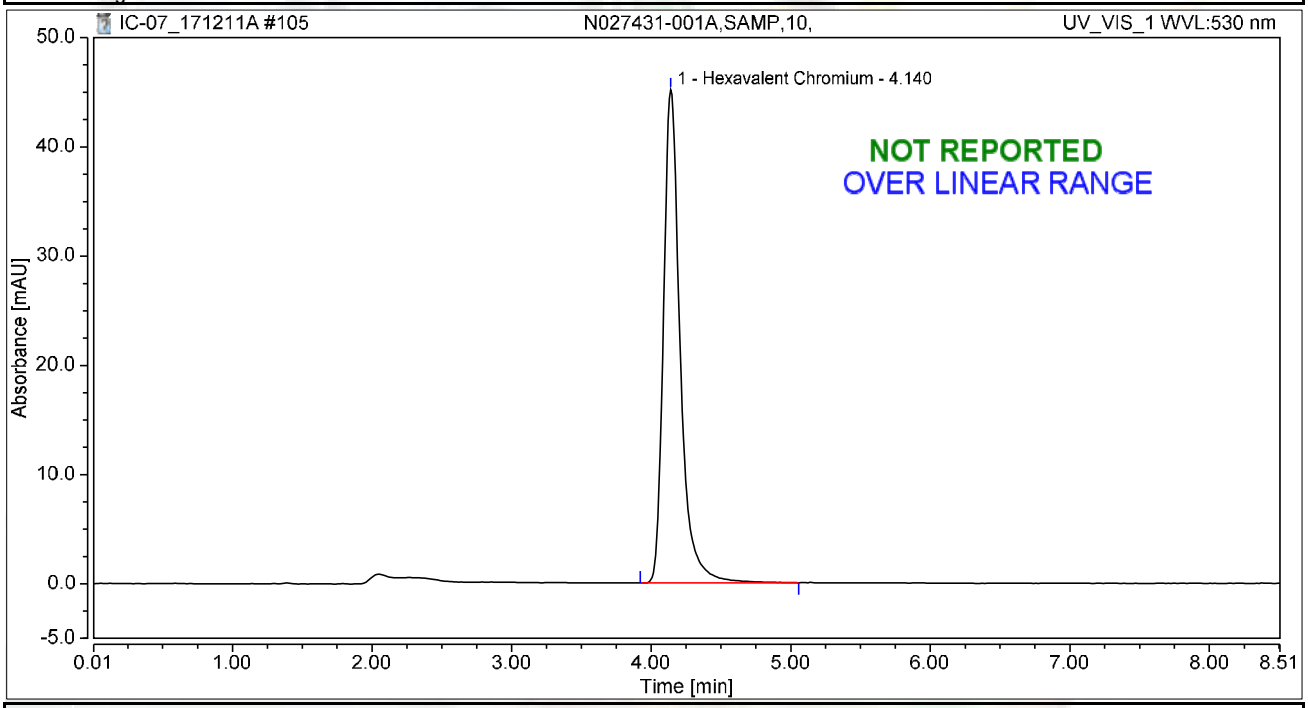
Chromatogram and Results

Injection Details

Injection Name:	**N027431-001A,SAMP,10,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 00:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	6.271	45.157	100.00	100.00	24.9758
Total:			**6.271**	**45.157**	**100.00**	**100.00**	

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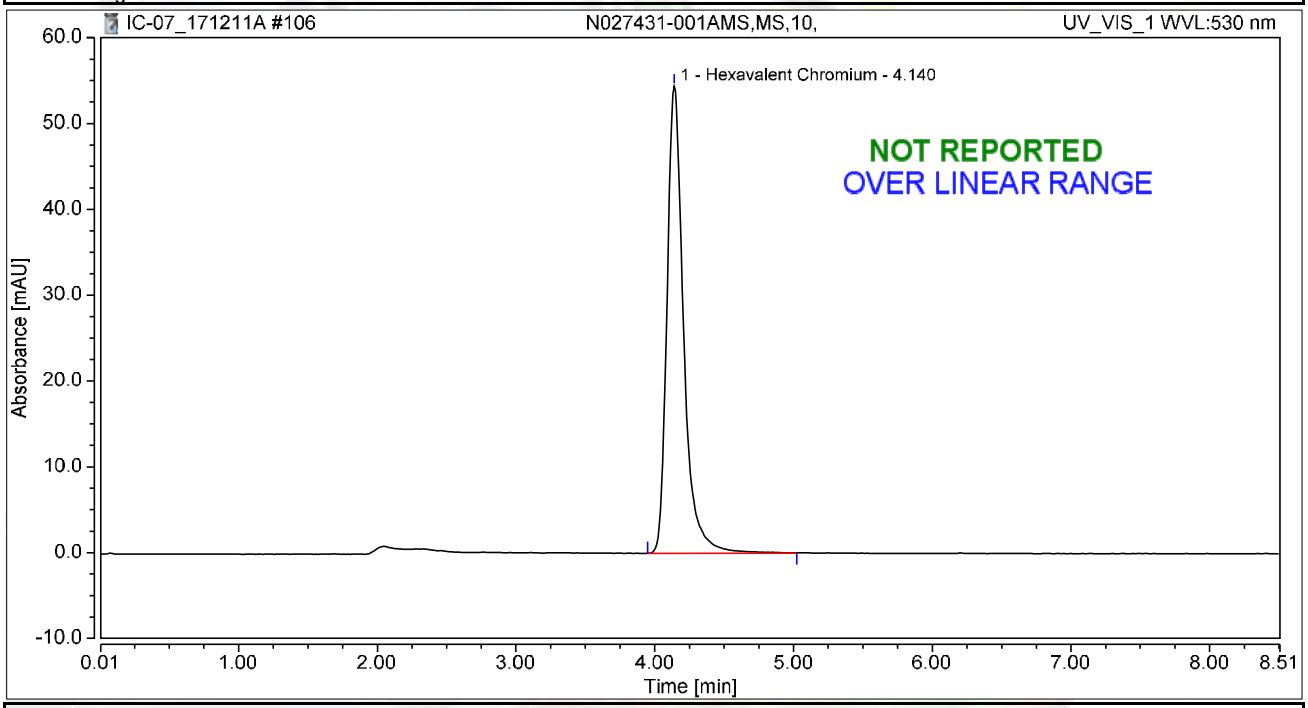
Chromatogram and Results

Injection Details

Injection Name:	**N027431-001AMS,MS,10,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 00:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	7.562	54.427	100.00	100.00	30.1165
Total:			**7.562**	**54.427**	**100.00**	**100.00**	

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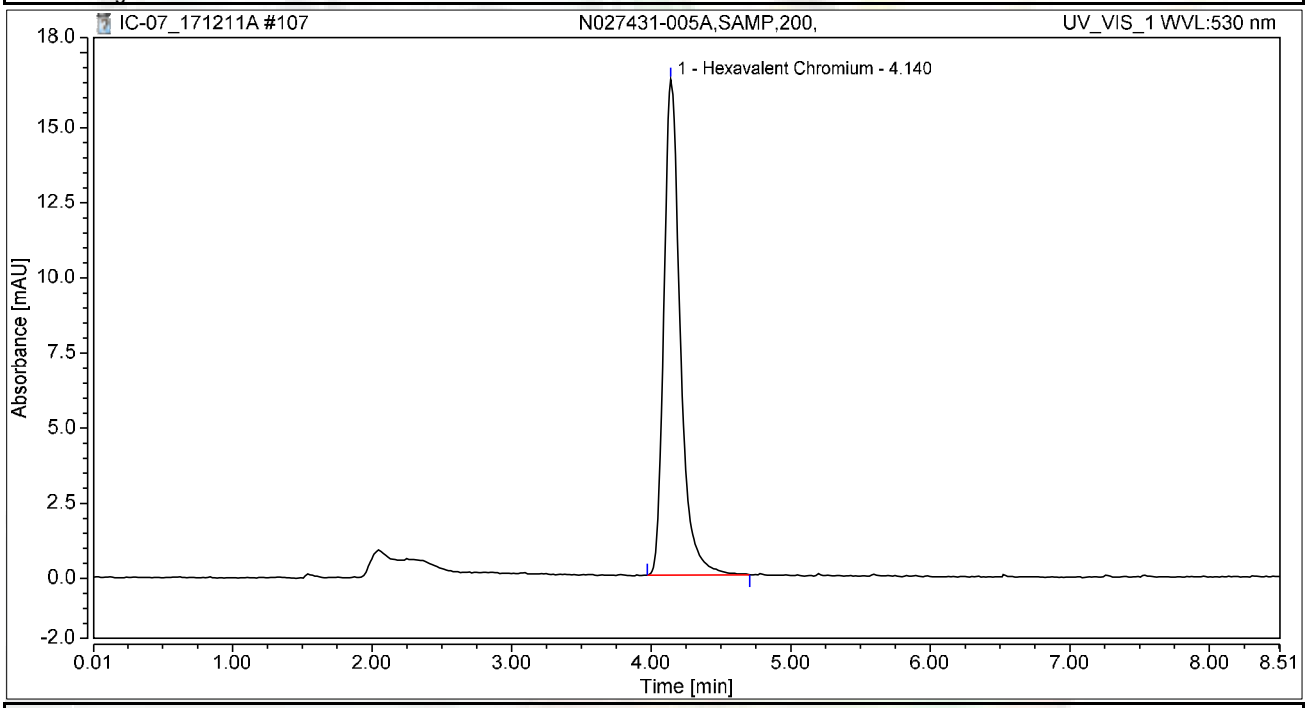
Chromatogram and Results

Injection Details

Injection Name:	**N027431-005A,SAMP,200,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 00:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

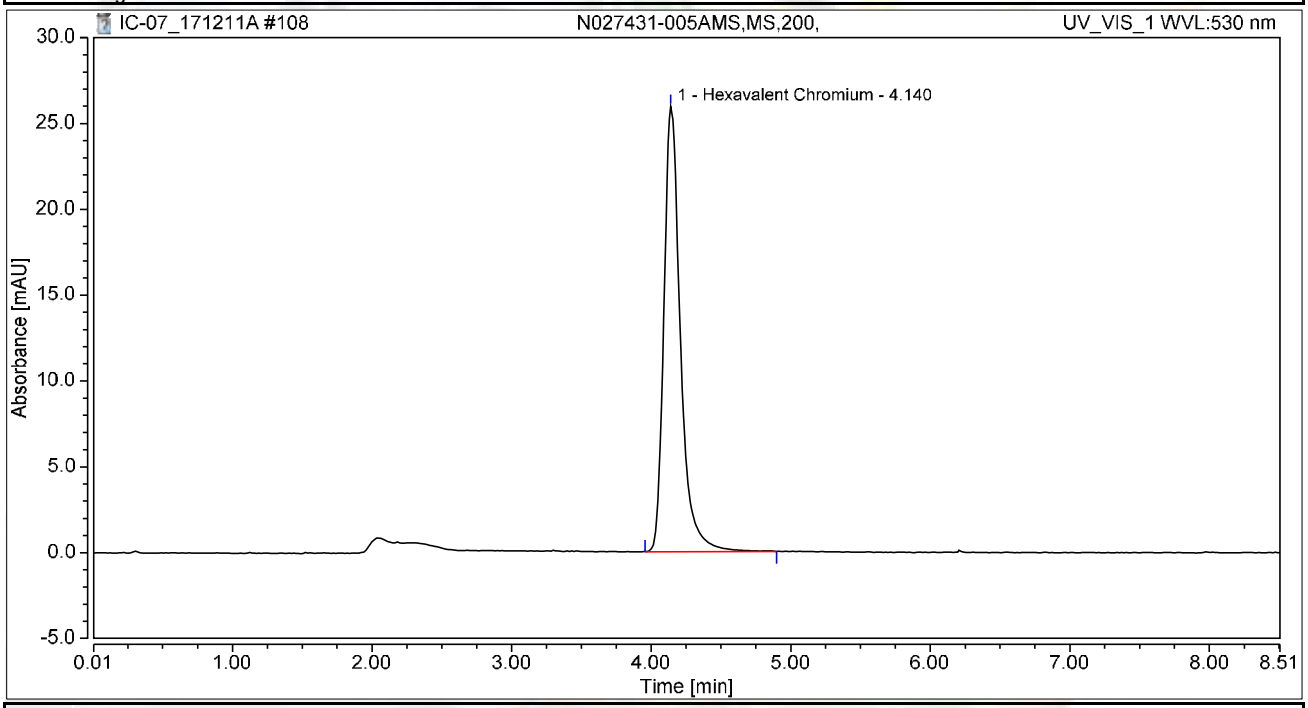
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.258	16.507	100.00	100.00	8.9923
Total:			**2.258**	**16.507**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-005AMS,MS,200,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 00:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

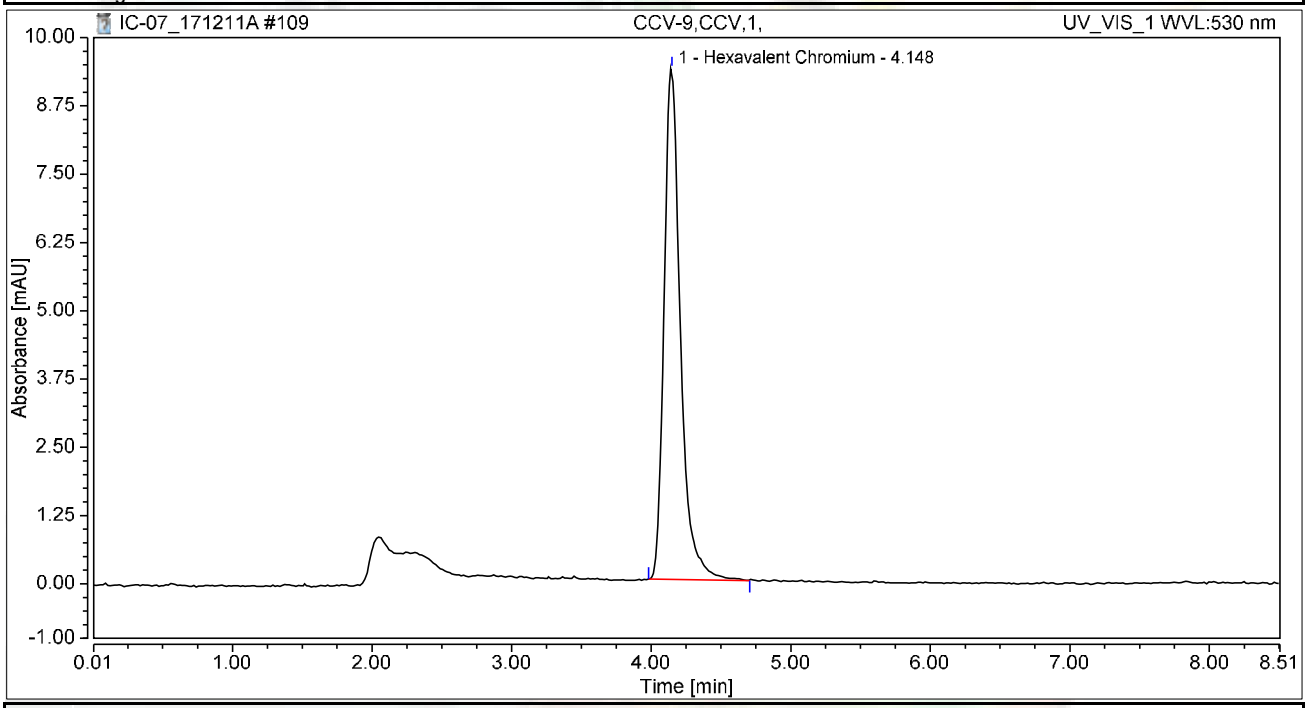
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	3.571	25.942	100.00	100.00	14.2232
Total:			**3.571**	**25.942**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-9,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 00:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

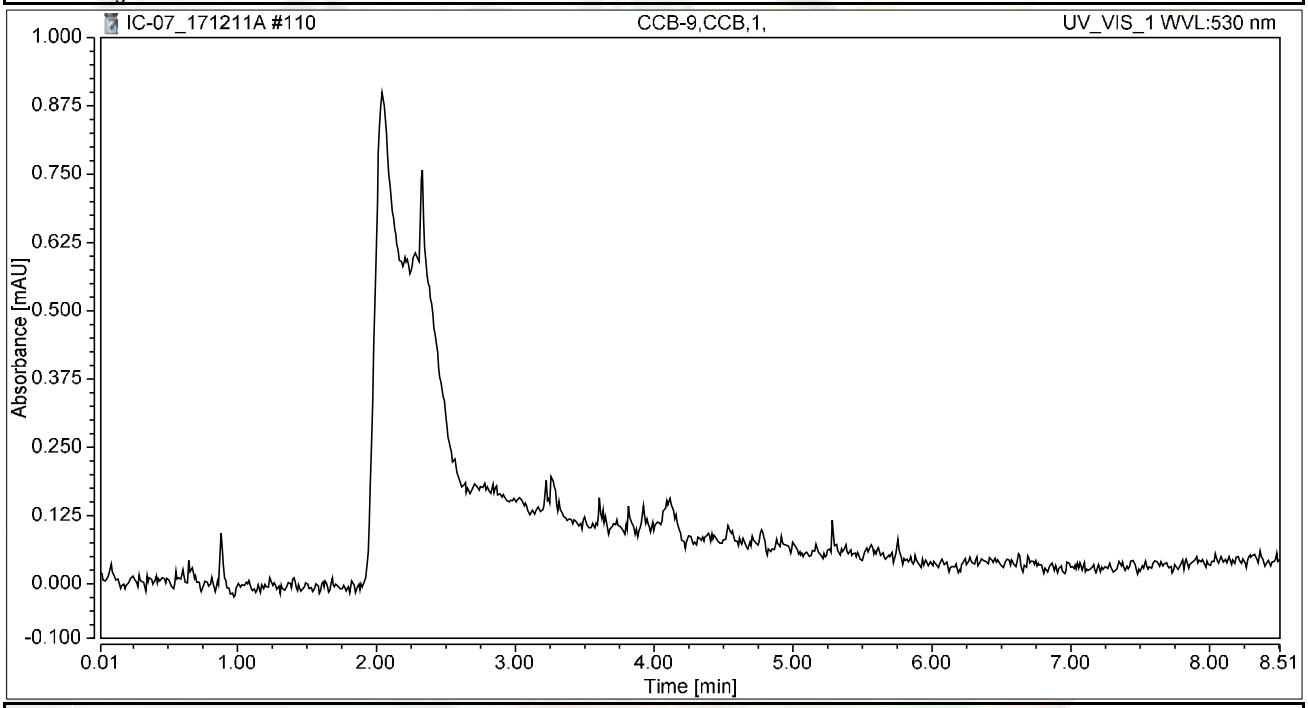
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.274	9.350	100.00	100.00	5.0724
Total:			**1.274**	**9.350**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-9,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 00:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

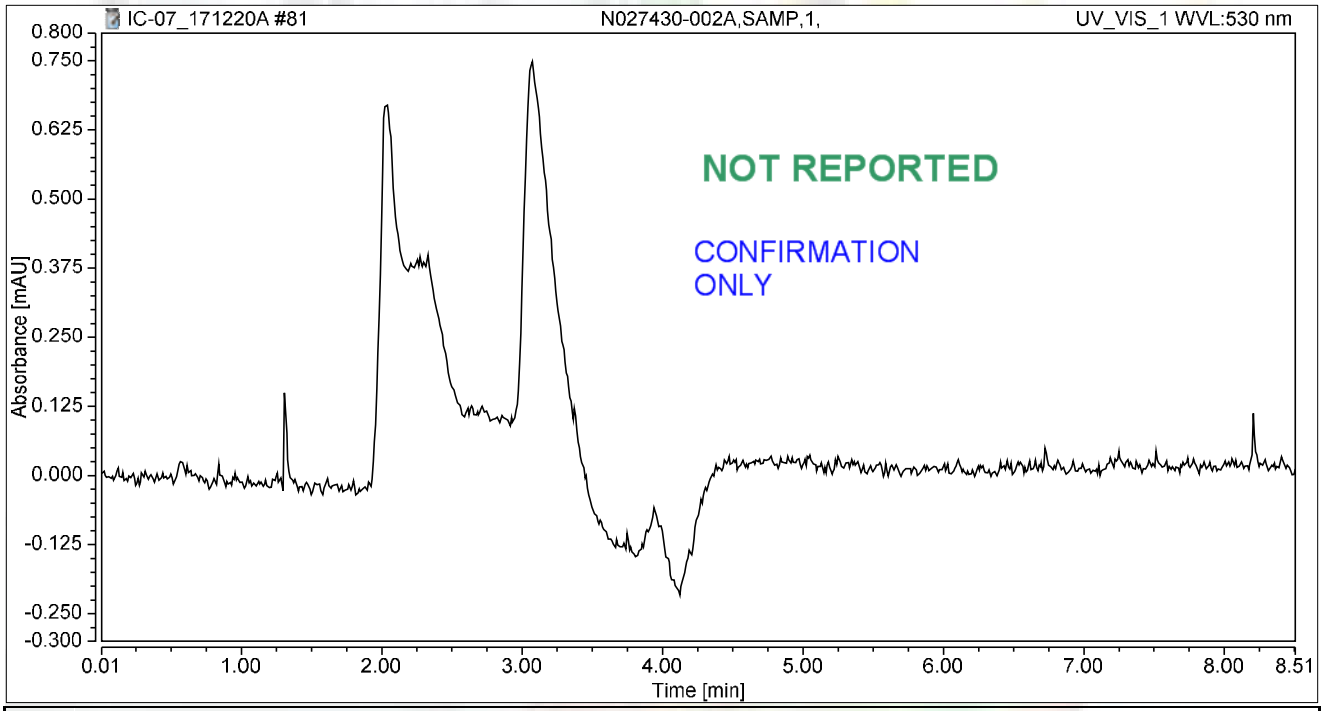
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 20:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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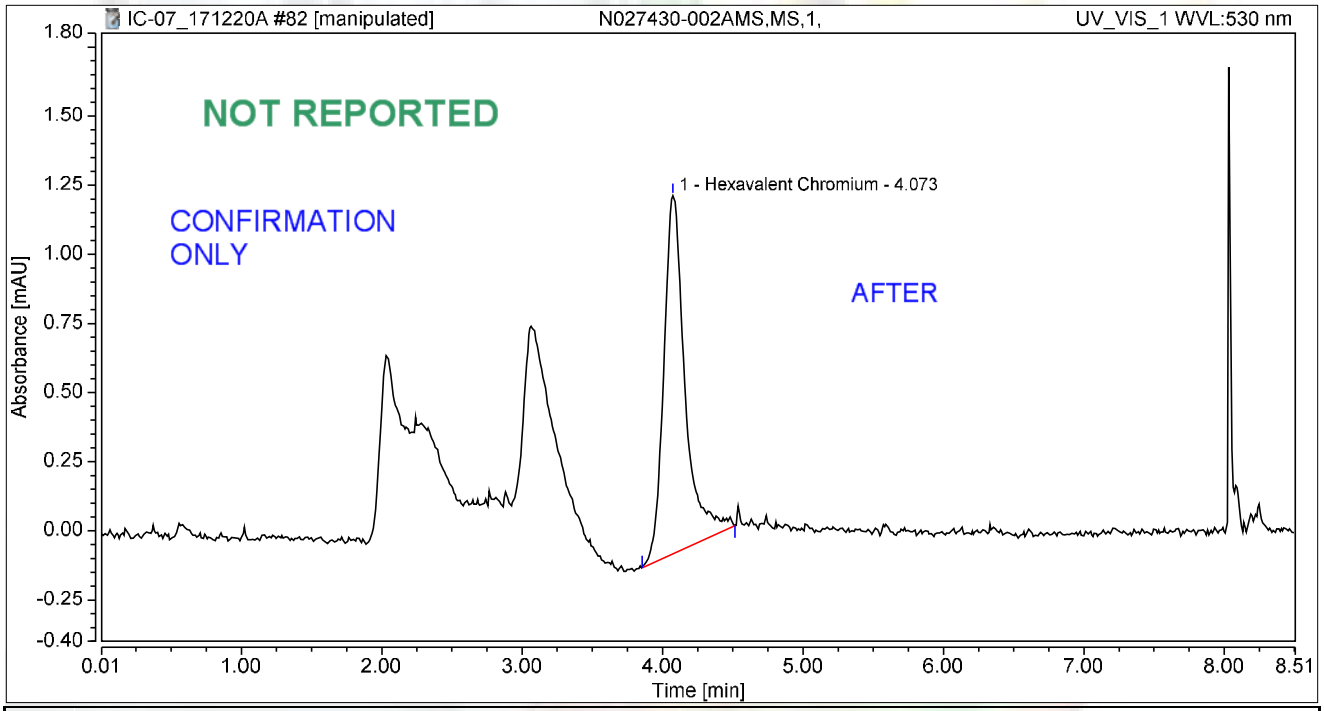
Chromatogram and Results

Injection Details

Injection Name:	**N027430-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 20:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	0.229	1.296	100.00	100.00	0.9101
Total:			**0.229**	**1.296**	**100.00**	**100.00**	

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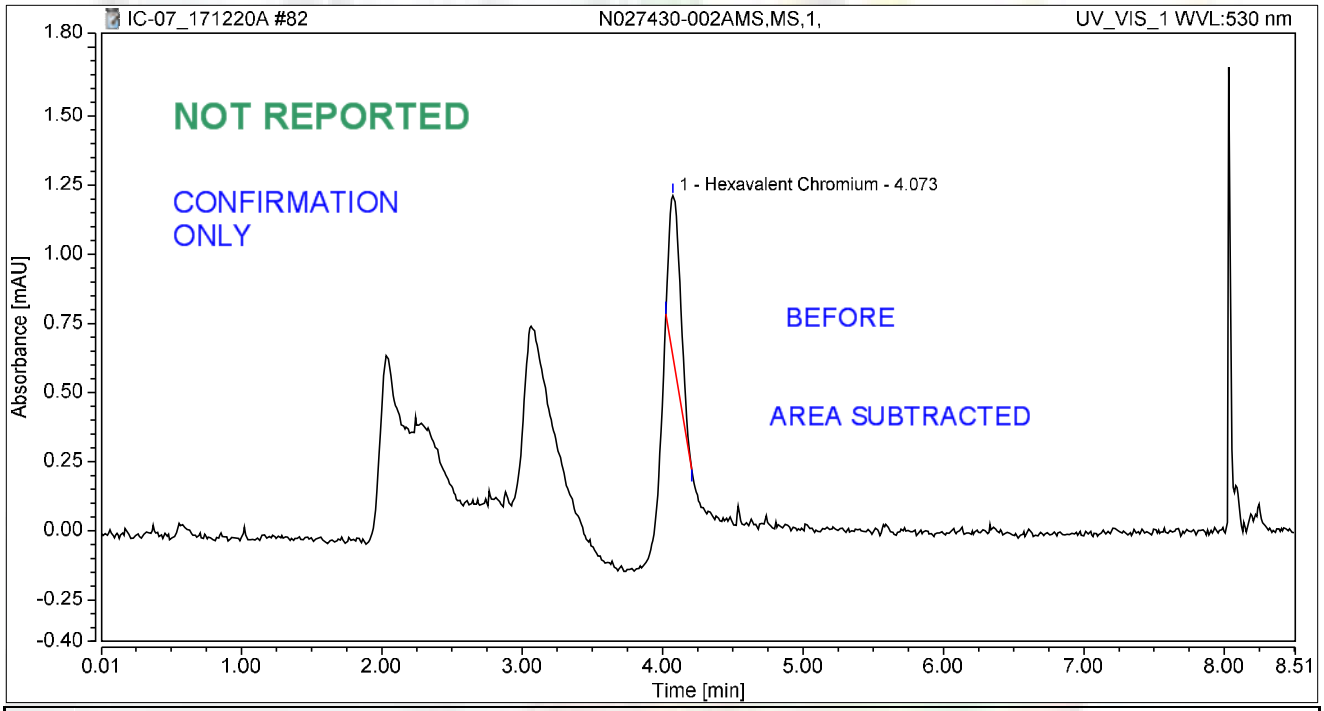
Chromatogram and Results

Injection Details

Injection Name:	**N027430-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 20:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	0.057	0.581	100.00	100.00	0.2283
Total:			**0.057**	**0.581**	**100.00**	**100.00**	

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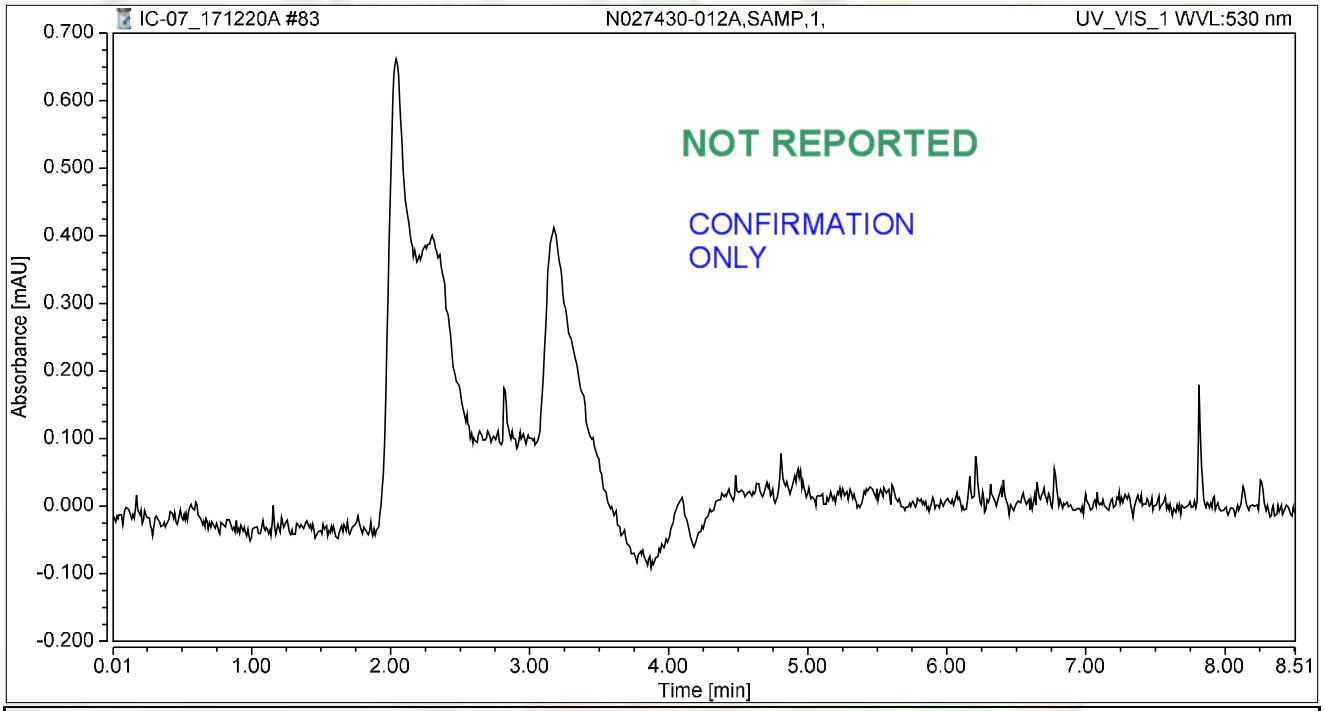
Chromatogram and Results

Injection Details

Injection Name:	**N027430-012A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 20:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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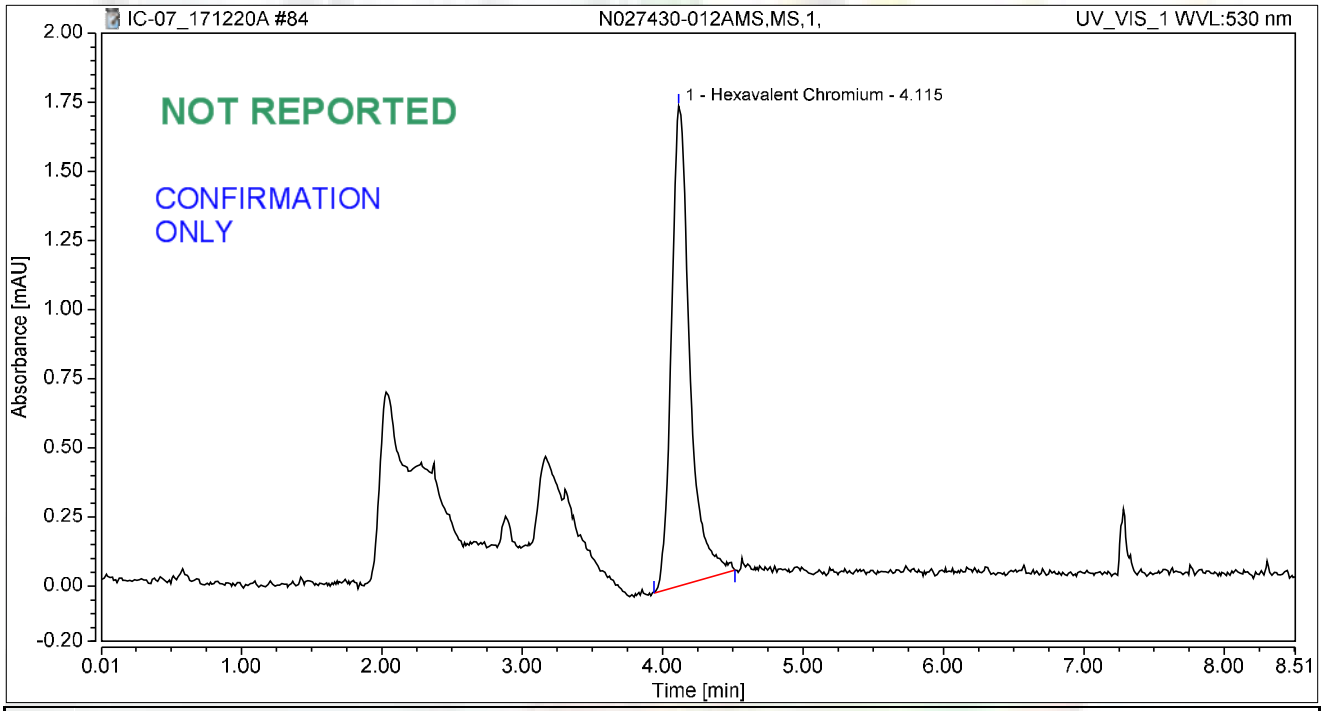
Chromatogram and Results

Injection Details

Injection Name:	**N027430-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 20:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.265	1.736	100.00	100.00	1.0534
Total:			**0.265**	**1.736**	**100.00**	**100.00**	

rba 12/21/2017

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120816 **Analyst:** LSR

ASSET #: N027430 **Date Analyzed:** 12/14/2017

Method: EPA 2320

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X			X		
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Silvia Ramit Date: 12/21/2017

2nd Level Reviewer: RLB 12/22/2017 Date:

SAMPLE CALCULATION

Sample ID: **N027430-002C @ pH 8.00**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (12.45 mL)

= **0.02008 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (1.90) (0.02008 N) (1) * 1000

= 38.1520 mg**/L**

Reporting results in two significant figures,

= **38 mg/L** as CaCO3

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C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02008 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (1.90 mL) (0.02008) (1) * 1000

= 38.1520 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 38.1520 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **38 mg/L**

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LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.69	50	0.00	0.050	MBLK
LCS-1	8.77	50	0.10	4.90	LCS
N027430-002C	8.00	50	0.00	1.90	SAMP
N027430-004C	7.77	50	0.00	22.70	SAMP
N027430-006C	7.68	50	0.00	10.60	SAMP
N027430-008C	7.61	50	0.00	13.70	SAMP
N027430-012C	7.96	50	0.00	20.70	SAMP
N027430-013C	7.59	50	0.00	6.20	SAMP
N027430-014C	7.69	50	0.00	2.90	SAMP
N027430-015C	7.58	50	0.00	2.95	SAMP
N027430-016C	8.21	50	0.00	2.20	SAMP
N027430-017C	8.21	50	0.00	2.35	SAMP
N027430-018C	7.75	50	0.00	2.20	SAMP
N027430-020C	7.63	50	0.00	8.20	SAMP
N027431-001C	7.76	50	0.00	4.70	SAMP
N027431-002C	7.61	50	0.00	4.95	SAMP
N027431-003C	7.61	50	0.00	2.90	SAMP
N027431-004C	7.65	50	0.00	3.00	SAMP
N027431-005C	7.96	50	0.00	5.20	SAMP
N027431-006C	7.60	50	0.00	4.90	SAMP
N027459-001E	7.60	50	0.00	3.90	SAMP
N027459-002E	7.72	50	0.00	2.45	SAMP
N027430-002CDDUP	8.00	50	0.00	1.90	DUP
N027431-002CMS	8.23	50	0.00	9.80	MS
N027431-002CMSD	8.24	50	0.00	9.80	MSD

Standardization:

Spike amt:	**5**	ml
Titrant used:	**12.45**	ml
N H2SO4	**0.02008**	Normal
Date Analyzed:	**12/14/17**	
Time:	**8:15 AM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-161205A**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R171211A**	

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Date Analyzed:	12/14/17		Reagents:					Standardization:					P = 0
Time Started:	8:15 AM			Sodium Carbonate:		CINV-161205A			Spike amt:	5	mL		P < 1/2 T
Analyzed By:	LSR			Hydrochloric Acid:		0			Titrant used:	12.45	mL		P = 1/2 T
				Sulfuric Acid:		R171211A							P > 1/2 T
									N H2SO4	0.02008	N		P = T

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.69				0.02008	0.00	0.05	0.05	1	0.00	1.00	
LCS-1	50	8.77				0.02008	0.10	4.80	4.90	1	2.01	98.39	
N027430-002C	50	8				0.02008	0.00	1.90	1.90	1	0.00	38.15	
N027430-004C	50	7.77				0.02008	0.00	22.70	22.70	1	0.00	455.82	
N027430-006C	50	7.68				0.02008	0.00	10.60	10.60	1	0.00	212.85	
N027430-008C	50	7.61				0.02008	0.00	13.70	13.70	1	0.00	275.10	
N027430-012C	50	7.96				0.02008	0.00	20.70	20.70	1	0.00	415.66	
N027430-013C	50	7.59				0.02008	0.00	6.20	6.20	1	0.00	124.50	
N027430-014C	50	7.69				0.02008	0.00	2.90	2.90	1	0.00	58.23	
N027430-015C	50	7.58				0.02008	0.00	2.95	2.95	1	0.00	59.24	
N027430-016C	50	8.21				0.02008	0.00	2.20	2.20	1	0.00	44.18	
N027430-017C	50	8.21				0.02008	0.00	2.35	2.35	1	0.00	47.19	
N027430-018C	50	7.75				0.02008	0.00	2.20	2.20	1	0.00	44.18	
N027430-020C	50	7.63				0.02008	0.00	8.20	8.20	1	0.00	164.66	
N027431-001C	50	7.76				0.02008	0.00	4.70	4.70	1	0.00	94.38	
N027431-002C	50	7.61				0.02008	0.00	4.95	4.95	1	0.00	99.40	
N027431-003C	50	7.61				0.02008	0.00	2.90	2.90	1	0.00	58.23	
N027431-004C	50	7.65				0.02008	0.00	3.00	3.00	1	0.00	60.24	
N027431-005C	50	7.96				0.02008	0.00	5.20	5.20	1	0.00	104.42	
N027431-006C	50	7.6				0.02008	0.00	4.90	4.90	1	0.00	98.39	
N027459-001E	50	7.6				0.02008	0.00	3.90	3.90	1	0.00	78.31	
N027459-002E	50	7.72				0.02008	0.00	2.45	2.45	1	0.00	49.20	
N027430-002CDD	50	8				0.02008	0.00	1.90	1.90	1	0.00	38.15	
N027431-002CMS	50	8.23				0.02008	0.00	9.80	9.80	1	0.00	196.79	
N027431-002CMS	50	8.24				0.02008	0.00	9.80	9.80	1	0.00	196.79	

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RLB 12/22/2017

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	12/14/17
Time:	8:15 AM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.00	1.00	1.00		P = 0
LCS-1	0.00	4.02	94.38	98.39	98.39		P < 1/2 T
N027430-002C	0.00	0.00	38.15	38.15	38.15		P = 0
N027430-004C	0.00	0.00	455.82	455.82	455.82		P = 0
N027430-006C	0.00	0.00	212.85	212.85	212.85		P = 0
N027430-008C	0.00	0.00	275.10	275.10	275.10		P = 0
N027430-012C	0.00	0.00	415.66	415.66	415.66		P = 0
N027430-013C	0.00	0.00	124.50	124.50	124.50		P = 0
N027430-014C	0.00	0.00	58.23	58.23	58.23		P = 0
N027430-015C	0.00	0.00	59.24	59.24	59.24		P = 0
N027430-016C	0.00	0.00	44.18	44.18	44.18		P = 0
N027430-017C	0.00	0.00	47.19	47.19	47.19		P = 0
N027430-018C	0.00	0.00	44.18	44.18	44.18		P = 0
N027430-020C	0.00	0.00	164.66	164.66	164.66		P = 0
N027431-001C	0.00	0.00	94.38	94.38	94.38		P = 0
N027431-002C	0.00	0.00	99.40	99.40	99.40		P = 0
N027431-003C	0.00	0.00	58.23	58.23	58.23		P = 0
N027431-004C	0.00	0.00	60.24	60.24	60.24		P = 0
N027431-005C	0.00	0.00	104.42	104.42	104.42		P = 0
N027431-006C	0.00	0.00	98.39	98.39	98.39		P = 0
N027459-001E	0.00	0.00	78.31	78.31	78.31		P = 0
N027459-002E	0.00	0.00	49.20	49.20	49.20		P = 0
N027430-002CDDUP	0.00	0.00	38.15	38.15	38.15		P = 0
N027431-002CMS	0.00	0.00	196.79	196.79	196.79		P = 0
N027431-002CMSD	0.00	0.00	196.79	196.79	196.79		P = 0

Lilia Ramit 12/21/2017

RLB 12/22/2017

Alkalinity Preparation and Runlog

Book #8

Matrix: H2O

Date Extracted: 12/14/17
Time Extracted:
Extracted By: LSR

Date Analyzed: 12/14/17
Time Analyzed: 815
Analyzed By: LSR

Reagent Lot # / Reagent ID
Sodium Carbonate: CANV160205A
Hydrochloric Acid: —
Sulfuric Acid: R171211A
Sodium Bicarbonate: CANV150601A

pH meter Calibration:
SLOPE: 98.7%
pH 7 - 7.03 CANV170615F
4 - 4.03 170615E
10 - 10.01 170322D

	Sample ID	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50mL	10.61	MST171211A	5mL	0.05N	-	-	12.50	50/50	$N_{H_2SO_4} = \frac{(1.65g/L)(5mL)}{(53)(V\ titrant)}$	= 0.020000
	#2	1	10.58	1	1	1	-	-	12.40	1		= 0.020129
1)	MBLK	50 mL	5.69	-	-	-	0.02008	0	0.05	50/50		Ave: 0.020065
2)	LLS		8.77	MST171211B	1 mL	0.05N		0.10	4.90			
3)	ND27450-2C		8.00					0	1.90			
4)	4C		7.77					0	22.70			
5)	6C		7.68					0	10.60			
6)	8C		7.61					0	13.70			
7)	12C		7.96					0	20.70			
8)	13C		7.59					0	6.20			
9)	14C		7.69					0	2.90			
10)	15C		7.58					0	2.95		$P = \frac{(V\ pH\ 8.3)(N\ H_2SO_4)(50,000)}{V_{SX}}$	
11)	16C		8.21					0	2.20			
12)	17C		8.21					0	2.35			
13)	18C		7.75					0	2.20		$T = \frac{(V\ pH\ 4.5)(N\ H_2SO_4)(50,000)}{V_{SX}}$	
14)	20C		7.63					0	8.20			
15)	ND27431-1C		7.74					0	4.70			
16)	2C		7.61					0	4.95			
17)	3C		7.61					0	2.90			
18)	4C		7.65					0	3.00			
19)	5C		7.96					0	5.20			
20)	6C		7.60					0	4.90			
MS	ND27459-1E		7.60					0	3.90			
MSD	2E		7.72					0	2.45			
LCS	ND27450-2C DUP		8.00					0	1.90			
	ND27431-2C MS		8.23	MST171211B	1mL	0.05N		0	9.80			
	2C MSD		8.24					0	7.80			

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120771
ASSET #: N027430

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/12/2017

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.		X			X	
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

%Rec of Bromide in N027430-004C MS failed, low bias. However, LCS passed criteria.
Several samples were diluted due to precipitate formed when mixed with eluent.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/17/2017

2nd Level Reviewer: RB 12/22/2017 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120803
ASSET #: N027430 / N027431

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/13/2017

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.		X			X	
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

%Rec of Bromide in N027431-005CMS/MSD failed. However, LCS passed criteria.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/17/2017

2nd Level Reviewer: RB 12/22/2017 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120854
ASSET #: N027430

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/14/2017

Method:

- [X] EPA 300.0
- [ ] EPA 7199
- [ ] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/19/2017

2nd Level Reviewer: RLB 12/22/2017 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120937
ASSET #: N027430 / N027485

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/18/2017

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/20/2017

2nd Level Reviewer: RLB 12/22/2017 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Chloride concentration, in mg/L, in the orignal sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N027430-002C** concentration in mg/L is calculated as follows:

Chloride, mg/L = 4.341 * 2000

= 8682

Reporting result in two significant values,

Chloride, mg/L = 8700

rba 12/20/2017

12/22/2017

ANALYSIS RUN LOG

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 25
Created: 11/29/2017 9:35:17 AM by IC-05
Last Update: 11/30/2017 12:33:04 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	ICV,ICV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	ICB,ICB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	N027210-002A,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027232-001A,SAMP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027210-002A,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027210-002ADUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027210-002AMS,MS,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027210-002AMSD,MSD,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027232-001AMS,MS,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027232-001AMSD,MSD,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	N027232-001ADUP,DUP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished



Chromeleon © Dionex Corporation, Version 6.80 SR10 Build 2818 (166959)

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 25
Created: 11/29/2017 9:35:17 AM by IC-05
Last Update: 11/30/2017 12:33:04 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	ICV,ICV,1	11/29/2017 12:22:10 PM	ICV
10	ICB,ICB,1	11/29/2017 12:37:28 PM	ICB
11	MB-H2O,MBLK,1	11/29/2017 12:52:47 PM	METHOD BLANK
12	LCS-H2O,LCS,1	11/29/2017 1:08:05 PM	LCS
13	N027210-002A,SAMP,10	11/29/2017 1:23:23 PM	SAMP,1>10mL
14	N027232-001A,SAMP,2	11/29/2017 1:38:41 PM	SAMP,5>10mL
15	N027210-002A,SAMP,50	11/29/2017 2:44:14 PM	SAMP,0.2>10mL
16	N027210-002ADUP,DUP,50	11/29/2017 2:59:31 PM	DUP,0.2>10mL
17	N027210-002AMS,MS,10	11/29/2017 3:14:50 PM	MS,0.2>10mL
18	N027210-002AMSD,MSD,10	11/29/2017 3:30:07 PM	MSD,0.2>10mL
19	N027232-001AMS,MS,2	11/29/2017 3:45:25 PM	MS,5>10mL
20	N027232-001AMSD,MSD,2	11/29/2017 4:00:43 PM	MSD,5>10mL
21	CCV-1,CCV,1	11/29/2017 4:16:01 PM	CCV
22	CCB-1,CCB,1	11/29/2017 4:31:19 PM	CCB
23	N027232-001ADUP,DUP,2	11/29/2017 4:46:38 PM	DUP,5>10mL
24	CCV-2,CCV,1	11/29/2017 5:01:56 PM	CCV
25	CCB-2,CCB,1	11/29/2017 5:17:14 PM	CCB

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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 80
Created: 12/12/2017 8:35:21 AM by IC-05
Last Update: 12/13/2017 1:26:07 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027482-001A,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027482-003A,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027482-002A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027482-004A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027482-001ADUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027482-003A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027482-004AMS,MS,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	N027482-004AMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	N027482-004A,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	N027482-004ADUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
26	N027482-004AMS,MS,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
27	N027482-004AMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
28	N027482-001A,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
29	N027482-002A,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
30	N027482-003A,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
31	N027482-002A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
32	N027482-004ADUP,DUP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
33	N027482-001A,SAMP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
34	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
35	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
36	N027405-001D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
37	N027429-007D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
38	N027429-012D,SAMP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
39	N027429-007DMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
40	N027429-007DMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
41	N027429-012DMS,MS,2	Unknown	1000.0	Anions Default	Anions_171129	Finished

rba 12/17/2017

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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 80
Created: 12/12/2017 8:35:21 AM by IC-05
Last Update: 12/13/2017 1:26:07 AM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	BLANK,BLANK,1	12/12/2017 8:36:15 AM	BLANK
10	CCV-1,CCV,1	12/12/2017 8:51:34 AM	CCV
11	CCB-1,CCB,1	12/12/2017 9:06:51 AM	CCB
12	MB-H2O,MBLK,1	12/12/2017 9:22:09 AM	METHOD BLANK
13	LCS-H2O,LCS,1	12/12/2017 9:37:27 AM	LCS
14	N027482-001A,SAMP,1	12/12/2017 10:04:10 AM	SAMP,10mL
15	N027482-003A,SAMP,1	12/12/2017 10:19:28 AM	SAMP,10mL
16	N027482-002A,SAMP,5	12/12/2017 10:34:46 AM	SAMP,2>10mL
17	N027482-004A,SAMP,5	12/12/2017 10:50:04 AM	SAMP,2>10mL
18	N027482-001ADUP,DUP,1	12/12/2017 11:05:22 AM	DUP,10mL
19	N027482-003A,SAMP,5	12/12/2017 11:20:40 AM	SAMP,2>10mL
20	N027482-004AMS,MS,5	12/12/2017 11:35:58 AM	MS,2>10mL
21	N027482-004AMSD,MSD,5	12/12/2017 11:51:16 AM	MSD,2>10mL
22	CCV-2,CCV,1	12/12/2017 12:06:33 PM	CCV
23	CCB-2,CCB,1	12/12/2017 12:21:52 PM	CCB
24	N027482-004A,SAMP,50	12/12/2017 12:37:11 PM	SAMP,0.2>10mL
25	N027482-004ADUP,DUP,50	12/12/2017 12:52:29 PM	DUP,0.2>10mL
26	N027482-004AMS,MS,50	12/12/2017 1:07:47 PM	MS,0.2>10mL
27	N027482-004AMSD,MSD,50	12/12/2017 1:23:05 PM	MSD,0.2>10mL
28	N027482-001A,SAMP,50	12/12/2017 1:38:23 PM	SAMP,0.2>10mL
29	N027482-002A,SAMP,100	12/12/2017 2:06:39 PM	SAMP,0.5>10mL
30	N027482-003A,SAMP,100	12/12/2017 2:21:58 PM	SAMP,0.1>10mL
31	N027482-002A,SAMP,5	12/12/2017 2:37:15 PM	SAMP,2>10mL
32	N027482-004ADUP,DUP,5	12/12/2017 2:52:33 PM	DUP,2>10mL
33	N027482-001A,SAMP,2	12/12/2017 3:07:51 PM	SAMP,5>10mL
34	CCV-3,CCV,1	12/12/2017 3:23:10 PM	CCV
35	CCB-3,CCB,1	12/12/2017 3:38:27 PM	CCB
36	N027405-001D,SAMP,1	12/12/2017 3:53:45 PM	SAMP,10mL
37	N027429-007D,SAMP,1	12/12/2017 4:09:03 PM	SAMP,10mL
38	N027429-012D,SAMP,2	12/12/2017 4:24:21 PM	SAMP,5>10mL
39	N027429-007DMS,MS,1	12/12/2017 4:45:44 PM	SAMP,0.5>10mL
40	N027429-007DMSD,MSD,1	12/12/2017 5:01:02 PM	SAMP,0.005>10mL
41	N027429-012DMS,MS,2	12/12/2017 5:16:20 PM	SAMP,0.05>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 80
Created: 12/12/2017 8:35:21 AM by IC-05
Last Update: 12/13/2017 1:26:07 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027429-007DDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
43	N027429-008D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
44	N027429-005D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
45	N027429-006D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
46	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
47	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
48	N027429-009D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
49	N027429-010D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
50	N027429-013D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
51	N027429-014D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
52	N027429-015D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
53	N027429-016D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
54	N027429-017D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
55	N027429-018D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
56	N027429-020D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
57	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
58	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
59	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
60	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
61	N027430-006C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
62	N027430-006CDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
63	N027430-006CMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
64	N027430-006CMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
65	N027430-004C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
66	N027430-004CMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
67	N027430-012C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
68	N027430-002C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
69	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
70	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
71	N027430-008C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
72	N027430-013C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
73	N027430-014C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
74	N027430-016C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
75	N027430-017C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
76	N027430-015C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
77	N027430-018C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
78	N027430-020C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
79	CCV-7,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
80	CCB-7,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 80
Created: 12/12/2017 8:35:21 AM by IC-05
Last Update: 12/13/2017 1:26:07 AM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027429-007DDUP,DUP,1	12/12/2017 5:31:38 PM	DUP,10mL
43	N027429-008D,SAMP,1	12/12/2017 5:46:56 PM	SAMP,10mL
44	N027429-005D,SAMP,5	12/12/2017 6:02:14 PM	SAMP,2>10mL
45	N027429-006D,SAMP,5	12/12/2017 6:17:32 PM	SAMP,2>10mL
46	CCV-4,CCV,1	12/12/2017 6:32:50 PM	CCV
47	CCB-4,CCB,1	12/12/2017 6:48:08 PM	CCB
48	N027429-009D,SAMP,5	12/12/2017 7:03:25 PM	SAMP,2>10mL
49	N027429-010D,SAMP,10	12/12/2017 7:18:43 PM	SAMP,1>10mL
50	N027429-013D,SAMP,5	12/12/2017 7:34:01 PM	SAMP,2>10mL
51	N027429-014D,SAMP,5	12/12/2017 7:49:19 PM	SAMP,2>10mL
52	N027429-015D,SAMP,5	12/12/2017 8:04:37 PM	SAMP,2>10mL
53	N027429-016D,SAMP,5	12/12/2017 8:19:55 PM	SAMP,2>10mL
54	N027429-017D,SAMP,5	12/12/2017 8:35:12 PM	SAMP,2>10mL
55	N027429-018D,SAMP,5	12/12/2017 8:50:31 PM	SAMP,2>10mL
56	N027429-020D,SAMP,5	12/12/2017 9:05:49 PM	SAMP,2>10mL
57	CCV-5,CCV,1	12/12/2017 9:21:06 PM	CCV
58	CCB-5,CCB,1	12/12/2017 9:36:24 PM	CCB
59	LCS-2,LCS,1	12/12/2017 9:51:42 PM	LCS
60	MB-2,MBLK,1	12/12/2017 10:07:01 PM	METHOD BLANK
61	N027430-006C,SAMP,1	12/12/2017 10:22:19 PM	SAMP,10mL
62	N027430-006CDUP,DUP,1	12/12/2017 10:37:37 PM	DUP,10mL
63	N027430-006CMS,MS,1	12/12/2017 10:52:55 PM	MS,10mL
64	N027430-006CMSD,MSD,1	12/12/2017 11:08:12 PM	MSD,10mL
65	N027430-004C,SAMP,1	12/12/2017 11:23:31 PM	SAMP,10mL
66	N027430-004CMS,MS,1	12/12/2017 11:38:48 PM	MS,10mL
67	N027430-012C,SAMP,1	12/12/2017 11:54:06 PM	SAMP,10mL
68	N027430-002C,SAMP,5	12/13/2017 12:09:24 AM	SAMP,2>10mL
69	CCV-6,CCV,1	12/13/2017 12:24:42 AM	CCV
70	CCB-6,CCB,1	12/13/2017 12:40:00 AM	CCB
71	N027430-008C,SAMP,5	12/13/2017 12:55:18 AM	SAMP,2>10mL
72	N027430-013C,SAMP,5	12/13/2017 1:10:36 AM	SAMP,2>10mL
73	N027430-014C,SAMP,5	12/13/2017 1:25:54 AM	SAMP,2>10mL
74	N027430-016C,SAMP,1	12/13/2017 1:41:11 AM	SAMP,10mL
75	N027430-017C,SAMP,1	12/13/2017 1:56:29 AM	SAMP,10mL
76	N027430-015C,SAMP,5	12/13/2017 2:11:47 AM	SAMP,2>10mL
77	N027430-018C,SAMP,5	12/13/2017 2:27:05 AM	SAMP,2>10mL
78	N027430-020C,SAMP,5	12/13/2017 2:42:23 AM	SAMP,2>10mL
79	CCV-7,CCV,1	12/13/2017 2:57:41 AM	CCV
80	CCB-7,CCB,1	12/13/2017 3:12:58 AM	CCB

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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 81
Created: 12/13/2017 9:09:27 AM by IC-05
Last Update: 12/13/2017 7:11:29 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	MB-SOIL,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	LCS-SOIL,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027418-001D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027418-002D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027418-001D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027418-002D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027418-001DDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027418-001DMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	N027418-001DMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	N027418-001DPS,PS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
26	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
27	N027518-001A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
28	N027510-001B,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
29	N027510-002B,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
30	N027510-003B,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
31	N027482-002A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
32	N027482-002AMS,MS,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
33	N027510-003BMS,MS,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
34	N027510-003BMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
35	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
36	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
37	N027510-003BDUP,DUP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
38	N027510-001B,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
39	N027510-001BDUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
40	N027510-001BMS,MS,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
41	N027510-001BMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_171129	Finished

rba 12/17/2017

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 81
Created: 12/13/2017 9:09:27 AM by IC-05
Last Update: 12/13/2017 7:11:29 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	BLANK,BLANK,1	12/13/2017 9:10:15 AM	BLANK
10	CCV-1,CCV,1	12/13/2017 9:25:33 AM	CCV
11	CCV-1,CCV,1	12/13/2017 9:40:50 AM	CCV
12	CCB-1,CCB,1	12/13/2017 9:56:08 AM	CCB
13	MB-SOIL,MBLK,1	12/13/2017 10:11:26 AM	METHOD BLANK
14	LCS-SOIL,LCS,1	12/13/2017 10:26:44 AM	LCS
15	N027418-001D,SAMP,10	12/13/2017 10:42:02 AM	SAMP,1>10mL
16	N027418-002D,SAMP,10	12/13/2017 10:57:20 AM	SAMP,1>10mL
17	N027418-001D,SAMP,1	12/13/2017 11:12:38 AM	SAMP,10mL
18	N027418-002D,SAMP,1	12/13/2017 11:27:56 AM	SAMP,10mL
19	N027418-001DDUP,DUP,1	12/13/2017 11:43:13 AM	DUP,10mL
20	N027418-001DMS,MS,1	12/13/2017 11:58:31 AM	MS,10mL
21	N027418-001DMSD,MSD,1	12/13/2017 12:13:49 PM	MSD,10mL
22	N027418-001DPS,PS,1	12/13/2017 12:29:07 PM	PS,10mL
23	CCV-2,CCV,1	12/13/2017 12:44:25 PM	CCV
24	CCB-2,CCB,1	12/13/2017 12:59:42 PM	CCB
25	MB-H2O,MBLK,1	12/13/2017 1:15:00 PM	METHOD BLANK
26	LCS-H2O,LCS,1	12/13/2017 1:30:18 PM	LCS
27	N027518-001A,SAMP,5	12/13/2017 1:45:36 PM	SAMP,2>10mL
28	N027510-001B,SAMP,5	12/13/2017 2:00:53 PM	SAMP,2>10mL
29	N027510-002B,SAMP,5	12/13/2017 2:16:11 PM	SAMP,2>10mL
30	N027510-003B,SAMP,5	12/13/2017 2:31:30 PM	SAMP,2>10mL
31	N027482-002A,SAMP,5	12/13/2017 2:46:48 PM	SAMP,2>10mL
32	N027482-002AMS,MS,5	12/13/2017 3:02:05 PM	MS,2>10mL
33	N027510-003BMS,MS,5	12/13/2017 3:17:23 PM	MS,2>10mL
34	N027510-003BMSD,MSD,5	12/13/2017 3:32:41 PM	MSD,2>10mL
35	CCV-3,CCV,1	12/13/2017 3:47:59 PM	CCV
36	CCB-3,CCB,1	12/13/2017 4:03:16 PM	CCB
37	N027510-003BDUP,DUP,5	12/13/2017 4:18:34 PM	DUP,2>10mL
38	N027510-001B,SAMP,50	12/13/2017 4:33:52 PM	SAMP,0.2>10mL
39	N027510-001BDUP,DUP,50	12/13/2017 4:49:10 PM	DUP,0.2>10mL
40	N027510-001BMS,MS,50	12/13/2017 5:04:27 PM	MS,0.2>10mL
41	N027510-001BMSD,MSD,50	12/13/2017 5:19:45 PM	MSD,0.2>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 81
Created: 12/13/2017 9:09:27 AM by IC-05
Last Update: 12/13/2017 7:11:29 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027510-002B,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
43	N027510-003B,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
44	N027431-005C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
45	N027431-005CMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
46	N027431-005CMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
47	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
48	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
49	N027431-001C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
50	N027431-001CDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
51	N027431-001CMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
52	N027431-001CMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
53	N027431-002C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
54	N027431-003C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
55	N027431-004C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
56	N027431-006C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
57	N027430-008C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
58	N027430-008CDUP,DUP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
59	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
60	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
61	N027430-008CMS,MS,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
62	N027430-008CMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
63	N027430-012C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
64	N027430-013C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
65	N027430-014C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
66	N027430-015C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
67	N027539-001C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
68	N027539-001C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
69	N027539-002C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
70	N027539-002C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
71	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
72	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
73	N027539-004C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
74	N027539-004C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
75	N027482-002A,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
76	N027482-002AMS,MS,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
77	N027482-002A,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
78	N027482-002AMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
79	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
80	CCV-7,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
81	CCB-7,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 81
Created: 12/13/2017 9:09:27 AM by IC-05
Last Update: 12/13/2017 7:11:29 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027510-002B,SAMP,100	12/13/2017 5:35:03 PM	SAMP,0.1>10mL
43	N027510-003B,SAMP,100	12/13/2017 5:50:22 PM	SAMP,0.1>10mL
44	N027431-005C,SAMP,1	12/13/2017 6:13:17 PM	SAMP,10mL
45	N027431-005CMS,MS,1	12/13/2017 6:28:35 PM	MS,10mL
46	N027431-005CMSD,MSD,1	12/13/2017 6:43:53 PM	MSD,10mL
47	CCV-4,CCV,1	12/13/2017 6:59:11 PM	CCV
48	CCB-4,CCB,1	12/13/2017 7:14:28 PM	CCB
49	N027431-001C,SAMP,1	12/13/2017 7:29:46 PM	SAMP,10mL
50	N027431-001CDUP,DUP,1	12/13/2017 7:45:04 PM	DUP,10mL
51	N027431-001CMS,MS,1	12/13/2017 8:00:22 PM	MS,10mL
52	N027431-001CMSD,MSD,1	12/13/2017 8:15:40 PM	MSD,10mL
53	N027431-002C,SAMP,5	12/13/2017 8:30:58 PM	SAMP,2>10mL
54	N027431-003C,SAMP,5	12/13/2017 8:46:16 PM	SAMP,2>10mL
55	N027431-004C,SAMP,5	12/13/2017 9:01:34 PM	SAMP,2>10mL
56	N027431-006C,SAMP,5	12/13/2017 9:16:51 PM	SAMP,2>10mL
57	N027430-008C,SAMP,5	12/13/2017 9:32:09 PM	SAMP,2>10mL
58	N027430-008CDUP,DUP,5	12/13/2017 9:47:27 PM	DUP,2>10mL
59	CCV-5,CCV,1	12/13/2017 10:02:45 PM	CCV
60	CCB-5,CCB,1	12/13/2017 10:18:02 PM	CCB
61	N027430-008CMS,MS,5	12/13/2017 10:33:20 PM	MS,2>10mL
62	N027430-008CMSD,MSD,5	12/13/2017 10:48:38 PM	MSD,2>10mL
63	N027430-012C,SAMP,1	12/13/2017 11:03:56 PM	SAMP,10mL
64	N027430-013C,SAMP,5	12/13/2017 11:19:14 PM	SAMP,2>10mL
65	N027430-014C,SAMP,5	12/13/2017 11:34:32 PM	SAMP,2>10mL
66	N027430-015C,SAMP,5	12/13/2017 11:49:50 PM	SAMP,2>10mL
67	N027539-001C,SAMP,5	12/14/2017 12:05:08 AM	SAMP,2>10mL
68	N027539-001C,SAMP,100	12/14/2017 12:20:26 AM	SAMP,0.1>10mL
69	N027539-002C,SAMP,1	12/14/2017 12:35:43 AM	SAMP,10mL
70	N027539-002C,SAMP,50	12/14/2017 12:51:01 AM	SAMP,0.2>10mL
71	CCV-6,CCV,1	12/14/2017 1:06:19 AM	CCV
72	CCB-6,CCB,1	12/14/2017 1:21:37 AM	CCB
73	N027539-004C,SAMP,1	12/14/2017 1:36:55 AM	SAMP,10mL
74	N027539-004C,SAMP,50	12/14/2017 1:52:14 AM	SAMP,0.2>10mL
75	N027482-002A,SAMP,10	12/14/2017 2:07:31 AM	SAMP,1>10mL
76	N027482-002AMS,MS,10	12/14/2017 2:22:49 AM	MS,1>10mL
77	N027482-002A,SAMP,20	12/14/2017 2:38:07 AM	SAMP,0.5>10mL
78	N027482-002AMS,MS,20	12/14/2017 2:53:25 AM	MS,0.5>10mL
79	BLANK,BLANK,1	12/14/2017 3:08:43 AM	BLANK
80	CCV-7,CCV,1	12/14/2017 3:24:00 AM	CCV
81	CCB-7,CCB,1	12/14/2017 3:39:19 AM	CCB

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 113
Created: 12/14/2017 8:36:45 AM by IC-05
Last Update: 12/15/2017 4:10:57 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027429-005D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027429-005D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027429-006D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027429-006D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027429-007D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027429-007D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027429-008D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	N027429-008D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	N027429-008DMS,MS,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	N027429-008DMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
26	N027429-013D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
27	N027429-013DMS,MS,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
28	N027429-013DMSD,MSD,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
29	N027429-013D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
30	N027429-013DMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
31	N027429-013DMSD,MSD,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
32	N027429-009D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
33	N027429-009D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
34	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
35	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
36	N027429-010D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
37	N027429-010D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
38	N027429-012D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
39	N027429-012D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
40	N027429-014D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
41	N027429-014D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 113
Created: 12/14/2017 8:36:45 AM by IC-05
Last Update: 12/15/2017 4:10:57 AM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	BLANK,BLANK,1	12/14/2017 8:37:30 AM	BLANK
10	CCV-1,CCV,1	12/14/2017 8:52:48 AM	CCV
11	CCB-1,CCB,1	12/14/2017 9:08:06 AM	CCB
12	MB-H2O,MBLK,1	12/14/2017 9:23:24 AM	METHOD BLANK
13	LCS-H2O,LCS,1	12/14/2017 9:38:42 AM	LCS
14	N027429-005D,SAMP,2000	12/14/2017 10:12:46 AM	SAMP,0.005>>10mL
15	N027429-005D,SAMP,100	12/14/2017 10:28:05 AM	SAMP,0.1>10mL
16	N027429-006D,SAMP,2000	12/14/2017 10:43:23 AM	SAMP,0.005>>10mL
17	N027429-006D,SAMP,100	12/14/2017 10:58:41 AM	SAMP,0.1>10mL
18	N027429-007D,SAMP,100	12/14/2017 11:13:59 AM	SAMP,0.1>10mL
19	N027429-007D,SAMP,20	12/14/2017 11:29:17 AM	SAMP,0.5>10mL
20	N027429-008D,SAMP,100	12/14/2017 11:44:35 AM	SAMP,0.1>10mL
21	N027429-008D,SAMP,20	12/14/2017 11:59:52 AM	SAMP,0.5>10mL
22	CCV-2,CCV,1	12/14/2017 12:15:10 PM	CCV
23	CCB-2,CCB,1	12/14/2017 12:30:28 PM	CCB
24	N027429-008DMS,MS,100	12/14/2017 12:49:52 PM	MS,0.1>10mL
25	N027429-008DMS,MS,20	12/14/2017 1:05:10 PM	MS,0.5>10mL
26	N027429-013D,SAMP,100	12/14/2017 1:20:28 PM	SAMP,0.1>10mL
27	N027429-013DMS,MS,100	12/14/2017 1:35:46 PM	MS,0.1>10mL
28	N027429-013DMSD,MSD,100	12/14/2017 1:51:03 PM	MSD,0.1>10mL
29	N027429-013D,SAMP,20	12/14/2017 2:06:21 PM	SAMP,0.5>10mL
30	N027429-013DMS,MS,20	12/14/2017 2:21:39 PM	MS,0.5>10mL
31	N027429-013DMSD,MSD,20	12/14/2017 2:36:57 PM	MSD,0.5>10mL
32	N027429-009D,SAMP,2000	12/14/2017 2:52:15 PM	SAMP,0.005>10mL
33	N027429-009D,SAMP,100	12/14/2017 3:07:32 PM	SAMP,0.1>10mL
34	CCV-3,CCV,1	12/14/2017 3:22:50 PM	CCV
35	CCB-3,CCB,1	12/14/2017 3:38:08 PM	CCB
36	N027429-010D,SAMP,1000	12/14/2017 3:53:26 PM	SAMP,0.01>10mL
37	N027429-010D,SAMP,100	12/14/2017 4:08:44 PM	SAMP,0.1>10mL
38	N027429-012D,SAMP,200	12/14/2017 4:24:02 PM	SAMP,0.05>10mL
39	N027429-012D,SAMP,20	12/14/2017 4:39:20 PM	SAMP,05>10mL
40	N027429-014D,SAMP,100	12/14/2017 4:56:46 PM	SAMP,0.1>10mL
41	N027429-014D,SAMP,20	12/14/2017 5:12:04 PM	SAMP,0.5>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 113
Created: 12/14/2017 8:36:45 AM by IC-05
Last Update: 12/15/2017 4:10:57 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027429-015D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
43	N027429-015D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
44	N027429-016D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
45	N027429-016D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
46	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
47	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
48	N027429-015DDUP,DUP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
49	N027429-015DDUP,DUP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
50	N027429-017D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
51	N027429-017D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
52	N027429-018D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
53	N027429-018D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
54	N027429-020D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
55	N027429-020D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
56	N027431-001C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
57	N027431-001C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
58	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
59	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
60	N027431-002C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
61	N027431-002C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
62	N027431-003C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
63	N027431-003C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
64	N027431-004C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
65	N027431-004C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
66	N027431-005C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
67	N027431-005C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
68	N027431-006C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
69	N027431-006C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
70	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
71	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
72	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
73	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
74	N027430-004C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
75	N027430-004CDUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
76	N027430-004CMS,MS,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
77	N027430-004CMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
78	N027430-004C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
79	N027430-004CDUP,DUP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
80	N027430-004CMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
81	N027430-004CMSD,MSD,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
82	CCV-7,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 113
Created: 12/14/2017 8:36:45 AM by IC-05
Last Update: 12/15/2017 4:10:57 AM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027429-015D,SAMP,200	12/14/2017 5:27:22 PM	SAMP,0.05>10mL
43	N027429-015D,SAMP,20	12/14/2017 5:42:40 PM	SAMP,0.5>10mL
44	N027429-016D,SAMP,500	12/14/2017 5:57:57 PM	SAMP,0.02>10mL
45	N027429-016D,SAMP,20	12/14/2017 6:13:16 PM	SAMP,0.5>10mL
46	CCV-4,CCV,1	12/14/2017 6:28:34 PM	CCV
47	CCB-4,CCB,1	12/14/2017 6:43:51 PM	CCB
48	N027429-015DDUP,DUP,200	12/14/2017 6:59:09 PM	DUP,0.05>10mL
49	N027429-015DDUP,DUP,20	12/14/2017 7:14:27 PM	DUP,0.5>10mL
50	N027429-017D,SAMP,500	12/14/2017 7:29:45 PM	SAMP,0.02>10mL
51	N027429-017D,SAMP,20	12/14/2017 7:45:03 PM	SAMP,0.5>10mL
52	N027429-018D,SAMP,1000	12/14/2017 8:00:21 PM	SAMP,0.01>10mL
53	N027429-018D,SAMP,100	12/14/2017 8:15:39 PM	SAMP,0.1>10mL
54	N027429-020D,SAMP,1000	12/14/2017 8:30:57 PM	SAMP,0.01>10mL
55	N027429-020D,SAMP,100	12/14/2017 8:46:15 PM	SAMP,0.1>10mL
56	N027431-001C,SAMP,200	12/14/2017 9:01:34 PM	SAMP,0.05>10mL
57	N027431-001C,SAMP,20	12/14/2017 9:16:52 PM	SAMP,0.5>10mL
58	CCV-5,CCV,1	12/14/2017 9:32:10 PM	CCV
59	CCB-5,CCB,1	12/14/2017 9:47:28 PM	CCB
60	N027431-002C,SAMP,1000	12/14/2017 10:02:46 PM	SAMP,0.01>10mL
61	N027431-002C,SAMP,50	12/14/2017 10:18:04 PM	SAMP,0.2>10mL
62	N027431-003C,SAMP,2000	12/14/2017 10:33:21 PM	SAMP,0.005>10mL
63	N027431-003C,SAMP,100	12/14/2017 10:48:39 PM	SAMP,0.1>10mL
64	N027431-004C,SAMP,2000	12/14/2017 11:03:57 PM	SAMP,0.005>10mL
65	N027431-004C,SAMP,100	12/14/2017 11:19:15 PM	SAMP,0.1>10mL
66	N027431-005C,SAMP,100	12/14/2017 11:34:33 PM	SAMP,0.1>10mL
67	N027431-005C,SAMP,20	12/14/2017 11:49:51 PM	SAMP,0.5>10mL
68	N027431-006C,SAMP,1000	12/15/2017 12:05:09 AM	SAMP,0.01>10mL
69	N027431-006C,SAMP,200	12/15/2017 12:20:27 AM	SAMP,0.05>10mL
70	CCV-6,CCV,1	12/15/2017 12:35:44 AM	CCV
71	CCB-6,CCB,1	12/15/2017 12:51:02 AM	CCB
72	LCS-2,LCS,1	12/15/2017 1:06:20 AM	LCS
73	MB-2,MBLK,1	12/15/2017 1:21:38 AM	METHOD BLANK
74	N027430-004C,SAMP,50	12/15/2017 1:36:55 AM	SAMP,0.2>10mL
75	N027430-004CDUP,DUP,50	12/15/2017 1:52:13 AM	DUP,0.2>10mL
76	N027430-004CMS,MS,50	12/15/2017 2:07:31 AM	MS,0.2>10mL
77	N027430-004CMSD,MSD,50	12/15/2017 2:22:49 AM	MSD,0.2>10mL
78	N027430-004C,SAMP,20	12/15/2017 2:38:07 AM	SAMP,0.5>10mL
79	N027430-004CDUP,DUP,20	12/15/2017 2:53:25 AM	DUP,0.5>10mL
80	N027430-004CMS,MS,20	12/15/2017 3:08:43 AM	MS,0.5>10mL
81	N027430-004CMSD,MSD,20	12/15/2017 3:24:01 AM	MSD,0.5>10mL
82	CCV-7,CCV,1	12/15/2017 3:39:19 AM	CCV

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 113
Created: 12/14/2017 8:36:45 AM by IC-05
Last Update: 12/15/2017 4:10:57 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
83	CCB-7,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
84	N027430-020C,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
85	N027430-020CMS,MS,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
86	N027430-020C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
87	N027430-020CMS,MS,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
88	N027430-002C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
89	N027430-002C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
90	N027430-006C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
91	N027430-006C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
92	N027430-008C,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
93	N027430-008C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
94	CCV-8,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
95	CCB-8,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
96	N027430-012C,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
97	N027430-012C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
98	N027430-013C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
99	N027430-013C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
100	N027430-014C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
101	N027430-014C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
102	N027430-015C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
103	N027430-015C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
104	N027430-016C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
105	N027430-016C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
106	CCV-9,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
107	CCB-9,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
108	N027430-017C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
109	N027430-017C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
110	N027430-018C,SAMP,5000	Unknown	1000.0	Anions Default	Anions_171129	Finished
111	N027430-018C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
112	CCV-10,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
113	CCB-10,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 113
Created: 12/14/2017 8:36:45 AM by IC-05
Last Update: 12/15/2017 4:10:57 AM by IC-05

No.	Name	Inj. Date/Time	Comment
83	CCB-7,CCB,1	12/15/2017 3:54:37 AM	CCB
84	N027430-020C,SAMP,500	12/15/2017 4:09:54 AM	SAMP,0.02>10mL
85	N027430-020CMS,MS,500	12/15/2017 4:25:12 AM	MS,0.02>10mL
86	N027430-020C,SAMP,50	12/15/2017 4:40:30 AM	SAMP,0.2>10mL
87	N027430-020CMS,MS,50	12/15/2017 4:55:48 AM	MS,0.2>10mL
88	N027430-002C,SAMP,2000	12/15/2017 5:11:06 AM	SAMP,0.005>10mL
89	N027430-002C,SAMP,200	12/15/2017 5:26:23 AM	SAMP,0.05>10mL
90	N027430-006C,SAMP,20	12/15/2017 5:41:41 AM	SAMP,0.5>10mL
91	N027430-006C,SAMP,50	12/15/2017 5:56:59 AM	SAMP,0.2>10mL
92	N027430-008C,SAMP,500	12/15/2017 6:12:17 AM	SAMP,0.02>10mL
93	N027430-008C,SAMP,50	12/15/2017 6:27:35 AM	SAMP,0.2>10mL
94	CCV-8,CCV,1	12/15/2017 6:42:53 AM	CCV
95	CCB-8,CCB,1	12/15/2017 6:58:11 AM	CCB
96	N027430-012C,SAMP,500	12/15/2017 7:13:28 AM	SAMP,0.02>10mL
97	N027430-012C,SAMP,200	12/15/2017 7:28:46 AM	SAMP,0.05>10mL
98	N027430-013C,SAMP,1000	12/15/2017 7:44:04 AM	SAMP,0.01>10mL
99	N027430-013C,SAMP,100	12/15/2017 7:59:22 AM	SAMP,0.1>10mL
100	N027430-014C,SAMP,2000	12/15/2017 8:14:40 AM	SAMP,0.005>10mL
101	N027430-014C,SAMP,100	12/15/2017 8:29:58 AM	SAMP,0.1>10mL
102	N027430-015C,SAMP,2000	12/15/2017 8:45:15 AM	SAMP,0.005>10mL
103	N027430-015C,SAMP,100	12/15/2017 9:00:33 AM	SAMP,0.1>10mL
104	N027430-016C,SAMP,1000	12/15/2017 9:15:51 AM	SAMP,0.01>10mL
105	N027430-016C,SAMP,100	12/15/2017 9:31:09 AM	SAMP,0.1>10mL
106	CCV-9,CCV,1	12/15/2017 9:46:27 AM	CCV
107	CCB-9,CCB,1	12/15/2017 10:01:44 AM	CCB
108	N027430-017C,SAMP,1000	12/15/2017 10:17:03 AM	SAMP,0.01>10mL
109	N027430-017C,SAMP,100	12/15/2017 10:32:21 AM	SAMP,0.1>10mL
110	N027430-018C,SAMP,5000	12/15/2017 10:47:39 AM	SAMP,0.002>10mL
111	N027430-018C,SAMP,200	12/15/2017 11:02:56 AM	SAMP,0.05>10mL
112	CCV-10,CCV,1	12/15/2017 11:18:14 AM	CCV
113	CCB-10,CCB,1	12/15/2017 11:33:32 AM	CCB

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/18/2017 9:15:01 AM by IC-05
Last Update: 12/18/2017 5:39:47 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027430-012C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027430-012C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027430-012CDUP,DUP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027430-012CMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027430-012CMSD,MSD,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027412-001B,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	N027413-001B,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	N027414-001B,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
26	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
27	N027416-001B,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
28	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
29	N027417-001B,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
30	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
31	N027414-001B,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
32	N027412-001B,SAMP,10000	Unknown	1000.0	Anions Default	Anions_171129	Finished
33	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
34	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
35	N027485-002D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
36	N027485-003D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
37	N027485-005D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
38	N027485-006D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
39	N027485-007D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
40	N027485-001D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
41	N027485-001DDUP,DUP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/18/2017 9:15:01 AM by IC-05
Last Update: 12/18/2017 5:39:47 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	BLANK,BLANK,1	12/18/2017 9:15:27 AM	BLANK
10	CCV-1,CCV,1	12/18/2017 9:30:45 AM	CCV
11	CCB-1,CCB,1	12/18/2017 9:46:03 AM	CCB
12	MB-H2O,MBLK,1	12/18/2017 10:01:21 AM	METHOD BLANK
13	LCS-H2O,LCS,1	12/18/2017 10:16:39 AM	LCS
14	N027430-012C,SAMP,10	12/18/2017 10:31:57 AM	SAMP,1>10mL
15	N027430-012C,SAMP,20	12/18/2017 10:49:02 AM	SAMP,0.5>10mL
16	N027430-012CDUP,DUP,20	12/18/2017 11:04:21 AM	DUP,0.5>10mL
17	N027430-012CMS,MS,20	12/18/2017 11:19:38 AM	MS,0.5>10mL
18	N027430-012CMSD,MSD,20	12/18/2017 11:34:56 AM	MSD,0.5>10mL
19	N027412-001B,SAMP,200	12/18/2017 11:50:14 AM	SAMP,0.05>10mL
20	BLANK,BLANK,1	12/18/2017 12:05:32 PM	BLANK
21	CCV-2,CCV,1	12/18/2017 12:20:50 PM	CCV
22	CCB-2,CCB,1	12/18/2017 12:36:08 PM	CCB
23	N027413-001B,SAMP,100	12/18/2017 12:51:25 PM	SAMP,0.1>10mL
24	BLANK,BLANK,1	12/18/2017 1:06:43 PM	BLANK
25	N027414-001B,SAMP,100	12/18/2017 1:22:01 PM	SAMP,0.1>10mL
26	BLANK,BLANK,1	12/18/2017 1:37:19 PM	BLANK
27	N027416-001B,SAMP,200	12/18/2017 1:52:37 PM	SAMP,0.05>10mL
28	BLANK,BLANK,1	12/18/2017 2:07:55 PM	BLANK
29	N027417-001B,SAMP,200	12/18/2017 2:23:12 PM	SAMP,0.05>10mL
30	BLANK,BLANK,1	12/18/2017 2:38:30 PM	BLANK
31	N027414-001B,SAMP,5	12/18/2017 2:53:48 PM	SAMP,2>10mL
32	N027412-001B,SAMP,10000	12/18/2017 3:09:06 PM	SAMP,0.001>10mL
33	CCV-3,CCV,1	12/18/2017 3:24:25 PM	CCV
34	CCB-3,CCB,1	12/18/2017 3:39:43 PM	CCB
35	N027485-002D,SAMP,2000	12/18/2017 3:55:01 PM	SAMP,0.005>10mL
36	N027485-003D,SAMP,2000	12/18/2017 4:10:19 PM	SAMP,0.005>10mL
37	N027485-005D,SAMP,2000	12/18/2017 4:25:37 PM	SAMP,0.005>10mL
38	N027485-006D,SAMP,2000	12/18/2017 4:40:54 PM	SAMP,0.005>10mL
39	N027485-007D,SAMP,2000	12/18/2017 4:56:12 PM	SAMP,0.005>10mL
40	N027485-001D,SAMP,200	12/18/2017 5:11:30 PM	SAMP,0.02>10mL
41	N027485-001DDUP,DUP,200	12/18/2017 5:26:48 PM	SAMP,0.001>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/18/2017 9:15:01 AM by IC-05
Last Update: 12/18/2017 5:39:47 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027485-001DMS,MS,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
43	N027485-001DMSD,MSD,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
44	N027485-001D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
45	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
46	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
47	N027485-001DDUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
48	N027485-001DMS,MS,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
49	N027485-001DMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
50	N027485-011E,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
51	N027485-011EMS,MS,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
52	N027485-011E,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
53	N027485-011EMS,MS,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
54	N027485-004D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
55	N027485-004D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
56	N027485-008D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
57	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
58	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
59	N027485-008D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
60	N027485-009D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
61	N027485-009D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
62	N027485-010D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
63	N027485-010D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
64	N027485-012E,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
65	N027485-012E,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
66	N027413-001B,SAMP,10000	Unknown	1000.0	Anions Default	Anions_171129	Finished
67	N027413-001B,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
68	N027416-001B,SAMP,10000	Unknown	1000.0	Anions Default	Anions_171129	Finished
69	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
70	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
71	N027417-001B,SAMP,10000	Unknown	1000.0	Anions Default	Anions_171129	Finished
72	N027485-002D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
73	N027485-003D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
74	N027485-005D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
75	N027485-006D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
76	N027485-007D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
77	N027417-001B,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
78	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
79	N027414-001B,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
80	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
81	CCV-7,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
82	CCB-7,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/18/2017 9:15:01 AM by IC-05
Last Update: 12/18/2017 5:39:47 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027485-001DMS,MS,200	12/18/2017 5:42:06 PM	MS,0.05>10mL
43	N027485-001DMSD,MSD,200	12/18/2017 5:57:23 PM	MSD,0.05>10mL
44	N027485-001D,SAMP,50	12/18/2017 6:12:41 PM	SAMP,0.2>10mL
45	CCV-4,CCV,1	12/18/2017 6:27:59 PM	CCV
46	CCB-4,CCB,1	12/18/2017 6:43:17 PM	CCB
47	N027485-001DDUP,DUP,50	12/18/2017 6:58:35 PM	DUP,0.2>10mL
48	N027485-001DMS,MS,50	12/18/2017 7:13:53 PM	MS,0.2>10mL
49	N027485-001DMSD,MSD,50	12/18/2017 7:29:11 PM	MSD,0.2>10mL
50	N027485-011E,SAMP,200	12/18/2017 7:44:29 PM	SAMP,0.05>10mL
51	N027485-011EMS,MS,200	12/18/2017 7:59:46 PM	SAMP,0.05>10mL
52	N027485-011E,SAMP,100	12/18/2017 8:15:04 PM	SAMP,0.1>10mL
53	N027485-011EMS,MS,100	12/18/2017 8:30:22 PM	MS,0.1>10mL
54	N027485-004D,SAMP,2000	12/18/2017 8:45:40 PM	SAMP,0.005>10mL
55	N027485-004D,SAMP,50	12/18/2017 9:00:58 PM	SAMP,0.2>10mL
56	N027485-008D,SAMP,200	12/18/2017 9:16:16 PM	SAMP,0.05>10mL
57	CCV-5,CCV,1	12/18/2017 9:31:33 PM	CCV
58	CCB-5,CCB,1	12/18/2017 9:46:51 PM	CCB
59	N027485-008D,SAMP,10	12/18/2017 10:02:09 PM	SAMP,1>10mL
60	N027485-009D,SAMP,500	12/18/2017 10:17:27 PM	SAMP,0.02>10mL
61	N027485-009D,SAMP,100	12/18/2017 10:32:45 PM	SAMP,0.1>10mL
62	N027485-010D,SAMP,1000	12/18/2017 10:48:02 PM	SAMP,0.01>10mL
63	N027485-010D,SAMP,100	12/18/2017 11:03:20 PM	SAMP,0.1>10mL
64	N027485-012E,SAMP,200	12/18/2017 11:18:38 PM	SAMP,0.05>10mL
65	N027485-012E,SAMP,100	12/18/2017 11:33:56 PM	SAMP,0.1>10mL
66	N027413-001B,SAMP,10000	12/18/2017 11:49:14 PM	SAMP,0.001>10mL
67	N027413-001B,SAMP,500	12/19/2017 12:04:31 AM	SAMP,0.05>10mL
68	N027416-001B,SAMP,10000	12/19/2017 12:19:49 AM	SAMP,0.001>10mL
69	CCV-6,CCV,1	12/19/2017 12:35:07 AM	CCV
70	CCB-6,CCB,1	12/19/2017 12:50:25 AM	CCB
71	N027417-001B,SAMP,10000	12/19/2017 1:05:43 AM	SAMP,0.001>10mL
72	N027485-002D,SAMP,100	12/19/2017 1:21:01 AM	SAMP,0.1>10mL
73	N027485-003D,SAMP,100	12/19/2017 1:36:19 AM	SAMP,0.1>10mL
74	N027485-005D,SAMP,100	12/19/2017 1:51:37 AM	SAMP,0.1>10mL
75	N027485-006D,SAMP,100	12/19/2017 2:06:54 AM	SAMP,0.1>10mL
76	N027485-007D,SAMP,100	12/19/2017 2:22:12 AM	SAMP,0.1>10mL
77	N027417-001B,SAMP,500	12/19/2017 2:37:30 AM	SAMP,0.02>10mL
78	BLANK,BLANK,1	12/19/2017 2:52:48 AM	BLANK
79	N027414-001B,SAMP,10	12/19/2017 3:08:06 AM	SAMP,1>10mL
80	BLANK,BLANK,1	12/19/2017 3:23:24 AM	BLANK
81	CCV-7,CCV,1	12/19/2017 3:38:41 AM	CCV
82	CCB-7,CCB,1	12/19/2017 3:53:59 AM	CCB

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/18/2017 9:15:01 AM by IC-05
Last Update: 12/18/2017 5:39:47 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
83	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
84	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
85	N027459-017E,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
86	N027459-018C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
87	N027459-019C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
88	N027459-019CDUP,DUP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
89	N027459-019CMS,MS,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
90	N027459-019CMSD,MSD,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
91	CCV-8,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
92	CCB-8,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/18/2017 9:15:01 AM by IC-05
Last Update: 12/18/2017 5:39:47 PM by IC-05

No.	Name	Inj. Date/Time	Comment
83	LCS-2,LCS,1	12/19/2017 4:09:17 AM	LCS
84	MB-2,MBLK,1	12/19/2017 4:24:35 AM	METHOD BLANK
85	N027459-017E,SAMP,100	12/19/2017 4:39:52 AM	SAMP,0.1>10mL
86	N027459-018C,SAMP,2000	12/19/2017 4:55:10 AM	SAMP,0.005>10mL
87	N027459-019C,SAMP,1000	12/19/2017 5:10:28 AM	SAMP,0.01>10mL
88	N027459-019CDUP,DUP,1000	12/19/2017 5:25:46 AM	DUP,0.01>10mL
89	N027459-019CMS,MS,1000	12/19/2017 5:41:04 AM	MS,0.01>10mL
90	N027459-019CMSD,MSD,1000	12/19/2017 5:56:21 AM	MSD,0.01>10mL
91	CCV-8,CCV,1	12/19/2017 6:11:39 AM	CCV
92	CCB-8,CCB,1	12/19/2017 6:26:57 AM	CCB

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INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0709	0.1410	0.2824	0.7275	1.5389	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 12/22/2017

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Bromide	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.05	0.25	0.5	1.25	2.5	R^2
Area,mAU*min	0.0000	0.0033	0.0139	0.0287	0.0714	0.1448	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814D

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 12/22/2017

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0532	0.2181	0.4423	1.1375	2.3683	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RJB 12/22/2017

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Fluoride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.05	0.25	0.5	1.25	2.5	R^2
Area,mAU*min	0.0000	0.0100	0.0509	0.1014	0.2560	0.5201	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814A

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.



12/22/2017

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120771**
Client ID: **ICV**	Batch ID: **R120771**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2863365**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.235	0.50	1.250	0	98.8	90	110				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120771**
Client ID: **CCV**	Batch ID: **R120771**	TestNo: **EPA 300.0**		Analysis Date: **12/12/2017**	SeqNo: **2863375**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.263	0.50	1.250	0	101	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120771**
Client ID: **CCV**	Batch ID: **R120771**	TestNo: **EPA 300.0**		Analysis Date: **12/13/2017**	SeqNo: **2863387**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.264	0.50	1.250	0	101	90	110				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120771**
Client ID: **CCV**	Batch ID: **R120771**	TestNo: **EPA 300.0**		Analysis Date: **12/13/2017**	SeqNo: **2863397**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.263	0.50	1.250	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **ICV**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2869512**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.042	0.50	2.000	0	102	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCV**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.947	0.50	2.000	0	97.4	90	110				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCV**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.946	0.50	2.000	0	97.3	90	110				

Sample ID **CCV-8**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCV**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.947	0.50	2.000	0	97.4	90	110				

Sample ID **CCV-9**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCV**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869536**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.967	0.50	2.000	0	98.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-10**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCV**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869540**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.954	0.50	2.000	0	97.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **ICV**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2867946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.255	0.10	1.250	0	100	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCV**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/13/2017**	SeqNo: **2867950**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.239	0.10	1.250	0	99.1	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCV**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/13/2017**	SeqNo: **2867954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.213	0.10	1.250	0	97.1	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCV**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/13/2017**	SeqNo: **2867956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.251	0.10	1.250	0	100	90	110				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCV**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/13/2017**	SeqNo: **2867960**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.248	0.10	1.250	0	99.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCV**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2867967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.263	0.10	1.250	0	101	90	110				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCV**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2867969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.270	0.10	1.250	0	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **ICV**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2872490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.255	0.10	1.250	0	100	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCV**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.206	0.10	1.250	0	96.5	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCV**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.215	0.10	1.250	0	97.2	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCV**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.236	0.10	1.250	0	98.8	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCV**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.238	0.10	1.250	0	99.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	CCV-5	SampType:	CCV	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	CCV	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872511

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.252	0.10	1.250	0	100	90	110				

Sample ID	CCV-6	SampType:	CCV	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	CCV	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2872513

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.255	0.10	1.250	0	100	90	110				

Sample ID	CCV-7	SampType:	CCV	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	CCV	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2872515

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.259	0.10	1.250	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **ICV**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2869542**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.936	0.50	4.000	0	98.4	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCV**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869544**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.750	0.50	4.000	0	93.8	90	110				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCV**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869552**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.787	0.50	4.000	0	94.7	90	110				

Sample ID **CCV-8**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCV**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869559**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.822	0.50	4.000	0	95.5	90	110				

Sample ID **CCV-9**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCV**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869566**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.785	0.50	4.000	0	94.6	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCV-10**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCV**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.812	0.50	4.000	0	95.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	**ICB**	SampType:	**ICB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**120771**
Client ID:	**ICB**	Batch ID:	**R120771**	TestNo:	**EPA 300.0**			Analysis Date:	**11/29/2017**	SeqNo:	**2863366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-5**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**120771**
Client ID:	**CCB**	Batch ID:	**R120771**	TestNo:	**EPA 300.0**			Analysis Date:	**12/12/2017**	SeqNo:	**2863376**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-6**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**120771**
Client ID:	**CCB**	Batch ID:	**R120771**	TestNo:	**EPA 300.0**			Analysis Date:	**12/13/2017**	SeqNo:	**2863388**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-7**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**120771**
Client ID:	**CCB**	Batch ID:	**R120771**	TestNo:	**EPA 300.0**			Analysis Date:	**12/13/2017**	SeqNo:	**2863398**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **ICB**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2869513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCB**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCB**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCB**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-9**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCB**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869537**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCB-10**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCB**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869541**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **ICB**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2867947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCB**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/13/2017**	SeqNo: **2867951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCB**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/13/2017**	SeqNo: **2867955**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCB**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/13/2017**	SeqNo: **2867957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCB**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/13/2017**	SeqNo: **2867961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCB**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2867968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCB**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2867970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **ICB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2872491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872508**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872510**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872512**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2872514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2872516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **ICB**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2869543**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCB**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869545**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCB**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCB**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869560**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-9**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCB**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869567**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCB-10**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120854**
Client ID: **CCB**	Batch ID: **R120854**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2869571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/13/2017

Sample Name	Retention Time		Evaluation
CCV-2	Fluoride	2.970	
CCV-3	Fluoride	2.964	
CCV-4	Fluoride	2.950	
CCV-5	Fluoride	2.947	
CCV-6	Fluoride	2.957	
CCV-7	Fluoride	2.957	
	Average	2.958	
	Applied RT Window	2.758 - 3.158	
MB-R120803_F	Fluoride	N.A.	N.A.
LCS-R120803_F	Fluoride	2.967	PASS
N027430-008C	Fluoride	2.944	PASS
N027430-008CDUP	Fluoride	2.940	PASS
N027430-008CMS	Fluoride	2.950	PASS
N027430-008CMSD	Fluoride	2.950	PASS
N027430-013C	Fluoride	2.947	PASS
N027430-014C	Fluoride	2.930	PASS
N027430-015C	Fluoride	2.907	PASS

rba 12/20/2017

12/22/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/18/2017

Sample Name		Retention Time	Evaluation
CCV-1	Fluoride	2.934	
CCV-2	Fluoride	2.930	
CCV-3	Fluoride	2.930	
CCV-4	Fluoride	2.917	
CCV-5	Fluoride	2.934	
CCV-6	Fluoride	2.937	
CCV-7	Fluoride	2.937	

Average 2.931

Applied RT Window 2.731 - 3.131

MB-R120937_F	Fluoride	N.A.	N.A.
LCS-R120937_F	Fluoride	2.930	PASS
N027430-012C	Fluoride	2.924	PASS
N027430-012CDUP	Fluoride	2.920	PASS
N027430-012CMS	Fluoride	2.923	PASS
N027430-012CMSD	Fluoride	2.924	PASS

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12/22/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/12/2017

Sample Name		Retention Time	Evaluation
CCV-5	Bromide	4.884	
CCV-6	Bromide	4.880	
CCV-7	Bromide	4.880	
Average		4.881	
Applied RT Window		4.681 - 5.081	
LCS-R120771_BR	Bromide	4.883	PASS
MB-R120771_BR	Bromide	N.A.	N.A.
N027430-006C	Bromide	N.A.	N.A.
N027430-006CDUP	Bromide	N.A.	N.A.
N027430-006CMS	Bromide	4.877	PASS
N027430-006CMSD	Bromide	4.877	PASS
N027430-004C	Bromide	N.A.	N.A.
N027430-004CMS	Bromide	4.874	PASS
N027430-012C	Bromide	N.A.	N.A.
N027430-002C	Bromide	N.A.	N.A.
N027430-008C	Bromide	N.A.	N.A.
N027430-013C	Bromide	N.A.	N.A.
N027430-014C	Bromide	N.A.	N.A.
N027430-016C	Bromide	N.A.	N.A.
N027430-017C	Bromide	N.A.	N.A.
N027430-015C	Bromide	N.A.	N.A.
N027430-018C	Bromide	N.A.	N.A.
N027430-020C	Bromide	N.A.	N.A.

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12/22/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/14/2017

Sample Name		Retention Time	Evaluation
CCV-6	Sulfate	7.430	
CCV-7	Sulfate	7.427	
CCV-8	Sulfate	7.417	
CCV-9	Sulfate	7.407	
CCV-10	Sulfate	7.400	
	Average	7.416	
	Applied RT Window	7.216 - 7.616	
LCS-R120854_SO4	Sulfate	7.434	PASS
MB-R120854_SO4	Sulfate	N.A.	N.A.
N027430-004C	Sulfate	7.433	PASS
N027430-004CDUP	Sulfate	7.434	PASS
N027430-004CMS	Sulfate	7.437	PASS
N027430-004CMSD	Sulfate	7.434	PASS
N027430-020C	Sulfate	7.420	PASS
N027430-020CMS	Sulfate	7.423	PASS
N027430-002C	Sulfate	7.423	PASS
N027430-006C	Sulfate	7.434	PASS
N027430-008C	Sulfate	7.420	PASS
N027430-012C	Sulfate	7.414	PASS
N027430-013C	Sulfate	7.420	PASS
N027430-014C	Sulfate	7.413	PASS
N027430-015C	Sulfate	7.417	PASS
N027430-016C	Sulfate	7.417	PASS
N027430-017C	Sulfate	7.413	PASS
N027430-018C	Sulfate	7.404	PASS

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12/22/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/14/2017

Sample Name		Retention Time	Evaluation
CCV-6	Chloride	3.767	
CCV-7	Chloride	3.770	
CCV-8	Chloride	3.767	
CCV-9	Chloride	3.764	
CCV-10	Chloride	3.763	
	Average	3.766	
	Applied RT Window	3.566 - 3.966	
LCS-R120854_CL	Chloride	3.767	PASS
MB-R120854_CL	Chloride	N.A.	N.A.
N027430-004C	Chloride	3.767	PASS
N027430-004CDUP	Chloride	3.764	PASS
N027430-004CMS	Chloride	3.767	PASS
N027430-004CMSD	Chloride	3.770	PASS
N027430-020C	Chloride	3.767	PASS
N027430-020CMS	Chloride	3.767	PASS
N027430-002C	Chloride	3.767	PASS
N027430-006C	Chloride	3.767	PASS
N027430-008C	Chloride	3.764	PASS
N027430-012C	Chloride	3.767	PASS
N027430-013C	Chloride	3.767	PASS
N027430-014C	Chloride	3.767	PASS
N027430-015C	Chloride	3.767	PASS
N027430-016C	Chloride	3.767	PASS
N027430-017C	Chloride	3.767	PASS
N027430-018C	Chloride	3.764	PASS

jrba 12/20/2017

12/22/2017

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 5/23/2017 ; 5/24/2017; 5/25/2017
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Datafile	170523A D36	170523A D37	170523A D38	170524A D17	170524A D18	170525A D45	170525A D46					
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**MDL**	**LOD**	**PQL**
Fluoride	0.020	0.022	0.021	0.020	0.023	0.026	0.024	0.020	0.0021	**0.0065**	0.020	0.10
Chloride	0.133	0.136	0.136	0.133	0.141	0.133	0.136	0.025	0.0029	**0.0091**	0.020	0.50
Nitrite	0.030	0.028	0.027	0.028	0.028	0.027	0.027	0.020	0.0010	**0.0030**	0.010	0.05
Bromide	0.037	0.042	0.043	0.038	0.040	0.032	0.025	0.040	0.0062	**0.0196**	0.040	0.20
Nitrate	0.035	0.034	0.033	0.033	0.033	0.031	0.030	0.020	0.0016	**0.0050**	0.010	0.05
Phosphate	0.047	0.051	0.049	0.046	0.052	0.047	0.059	0.040	0.0043	**0.0135**	0.030	0.10
Sulfate	0.213	0.199	0.208	0.216	0.199	0.201	0.198	0.050	0.0073	**0.0229**	0.050	0.50

MDL/LOD & PQL Verification 2017

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)** Matrix: **WATER**
Method Number: EPA Method 300.0 Unit: mg/L
Analysis Date(s): 5/26/2017
Analyst: Ria Abes

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0065**	0.020	0.024	0.10	0.0906	**91**
Chloride	**0.0091**	0.020	0.130	0.50	0.5635	**113**
Nitrite	**0.0030**	0.010	0.023	0.05	0.0581	**116**
Bromide	**0.0196**	0.040	0.048	0.20	0.194	**97**
Nitrate	**0.0050**	0.010	0.023	0.05	0.0599	**120**
Phosphate	**0.0135**	0.030	0.043	0.10	0.1111	**111**
Sulfate	**0.0229**	0.050	0.195	0.50	0.6178	**124**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121010 **Analyst:** QBM

ASSET #: N027429, N027430, N027431 **Date Analyzed:** 12/21/2017

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 12/22/2017

2nd Level Reviewer RLB 12/22/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N027430-016D**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	1.1064	*	1
	=	1.1064	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 1.1 mg/L

RLB 12/22/2017

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

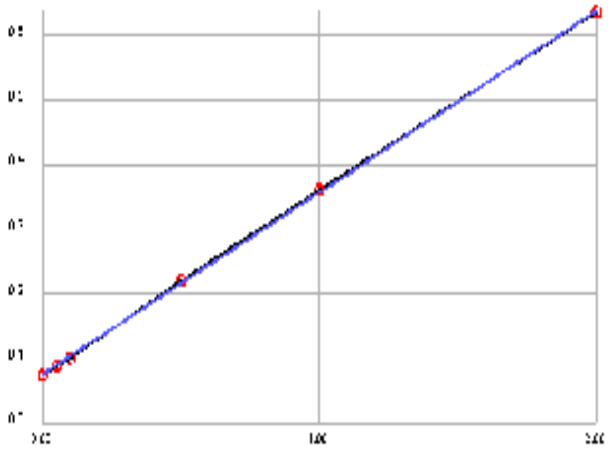
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2815x + 0.076
Correlation	.99987

Calibrant	Energy	Set	Conc
1	0.0736	0.0000	-0.0084
2	0.0899	0.0500	0.0495
3	0.1009	0.1000	0.0886
4	0.2217	0.5000	0.5177
5	0.3611	1.0000	1.0130
6	0.6360	2.0000	1.9897

Notes:

12/22/2017

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **ICV**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.504	0.050	0.5000	0	101	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **CCV**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.512	0.050	0.5000	0	102	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **CCV**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876094**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.465	0.050	0.5000	0	93.0	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **CCV**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.474	0.050	0.5000	0	94.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **ICB**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876072**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **CCB**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **CCB**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876095**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **CCB**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876106**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 12-21-2017 16:29
Time end: 12-21-2017 19:31

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	18:48:51	0.0022		0.0766
2	<BLANK>	18:49:50	-0.0113		0.0728
3	<CAL1>	18:50:45	-0.0084	[0]	0.0736
4	<CAL2>	18:51:47	0.0495	[0.05]	0.0899
5	<CAL3>	18:52:44	0.0886	[0.1]	0.1009
6	<CAL4>	18:53:38	0.5177	[0.5]	0.2217
7	<CAL5>	18:54:33	1.0130	[1]	0.3611
8	<CAL6>	18:55:35	1.9897	[2]	0.6360
9	,BLANK,BLANK,1, NOT REPORTED	18:56:29	0.0168		0.0807
10	,ICV,ICV,1,	18:57:24	0.5035		0.2177
11	,ICB,ICB,1,	18:58:26	-0.0013		0.0756
12	,MB-H2O,MBLK,1,	18:59:21	-0.0148		0.0718
13	,LCS-H2O,LCS,1,	19:00:21	0.5263		0.2241
14	,N027429-007C,SAMP,5,	19:01:17	0.5618		0.2341
15	,N027429-007CMS,MS,5,	19:02:12	1.1242		0.3924
16	,N027429-007CMSD,MSD,5,	19:03:13	1.0968		0.3847
17	,N027429-008C,SAMP,5,	19:04:08	0.5902		0.2421
18	,N027429-008CDUP,DUP,5,	19:05:04	0.6353		0.2548
19	,N027429-009C,SAMP,1,	19:06:00	0.7494		0.2869
20	,N027429-010C,SAMP,5,	19:07:00	0.4527		0.2034
21	,CCV-1,CCV,1, NOT REPORTED	19:07:56	0.5415		0.2284
22	,CCV-1,CCV,1,	19:08:51	0.5117		0.2200
23	,CCB-1,CCB,1,	19:09:51	0.0079		0.0782
24	,N027429-012C,SAMP,10,	19:10:47	1.1313		0.3944
25	,N027429-013C,SAMP,10,	19:11:48	1.2539		0.4289
26	,N027429-014C,SAMP,10,	19:12:44	1.1579		0.4019

RLB 12/22/2017

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N027429-015C,SAMP,10,	19:13:44	0.5955		0.2436
28	,N027430-004D,SAMP,1,	19:14:40	0.0211		0.0819
29	,N027430-006D,SAMP,1,	19:15:35	-0.0070		0.0740
30	,N027430-008D,SAMP,1,	19:16:23	-0.0095		0.0733
31	,N027430-012D,SAMP,1,	19:17:07	0.2968		0.1595
32	,BLANK, NOT REPORTED	19:17:56	-0.0116		0.0727
33	,CCV-2,CCV,1, NOT REPORTED	19:18:38	0.5131		0.2204
34	,CCV-2,CCV,1,	19:19:22	0.4648		0.2068
35	,CCB-2,CCB,1,	19:20:10	-0.0184		0.0708
36	,N027430-013D,SAMP,1,	19:20:53	1.1398		0.3968
37	,N027430-014D,SAMP,1,	19:21:41	1.5800		0.5207
38	,N027430-015D,SAMP,2,	19:22:24	0.8801		0.3237
39	,N027430-016D,SAMP,1,	19:23:06	1.1064		0.3874
40	,N027431-001D,SAMP,5,	19:23:56	0.9053		0.3308
41	,N027431-002D,SAMP,1,	19:24:39	0.0235		0.0826
42	,N027431-003D,SAMP,1,	19:25:21	0.0392		0.0870
43	,N027431-004D,SAMP,1,	19:26:10	0.0541		0.0912
44	,BLANK, NOT REPORTED	19:26:52	-0.0312		0.0672
45	,BLANK, NOT REPORTED	19:27:36	-0.0351		0.0661
46	,CCV-3,CCV,1,	19:28:24	0.4744		0.2095
47	,CCV-3,CCV,1, NOT REPORTED	19:29:07	0.4485		0.2022
48	,CCB-3,CCB,1,	19:29:50	-0.0287		0.0679

RLB 12/22/2017

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 12/21/2017
Time Analyzed: 4:23 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171220B
Color reagent: R171220C
2% Copper Sulfate: R171220A
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027429-007C		7.70							
N027429-008C		7.43							
N027429-009C		7.37							
N027429-010C		8.61							
N027429-012C		8.03							
N027429-013C		8.22							
N027429-014C		7.65							
N027429-015C		7.74							
N027430-004D		7.98							
N027430-006D		7.98							
N027430-008D		8.28							
N027430-012D		7.84							
N027430-013D		8.40							
N027430-014D		8.31							
N027430-015D		8.14							
N027430-016D		8.41							
N027431-001D		8.75							
N027431-002D		8.14							
N027431-003D		8.24							
N027431-004D		8.29							

Advanced Technology Laboratories, Inc.
Book # 1

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65993
ASSET #: N027430

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/18/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.		X				
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.		X				
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

Ca in N027430-015B is over linear range. For dilution.
%Rec of Ca, Fe & Mg in N027430-002B PS/MS/MSD failed. However LCS passed criteria.
Dilution test failed for Mg.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/22/17

2nd Level Reviewer 12/22/2017 Date: _____

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65993
ASSET #: N027430

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/19/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .			X			
24. LCS compounds within control limits.			X			
25. MS/MSD, RPD's are within control limits			X			
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For dilution of Ca in N027430-015B only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/22/17

2nd Level Reviewer 12/22/2017 Date: ~

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65993
ASSET #: N027430

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/20/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Na run only.
%Rec of Na in N027430-004B PS/MS/MSD failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/22/17

2nd Level Reviewer 12/22/2017 Date: _____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N027430-002B** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.05284 * 1 * (25/25) * 1000

Iron , ug/L = 52.84

Reporting results in two significant figures,

Iron , ug/L = 53

% RSD SUMMARY

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	B	0	0.59	15	PASS
Standard1	ICAL	1	B	0.1	1.15	15	PASS
Standard3	ICAL	1	B	1	0.087	15	PASS
Standard4	ICAL	1	B	2.5	0.59	15	PASS
Standard5	ICAL	1	B	3.75	1.54	15	PASS
Standard6	ICAL	1	B	5	0.48	15	PASS
Standard7	ICAL	1	B	10	0.68	15	PASS
ICV	ICV	1	B	4.98	0.36	15	PASS
ICB	ICB	1	B	0.011	11.2	15	PASS
LLICV	CCV1	1	B	0.15	0.7	20	PASS
LLICV	CCV1	1	B	0.097	1.87	20	PASS
ICSA1	ICSA	1	B	0.077	3.84	15	PASS
ICSAB1	ICSAB	1	B	1.17	0.22	15	PASS
CCV1	CCV	1	B	4.8	0.61	15	PASS
CCB1	CCB	1	B	0.017	19.94	15	<PQL
CCV2	CCV	1	B	4.7	0.74	15	PASS
CCB2	CCB	1	B	0.019	18.28	15	<PQL
MB-65993	MBLK	1	B	-0.0022	24.9	15	<PQL
LCS1-65993	LCS	1	B	4.52	1.084	15	PASS
N027430-002B	SAMP	1	B	2.39	0.7	15	PASS
N027430-002B	SAMP	5	B	0.54	0.5	15	PASS
N027430-002B-PS	PS	1	B	6.84	0.76	15	PASS
N027430-002B-MS1	MS	1	B	6.94	0.76	15	PASS
N027430-002B-MSD1	MSD	1	B	6.97	0.45	15	PASS
N027430-004B	SAMP	1	B	0.37	0.86	15	PASS
N027430-006B	SAMP	1	B	0.17	0.78	15	PASS
N027430-008B	SAMP	1	B	0.77	0.26	15	PASS
CCV3	CCV	1	B	4.68	0.68	15	PASS
CCB3	CCB	1	B	0.021	15.084	15	<PQL
N027430-012B	SAMP	1	B	2.16	0.48	15	PASS
N027430-013B	SAMP	1	B	1.088	0.23	15	PASS
N027430-014B	SAMP	1	B	1.04	0.63	15	PASS
N027430-015B	SAMP	1	B	1.4	0.56	15	PASS
N027430-016B	SAMP	1	B	1.88	0.45	15	PASS
N027430-017B	SAMP	1	B	3	0.89	15	PASS
N027430-018B	SAMP	1	B	3.7	0.61	15	PASS
N027430-020B	SAMP	1	B	0.82	0.38	15	PASS
N027431-001B	SAMP	1	B	0.38	0.2	15	PASS
N027431-002B	SAMP	1	B	1.25	0.55	15	PASS
CCV4	CCV	1	B	4.63	0.81	15	PASS
CCB4	CCB	1	B	0.016	20.33	15	<PQL
LLCCV1	CCV2	1	B	0.087	1.74	20	PASS

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
ICSA2	ICSA	1	B	0.078	2.16	15	PASS
ICSAB2	ICSAB	1	B	1.091	0.32	15	PASS
N027431-003B	SAMP	1	B	1.98	0.78	15	PASS
N027431-004B	SAMP	1	B	2.0009	0.49	15	PASS
N027431-005B	SAMP	1	B	0.42	0.33	15	PASS
N027431-006B	SAMP	1	B	1.88	0.38	15	PASS
CCV5	CCV	1	B	4.57	0.88	15	PASS
CCB5	CCB	1	B	0.032	17.76	15	<PQL
CCV6	CCV	1	B	4.54	0.67	15	PASS
CCB6	CCB	1	B	0.026	8.48	15	PASS
LLCCV2	CCV2	1	B	0.097	3.16	20	PASS
ICSA3	ICSA	1	B	0.1	2.31	15	PASS
ICSAB3	ICSAB	1	B	1.077	0.35	15	PASS
CCV7	CCV	1	B	4.87	0.75	15	PASS
CCB7	CCB	1	B	0.03	2.69	15	PASS
LLCCV3	CCV2	1	B	0.1	1.79	20	PASS
ICSA4	ICSA	1	B	0.099	0.24	15	PASS
ICSAB4	ICSAB	1	B	1.17	0.46	15	PASS
CalBlk	IBLK	1	Ca	0	3.65	15	PASS
Standard1	ICAL	1	Ca	0.2	11.17	15	PASS
Standard2	ICAL	1	Ca	1	1.87	15	PASS
Standard3	ICAL	1	Ca	2	2.47	15	PASS
Standard4	ICAL	1	Ca	5	0.83	15	PASS
Standard5	ICAL	1	Ca	7.5	0.61	15	PASS
Standard6	ICAL	1	Ca	10	0.51	15	PASS
Standard7	ICAL	1	Ca	20	0.3	15	PASS
ICV	ICV	1	Ca	10.088	0.21	15	PASS
ICB	ICB	1	Ca	-0.0018	778.17	15	<PQL
LLICV	CCV1	1	Ca	0.34	5.65	20	PASS
LLICV	CCV1	1	Ca	0.2	11.79	20	PASS
ICSA1	ICSA	1	Ca	498.55	0.67	15	PASS
ICSAB1	ICSAB	1	Ca	536.96	0.1	15	PASS
CCV1	CCV	1	Ca	9.97	0.27	15	PASS
CCB1	CCB	1	Ca	0.016	132.15	15	<PQL
CCV2	CCV	1	Ca	9.91	0.43	15	PASS
CCB2	CCB	1	Ca	0.029	24.8	15	<PQL
MB-65993	MBLK	1	Ca	0.049	23.35	15	<PQL
LCS1-65993	LCS	1	Ca	9.59	0.4	15	PASS
N027430-002B	SAMP	1	Ca	211.04	0.51	15	PASS
N027430-002B	SAMP	5	Ca	43.85	0.3	15	PASS
N027430-002B-PS	PS	1	Ca	211.39	0.19	15	PASS
N027430-002B-MS1	MS	1	Ca	214.32	0.13	15	PASS

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027430-002B-MSD1	MSD	1	Ca	215.35	0.023	15	PASS
N027430-004B	SAMP	1	Ca	70.47	0.28	15	PASS
N027430-006B	SAMP	1	Ca	92.97	0.29	15	PASS
N027430-008B	SAMP	1	Ca	181.66	0.1	15	PASS
CCV3	CCV	1	Ca	9.99	0.7	15	PASS
CCB3	CCB	1	Ca	-0.011	317.39	15	<PQL
N027430-012B	SAMP	1	Ca	54.36	0.51	15	PASS
N027430-013B	SAMP	1	Ca	264.05	0.072	15	PASS
N027430-014B	SAMP	1	Ca	370.67	0.31	15	PASS
N027430-015B	SAMP	1	Ca	494.84	0.42	15	PASS
N027430-016B	SAMP	1	Ca	97.77	0.12	15	PASS
N027430-017B	SAMP	1	Ca	104.48	0.24	15	PASS
N027430-018B	SAMP	1	Ca	324.12	0.21	15	PASS
N027430-020B	SAMP	1	Ca	158.46	0.4	15	PASS
N027431-001B	SAMP	1	Ca	79.8	0.12	15	PASS
N027431-002B	SAMP	1	Ca	145.69	0.14	15	PASS
CCV4	CCV	1	Ca	9.89	0.33	15	PASS
CCB4	CCB	1	Ca	-0.0036	655.17	15	<PQL
LLCCV1	CCV2	1	Ca	0.23	25.2	20	<PQL
ICSA2	ICSA	1	Ca	487.27	0.25	15	PASS
ICSAB2	ICSAB	1	Ca	537.05	0.61	15	PASS
N027431-003B	SAMP	1	Ca	307.84	0.38	15	PASS
N027431-004B	SAMP	1	Ca	310.18	0.12	15	PASS
N027431-005B	SAMP	1	Ca	54.46	0.45	15	PASS
N027431-006B	SAMP	1	Ca	243.52	0.21	15	PASS
CCV5	CCV	1	Ca	9.74	0.6	15	PASS
CCB5	CCB	1	Ca	0.015	48.034	15	<PQL
CCV6	CCV	1	Ca	9.73	0.54	15	PASS
CCB6	CCB	1	Ca	0.022	18.88	15	<PQL
LLCCV2	CCV2	1	Ca	0.24	14.45	20	PASS
ICSA3	ICSA	1	Ca	473.64	0.25	15	PASS
ICSAB3	ICSAB	1	Ca	525.29	0.57	15	PASS
CCV7	CCV	1	Ca	10.062	0.85	15	PASS
CCB7	CCB	1	Ca	0.013	111.0015	15	<PQL
LLCCV3	CCV2	1	Ca	0.22	7.62	20	PASS
ICSA4	ICSA	1	Ca	491.53	0.12	15	PASS
ICSAB4	ICSAB	1	Ca	539.93	0.17	15	PASS
CalBlk	IBLK	1	Fe	0	7.094	15	PASS
Standard1	ICAL	1	Fe	0.02	2.33	15	PASS
Standard2	ICAL	1	Fe	0.05	0.25	15	PASS
Standard3	ICAL	1	Fe	2	0.41	15	PASS
Standard4	ICAL	1	Fe	5	0.1	15	PASS

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard5	ICAL	1	Fe	7.5	1.055	15	PASS
Standard6	ICAL	1	Fe	10	0.12	15	PASS
Standard7	ICAL	1	Fe	20	0.043	15	PASS
ICV	ICV	1	Fe	10.026	0.075	15	PASS
ICB	ICB	1	Fe	0.00024	127.55	15	<PQL
LLICV	CCV1	1	Fe	0.035	1.7	20	PASS
LLICV	CCV1	1	Fe	0.023	4.14	20	PASS
ICSA1	ICSA	1	Fe	179.89	0.11	15	PASS
ICSAB1	ICSAB	1	Fe	190.03	0.14	15	PASS
CCV1	CCV	1	Fe	9.78	0.18	15	PASS
CCB1	CCB	1	Fe	0.00026	80.41	15	<PQL
CCV2	CCV	1	Fe	9.64	0.025	15	PASS
CCB2	CCB	1	Fe	0.00052	63.31	15	<PQL
MB-65993	MBLK	1	Fe	0.0012	59.24	15	<PQL
LCS1-65993	LCS	1	Fe	0.11	0.6	15	PASS
N027430-002B	SAMP	1	Fe	0.053	2.32	15	PASS
N027430-002B	SAMP	5	Fe	0.012	3.56	15	PASS
N027430-002B-PS	PS	1	Fe	0.14	0.57	15	PASS
N027430-002B-MS1	MS	1	Fe	0.12	0.75	15	PASS
N027430-002B-MSD1	MSD	1	Fe	0.12	0.24	15	PASS
N027430-004B	SAMP	1	Fe	1.0098	0.061	15	PASS
N027430-006B	SAMP	1	Fe	0.017	4.99	15	PASS
N027430-008B	SAMP	1	Fe	0.5	0.19	15	PASS
CCV3	CCV	1	Fe	9.64	0.14	15	PASS
CCB3	CCB	1	Fe	0.00084	63.96	15	<PQL
N027430-012B	SAMP	1	Fe	0.14	1.1	15	PASS
N027430-013B	SAMP	1	Fe	0.02	3.57	15	PASS
N027430-014B	SAMP	1	Fe	0.019	8.5	15	PASS
N027430-015B	SAMP	1	Fe	0.068	1.91	15	PASS
N027430-016B	SAMP	1	Fe	0.07	0.83	15	PASS
N027430-017B	SAMP	1	Fe	0.014	5.75	15	PASS
N027430-018B	SAMP	1	Fe	0.24	0.7	15	PASS
N027430-020B	SAMP	1	Fe	0.015	2.064	15	PASS
N027431-001B	SAMP	1	Fe	0.023	1.88	15	PASS
N027431-002B	SAMP	1	Fe	0.052	0.72	15	PASS
CCV4	CCV	1	Fe	9.57	0.057	15	PASS
CCB4	CCB	1	Fe	0.0017	65.66	15	<PQL
LLCCV1	CCV2	1	Fe	0.023	3.17	20	PASS
ICSA2	ICSA	1	Fe	171.22	0.055	15	PASS
ICSAB2	ICSAB	1	Fe	177.82	0.22	15	PASS
N027431-003B	SAMP	1	Fe	0.053	1.47	15	PASS
N027431-004B	SAMP	1	Fe	0.045	0.38	15	PASS

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027431-005B	SAMP	1	Fe	0.046	0.85	15	PASS
N027431-006B	SAMP	1	Fe	0.019	3.14	15	PASS
CCV5	CCV	1	Fe	9.54	0.1	15	PASS
CCB5	CCB	1	Fe	0.0016	45.74	15	<PQL
CCV6	CCV	1	Fe	9.53	0.14	15	PASS
CCB6	CCB	1	Fe	0.0022	12.11	15	PASS
LLCCV2	CCV2	1	Fe	0.023	2.84	20	PASS
ICSA3	ICSA	1	Fe	172.78	0.29	15	PASS
ICSAB3	ICSAB	1	Fe	178.26	0.14	15	PASS
CCV7	CCV	1	Fe	10.079	0.16	15	PASS
CCB7	CCB	1	Fe	0.00004	522.00022	15	<PQL
LLCCV3	CCV2	1	Fe	0.023	2.21	20	PASS
ICSA4	ICSA	1	Fe	183.12	0.28	15	PASS
ICSAB4	ICSAB	1	Fe	193.13	0.029	15	PASS
CalBlk	IBLK	1	Mg	0	0.61	15	PASS
Standard1	ICAL	1	Mg	0.1	0.95	15	PASS
Standard2	ICAL	1	Mg	1	1.084	15	PASS
Standard3	ICAL	1	Mg	2	0.64	15	PASS
Standard4	ICAL	1	Mg	5	0.048	15	PASS
Standard5	ICAL	1	Mg	7.5	1.03	15	PASS
Standard6	ICAL	1	Mg	10	0.17	15	PASS
Standard7	ICAL	1	Mg	20	0.096	15	PASS
ICV	ICV	1	Mg	10	0.2	15	PASS
ICB	ICB	1	Mg	0.0014	23.22	15	<PQL
LLICV	CCV1	1	Mg	0.16	1.15	20	PASS
LLICV	CCV1	1	Mg	0.11	0.91	20	PASS
ICSA1	ICSA	1	Mg	485.04	0.27	15	PASS
ICSAB1	ICSAB	1	Mg	511.69	0.39	15	PASS
CCV1	CCV	1	Mg	9.74	0.21	15	PASS
CCB1	CCB	1	Mg	0.0017	20.16	15	<PQL
CCV2	CCV	1	Mg	9.66	0.29	15	PASS
CCB2	CCB	1	Mg	0.0024	41.23	15	<PQL
MB-65993	MBLK	1	Mg	0.0048	9.2	15	PASS
LCS1-65993	LCS	1	Mg	9.31	0.026	15	PASS
N027430-002B	SAMP	1	Mg	4.66	0.55	15	PASS
N027430-002B	SAMP	5	Mg	1.15	0.2	15	PASS
N027430-002B-PS	PS	1	Mg	11.71	0.33	15	PASS
N027430-002B-MS1	MS	1	Mg	11.86	0.04	15	PASS
N027430-002B-MSD1	MSD	1	Mg	11.84	0.13	15	PASS
N027430-004B	SAMP	1	Mg	30.43	0.13	15	PASS
N027430-006B	SAMP	1	Mg	27.48	0.19	15	PASS
N027430-008B	SAMP	1	Mg	37.039	0.25	15	PASS

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV3	CCV	1	Mg	9.72	0.18	15	PASS
CCB3	CCB	1	Mg	0.0014	27.16	15	<PQL
N027430-012B	SAMP	1	Mg	71.73	0.098	15	PASS
N027430-013B	SAMP	1	Mg	23.91	0.14	15	PASS
N027430-014B	SAMP	1	Mg	41.26	0.19	15	PASS
N027430-015B	SAMP	1	Mg	51.51	0.1	15	PASS
N027430-016B	SAMP	1	Mg	2.57	0.35	15	PASS
N027430-017B	SAMP	1	Mg	2.46	0.4	15	PASS
N027430-018B	SAMP	1	Mg	6.46	0.26	15	PASS
N027430-020B	SAMP	1	Mg	36.79	0.44	15	PASS
N027431-001B	SAMP	1	Mg	20.54	0.25	15	PASS
N027431-002B	SAMP	1	Mg	6.65	0.078	15	PASS
CCV4	CCV	1	Mg	9.64	0.14	15	PASS
CCB4	CCB	1	Mg	0.0011	26.28	15	<PQL
LLCCV1	CCV2	1	Mg	0.1	0.46	20	PASS
ICSA2	ICSA	1	Mg	463.52	0.1	15	PASS
ICSAB2	ICSAB	1	Mg	501.44	0.17	15	PASS
N027431-003B	SAMP	1	Mg	11.75	0.13	15	PASS
N027431-004B	SAMP	1	Mg	11.87	0.16	15	PASS
N027431-005B	SAMP	1	Mg	12.52	0.15	15	PASS
N027431-006B	SAMP	1	Mg	21.63	0.16	15	PASS
CCV5	CCV	1	Mg	9.63	0.039	15	PASS
CCB5	CCB	1	Mg	0.0019	35.79	15	<PQL
CCV6	CCV	1	Mg	9.62	0.13	15	PASS
CCB6	CCB	1	Mg	0.0011	28.96	15	<PQL
LLCCV2	CCV2	1	Mg	0.1	2.15	20	PASS
ICSA3	ICSA	1	Mg	451.31	0.71	15	PASS
ICSAB3	ICSAB	1	Mg	504.86	0.33	15	PASS
CCV7	CCV	1	Mg	10.17	0.14	15	PASS
CCB7	CCB	1	Mg	0.0017	60.33	15	<PQL
LLCCV3	CCV2	1	Mg	0.11	1.71	20	PASS
ICSA4	ICSA	1	Mg	474.19	0.6	15	PASS
ICSAB4	ICSAB	1	Mg	522.59	0.21	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Ca	0	4.61	15	PASS
Standard1	ICAL	1	Ca	0.2	11.24	15	PASS
Standard2	ICAL	1	Ca	1	4.85	15	PASS
Standard3	ICAL	1	Ca	2	2.89	15	PASS
Standard4	ICAL	1	Ca	5	0.84	15	PASS
Standard5	ICAL	1	Ca	7.5	0.92	15	PASS
Standard6	ICAL	1	Ca	10	0.58	15	PASS
Standard7	ICAL	1	Ca	20	0.33	15	PASS
ICV	ICV	1	Ca	10.1	0.16	15	PASS
ICB	ICB	1	Ca	0.025	67.56	15	<PQL
LLICV	CCV1	1	Ca	0.23	11.41	20	PASS
ICSA1	ICSA	1	Ca	506.49	0.09	15	PASS
ICSAB1	ICSAB	1	Ca	555.54	0.11	15	PASS
N027430-015B	SAMP	5	Ca	108.86	0.23	15	PASS
CCV1	CCV	1	Ca	10.087	0.51	15	PASS
CCB1	CCB	1	Ca	-0.021	131.14	15	<PQL
CCB1	CCB	1	Ca	0.033	27.36	15	<PQL
CCV2	CCV	1	Ca	9.9	0.58	15	PASS
CCB2	CCB	1	Ca	0.0035	666.54	15	<PQL
CCV3	CCV	1	Ca	10.16	0.48	15	PASS
CCB3	CCB	1	Ca	0.00041	7555.71	15	<PQL
CCB3	CCB	1	Ca	0.018	110.92	15	<PQL
CCV4	CCV	1	Ca	9.88	0.11	15	PASS
CCB4	CCB	1	Ca	0.029	117.34	15	<PQL
LLCCV1	CCV2	1	Ca	0.22	13.79	20	PASS
ICSA2	ICSA	1	Ca	511.76	0.092	15	PASS
ICSAB2	ICSAB	1	Ca	558.43	0.18	15	PASS
CCV5	CCV	1	Ca	10.35	0.77	15	PASS
CCB5	CCB	1	Ca	0.0066	281.14	15	<PQL
CCV6	CCV	1	Ca	10.068	0.64	15	PASS
CCB6	CCB	1	Ca	-0.02	390.28	15	<PQL
CCV7	CCV	1	Ca	9.85	0.94	15	PASS
CCB7	CCB	1	Ca	0.031	61.44	15	<PQL
CCV8	CCV	1	Ca	10.064	0.5	15	PASS
CCB8	CCB	1	Ca	0.048	44.45	15	<PQL
LLCCV2	CCV2	1	Ca	0.27	8.72	20	PASS
ICSA3	ICSA	1	Ca	497.08	0.11	15	PASS
ICSAB3	ICSAB	1	Ca	543.69	0.18	15	PASS
CCV9	CCV	1	Ca	10.13	0.85	15	PASS
CCB9	CCB	1	Ca	0.061	16.2	15	<PQL
CCV10	CCV	1	Ca	9.92	0.49	15	PASS
CCB10	CCB	1	Ca	0.063	30.0053	15	<PQL

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV11	CCV	1	Ca	9.66	0.31	15	PASS
CCB11	CCB	1	Ca	0.049	17.31	15	<PQL
CCB11	CCB	1	Ca	0.053	25.75	15	<PQL
CCV12	CCV	1	Ca	9.88	0.73	15	PASS
CCB12	CCB	1	Ca	0.055	96.22	15	<PQL
LLCCV3	CCV2	1	Ca	0.26	4.53	20	PASS
ICSA4	ICSA	1	Ca	489.73	0.39	15	PASS
ICSAB4	ICSAB	1	Ca	536.67	0.25	15	PASS
CCV13	CCV	1	Ca	9.81	0.84	15	PASS
CCB13	CCB	1	Ca	0.061	71.21	15	<PQL
CCV14	CCV	1	Ca	10.006	0.81	15	PASS
CCB14	CCB	1	Ca	0.021	202	15	<PQL
CCV15	CCV	1	Ca	9.48	0.87	15	PASS
CCB15	CCB	1	Ca	0.038	117.27	15	<PQL
CCV16	CCV	1	Ca	9.47	0.34	15	PASS
CCB16	CCB	1	Ca	0.0024	667.76	15	<PQL
CCB16	CCB	1	Ca	0.044	46.61	15	<PQL
CCV17	CCV	1	Ca	10.46	0.51	15	PASS
CCB17	CCB	1	Ca	-0.019	142.64	15	<PQL
LLCCV4	CCV2	1	Ca	0.27	10.024	20	PASS
LLCCV4	CCV2	1	Ca	0.16	3.77	20	PASS
ICSA5	ICSA	1	Ca	511.39	0.15	15	PASS
ICSAB5	ICSAB	1	Ca	561.62	0.28	15	PASS
ICSAB5	ICSAB	1	Ca	464.82	0.11	15	PASS

RSD SUMMARY: 171220B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	2.95	15	PASS
Standard1	ICAL	1	Na	0.1	6.067	15	PASS
Standard2	ICAL	1	Na	1	0.45	15	PASS
Standard3	ICAL	1	Na	5	0.3	15	PASS
Standard4	ICAL	1	Na	10	0.24	15	PASS
Standard5	ICAL	1	Na	20	0.39	15	PASS
Standard6	ICAL	1	Na	40	0.1	15	PASS
ICV	ICV	1	Na	10.2	0.38	15	PASS
ICB	ICB	1	Na	0.013	38.44	15	<PQL
ICSA1	ICSA	1	Na	0.024	15	15	PASS
ICSAB1	ICSAB	1	Na	10.22	0.24	15	PASS
MB-65993	MBLK	1	Na	0.027	8.25	15	PASS
LCS2-65993	LCS	1	Na	20.34	0.2	15	PASS
N027430-002B	SAMP	250	Na	22.77	0.044	15	PASS
N027430-004B	SAMP	1	Na	217.23	0.39	15	PASS
N027430-004B	SAMP	5	Na	46.47	0.48	15	PASS
N027430-004B-PS	PS	1	Na	241.81	0.25	15	PASS
N027430-004B-MS2	MS	1	Na	246.08	0.33	15	PASS
N027430-004B-MSD2	MSD	1	Na	247.07	0.12	15	PASS
N027430-004B	SAMP	10	Na	22.67	0.035	15	PASS
N027430-004B	SAMP	50	Na	4.76	0.097	15	PASS
CCV1	CCV	1	Na	17.3	0.17	15	PASS
CCV1	CCV	1	Na	10.19	0.36	15	PASS
CCB1	CCB	1	Na	0.062	2.87	15	PASS
N027430-004B-PS	PS	10	Na	25.3	0.26	15	PASS
N027430-004B-MS2	MS	10	Na	26.12	0.15	15	PASS
N027430-004B-MSD2	MSD	10	Na	25.89	0.32	15	PASS
N027430-006B	SAMP	10	Na	10.69	1.29	15	PASS
N027430-008B	SAMP	100	Na	12.27	0.054	15	PASS
N027430-012B	SAMP	100	Na	30.38	0.22	15	PASS
N027430-013B	SAMP	100	Na	18.84	0.26	15	PASS
N027430-014B	SAMP	100	Na	30.53	0.18	15	PASS
N027430-015B	SAMP	250	Na	15.39	0.16	15	PASS
N027430-016B	SAMP	250	Na	16.26	0.14	15	PASS
CCV2	CCV	1	Na	10.31	0.25	15	PASS
CCB2	CCB	1	Na	0.05	2.62	15	PASS
N027430-017B	SAMP	250	Na	20.09	0.047	15	PASS
N027430-018B	SAMP	500	Na	16.79	0.18	15	PASS
N027430-020B	SAMP	100	Na	11.28	0.39	15	PASS
N027431-001B	SAMP	25	Na	13.68	0.17	15	PASS
N027431-002B	SAMP	100	Na	18.43	0.14	15	PASS
N027431-003B	SAMP	250	Na	14.87	0.39	15	PASS

RSD SUMMARY: 171220B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027431-004B	SAMP	250	Na	15.39	0.24	15	PASS
N027431-005B	SAMP	1	Na	290.31	0.81	15	PASS
N027431-005B	SAMP	25	Na	12.35	0.11	15	PASS
N027431-006B	SAMP	1	Na	1411.8	0.24	15	PASS
CCV3	CCV	1	Na	10.46	0.35	15	PASS
CCB3	CCB	1	Na	0.17	2.12	15	PASS
N027431-006B	SAMP	100	Na	16.31	0.25	15	PASS
CCV4	CCV	1	Na	10.33	0.15	15	PASS
CCB4	CCB	1	Na	0.098	3.11	15	PASS
ICSA2	ICSA	1	Na	0.085	7.067	15	PASS
ICSAB2	ICSAB	1	Na	10.32	0.067	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 171218C

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201K/MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201K/-171030G/-171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/18/2017	10:32:48 PM
2	Standard1	ICAL	1	12/18/2017	10:42:09 PM
3	Standard2	ICAL	1	12/18/2017	10:47:29 PM
11	Standard3	ICAL	1	12/18/2017	10:52:47 PM
12	Standard4	ICAL	1	12/18/2017	10:58:08 PM
6	Standard5	ICAL	1	12/18/2017	11:05:01 PM
7	Standard6	ICAL	1	12/18/2017	11:12:21 PM
8	Standard7	ICAL	1	12/18/2017	11:19:11 PM
9	ICV	ICV	1	12/18/2017	11:26:02 PM
1	ICB	ICB	1	12/18/2017	11:32:54 PM
2	LLICV	CCV1	1	12/18/2017	11:37:43 PM
2	LLICV	CCV1	1	12/18/2017	11:42:16 PM
4	ICSA1	ICSA	1	12/18/2017	11:47:34 PM
5	ICSAB1	ICSAB	1	12/18/2017	11:55:02 PM
64	MB-65992	MBLK	1	12/19/2017	12:02:34 AM
65	LCS1-65992	LCS	1	12/19/2017	12:07:25 AM
66	N027429-010B	SAMP	1	12/19/2017	12:14:46 AM
67	N027429-012B	SAMP	1	12/19/2017	12:21:46 AM
68	N027429-013B	SAMP	1	12/19/2017	12:28:38 AM
69	N027429-014B	SAMP	1	12/19/2017	12:35:29 AM
70	N027429-015B	SAMP	1	12/19/2017	12:42:20 AM
71	N027429-016C	SAMP	1	12/19/2017	12:49:12 AM
72	N027429-017C	SAMP	1	12/19/2017	12:56:03 AM
73	N027429-018C	SAMP	1	12/19/2017	01:02:55 AM
7	CCV1	CCV	1	12/19/2017	01:09:48 AM
1	CCB1	CCB	1	12/19/2017	01:16:38 AM
74	N027429-020C	SAMP	1	12/19/2017	01:21:27 AM
75	N027437-001B	SAMP	1	12/19/2017	01:28:19 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
76	N027437-002B	SAMP	1	12/19/2017	01:33:41 AM
77	N027437-002B	SAMP	5	12/19/2017	01:40:33 AM
78	N027437-002B-PS	PS	1	12/19/2017	01:45:55 AM
79	N027437-002BMS1	MS	1	12/19/2017	01:53:18 AM
80	N027437-002BMSD1	MSD	1	12/19/2017	02:00:10 AM
81	N027437-003D	SAMP	1	12/19/2017	02:07:02 AM
82	N027437-004B	SAMP	1	12/19/2017	02:11:55 AM
83	N027437-005B	SAMP	1	12/19/2017	02:17:17 AM
7	CCV2	CCV	1	12/19/2017	02:22:08 AM
1	CCB2	CCB	1	12/19/2017	02:28:59 AM
84	MB-65993	MBLK	1	12/19/2017	02:33:47 AM
85	LCS1-65993	LCS	1	12/19/2017	02:38:38 AM
86	N027430-002B	SAMP	1	12/19/2017	02:46:00 AM
87	N027430-002B	SAMP	5	12/19/2017	02:52:53 AM
88	N027430-002B-PS	PS	1	12/19/2017	02:57:45 AM
89	N027430-002B-MS1	MS	1	12/19/2017	03:04:37 AM
90	N027430-002B-MSD1	MSD	1	12/19/2017	03:11:30 AM
91	N027430-004B	SAMP	1	12/19/2017	03:18:23 AM
92	N027430-006B	SAMP	1	12/19/2017	03:23:16 AM
93	N027430-008B	SAMP	1	12/19/2017	03:28:09 AM
7	CCV3	CCV	1	12/19/2017	03:35:01 AM
1	CCB3	CCB	1	12/19/2017	03:41:52 AM
94	N027430-012B	SAMP	1	12/19/2017	03:46:40 AM
95	N027430-013B	SAMP	1	12/19/2017	03:53:31 AM
96	N027430-014B	SAMP	1	12/19/2017	04:00:23 AM
97	N027430-015B	SAMP	1	12/19/2017	04:07:15 AM
98	N027430-016B	SAMP	1	12/19/2017	04:14:08 AM
99	N027430-017B	SAMP	1	12/19/2017	04:20:59 AM
100	N027430-018B	SAMP	1	12/19/2017	04:27:52 AM
101	N027430-020B	SAMP	1	12/19/2017	04:34:45 AM
102	N027431-001B	SAMP	1	12/19/2017	04:41:38 AM
103	N027431-002B	SAMP	1	12/19/2017	04:46:31 AM
7	CCV4	CCV	1	12/19/2017	04:53:25 AM
1	CCB4	CCB	1	12/19/2017	05:00:16 AM
2	LLCCV1	CCV2	1	12/19/2017	05:05:04 AM
4	ICSA2	ICSA	1	12/19/2017	05:10:23 AM
5	ICSAB2	ICSAB	1	12/19/2017	05:17:50 AM
104	N027431-003B	SAMP	1	12/19/2017	05:25:19 AM
105	N027431-004B	SAMP	1	12/19/2017	05:32:11 AM
106	N027431-005B	SAMP	1	12/19/2017	05:39:05 AM
107	N027431-006B	SAMP	1	12/19/2017	05:45:58 AM
108	MB-65991	MBLK	1	12/19/2017	05:52:51 AM
109	LCS1-65991	LCS	1	12/19/2017	05:57:43 AM
110	N027437-001A	SAMP	1	12/19/2017	06:04:35 AM
111	N027437-002A	SAMP	1	12/19/2017	06:09:57 AM
112	N027437-002A	SAMP	5	12/19/2017	06:16:50 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
113	N027437-002A-PS	PS	1	12/19/2017	06:22:12 AM
7	CCV5	CCV	1	12/19/2017	06:29:05 AM
1	CCB5	CCB	1	12/19/2017	06:35:56 AM
114	N027437-002AMS1	MS	1	12/19/2017	06:41:14 AM
115	N027437-002AMSD1	MSD	1	12/19/2017	06:48:08 AM
116	N027437-003C	SAMP	1	12/19/2017	06:55:02 AM
117	N027437-004A	SAMP	1	12/19/2017	07:01:56 AM
118	N027437-005A	SAMP	1	12/19/2017	07:07:18 AM
119	N027405-013B	SAMP	5	12/19/2017	07:12:10 AM
120	N027429-010B	SAMP	5	12/19/2017	07:17:03 AM
7	CCV6	CCV	1	12/19/2017	07:23:56 AM
1	CCB6	CCB	1	12/19/2017	07:30:48 AM
2	LLCCV2	CCV2	1	12/19/2017	07:35:36 AM
4	ICSA3	ICSA	1	12/19/2017	07:40:54 AM
5	ICSAB3	ICSAB	1	12/19/2017	07:48:24 AM
121	N027405-012B	SAMP	5	12/19/2017	08:01:04 AM
38	MB-65994	MBLK	1	12/19/2017	08:07:56 AM
39	LCS1-65994	LCS	1	12/19/2017	08:12:45 AM
40	N027459-001C	SAMP	1	12/19/2017	08:20:04 AM
41	N027459-001C	SAMP	5	12/19/2017	08:26:54 AM
42	N027459-001C-PS	PS	1	12/19/2017	08:31:43 AM
43	N027459-001C-MS1	MS	1	12/19/2017	08:38:34 AM
44	N027459-001C-MSD1	MSD	1	12/19/2017	08:45:25 AM
45	N027459-002C	SAMP	1	12/19/2017	08:52:15 AM
46	N027459-003B	SAMP	1	12/19/2017	08:59:06 AM
7	CCV7	CCV	1	12/19/2017	09:07:07 AM
1	CCB7	CCB	1	12/19/2017	09:17:06 AM
2	LLCCV3	CCV2	1	12/19/2017	09:24:34 AM
4	ICSA4	ICSA	1	12/19/2017	09:34:26 AM
5	ICSAB4	ICSAB	1	12/19/2017	09:41:57 AM

INJECTION LOG: 171219A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201K/MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201K/-171030G/-171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/19/2017	10:23:34 AM
2	Standard1	ICAL	1	12/19/2017	10:28:24 AM
3	Standard2	ICAL	1	12/19/2017	10:33:45 AM
11	Standard3	ICAL	1	12/19/2017	10:39:04 AM
12	Standard4	ICAL	1	12/19/2017	10:44:25 AM
6	Standard5	ICAL	1	12/19/2017	10:51:46 AM
7	Standard6	ICAL	1	12/19/2017	10:59:06 AM
8	Standard7	ICAL	1	12/19/2017	11:06:41 AM
9	ICV	ICV	1	12/19/2017	11:10:28 AM
1	ICB	ICB	1	12/19/2017	11:21:16 AM
2	LLICV	CCV1	1	12/19/2017	11:26:34 AM
4	ICSA1	ICSA	1	12/19/2017	11:40:02 AM
5	ICSAB1	ICSAB	1	12/19/2017	11:47:34 AM
122	N027429-010B	SAMP	5	12/19/2017	11:55:06 AM
123	N027430-015B	SAMP	5	12/19/2017	12:02:00 PM
108	MB-65991	MBLK	1	12/19/2017	12:08:53 PM
109	LCS1-65991	LCS	1	12/19/2017	12:13:44 PM
110	N027437-001A	SAMP	1	12/19/2017	12:21:07 PM
111	N027437-002A	SAMP	1	12/19/2017	12:26:28 PM
112	N027437-002A	SAMP	5	12/19/2017	12:33:22 PM
113	N027437-002A-PS	PS	1	12/19/2017	12:38:43 PM
114	N027437-002AMS1	MS	1	12/19/2017	12:45:38 PM
115	N027437-002AMSD1	MSD	1	12/19/2017	12:52:31 PM
7	CCV1	CCV	1	12/19/2017	12:59:24 PM
1	CCB1	CCB	1	12/19/2017	01:06:15 PM
1	CCB1	CCB	1	12/19/2017	01:14:21 PM
116	N027437-003C	SAMP	1	12/19/2017	01:19:09 PM
117	N027437-004A	SAMP	1	12/19/2017	01:24:04 PM
118	N027437-005A	SAMP	1	12/19/2017	01:29:27 PM
38	MB-65994	MBLK	1	12/19/2017	01:34:18 PM
39	LCS1-65994	LCS	1	12/19/2017	01:39:09 PM
40	N027459-001C	SAMP	1	12/19/2017	01:46:29 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
41	N027459-001C	SAMP	5	12/19/2017	01:53:19 PM
42	N027459-001C-PS	PS	1	12/19/2017	01:58:11 PM
43	N027459-001C-MS1	MS	1	12/19/2017	02:05:02 PM
44	N027459-001C-MSD1	MSD	1	12/19/2017	02:11:54 PM
7	CCV2	CCV	1	12/19/2017	02:18:46 PM
1	CCB2	CCB	1	12/19/2017	02:25:37 PM
45	N027459-002C	SAMP	1	12/19/2017	02:30:56 PM
46	N027459-003B	SAMP	1	12/19/2017	02:37:46 PM
47	N027459-004B	SAMP	1	12/19/2017	02:44:38 PM
48	N027459-005B	SAMP	1	12/19/2017	02:51:28 PM
49	N027459-006B	SAMP	1	12/19/2017	02:58:20 PM
50	N027459-007B	SAMP	1	12/19/2017	03:05:13 PM
51	N027459-008C	SAMP	1	12/19/2017	03:12:46 PM
52	N027459-009B	SAMP	1	12/19/2017	03:20:08 PM
53	N027459-010B	SAMP	1	12/19/2017	03:26:58 PM
54	N027459-011B	SAMP	1	12/19/2017	03:33:50 PM
7	CCV3	CCV	1	12/19/2017	03:40:40 PM
1	CCB3	CCB	1	12/19/2017	03:48:03 PM
55	N027459-012B	SAMP	1	12/19/2017	03:53:21 PM
1	CCB3	CCB	1	12/19/2017	03:58:33 PM
55	N027459-012B	SAMP	1	12/19/2017	04:03:22 PM
56	N027459-013B	SAMP	1	12/19/2017	04:08:43 PM
57	N027459-014B	SAMP	1	12/19/2017	04:15:34 PM
58	N027459-015B	SAMP	1	12/19/2017	04:22:24 PM
59	N027459-016C	SAMP	1	12/19/2017	04:29:17 PM
60	N027459-017C	SAMP	1	12/19/2017	04:36:09 PM
61	N027459-018B	SAMP	1	12/19/2017	04:43:02 PM
62	N027459-019B	SAMP	1	12/19/2017	04:50:27 PM
63	MB-66042	MBLK	1	12/19/2017	04:57:19 PM
64	LCS1-66042	LCS	1	12/19/2017	05:02:10 PM
7	CCV4	CCV	1	12/19/2017	05:09:31 PM
1	CCB4	CCB	1	12/19/2017	05:34:54 PM
2	LLCCV1	CCV2	1	12/19/2017	05:39:42 PM
4	ICSA2	ICSA	1	12/19/2017	05:45:03 PM
5	ICSAB2	ICSAB	1	12/19/2017	05:52:35 PM
65	N027485-001B	SAMP	1	12/19/2017	06:00:08 PM
66	N027485-001B	SAMP	5	12/19/2017	06:05:00 PM
67	N027485-001B-PS	PS	1	12/19/2017	06:10:22 PM
68	N027485-001B-MS1	MS	1	12/19/2017	06:17:41 PM
69	N027485-001B-MSD1	MSD	1	12/19/2017	06:24:34 PM
70	N027485-002B	SAMP	1	12/19/2017	06:31:26 PM
71	N027485-003B	SAMP	1	12/19/2017	06:38:18 PM
72	N027485-004B	SAMP	1	12/19/2017	06:45:10 PM
73	N027485-005B	SAMP	1	12/19/2017	06:52:03 PM
74	N027485-006B	SAMP	1	12/19/2017	06:58:55 PM
7	CCV5	CCV	1	12/19/2017	07:05:47 PM
1	CCB5	CCB	1	12/19/2017	07:15:36 PM
75	N027485-007B	SAMP	1	12/19/2017	07:20:24 PM
76	N027485-008B	SAMP	1	12/19/2017	07:27:16 PM
77	N027485-009B	SAMP	1	12/19/2017	07:34:47 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
78	N027485-010B	SAMP	1	12/19/2017	07:41:39 PM
79	N027485-011C	SAMP	1	12/19/2017	07:48:31 PM
80	N027485-012C	SAMP	1	12/19/2017	07:55:53 PM
81	N027523-001B	SAMP	1	12/19/2017	08:03:16 PM
82	N027523-002B	SAMP	1	12/19/2017	08:10:40 PM
83	N027523-003B	SAMP	1	12/19/2017	08:16:01 PM
84	N027523-004B	SAMP	1	12/19/2017	08:21:22 PM
7	CCV6	CCV	1	12/19/2017	08:26:44 PM
1	CCB6	CCB	1	12/19/2017	08:33:35 PM
85	N027523-005C	SAMP	1	12/19/2017	08:38:25 PM
86	N027523-006C	SAMP	1	12/19/2017	08:45:18 PM
87	N027523-007C	SAMP	1	12/19/2017	08:52:10 PM
88	N027523-008B	SAMP	1	12/19/2017	08:59:02 PM
14	N027459-003B	SAMP	5	12/19/2017	09:05:54 PM
15	N027459-004B	SAMP	5	12/19/2017	09:12:43 PM
16	N027459-006B	SAMP	5	12/19/2017	09:19:32 PM
17	N027459-018B	SAMP	5	12/19/2017	09:24:22 PM
89	MB-66081	MBLK	1	12/19/2017	09:31:12 PM
90	LCS1-66081	LCS	1	12/19/2017	09:36:14 PM
7	CCV7	CCV	1	12/19/2017	09:43:36 PM
1	CCB7	CCB	1	12/19/2017	09:53:44 PM
91	N027523-009B	SAMP	1	12/19/2017	09:58:31 PM
92	N027523-009B	SAMP	5	12/19/2017	10:05:24 PM
93	N027523-009B-PS	PS	1	12/19/2017	10:12:17 PM
94	N027523-009B-MS1	MS	1	12/19/2017	10:19:10 PM
95	N027523-009B-MSD1	MSD	1	12/19/2017	10:26:03 PM
96	N027523-012B	SAMP	1	12/19/2017	10:32:56 PM
97	N027546-001B	SAMP	1	12/19/2017	10:39:51 PM
98	N027546-002B	SAMP	1	12/19/2017	10:47:14 PM
99	N027546-003B	SAMP	1	12/19/2017	10:54:08 PM
100	N027546-004B	SAMP	1	12/19/2017	11:01:01 PM
7	CCV8	CCV	1	12/19/2017	11:07:54 PM
1	CCB8	CCB	1	12/19/2017	11:15:16 PM
2	LLCCV2	CCV2	1	12/19/2017	11:20:35 PM
4	ICSA3	ICSA	1	12/19/2017	11:25:54 PM
5	ICSAB3	ICSAB	1	12/19/2017	11:33:27 PM
101	N027546-005B	SAMP	1	12/19/2017	11:40:59 PM
102	N027546-006B	SAMP	1	12/19/2017	11:47:52 PM
103	N027546-007B	SAMP	1	12/19/2017	11:55:15 PM
104	N027546-008B	SAMP	1	12/20/2017	12:02:08 AM
105	N027546-009B	SAMP	1	12/20/2017	12:09:00 AM
106	N027546-010B	SAMP	1	12/20/2017	12:15:53 AM
107	MB-66082	MBLK	1	12/20/2017	12:22:46 AM
108	LCS1-66082	LCS	1	12/20/2017	12:27:38 AM
109	N027557-001B	SAMP	1	12/20/2017	12:35:02 AM
110	N027557-001B	SAMP	5	12/20/2017	12:41:54 AM
7	CCV9	CCV	1	12/20/2017	12:46:48 AM
1	CCB9	CCB	1	12/20/2017	12:54:10 AM
111	N027557-001B-PS	PS	1	12/20/2017	12:59:28 AM
112	N027557-001B-MS1	MS	1	12/20/2017	01:06:23 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
113	N027557-001B-MSD1	MSD	1	12/20/2017	01:13:17 AM
114	N027557-002B	SAMP	1	12/20/2017	01:20:11 AM
115	N027557-003B	SAMP	1	12/20/2017	01:27:03 AM
116	N027557-004B	SAMP	1	12/20/2017	01:33:56 AM
117	N027557-005B	SAMP	1	12/20/2017	01:40:49 AM
118	N027557-006B	SAMP	1	12/20/2017	01:47:42 AM
119	N027557-007B	SAMP	1	12/20/2017	01:54:34 AM
120	N027557-008B	SAMP	1	12/20/2017	02:01:28 AM
7	CCV10	CCV	1	12/20/2017	02:06:50 AM
1	CCB10	CCB	1	12/20/2017	02:14:12 AM
121	N027557-009B	SAMP	1	12/20/2017	02:19:30 AM
122	N027557-010B	SAMP	1	12/20/2017	02:26:54 AM
123	MB-66080	MBLK	1	12/20/2017	02:32:17 AM
124	LCS1-66080	LCS	1	12/20/2017	02:37:09 AM
125	N027524-001E	SAMP	1	12/20/2017	02:44:33 AM
126	N027524-001E	SAMP	5	12/20/2017	02:51:26 AM
127	N027524-001E-PS	PS	1	12/20/2017	02:56:47 AM
128	N027524-001E-MS1	MS	1	12/20/2017	03:03:41 AM
129	N027524-001E-MSD1	MSD	1	12/20/2017	03:10:35 AM
130	N027524-002E	SAMP	1	12/20/2017	03:17:29 AM
7	CCV11	CCV	1	12/20/2017	03:24:21 AM
1	CCB11	CCB	1	12/20/2017	03:31:12 AM
131	N027524-003E	SAMP	1	12/20/2017	03:36:30 AM
1	CCB11	CCB	1	12/20/2017	03:47:23 AM
131	N027524-003E	SAMP	1	12/20/2017	03:52:10 AM
132	N027524-004E	SAMP	1	12/20/2017	03:59:04 AM
133	N027524-005E	SAMP	1	12/20/2017	04:05:57 AM
134	N027524-006E	SAMP	1	12/20/2017	04:12:49 AM
135	N027524-007E	SAMP	1	12/20/2017	04:17:42 AM
136	N027524-008E	SAMP	1	12/20/2017	04:22:35 AM
137	N027524-009E	SAMP	1	12/20/2017	04:29:28 AM
138	N027524-010E	SAMP	1	12/20/2017	04:36:21 AM
139	N027524-011E	SAMP	1	12/20/2017	04:43:14 AM
140	N027524-011E-MS1	MS	1	12/20/2017	04:50:07 AM
7	CCV12	CCV	1	12/20/2017	04:57:01 AM
1	CCB12	CCB	1	12/20/2017	05:07:37 AM
2	LLCCV3	CCV2	1	12/20/2017	05:12:57 AM
4	ICSA4	ICSA	1	12/20/2017	05:18:16 AM
5	ICSAB4	ICSAB	1	12/20/2017	05:25:48 AM
141	N027524-012E	SAMP	1	12/20/2017	05:33:21 AM
142	N027524-013E	SAMP	1	12/20/2017	05:40:14 AM
143	N027556-001E	SAMP	1	12/20/2017	05:47:07 AM
144	N027556-002E	SAMP	1	12/20/2017	05:54:00 AM
145	N027556-003E	SAMP	1	12/20/2017	06:00:53 AM
146	N027556-004D	SAMP	1	12/20/2017	06:07:46 AM
147	N027556-005D	SAMP	1	12/20/2017	06:14:39 AM
148	N027556-006E	SAMP	1	12/20/2017	06:21:32 AM
18	N027485-002B	SAMP	5	12/20/2017	06:28:25 AM
19	N027485-003B	SAMP	5	12/20/2017	06:35:15 AM
7	CCV13	CCV	1	12/20/2017	06:42:05 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CCB13	CCB	1	12/20/2017	06:49:25 AM
20	N027485-010B	SAMP	5	12/20/2017	06:54:44 AM
149	N027523-009B	SAMP	25	12/20/2017	07:43:23 AM
150	N027523-009B-PS	PS	5	12/20/2017	07:48:17 AM
151	N027523-009B-MS1	MS	5	12/20/2017	07:55:12 AM
152	N027523-009B-MSD1	MSD	5	12/20/2017	08:02:06 AM
153	N027557-005B	SAMP	5	12/20/2017	08:05:46 AM
154	N027557-007B	SAMP	5	12/20/2017	08:12:39 AM
38	MB-66083	MBLK	1	12/20/2017	08:19:33 AM
39	LCS1-66083	LCS	1	12/20/2017	08:23:38 AM
40	N027524-001F	SAMP	1	12/20/2017	08:29:29 AM
7	CCV14	CCV	1	12/20/2017	08:34:48 AM
1	CCB14	CCB	1	12/20/2017	08:47:22 AM
41	N027524-001F	SAMP	5	12/20/2017	08:51:40 AM
42	N027524-001F-PS	PS	1	12/20/2017	08:56:29 AM
43	N027524-001F-MS1	MS	1	12/20/2017	09:01:50 AM
44	N027524-001F-MSD1	MSD	1	12/20/2017	09:07:11 AM
45	N027524-002F	SAMP	1	12/20/2017	09:12:32 AM
46	N027524-003F	SAMP	1	12/20/2017	09:17:54 AM
47	N027524-004F	SAMP	1	12/20/2017	09:23:15 AM
48	N027524-005F	SAMP	1	12/20/2017	09:28:37 AM
49	N027524-006F	SAMP	1	12/20/2017	09:33:59 AM
50	N027524-007F	SAMP	1	12/20/2017	09:39:21 AM
7	CCV15	CCV	1	12/20/2017	09:50:33 AM
1	CCB15	CCB	1	12/20/2017	10:04:37 AM
51	N027524-008F	SAMP	1	12/20/2017	10:09:24 AM
52	N027524-009F	SAMP	1	12/20/2017	10:14:46 AM
53	N027524-010F	SAMP	1	12/20/2017	10:20:08 AM
54	N027524-011F	SAMP	1	12/20/2017	10:25:39 AM
55	N027524-012F	SAMP	1	12/20/2017	10:31:01 AM
56	N027524-013F	SAMP	1	12/20/2017	10:36:21 AM
57	N027556-001F	SAMP	1	12/20/2017	10:41:41 AM
58	N027556-002F	SAMP	1	12/20/2017	10:47:03 AM
59	N027556-003F	SAMP	1	12/20/2017	10:52:24 AM
60	N027556-006F	SAMP	1	12/20/2017	10:57:45 AM
7	CCV16	CCV	1	12/20/2017	11:03:06 AM
1	CCB16	CCB	1	12/20/2017	11:08:59 AM
1	CCB16	CCB	1	12/20/2017	11:17:02 AM
61	N027556-008E	SAMP	1	12/20/2017	11:20:47 AM
62	N027556-009E	SAMP	1	12/20/2017	11:25:39 AM
63	N027556-010F	SAMP	1	12/20/2017	11:31:31 AM
7	CCV17	CCV	1	12/20/2017	11:40:26 AM
1	CCB17	CCB	1	12/20/2017	11:46:17 AM
2	LLCCV4	CCV2	1	12/20/2017	11:51:05 AM
2	LLCCV4	CCV2	1	12/20/2017	12:04:06 PM
4	ICSA5	ICSA	1	12/20/2017	12:08:54 PM
5	ICSAB5	ICSAB	1	12/20/2017	12:14:57 PM
5	ICSAB5	ICSAB	1	12/20/2017	12:24:11 PM

INJECTION LOG: 171220B

Instrument ID: ICP-02

STANDARD CODE		
Standard1	MWST-170601A,0.025<50mL	MWST-171201R
Standard2	MWST-170601A,0.25<50mL	
Standard3	MWST-170601A,1.25<50mL	
Standard4	MWST-170601A,2.5<50mL	
Standard5	MWST-170601A,5<50mL	
Standard6	MWST-170601A,10<50mL	
ICV	MWST-171030L	
CCV	MWST-170601A,2.5<50mL	MWST-171201R
ICSA/ICSAB	MWST-170601L/MWST-170601B	MWST-171201P/ MWST-171201S
Int. Std. (Sc):	MSST-171009C/B	
PS Spike	MSST-130329D/E	

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/20/2017	06:47:08 PM
26	Standard1	ICAL	1	12/20/2017	06:50:25 PM
27	Standard2	ICAL	1	12/20/2017	06:53:42 PM
28	Standard3	ICAL	1	12/20/2017	06:57:31 PM
29	Standard4	ICAL	1	12/20/2017	07:01:22 PM
30	Standard5	ICAL	1	12/20/2017	07:06:47 PM
31	Standard6	ICAL	1	12/20/2017	07:10:51 PM
32	ICV	ICV	1	12/20/2017	07:15:00 PM
1	ICB	ICB	1	12/20/2017	07:18:55 PM
33	ICSA1	ICSA	1	12/20/2017	07:24:12 PM
34	ICSAB1	ICSAB	1	12/20/2017	07:27:31 PM
98	MB-65993	MBLK	1	12/20/2017	07:35:18 PM
99	LCS2-65993	LCS	1	12/20/2017	07:39:03 PM
100	N027430-002B	SAMP	250	12/20/2017	07:44:07 PM
101	N027430-004B	SAMP	1	12/20/2017	07:47:27 PM
102	N027430-004B	SAMP	5	12/20/2017	07:52:21 PM
103	N027430-004B-PS	PS	1	12/20/2017	07:56:13 PM
104	N027430-004B-MS2	MS	1	12/20/2017	07:59:33 PM
105	N027430-004B-MSD2	MSD	1	12/20/2017	08:04:40 PM
106	N027430-004B	SAMP	10	12/20/2017	08:09:48 PM
107	N027430-004B	SAMP	50	12/20/2017	08:13:07 PM
8	CCV1	CCV	1	12/20/2017	08:16:27 PM
29	CCV1	CCV	1	12/20/2017	08:19:28 PM
1	CCB1	CCB	1	12/20/2017	08:23:22 PM
108	N027430-004B-PS	PS	10	12/20/2017	08:26:40 PM
109	N027430-004B-MS2	MS	10	12/20/2017	08:30:32 PM
110	N027430-004B-MSD2	MSD	10	12/20/2017	08:34:24 PM
111	N027430-006B	SAMP	10	12/20/2017	08:38:17 PM
112	N027430-008B	SAMP	100	12/20/2017	08:41:38 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
113	N027430-012B	SAMP	100	12/20/2017	08:44:59 PM
114	N027430-013B	SAMP	100	12/20/2017	08:48:21 PM
115	N027430-014B	SAMP	100	12/20/2017	08:51:42 PM
116	N027430-015B	SAMP	250	12/20/2017	08:55:03 PM
117	N027430-016B	SAMP	250	12/20/2017	08:58:24 PM
29	CCV2	CCV	1	12/20/2017	09:01:45 PM
1	CCB2	CCB	1	12/20/2017	09:05:40 PM
118	N027430-017B	SAMP	250	12/20/2017	09:08:58 PM
119	N027430-018B	SAMP	500	12/20/2017	09:12:20 PM
120	N027430-020B	SAMP	100	12/20/2017	09:16:18 PM
121	N027431-001B	SAMP	25	12/20/2017	09:19:39 PM
122	N027431-002B	SAMP	100	12/20/2017	09:23:01 PM
123	N027431-003B	SAMP	250	12/20/2017	09:26:23 PM
124	N027431-004B	SAMP	250	12/20/2017	09:29:45 PM
125	N027431-005B	SAMP	1	12/20/2017	09:33:07 PM
126	N027431-005B	SAMP	25	12/20/2017	09:38:01 PM
127	N027431-006B	SAMP	1	12/20/2017	09:41:20 PM
29	CCV3	CCV	1	12/20/2017	09:46:36 PM
1	CCB3	CCB	1	12/20/2017	09:50:31 PM
128	N027431-006B	SAMP	100	12/20/2017	09:53:49 PM
29	CCV4	CCV	1	12/20/2017	09:57:11 PM
1	CCB4	CCB	1	12/20/2017	10:01:06 PM
33	ICSA2	ICSA	1	12/20/2017	10:04:23 PM
34	ICSAB2	ICSAB	1	12/20/2017	10:07:42 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/11/2017 7:56:26**
Prep End Date: **12/11/2017 3:00:00**
Prep Batch **65993** Prep Code: **3010_W_DISS**

Reviewed/ Date: 12/22/2017
Initials/ Date: for MG
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-48**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-65993	Aqueous		25	☐	0	0	25	1.000		
LCS2-65993	Aqueous		25	☐	0	0	25	1.000		
MB-65993	Aqueous		25	☐	0	0	25	1.000		
N027430-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-004B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-004B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-014B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9589	HYDROCHLORIC ACID
9601	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/11/2017 7:56:26**
Prep End Date: **12/11/2017 3:00:00**
Prep Batch **65993** Prep Code: **3010_W_DISS**

Reviewed/ Date: 12/22/2017
Initials/ Date: for MG
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-48**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027430-015B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-016B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-017B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-018B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-020B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-006B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9589	HYDROCHLORIC ACID
9601	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 171218C

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Boron								
CalBlk	12/18/2017	10:32:48 PM	B	249.677	5579	0.00	mg/L	
Standard1	12/18/2017	10:42:09 PM	B	249.677	5366	0.1000	mg/L	
Standard3	12/18/2017	10:52:47 PM	B	249.677	37786	1.000	mg/L	
Standard4	12/18/2017	10:58:08 PM	B	249.677	92149	2.500	mg/L	
Standard5	12/18/2017	11:05:01 PM	B	249.677	145677	3.750	mg/L	
Standard6	12/18/2017	11:12:21 PM	B	249.677	188926	5.000	mg/L	
Standard7	12/18/2017	11:19:11 PM	B	249.677	380951	10.000	mg/L	0.9999
Magnesium								
CalBlk	12/18/2017	10:32:48 PM	Mg	279.079	227	0.00	mg/L	
Standard1	12/18/2017	10:42:09 PM	Mg	279.079	2071	0.1000	mg/L	
Standard2	12/18/2017	10:47:29 PM	Mg	279.079	12904	1.000	mg/L	
Standard3	12/18/2017	10:52:47 PM	Mg	279.079	27082	2.000	mg/L	
Standard4	12/18/2017	10:58:08 PM	Mg	279.079	64266	5.000	mg/L	
Standard5	12/18/2017	11:05:01 PM	Mg	279.079	101143	7.500	mg/L	
Standard6	12/18/2017	11:12:21 PM	Mg	279.079	129171	10.000	mg/L	
Standard7	12/18/2017	11:19:11 PM	Mg	279.079	257123	20.000	mg/L	0.9999
Calcium								
CalBlk	12/18/2017	10:32:48 PM	Ca	227.546	-142	0.00	mg/L	
Standard1	12/18/2017	10:42:09 PM	Ca	227.546	97	0.2000	mg/L	
Standard2	12/18/2017	10:47:29 PM	Ca	227.546	304	1.000	mg/L	
Standard3	12/18/2017	10:52:47 PM	Ca	227.546	661	2.000	mg/L	
Standard4	12/18/2017	10:58:08 PM	Ca	227.546	1578	5.000	mg/L	
Standard5	12/18/2017	11:05:01 PM	Ca	227.546	2445	7.500	mg/L	
Standard6	12/18/2017	11:12:21 PM	Ca	227.546	3145	10.000	mg/L	
Standard7	12/18/2017	11:19:11 PM	Ca	227.546	6220	20.000	mg/L	0.9999
Iron								
CalBlk	12/18/2017	10:32:48 PM	Fe	273.953	-156	0.00	mg/L	
Standard1	12/18/2017	10:42:09 PM	Fe	273.953	739	0.0200	mg/L	
Standard2	12/18/2017	10:47:29 PM	Fe	273.953	1640	0.050	mg/L	
Standard3	12/18/2017	10:52:47 PM	Fe	273.953	44945	2.000	mg/L	
Standard4	12/18/2017	10:58:08 PM	Fe	273.953	107029	5.000	mg/L	
Standard5	12/18/2017	11:05:01 PM	Fe	273.953	168392	7.500	mg/L	
Standard6	12/18/2017	11:12:21 PM	Fe	273.953	214592	10.000	mg/L	
Standard7	12/18/2017	11:19:11 PM	Fe	273.953	426001	20.000	mg/L	0.9999

INITIAL CALIBRATION SUMMARY: 171219A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Calcium								
CalBlk	12/19/2017	10:23:34 AM	Ca	227.546	-144	0.00	mg/L	
Standard1	12/19/2017	10:28:24 AM	Ca	227.546	62	0.2000	mg/L	
Standard2	12/19/2017	10:33:45 AM	Ca	227.546	278	1.000	mg/L	
Standard3	12/19/2017	10:39:04 AM	Ca	227.546	591	2.000	mg/L	
Standard4	12/19/2017	10:44:25 AM	Ca	227.546	1444	5.000	mg/L	
Standard5	12/19/2017	10:51:46 AM	Ca	227.546	2153	7.500	mg/L	
Standard6	12/19/2017	10:59:06 AM	Ca	227.546	2875	10.000	mg/L	
Standard7	12/19/2017	11:06:41 AM	Ca	227.546	5631	20.000	mg/L	0.9999

INITIAL CALIBRATION SUMMARY: 171220B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	12/20/2017	06:47:08 PM	Na	589.594	416	0.00	mg/L	
Standard1	12/20/2017	06:50:25 PM	Na	589.594	456	0.1000	mg/L	
Standard2	12/20/2017	06:53:42 PM	Na	589.594	4185	1.000	mg/L	
Standard3	12/20/2017	06:57:31 PM	Na	589.594	21120	5.000	mg/L	
Standard4	12/20/2017	07:01:22 PM	Na	589.594	41806	10.000	mg/L	
Standard5	12/20/2017	07:06:47 PM	Na	589.594	83648	20.000	mg/L	
Standard6	12/20/2017	07:10:51 PM	Na	589.594	163117	40.000	mg/L	0.9999

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4981.624	100	5000	0	99.6	90	110				
Calcium	10088.062	500	10000	0	101	90	110				
Iron	10025.747	20	10000	0	100	90	110				
Magnesium	9999.066	100	10000	0	100	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	96.642	100	100.0	0	96.6	80	120				
Calcium	204.883	500	200.0	0	102	80	120				
Iron	23.129	20	20.00	0	116	80	120				
Magnesium	106.139	100	100.0	0	106	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871592**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4800.518	100	5000	0	96.0	90	110				
Calcium	9969.207	500	10000	0	99.7	90	110				
Iron	9776.470	20	10000	0	97.8	90	110				
Magnesium	9740.502	100	10000	0	97.4	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871604**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4702.076	100	5000	0	94.0	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **CCV** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2871604**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9908.640	500	10000	0	99.1	90	110				
Iron	9641.235	20	10000	0	96.4	90	110				
Magnesium	9655.505	100	10000	0	96.6	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **CCV** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2871616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4675.269	100	5000	0	93.5	90	110				
Calcium	9993.795	500	10000	0	99.9	90	110				
Iron	9644.149	20	10000	0	96.4	90	110				
Magnesium	9720.978	100	10000	0	97.2	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **CCV** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2871628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4627.448	100	5000	0	92.5	90	110				
Calcium	9894.698	500	10000	0	98.9	90	110				
Iron	9566.690	20	10000	0	95.7	90	110				
Magnesium	9638.896	100	10000	0	96.4	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **ZZZZZZ** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2871630**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	86.971	100	100.0	0	87.0	70	130				
Calcium	231.543	500	200.0	0	116	70	130				
Iron	23.093	20	20.00	0	115	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	ZZZZZZ	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871630

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	102.266	100	100.0	0	102	70	130				

Sample ID	CCV5	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	CCV	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871643

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4565.887	100	5000	0	91.3	90	110				
Calcium	9735.929	500	10000	0	97.4	90	110				
Iron	9541.151	20	10000	0	95.4	90	110				
Magnesium	9628.434	100	10000	0	96.3	90	110				

Sample ID	CCV6	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	CCV	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871652

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4537.337	100	5000	0	90.7	90	110				
Calcium	9734.042	500	10000	0	97.3	90	110				
Iron	9531.319	20	10000	0	95.3	90	110				
Magnesium	9621.434	100	10000	0	96.2	90	110				

Sample ID	LLCCV2	SampType:	CCV2	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	ZZZZZZ	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871654

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	96.701	100	100.0	0	96.7	70	130				
Calcium	240.192	500	200.0	0	120	70	130				
Iron	22.875	20	20.00	0	114	70	130				
Magnesium	103.462	100	100.0	0	103	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871667**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4870.263	100	5000	0	97.4	90	110				
Calcium	10062.017	500	10000	0	101	90	110				
Iron	10079.268	20	10000	0	101	90	110				
Magnesium	10170.430	100	10000	0	102	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871669**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	104.049	100	100.0	0	104	70	130				
Calcium	222.727	500	200.0	0	111	70	130				
Iron	23.158	20	20.00	0	116	70	130				
Magnesium	110.310	100	100.0	0	110	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICV	SampType:	ICV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	ICV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872867

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10101.951	500	10000	0	101	90	110				

Sample ID	LLICV	SampType:	CCV1	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	ZZZZZZ	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872869

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	225.252	500	200.0	0	113	80	120				

Sample ID	CCV1	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872882

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10087.496	500	10000	0	101	90	110				

Sample ID	CCV2	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872895

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9904.520	500	10000	0	99.0	90	110				

Sample ID	CCV3	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872907

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10165.050	500	10000	0	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCV4	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872921

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9876.655	500	10000	0	98.8	90	110				

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	ZZZZZZ	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872923

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	220.353	500	200.0	0	110	70	130				

Sample ID	CCV5	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872936

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10352.156	500	10000	0	104	90	110				

Sample ID	CCV6	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872948

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10068.129	500	10000	0	101	90	110				

Sample ID	CCV7	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872960

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9847.946	500	10000	0	98.5	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCV8	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872972

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10063.850	500	10000	0	101	90	110				

Sample ID	LLCCV2	SampType:	CCV2	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	ZZZZZZ	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872974

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	266.163	500	200.0	0	133	70	130				S

Sample ID	CCV9	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873638

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10125.639	500	10000	0	101	90	110				

Sample ID	CCV10	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873650

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9918.903	500	10000	0	99.2	90	110				

Sample ID	CCV11	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873662

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9659.769	500	10000	0	96.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

12/22/2017

Ca on LLCCV2 is biased high however, sample N027430-015 Calcium concentration is greater than the regular CCV which passed QC criteria.

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCV12	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873676

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9875.510	500	10000	0	98.8	90	110				

Sample ID	LLCCV3	SampType:	CCV2	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	ZZZZZZ	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873678

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	258.351	500	200.0	0	129	70	130				

Sample ID	CCV13	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873691

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9814.263	500	10000	0	98.1	90	110				

Sample ID	CCV14	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873703

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10006.400	500	10000	0	100	90	110				

Sample ID	CCV15	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCV	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873715

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9477.839	500	10000	0	94.8	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV16**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9474.062	500	10000	0	94.7	90	110				

Sample ID **CCV17**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873733**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10458.405	500	10000	0	105	90	110				

Sample ID **LLCCV4**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	164.854	500	200.0	0	82.4	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **ICV**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874504**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10199.627	500	10000	0	102	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **CCV**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10193.558	500	10000	0	102	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **CCV**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874531**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10312.936	500	10000	0	103	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **CCV**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874543**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10462.425	500	10000	0	105	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **CCV**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874546**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10332.651	500	10000	0	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	11.230	100									
Calcium	-1.802075	500									
Iron	0.239	20									
Magnesium	1.384	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871593**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	17.004	100									
Calcium	16.292	500									
Iron	0.264	20									
Magnesium	1.657	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871605**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	18.575	100									
Calcium	29.130	500									
Iron	0.524	20									
Magnesium	2.381	100									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	20.882	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-10.673498	500									
Iron	0.841	20									
Magnesium	1.354	100									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	16.066	100									
Calcium	-3.575705	500									
Iron	1.730	20									
Magnesium	1.130	100									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	32.298	100									
Calcium	15.024	500									
Iron	1.554	20									
Magnesium	1.859	100									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871653**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	26.422	100									
Calcium	21.639	500									
Iron	2.167	20									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871653**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	1.109	100									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871668**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	30.018	100									
Calcium	13.349	500									
Iron	0.043	20									
Magnesium	1.712	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872868**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	25.289	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	33.130	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	3.457	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	17.578	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	29.385	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872937**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	6.563	500									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-20.165979	500									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	31.182	500									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	48.382	500									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873639**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	61.218	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCB10	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873651

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	63.322	500									

Sample ID	CCB11	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873665

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	53.447	500									

Sample ID	CCB12	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873677

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	54.893	500									

Sample ID	CCB13	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873692

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	60.610	500									

Sample ID	CCB14	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873704

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	21.048	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCB15	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873716

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	37.689	500									

Sample ID	CCB16	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873729

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	43.740	500									

Sample ID	CCB17	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873734

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-18.816967	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICB	SampType:	ICB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120973
Client ID:	ICB	Batch ID:	R120973	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2874505

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	12.902	500									

Sample ID	CCB1	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120973
Client ID:	CCB	Batch ID:	R120973	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2874520

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	62.235	500									

Sample ID	CCB2	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120973
Client ID:	CCB	Batch ID:	R120973	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2874532

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	49.622	500									

Sample ID	CCB3	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120973
Client ID:	CCB	Batch ID:	R120973	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2874544

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	172.283	500									

Sample ID	CCB4	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120973
Client ID:	CCB	Batch ID:	R120973	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2874547

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	98.184	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICSA**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871580**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	499606.293	50	500000	0	99.9	80	120				
Boron	77.045	100									
Calcium	498548.809	500	500000	0	99.7	80	120				
Iron	179892.137	20	200000	0	89.9	80	120				
Magnesium	485043.587	100	500000	0	97.0	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICSAB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871581**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	549867.041	50	500000	0	110	80	120				
Boron	1174.793	100	1000	0	117	80	120				
Calcium	536964.037	500	500000	0	107	80	120				
Iron	190028.308	20	200000	0	95.0	80	120				
Magnesium	511694.882	100	500000	0	102	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICSA**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871631**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	484031.618	50	500000	0	96.8	80	120				
Boron	78.420	100									
Calcium	487269.052	500	500000	0	97.5	80	120				
Iron	171216.397	20	200000	0	85.6	80	120				
Magnesium	463520.732	100	500000	0	92.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	ICSAB	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871632

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	526793.741	50	500000	0	105	80	120				
Boron	1090.925	100	1000	0	109	80	120				
Calcium	537053.293	500	500000	0	107	80	120				
Iron	177822.006	20	200000	0	88.9	80	120				
Magnesium	501435.284	100	500000	0	100	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	ICSA	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871655

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	484725.819	50	500000	0	96.9	80	120				
Boron	103.973	100									
Calcium	473640.507	500	500000	0	94.7	80	120				
Iron	172781.452	20	200000	0	86.4	80	120				
Magnesium	451305.649	100	500000	0	90.3	80	120				

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	ICSAB	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871656

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	525073.791	50	500000	0	105	80	120				
Boron	1076.987	100	1000	0	108	80	120				
Calcium	525291.517	500	500000	0	105	80	120				
Iron	178260.199	20	200000	0	89.1	80	120				
Magnesium	504862.836	100	500000	0	101	80	120				

B on ICSA3 is biased high however, samples for B were closed by CCV4/CCB4/LLCCV1/ICSA2/ICSAB2.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

12/22/2017

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **ICSA** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872870**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	498329.453	50	500000	0	99.7	80	120				
Calcium	506490.713	500	500000	0	101	80	120				
Iron	179793.677	20	200000	0	89.9	80	120				
Magnesium	475935.929	100	500000	0	95.2	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **ICSAB** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	546782.249	50	500000	0	109	80	120				
Calcium	555538.618	500	500000	0	111	80	120				
Iron	187588.653	20	200000	0	93.8	80	120				
Magnesium	503556.663	100	500000	0	101	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **ICSA** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	505775.123	50	500000	0	101	80	120				
Calcium	511760.390	500	500000	0	102	80	120				
Iron	181783.344	20	200000	0	90.9	80	120				
Magnesium	481219.806	100	500000	0	96.2	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **ICSAB** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	551426.519	50	500000	0	110	80	120				
Calcium	558431.588	500	500000	0	112	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSAB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	188992.776	20	200000	0	94.5	80	120				
Magnesium	506616.951	100	500000	0	101	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	494366.698	50	500000	0	98.9	80	120				
Calcium	497081.940	500	500000	0	99.4	80	120				
Iron	176987.327	20	200000	0	88.5	80	120				
Magnesium	476524.153	100	500000	0	95.3	80	120				

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSAB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	541047.279	50	500000	0	108	80	120				
Calcium	543688.104	500	500000	0	109	80	120				
Iron	184653.505	20	200000	0	92.3	80	120				
Magnesium	500595.553	100	500000	0	100	80	120				

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873679**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	491037.277	50	500000	0	98.2	80	120				
Calcium	489727.156	500	500000	0	97.9	80	120				
Iron	175817.995	20	200000	0	87.9	80	120				
Magnesium	473899.027	100	500000	0	94.8	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICSAB4	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	ICSAB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873680

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	538707.628	50	500000	0	108	80	120				
Calcium	536671.907	500	500000	0	107	80	120				
Iron	183946.460	20	200000	0	92.0	80	120				
Magnesium	500154.534	100	500000	0	100	80	120				

Sample ID	ICSA5	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	ICSA	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873737

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	519089.326	50	500000	0	104	80	120				
Calcium	511388.117	500	500000	0	102	80	120				
Iron	187834.978	20	200000	0	93.9	80	120				
Magnesium	504975.878	100	500000	0	101	80	120				

Sample ID	ICSAB5	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	ICSAB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873739

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	473861.160	50	500000	0	94.8	80	120				
Calcium	464818.220	500	500000	0	93.0	80	120				
Iron	200609.345	20	200000	0	100	80	120				
Magnesium	447746.521	100	500000	0	89.5	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **ICSA**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874506**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	23.807	500									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **ICSAB**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10216.986	500	10000	0	102	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **ICSA**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874548**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	85.340	500									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **ICSAB**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874549**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10321.702	500	10000	0	103	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.01	101.02	65-125	PASS
Standard2	ICAL	1	1.0028	100.28	65-125	PASS
Standard3	ICAL	1	1.048	104.75	65-125	PASS
Standard4	ICAL	1	1.088	108.84	65-125	PASS
Standard5	ICAL	1	1.19	118.58	65-125	PASS
Standard6	ICAL	1	0.96	96.25	65-125	PASS
Standard7	ICAL	1	0.95	94.86	65-125	PASS
ICV	ICV	1	0.97	96.72	65-125	PASS
ICB	ICB	1	1	99.76	65-125	PASS
LLICV	CCV1	1	1.0008	100.08	65-125	PASS
LLICV	CCV1	1	1	99.79	65-125	PASS
ICSA1	ICSA	1	0.87	86.92	65-125	PASS
ICSAB1	ICSAB	1	0.79	78.77	65-125	PASS
CCV1	CCV	1	0.97	96.66	65-125	PASS
CCB1	CCB	1	1.0021	100.21	65-125	PASS
CCV2	CCV	1	0.98	97.53	65-125	PASS
CCB2	CCB	1	1.0038	100.38	65-125	PASS
MB-65993	MBLK	1	1.056	105.55	65-125	PASS
LCS1-65993	LCS	1	0.92	92.37	65-125	PASS
N027430-002B	SAMP	1	0.8	80.15	65-125	PASS
N027430-002B	SAMP	5	0.9	90.019	65-125	PASS
N027430-002B-PS	PS	1	0.81	81.11	65-125	PASS
N027430-002B-MS1	MS	1	0.8	80.48	65-125	PASS
N027430-002B-MSD1	MSD	1	0.82	81.7	65-125	PASS
N027430-004B	SAMP	1	1.035	103.54	65-125	PASS
N027430-006B	SAMP	1	1.015	101.47	65-125	PASS
N027430-008B	SAMP	1	0.94	93.84	65-125	PASS
CCV3	CCV	1	0.97	96.71	65-125	PASS
CCB3	CCB	1	1	99.8	65-125	PASS
N027430-012B	SAMP	1	0.86	85.96	65-125	PASS
N027430-013B	SAMP	1	0.89	89.086	65-125	PASS
N027430-014B	SAMP	1	0.84	83.56	65-125	PASS
N027430-015B	SAMP	1	0.82	82.4	65-125	PASS
N027430-016B	SAMP	1	0.85	84.58	65-125	PASS
N027430-017B	SAMP	1	0.83	82.71	65-125	PASS
N027430-018B	SAMP	1	0.74	73.87	65-125	PASS
N027430-020B	SAMP	1	0.92	92.28	65-125	PASS
N027431-001B	SAMP	1	0.96	96.36	65-125	PASS
N027431-002B	SAMP	1	0.87	87.35	65-125	PASS
CCV4	CCV	1	0.98	97.87	65-125	PASS

INTERNAL STANDARD: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCB4	CCB	1	1	99.62	65-125	PASS
LLCCV1	CCV2	1	1.016	101.59	65-125	PASS
ICSA2	ICSA	1	0.87	86.98	65-125	PASS
ICSAB2	ICSAB	1	0.79	78.92	65-125	PASS
N027431-003B	SAMP	1	0.84	84.34	65-125	PASS
N027431-004B	SAMP	1	0.86	85.75	65-125	PASS
N027431-005B	SAMP	1	0.99	98.83	65-125	PASS
N027431-006B	SAMP	1	0.89	89.26	65-125	PASS
CCV5	CCV	1	0.98	97.84	65-125	PASS
CCB5	CCB	1	1.015	101.51	65-125	PASS
CCV6	CCV	1	0.98	98.036	65-125	PASS
CCB6	CCB	1	1.0083	100.83	65-125	PASS
LLCCV2	CCV2	1	1.018	101.82	65-125	PASS
ICSA3	ICSA	1	0.88	88.075	65-125	PASS
ICSAB3	ICSAB	1	0.8	79.74	65-125	PASS
CCV7	CCV	1	0.98	97.56	65-125	PASS
CCB7	CCB	1	0.99	99.13	65-125	PASS
LLCCV3	CCV2	1	1.0075	100.75	65-125	PASS
ICSA4	ICSA	1	0.87	87.1	65-125	PASS
ICSAB4	ICSAB	1	0.8	79.67	65-125	PASS

INTERNAL STANDARD: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	98.9	65-125	PASS
Standard2	ICAL	1	1.053	105.31	65-125	PASS
Standard3	ICAL	1	1.046	104.59	65-125	PASS
Standard4	ICAL	1	1.074	107.38	65-125	PASS
Standard5	ICAL	1	0.99	98.63	65-125	PASS
Standard6	ICAL	1	0.93	93.39	65-125	PASS
Standard7	ICAL	1	0.95	94.61	65-125	PASS
ICV	ICV	1	0.94	94.18	65-125	PASS
ICB	ICB	1	1.015	101.49	65-125	PASS
LLICV	CCV1	1	1.034	103.35	65-125	PASS
ICSA1	ICSA	1	1.015	101.5	65-125	PASS
ICSAB1	ICSAB	1	0.82	81.74	65-125	PASS
N027430-015B	SAMP	5	0.85	85.095	65-125	PASS
CCV1	CCV	1	0.98	97.92	65-125	PASS
CCB1	CCB	1	1	99.98	65-125	PASS
CCB1	CCB	1	1.031	103.1	65-125	PASS
CCV2	CCV	1	1.03	102.97	65-125	PASS
CCB2	CCB	1	1.042	104.16	65-125	PASS
CCV3	CCV	1	0.98	97.7	65-125	PASS
CCB3	CCB	1	1.042	104.17	65-125	PASS
CCB3	CCB	1	1.022	102.22	65-125	PASS
CCV4	CCV	1	1.011	101.06	65-125	PASS
CCB4	CCB	1	1	99.81	65-125	PASS
LLCCV1	CCV2	1	1.033	103.33	65-125	PASS
ICSA2	ICSA	1	1.045	104.52	65-125	PASS
ICSAB2	ICSAB	1	0.84	84.43	65-125	PASS
CCV5	CCV	1	0.99	98.91	65-125	PASS
CCB5	CCB	1	1.0069	100.69	65-125	PASS
CCV6	CCV	1	1.028	102.84	65-125	PASS
CCB6	CCB	1	1.0096	100.96	65-125	PASS
CCV7	CCV	1	1.037	103.74	65-125	PASS
CCB7	CCB	1	1.037	103.7	65-125	PASS
CCV8	CCV	1	1.072	107.21	65-125	PASS
CCB8	CCB	1	1.094	109.41	65-125	PASS
LLCCV2	CCV2	1	1.15	115.04	65-125	PASS
ICSA3	ICSA	1	1.15	114.65	65-125	PASS
ICSAB3	ICSAB	1	0.9	90.38	65-125	PASS
CCV9	CCV	1	1.075	107.45	65-125	PASS
CCB9	CCB	1	1.085	108.54	65-125	PASS
CCV10	CCV	1	1.088	108.83	65-125	PASS

INTERNAL STANDARD: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCB10	CCB	1	1.11	110.82	65-125	PASS
CCV11	CCV	1	1.11	110.54	65-125	PASS
CCB11	CCB	1	1.095	109.54	65-125	PASS
CCB11	CCB	1	1.1	110.07	65-125	PASS
CCV12	CCV	1	1.079	107.91	65-125	PASS
CCB12	CCB	1	1.11	110.73	65-125	PASS
LLCCV3	CCV2	1	1.17	116.58	65-125	PASS
ICSA4	ICSA	1	1.16	115.81	65-125	PASS
ICSAB4	ICSAB	1	0.91	91.32	65-125	PASS
CCV13	CCV	1	1.073	107.34	65-125	PASS
CCB13	CCB	1	1.097	109.65	65-125	PASS
CCV14	CCV	1	1.074	107.42	65-125	PASS
CCB14	CCB	1	1.048	104.82	65-125	PASS
CCV15	CCV	1	1.029	102.92	65-125	PASS
CCB15	CCB	1	1.038	103.82	65-125	PASS
CCV16	CCV	1	1.033	103.32	65-125	PASS
CCB16	CCB	1	1.042	104.16	65-125	PASS
CCB16	CCB	1	1.043	104.26	65-125	PASS
CCV17	CCV	1	1.023	102.26	65-125	PASS
CCB17	CCB	1	1.012	101.22	65-125	PASS
LLCCV4	CCV2	1	1.12	111.89	65-125	PASS
LLCCV4	CCV2	1	1.047	104.73	65-125	PASS
ICSA5	ICSA	1	1.11	111.01	65-125	PASS
ICSAB5	ICSAB	1	0.88	87.76	65-125	PASS
ICSAB5	ICSAB	1	1.043	104.34	65-125	PASS

INTERNAL STANDARD: 171220B

Instrument ID: ICP-02

Scandium

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1	99.73	65-125	PASS
Standard2	ICAL	1	1.0062	100.62	65-125	PASS
Standard3	ICAL	1	0.99	98.52	65-125	PASS
Standard4	ICAL	1	0.97	97.31	65-125	PASS
Standard5	ICAL	1	0.96	96.35	65-125	PASS
Standard6	ICAL	1	0.95	95.47	65-125	PASS
ICV	ICV	1	0.97	96.67	65-125	PASS
ICB	ICB	1	1	99.53	65-125	PASS
ICSA1	ICSA	1	1.0002	100.02	65-125	PASS
ICSAB1	ICSAB	1	0.97	96.83	65-125	PASS
MB-65993	MBLK	1	0.99	98.85	65-125	PASS
LCS2-65993	LCS	1	1.036	103.55	65-125	PASS
N027430-002B	SAMP	250	0.98	97.68	65-125	PASS
N027430-004B	SAMP	1	1	99.74	65-125	PASS
N027430-004B	SAMP	5	0.98	98.26	65-125	PASS
N027430-004B-PS	PS	1	0.98	98.31	65-125	PASS
N027430-004B-MS2	MS	1	0.98	98.33	65-125	PASS
N027430-004B-MSD2	MSD	1	0.98	97.95	65-125	PASS
N027430-004B	SAMP	10	0.97	96.6	65-125	PASS
N027430-004B	SAMP	50	0.98	97.63	65-125	PASS
CCV1	CCV	1	1.015	101.53	65-125	PASS
CCV1	CCV	1	0.96	96.11	65-125	PASS
CCB1	CCB	1	0.98	97.78	65-125	PASS
N027430-004B-PS	PS	10	0.97	96.97	65-125	PASS
N027430-004B-MS2	MS	10	0.97	97.098	65-125	PASS
N027430-004B-MSD2	MSD	10	0.97	96.96	65-125	PASS
N027430-006B	SAMP	10	0.97	97.4	65-125	PASS
N027430-008B	SAMP	100	0.97	96.8	65-125	PASS
N027430-012B	SAMP	100	0.96	96.11	65-125	PASS
N027430-013B	SAMP	100	0.97	96.71	65-125	PASS
N027430-014B	SAMP	100	0.96	96.025	65-125	PASS
N027430-015B	SAMP	250	0.96	95.93	65-125	PASS
N027430-016B	SAMP	250	0.97	96.73	65-125	PASS
CCV2	CCV	1	0.95	95.46	65-125	PASS
CCB2	CCB	1	0.98	97.96	65-125	PASS
N027430-017B	SAMP	250	0.97	96.66	65-125	PASS
N027430-018B	SAMP	500	0.97	96.56	65-125	PASS
N027430-020B	SAMP	100	0.96	96.37	65-125	PASS
N027431-001B	SAMP	25	0.96	96.072	65-125	PASS
N027431-002B	SAMP	100	0.97	97.16	65-125	PASS

12/22/2017

INTERNAL STANDARD: 171220B

Instrument ID: ICP-02

Scandium

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N027431-003B	SAMP	250	0.96	96.05	65-125	PASS
N027431-004B	SAMP	250	0.97	97.12	65-125	PASS
N027431-005B	SAMP	1	0.95	95.025	65-125	PASS
N027431-005B	SAMP	25	0.96	96.36	65-125	PASS
N027431-006B	SAMP	1	0.9	90.062	65-125	PASS
CCV3	CCV	1	0.95	95.48	65-125	PASS
CCB3	CCB	1	0.97	97.064	65-125	PASS
N027431-006B	SAMP	100	0.96	96.25	65-125	PASS
CCV4	CCV	1	0.95	95.4	65-125	PASS
CCB4	CCB	1	0.98	97.55	65-125	PASS
ICSA2	ICSA	1	0.97	96.79	65-125	PASS
ICSAB2	ICSAB	1	0.95	95.45	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N027430
Test Method: EPA 6010B
Analysis Date: 12/18/2017 & 12/20/2017

Matrix: Groundwater
Batch No.: 65993

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B & Fe. The calculated concentration is <25RL.
Dilution test failed for Mg.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027430-002B DT 5X	Boron	ug/L	2691.515	NA	2388.723	12.68%	10
N027430-002B DT 5X	Calcium	ug/L	219251	PASS	211040.5	3.89%	10
N027430-002B DT 5X	Iron	ug/L	60.30838	NA	52.83901	14.14%	10
N027430-002B DT 5X	Magnesium	ug/L	5739.538	FAIL	4660.336	23.16%	10
N027430-004B DT 50X	Sodium	ug/L	238153.7	PASS	226728.1	5.04%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N027430-002B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871610**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6840.260	100	5000	2389	89.0	80	120				
Calcium	211388.844	500	10000	211000	3.48	80	120				S
Iron	135.616	20	100.0	52.84	82.8	80	120				
Magnesium	11715.362	100	10000	4660	70.6	80	120				S

Sample ID **N027430-004B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **ZZZZZZ**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2874521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	253014.845	5000	20000	226700	131	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

LOD & PQL VERIFICATION

Analytical Method: EPA 6010B / 200.7 **Matrix:** Water
Date of Analysis: 2/21/2017 **Units:** mg/L
Instrument Name: ICP2
Analyst: MI

Compound	MDL	LOD		PQL		
		Spike	Recovered	Spike	Recovered	% Recovery
Sodium	0.02621	0.10	0.08408	0.5	0.52080	104.2
Potassium	0.03815	0.10	0.13587	0.5	0.48231	96.5
Strontium	0.00545	0.02	0.02459	0.05	0.06052	121.0

Method Detection Limit

Analytical Method: EPA 6010B / 200.7
Digestion Method: EPA 3010A
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: mg/L

Analyte	1	2	3	4	5	6	7	SD	Ave	AMT SPIKED	%RSD	MDL	PQL
Potassium	0.15443	0.16201	0.14301	0.16141	0.16124	0.12965	0.14652	0.01215	0.15118	0.1000	8.0	0.03815	0.5
Sodium	0.11445	0.11459	0.11678	0.11286	0.11394	0.09515	0.10066	0.00835	0.10978	0.1000	7.6	0.02621	0.5
Strontium	0.02939	0.03046	0.0307	0.02962	0.03209	0.02708	0.02772	0.00174	0.02958	0.0250	5.9	0.00545	0.05

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66020
ASSET #: N027430

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 12/19/2017

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X			X	
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?		X			X	
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X	X		X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).		X			X	
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of Mn & Mo in N027430-002B PS/MS/MSD failed. However LCS & DT passed criteria.
%Rec of IS in N027430-018B failed. Se for rerun.
For Confirmation:
N027430-002B (6020) = 3.5 ug/L :confirmation: 3.4 ug/L ; N027430-002A (218.6) = 0.37 ug/L :confirmation: 0.07 ug/L
N027430-012B (6020) = 1.7 ug/L :confirmation: 1.5 ug/L ; N027430-012A (218.6) = <0.20 ug/L :confirmation: 0.0 ug/L

	Yes	No	N/A
1. All assigned sample(s) analyzed	/		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/22/17
2nd Level Reviewer 12/22/2017 Date: ——

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66020
ASSET #: N027430

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 12/20/2017

Method:

- [ ] EPA 6010B / 200.7
- [ ] EPA 7470A / 7471A/245.1
- [X] EPA 6020 / 200.8
- [ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)		X		X	X	
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X	X	
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		X
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			X
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .			X			X
24. LCS compounds within control limits.			X			X
25. MS/MSD, RPD's are within control limits			X			X
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For Se in N027430-018B rerun only.
%Rec of Se in LLICV failed, bias high. However %Rec within limit 80-120%, thus reported.
% RSD

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/22/17

2nd Level Reviewer 12/22/2017 Date: _____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N027430-002B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 3.54563 * 1 * (25/25)

Chromium , ug/L = 3.54563

Reporting results in two significant figures,

Chromium , ug/L = 3.5

% RSD SUMMARY

PERCENT RSD SUMMARY: 171219B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.088	13.13	15	PASS	0.12	6.39	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.51	4.38	15	PASS	0.54	2.038	15	PASS
Std3-5/50 ppb	ICAL	1	5.2	1.061	15	PASS	5.2	2.85	15	PASS
Std4-10/100 ppb	ICAL	1	10.23	2.049	15	PASS	10.23	0.85	15	PASS
Std5-20/200 ppb	ICAL	1	20.49	1.95	15	PASS	20.22	3.05	15	PASS
Std6-40/400 ppb	ICAL	1	40.45	1.58	15	PASS	40.2	2.63	15	PASS
Std7-100/1000 ppb	ICAL	1	100.78	1.69	15	PASS	99.84	2.055	15	PASS
Std8-200/2000 ppb	ICAL	1	199.45	1.54	15	PASS	195.18	1.2	15	PASS
ICV	ICV	1	10.077	1.33	15	PASS	99.24	1.43	15	PASS
ICB	ICB	1	0.00089	482.47	15	<PQL	0.0012	121.89	15	<PQL
LLICV	CCV1	1	1.025	7.46	20	PASS	0.53	5.12	20	PASS
ICSA1	ICSA	1	0.072	17.77	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.064	1.4	15	PASS	22.99	1.51	15	PASS
LLICV	CCV1	1	1.057	3.027	20	PASS	0.53	4.35	20	PASS
MB-66020	MBLK	1	0.0043	317.14	15	<PQL	0.0057	54.56	15	<PQL
LCS-66020	LCS	1	10.17	1.7	15	PASS	100.074	1.65	15	PASS
N027430-002B	SAMP	1	3.55	1.19	15	PASS	307.96	1.0031	15	PASS
N027430-002B	SAMP	5	0.82	2.47	15	PASS	67.15	0.99	15	PASS
N027430-002B	SAMP	25	0.15	2.39	15	PASS	14.64	1.61	15	PASS
N027430-002B-PS	PS	1	12.69	2.72	15	PASS	379.39	1.16	15	PASS
N027430-002B-PS	PS	5	2.89	0.38	15	PASS	89.24	1.79	15	PASS
N027430-002B-MS	MS	1	13.2	0.61	15	PASS	391.17	2.17	15	PASS
N027430-002B-MS	MS	5	2.96	1.53	15	PASS	93.55	1.24	15	PASS
N027430-002B-MSD	MSD	1	13.18	0.98	15	PASS	382.6	0.88	15	PASS
CCV1	CCV	1	20.65	2.47	15	PASS	20.52	2.44	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.022	24.38	15	<PQL
N027430-002B-MSD	MSD	5	2.91	1.34	15	PASS	95.34	1.69	15	PASS
N027430-004B	SAMP	1	0.074	2.73	15	PASS	193.078	0.65	15	PASS
N027430-004B	SAMP	5	<0.000	N/A	15	<PQL	40.68	2.3	15	PASS
N027430-006B	SAMP	1	0.21	10.4	15	PASS	<0.000	N/A	15	<PQL
N027430-006B	SAMP	5	0.021	34.29	15	<PQL	<0.000	N/A	15	<PQL
N027430-008B	SAMP	1	0.23	2.69	15	PASS	128.42	0.6	15	PASS
N027430-008B	SAMP	5	0.019	12.32	15	PASS	27.63	0.71	15	PASS
N027430-012B	SAMP	1	1.67	1.24	15	PASS	14.097	0.64	15	PASS
N027430-012B	SAMP	5	0.33	9.077	15	PASS	3.12	3.2	15	PASS
N027430-013B	SAMP	1	5.037	1.21	15	PASS	5.43	2.86	15	PASS
CCV2	CCV	1	20.48	1.64	15	PASS	20.49	2.19	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.0018	658.49	15	<PQL
N027430-013B	SAMP	5	1.038	1.64	15	PASS	1.24	4.69	15	PASS
N027430-014B	SAMP	1	7.24	1.13	15	PASS	3.79	3.023	15	PASS

PERCENT RSD SUMMARY: 171219B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027430-014B	SAMP	5	1.54	2.58	15	PASS	0.82	1.97	15	PASS
N027430-015B	SAMP	1	15.33	0.77	15	PASS	18.27	0.12	15	PASS
N027430-015B	SAMP	5	3.44	0.37	15	PASS	4.0031	2.86	15	PASS
N027430-016B	SAMP	1	11.13	1.017	15	PASS	17.33	0.54	15	PASS
N027430-016B	SAMP	5	2.3	4.62	15	PASS	3.79	2.16	15	PASS
N027430-017B	SAMP	1	0.53	1.24	15	PASS	39.13	0.61	15	PASS
N027430-017B	SAMP	5	0.12	2.19	15	PASS	8.56	1.31	15	PASS
N027430-018B	SAMP	1	0.15	10.69	15	PASS	237.53	0.88	15	PASS
CCV3	CCV	1	20.56	1.11	15	PASS	20.65	2	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.057	9.21	15	PASS
N027430-018B	SAMP	5	<0.000	N/A	15	<PQL	60.25	0.45	15	PASS
N027430-020B	SAMP	1	92.88	0.33	15	PASS	24.0048	0.56	15	PASS
N027430-020B	SAMP	5	20.28	1.79	15	PASS	5.38	1.64	15	PASS
N027430-002B	SAMP	1	3.61	0.74	15	PASS	307.3	0.58	15	PASS
N027430-002B-MSD	MSD	1	12.45	2.36	15	PASS	391.23	2.8	15	PASS
N027430-006B	SAMP	1	0.2	6.44	15	PASS	<0.000	N/A	15	<PQL
N027430-018B	SAMP	25	<0.000	N/A	15	<PQL	60.87	2.068	15	PASS
CCV4	CCV	1	20.14	1.36	15	PASS	20.3	0.95	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.026	41.76	15	<PQL
LLCCV1	CCV2	1	0.99	4.082	20	PASS	0.59	1.45	20	PASS
ICSA2	ICSA	1	0.14	20.79	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.42	1.52	15	PASS	23.64	1.8	15	PASS

PERCENT RSD SUMMARY: 171219B

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	11.062	15	PASS	0.1	62.68	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.51	11.66	15	PASS	0.46	26.55	15	<PQL
Std3-5/50 ppb	ICAL	1	4.91	1.71	15	PASS	5.061	7.67	15	PASS
Std4-10/100 ppb	ICAL	1	10.18	1.78	15	PASS	10.096	2.8	15	PASS
Std5-20/200 ppb	ICAL	1	20.26	1.34	15	PASS	20.58	4.57	15	PASS
Std6-40/400 ppb	ICAL	1	40.24	0.5	15	PASS	41.13	0.7	15	PASS
Std7-100/1000 ppb	ICAL	1	101.089	0.48	15	PASS	100.57	2.26	15	PASS
Std8-200/2000 ppb	ICAL	1	199.37	0.58	15	PASS	199.42	0.42	15	PASS
ICV	ICV	1	10	1.79	15	PASS	10	3.84	15	PASS
ICB	ICB	1	0.018	174.79	15	<PQL	0.022	41.3	15	<PQL
LLICV	CCV1	1	0.093	15.86	20	PASS	0.52	28.63	20	NR!
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.0063	145.48	15	<PQL
ICSAB1	ICSAB	1	20.18	1.87	15	PASS	18.98	1.5	15	PASS
LLICV	CCV1	1	0.11	26.19	20	NR!	0.55	14.92	20	PASS
MB-66020	MBLK	1	0.001	1396.17	15	<PQL	0.012	135.49	15	<PQL
LCS-66020	LCS	1	9.68	1.18	15	PASS	9.65	1.36	15	PASS
N027430-002B	SAMP	1	2.4	6.87	15	PASS	0.71	36.39	15	NR!
N027430-002B	SAMP	5	0.44	9.6	15	PASS	0.054	52.097	15	<PQL
N027430-002B	SAMP	25	0.083	18.28	15	<PQL	0.032	129.51	15	<PQL
N027430-002B-PS	PS	1	12.12	1.84	15	PASS	9.81	4.16	15	PASS
N027430-002B-PS	PS	5	2.65	1.17	15	PASS	1.91	5.96	15	PASS
N027430-002B-MS	MS	1	12.23	2.51	15	PASS	9.62	2.99	15	PASS
N027430-002B-MS	MS	5	2.61	3.66	15	PASS	1.96	8.22	15	PASS
N027430-002B-MSD	MSD	1	12.12	2.49	15	PASS	10.097	2.67	15	PASS
CCV1	CCV	1	20.24	0.31	15	PASS	21.5	3.95	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.023	76.49	15	<PQL
N027430-002B-MSD	MSD	5	2.8	3.26	15	PASS	2.22	9.83	15	PASS
N027430-004B	SAMP	1	9.22	1.74	15	PASS	0.29	9.37	15	PASS
N027430-004B	SAMP	5	1.9	4.093	15	PASS	0.056	37.35	15	<PQL
N027430-006B	SAMP	1	0.77	2.12	15	PASS	1.2	15.45	15	NR!
N027430-006B	SAMP	5	0.16	12.54	15	PASS	0.16	9.4	15	PASS
N027430-008B	SAMP	1	1.71	3.019	15	PASS	0.035	110.51	15	<PQL
N027430-008B	SAMP	5	0.39	6.93	15	PASS	0.018	86.17	15	<PQL
N027430-012B	SAMP	1	9.7	1.64	15	PASS	0.6	28.25	15	NR!
N027430-012B	SAMP	5	2.061	5.45	15	PASS	0.074	75.16	15	<PQL
N027430-013B	SAMP	1	1.13	5.47	15	PASS	0.13	39.54	15	<PQL
CCV2	CCV	1	19.94	0.9	15	PASS	21.53	5.21	15	PASS
CCB2	CCB	1	0.0021	649.075	15	<PQL	0.013	56.71	15	<PQL
N027430-013B	SAMP	5	0.21	5.41	15	PASS	0.035	48.35	15	<PQL
N027430-014B	SAMP	1	1.63	10.085	15	PASS	0.78	16.11	15	NR!

PERCENT RSD SUMMARY: 171219B

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027430-014B	SAMP	5	0.36	10.67	15	PASS	0.18	28.68	15	<PQL
N027430-015B	SAMP	1	1.048	9.65	15	PASS	0.6	17.54	15	NR!
N027430-015B	SAMP	5	0.21	9.78	15	PASS	0.12	7.6	15	PASS
N027430-016B	SAMP	1	1.97	1.35	15	PASS	0.7	26.32	15	NR!
N027430-016B	SAMP	5	0.43	8.92	15	PASS	0.092	56.3	15	<PQL
N027430-017B	SAMP	1	2.32	3.57	15	PASS	0.78	15.014	15	NR!
N027430-017B	SAMP	5	0.43	13.94	15	PASS	0.16	25.51	15	<PQL
N027430-018B	SAMP	1	2.76	2.93	15	PASS	0.13	53.77	15	<PQL
CCV3	CCV	1	20.82	1.97	15	PASS	20.92	3.12	15	PASS
CCB3	CCB	1	0.0034	495.11	15	<PQL	0.027	99.49	15	<PQL
N027430-018B	SAMP	5	0.57	5.54	15	PASS	0.014	131.23	15	<PQL
N027430-020B	SAMP	1	1.86	1.18	15	PASS	1.41	11.9	15	PASS
N027430-020B	SAMP	5	0.38	6.6	15	PASS	0.26	6.26	15	PASS
N027430-002B	SAMP	1	2.11	3.87	15	PASS	0.29	21.57	15	<PQL
N027430-002B-MSD	MSD	1	11.63	3.99	15	PASS	11.6	5.29	15	PASS
N027430-006B	SAMP	1	0.71	2.99	15	PASS	1.17	7.85	15	PASS
N027430-018B	SAMP	25	0.63	10.32	15	PASS	0.051	37.58	15	<PQL
CCV4	CCV	1	20.5	0.59	15	PASS	21.3	2.035	15	PASS
CCB4	CCB	1	0.00058	3627.63	15	<PQL	0.029	116.079	15	<PQL
LLCCV1	CCV2	1	0.08	22.4	20	<PQL	0.55	13.68	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.056	69.87	15	<PQL
ICSAB2	ICSAB	1	20.12	1.5	15	PASS	17.59	4.63	15	PASS

PERCENT RSD SUMMARY: 171219B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.087	4.21	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.49	7.44	15	PASS
Std3-5/50 ppb	ICAL	1	5.051	1.83	15	PASS
Std4-10/100 ppb	ICAL	1	9.85	0.66	15	PASS
Std5-20/200 ppb	ICAL	1	19.99	0.43	15	PASS
Std6-40/400 ppb	ICAL	1	40.018	1.14	15	PASS
Std7-100/1000 ppb	ICAL	1	100.55	0.54	15	PASS
Std8-200/2000 ppb	ICAL	1	199.73	0.91	15	PASS
ICV	ICV	1	10.41	1.58	15	PASS
ICB	ICB	1	0.16	7.63	15	PASS
LLICV	CCV1	1	0.53	3.49	20	PASS
ICSA1	ICSA	1	0.062	13.11	15	PASS
ICSAB1	ICSAB	1	22.013	1.53	15	PASS
LLICV	CCV1	1	0.5	3.27	20	PASS
MB-66020	MBLK	1	0.014	49.21	15	<PQL
LCS-66020	LCS	1	9.98	1.37	15	PASS
N027430-002B	SAMP	1	275.029	0.48	15	PASS
N027430-002B	SAMP	5	50.74	0.66	15	PASS
N027430-002B	SAMP	25	10.11	1.32	15	PASS
N027430-002B-PS	PS	1	281.33	0.69	15	PASS
N027430-002B-PS	PS	5	55.63	0.79	15	PASS
N027430-002B-MS	MS	1	296.66	0.76	15	PASS
N027430-002B-MS	MS	5	58.53	0.74	15	PASS
N027430-002B-MSD	MSD	1	294.89	0.69	15	PASS
CCV1	CCV	1	20.59	1.17	15	PASS
CCB1	CCB	1	0.17	14.23	15	PASS
N027430-002B-MSD	MSD	5	60.28	0.45	15	PASS
N027430-004B	SAMP	1	4.83	3.22	15	PASS
N027430-004B	SAMP	5	0.95	1.59	15	PASS
N027430-006B	SAMP	1	4.41	1.91	15	PASS
N027430-006B	SAMP	5	0.85	0.92	15	PASS
N027430-008B	SAMP	1	23.034	1.4	15	PASS
N027430-008B	SAMP	5	4.45	2.38	15	PASS
N027430-012B	SAMP	1	356.059	1.98	15	PASS
N027430-012B	SAMP	5	67.5	0.17	15	PASS
N027430-013B	SAMP	1	10.68	0.7	15	PASS
CCV2	CCV	1	20.16	0.58	15	PASS
CCB2	CCB	1	0.11	9.14	15	PASS
N027430-013B	SAMP	5	1.98	1.9	15	PASS
N027430-014B	SAMP	1	44.66	1.51	15	PASS

PERCENT RSD SUMMARY: 171219B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N027430-014B	SAMP	5	8.16	1.9	15	PASS
N027430-015B	SAMP	1	18.91	0.11	15	PASS
N027430-015B	SAMP	5	3.45	0.96	15	PASS
N027430-016B	SAMP	1	199.19	0.58	15	PASS
N027430-016B	SAMP	5	36.32	0.52	15	PASS
N027430-017B	SAMP	1	352.41	0.89	15	PASS
N027430-017B	SAMP	5	63.59	0.62	15	PASS
N027430-018B	SAMP	1	213.24	1.32	15	PASS
CCV3	CCV	1	20.42	0.65	15	PASS
CCB3	CCB	1	0.16	9.64	15	PASS
N027430-018B	SAMP	5	38.53	0.037	15	PASS
N027430-020B	SAMP	1	13.82	1.17	15	PASS
N027430-020B	SAMP	5	3.42	6.053	15	PASS
N027430-002B	SAMP	1	275.39	0.82	15	PASS
N027430-002B-MSD	MSD	1	295.074	0.46	15	PASS
N027430-006B	SAMP	1	4.32	2.31	15	PASS
N027430-018B	SAMP	25	37.54	1.48	15	PASS
CCV4	CCV	1	20.18	0.85	15	PASS
CCB4	CCB	1	0.11	18.88	15	<PQL
LLCCV1	CCV2	1	0.52	3.46	20	PASS
ICSA2	ICSA	1	0.2	9.37	15	PASS
ICSAB2	ICSAB	1	21.91	1.26	15	PASS

PERCENT RSD SUMMARY: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	16.17	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.55	2.81	15	PASS
Std3-5/50 ppb	ICAL	1	5.015	4.6	15	PASS
Std4-10/100 ppb	ICAL	1	9.49	2.22	15	PASS
Std5-20/200 ppb	ICAL	1	20.37	2.35	15	PASS
Std6-40/400 ppb	ICAL	1	40.84	1.63	15	PASS
Std7-100/1000 ppb	ICAL	1	99.64	0.32	15	PASS
Std8-200/2000 ppb	ICAL	1	201.36	2.67	15	PASS
ICV	ICV	1	10.49	0.58	15	PASS
ICB	ICB	1	0.15	18.32	15	<PQL
LLICV	CCV1	1	0.6	3.93	20	PASS
ICSA1	ICSA	1	0.099	12.53	15	PASS
ICSAB1	ICSAB	1	17.94	4.031	15	PASS
LLICV	CCV1	1	0.58	22.6	20	NR!
CCV1	CCV	1	21.21	3.2	15	PASS
CCB1	CCB	1	0.12	25.82	15	<PQL
CCV2	CCV	1	19.6	4.59	15	PASS
CCB2	CCB	1	0.061	33.78	15	<PQL
CCV3	CCV	1	20.82	2.77	15	PASS
CCB3	CCB	1	0.02	165.52	15	<PQL
LLCCV1	CCV2	1	0.56	15.32	20	PASS
ICSA2	ICSA	1	0.014	79.34	15	<PQL
ICSAB2	ICSAB	1	19.52	0.87	15	PASS
CCV4	CCV	1	21.13	3.11	15	PASS
CCB4	CCB	1	0.017	85.8	15	<PQL
N027430-018B	SAMP	25	0.0062	413.29	15	<PQL
CCV5	CCV	1	21.54	0.98	15	PASS
CCB5	CCB	1	0.014	39.42	15	<PQL
LLCCV2	CCV2	1	0.49	10.76	20	PASS
ICSA3	ICSA	1	0.027	59.64	15	<PQL
ICSAB3	ICSAB	1	16.25	0.63	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 171219B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B1219001.D	RINSE	RINSE	1	12/19/17 4:48 PM
B1219002.D	Cal Blank	IBLK	1	12/19/17 4:53 PM
B1219003.D	Std1-0.1/1 ppb	ICAL	1	12/19/17 4:59 PM
B1219004.D	Std2-0.5/5 ppb	ICAL	1	12/19/17 5:04 PM
B1219005.D	Std3-5/50 ppb	ICAL	1	12/19/17 5:10 PM
B1219006.D	Std4-10/100 ppb	ICAL	1	12/19/17 5:15 PM
B1219007.D	Std5-20/200 ppb	ICAL	1	12/19/17 5:21 PM
B1219008.D	Std6-40/400 ppb	ICAL	1	12/19/17 5:26 PM
B1219009.D	Std7-100/1000 ppb	ICAL	1	12/19/17 5:32 PM
B1219010.D	Std8-200/2000 ppb	ICAL	1	12/19/17 5:38 PM
B1219011.D	ICV	ICV	1	12/19/17 5:43 PM
B1219012.D	ICB	ICB	1	12/19/17 5:49 PM
B1219013.D	LLICV	CCV1	1	12/19/17 5:54 PM
B1219014.D	ICSA1	ICSA	1	12/19/17 6:00 PM
B1219015.D	ICSAB1	ICSAB	1	12/19/17 6:05 PM
B1219016.D	LLICV	CCV1	1	12/19/17 6:11 PM
B1219017.D	MB-66020	MBLK	1	12/19/17 6:15 PM
B1219018.D	LCS-66020	LCS	1	12/19/17 6:21 PM
B1219019.D	N027430-002B	SAMP	1	12/19/17 6:26 PM
B1219020.D	N027430-002B	SAMP	5	12/19/17 6:33 PM
B1219021.D	N027430-002B	SAMP	25	12/19/17 6:38 PM
B1219022.D	N027430-002B-PS	PS	1	12/19/17 6:44 PM
B1219023.D	N027430-002B-PS	PS	5	12/19/17 6:49 PM
B1219024.D	N027430-002B-MS	MS	1	12/19/17 6:55 PM
B1219025.D	N027430-002B-MS	MS	5	12/19/17 7:00 PM
B1219026.D	N027430-002B-MSD	MSD	1	12/19/17 7:06 PM
B1219027.D	CCV1	CCV	1	12/19/17 7:12 PM
B1219028.D	CCB1	CCB	1	12/19/17 7:17 PM
B1219029.D	N027430-002B-MSD	MSD	5	12/19/17 7:23 PM
B1219030.D	N027430-004B	SAMP	1	12/19/17 7:28 PM
B1219031.D	N027430-004B	SAMP	5	12/19/17 7:34 PM
B1219032.D	N027430-006B	SAMP	1	12/19/17 7:43 PM
B1219033.D	N027430-006B	SAMP	5	12/19/17 7:49 PM
B1219034.D	N027430-008B	SAMP	1	12/19/17 7:54 PM
B1219035.D	N027430-008B	SAMP	5	12/19/17 8:00 PM
B1219036.D	N027430-012B	SAMP	1	12/19/17 8:05 PM
B1219037.D	N027430-012B	SAMP	5	12/19/17 8:11 PM
B1219038.D	N027430-013B	SAMP	1	12/19/17 8:17 PM
B1219039.D	CCV2	CCV	1	12/19/17 8:22 PM
B1219040.D	CCB2	CCB	1	12/19/17 8:28 PM
B1219041.D	N027430-013B	SAMP	5	12/19/17 8:33 PM
B1219042.D	N027430-014B	SAMP	1	12/19/17 8:39 PM

INJECTION LOG: 171219B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B1219043.D	N027430-014B	SAMP	5	12/19/17 8:44 PM
B1219044.D	N027430-015B	SAMP	1	12/19/17 8:50 PM
B1219045.D	N027430-015B	SAMP	5	12/19/17 8:55 PM
B1219046.D	N027430-016B	SAMP	1	12/19/17 9:01 PM
B1219047.D	N027430-016B	SAMP	5	12/19/17 9:07 PM
B1219048.D	N027430-017B	SAMP	1	12/19/17 9:12 PM
B1219049.D	N027430-017B	SAMP	5	12/19/17 9:18 PM
B1219050.D	N027430-018B	SAMP	1	12/19/17 9:24 PM
B1219051.D	CCV3	CCV	1	12/19/17 9:29 PM
B1219052.D	CCB3	CCB	1	12/19/17 9:35 PM
B1219053.D	N027430-018B	SAMP	5	12/19/17 9:41 PM
B1219054.D	N027430-020B	SAMP	1	12/19/17 9:46 PM
B1219055.D	N027430-020B	SAMP	5	12/19/17 9:52 PM
B1219056.D	N027430-002B	SAMP	1	12/19/17 9:57 PM
B1219057.D	N027430-002B-MSD	MSD	1	12/19/17 10:03 PM
B1219058.D	N027430-006B	SAMP	1	12/19/17 10:09 PM
B1219059.D	N027430-018B	SAMP	25	12/19/17 10:14 PM
B1219060.D	N027429-001B	SAMP	25	12/19/17 10:19 PM
B1219061.D	N027429-001B-PS	PS	1	12/19/17 10:25 PM
B1219062.D	N027429-001B-PS	PS	5	12/19/17 10:30 PM
B1219063.D	CCV4	CCV	1	12/19/17 10:36 PM
B1219064.D	CCB4	CCB	1	12/19/17 10:41 PM
B1219065.D	LLCCV1	CCV2	1	12/19/17 10:47 PM
B1219066.D	ICSA2	ICSA	1	12/19/17 10:53 PM
B1219067.D	ICSAB2	ICSAB	1	12/19/17 10:58 PM

INJECTION LOG: 171220A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1220001.D	RINSE	RINSE	1	12/20/17 3:01 PM
A1220002.D	Cal Blank	IBLK	1	12/20/17 3:07 PM
A1220003.D	Std1-0.1/1 ppb	ICAL	1	12/20/17 3:13 PM
A1220004.D	Std2-0.5/5 ppb	ICAL	1	12/20/17 3:18 PM
A1220005.D	Std3-5/50 ppb	ICAL	1	12/20/17 3:24 PM
A1220006.D	Std4-10/100 ppb	ICAL	1	12/20/17 3:29 PM
A1220007.D	Std5-20/200 ppb	ICAL	1	12/20/17 3:35 PM
A1220008.D	Std6-40/400 ppb	ICAL	1	12/20/17 3:40 PM
A1220009.D	Std7-100/1000 ppb	ICAL	1	12/20/17 3:46 PM
A1220010.D	Std8-200/2000 ppb	ICAL	1	12/20/17 3:51 PM
A1220011.D	ICV	ICV	1	12/20/17 3:57 PM
A1220012.D	ICB	ICB	1	12/20/17 4:03 PM
A1220013.D	LLICV	CCV1	1	12/20/17 4:09 PM
A1220014.D	ICSA1	ICSA	1	12/20/17 4:14 PM
A1220015.D	ICSAB1	ICSAB	1	12/20/17 4:20 PM
A1220016.D	LLICV	CCV1	1	12/20/17 4:25 PM
A1220017.D	MB-65978	MBLK	1	12/20/17 4:31 PM
A1220018.D	LCS-65978	LCS	1	12/20/17 4:37 PM
A1220019.D	N027429-001B	SAMP	1	12/20/17 4:42 PM
A1220020.D	N027429-001B	SAMP	5	12/20/17 4:48 PM
A1220021.D	N027429-001B	SAMP	25	12/20/17 4:53 PM
A1220022.D	N027429-001B-PS	PS	1	12/20/17 4:59 PM
A1220023.D	N027429-001B-PS	PS	5	12/20/17 5:04 PM
A1220024.D	N027429-001B-MS	MS	1	12/20/17 5:10 PM
A1220025.D	N027429-001B-MS	MS	5	12/20/17 5:15 PM
A1220026.D	N027429-001B-MSD	MSD	1	12/20/17 5:21 PM
A1220027.D	CCV1	CCV	1	12/20/17 5:27 PM
A1220028.D	CCB1	CCB	1	12/20/17 5:32 PM
A1220029.D	N027429-001B-MSD	MSD	5	12/20/17 5:38 PM
A1220030.D	N027429-002B	SAMP	1	12/20/17 5:43 PM
A1220031.D	N027429-002B	SAMP	5	12/20/17 5:49 PM
A1220032.D	N027429-003B	SAMP	1	12/20/17 5:54 PM
A1220033.D	N027429-003B	SAMP	5	12/20/17 6:00 PM
A1220034.D	N027429-010B	SAMP	1	12/20/17 6:05 PM
A1220035.D	N027429-010B	SAMP	5	12/20/17 6:11 PM
A1220036.D	N027429-013B	SAMP	1	12/20/17 6:17 PM
A1220037.D	N027429-013B	SAMP	5	12/20/17 6:22 PM
A1220038.D	N027429-014B	SAMP	1	12/20/17 6:28 PM
A1220039.D	CCV2	CCV	1	12/20/17 6:36 PM
A1220040.D	CCB2	CCB	1	12/20/17 6:41 PM
A1220041.D	N027429-014B	SAMP	5	12/20/17 6:47 PM
A1220042.D	N027429-010B	SAMP	5	12/20/17 6:53 PM

INJECTION LOG: 171220A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1220043.D	N027429-001B	SAMP	1	12/20/17 6:58 PM
A1220044.D	N027429-005B	SAMP	1	12/20/17 7:04 PM
A1220045.D	N027429-005B	SAMP	5	12/20/17 7:09 PM
A1220046.D	N027429-006B	SAMP	1	12/20/17 7:15 PM
A1220047.D	N027429-006B	SAMP	5	12/20/17 7:20 PM
A1220048.D	CCV3	CCV	1	12/20/17 7:26 PM
A1220049.D	CCB3	CCB	1	12/20/17 7:32 PM
A1220050.D	LLCCV1	CCV2	1	12/20/17 7:37 PM
A1220051.D	ICSA2	ICSA	1	12/20/17 7:43 PM
A1220052.D	ICSAB2	ICSAB	1	12/20/17 7:48 PM
A1220053.D	N027429-007B	SAMP	1	12/20/17 7:54 PM
A1220054.D	N027429-007B	SAMP	5	12/20/17 7:59 PM
A1220055.D	N027429-008B	SAMP	1	12/20/17 8:05 PM
A1220056.D	N027429-008B	SAMP	5	12/20/17 8:10 PM
A1220057.D	N027429-009B	SAMP	1	12/20/17 8:16 PM
A1220058.D	N027429-009B	SAMP	5	12/20/17 8:21 PM
A1220059.D	N027429-012B	SAMP	1	12/20/17 8:27 PM
A1220060.D	N027429-012B	SAMP	5	12/20/17 8:33 PM
A1220061.D	N027429-015B	SAMP	1	12/20/17 8:38 PM
A1220062.D	N027429-015B	SAMP	5	12/20/17 8:44 PM
A1220063.D	CCV4	CCV	1	12/20/17 8:49 PM
A1220064.D	CCB4	CCB	1	12/20/17 8:55 PM
A1220065.D	N027429-016C	SAMP	1	12/20/17 9:00 PM
A1220066.D	N027429-016C	SAMP	5	12/20/17 9:06 PM
A1220067.D	N027429-017C	SAMP	1	12/20/17 9:12 PM
A1220068.D	N027429-017C	SAMP	5	12/20/17 9:17 PM
A1220069.D	N027429-018C	SAMP	1	12/20/17 9:23 PM
A1220070.D	N027429-018C	SAMP	5	12/20/17 9:28 PM
A1220071.D	N027429-020C	SAMP	1	12/20/17 9:34 PM
A1220072.D	N027429-020C	SAMP	5	12/20/17 9:39 PM
A1220073.D	N027429-010B	SAMP	25	12/20/17 9:45 PM
A1220074.D	N027430-018B	SAMP	25	12/20/17 9:51 PM
A1220075.D	CCV5	CCV	1	12/20/17 9:56 PM
A1220076.D	CCB5	CCB	1	12/20/17 10:02 PM
A1220077.D	LLCCV2	CCV2	1	12/20/17 10:07 PM
A1220078.D	ICSA3	ICSA	1	12/20/17 10:13 PM
A1220079.D	ICSAB3	ICSAB	1	12/20/17 10:19 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/12/2017 12:45:1**
Prep End Date: **12/12/2017 6:00:00**
Reviewed/ Date: 12/22/2017
Initials/ Date: 12/22/2017

Prep Batch **66020** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.6**	**02-14**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66020	Aqueous		25	☐	0	0	25	1.000		
MB-66020	Aqueous		25	☐	0	0	25	1.000		
N027430-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-008B	Unknown	<2	25	☐	0	0	25	1.000		
N027430-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-015B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-016B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-017B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/12/2017 12:45:1**
Prep End Date: **12/12/2017 6:00:00**
Reviewed/ Date: 12/22/2017
Initials/ Date: 12/22/2017

Prep Batch **66020** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.6**	**02-14**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027430-018B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-020B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 19 Dec 2017 11:23:55 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	92961.80	0.00	
24 Mg	265522.00	0.00	
25 Mg	35031.40	0.00	
26 Mg	41235.30	0.00	
59 Co	383642.00	0.00	
115 In	673609.00	0.00	
206 Pb	196601.00	0.00	
207 Pb	170749.00	0.00	
208 Pb	417665.00	0.00	

RSD (%)

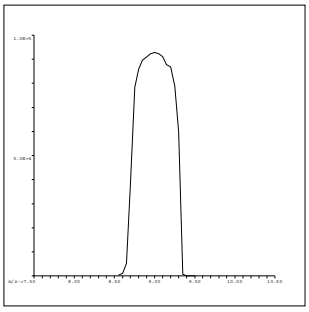
Element	Actual	Required	Flag
9 Be	1.37	5.00	
24 Mg	2.23	5.00	
25 Mg	1.65	5.00	
26 Mg	2.49	5.00	
59 Co	0.70	5.00	
115 In	0.16	5.00	
206 Pb	0.54	5.00	
207 Pb	0.50	5.00	
208 Pb	0.72	5.00	

Ion Ratio

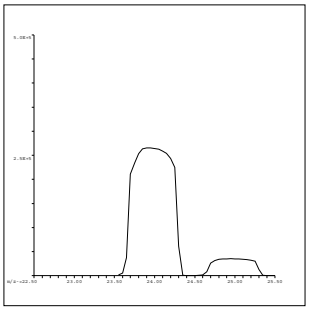
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

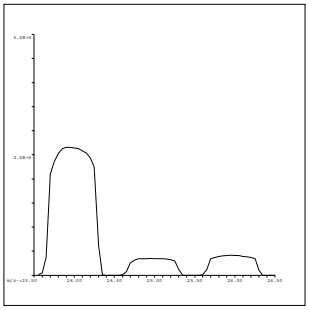
Element	Actual	Required	Flag



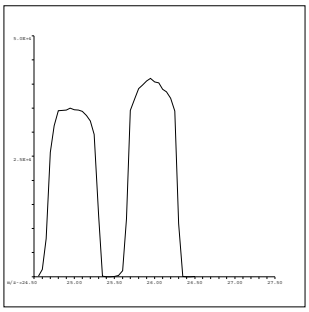
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



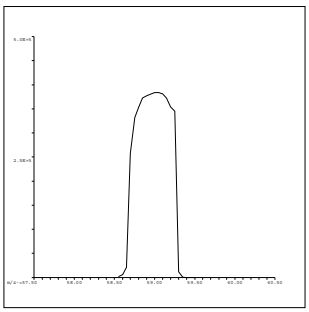
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



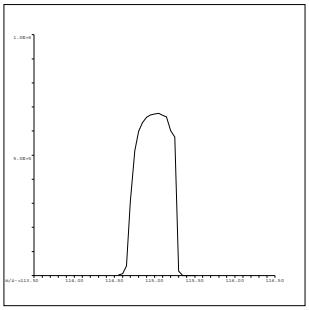
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



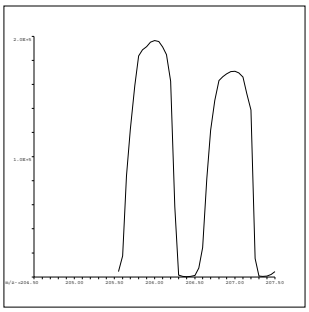
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



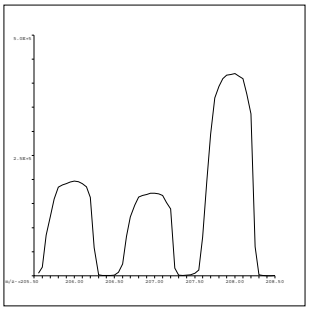
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



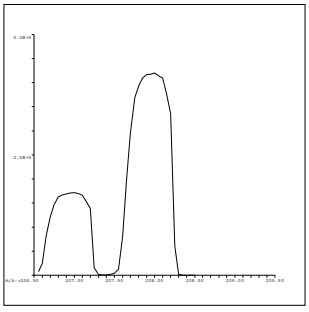
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 20 Dec 2017 02:10:17 pm
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	160949.00	0.00	
24	Mg	535541.00	0.00	
25	Mg	71149.60	0.00	
26	Mg	82622.80	0.00	
59	Co	731408.00	0.00	
115	In	1360180.00	0.00	
206	Pb	371476.00	0.00	
207	Pb	322046.00	0.00	
208	Pb	786938.00	0.00	

RSD (%)

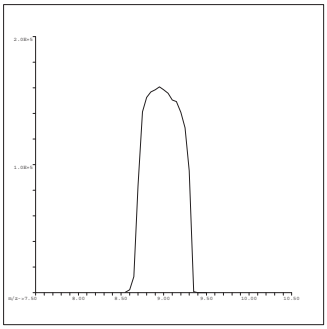
Element		Actual	Required	Flag
9	Be	1.30	5.00	
24	Mg	1.01	5.00	
25	Mg	0.97	5.00	
26	Mg	1.45	5.00	
59	Co	1.10	5.00	
115	In	1.40	5.00	
206	Pb	0.91	5.00	
207	Pb	0.87	5.00	
208	Pb	0.50	5.00	

Ion Ratio

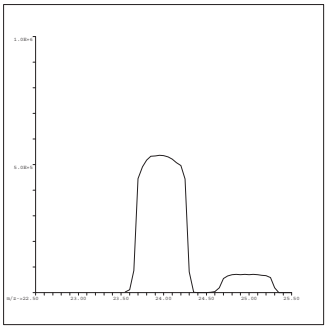
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

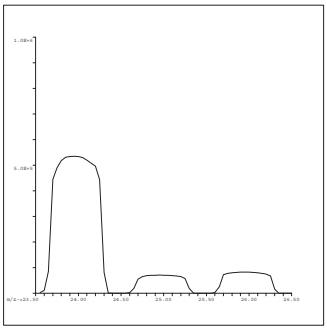
Element	Actual	Required	Flag



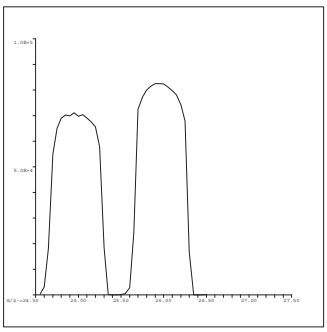
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



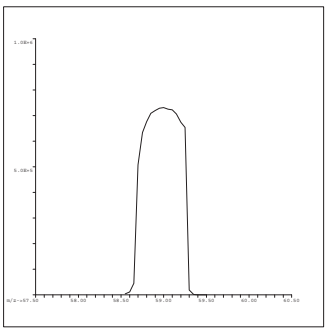
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



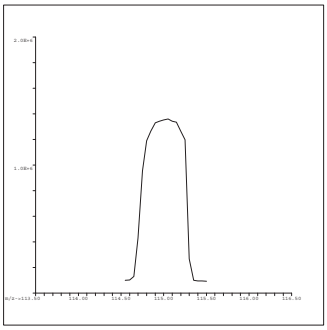
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



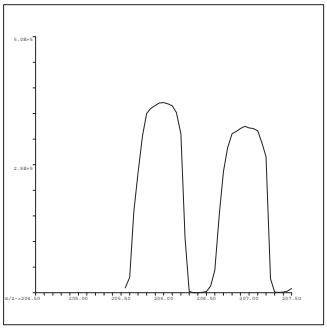
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



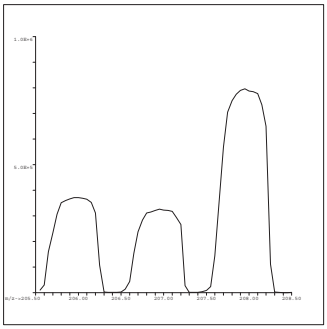
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



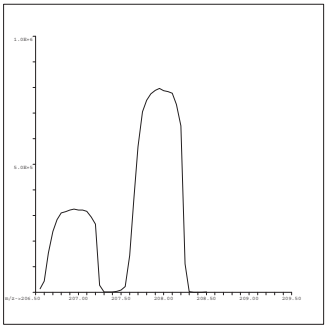
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 171219B

Instrument ID: ICPMS-02

Analyte	Data File	B1219002.D	B1219003.D	B1219004.D	B1219005.D	B1219006.D	B1219007.D	B1219008.D	B1219009.D	B1219010.D	
	Acq. Date-Time	12/19/2017 04:53 PM	12/19/2017 04:59 PM	12/19/2017 05:04 PM	12/19/2017 05:10 PM	12/19/2017 05:15 PM	12/19/2017 05:21 PM	12/19/2017 05:26 PM	12/19/2017 05:32 PM	12/19/2017 05:38 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	78977.5		75222.5	73219.2	72524	71879.1	71309.6	69593.5	67017.7	
55 Mn [2]	CPS	123.9		1760.2	15642.5	30356.6	59343.4	116954.6	283390.8	533495.1	1.0000
52 Cr [2]	CPS	379.8		3423.6	30469.4	59069.5	116838.4	228544.5	555159.7	1057880.9	1.0000
72 Ge (ISTD) [1]	CPS	62963.1		60656.8	59227	57718.2	56926.7	56013.6	55351.5	53411.4	
78 Se [1]	CPS	1.1		115.6	1240.1	2410.3	4845.3	9527.6	23020.3	44043	1.0000
72 Ge (ISTD) [2]	CPS	53389.2	53049.2	51629.1	51569.9	49624.1	49178.2	48535.1	47106.5	45184.6	
75 As [2]	CPS	17.3	80.4	329.8	3031.9	6032.7	11877.3	23268.6	56710.7	107272.4	1.0000
103 Rh (ISTD) [2]	CPS	1693983.8		1643831.8	1626802	1606315.6	1582386.9	1556812.9	1528897.9	1475501	
95 Mo [2]	CPS	103.3		1960.2	18899.5	36279.8	72471.8	142625.3	351805.3	674323.7	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 171220A

Instrument ID: ICPMS-02

Analyte	Data File	A1220002.D	A1220004.D	A1220005.D	A1220006.D	A1220007.D	A1220008.D	A1220009.D	A1220010.D	
	Acq. Date-Time	12/20/2017 03:07 PM	12/20/2017 03:18 PM	12/20/2017 03:24 PM	12/20/2017 03:29 PM	12/20/2017 03:35 PM	12/20/2017 03:40 PM	12/20/2017 03:46 PM	12/20/2017 03:51 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
72 Ge (ISTD) [1]	CPS	80026.1	82030.9	82674	81502	78272.6	77364.2	75878.8	73386.3	
78 Se [1]	CPS	3.3	224.5	2026.9	3777.3	7784.4	15421.2	36896.2	72110.8	0.9999

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICV**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873393**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.997	0.10	10.00	0	100	90	110				
Manganese	99.236	0.50	100.0	0	99.2	90	110				
Molybdenum	10.413	0.50	10.00	0	104	90	110				
Selenium	9.999	0.50	10.00	0	100	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ZZZZZZ**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873395**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.093	0.10	0.1000	0	93.4	80	120				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ZZZZZZ**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873398**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.534	0.50	0.5000	0	107	80	120				
Molybdenum	0.497	0.50	0.5000	0	99.3	80	120				
Selenium	0.551	0.50	0.5000	0	110	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCV**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873409**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.243	0.10	20.00	0	101	90	110				
Manganese	20.520	0.50	20.00	0	103	90	110				
Molybdenum	20.594	0.50	20.00	0	103	90	110				
Selenium	21.499	0.50	20.00	0	107	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCV**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873421**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.937	0.10	20.00	0	99.7	90	110				
Manganese	20.487	0.50	20.00	0	102	90	110				
Molybdenum	20.156	0.50	20.00	0	101	90	110				
Selenium	21.530	0.50	20.00	0	108	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCV**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873433**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.821	0.10	20.00	0	104	90	110				
Manganese	20.654	0.50	20.00	0	103	90	110				
Molybdenum	20.418	0.50	20.00	0	102	90	110				
Selenium	20.917	0.50	20.00	0	105	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCV**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873445**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.503	0.10	20.00	0	103	90	110				
Manganese	20.297	0.50	20.00	0	101	90	110				
Molybdenum	20.185	0.50	20.00	0	101	90	110				
Selenium	21.301	0.50	20.00	0	107	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ZZZZZZ**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873447**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.080	0.10	0.1000	0	80.2	70	130				
Manganese	0.589	0.50	0.5000	0	118	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ZZZZZZ**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873447**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.517	0.50	0.5000	0	103	70	130				
Selenium	0.551	0.50	0.5000	0	110	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ICV**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.948	0.10	10.00	0	99.5	90	110				
Manganese	97.834	0.50	100.0	0	97.8	90	110				
Molybdenum	10.937	0.50	10.00	0	109	90	110				
Selenium	10.490	0.50	10.00	0	105	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ZZZZZZ**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874741**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.564	0.50	0.5000	0	113	80	120				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ZZZZZZ**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874744**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.101	0.10	0.1000	0	101	80	120				
Manganese	0.563	0.50	0.5000	0	113	80	120				
Selenium	0.579	0.50	0.5000	0	116	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCV**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.206	0.10	20.00	0	101	90	110				
Manganese	20.432	0.50	20.00	0	102	90	110				
Molybdenum	20.343	0.50	20.00	0	102	90	110				
Selenium	21.212	0.50	20.00	0	106	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **120980**
Client ID: **CCV** Batch ID: **R120980** TestNo: **EPA 6020** Analysis Date: **12/20/2017** SeqNo: **2874767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.077	0.10	20.00	0	100	90	110				
Manganese	20.092	0.50	20.00	0	100	90	110				
Molybdenum	19.763	0.50	20.00	0	98.8	90	110				
Selenium	19.598	0.50	20.00	0	98.0	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **120980**
Client ID: **CCV** Batch ID: **R120980** TestNo: **EPA 6020** Analysis Date: **12/20/2017** SeqNo: **2874776**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.252	0.10	20.00	0	101	90	110				
Manganese	20.621	0.50	20.00	0	103	90	110				
Molybdenum	19.945	0.50	20.00	0	99.7	90	110				
Selenium	20.817	0.50	20.00	0	104	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **120980**
Client ID: **ZZZZZZ** Batch ID: **R120980** TestNo: **EPA 6020** Analysis Date: **12/20/2017** SeqNo: **2874778**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.095	0.10	0.1000	0	94.8	70	130				
Manganese	0.555	0.50	0.5000	0	111	70	130				
Molybdenum	0.519	0.50	0.5000	0	104	70	130				
Selenium	0.564	0.50	0.5000	0	113	70	130				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **120980**
Client ID: **CCV** Batch ID: **R120980** TestNo: **EPA 6020** Analysis Date: **12/20/2017** SeqNo: **2874791**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.744	0.10	20.00	0	104	90	110				
Manganese	20.729	0.50	20.00	0	104	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCV**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874791**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	19.715	0.50	20.00	0	98.6	90	110				
Selenium	21.132	0.50	20.00	0	106	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCV**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874803**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.679	0.10	20.00	0	103	90	110				
Manganese	21.364	0.50	20.00	0	107	90	110				
Molybdenum	19.557	0.50	20.00	0	97.8	90	110				
Selenium	21.539	0.50	20.00	0	108	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ZZZZZZ**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874805**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.073	0.10	0.1000	0	73.3	70	130				
Manganese	0.595	0.50	0.5000	0	119	70	130				
Molybdenum	0.493	0.50	0.5000	0	98.6	70	130				
Selenium	0.495	0.50	0.5000	0	99.0	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICV**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873336**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.077	1.0	10.00	0	101	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ZZZZZZ**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873341**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.057	1.0	1.000	0	106	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCV**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873352**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.646	1.0	20.00	0	103	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCV**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.479	1.0	20.00	0	102	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCV**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873376**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.563	1.0	20.00	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCV**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873388**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.143	1.0	20.00	0	101	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ZZZZZZ**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873390**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.987	1.0	1.000	0	98.7	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873394**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.159	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.175	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873422**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.108	0.50									
Selenium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.057	0.50									
Molybdenum	0.162	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873446**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.109	0.50									
Selenium	0.029	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ICB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874740**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.188	0.50									
Selenium	0.146	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874756**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.255	0.50									
Selenium	0.124	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874768**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.141	0.50									
Selenium	0.061	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874777**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874777**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.077	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.057	0.50									
Selenium	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **CCB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874804**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.046	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873337**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873353**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873365**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873377**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **CCB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873389**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICSA**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873396**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.062	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICSAB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873397**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.178	0.10	20.00	0	101	80	120				
Manganese	22.989	0.50	20.00	0	115	80	120				
Molybdenum	22.013	0.50	20.00	0	110	80	120				
Selenium	18.983	0.50	20.00	0	94.9	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICSA**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873448**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.200	0.50									
Selenium	0.056	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICSAB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873449**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.116	0.10	20.00	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICSAB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873449**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	23.641	0.50	20.00	0	118	80	120				
Molybdenum	21.915	0.50	20.00	0	110	80	120				
Selenium	17.589	0.50	20.00	0	87.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	120980
Client ID:	ICSA	Batch ID:	R120980	TestNo:	EPA 6020			Analysis Date:	12/20/2017	SeqNo:	2874742

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.099	0.50									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	120980
Client ID:	ICSAB	Batch ID:	R120980	TestNo:	EPA 6020			Analysis Date:	12/20/2017	SeqNo:	2874743

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	17.938	0.50	20.00	0	89.7	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	120980
Client ID:	ICSA	Batch ID:	R120980	TestNo:	EPA 6020			Analysis Date:	12/20/2017	SeqNo:	2874779

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	120980
Client ID:	ICSAB	Batch ID:	R120980	TestNo:	EPA 6020			Analysis Date:	12/20/2017	SeqNo:	2874780

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.521	0.50	20.00	0	97.6	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	120980
Client ID:	ICSA	Batch ID:	R120980	TestNo:	EPA 6020			Analysis Date:	12/20/2017	SeqNo:	2874806

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120980**
Client ID: **ICSAB**	Batch ID: **R120980**	TestNo: **EPA 6020**		Analysis Date: **12/20/2017**	SeqNo: **2874807**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	16.247	0.50	20.00	0	81.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICSA**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.072	1.0									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICSAB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873340**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.064	1.0	20.00	0	100	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICSA**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873391**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.138	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID: **ICSAB**	Batch ID: **R120962**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2873392**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.418	1.0	20.00	0	97.1	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 171219B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	78977.5	78977.5	100	PASS	70-125	53389.2	53389.2	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	77468	78977.5	98.089	PASS	70-125	53049.2	53389.2	99.36	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	75222.5	78977.5	95.25	PASS	70-125	51629.1	53389.2	96.7	PASS	70-125
Std3-5/50 ppb	ICAL	1	73219.2	78977.5	92.71	PASS	70-125	51569.9	53389.2	96.59	PASS	70-125
Std4-10/100 ppb	ICAL	1	72524	78977.5	91.83	PASS	70-125	49624.1	53389.2	92.95	PASS	70-125
Std5-20/200 ppb	ICAL	1	71879.1	78977.5	91.012	PASS	70-125	49178.2	53389.2	92.11	PASS	70-125
Std6-40/400 ppb	ICAL	1	71309.6	78977.5	90.29	PASS	70-125	48535.1	53389.2	90.91	PASS	70-125
Std7-100/1000 ppb	ICAL	1	69593.5	78977.5	88.12	PASS	70-125	47106.5	53389.2	88.23	PASS	70-125
Std8-200/2000 ppb	ICAL	1	67017.7	78977.5	84.86	PASS	70-125	45184.6	53389.2	84.63	PASS	70-125
ICV	ICV	1	77952.8	78977.5	98.7	PASS	70-125	53651.2	53389.2	100.49	PASS	70-125
ICB	ICB	1	63019.6	78977.5	79.79	PASS	70-125	43352.9	53389.2	81.2	PASS	70-125
LLICV	CCV1	1	62643.1	78977.5	79.32	PASS	70-125	44244.3	53389.2	82.87	PASS	70-125
ICSA1	ICSA	1	67499.5	78977.5	85.47	PASS	70-125	45231.2	53389.2	84.72	PASS	70-125
ICSAB1	ICSAB	1	70773.1	78977.5	89.61	PASS	70-125	45873.1	53389.2	85.92	PASS	70-125
LLICV	CCV1	1	66457.3	78977.5	84.15	PASS	70-125	46789.9	53389.2	87.64	PASS	70-125
MB-66020	MBLK	1	60271.8	78977.5	76.32	PASS	70-125	42251.2	53389.2	79.14	PASS	70-125
LCS-66020	LCS	1	73393.1	78977.5	92.93	PASS	70-125	51670.4	53389.2	96.78	PASS	70-125
N027430-002B	SAMP	1	55504.4	78977.5	70.28	PASS	70-125	31822.9	53389.2	59.61	NR!	70-125
N027430-002B	SAMP	5	71361	78977.5	90.36	PASS	70-125	43799.7	53389.2	82.039	PASS	70-125
N027430-002B	SAMP	25	77347.4	78977.5	97.94	PASS	70-125	51014.9	53389.2	95.55	PASS	70-125
N027430-002B-PS	PS	1	69518.5	78977.5	88.023	PASS	70-125	38734.4	53389.2	72.55	PASS	70-125
N027430-002B-PS	PS	5	80186.6	78977.5	101.53	PASS	70-125	48967.4	53389.2	91.72	PASS	70-125
N027430-002B-MS	MS	1	69729.3	78977.5	88.29	PASS	70-125	38038.4	53389.2	71.25	PASS	70-125
N027430-002B-MS	MS	5	78812	78977.5	99.79	PASS	70-125	49955.9	53389.2	93.57	PASS	70-125
N027430-002B-MSD	MSD	1	68000.2	78977.5	86.1	PASS	70-125	37275.5	53389.2	69.82	NR!	70-125
CCV1	CCV	1	87832.7	78977.5	111.21	PASS	70-125	59610.6	53389.2	111.65	PASS	70-125
CCB1	CCB	1	85622.1	78977.5	108.41	PASS	70-125	58449.6	53389.2	109.48	PASS	70-125
N027430-002B-MSD	MSD	5	78087.5	78977.5	98.87	PASS	70-125	48557.6	53389.2	90.95	PASS	70-125
N027430-004B	SAMP	1	86979.3	78977.5	110.13	PASS	70-125	57070.3	53389.2	106.89	PASS	70-125
N027430-004B	SAMP	5	88385	78977.5	111.91	PASS	70-125	58185.6	53389.2	108.98	PASS	70-125
N027430-006B	SAMP	1	74519.2	78977.5	94.35	PASS	70-125	48334.5	53389.2	90.53	PASS	70-125
N027430-006B	SAMP	5	81493.9	78977.5	103.19	PASS	70-125	54682.3	53389.2	102.42	PASS	70-125
N027430-008B	SAMP	1	71483.7	78977.5	90.51	PASS	70-125	43307.2	53389.2	81.12	PASS	70-125
N027430-008B	SAMP	5	81975.9	78977.5	103.8	PASS	70-125	53015.7	53389.2	99.3	PASS	70-125
N027430-012B	SAMP	1	69057	78977.5	87.44	PASS	70-125	39435.1	53389.2	73.86	PASS	70-125
N027430-012B	SAMP	5	78387.7	78977.5	99.25	PASS	70-125	50275.9	53389.2	94.17	PASS	70-125
N027430-013B	SAMP	1	72190.4	78977.5	91.41	PASS	70-125	43213.7	53389.2	80.94	PASS	70-125
CCV2	CCV	1	85390.8	78977.5	108.12	PASS	70-125	57997.2	53389.2	108.63	PASS	70-125
CCB2	CCB	1	81890.3	78977.5	103.69	PASS	70-125	56226.3	53389.2	105.31	PASS	70-125
N027430-013B	SAMP	5	75478.8	78977.5	95.57	PASS	70-125	49276.2	53389.2	92.3	PASS	70-125
N027430-014B	SAMP	1	63046.4	78977.5	79.83	PASS	70-125	36948.2	53389.2	69.21	NR!	70-125

INTERNAL STANDARD: 171219B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027430-014B	SAMP	5	74533.7	78977.5	94.37	PASS	70-125	47700.5	53389.2	89.34	PASS	70-125
N027430-015B	SAMP	1	62778.9	78977.5	79.49	PASS	70-125	35591.8	53389.2	66.66	NR!	70-125
N027430-015B	SAMP	5	68234.4	78977.5	86.4	PASS	70-125	43919.9	53389.2	82.26	PASS	70-125
N027430-016B	SAMP	1	58370.7	78977.5	73.91	PASS	70-125	33941.6	53389.2	63.57	NR!	70-125
N027430-016B	SAMP	5	63642.3	78977.5	80.58	PASS	70-125	42028.4	53389.2	78.72	PASS	70-125
N027430-017B	SAMP	1	56664.2	78977.5	71.75	PASS	70-125	29918.2	53389.2	56.038	NR!	70-125
N027430-017B	SAMP	5	84868.1	78977.5	107.46	PASS	70-125	49939.4	53389.2	93.54	PASS	70-125
N027430-018B	SAMP	1	56983.6	78977.5	72.15	PASS	70-125	26136.1	53389.2	48.95	NR!	70-125
CCV3	CCV	1	60609.9	78977.5	76.74	PASS	70-125	43409.8	53389.2	81.31	PASS	70-125
CCB3	CCB	1	62232.7	78977.5	78.8	PASS	70-125	43762.8	53389.2	81.97	PASS	70-125
N027430-018B	SAMP	5	79341	78977.5	100.46	PASS	70-125	44655	53389.2	83.64	PASS	70-125
N027430-020B	SAMP	1	91094.7	78977.5	115.34	PASS	70-125	51034.8	53389.2	95.59	PASS	70-125
N027430-020B	SAMP	5	85816.3	78977.5	108.66	PASS	70-125	53053.5	53389.2	99.37	PASS	70-125
N027430-002B	SAMP	1	52385.3	78977.5	66.33	NR!	70-125	29323.7	53389.2	54.92	NR!	70-125
N027430-002B-MSD	MSD	1	57753.9	78977.5	73.13	PASS	70-125	31184.9	53389.2	58.41	NR!	70-125
N027430-006B	SAMP	1	71809.7	78977.5	90.92	PASS	70-125	48081.3	53389.2	90.058	PASS	70-125
N027430-018B	SAMP	25	66602.6	78977.5	84.33	PASS	70-125	41259.5	53389.2	77.28	PASS	70-125
CCV4	CCV	1	63631.1	78977.5	80.57	PASS	70-125	44299.8	53389.2	82.98	PASS	70-125
CCB4	CCB	1	61127.4	78977.5	77.4	PASS	70-125	43124.5	53389.2	80.77	PASS	70-125
LLCCV1	CCV2	1	61817.6	78977.5	78.27	PASS	70-125	44219.6	53389.2	82.82	PASS	70-125
ICSA2	ICSA	1	77109.6	78977.5	97.63	PASS	70-125	47987.8	53389.2	89.88	PASS	70-125
ICSAB2	ICSAB	1	75819.3	78977.5	96.001	PASS	70-125	47932.4	53389.2	89.78	PASS	70-125

INTERNAL STANDARD: 171219B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	62963.1	62963.1	100	PASS	70-125	1693983.8	1693983.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	62065.2	62963.1	98.57	PASS	70-125	1688177.2	1693983.8	99.66	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	60656.8	62963.1	96.34	PASS	70-125	1643831.8	1693983.8	97.039	PASS	70-125
Std3-5/50 ppb	ICAL	1	59227	62963.1	94.066	PASS	70-125	1626802	1693983.8	96.034	PASS	70-125
Std4-10/100 ppb	ICAL	1	57718.2	62963.1	91.67	PASS	70-125	1606315.6	1693983.8	94.82	PASS	70-125
Std5-20/200 ppb	ICAL	1	56926.7	62963.1	90.41	PASS	70-125	1582386.9	1693983.8	93.41	PASS	70-125
Std6-40/400 ppb	ICAL	1	56013.6	62963.1	88.96	PASS	70-125	1556812.9	1693983.8	91.9	PASS	70-125
Std7-100/1000 ppb	ICAL	1	55351.5	62963.1	87.91	PASS	70-125	1528897.9	1693983.8	90.25	PASS	70-125
Std8-200/2000 ppb	ICAL	1	53411.4	62963.1	84.83	PASS	70-125	1475501	1693983.8	87.1	PASS	70-125
ICV	ICV	1	62831.4	62963.1	99.79	PASS	70-125	1781513.8	1693983.8	105.17	PASS	70-125
ICB	ICB	1	50920.1	62963.1	80.87	PASS	70-125	1471989.3	1693983.8	86.9	PASS	70-125
LLICV	CCV1	1	51462	62963.1	81.73	PASS	70-125	1452270.8	1693983.8	85.73	PASS	70-125
ICSA1	ICSA	1	50705.1	62963.1	80.53	PASS	70-125	1368700.1	1693983.8	80.8	PASS	70-125
ICSAB1	ICSAB	1	49447.7	62963.1	78.53	PASS	70-125	1407963.4	1693983.8	83.12	PASS	70-125
LLICV	CCV1	1	57148.3	62963.1	90.76	PASS	70-125	1514615.2	1693983.8	89.41	PASS	70-125
MB-66020	MBLK	1	48960.8	62963.1	77.76	PASS	70-125	1421396.4	1693983.8	83.91	PASS	70-125
LCS-66020	LCS	1	60641.1	62963.1	96.31	PASS	70-125	1717805.7	1693983.8	101.41	PASS	70-125
N027430-002B	SAMP	1	31024.7	62963.1	49.27	NR!	70-125	839709.6	1693983.8	49.57	NR!	70-125
N027430-002B	SAMP	5	46407.9	62963.1	73.71	PASS	70-125	1272783.9	1693983.8	75.14	PASS	70-125
N027430-002B	SAMP	25	59153.3	62963.1	93.95	PASS	70-125	1519356.6	1693983.8	89.69	PASS	70-125
N027430-002B-PS	PS	1	40186.9	62963.1	63.83	NR!	70-125	1009539.8	1693983.8	59.6	NR!	70-125
N027430-002B-PS	PS	5	55152.6	62963.1	87.6	PASS	70-125	1407045.8	1693983.8	83.061	PASS	70-125
N027430-002B-MS	MS	1	39914.2	62963.1	63.39	NR!	70-125	990160.5	1693983.8	58.45	NR!	70-125
N027430-002B-MS	MS	5	55745.8	62963.1	88.54	PASS	70-125	1404806	1693983.8	82.93	PASS	70-125
N027430-002B-MSD	MSD	1	39122.1	62963.1	62.13	NR!	70-125	977205.8	1693983.8	57.69	NR!	70-125
CCV1	CCV	1	66695.5	62963.1	105.93	PASS	70-125	1906975.9	1693983.8	112.57	PASS	70-125
CCB1	CCB	1	67592.4	62963.1	107.35	PASS	70-125	1866990.2	1693983.8	110.21	PASS	70-125
N027430-002B-MSD	MSD	5	53033.6	62963.1	84.23	PASS	70-125	1371066.7	1693983.8	80.94	PASS	70-125
N027430-004B	SAMP	1	63537.5	62963.1	100.91	PASS	70-125	1646294.7	1693983.8	97.18	PASS	70-125
N027430-004B	SAMP	5	66629.9	62963.1	105.82	PASS	70-125	1747318.4	1693983.8	103.15	PASS	70-125
N027430-006B	SAMP	1	53531.8	62963.1	85.021	PASS	70-125	1483631.7	1693983.8	87.58	PASS	70-125
N027430-006B	SAMP	5	63673.4	62963.1	101.13	PASS	70-125	1686723.2	1693983.8	99.57	PASS	70-125
N027430-008B	SAMP	1	48217.6	62963.1	76.58	PASS	70-125	1255337.9	1693983.8	74.11	PASS	70-125
N027430-008B	SAMP	5	59298.3	62963.1	94.18	PASS	70-125	1557691.4	1693983.8	91.95	PASS	70-125
N027430-012B	SAMP	1	41943.6	62963.1	66.62	NR!	70-125	1085692.5	1693983.8	64.091	NR!	70-125
N027430-012B	SAMP	5	54920.9	62963.1	87.23	PASS	70-125	1477259.6	1693983.8	87.21	PASS	70-125
N027430-013B	SAMP	1	45963.3	62963.1	73	PASS	70-125	1211780.3	1693983.8	71.53	PASS	70-125
CCV2	CCV	1	64458.6	62963.1	102.38	PASS	70-125	1852498.2	1693983.8	109.36	PASS	70-125
CCB2	CCB	1	63410.4	62963.1	100.71	PASS	70-125	1789864.7	1693983.8	105.66	PASS	70-125
N027430-013B	SAMP	5	54492.7	62963.1	86.55	PASS	70-125	1463553.3	1693983.8	86.4	PASS	70-125
N027430-014B	SAMP	1	38779.1	62963.1	61.59	NR!	70-125	991488.6	1693983.8	58.53	NR!	70-125

INTERNAL STANDARD: 171219B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027430-014B	SAMP	5	51976.8	62963.1	82.55	PASS	70-125	1416653.1	1693983.8	83.63	PASS	70-125
N027430-015B	SAMP	1	36644.1	62963.1	58.2	NR!	70-125	952492.1	1693983.8	56.23	NR!	70-125
N027430-015B	SAMP	5	48272.1	62963.1	76.67	PASS	70-125	1313169	1693983.8	77.52	PASS	70-125
N027430-016B	SAMP	1	36269.9	62963.1	57.61	NR!	70-125	931080.8	1693983.8	54.96	NR!	70-125
N027430-016B	SAMP	5	47383.9	62963.1	75.26	PASS	70-125	1246193.4	1693983.8	73.57	PASS	70-125
N027430-017B	SAMP	1	34479.4	62963.1	54.76	NR!	70-125	840801.7	1693983.8	49.63	NR!	70-125
N027430-017B	SAMP	5	53998.9	62963.1	85.76	PASS	70-125	1523061.7	1693983.8	89.91	PASS	70-125
N027430-018B	SAMP	1	24645.9	62963.1	39.14	NR!	70-125	720433.3	1693983.8	42.53	NR!	70-125
CCV3	CCV	1	49258.7	62963.1	78.23	PASS	70-125	1379483.2	1693983.8	81.43	PASS	70-125
CCB3	CCB	1	51192.1	62963.1	81.3	PASS	70-125	1385098.4	1693983.8	81.77	PASS	70-125
N027430-018B	SAMP	5	43844	62963.1	69.63	NR!	70-125	1381554	1693983.8	81.56	PASS	70-125
N027430-020B	SAMP	1	53111.3	62963.1	84.35	PASS	70-125	1563624.7	1693983.8	92.3	PASS	70-125
N027430-020B	SAMP	5	54624.1	62963.1	86.76	PASS	70-125	1767687.3	1693983.8	104.35	PASS	70-125
N027430-002B	SAMP	1	27288	62963.1	43.34	NR!	70-125	813259.7	1693983.8	48.009	NR!	70-125
N027430-002B-MSD	MSD	1	30648.4	62963.1	48.68	NR!	70-125	874513.3	1693983.8	51.62	NR!	70-125
N027430-006B	SAMP	1	47778.3	62963.1	75.88	PASS	70-125	1506262.1	1693983.8	88.92	PASS	70-125
N027430-018B	SAMP	25	43573.3	62963.1	69.2	NR!	70-125	1246370.9	1693983.8	73.58	PASS	70-125
CCV4	CCV	1	51883.2	62963.1	82.4	PASS	70-125	1403482.2	1693983.8	82.85	PASS	70-125
CCB4	CCB	1	49258.5	62963.1	78.23	PASS	70-125	1371556.2	1693983.8	80.97	PASS	70-125
LLCCV1	CCV2	1	50880.2	62963.1	80.81	PASS	70-125	1395677.8	1693983.8	82.39	PASS	70-125
ICSA2	ICSA	1	62099.5	62963.1	98.63	PASS	70-125	1503655.8	1693983.8	88.76	PASS	70-125
ICSAB2	ICSAB	1	60607.2	62963.1	96.26	PASS	70-125	1483045.4	1693983.8	87.55	PASS	70-125

INTERNAL STANDARD: 171220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	80026.1	80026.1	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	83729.5	80026.1	104.63	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	82030.9	80026.1	102.51	PASS	70-125
Std3-5/50 ppb	ICAL	1	82674	80026.1	103.31	PASS	70-125
Std4-10/100 ppb	ICAL	1	81502	80026.1	101.84	PASS	70-125
Std5-20/200 ppb	ICAL	1	78272.6	80026.1	97.81	PASS	70-125
Std6-40/400 ppb	ICAL	1	77364.2	80026.1	96.67	PASS	70-125
Std7-100/1000 ppb	ICAL	1	75878.8	80026.1	94.82	PASS	70-125
Std8-200/2000 ppb	ICAL	1	73386.3	80026.1	91.7	PASS	70-125
ICV	ICV	1	87124.5	80026.1	108.87	PASS	70-125
ICB	ICB	1	73432.3	80026.1	91.76	PASS	70-125
LLICV	CCV1	1	70814.1	80026.1	88.49	PASS	70-125
ICSA1	ICSA	1	63373.6	80026.1	79.19	PASS	70-125
ICSAB1	ICSAB	1	75429.7	80026.1	94.26	PASS	70-125
LLICV	CCV1	1	67442	80026.1	84.28	PASS	70-125
CCV1	CCV	1	76199.2	80026.1	95.22	PASS	70-125
CCB1	CCB	1	71894	80026.1	89.84	PASS	70-125
CCV2	CCV	1	92019.8	80026.1	114.99	PASS	70-125
CCB2	CCB	1	88320.8	80026.1	110.36	PASS	70-125
CCV3	CCV	1	73868.3	80026.1	92.31	PASS	70-125
CCB3	CCB	1	72090.6	80026.1	90.084	PASS	70-125
LLCCV1	CCV2	1	75979.4	80026.1	94.94	PASS	70-125
ICSA2	ICSA	1	70685.9	80026.1	88.33	PASS	70-125
ICSAB2	ICSAB	1	63967	80026.1	79.93	PASS	70-125
CCV4	CCV	1	74498.6	80026.1	93.093	PASS	70-125
CCB4	CCB	1	70534	80026.1	88.14	PASS	70-125
N027430-018B	SAMP	25	62415.6	80026.1	77.99	PASS	70-125
CCV5	CCV	1	74899.9	80026.1	93.59	PASS	70-125
CCB5	CCB	1	70671.4	80026.1	88.31	PASS	70-125
LLCCV2	CCV2	1	74736.8	80026.1	93.39	PASS	70-125
ICSA3	ICSA	1	64316.3	80026.1	80.37	PASS	70-125
ICSAB3	ICSAB	1	59026.5	80026.1	73.76	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N027430
Test Method: EPA 6020
Analysis Date: 12/19/2017

Matrix: Groundwater
Batch No.: 66020

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr & Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027430-002B DT 25X	Arsenic	ug/L	2.077801	NA	2.214615	6.18%	10
N027430-002B DT 5X	Chromium	ug/L	4.079344	NA	3.545633	15.05%	10
N027430-002B DT 25X	Manganese	ug/L	366.0267	PASS	335.7654	9.01%	10
N027430-002B DT 25X	Molybdenum	ug/L	252.7964	PASS	253.7041	0.36%	10
N027430-002B DT 25X	Selenium	ug/L	0.803246	NA	0.270273	197.20%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N027430-002B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120962**
Client ID:	**ZZZZZZ**	Batch ID: **66020**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2873405**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.249	0.50	10.00	2.215	110	80	120				
Manganese	446.178	2.5	100.0	335.8	110	80	120				
Molybdenum	278.153	2.5	10.00	253.7	244	80	120				S
Selenium	9.572	2.5	10.00	0.2703	93.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N027430-002B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	120962
Client ID:	ZZZZZZ	Batch ID:	66020	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2873347

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.690	1.0	10.00	3.546	91.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

January 09, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027430

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 07, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburcaw for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

ASSET Laboratories **Date:** *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027430

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Subcontracted Analyses:

Oxygen/Deuterium was subcontracted to Zymax- Pittsburg,PA.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (3.5 ug/L) and hexavalent chromium (0 ug/L) for sample N027430-002 (MW-49-275-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (1.7 ug/L) and hexavalent chromium (0 ug/L) for sample N027430-012 (MW-33-040-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Dilution was necessary for samples N027430-002, -012, -014, -017 and -018 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 300.0:

Dilution was necessary for some samples due to precipitation upon the addition of eluent.

Matrix Spike (MS) is outside recovery criteria for Bromide in QC sample N027430-004CMS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N027430-002B-MS1 and N027430-002B-MSD1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N027430-002B-MS1 and N027430-002B-MSD1 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N027430-004B-MS2 and N027430-004B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Molybdenum in QC samples N027430-002B-MS and N027430-002B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Manganese in QC samples N027430-002B-MS and N027430-002B-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary on some analytes for samples N027430-002, -012, -014, -015, -016, -017 and -018 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Because the results for total dissolved chromium (3.5 ug/L) and hexavalent chromium (0 ug/L) for sample N027430-002 (MW-49-275-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 3.4 and 0.07 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (1.7 ug/L) and hexavalent chromium (0 ug/L) for sample N027430-012 (MW-33-040-Q417) are discrepant, sample from both the total dissolved

chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.5 and 0 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

ASSET Laboratories

Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027430
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027430-001A	MW-49-275-EB-Q417	Groundwater	12/7/2017 1:15:00 PM	12/7/2017	12/22/2017
N027430-002A	MW-49-275-Q417	Groundwater	12/7/2017 1:47:00 PM	12/7/2017	12/22/2017
N027430-002B	MW-49-275-Q417	Groundwater	12/7/2017 1:47:00 PM	12/7/2017	12/22/2017
N027430-002C	MW-49-275-Q417	Groundwater	12/7/2017 1:47:00 PM	12/7/2017	12/22/2017
N027430-002D	MW-49-275-Q417	Groundwater	12/7/2017 1:47:00 PM	12/7/2017	12/22/2017
N027430-003A	MW-29-EB-Q417	Groundwater	12/7/2017 12:20:00 PM	12/7/2017	12/22/2017
N027430-004A	MW-29-Q417	Groundwater	12/7/2017 1:00:00 PM	12/7/2017	12/22/2017
N027430-004B	MW-29-Q417	Groundwater	12/7/2017 1:00:00 PM	12/7/2017	12/22/2017
N027430-004C	MW-29-Q417	Groundwater	12/7/2017 1:00:00 PM	12/7/2017	12/22/2017
N027430-004D	MW-29-Q417	Groundwater	12/7/2017 1:00:00 PM	12/7/2017	12/22/2017
N027430-005A	MW-28-025-EB-Q417	Groundwater	12/7/2017 11:25:00 AM	12/7/2017	12/22/2017
N027430-006A	MW-28-025-Q417	Groundwater	12/7/2017 12:01:00 PM	12/7/2017	12/22/2017
N027430-006B	MW-28-025-Q417	Groundwater	12/7/2017 12:01:00 PM	12/7/2017	12/22/2017
N027430-006C	MW-28-025-Q417	Groundwater	12/7/2017 12:01:00 PM	12/7/2017	12/22/2017
N027430-006D	MW-28-025-Q417	Groundwater	12/7/2017 12:01:00 PM	12/7/2017	12/22/2017
N027430-007A	MW-28-090-EB-Q417	Groundwater	12/7/2017 12:20:00 PM	12/7/2017	12/22/2017
N027430-008A	MW-28-090-Q417	Groundwater	12/7/2017 12:10:00 PM	12/7/2017	12/22/2017
N027430-008B	MW-28-090-Q417	Groundwater	12/7/2017 12:10:00 PM	12/7/2017	12/22/2017
N027430-008C	MW-28-090-Q417	Groundwater	12/7/2017 12:10:00 PM	12/7/2017	12/22/2017
N027430-008D	MW-28-090-Q417	Groundwater	12/7/2017 12:10:00 PM	12/7/2017	12/22/2017
N027430-009A	MW-723-Q417	Groundwater	12/7/2017 3:25:00 PM	12/7/2017	12/22/2017
N027430-010A	MW-724-Q417	Groundwater	12/7/2017 3:30:00 PM	12/7/2017	12/22/2017
N027430-011A	MW-33-040-EB-Q417	Groundwater	12/7/2017 9:15:00 AM	12/7/2017	12/22/2017
N027430-012A	MW-33-040-Q417	Groundwater	12/7/2017 9:55:00 AM	12/7/2017	12/22/2017
N027430-012B	MW-33-040-Q417	Groundwater	12/7/2017 9:55:00 AM	12/7/2017	12/22/2017
N027430-012C	MW-33-040-Q417	Groundwater	12/7/2017 9:55:00 AM	12/7/2017	12/22/2017
N027430-012D	MW-33-040-Q417	Groundwater	12/7/2017 9:55:00 AM	12/7/2017	12/22/2017
N027430-012E	MW-33-040-Q417	Groundwater	12/7/2017 9:55:00 AM	12/7/2017	12/22/2017
N027430-013A	MW-33-090-Q417	Groundwater	12/7/2017 8:47:00 AM	12/7/2017	12/22/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027430
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027430-013B	MW-33-090-Q417	Groundwater	12/7/2017 8:47:00 AM	12/7/2017	12/22/2017
N027430-013C	MW-33-090-Q417	Groundwater	12/7/2017 8:47:00 AM	12/7/2017	12/22/2017
N027430-013D	MW-33-090-Q417	Groundwater	12/7/2017 8:47:00 AM	12/7/2017	12/22/2017
N027430-013E	MW-33-090-Q417	Groundwater	12/7/2017 8:47:00 AM	12/7/2017	12/22/2017
N027430-014A	MW-33-150-Q417	Groundwater	12/7/2017 9:44:00 AM	12/7/2017	12/22/2017
N027430-014B	MW-33-150-Q417	Groundwater	12/7/2017 9:44:00 AM	12/7/2017	12/22/2017
N027430-014C	MW-33-150-Q417	Groundwater	12/7/2017 9:44:00 AM	12/7/2017	12/22/2017
N027430-014D	MW-33-150-Q417	Groundwater	12/7/2017 9:44:00 AM	12/7/2017	12/22/2017
N027430-014E	MW-33-150-Q417	Groundwater	12/7/2017 9:44:00 AM	12/7/2017	12/22/2017
N027430-015A	MW-33-210-Q417	Groundwater	12/7/2017 9:00:00 AM	12/7/2017	12/22/2017
N027430-015B	MW-33-210-Q417	Groundwater	12/7/2017 9:00:00 AM	12/7/2017	12/22/2017
N027430-015C	MW-33-210-Q417	Groundwater	12/7/2017 9:00:00 AM	12/7/2017	12/22/2017
N027430-015D	MW-33-210-Q417	Groundwater	12/7/2017 9:00:00 AM	12/7/2017	12/22/2017
N027430-015E	MW-33-210-Q417	Groundwater	12/7/2017 9:00:00 AM	12/7/2017	12/22/2017
N027430-016A	MW-46-175-1217	Groundwater	12/7/2017 10:44:00 AM	12/7/2017	12/22/2017
N027430-016B	MW-46-175-1217	Groundwater	12/7/2017 10:44:00 AM	12/7/2017	12/22/2017
N027430-016C	MW-46-175-1217	Groundwater	12/7/2017 10:44:00 AM	12/7/2017	12/22/2017
N027430-016D	MW-46-175-1217	Groundwater	12/7/2017 10:44:00 AM	12/7/2017	12/22/2017
N027430-016E	MW-46-175-1217	Groundwater	12/7/2017 10:44:00 AM	12/7/2017	12/22/2017
N027430-017A	MW-46-205-Q417	Groundwater	12/7/2017 10:45:00 AM	12/7/2017	12/22/2017
N027430-017B	MW-46-205-Q417	Groundwater	12/7/2017 10:45:00 AM	12/7/2017	12/22/2017
N027430-017C	MW-46-205-Q417	Groundwater	12/7/2017 10:45:00 AM	12/7/2017	12/22/2017
N027430-018A	MW-49-365-Q417	Groundwater	12/7/2017 1:05:00 PM	12/7/2017	12/22/2017
N027430-018B	MW-49-365-Q417	Groundwater	12/7/2017 1:05:00 PM	12/7/2017	12/22/2017
N027430-018C	MW-49-365-Q417	Groundwater	12/7/2017 1:05:00 PM	12/7/2017	12/22/2017
N027430-018D	MW-49-365-Q417	Groundwater	12/7/2017 1:05:00 PM	12/7/2017	12/22/2017
N027430-019A	MW-722-Q417	Groundwater	12/7/2017 3:30:00 PM	12/7/2017	12/22/2017
N027430-020A	TW-02D-1217	Groundwater	12/7/2017 12:58:00 PM	12/7/2017	12/22/2017
N027430-020B	TW-02D-1217	Groundwater	12/7/2017 12:58:00 PM	12/7/2017	12/22/2017
N027430-020C	TW-02D-1217	Groundwater	12/7/2017 12:58:00 PM	12/7/2017	12/22/2017

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-275-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208F**	QC Batch: **R120747**			PrepDate			Analyst: **LR**
Specific Conductance	18000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	1400	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	5400	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 8:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	7700	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-1217
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-365-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	25000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-1217
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:58:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	4800	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N027429-005DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120747
Client ID:	ZZZZZZ	Batch ID:	R120747	TestNo:	EPA 120.1			Analysis Date:	12/8/2017	SeqNo:	2860676

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	15840.000	0.10						15870	0.189	10	

Sample ID	N027430-002CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120747
Client ID:	ZZZZZZ	Batch ID:	R120747	TestNo:	EPA 120.1			Analysis Date:	12/8/2017	SeqNo:	2860691

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	17930.000	0.10						17890	0.223	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N027430-018CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120750
Client ID:	ZZZZZZ	Batch ID:	R120750	TestNo:	EPA 120.1			Analysis Date:	12/8/2017	SeqNo:	2860752

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	24900.000	0.10						24700	0.806	10	

Sample ID	N027459-003CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120750
Client ID:	ZZZZZZ	Batch ID:	R120750	TestNo:	EPA 120.1			Analysis Date:	12/8/2017	SeqNo:	2860769

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	11670.000	0.10						11690	0.171	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-275-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**			PrepDate	**12/12/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	14000	100	100		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**			PrepDate	**12/12/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	970	10	10		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**				PrepDate	**12/12/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	780	10	10		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**			PrepDate	**12/12/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3900	50	50		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**			PrepDate	**12/12/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	8400	100	100		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 8:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**			PrepDate	**12/12/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	5700	50	50		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171212F**	QC Batch: **66025**			PrepDate	**12/12/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	9000	100	100		mg/L	1	12/12/2017 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	11000	100	100		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-1217
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	10000	100	100		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	12000	100	100		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-365-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	22000	200	200		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-1217
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:58:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3300	33	33		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-66025	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/12/2017	RunNo:	120818
Client ID:	LCSW	Batch ID:	66025	TestNo:	SM2540C			Analysis Date:	12/12/2017	SeqNo:	2865479

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	936.000	10	1000	0	93.6	80	120				

Sample ID	MB-66025	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/12/2017	RunNo:	120818
Client ID:	PBW	Batch ID:	66025	TestNo:	SM2540C			Analysis Date:	12/12/2017	SeqNo:	2865480

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N027430-002CDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/12/2017	RunNo:	120818
Client ID:	ZZZZZZ	Batch ID:	66025	TestNo:	SM2540C			Analysis Date:	12/12/2017	SeqNo:	2865485

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	14560.000	100						13930	4.42	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66055** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/13/2017** RunNo: **120820**
Client ID: **LCSW** Batch ID: **66055** TestNo: **SM2540C** Analysis Date: **12/13/2017** SeqNo: **2865495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	953.000	10	1000	0	95.3	80	120				

Sample ID **MB-66055** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/13/2017** RunNo: **120820**
Client ID: **PBW** Batch ID: **66055** TestNo: **SM2540C** Analysis Date: **12/13/2017** SeqNo: **2865496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N027430-018CDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/13/2017** RunNo: **120820**
Client ID: **ZZZZZZ** Batch ID: **66055** TestNo: **SM2540C** Analysis Date: **12/13/2017** SeqNo: **2865501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	22760.000	200						21820	4.22	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-275-EB-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:15:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 11:07 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-275-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/11/2017 11:45 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	3.5	0.019	1.0		µg/L	1	12/19/2017 06:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-EB-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 12:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_171211A** QC Batch: **R120833** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 12:23 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_171219B** QC Batch: **66020** PrepDate **12/12/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/19/2017 07:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-EB-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 11:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 12:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 01:01 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/19/2017 10:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-EB-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 01:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_171211A** QC Batch: **R120833** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 01:57 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_171219B** QC Batch: **66020** PrepDate **12/12/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/19/2017 07:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-723-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 3:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 02:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-724-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 02:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-EB-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 04:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/11/2017 07:41 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	1.7	0.019	1.0		µg/L	1	12/19/2017 08:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 8:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	5.5	0.17	1.0		µg/L	5	12/11/2017 04:29 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	5.0	0.019	1.0		µg/L	1	12/19/2017 08:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	7.0	0.17	1.0		µg/L	5	12/11/2017 04:48 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	7.2	0.019	1.0		µg/L	1	12/19/2017 08:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A** QC Batch: **R120833**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	14	0.17	1.0		µg/L	5	12/11/2017 05:26 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	15	0.019	1.0		µg/L	1	12/19/2017 08:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-1217
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211B** QC Batch: **R120834**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	11	0.17	1.0		µg/L	5	12/11/2017 09:53 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	11	0.019	1.0		µg/L	1	12/19/2017 09:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211B** QC Batch: **R120834**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/11/2017 10:12 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/19/2017 09:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-365-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211B** QC Batch: **R120834**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/11/2017 10:31 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_171219B** QC Batch: **66020**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/19/2017 09:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-722-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/11/2017 03:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-1217
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:58:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211A**	QC Batch: **R120833**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	110	0.66	4.0		µg/L	20	12/11/2017 02:54 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	93	0.019	1.0		µg/L	1	12/19/2017 09:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R120833**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **PBW**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R120833**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **LCSW**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866007**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.161	0.20	5.000	0	103	90	110				

Sample ID **N027405-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866008**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.424	1.0	5.000	4.203	104	90	110				

Sample ID **N027405-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.452	1.0	5.000	0	109	90	110				

Sample ID **N027405-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120833**
Client ID: **ZZZZZZ**	Batch ID: **R120833**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.692	1.0	5.000	1.529	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027430-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120833**
Client ID: **ZZZZZZ** Batch ID: **R120833** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.068	0.20	1.000	0	107	90	110				

Sample ID **N027430-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120833**
Client ID: **ZZZZZZ** Batch ID: **R120833** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.905	1.0	5.000	0.3715	90.7	90	110				

Sample ID **N027430-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120833**
Client ID: **ZZZZZZ** Batch ID: **R120833** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.074	0.20	1.000	0	107	90	110				

Sample ID **N027430-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120833**
Client ID: **ZZZZZZ** Batch ID: **R120833** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Sample ID **N027430-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120833**
Client ID: **ZZZZZZ** Batch ID: **R120833** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866025**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0	107	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027430-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866027

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.097	0.20	1.000	0	110	90	110				

Sample ID	N027430-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866031

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.056	0.20	1.000	0	106	90	110				

Sample ID	N027430-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866033

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.976	0.20	1.000	0	97.6	90	110				

Sample ID	N027430-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866035

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.057	0.20	1.000	0	106	90	110				

Sample ID	N027430-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866037

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.040	0.20	1.000	0	104	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027430-020AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866039

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	211.092	4.0	100.0	105.8	105	90	110				

Sample ID	N027430-019AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866043

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Sample ID	N027430-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866045

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.068	0.20	1.000	0	107	90	110				

Sample ID	N027430-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866047

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.554	1.0	5.000	5.490	101	90	110				

Sample ID	N027430-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866049

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.171	1.0	5.000	6.955	104	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027430-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866053

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	18.580	1.0	5.000	13.88	94.0	90	110				

Sample ID	N027405-006ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866054

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.215	1.0						4.203	0.273	20	

Sample ID	N027430-020AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866055

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	210.110	4.0	100.0	105.8	104	90	110	211.1	0.466	20	

Sample ID	N027430-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120833
Client ID:	ZZZZZZ	Batch ID:	R120833	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866059

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.371	1.0	5.000	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R120834** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120834**
Client ID: **LCSW** Batch ID: **R120834** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866068**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.175	0.20	5.000	0	104	90	110				

Sample ID **MB-R120834** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120834**
Client ID: **PBW** Batch ID: **R120834** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **N027431-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120834**
Client ID: **ZZZZZZ** Batch ID: **R120834** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9591.600	200	5000	4141	109	90	110				

Sample ID **N027431-006AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120834**
Client ID: **ZZZZZZ** Batch ID: **R120834** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866072**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9630.200	200	5000	4141	110	90	110	9592	0.402	20	

Sample ID **N027428-002ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120834**
Client ID: **ZZZZZZ** Batch ID: **R120834** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	546.890	20						549.7	0.509	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027428-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120834**
Client ID: **ZZZZZZ** Batch ID: **R120834** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1059.800	20	500.0	549.7	102	90	110				

Sample ID **N027428-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120834**
Client ID: **ZZZZZZ** Batch ID: **R120834** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0	108	90	110				

Sample ID **N027430-016AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120834**
Client ID: **ZZZZZZ** Batch ID: **R120834** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866081**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	16.573	1.0	5.000	11.46	102	90	110				

Sample ID **N027430-017AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120834**
Client ID: **ZZZZZZ** Batch ID: **R120834** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.899	1.0	5.000	0.8090	102	90	110				

Sample ID **N027430-018AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120834**
Client ID: **ZZZZZZ** Batch ID: **R120834** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.580	1.0	5.000	0	91.6	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027431-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120834**
Client ID: **ZZZZZZ** Batch ID: **R120834** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866089**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.637	1.0	5.000	0.3545	106	90	110				

Sample ID **N027431-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120834**
Client ID: **ZZZZZZ** Batch ID: **R120834** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866091**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.256	1.0	5.000	0.2550	100	90	110				

Sample ID **N027431-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120834**
Client ID: **ZZZZZZ** Batch ID: **R120834** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866093**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.104	1.0	5.000	0.2855	96.4	90	110				

Sample ID **N027431-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120834**
Client ID: **ZZZZZZ** Batch ID: **R120834** TestNo: **EPA 218.6** Analysis Date: **12/12/2017** SeqNo: **2866095**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2844.640	40	1000	1798	105	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-66020**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120962**
Client ID: **PBW**	Batch ID: **66020**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2873342**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-66020**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120962**
Client ID: **LCSW**	Batch ID: **66020**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2873343**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.165	1.0	10.00	0	102	85	115				

Sample ID **N027430-002B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120962**
Client ID: **ZZZZZZ**	Batch ID: **66020**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2873349**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	13.198	1.0	10.00	3.546	96.5	75	125				

Sample ID **N027430-002B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120962**
Client ID: **ZZZZZZ**	Batch ID: **66020**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2873351**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	13.183	1.0	10.00	3.546	96.4	75	125	13.20	0.112	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-275-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	38	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	460	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	210	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	280	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	420	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 8:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	120	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	58	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	59	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-1217
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	44	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	47	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-365-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	44	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-1217
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:58:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	160	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R120816**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **LCSW**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	98.394	5.0	100.0	0	98.4	85	115				

Sample ID **MB-R120816**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **PBW**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N027430-002CDDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **ZZZZZZ**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865286**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	38.153	5.0						38.15	0	30	

Sample ID **N027431-002CMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **ZZZZZZ**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865300**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	196.787	5.0	100.0	99.40	97.4	75	125				

Sample ID **N027431-002CMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **ZZZZZZ**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	196.787	5.0	100.0	99.40	97.4	75	125	196.8	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-002

Client Sample ID: MW-49-275-Q417
Collection Date: 12/7/2017 1:47:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 12:09 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	8700	18	1000		mg/L	2000	12/15/2017 05:11 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	1400	4.6	100		mg/L	200	12/15/2017 05:26 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-004

Client Sample ID: MW-29-Q417
Collection Date: 12/7/2017 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/12/2017 11:23 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	210	0.46	25		mg/L	50	12/15/2017 01:36 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	140	0.46	10		mg/L	20	12/15/2017 02:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-006

Client Sample ID: MW-28-025-Q417
Collection Date: 12/7/2017 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/12/2017 10:22 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	110	0.18	10		mg/L	20	12/15/2017 05:41 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	270	0.46	10		mg/L	20	12/15/2017 05:41 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-008

Client Sample ID: MW-28-090-Q417
Collection Date: 12/7/2017 12:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 12:55 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	1900	4.6	250		mg/L	500	12/15/2017 06:12 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**				PrepDate			Analyst: **RAB**
Fluoride	1.9	0.032	0.50		mg/L	5	12/13/2017 09:32 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	570	1.1	25		mg/L	50	12/15/2017 06:27 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/12/2017 11:54 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	4000	4.6	250		mg/L	500	12/15/2017 07:13 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Fluoride	12	0.13	2.0		mg/L	20	12/18/2017 10:49 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	1500	4.6	100		mg/L	200	12/15/2017 07:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-013

Client Sample ID: MW-33-090-Q417
Collection Date: 12/7/2017 8:47:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 01:10 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	2900	9.1	500		mg/L	1000	12/15/2017 07:44 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**				PrepDate			Analyst: **RAB**
Fluoride	2.2	0.032	0.50		mg/L	5	12/13/2017 11:19 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	730	2.3	50		mg/L	100	12/15/2017 07:59 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-014

Client Sample ID: MW-33-150-Q417
Collection Date: 12/7/2017 9:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 01:25 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	5100	18	1000		mg/L	2000	12/15/2017 08:14 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**				PrepDate			Analyst: **RAB**
Fluoride	2.4	0.032	0.50		mg/L	5	12/13/2017 11:34 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	840	2.3	50		mg/L	100	12/15/2017 08:29 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-015

Client Sample ID: MW-33-210-Q417
Collection Date: 12/7/2017 9:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 02:11 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	6400	18	1000		mg/L	2000	12/15/2017 08:45 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**				PrepDate			Analyst: **RAB**
Fluoride	1.8	0.032	0.50		mg/L	5	12/13/2017 11:49 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	1200	2.3	50		mg/L	100	12/15/2017 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-016

Client Sample ID: MW-46-175-1217
Collection Date: 12/7/2017 10:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/13/2017 01:41 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	6100	9.1	500		mg/L	1000	12/15/2017 09:15 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	900	2.3	50		mg/L	100	12/15/2017 09:31 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/13/2017 01:56 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	7700	9.1	500		mg/L	1000	12/15/2017 10:17 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	900	2.3	50		mg/L	100	12/15/2017 10:32 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-018

Client Sample ID: MW-49-365-Q417
Collection Date: 12/7/2017 1:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 02:27 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	14000	46	2500		mg/L	5000	12/15/2017 10:47 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	1300	4.6	100		mg/L	200	12/15/2017 11:02 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-020

Client Sample ID: TW-02D-1217
Collection Date: 12/7/2017 12:58:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171212B** QC Batch: **R120771**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 02:42 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Chloride	1800	4.6	250		mg/L	500	12/15/2017 04:09 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214B** QC Batch: **R120854**				PrepDate			Analyst: **RAB**
Sulfate	370	1.1	25		mg/L	50	12/15/2017 04:40 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	LCS-R120771_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120771
Client ID:	LCSW	Batch ID:	R120771	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2863377

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.251	0.50	1.250	0	100	90	110				

Sample ID	MB-R120771_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120771
Client ID:	PBW	Batch ID:	R120771	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2863378

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	N027430-006CDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120771
Client ID:	ZZZZZZ	Batch ID:	R120771	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2863380

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50						0	0	20	

Sample ID	N027430-006CMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120771
Client ID:	ZZZZZZ	Batch ID:	R120771	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2863381

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.003	0.50	1.250	0	80.2	80	120				

Sample ID	N027430-006CMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120771
Client ID:	ZZZZZZ	Batch ID:	R120771	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2863382

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.036	0.50	1.250	0	82.9	80	120	1.003	3.25	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	N027430-004CMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120771
Client ID:	ZZZZZZ	Batch ID:	R120771	TestNo:	EPA 300.0			Analysis Date:	12/12/2017	SeqNo:	2863384

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.799	0.50	1.250	0	63.9	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **LCS-R120854_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **120854**
Client ID: **LCSW** Batch ID: **R120854** TestNo: **EPA 300.0** Analysis Date: **12/15/2017** SeqNo: **2869516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.989	0.50	2.000	0	99.4	90	110				

Sample ID **MB-R120854_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **120854**
Client ID: **PBW** Batch ID: **R120854** TestNo: **EPA 300.0** Analysis Date: **12/15/2017** SeqNo: **2869517**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **N027430-004CDUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **120854**
Client ID: **ZZZZZZ** Batch ID: **R120854** TestNo: **EPA 300.0** Analysis Date: **12/15/2017** SeqNo: **2869519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	209.355	25						210.2	0.398	20	

Sample ID **N027430-004CMS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **120854**
Client ID: **ZZZZZZ** Batch ID: **R120854** TestNo: **EPA 300.0** Analysis Date: **12/15/2017** SeqNo: **2869520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	316.325	25	100.0	210.2	106	80	120				

Sample ID **N027430-004CMSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **120854**
Client ID: **ZZZZZZ** Batch ID: **R120854** TestNo: **EPA 300.0** Analysis Date: **12/15/2017** SeqNo: **2869521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	317.025	25	100.0	210.2	107	80	120	316.3	0.221	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N027430-020CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	ZZZZZZ	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869525

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2813.150	250	1000	1774	104	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	MB-R120803_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120803
Client ID:	PBW	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867952

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID	LCS-R120803_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120803
Client ID:	LCSW	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867953

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.228	0.10	1.250	0	98.2	90	110				

Sample ID	N027430-008CDUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120803
Client ID:	ZZZZZZ	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867959

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.790	0.50						1.929	7.48	20	

Sample ID	N027430-008CMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120803
Client ID:	ZZZZZZ	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867962

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	7.748	0.50	6.250	1.929	93.1	80	120				

Sample ID	N027430-008CMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120803
Client ID:	ZZZZZZ	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867963

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	8.353	0.50	6.250	1.929	103	80	120	7.748	7.51	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	MB-R120937_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	PBW	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872494

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID	LCS-R120937_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	LCSW	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872495

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.181	0.10	1.250	0	94.5	90	110				

Sample ID	N027430-012CDUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872497

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	11.460	2.0						11.66	1.71	20	

Sample ID	N027430-012CMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872498

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	37.536	2.0	25.00	11.66	104	80	120				

Sample ID	N027430-012CMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872499

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	35.016	2.0	25.00	11.66	93.4	80	120	37.54	6.95	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **LCS-R120854_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120854**
Client ID: **LCSW** Batch ID: **R120854** TestNo: **EPA 300.0** Analysis Date: **12/15/2017** SeqNo: **2869546**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.730	0.50	4.000	0	93.3	90	110				

Sample ID **MB-R120854_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120854**
Client ID: **PBW** Batch ID: **R120854** TestNo: **EPA 300.0** Analysis Date: **12/15/2017** SeqNo: **2869547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **N027430-004CDUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120854**
Client ID: **ZZZZZZ** Batch ID: **R120854** TestNo: **EPA 300.0** Analysis Date: **12/15/2017** SeqNo: **2869549**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	139.038	10						139.8	0.532	20	

Sample ID **N027430-004CMS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120854**
Client ID: **ZZZZZZ** Batch ID: **R120854** TestNo: **EPA 300.0** Analysis Date: **12/15/2017** SeqNo: **2869550**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	221.892	10	80.00	139.8	103	80	120				

Sample ID **N027430-004CMSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120854**
Client ID: **ZZZZZZ** Batch ID: **R120854** TestNo: **EPA 300.0** Analysis Date: **12/15/2017** SeqNo: **2869551**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	220.132	10	80.00	139.8	100	80	120	221.9	0.796	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N027430-020CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120854
Client ID:	ZZZZZZ	Batch ID:	R120854	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2869555

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	573.715	25	200.0	373.2	100	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
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ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.30	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 8:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.1	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.6	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.8	0.044	0.10		mg/L	2	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-1217
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.1	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R121010	**MBLK**	**4500N03F_W**	**mg/L**		**121010**
Client ID: **PBW**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876073**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-R121010	**LCS**	**4500N03F_W**	**mg/L**		**121010**
Client ID: **LCSW**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.526	0.050	0.5000	0	105	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027429-007CMS	**MS**	**4500N03F_W**	**mg/L**		**121010**
Client ID: **ZZZZZZ**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.621	0.25	2.500	2.809	112	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027429-007CMSD	**MSD**	**4500N03F_W**	**mg/L**		**121010**
Client ID: **ZZZZZZ**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.484	0.25	2.500	2.809	107	75	125	5.621	2.47	20	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027429-008CDUP	**DUP**	**4500N03F_W**	**mg/L**		**121010**
Client ID: **ZZZZZZ**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.177	0.25						2.951	7.36	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-002

Client Sample ID: MW-49-275-Q417
Collection Date: 12/7/2017 1:47:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	2400	38	100		ug/L	1	12/19/2017 02:46 AM
Calcium	210000	28	500		ug/L	1	12/19/2017 02:46 AM
Iron	53	1.8	20		ug/L	1	12/19/2017 02:46 AM
Magnesium	4700	4.4	100		ug/L	1	12/19/2017 02:46 AM
Sodium	5700000	6600	120000		ug/L	250	12/20/2017 07:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-004

Client Sample ID: MW-29-Q417
Collection Date: 12/7/2017 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	370	38	100		ug/L	1	12/19/2017 03:18 AM
Calcium	70000	28	500		ug/L	1	12/19/2017 03:18 AM
Iron	1000	1.8	20		ug/L	1	12/19/2017 03:18 AM
Magnesium	30000	4.4	100		ug/L	1	12/19/2017 03:18 AM
Sodium	230000	260	5000		ug/L	10	12/20/2017 08:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-006

Client Sample ID: MW-28-025-Q417
Collection Date: 12/7/2017 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	170	38	100		ug/L	1	12/19/2017 03:23 AM
Calcium	93000	28	500		ug/L	1	12/19/2017 03:23 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 03:23 AM
Magnesium	27000	4.4	100		ug/L	1	12/19/2017 03:23 AM
Sodium	110000	260	5000		ug/L	10	12/20/2017 08:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-008

Client Sample ID: MW-28-090-Q417
Collection Date: 12/7/2017 12:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	770	38	100		ug/L	1	12/19/2017 03:28 AM
Calcium	180000	28	500		ug/L	1	12/19/2017 03:28 AM
Iron	500	1.8	20		ug/L	1	12/19/2017 03:28 AM
Magnesium	37000	4.4	100		ug/L	1	12/19/2017 03:28 AM
Sodium	1200000	2600	50000		ug/L	100	12/20/2017 08:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-012

Client Sample ID: MW-33-040-Q417
Collection Date: 12/7/2017 9:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	2200	38	100		ug/L	1	12/19/2017 03:46 AM
Calcium	54000	28	500		ug/L	1	12/19/2017 03:46 AM
Iron	140	1.8	20		ug/L	1	12/19/2017 03:46 AM
Magnesium	72000	4.4	100		ug/L	1	12/19/2017 03:46 AM
Sodium	3000000	2600	50000		ug/L	100	12/20/2017 08:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 8:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**				PrepDate	**12/11/2017**	Analyst: **CEI**
Boron	1100	38	100		ug/L	1	12/19/2017 03:53 AM
Calcium	260000	28	500		ug/L	1	12/19/2017 03:53 AM
Iron	20	1.8	20		ug/L	1	12/19/2017 03:53 AM
Magnesium	24000	4.4	100		ug/L	1	12/19/2017 03:53 AM
Sodium	1900000	2600	50000		ug/L	100	12/20/2017 08:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-014

Client Sample ID: MW-33-150-Q417
Collection Date: 12/7/2017 9:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1000	38	100		ug/L	1	12/19/2017 04:00 AM
Calcium	370000	28	500		ug/L	1	12/19/2017 04:00 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 04:00 AM
Magnesium	41000	4.4	100		ug/L	1	12/19/2017 04:00 AM
Sodium	3100000	2600	50000		ug/L	100	12/20/2017 08:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-015

Client Sample ID: MW-33-210-Q417
Collection Date: 12/7/2017 9:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1400	38	100		ug/L	1	12/19/2017 04:07 AM
Calcium	540000	140	2500		ug/L	5	12/19/2017 12:02 PM
Iron	68	1.8	20		ug/L	1	12/19/2017 04:07 AM
Magnesium	52000	4.4	100		ug/L	1	12/19/2017 04:07 AM
Sodium	3800000	6600	120000		ug/L	250	12/20/2017 08:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-016

Client Sample ID: MW-46-175-1217
Collection Date: 12/7/2017 10:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1900	38	100		ug/L	1	12/19/2017 04:14 AM
Calcium	98000	28	500		ug/L	1	12/19/2017 04:14 AM
Iron	70	1.8	20		ug/L	1	12/19/2017 04:14 AM
Magnesium	2600	4.4	100		ug/L	1	12/19/2017 04:14 AM
Sodium	4100000	6600	120000		ug/L	250	12/20/2017 08:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-017

Client Sample ID: MW-46-205-Q417
Collection Date: 12/7/2017 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	3000	38	100		ug/L	1	12/19/2017 04:20 AM
Calcium	100000	28	500		ug/L	1	12/19/2017 04:20 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 04:20 AM
Magnesium	2500	4.4	100		ug/L	1	12/19/2017 04:20 AM
Sodium	5000000	6600	120000		ug/L	250	12/20/2017 09:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-365-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**				PrepDate	**12/11/2017**	Analyst: **CEI**
Boron	3700	38	100		ug/L	1	12/19/2017 04:27 AM
Calcium	320000	28	500		ug/L	1	12/19/2017 04:27 AM
Iron	240	1.8	20		ug/L	1	12/19/2017 04:27 AM
Magnesium	6500	4.4	100		ug/L	1	12/19/2017 04:27 AM
Sodium	8400000	13000	250000		ug/L	500	12/20/2017 09:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-020

Client Sample ID: TW-02D-1217
Collection Date: 12/7/2017 12:58:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	820	38	100		ug/L	1	12/19/2017 04:34 AM
Calcium	160000	28	500		ug/L	1	12/19/2017 04:34 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 04:34 AM
Magnesium	37000	4.4	100		ug/L	1	12/19/2017 04:34 AM
Sodium	1100000	2600	50000		ug/L	100	12/20/2017 09:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-65993**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **PBW**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	48.972	500									
Iron	ND	20									
Magnesium	4.804	100									

Sample ID **LCS1-65993**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **LCSW**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871607**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4518.810	100	5000	0	90.4	85	115				
Calcium	9590.941	500	10000	0	95.9	85	115				
Iron	109.266	20	100.0	0	109	85	115				
Magnesium	9312.753	100	10000	0	93.1	85	115				

Sample ID **N027430-002B-MS1**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6944.229	100	5000	2389	91.1	75	125				
Calcium	214316.917	500	10000	211000	32.8	75	125				S
Iron	120.528	20	100.0	52.84	67.7	75	125				S
Magnesium	11862.775	100	10000	4660	72.0	75	125				S

Sample ID **N027430-002B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6971.693	100	5000	2389	91.7	75	125	6944	0.395	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027430-002B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120920
Client ID:	ZZZZZZ	Batch ID:	65993	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2871612

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	215346.305	500	10000	211000	43.1	75	125	214300	0.479	20	S
Iron	119.359	20	100.0	52.84	66.5	75	125	120.5	0.974	20	S
Magnesium	11837.119	100	10000	4660	71.8	75	125	11860	0.217	20	S

Sample ID	MB-65993	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120973
Client ID:	PBW	Batch ID:	65993	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874508

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	26.536	500									

Sample ID	LCS2-65993	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120973
Client ID:	LCSW	Batch ID:	65993	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874509

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20336.418	500	20000	0	102	85	115				

Sample ID	N027430-004B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120973
Client ID:	ZZZZZZ	Batch ID:	65993	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874522

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	261208.893	5000	20000	226700	172	75	125				S

Sample ID	N027430-004B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120973
Client ID:	ZZZZZZ	Batch ID:	65993	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874523

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	258902.013	5000	20000	226700	161	75	125	261200	0.887	20	S

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-275-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	340	0.28	2.5		µg/L	5	12/19/2017 06:33 PM
Molybdenum	250	0.19	2.5		µg/L	5	12/19/2017 06:33 PM
Selenium	ND	0.14	2.5		µg/L	5	12/19/2017 06:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**				PrepDate	**12/12/2017**	Analyst: **CEI**
Arsenic	9.2	0.025	0.10		µg/L	1	12/19/2017 07:28 PM
Manganese	200	0.28	2.5		µg/L	5	12/19/2017 07:34 PM
Molybdenum	4.8	0.039	0.50		µg/L	1	12/19/2017 07:28 PM
Selenium	ND	0.028	0.50		µg/L	1	12/19/2017 07:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-006

Client Sample ID: MW-28-025-Q417
Collection Date: 12/7/2017 12:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**	Analyst: **CEI**	
Arsenic	0.71	0.025	0.10		µg/L	1	12/19/2017 10:09 PM
Manganese	ND	0.056	0.50		µg/L	1	12/19/2017 10:09 PM
Molybdenum	4.3	0.039	0.50		µg/L	1	12/19/2017 10:09 PM
Selenium	1.2	0.028	0.50		µg/L	1	12/19/2017 10:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-008

Client Sample ID: MW-28-090-Q417
Collection Date: 12/7/2017 12:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Arsenic	1.7	0.025	0.10		µg/L	1	12/19/2017 07:54 PM
Manganese	130	0.056	0.50		µg/L	1	12/19/2017 07:54 PM
Molybdenum	23	0.039	0.50		µg/L	1	12/19/2017 07:54 PM
Selenium	ND	0.028	0.50		µg/L	1	12/19/2017 07:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 9:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**				PrepDate	**12/12/2017**	Analyst: **CEI**
Arsenic	9.7	0.025	0.10		µg/L	1	12/19/2017 08:05 PM
Manganese	14	0.056	0.50		µg/L	1	12/19/2017 08:05 PM
Molybdenum	340	0.19	2.5		µg/L	5	12/19/2017 08:11 PM
Selenium	ND	0.14	2.5		µg/L	5	12/19/2017 08:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 8:47:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**				PrepDate	**12/12/2017**	Analyst: **CEI**
Arsenic	1.1	0.025	0.10		µg/L	1	12/19/2017 08:17 PM
Manganese	5.4	0.056	0.50		µg/L	1	12/19/2017 08:17 PM
Molybdenum	11	0.039	0.50		µg/L	1	12/19/2017 08:17 PM
Selenium	ND	0.028	0.50		µg/L	1	12/19/2017 08:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-014

Client Sample ID: MW-33-150-Q417
Collection Date: 12/7/2017 9:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Arsenic	1.8	0.12	0.50		µg/L	5	12/19/2017 08:44 PM
Manganese	3.8	0.056	0.50		µg/L	1	12/19/2017 08:39 PM
Molybdenum	41	0.19	2.5		µg/L	5	12/19/2017 08:44 PM
Selenium	ND	0.14	2.5		µg/L	5	12/19/2017 08:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027430
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027430-015

Client Sample ID: MW-33-210-Q417
Collection Date: 12/7/2017 9:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Arsenic	1.0	0.12	0.50		µg/L	5	12/19/2017 08:55 PM
Manganese	18	0.056	0.50		µg/L	1	12/19/2017 08:50 PM
Molybdenum	17	0.19	2.5		µg/L	5	12/19/2017 08:55 PM
Selenium	ND	0.14	2.5		µg/L	5	12/19/2017 08:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-1217
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**				PrepDate	**12/12/2017**	Analyst: **CEI**
Manganese	17	0.056	0.50		µg/L	1	12/19/2017 09:01 PM
Molybdenum	180	0.19	2.5		µg/L	5	12/19/2017 09:07 PM
Selenium	ND	0.14	2.5		µg/L	5	12/19/2017 09:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**				PrepDate	**12/12/2017**	Analyst: **CEI**
Manganese	39	0.056	0.50		µg/L	1	12/19/2017 09:12 PM
Molybdenum	320	0.19	2.5		µg/L	5	12/19/2017 09:18 PM
Selenium	ND	0.14	2.5		µg/L	5	12/19/2017 09:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-49-365-Q417
Lab Order:	N027430	**Collection Date:**	12/7/2017 1:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	300	0.28	2.5		µg/L	5	12/19/2017 09:41 PM
Molybdenum	190	0.19	2.5		µg/L	5	12/19/2017 09:41 PM
Selenium	ND	0.69	12		µg/L	25	12/20/2017 09:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *09-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-1217
Lab Order:	N027430	**Collection Date:**	12/7/2017 12:58:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027430-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_171219B**	QC Batch: **66020**				PrepDate	**12/12/2017**	Analyst: **CEI**
Manganese	24	0.056	0.50		µg/L	1	12/19/2017 09:46 PM
Molybdenum	14	0.039	0.50		µg/L	1	12/19/2017 09:46 PM
Selenium	1.4	0.028	0.50		µg/L	1	12/19/2017 09:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66020**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120962**
Client ID: **PBW**	Batch ID: **66020**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2873399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-66020**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120962**
Client ID: **LCSW**	Batch ID: **66020**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2873400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.679	0.10	10.00	0	96.8	85	115				
Manganese	100.074	0.50	100.0	0	100	85	115				
Molybdenum	9.982	0.50	10.00	0	99.8	85	115				
Selenium	9.653	0.50	10.00	0	96.5	85	115				

Sample ID **N027430-002B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120962**
Client ID: **ZZZZZZ**	Batch ID: **66020**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2873407**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.028	0.50	10.00	2.215	108	75	125				
Manganese	467.773	2.5	100.0	335.8	132	75	125				S
Molybdenum	292.655	2.5	10.00	253.7	390	75	125				S
Selenium	9.785	2.5	10.00	0.2703	95.2	75	125				

Sample ID **N027430-002B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **120962**
Client ID: **ZZZZZZ**	Batch ID: **66020**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2873411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.986	0.50	10.00	2.215	118	75	125	13.03	7.09	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027430
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027430-002B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	120962
Client ID:	ZZZZZZ	Batch ID:	66020	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2873411

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	476.720	2.5	100.0	335.8	141	75	125	467.8	1.89	20	S
Molybdenum	301.417	2.5	10.00	253.7	477	75	125	292.7	2.95	20	S
Selenium	11.103	2.5	10.00	0.2703	108	75	125	9.785	12.6	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker	RWQCB ✓	1. Chilled
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec	CalTrans	2. Headspace
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	Others ✓	LEVEL III	3. Container Intact
Title: Geologist II	Phone: 916-786-3302 Fax:		Specify: RWQCB	LEVEL IV	4. Seal Present
Signature: Date: 12/7/2017	Sampled By: Gantt Jeffers		Global ID:	Regulatory	5. IR number 2
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*			Specify State:	6. Method of Cooling: Ice
Project Name: PG&E Topock - GMP	Signature: Date: 12/7/2017				Sample Temp: 3.9°C
Project Number: RC000753.801B					Courier: Tracking No.:

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM; 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3; 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4; 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0); 1 liter poly	Specific Conductance (EPA 120.1); 1 liter poly	Total Dissolved Solids (SM2540C); 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B); 1 liter poly	Fluoride (EPA 300.0); 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027430-01 ✓	MW-49-275-EB-Q417	12/7/2017	13:15		X																			E	1	P	B	
2	-02 ✓	MW-49-275-Q417	12/7/2017	13:47			X	X			X						X		X	X	X	X				E	5	P	BN	
3	-03 ✓	MW-29-EB-Q417	12/7/2017	12:20		X																				E	1	P	B	
4	-04 ✓	MW-29-Q417	12/7/2017	13:00			X		X		X							X	X	X	X	X				E	5	P	BNS	
5	-05 ✓	MW-28-025-EB-Q417	12/7/2017	11:25		X																				E	1	P	B	
6	-06 ✓	MW-28-025-Q417	12/7/2017	12:01			X		X		X							X	X	X	X	X				E	5	P	BNS	
7	-07 ✓	MW-28-090-EB-Q417	12/7/2017	11:20		X																				E	1	P	B	
8	-08 ✓	MW-28-090-Q417	12/7/2017	12:10			X		X		X							X	X	X	X	X	X			E	5	P	BNS	
9	-09 ✓	MW-723-Q417	12/7/2017	15:25		X																				E	1	P	B	
10	-10 ✓	MW-724-Q417	12/7/2017	15:30		X																				E	1	P	B	

Relinquished by (Signature and Printed Name): G. Jeffers	Date/Time: 12.7.17 1626	Received by (Signature and Printed Name):	Date/Time:
Relinquished by (Signature and Printed Name):	Date/Time: 12/7/17 1842	Received by (Signature and Printed Name):	Date/Time: 12/7/17 1842
Relinquished by (Signature and Printed Name):	Date/Time:	Received by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

	A = < 24 Hrs or Same Day TAT
	B = Next Workday
	C = 2 Workdays
	D = 3 Workdays
X	E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis.
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B = (NH4)2SO4/NH4OH		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
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California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓ (Specify: RWQCB)
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition (Y N): 1. Chilled; 2. Headspace; 3. Container Intact; 4. Seal Present; 5. IR number 2
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Global ID: Specify State:
Submitted By: Gantt Jeffers	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	6. Method of Cooling: Ice
Title: Geologist II			Sample Temp: 2-9°C
Signature: Date: 12/7/2017	Sampled By: Gantt Jeffers	Matrix: Ground x Sediment; Potable Soil; NPDES Other Solid; Surface	Courier:
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*		Tracking No.:
Project Name: PG&E Topock - GMP	Signature: Date: 12/7/2017		
Project Number: RC000753.801B			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM — 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3 — 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 — 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3 — 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3 — 500 mL poly	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3 — 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3 — 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4 — 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) — 1 liter poly	Specific Conductance (EPA 120.1) — 1 liter poly	Total Dissolved Solids (SM2540C) — 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) — 1 liter poly	Fluoride (EPA 300.0) — 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027430-11 ✓	MW-33-040-EB-Q417	12/7/2017	9:15		X												X							E	1	P	B	
2	-12 ✓	MW-33-040-Q417	12/7/2017	9:55			X	X	X		X							X	X	X	X	X			E	6	P	BNS	
3	-13 ✓	MW-33-090-Q417	12/7/2017	8:47		X		X	X		X							X	X	X	X	X			E	5	P	BNS	
4	-14 ✓	MW-33-150-Q417	12/7/2017	9:44		X		X	X		X							X	X	X	X	X			E	5	P	BNS	
5	-15 ✓	MW-33-210-Q417	12/7/2017	9:00		X		X	X		X							X	X	X	X	X			E	5	P	BNS	
6	-16 ✓	MW-46-175-Q417	12/7/2017	10:44		X		X			X						X	X	X	X	X				E	5	P	BNS	
7	-17 ✓	MW-46-205-Q417	12/7/2017	10:45		X					X						X	X	X	X	X				E	3	P	BN	
8	-18 ✓	MW-49-365-Q417	12/7/2017	13:05			X	X			X						X	X	X	X	X				E	5	P	BN	
9	-19 ✓	MW-722-Q417	12/7/2017	15:30		X																			E	1	P	B	
10	-20 ✓	TW-02D-Q417	12/7/2017	12:58		X					X						X	X	X	X	X				E	3	P	BN	

Relinquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
G. Jeffers	12.7.17 1626		
			12/7/17 1626
	12/7/17 1642		
			12/7/17 1642

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B = (NH4)2SO4/NH4OH		

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/7/2017	Workorder:	N027430
Rep sample Temp (Deg C):	3.9/2.9	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: N/A Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 12/21/2017

Reviewed By: 12/21/2017

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (760) 781 3338
FAX: (805) 544-8226
Acct #:

Field Sampler: Signed

11-Dec-17

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: OXY_DEUT		
N027430-002D / MW-49-275-Q417	Groundwater	12/7/2017 1:47:00 PM	8OZP	1		
N027430-012E / MW-33-040-Q417	Groundwater	12/7/2017 9:55:00 AM	8OZP	1		
N027430-013E / MW-33-090-Q417	Groundwater	12/7/2017 8:47:00 AM	16OZP	1		
N027430-014E / MW-33-150-Q417	Groundwater	12/7/2017 9:44:00 AM	8OZP	1		
N027430-015E / MW-33-210-Q417	Groundwater	12/7/2017 9:00:00 AM	8OZP	1		
N027430-016E / MW-46-175-~~Q417~~ 1217	Groundwater	12/7/2017 10:44:00 AM	8OZP	1		
N027430-018D / MW-49-365-Q417	Groundwater	12/7/2017 1:05:00 PM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N27430A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Oxygen and Deuterium Stable Isotopes SFIRM. EDD Requirement Labspec7 edata.

Fedex #: 770961567484

	Date/Time		Date/Time
Relinquished by:	12/11/2017 16:00	**Received by:**	
Relinquished by:		**Received by:**	

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-001A	MW-49-275-EB-Q417	12/7/2017 1:15:00 PM	12/21/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-002A	MW-49-275-Q417	12/7/2017 1:47:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-002B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-002C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-002D			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027430-003A	MW-29-EB-Q417	12/7/2017 12:20:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-004A	MW-29-Q417	12/7/2017 1:00:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-004B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-004B	MW-29-Q417	12/7/2017 1:00:00 PM	12/21/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-004C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-004D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-005A	MW-28-025-EB-Q417	12/7/2017 11:25:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-006A	MW-28-025-Q417	12/7/2017 12:01:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-006B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-006C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-006C	MW-28-025-Q417	12/7/2017 12:01:00 PM	12/21/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-006D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-007A	MW-28-090-EB-Q417	12/7/2017 12:20:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-008A	MW-028-090-Q417	12/7/2017 12:10:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-008B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-008C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-008D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-009A	MW-723-Q417	12/7/2017 3:25:00 PM	12/21/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-010A	MW-724-Q417	12/7/2017 3:30:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-011A	MW-33-040-EB-Q417	12/7/2017 9:15:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-012A	MW-33-040-Q417	12/7/2017 9:55:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-012B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-012C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-012D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-012E			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	WW
N027430-013A	MW-33-090-Q417	12/7/2017 8:47:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-013B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-013B	MW-33-090-Q417	12/7/2017 8:47:00 AM	12/21/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-013C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-013D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-013E			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	WW
N027430-014A	MW-33-150-Q417	12/7/2017 9:44:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-014B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-014C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-014C	MW-33-150-Q417	12/7/2017 9:44:00 AM	12/21/2017	Groundwater	SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-014D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-014E			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	WW
N027430-015A	MW-33-210-Q417	12/7/2017 9:00:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-015B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-015C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-015C	MW-33-210-Q417	12/7/2017 9:00:00 AM	12/21/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-015D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-015E			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	WW
N027430-016A	MW-46-175-Q417 1217	12/7/2017 10:44:00 AM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-016B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-016C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-016D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027430-016E			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB

12/27/2017

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-017A	MW-46-205-Q417	12/7/2017 10:45:00 AM	12/21/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-017B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-017C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-018A	MW-49-365-Q417	12/7/2017 1:05:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-018B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-018C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-018C	MW-49-365-Q417	12/7/2017 1:05:00 PM	12/21/2017	Groundwater		Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027430-018D			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027430-019A	MW-722-Q417	12/7/2017 3:30:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-020A	TW-02D-Q417	12/7/2017 12:58:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027430-020B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027430-020C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW

1217

12/27/2017

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027430

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027430-021A	FOLDER	12/21/2017	12/21/2017		EDD	RWQCB	☐	☐	☐	LAB
			12/21/2017		Folder	Folder	☐	☐	☐	LAB
			12/21/2017		Folder	Folder	☐	☐	☐	LAB

nancy@assetlaboratories.com

From: Tina Rice [Tina.Rice@critigen.com]
Sent: Wednesday, December 27, 2017 10:59 AM
To: 'nancy@assetlaboratories.com'
Subject: RE: Data uploaded to EQUIS 12/26/17 Topock

Hey Nancy,

Another batch with a duplicate sample IDs. I updated the EDD and reloaded but could you please update the lab reports as follows:

ClientSampID	NewClientSampID	DateCollected	WorkOrder
MW-46-175-Q417	MW-46-175-1217	12/7/2017	N027430
TW-02D-Q417	TW-02D-1217	12/7/2017	N027430

Thanks!
Tina

From: nancy@assetlaboratories.com [mailto:nancy@assetlaboratories.com]
Sent: Tuesday, December 26, 2017 6:19 PM
To: Jennifer.Singer@arcadis.com; Dan.Bush@arcadis.com
Cc: Daniel Moore <Daniel.Moore@critigen.com>; Tina Rice <Tina.Rice@critigen.com>; Laura.Madsen@arcadis.com; Sean.Maurel@arcadis.com; Kalib Sumter <Kalib.Sumter@critigen.com>; marlon@assetlaboratories.com; Serna, Erica <Erica.Serna@arcadis.com>
Subject: Data uploaded to EQUIS 12/26/17 Topock

N027430–Level 4 PDF uploaded.

Thanks,
Nancy

From: nancy@assetlaboratories.com [mailto:nancy@assetlaboratories.com]
Sent: Friday, December 22, 2017 7:07 PM
To: 'Jennifer.Singer@arcadis.com'; 'Dan.Bush@arcadis.com'
Cc: 'Daniel.Moore@critigen.com'; 'Tina.Rice@critigen.com'; 'Laura.Madsen@arcadis.com'; 'Sean.Maurel@arcadis.com'; 'Kalib Sumter'; 'marlon@assetlaboratories.com'; Serna, Erica
Subject: Data uploaded to EQUIS 12/22/17 Topock

N027430–EDD uploaded.

Thanks,
Nancy

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

From: nancy@assetlaboratories.com [mailto:nancy@assetlaboratories.com]
Sent: Friday, December 22, 2017 6:40 PM
To: 'Jennifer.Singer@arcadis.com'; 'Dan.Bush@arcadis.com'
Cc: 'Daniel.Moore@critigen.com'; 'Tina.Rice@critigen.com'; 'Laura.Madsen@arcadis.com'; 'Sean.Maurel@arcadis.com'; 'Kalib Sumter'; 'marlon@assetlaboratories.com'; Serna, Erica
Subject: Data uploaded to EQUIS 12/22/17 Topock

N027430–Level 2 PDF uploaded.

Thanks,

Nancy Sibucao
Project Manager
Nevada: 3151 W. Post Road, Las Vegas, NV 89118 | P: 702.307.2659 Ext. 412 | F: 702.307.2691
California: 11060 Artesia Blvd., Ste. C, Cerritos, CA 90703 | P: 562.219.7435 | F: 562.219.7436
www.assetlaboratories.com



ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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December 26, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027431

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 07, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liu for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Subcontracted Analyses:

Oxygen/Deuterium was subcontracted to Zymax- Pittsburg,PA.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (3.0 ug/L) and hexavalent chromium (0 ug/L) for sample N027431-002 (MW-62-110-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Dilution was necessary for samples N027431-002, -003 and -004 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 300.0:

Dilution was necessary for samples N027431-002, -003, -004 and -006 due to precipitation upon the addition of eluent.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Bromide in QC samples N027431-005CMS and N027431-005CMSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N027430-002B-MS1 and N027430-002B-MSD1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N027430-002B-MS1 and N027430-002B-MSD1 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N027430-004B-MS2 and N027430-004B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (3.0 ug/L) and hexavalent chromium (0 ug/L) for sample N027431-002 (MW-62-110-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 2.4 and 1.2 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

ASSET Laboratories

Date: *26-Dec-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027431
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027431-001A	TW-02S-Q417	Groundwater	12/7/2017 12:42:00 PM	12/7/2017	12/26/2017
N027431-001B	TW-02S-Q417	Groundwater	12/7/2017 12:42:00 PM	12/7/2017	12/26/2017
N027431-001C	TW-02S-Q417	Groundwater	12/7/2017 12:42:00 PM	12/7/2017	12/26/2017
N027431-001D	TW-02S-Q417	Groundwater	12/7/2017 12:42:00 PM	12/7/2017	12/26/2017
N027431-002A	MW-62-110-Q417	Groundwater	12/7/2017 3:55:00 PM	12/7/2017	12/26/2017
N027431-002B	MW-62-110-Q417	Groundwater	12/7/2017 3:55:00 PM	12/7/2017	12/26/2017
N027431-002C	MW-62-110-Q417	Groundwater	12/7/2017 3:55:00 PM	12/7/2017	12/26/2017
N027431-002D	MW-62-110-Q417	Groundwater	12/7/2017 3:55:00 PM	12/7/2017	12/26/2017
N027431-003A	MW-62-190-Q417	Groundwater	12/7/2017 3:40:00 PM	12/7/2017	12/26/2017
N027431-003B	MW-62-190-Q417	Groundwater	12/7/2017 3:40:00 PM	12/7/2017	12/26/2017
N027431-003C	MW-62-190-Q417	Groundwater	12/7/2017 3:40:00 PM	12/7/2017	12/26/2017
N027431-003D	MW-62-190-Q417	Groundwater	12/7/2017 3:40:00 PM	12/7/2017	12/26/2017
N027431-004A	MW-917-Q417	Groundwater	12/7/2017 3:45:00 PM	12/7/2017	12/26/2017
N027431-004B	MW-917-Q417	Groundwater	12/7/2017 3:45:00 PM	12/7/2017	12/26/2017
N027431-004C	MW-917-Q417	Groundwater	12/7/2017 3:45:00 PM	12/7/2017	12/26/2017
N027431-004D	MW-917-Q417	Groundwater	12/7/2017 3:45:00 PM	12/7/2017	12/26/2017
N027431-005A	MW-20-070-Q417	Groundwater	12/7/2017 3:22:00 PM	12/7/2017	12/26/2017
N027431-005B	MW-20-070-Q417	Groundwater	12/7/2017 3:22:00 PM	12/7/2017	12/26/2017
N027431-005C	MW-20-070-Q417	Groundwater	12/7/2017 3:22:00 PM	12/7/2017	12/26/2017
N027431-005D	MW-20-070-Q417	Groundwater	12/7/2017 3:22:00 PM	12/7/2017	12/26/2017
N027431-005E	MW-20-070-Q417	Groundwater	12/7/2017 3:22:00 PM	12/7/2017	12/26/2017
N027431-006A	MW-20-130-Q417	Groundwater	12/7/2017 3:18:00 PM	12/7/2017	12/26/2017
N027431-006B	MW-20-130-Q417	Groundwater	12/7/2017 3:18:00 PM	12/7/2017	12/26/2017
N027431-006C	MW-20-130-Q417	Groundwater	12/7/2017 3:18:00 PM	12/7/2017	12/26/2017
N027431-006D	MW-20-130-Q417	Groundwater	12/7/2017 3:18:00 PM	12/7/2017	12/26/2017
N027431-006E	MW-20-130-Q417	Groundwater	12/7/2017 3:18:00 PM	12/7/2017	12/26/2017

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-001

Client Sample ID: TW-02S-Q417
Collection Date: 12/7/2017 12:42:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	2000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	7400	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-190-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-917-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-070-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:22:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	1700	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-130-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:18:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	7100	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N027430-018CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **120750**
Client ID: **ZZZZZZ**	Batch ID: **R120750**	TestNo: **EPA 120.1**		Analysis Date: **12/8/2017**	SeqNo: **2860752**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	24900.000	0.10						24700	0.806	10	

Sample ID **N027459-003CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **120750**
Client ID: **ZZZZZZ**	Batch ID: **R120750**	TestNo: **EPA 120.1**		Analysis Date: **12/8/2017**	SeqNo: **2860769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	11670.000	0.10						11690	0.171	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02S-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 12:42:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214G**	QC Batch: **66074**				PrepDate	**12/14/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1300	17	17		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214G**	QC Batch: **66074**			PrepDate	**12/14/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	5300	50	50		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-190-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214G**	QC Batch: **66074**				PrepDate	**12/14/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	9300	100	100		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-917-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214G**	QC Batch: **66074**				PrepDate	**12/14/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	10000	100	100		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-070-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:22:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214G**	QC Batch: **66074**				PrepDate	**12/14/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1100	13	13		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-130-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:18:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214G**	QC Batch: **66074**			PrepDate	**12/14/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	5500	50	50		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66074**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/14/2017**	RunNo: **120876**
Client ID: **LCSW**	Batch ID: **66074**	TestNo: **SM2540C**		Analysis Date: **12/14/2017**	SeqNo: **2869155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	938.000	10	1000	0	93.8	80	120				

Sample ID **MB-66074**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/14/2017**	RunNo: **120876**
Client ID: **PBW**	Batch ID: **66074**	TestNo: **SM2540C**		Analysis Date: **12/14/2017**	SeqNo: **2869156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N027459-018CDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/14/2017**	RunNo: **120876**
Client ID: **ZZZZZZ**	Batch ID: **66074**	TestNo: **SM2540C**		Analysis Date: **12/14/2017**	SeqNo: **2869166**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	10920.000	100						10470	4.21	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02S-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 12:42:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171212A**	QC Batch: **R120835**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	250	1.7	10		µg/L	50	12/12/2017 01:33 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	260	0.096	5.0		µg/L	5	12/16/2017 05:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-002

Client Sample ID: MW-62-110-Q417
Collection Date: 12/7/2017 3:55:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211B** QC Batch: **R120834**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/11/2017 11:09 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171219A** QC Batch: **65979**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	3.0	0.019	1.0		µg/L	1	12/19/2017 02:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-190-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_171211B** QC Batch: **R120834**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/11/2017 11:28 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219A** QC Batch: **65979**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/19/2017 02:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-917-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211B**	QC Batch: **R120834**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/11/2017 11:47 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/19/2017 02:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-070-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:22:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211B**	QC Batch: **R120834**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1800	6.6	40		µg/L	200	12/12/2017 12:25 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	1900	0.48	25		µg/L	25	12/19/2017 02:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-006

Client Sample ID: MW-20-130-Q417
Collection Date: 12/7/2017 3:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211B**	QC Batch: **R120834**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	4100	33	200		µg/L	1000	12/11/2017 08:19 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171219A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	4400	0.48	25		µg/L	25	12/19/2017 02:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R120834**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **LCSW**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866068**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.175	0.20	5.000	0	104	90	110				

Sample ID **MB-R120834**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **PBW**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **N027431-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9591.600	200	5000	4141	109	90	110				

Sample ID **N027431-006AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866072**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9630.200	200	5000	4141	110	90	110	9592	0.402	20	

Sample ID **N027428-002ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	546.890	20						549.7	0.509	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027428-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1059.800	20	500.0	549.7	102	90	110				

Sample ID **N027428-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0	108	90	110				

Sample ID **N027430-016AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866081**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	16.573	1.0	5.000	11.46	102	90	110				

Sample ID **N027430-017AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.899	1.0	5.000	0.8090	102	90	110				

Sample ID **N027430-018AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.580	1.0	5.000	0	91.6	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027431-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866089

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.637	1.0	5.000	0.3545	106	90	110				

Sample ID	N027431-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866091

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.256	1.0	5.000	0.2550	100	90	110				

Sample ID	N027431-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/11/2017	SeqNo:	2866093

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.104	1.0	5.000	0.2855	96.4	90	110				

Sample ID	N027431-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120834
Client ID:	ZZZZZZ	Batch ID:	R120834	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866095

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2844.640	40	1000	1798	105	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R120835	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120835
Client ID:	PBW	Batch ID:	R120835	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866104

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	LCS-R120835	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120835
Client ID:	LCSW	Batch ID:	R120835	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866105

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.211	0.20	5.000	0	104	90	110				

Sample ID	N027465-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120835
Client ID:	ZZZZZZ	Batch ID:	R120835	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866109

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.043	0.20	1.000	0	104	90	110				

Sample ID	N027465-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120835
Client ID:	ZZZZZZ	Batch ID:	R120835	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866111

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.097	0.20	1.000	0.05640	104	90	110				

Sample ID	N027465-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120835
Client ID:	ZZZZZZ	Batch ID:	R120835	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866113

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.081	0.20	1.000	0	108	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027431-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866117**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	505.875	10	250.0	249.8	102	90	110				

Sample ID **N027431-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	248.115	10						249.8	0.693	20	

Sample ID **N027429-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866120**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	199.672	4.0	100.0	94.25	105	90	110				

Sample ID **N027429-009AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866121**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	198.092	4.0	100.0	94.25	104	90	110	199.7	0.794	20	

Sample ID **N027429-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.081	0.20	1.000	0	108	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027429-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.132	0.20	1.000	0.07800	105	90	110				

Sample ID **N027429-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	512.690	10	250.0	248.5	106	90	110				

Sample ID **N027429-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.033	0.20	1.000	0	103	90	110				

Sample ID **N027429-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866133**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	46.073	1.0	25.00	20.60	102	90	110				

Sample ID **N027429-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.442	1.0	25.00	20.10	101	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027429-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120835
Client ID:	ZZZZZZ	Batch ID:	R120835	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866139

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.171	0.20	5.000	2.945	105	90	110				

Sample ID	N027429-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120835
Client ID:	ZZZZZZ	Batch ID:	R120835	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866141

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.530	0.20	5.000	2.266	105	90	110				

Sample ID	N027429-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120835
Client ID:	ZZZZZZ	Batch ID:	R120835	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866143

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8927.300	200	5000	3603	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-65979	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120912
Client ID:	PBW	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870889

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-65979	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120912
Client ID:	LCSW	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870890

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.188	1.0	10.00	0	102	85	115				

Sample ID	N027405-001C-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120912
Client ID:	ZZZZZZ	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870896

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.569	1.0	10.00	0.07664	94.9	75	125				

Sample ID	N027405-001C-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120912
Client ID:	ZZZZZZ	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870898

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.547	1.0	10.00	0.07664	94.7	75	125	9.569	0.235	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02S-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 12:42:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	94	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	99	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-190-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	58	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-917-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	60	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-070-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:22:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	100	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-130-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:18:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	98	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R120816**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **LCSW**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	98.394	5.0	100.0	0	98.4	85	115				

Sample ID **MB-R120816**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **PBW**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N027430-002CDDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **ZZZZZZ**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865286**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	38.153	5.0						38.15	0	30	

Sample ID **N027431-002CMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **ZZZZZZ**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865300**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	196.787	5.0	100.0	99.40	97.4	75	125				

Sample ID **N027431-002CMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **ZZZZZZ**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	196.787	5.0	100.0	99.40	97.4	75	125	196.8	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-001

Client Sample ID: TW-02S-Q417
Collection Date: 12/7/2017 12:42:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**			PrepDate				Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/13/2017 07:29 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Chloride	610	1.8	100		mg/L	200	12/14/2017 09:01 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Sulfate	170	0.46	10		mg/L	20	12/14/2017 09:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-002

Client Sample ID: MW-62-110-Q417
Collection Date: 12/7/2017 3:55:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 08:30 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Chloride	2900	9.1	500		mg/L	1000	12/14/2017 10:02 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Sulfate	520	1.1	25		mg/L	50	12/14/2017 10:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-003

Client Sample ID: MW-62-190-Q417
Collection Date: 12/7/2017 3:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 08:46 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Chloride	6300	18	1000		mg/L	2000	12/14/2017 10:33 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Sulfate	710	2.3	50		mg/L	100	12/14/2017 10:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-004

Client Sample ID: MW-917-Q417
Collection Date: 12/7/2017 3:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 09:01 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Chloride	6100	18	1000		mg/L	2000	12/14/2017 11:03 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Sulfate	720	2.3	50		mg/L	100	12/14/2017 11:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-005

Client Sample ID: MW-20-070-Q417
Collection Date: 12/7/2017 3:22:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**			PrepDate				Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/13/2017 06:13 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Chloride	390	0.91	50		mg/L	100	12/14/2017 11:34 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Sulfate	240	0.46	10		mg/L	20	12/14/2017 11:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-006

Client Sample ID: MW-20-130-Q417
Collection Date: 12/7/2017 3:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 09:16 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Chloride	2500	9.1	500		mg/L	1000	12/15/2017 12:05 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Sulfate	1000	4.6	100		mg/L	200	12/15/2017 12:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	MB-R120803_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120803		
Client ID:	PBW	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867977		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide	ND	0.50											

Sample ID	LCS-R120803_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120803		
Client ID:	LCSW	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867978		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide	1.206	0.50	1.250	0	96.5	90	110						

Sample ID	N027431-005CMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120803		
Client ID:	ZZZZZZ	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867982		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide	0.412	0.50	1.250	0	32.9	80	120				S		

Sample ID	N027431-005CMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120803		
Client ID:	ZZZZZZ	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867983		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide	0.383	0.50	1.250	0	30.6	80	120	0.4118	0	20	S		

Sample ID	N027431-001CDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120803		
Client ID:	ZZZZZZ	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867987		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide	ND	0.50						0	0	20			

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R120853_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	PBW	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868189

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R120853_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	LCSW	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868190

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.973	0.50	2.000	0	98.6	90	110				

Sample ID	N027429-008DMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868197

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	510.320	50	200.0	296.9	107	80	120				

Sample ID	N027429-013DMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868199

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	728.160	50	200.0	518.5	105	80	120				

Sample ID	N027429-013DMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868200

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	736.410	50	200.0	518.5	109	80	120	728.2	1.13	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N027429-015DDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868211

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	592.540	100						597.0	0.753	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R120853_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	PBW	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868229

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R120853_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	LCSW	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868230

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.773	0.50	4.000	0	94.3	90	110				

Sample ID	N027429-008DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868237

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	236.256	10	80.00	156.1	100	80	120				

Sample ID	N027429-013DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868239

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	328.584	10	80.00	245.8	103	80	120				

Sample ID	N027429-013DMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868240

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	327.796	10	80.00	245.8	103	80	120	328.6	0.240	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N027429-015DDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868251

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	188.270	10						187.5	0.425	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-001

Client Sample ID: TW-02S-Q417
Collection Date: 12/7/2017 12:42:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	4.5	0.11	0.25		mg/L	5	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-190-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-917-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.054	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-070-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:22:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	9.0	0.22	0.50		mg/L	10	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-130-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:18:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	15	0.44	1.0		mg/L	20	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R121010	**MBLK**	**4500N03F_W**	**mg/L**		**121010**
Client ID: **PBW**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876073**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-R121010	**LCS**	**4500N03F_W**	**mg/L**		**121010**
Client ID: **LCSW**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.526	0.050	0.5000	0	105	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027429-007CMS	**MS**	**4500N03F_W**	**mg/L**		**121010**
Client ID: **ZZZZZZ**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.621	0.25	2.500	2.809	112	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027429-007CMSD	**MSD**	**4500N03F_W**	**mg/L**		**121010**
Client ID: **ZZZZZZ**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.484	0.25	2.500	2.809	107	75	125	5.621	2.47	20	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027429-008CDUP	**DUP**	**4500N03F_W**	**mg/L**		**121010**
Client ID: **ZZZZZZ**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.177	0.25						2.951	7.36	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R121034**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **PBW**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877768**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R121034**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **LCSW**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.496	0.050	0.5000	0	99.3	85	115				

Sample ID **N027431-005DDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **ZZZZZZ**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877771**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.148	0.50						9.004	1.59	20	

Sample ID **N027431-006DMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **ZZZZZZ**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877773**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	25.092	1.0	10.00	15.04	100	75	125				

Sample ID **N027431-006DMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **ZZZZZZ**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877774**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	24.784	1.0	10.00	15.04	97.4	75	125	25.09	1.24	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-001

Client Sample ID: TW-02S-Q417
Collection Date: 12/7/2017 12:42:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	380	38	100		ug/L	1	12/19/2017 04:41 AM
Calcium	80000	28	500		ug/L	1	12/19/2017 04:41 AM
Iron	23	1.8	20		ug/L	1	12/19/2017 04:41 AM
Magnesium	21000	4.4	100		ug/L	1	12/19/2017 04:41 AM
Sodium	340000	660	12000		ug/L	25	12/20/2017 09:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-002

Client Sample ID: MW-62-110-Q417
Collection Date: 12/7/2017 3:55:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1300	38	100		ug/L	1	12/19/2017 04:46 AM
Calcium	150000	28	500		ug/L	1	12/19/2017 04:46 AM
Iron	52	1.8	20		ug/L	1	12/19/2017 04:46 AM
Magnesium	6700	4.4	100		ug/L	1	12/19/2017 04:46 AM
Sodium	1800000	2600	50000		ug/L	100	12/20/2017 09:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-003

Client Sample ID: MW-62-190-Q417
Collection Date: 12/7/2017 3:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171221A**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	2000	38	100		ug/L	1	12/21/2017 11:37 AM
Calcium	310000	28	500		ug/L	1	12/19/2017 05:25 AM
Iron	53	1.8	20		ug/L	1	12/19/2017 05:25 AM
Magnesium	12000	4.4	100		ug/L	1	12/19/2017 05:25 AM
Sodium	3700000	6600	120000		ug/L	250	12/20/2017 09:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-004

Client Sample ID: MW-917-Q417
Collection Date: 12/7/2017 3:45:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_171221A** QC Batch: **65993** PrepDate **12/11/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	2000	38	100		ug/L	1	12/21/2017 11:43 AM
Calcium	310000	28	500		ug/L	1	12/19/2017 05:32 AM
Iron	45	1.8	20		ug/L	1	12/19/2017 05:32 AM
Magnesium	12000	4.4	100		ug/L	1	12/19/2017 05:32 AM
Sodium	3800000	6600	120000		ug/L	250	12/20/2017 09:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-005

Client Sample ID: MW-20-070-Q417
Collection Date: 12/7/2017 3:22:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171221A**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	500	38	100		ug/L	1	12/21/2017 11:49 AM
Calcium	54000	28	500		ug/L	1	12/19/2017 05:39 AM
Iron	46	1.8	20		ug/L	1	12/19/2017 05:39 AM
Magnesium	13000	4.4	100		ug/L	1	12/19/2017 05:39 AM
Potassium	5200	38	500		ug/L	1	12/20/2017 09:33 PM
Sodium	310000	660	12000		ug/L	25	12/20/2017 09:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-006

Client Sample ID: MW-20-130-Q417
Collection Date: 12/7/2017 3:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171221A**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	2100	38	100		ug/L	1	12/21/2017 11:54 AM
Calcium	240000	28	500		ug/L	1	12/19/2017 05:45 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 05:45 AM
Magnesium	22000	4.4	100		ug/L	1	12/19/2017 05:45 AM
Potassium	22000	38	500		ug/L	1	12/20/2017 09:41 PM
Sodium	1600000	2600	50000		ug/L	100	12/20/2017 09:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-65993**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **PBW**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	48.972	500									
Iron	ND	20									
Magnesium	4.804	100									

Sample ID **LCS1-65993**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **LCSW**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871607**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4518.810	100	5000	0	90.4	85	115				
Calcium	9590.941	500	10000	0	95.9	85	115				
Iron	109.266	20	100.0	0	109	85	115				
Magnesium	9312.753	100	10000	0	93.1	85	115				

Sample ID **N027430-002B-MS1**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6944.229	100	5000	2389	91.1	75	125				
Calcium	214316.917	500	10000	211000	32.8	75	125				S
Iron	120.528	20	100.0	52.84	67.7	75	125				S
Magnesium	11862.775	100	10000	4660	72.0	75	125				S

Sample ID **N027430-002B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6971.693	100	5000	2389	91.7	75	125	6944	0.395	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027430-002B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120920
Client ID:	ZZZZZZ	Batch ID:	65993	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2871612

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	215346.305	500	10000	211000	43.1	75	125	214300	0.479	20	S
Iron	119.359	20	100.0	52.84	66.5	75	125	120.5	0.974	20	S
Magnesium	11837.119	100	10000	4660	71.8	75	125	11860	0.217	20	S

Sample ID	MB-65993	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120973
Client ID:	PBW	Batch ID:	65993	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874508

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	ND	500									
Sodium	26.536	500									

Sample ID	LCS2-65993	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120973
Client ID:	LCSW	Batch ID:	65993	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874509

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	19557.801	500	20000	0	97.8	85	115				
Sodium	20336.418	500	20000	0	102	85	115				

Sample ID	N027430-004B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120973
Client ID:	ZZZZZZ	Batch ID:	65993	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874514

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	25794.440	500	20000	4523	106	75	125				

Sample ID	N027430-004B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120973
Client ID:	ZZZZZZ	Batch ID:	65993	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874515

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	25850.600	500	20000	4523	107	75	125	25790	0.217	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027430-004B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120973
Client ID:	ZZZZZZ	Batch ID:	65993	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874522

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	261208.893	5000	20000	226700	172	75	125				S

Sample ID	N027430-004B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120973
Client ID:	ZZZZZZ	Batch ID:	65993	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874523

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	258902.013	5000	20000	226700	161	75	125	261200	0.887	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-001

Client Sample ID: TW-02S-Q417
Collection Date: 12/7/2017 12:42:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Manganese	ND	0.056	0.50		µg/L	1	12/19/2017 01:25 PM
Molybdenum	12	0.039	0.50		µg/L	1	12/19/2017 01:25 PM
Selenium	3.1	0.028	0.50		µg/L	1	12/19/2017 01:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-002

Client Sample ID: MW-62-110-Q417
Collection Date: 12/7/2017 3:55:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	20	0.025	0.10		µg/L	1	12/19/2017 02:54 PM
Manganese	220	0.28	2.5		µg/L	5	12/19/2017 01:30 PM
Molybdenum	46	0.039	0.50		µg/L	1	12/19/2017 02:54 PM
Selenium	ND	0.028	0.50		µg/L	1	12/19/2017 02:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-190-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_171219A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	3.4	0.025	0.10		µg/L	1	12/19/2017 02:48 PM
Manganese	1200	1.4	12		µg/L	25	12/19/2017 01:41 PM
Molybdenum	42	0.039	0.50		µg/L	1	12/19/2017 02:48 PM
Selenium	ND	0.028	0.50		µg/L	1	12/19/2017 02:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-004

Client Sample ID: MW-917-Q417
Collection Date: 12/7/2017 3:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	5.2	0.025	0.10		µg/L	1	12/19/2017 02:43 PM
Manganese	1200	1.4	12		µg/L	25	12/19/2017 01:53 PM
Molybdenum	42	0.039	0.50		µg/L	1	12/19/2017 02:43 PM
Selenium	ND	0.028	0.50		µg/L	1	12/19/2017 02:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-005

Client Sample ID: MW-20-070-Q417
Collection Date: 12/7/2017 3:22:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Manganese	ND	0.056	0.50		µg/L	1	12/19/2017 02:09 PM
Molybdenum	36	0.039	0.50		µg/L	1	12/19/2017 02:09 PM
Selenium	5.0	0.028	0.50		µg/L	1	12/19/2017 02:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-130-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:18:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_171219A**	QC Batch: **65979**				PrepDate	**12/8/2017**	Analyst: **CEI**
Arsenic	3.6	0.025	0.10		µg/L	1	12/19/2017 02:26 PM
Manganese	1.6	0.056	0.50		µg/L	1	12/19/2017 02:26 PM
Molybdenum	21	0.039	0.50		µg/L	1	12/19/2017 02:26 PM
Selenium	42	0.028	0.50		µg/L	1	12/19/2017 02:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-65979**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120912**
Client ID: **PBW**	Batch ID: **65979**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-65979**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120912**
Client ID: **LCSW**	Batch ID: **65979**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.997	0.10	10.00	0	100	85	115				
Manganese	99.052	0.50	100.0	0	99.1	85	115				
Molybdenum	9.723	0.50	10.00	0	97.2	85	115				
Selenium	9.777	0.50	10.00	0	97.8	85	115				

Sample ID **N027405-001C-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120912**
Client ID: **ZZZZZZ**	Batch ID: **65979**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.743	0.10	10.00	4.629	101	75	125				
Molybdenum	22.777	0.50	10.00	10.82	120	75	125				
Selenium	9.247	0.50	10.00	0.1510	91.0	75	125				

Sample ID **N027405-001C-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120912**
Client ID: **ZZZZZZ**	Batch ID: **65979**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	234.439	2.5	100.0	138.5	95.9	75	125				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027405-001C-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120912
Client ID:	ZZZZZZ	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870955

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.547	0.10	10.00	4.629	99.2	75	125	14.74	1.34	20	
Molybdenum	22.863	0.50	10.00	10.82	120	75	125	22.78	0.376	20	
Selenium	8.866	0.50	10.00	0.1510	87.1	75	125	9.247	4.21	20	

Sample ID	N027405-001C-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120912
Client ID:	ZZZZZZ	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870958

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	237.256	2.5	100.0	138.5	98.7	75	125	234.4	1.19	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker	RWQCB ✓	1. Chilled ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec	CalTrans	2. Headspace
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	Others ✓	LEVEL III	3. Container Intact
Title: Geologist II	Phone: 916-786-3302 Fax:		Specify: RWQCB	LEVEL IV	4. Seal Present
Signature: Date: 12/7/2017	Sampled By: Gantt Jeffers		Global ID:	Regulatory	5. IR number X
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*			Specify State:	6. Method of Cooling: Ice
Project Name: PG&E Topock - GMP	Signature: Date: 12/7/2017				Sample Temp: 2.6°C
Project Number: RC000753.801B					Courier: Tracking No.:

Matrix: Ground x Sediment; Potable Soil; NPDES Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Oxygen and Deuterium Stable Isotopes SFIRM (250 mL poly)	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) Potassium; HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3 (500 mL poly)	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 (500 mL poly)	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3 (500 mL poly)	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3 (500 mL poly)	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3 (500 mL poly)	Mercury, Dissolved (EPA 7470A); HNO3 (500 mL poly)	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4 (250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM2540C) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Fluoride (EPA 300.0) (1 liter poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027431-01 ✓	TW-02S-Q417	12/7/2017	12:42		X					X						X	X	X	X	X		E	4	P	BNS	
2	-02	MW-62-110-Q417	12/7/2017	15:55		X			X		X						X	X	X	X	X		E	4	P	BNS	
3	-03 ✓	MW-62-190-Q417	12/7/2017	15:40		X			X		X						X	X	X	X	X		E	4	P	BNS	
4	-04 ✓	MW-917-Q417	12/7/2017	15:45		X			X		X						X	X	X	X	X		E	4	P	BNS	
5	-05 ✓	MW-20-070-Q417	12/7/2017	15:22		X		X		X	X					X	X	X	X	X	X		E	5	P	BNS	
6	-06 ✓	MW-20-130-Q417	12/7/2017	15:18		X		X	X		X						X	X	X	X	X		E	5	P	BNS	
7																												
8																												
9																												
10																												

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
Gantt Jeffers	12.7.17 1626		12/7/17 1626
	12/7/17 1642		12/7/17 1642

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B = $(NH4)2SO4/NH4OH$			M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/7/2017	Workorder:	N027431
Rep sample Temp (Deg C):	2.6	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: N/A Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 12/19/2017

Reviewed By: 12/21/2017

SampleControlLV

From: Madsen, Laura <Laura.Madsen@arcadis.com>
Sent: Tuesday, December 12, 2017 12:41 PM
To: Sample Control; Bush, Dan; Dan Moore
Cc: Tina Rice; Kalib Sumter; jmahn@blainetech.com; Jeffers, Gantt
Subject: RE: N027428; N027429; N027430; N027431 COC and Work Order Summary for Samples Received 12/7/2017

Hi Marlon,
I have two corrections for this batch.

N027430:

- The sample ID N027430-0008A should be MW-28-090-Q417. It was logged in as MW-028-090-Q417

N027431

- Sample MW-20-130 should be analyzed for Potassium SW6010B, it was inadvertently left off the COC.

Thanks!
Laura

From: Sample Control [mailto:samplecontrol.lv@assetlaboratories.com]
Sent: Friday, December 8, 2017 4:11 PM
To: Bush, Dan <Dan.Bush@arcadis.com>; Dan Moore <Daniel.Moore@critigen.com>
Cc: Madsen, Laura <Laura.Madsen@arcadis.com>; Maurel, Sean <Sean.Maurel@arcadis.com>; Tina Rice <Tina.Rice@critigen.com>; Kalib Sumter <Kalib.Sumter@critigen.com>; rsunjara@blainetech.com; Vadpey, Nick <Nicholas.Vadpey@arcadis.com>; Harmon, Alison <Ali.Harmon@arcadis.com>; Serna, Erica <Erica.Serna@arcadis.com>; Bloes, Marty <mbloes@pivox.com>; jmahn@blainetech.com
Subject: N027428; N027429; N027430; N027431 COC and Work Order Summary for Samples Received 12/7/2017

Hi Dan Bush:

Enclosed are COC and WO Summary for samples received 12/7/2017. If you have any questions, please contact your Project Manager listed below.

Marlon Cartin
3151 W. Post Road
Las Vegas, Nevada
89118
Tel. No.: (702)-307-2659 Ext. 410
Cel. No.: (702)-439-0421
Email: marlon@assetlaboratories.com

Thank you for using ASSET Laboratories.

Sincerely,
Krydelle D. Ines
Sample Control Officer

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (760) 781 3338
FAX: (805) 544-8226
Acct #:

Field Sampler: Signed

11-Dec-17

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**OXY_DEUT**		
N027431-005E / MW-20-070-Q417	Groundwater	12/7/2017 3:22:00 PM	8OZP	1		
N027431-006E / MW-20-130-Q417	Groundwater	12/7/2017 3:18:00 PM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N27431A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Oxygen and Deuterium Stable Isotopes SFIRM. EDD Requirement Labspec7 edata.

Fedex #: 770961567484

		Date/Time			Date/Time
Relinquished by:		12/11/2017 16:00	**Received by:**		
Relinquished by:			**Received by:**		

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027431

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027431-001A	TW-02S-Q417	12/7/2017 12:42:00 PM	12/21/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027431-001B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027431-001C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027431-001D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027431-002A	MW-62-110-Q417	12/7/2017 3:55:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027431-002B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027431-002C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027431

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027431-002C	MW-62-110-Q417	12/7/2017 3:55:00 PM	12/21/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027431-002D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027431-003A	MW-62-190-Q417	12/7/2017 3:40:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027431-003B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027431-003C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027431-003D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027431-004A	MW-917-Q417	12/7/2017 3:45:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027431-004B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027431

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027431-004B	MW-917-Q417	12/7/2017 3:45:00 PM	12/21/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027431-004C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027431-004D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027431-005A	MW-20-070-Q417	12/7/2017 3:22:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027431-005B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027431-005C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027431-005D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027431

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027431-005E	MW-20-070-Q417	12/7/2017 3:22:00 PM	12/21/2017	Groundwater	OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027431-006A	MW-20-130-Q417	12/7/2017 3:18:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027431-006B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027431-006C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027431-006D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027431-006E			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027431-007A	FOLDER	12/21/2017	12/21/2017		EDD	RWQCB	☐	☐	☐	LAB
			12/21/2017		Folder	Folder	☐	☐	☐	LAB
			12/21/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP

Project No.: RC000753.801B

ASSET Laboratories Work Order:

N027431

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

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December 26, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027431

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 07, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liu for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Subcontracted Analyses:

Oxygen/Deuterium was subcontracted to Zymax- Pittsburg,PA.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (3.0 ug/L) and hexavalent chromium (0 ug/L) for sample N027431-002 (MW-62-110-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Dilution was necessary for samples N027431-002, -003 and -004 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 300.0:

Dilution was necessary for samples N027431-002, -003, -004 and -006 due to precipitation upon the addition of eluent.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Bromide in QC samples N027431-005CMS and N027431-005CMSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N027430-002B-MS1 and N027430-002B-MSD1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N027430-002B-MS1 and N027430-002B-MSD1 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N027430-004B-MS2 and N027430-004B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (3.0 ug/L) and hexavalent chromium (0 ug/L) for sample N027431-002 (MW-62-110-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 2.4 and 1.2 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

ASSET Laboratories

Date: *26-Dec-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027431
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027431-001A	TW-02S-Q417	Groundwater	12/7/2017 12:42:00 PM	12/7/2017	12/26/2017
N027431-001B	TW-02S-Q417	Groundwater	12/7/2017 12:42:00 PM	12/7/2017	12/26/2017
N027431-001C	TW-02S-Q417	Groundwater	12/7/2017 12:42:00 PM	12/7/2017	12/26/2017
N027431-001D	TW-02S-Q417	Groundwater	12/7/2017 12:42:00 PM	12/7/2017	12/26/2017
N027431-002A	MW-62-110-Q417	Groundwater	12/7/2017 3:55:00 PM	12/7/2017	12/26/2017
N027431-002B	MW-62-110-Q417	Groundwater	12/7/2017 3:55:00 PM	12/7/2017	12/26/2017
N027431-002C	MW-62-110-Q417	Groundwater	12/7/2017 3:55:00 PM	12/7/2017	12/26/2017
N027431-002D	MW-62-110-Q417	Groundwater	12/7/2017 3:55:00 PM	12/7/2017	12/26/2017
N027431-003A	MW-62-190-Q417	Groundwater	12/7/2017 3:40:00 PM	12/7/2017	12/26/2017
N027431-003B	MW-62-190-Q417	Groundwater	12/7/2017 3:40:00 PM	12/7/2017	12/26/2017
N027431-003C	MW-62-190-Q417	Groundwater	12/7/2017 3:40:00 PM	12/7/2017	12/26/2017
N027431-003D	MW-62-190-Q417	Groundwater	12/7/2017 3:40:00 PM	12/7/2017	12/26/2017
N027431-004A	MW-917-Q417	Groundwater	12/7/2017 3:45:00 PM	12/7/2017	12/26/2017
N027431-004B	MW-917-Q417	Groundwater	12/7/2017 3:45:00 PM	12/7/2017	12/26/2017
N027431-004C	MW-917-Q417	Groundwater	12/7/2017 3:45:00 PM	12/7/2017	12/26/2017
N027431-004D	MW-917-Q417	Groundwater	12/7/2017 3:45:00 PM	12/7/2017	12/26/2017
N027431-005A	MW-20-070-Q417	Groundwater	12/7/2017 3:22:00 PM	12/7/2017	12/26/2017
N027431-005B	MW-20-070-Q417	Groundwater	12/7/2017 3:22:00 PM	12/7/2017	12/26/2017
N027431-005C	MW-20-070-Q417	Groundwater	12/7/2017 3:22:00 PM	12/7/2017	12/26/2017
N027431-005D	MW-20-070-Q417	Groundwater	12/7/2017 3:22:00 PM	12/7/2017	12/26/2017
N027431-005E	MW-20-070-Q417	Groundwater	12/7/2017 3:22:00 PM	12/7/2017	12/26/2017
N027431-006A	MW-20-130-Q417	Groundwater	12/7/2017 3:18:00 PM	12/7/2017	12/26/2017
N027431-006B	MW-20-130-Q417	Groundwater	12/7/2017 3:18:00 PM	12/7/2017	12/26/2017
N027431-006C	MW-20-130-Q417	Groundwater	12/7/2017 3:18:00 PM	12/7/2017	12/26/2017
N027431-006D	MW-20-130-Q417	Groundwater	12/7/2017 3:18:00 PM	12/7/2017	12/26/2017
N027431-006E	MW-20-130-Q417	Groundwater	12/7/2017 3:18:00 PM	12/7/2017	12/26/2017

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02S-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 12:42:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	2000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	7400	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-003

Client Sample ID: MW-62-190-Q417
Collection Date: 12/7/2017 3:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-004

Client Sample ID: MW-917-Q417
Collection Date: 12/7/2017 3:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-005

Client Sample ID: MW-20-070-Q417
Collection Date: 12/7/2017 3:22:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	1700	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-006

Client Sample ID: MW-20-130-Q417
Collection Date: 12/7/2017 3:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	7100	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N027430-018CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **120750**
Client ID: **ZZZZZZ**	Batch ID: **R120750**	TestNo: **EPA 120.1**		Analysis Date: **12/8/2017**	SeqNo: **2860752**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	24900.000	0.10						24700	0.806	10	

Sample ID **N027459-003CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **120750**
Client ID: **ZZZZZZ**	Batch ID: **R120750**	TestNo: **EPA 120.1**		Analysis Date: **12/8/2017**	SeqNo: **2860769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	11670.000	0.10						11690	0.171	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02S-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 12:42:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214G**	QC Batch: **66074**				PrepDate	**12/14/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1300	17	17		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214G**	QC Batch: **66074**				PrepDate	**12/14/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	5300	50	50		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-190-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214G**	QC Batch: **66074**				PrepDate	**12/14/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	9300	100	100		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-917-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214G**	QC Batch: **66074**				PrepDate	**12/14/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	10000	100	100		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-070-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:22:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214G**	QC Batch: **66074**				PrepDate	**12/14/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1100	13	13		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-130-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:18:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214G**	QC Batch: **66074**			PrepDate	**12/14/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	5500	50	50		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-66074	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/14/2017	RunNo:	120876
Client ID:	LCSW	Batch ID:	66074	TestNo:	SM2540C			Analysis Date:	12/14/2017	SeqNo:	2869155

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	938.000	10	1000	0	93.8	80	120				

Sample ID	MB-66074	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/14/2017	RunNo:	120876
Client ID:	PBW	Batch ID:	66074	TestNo:	SM2540C			Analysis Date:	12/14/2017	SeqNo:	2869156

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N027459-018CDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/14/2017	RunNo:	120876
Client ID:	ZZZZZZ	Batch ID:	66074	TestNo:	SM2540C			Analysis Date:	12/14/2017	SeqNo:	2869166

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	10920.000	100						10470	4.21	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-001

Client Sample ID: TW-02S-Q417
Collection Date: 12/7/2017 12:42:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171212A**	QC Batch: **R120835**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	250	1.7	10		µg/L	50	12/12/2017 01:33 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171216A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	260	0.096	5.0		µg/L	5	12/16/2017 05:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_171211B** QC Batch: **R120834**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/11/2017 11:09 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219A** QC Batch: **65979**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	3.0	0.019	1.0		µg/L	1	12/19/2017 02:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-003

Client Sample ID: MW-62-190-Q417
Collection Date: 12/7/2017 3:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211B** QC Batch: **R120834**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/11/2017 11:28 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_171219A** QC Batch: **65979**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/19/2017 02:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-917-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_171211B** QC Batch: **R120834**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/11/2017 11:47 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219A** QC Batch: **65979**				PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/19/2017 02:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-070-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:22:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211B**	QC Batch: **R120834**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1800	6.6	40		µg/L	200	12/12/2017 12:25 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	1900	0.48	25		µg/L	25	12/19/2017 02:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-130-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:18:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171211B**	QC Batch: **R120834**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	4100	33	200		µg/L	1000	12/11/2017 08:19 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171219A**	QC Batch: **65979**			PrepDate	**12/8/2017**		Analyst: **CEI**
Chromium	4400	0.48	25		µg/L	25	12/19/2017 02:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R120834**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **LCSW**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866068**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.175	0.20	5.000	0	104	90	110				

Sample ID **MB-R120834**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **PBW**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **N027431-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9591.600	200	5000	4141	109	90	110				

Sample ID **N027431-006AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866072**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9630.200	200	5000	4141	110	90	110	9592	0.402	20	

Sample ID **N027428-002ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	546.890	20						549.7	0.509	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027428-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120834**
Client ID: **ZZZZZZ** Batch ID: **R120834** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1059.800	20	500.0	549.7	102	90	110				

Sample ID **N027428-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120834**
Client ID: **ZZZZZZ** Batch ID: **R120834** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0	108	90	110				

Sample ID **N027430-016AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120834**
Client ID: **ZZZZZZ** Batch ID: **R120834** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866081**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	16.573	1.0	5.000	11.46	102	90	110				

Sample ID **N027430-017AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120834**
Client ID: **ZZZZZZ** Batch ID: **R120834** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.899	1.0	5.000	0.8090	102	90	110				

Sample ID **N027430-018AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120834**
Client ID: **ZZZZZZ** Batch ID: **R120834** TestNo: **EPA 218.6** Analysis Date: **12/11/2017** SeqNo: **2866085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.580	1.0	5.000	0	91.6	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027431-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866089**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.637	1.0	5.000	0.3545	106	90	110				

Sample ID **N027431-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866091**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.256	1.0	5.000	0.2550	100	90	110				

Sample ID **N027431-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866093**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.104	1.0	5.000	0.2855	96.4	90	110				

Sample ID **N027431-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866095**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2844.640	40	1000	1798	105	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R120835**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **PBW**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R120835**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **LCSW**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866105**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.211	0.20	5.000	0	104	90	110				

Sample ID **N027465-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.043	0.20	1.000	0	104	90	110				

Sample ID **N027465-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.097	0.20	1.000	0.05640	104	90	110				

Sample ID **N027465-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.081	0.20	1.000	0	108	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027431-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866117**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	505.875	10	250.0	249.8	102	90	110				

Sample ID **N027431-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	248.115	10						249.8	0.693	20	

Sample ID **N027429-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866120**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	199.672	4.0	100.0	94.25	105	90	110				

Sample ID **N027429-009AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866121**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	198.092	4.0	100.0	94.25	104	90	110	199.7	0.794	20	

Sample ID **N027429-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.081	0.20	1.000	0	108	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027429-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120835**
Client ID: **ZZZZZZ** Batch ID: **R120835** TestNo: **EPA 218.6** Analysis Date: **12/12/2017** SeqNo: **2866127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.132	0.20	1.000	0.07800	105	90	110				

Sample ID **N027429-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120835**
Client ID: **ZZZZZZ** Batch ID: **R120835** TestNo: **EPA 218.6** Analysis Date: **12/12/2017** SeqNo: **2866129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	512.690	10	250.0	248.5	106	90	110				

Sample ID **N027429-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120835**
Client ID: **ZZZZZZ** Batch ID: **R120835** TestNo: **EPA 218.6** Analysis Date: **12/12/2017** SeqNo: **2866131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.033	0.20	1.000	0	103	90	110				

Sample ID **N027429-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120835**
Client ID: **ZZZZZZ** Batch ID: **R120835** TestNo: **EPA 218.6** Analysis Date: **12/12/2017** SeqNo: **2866133**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	46.073	1.0	25.00	20.60	102	90	110				

Sample ID **N027429-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120835**
Client ID: **ZZZZZZ** Batch ID: **R120835** TestNo: **EPA 218.6** Analysis Date: **12/12/2017** SeqNo: **2866135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.442	1.0	25.00	20.10	101	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027429-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120835
Client ID:	ZZZZZZ	Batch ID:	R120835	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866139

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.171	0.20	5.000	2.945	105	90	110				

Sample ID	N027429-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120835
Client ID:	ZZZZZZ	Batch ID:	R120835	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866141

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.530	0.20	5.000	2.266	105	90	110				

Sample ID	N027429-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120835
Client ID:	ZZZZZZ	Batch ID:	R120835	TestNo:	EPA 218.6			Analysis Date:	12/12/2017	SeqNo:	2866143

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8927.300	200	5000	3603	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-65979	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120912
Client ID:	PBW	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870889

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-65979	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120912
Client ID:	LCSW	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870890

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.188	1.0	10.00	0	102	85	115				

Sample ID	N027405-001C-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120912
Client ID:	ZZZZZZ	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870896

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.569	1.0	10.00	0.07664	94.9	75	125				

Sample ID	N027405-001C-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120912
Client ID:	ZZZZZZ	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870898

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.547	1.0	10.00	0.07664	94.7	75	125	9.569	0.235	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-001

Client Sample ID: TW-02S-Q417
Collection Date: 12/7/2017 12:42:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	94	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	99	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-190-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	58	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-917-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	60	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-070-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:22:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	100	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-006

Client Sample ID: MW-20-130-Q417
Collection Date: 12/7/2017 3:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	98	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R120816**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **LCSW**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	98.394	5.0	100.0	0	98.4	85	115				

Sample ID **MB-R120816**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **PBW**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N027430-002CDDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **ZZZZZZ**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865286**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	38.153	5.0						38.15	0	30	

Sample ID **N027431-002CMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **ZZZZZZ**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865300**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	196.787	5.0	100.0	99.40	97.4	75	125				

Sample ID **N027431-002CMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **ZZZZZZ**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	196.787	5.0	100.0	99.40	97.4	75	125	196.8	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-001

Client Sample ID: TW-02S-Q417
Collection Date: 12/7/2017 12:42:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**			PrepDate				Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/13/2017 07:29 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Chloride	610	1.8	100		mg/L	200	12/14/2017 09:01 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**			PrepDate				Analyst: **RAB**
Sulfate	170	0.46	10		mg/L	20	12/14/2017 09:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-002

Client Sample ID: MW-62-110-Q417
Collection Date: 12/7/2017 3:55:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 08:30 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Chloride	2900	9.1	500		mg/L	1000	12/14/2017 10:02 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Sulfate	520	1.1	25		mg/L	50	12/14/2017 10:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-003

Client Sample ID: MW-62-190-Q417
Collection Date: 12/7/2017 3:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 08:46 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Chloride	6300	18	1000		mg/L	2000	12/14/2017 10:33 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Sulfate	710	2.3	50		mg/L	100	12/14/2017 10:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-004

Client Sample ID: MW-917-Q417
Collection Date: 12/7/2017 3:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 09:01 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Chloride	6100	18	1000		mg/L	2000	12/14/2017 11:03 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Sulfate	720	2.3	50		mg/L	100	12/14/2017 11:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-005

Client Sample ID: MW-20-070-Q417
Collection Date: 12/7/2017 3:22:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/13/2017 06:13 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Chloride	390	0.91	50		mg/L	100	12/14/2017 11:34 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Sulfate	240	0.46	10		mg/L	20	12/14/2017 11:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-006

Client Sample ID: MW-20-130-Q417
Collection Date: 12/7/2017 3:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171213B** QC Batch: **R120803**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/13/2017 09:16 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Chloride	2500	9.1	500		mg/L	1000	12/15/2017 12:05 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171214A** QC Batch: **R120853**				PrepDate			Analyst: **RAB**
Sulfate	1000	4.6	100		mg/L	200	12/15/2017 12:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	MB-R120803_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120803		
Client ID:	PBW	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867977		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide	ND	0.50											

Sample ID	LCS-R120803_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120803		
Client ID:	LCSW	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867978		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide	1.206	0.50	1.250	0	96.5	90	110						

Sample ID	N027431-005CMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120803		
Client ID:	ZZZZZZ	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867982		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide	0.412	0.50	1.250	0	32.9	80	120				S		

Sample ID	N027431-005CMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120803		
Client ID:	ZZZZZZ	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867983		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide	0.383	0.50	1.250	0	30.6	80	120	0.4118	0	20	S		

Sample ID	N027431-001CDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120803		
Client ID:	ZZZZZZ	Batch ID:	R120803	TestNo:	EPA 300.0			Analysis Date:	12/13/2017	SeqNo:	2867987		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide	ND	0.50						0	0	20			

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R120853_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	PBW	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868189

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R120853_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	LCSW	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868190

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.973	0.50	2.000	0	98.6	90	110				

Sample ID	N027429-008DMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868197

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	510.320	50	200.0	296.9	107	80	120				

Sample ID	N027429-013DMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868199

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	728.160	50	200.0	518.5	105	80	120				

Sample ID	N027429-013DMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868200

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	736.410	50	200.0	518.5	109	80	120	728.2	1.13	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N027429-015DDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868211

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	592.540	100						597.0	0.753	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R120853_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	PBW	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868229

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R120853_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	LCSW	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868230

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.773	0.50	4.000	0	94.3	90	110				

Sample ID	N027429-008DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868237

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	236.256	10	80.00	156.1	100	80	120				

Sample ID	N027429-013DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868239

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	328.584	10	80.00	245.8	103	80	120				

Sample ID	N027429-013DMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868240

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	327.796	10	80.00	245.8	103	80	120	328.6	0.240	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N027429-015DDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120853
Client ID:	ZZZZZZ	Batch ID:	R120853	TestNo:	EPA 300.0			Analysis Date:	12/14/2017	SeqNo:	2868251

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	188.270	10						187.5	0.425	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-001

Client Sample ID: TW-02S-Q417
Collection Date: 12/7/2017 12:42:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	4.5	0.11	0.25		mg/L	5	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-190-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-917-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171221B**	QC Batch: **R121010**		PrepDate			Analyst: **QBM**	
Nitrate/Nitrite as N	0.054	0.022	0.050		mg/L	1	12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-070-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:22:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	9.0	0.22	0.50		mg/L	10	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-130-Q417
Lab Order:	N027431	**Collection Date:**	12/7/2017 3:18:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027431-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	15	0.44	1.0		mg/L	20	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R121010	**MBLK**	**4500N03F_W**	**mg/L**		**121010**
Client ID: **PBW**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876073**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-R121010	**LCS**	**4500N03F_W**	**mg/L**		**121010**
Client ID: **LCSW**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.526	0.050	0.5000	0	105	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027429-007CMS	**MS**	**4500N03F_W**	**mg/L**		**121010**
Client ID: **ZZZZZZ**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.621	0.25	2.500	2.809	112	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027429-007CMSD	**MSD**	**4500N03F_W**	**mg/L**		**121010**
Client ID: **ZZZZZZ**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.484	0.25	2.500	2.809	107	75	125	5.621	2.47	20	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027429-008CDUP	**DUP**	**4500N03F_W**	**mg/L**		**121010**
Client ID: **ZZZZZZ**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.177	0.25						2.951	7.36	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R121034**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **PBW**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877768**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R121034**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **LCSW**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.496	0.050	0.5000	0	99.3	85	115				

Sample ID **N027431-005DDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **ZZZZZZ**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877771**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.148	0.50						9.004	1.59	20	

Sample ID **N027431-006DMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **ZZZZZZ**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877773**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	25.092	1.0	10.00	15.04	100	75	125				

Sample ID **N027431-006DMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **ZZZZZZ**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877774**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	24.784	1.0	10.00	15.04	97.4	75	125	25.09	1.24	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-001

Client Sample ID: TW-02S-Q417
Collection Date: 12/7/2017 12:42:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171218B**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	380	38	100		ug/L	1	12/19/2017 04:41 AM
Calcium	80000	28	500		ug/L	1	12/19/2017 04:41 AM
Iron	23	1.8	20		ug/L	1	12/19/2017 04:41 AM
Magnesium	21000	4.4	100		ug/L	1	12/19/2017 04:41 AM
Sodium	340000	660	12000		ug/L	25	12/20/2017 09:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-002

Client Sample ID: MW-62-110-Q417
Collection Date: 12/7/2017 3:55:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_171218B** QC Batch: **65993** PrepDate **12/11/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	1300	38	100		ug/L	1	12/19/2017 04:46 AM
Calcium	150000	28	500		ug/L	1	12/19/2017 04:46 AM
Iron	52	1.8	20		ug/L	1	12/19/2017 04:46 AM
Magnesium	6700	4.4	100		ug/L	1	12/19/2017 04:46 AM
Sodium	1800000	2600	50000		ug/L	100	12/20/2017 09:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-003

Client Sample ID: MW-62-190-Q417
Collection Date: 12/7/2017 3:40:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_171221A** QC Batch: **65993** PrepDate **12/11/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	2000	38	100		ug/L	1	12/21/2017 11:37 AM
Calcium	310000	28	500		ug/L	1	12/19/2017 05:25 AM
Iron	53	1.8	20		ug/L	1	12/19/2017 05:25 AM
Magnesium	12000	4.4	100		ug/L	1	12/19/2017 05:25 AM
Sodium	3700000	6600	120000		ug/L	250	12/20/2017 09:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-004

Client Sample ID: MW-917-Q417
Collection Date: 12/7/2017 3:45:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_171221A** QC Batch: **65993** PrepDate **12/11/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	2000	38	100		ug/L	1	12/21/2017 11:43 AM
Calcium	310000	28	500		ug/L	1	12/19/2017 05:32 AM
Iron	45	1.8	20		ug/L	1	12/19/2017 05:32 AM
Magnesium	12000	4.4	100		ug/L	1	12/19/2017 05:32 AM
Sodium	3800000	6600	120000		ug/L	250	12/20/2017 09:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-005

Client Sample ID: MW-20-070-Q417
Collection Date: 12/7/2017 3:22:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171221A**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	500	38	100		ug/L	1	12/21/2017 11:49 AM
Calcium	54000	28	500		ug/L	1	12/19/2017 05:39 AM
Iron	46	1.8	20		ug/L	1	12/19/2017 05:39 AM
Magnesium	13000	4.4	100		ug/L	1	12/19/2017 05:39 AM
Potassium	5200	38	500		ug/L	1	12/20/2017 09:33 PM
Sodium	310000	660	12000		ug/L	25	12/20/2017 09:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-006

Client Sample ID: MW-20-130-Q417
Collection Date: 12/7/2017 3:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171221A**	QC Batch: **65993**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	2100	38	100		ug/L	1	12/21/2017 11:54 AM
Calcium	240000	28	500		ug/L	1	12/19/2017 05:45 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 05:45 AM
Magnesium	22000	4.4	100		ug/L	1	12/19/2017 05:45 AM
Potassium	22000	38	500		ug/L	1	12/20/2017 09:41 PM
Sodium	1600000	2600	50000		ug/L	100	12/20/2017 09:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-65993**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **PBW**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	48.972	500									
Iron	ND	20									
Magnesium	4.804	100									

Sample ID **LCS1-65993**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **LCSW**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871607**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4518.810	100	5000	0	90.4	85	115				
Calcium	9590.941	500	10000	0	95.9	85	115				
Iron	109.266	20	100.0	0	109	85	115				
Magnesium	9312.753	100	10000	0	93.1	85	115				

Sample ID **N027430-002B-MS1**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6944.229	100	5000	2389	91.1	75	125				
Calcium	214316.917	500	10000	211000	32.8	75	125				S
Iron	120.528	20	100.0	52.84	67.7	75	125				S
Magnesium	11862.775	100	10000	4660	72.0	75	125				S

Sample ID **N027430-002B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6971.693	100	5000	2389	91.7	75	125	6944	0.395	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027430-002B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120920
Client ID:	ZZZZZZ	Batch ID:	65993	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2871612

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	215346.305	500	10000	211000	43.1	75	125	214300	0.479	20	S
Iron	119.359	20	100.0	52.84	66.5	75	125	120.5	0.974	20	S
Magnesium	11837.119	100	10000	4660	71.8	75	125	11860	0.217	20	S

Sample ID	MB-65993	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120973
Client ID:	PBW	Batch ID:	65993	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874508

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	ND	500									
Sodium	26.536	500									

Sample ID	LCS2-65993	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120973
Client ID:	LCSW	Batch ID:	65993	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874509

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	19557.801	500	20000	0	97.8	85	115				
Sodium	20336.418	500	20000	0	102	85	115				

Sample ID	N027430-004B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120973
Client ID:	ZZZZZZ	Batch ID:	65993	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874514

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	25794.440	500	20000	4523	106	75	125				

Sample ID	N027430-004B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120973
Client ID:	ZZZZZZ	Batch ID:	65993	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874515

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	25850.600	500	20000	4523	107	75	125	25790	0.217	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027430-004B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120973
Client ID:	ZZZZZZ	Batch ID:	65993	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874522

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	261208.893	5000	20000	226700	172	75	125				S

Sample ID	N027430-004B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120973
Client ID:	ZZZZZZ	Batch ID:	65993	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2874523

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	258902.013	5000	20000	226700	161	75	125	261200	0.887	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-001

Client Sample ID: TW-02S-Q417
Collection Date: 12/7/2017 12:42:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Manganese	ND	0.056	0.50		µg/L	1	12/19/2017 01:25 PM
Molybdenum	12	0.039	0.50		µg/L	1	12/19/2017 01:25 PM
Selenium	3.1	0.028	0.50		µg/L	1	12/19/2017 01:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-002

Client Sample ID: MW-62-110-Q417
Collection Date: 12/7/2017 3:55:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	20	0.025	0.10		µg/L	1	12/19/2017 02:54 PM
Manganese	220	0.28	2.5		µg/L	5	12/19/2017 01:30 PM
Molybdenum	46	0.039	0.50		µg/L	1	12/19/2017 02:54 PM
Selenium	ND	0.028	0.50		µg/L	1	12/19/2017 02:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-003

Client Sample ID: MW-62-190-Q417
Collection Date: 12/7/2017 3:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	3.4	0.025	0.10		µg/L	1	12/19/2017 02:48 PM
Manganese	1200	1.4	12		µg/L	25	12/19/2017 01:41 PM
Molybdenum	42	0.039	0.50		µg/L	1	12/19/2017 02:48 PM
Selenium	ND	0.028	0.50		µg/L	1	12/19/2017 02:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-004

Client Sample ID: MW-917-Q417
Collection Date: 12/7/2017 3:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	5.2	0.025	0.10		µg/L	1	12/19/2017 02:43 PM
Manganese	1200	1.4	12		µg/L	25	12/19/2017 01:53 PM
Molybdenum	42	0.039	0.50		µg/L	1	12/19/2017 02:43 PM
Selenium	ND	0.028	0.50		µg/L	1	12/19/2017 02:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-005

Client Sample ID: MW-20-070-Q417
Collection Date: 12/7/2017 3:22:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Manganese	ND	0.056	0.50		µg/L	1	12/19/2017 02:09 PM
Molybdenum	36	0.039	0.50		µg/L	1	12/19/2017 02:09 PM
Selenium	5.0	0.028	0.50		µg/L	1	12/19/2017 02:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027431
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027431-006

Client Sample ID: MW-20-130-Q417
Collection Date: 12/7/2017 3:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171219A**	QC Batch: **65979**			PrepDate	**12/8/2017**	Analyst: **CEI**	
Arsenic	3.6	0.025	0.10		µg/L	1	12/19/2017 02:26 PM
Manganese	1.6	0.056	0.50		µg/L	1	12/19/2017 02:26 PM
Molybdenum	21	0.039	0.50		µg/L	1	12/19/2017 02:26 PM
Selenium	42	0.028	0.50		µg/L	1	12/19/2017 02:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-65979**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120912**
Client ID: **PBW**	Batch ID: **65979**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-65979**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120912**
Client ID: **LCSW**	Batch ID: **65979**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.997	0.10	10.00	0	100	85	115				
Manganese	99.052	0.50	100.0	0	99.1	85	115				
Molybdenum	9.723	0.50	10.00	0	97.2	85	115				
Selenium	9.777	0.50	10.00	0	97.8	85	115				

Sample ID **N027405-001C-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120912**
Client ID: **ZZZZZZ**	Batch ID: **65979**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.743	0.10	10.00	4.629	101	75	125				
Molybdenum	22.777	0.50	10.00	10.82	120	75	125				
Selenium	9.247	0.50	10.00	0.1510	91.0	75	125				

Sample ID **N027405-001C-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/8/2017**	RunNo: **120912**
Client ID: **ZZZZZZ**	Batch ID: **65979**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/16/2017**	SeqNo: **2870954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	234.439	2.5	100.0	138.5	95.9	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027405-001C-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120912
Client ID:	ZZZZZZ	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870955

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.547	0.10	10.00	4.629	99.2	75	125	14.74	1.34	20	
Molybdenum	22.863	0.50	10.00	10.82	120	75	125	22.78	0.376	20	
Selenium	8.866	0.50	10.00	0.1510	87.1	75	125	9.247	4.21	20	

Sample ID	N027405-001C-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/8/2017	RunNo:	120912
Client ID:	ZZZZZZ	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870958

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	237.256	2.5	100.0	138.5	98.7	75	125	234.4	1.19	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker	RWQCB ✓	1. Chilled ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec	CalTrans	2. Headspace
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	Others ✓	LEVEL III	3. Container Intact
Title: Geologist II	Phone: 916-786-3302 Fax:		Specify: RWQCB	LEVEL IV	4. Seal Present
Signature: Date: 12/7/2017	Sampled By: Gantt Jeffers		Global ID:	Regulatory	5. IR number X
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*			Specify State:	6. Method of Cooling: Ice
Project Name: PG&E Topock - GMP	Signature: Date: 12/7/2017				Sample Temp: 2.6°C
Project Number: RC000753.801B					Courier: Tracking No.:

Matrix: Ground x Sediment; Potable Soil; NPDES Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Oxygen and Deuterium Stable Isotopes SFIRM (250 mL poly)	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) Potassium; HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3 (500 mL poly)	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 (500 mL poly)	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3 (500 mL poly)	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3 (500 mL poly)	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3 (500 mL poly)	Mercury, Dissolved (EPA 7470A); HNO3 (500 mL poly)	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4 (250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM2540C) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Fluoride (EPA 300.0) (1 liter poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027431-01 ✓	TW-02S-Q417	12/7/2017	12:42		X					X						X	X	X	X	X		E	4	P	BNS	
2	-02	MW-62-110-Q417	12/7/2017	15:55		X			X		X						X	X	X	X	X		E	4	P	BNS	
3	-03 ✓	MW-62-190-Q417	12/7/2017	15:40		X			X		X						X	X	X	X	X		E	4	P	BNS	
4	-04 ✓	MW-917-Q417	12/7/2017	15:45		X			X		X						X	X	X	X	X		E	4	P	BNS	
5	-05 ✓	MW-20-070-Q417	12/7/2017	15:22		X		X		X	X					X	X	X	X	X	X		E	5	P	BNS	
6	-06 ✓	MW-20-130-Q417	12/7/2017	15:18		X		X	X		X						X	X	X	X	X		E	5	P	BNS	
7																												
8																												
9																												
10																												

Relinquished by (Signature and Printed Name): Gantt Jeffers Date/Time: 12.7.17 1626
Received by (Signature and Printed Name): Date/Time:
Relinquished by (Signature and Printed Name): Date/Time: 12/7/17 1626
Received by (Signature and Printed Name): Date/Time:
Relinquished by (Signature and Printed Name): 12/7/17 1642 Date/Time:
Received by (Signature and Printed Name): Date/Time:
Relinquished by (Signature and Printed Name): Date/Time: 12/7/17 1642
Received by (Signature and Printed Name): Date/Time:

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B = $(NH4)2SO4/NH4OH$		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/7/2017	Workorder:	N027431
Rep sample Temp (Deg C):	2.6	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: N/A Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 12/19/2017

Reviewed By: 12/21/2017

SampleControlLV

From: Madsen, Laura <Laura.Madsen@arcadis.com>
Sent: Tuesday, December 12, 2017 12:41 PM
To: Sample Control; Bush, Dan; Dan Moore
Cc: Tina Rice; Kalib Sumter; jmahn@blainetech.com; Jeffers, Gantt
Subject: RE: N027428; N027429; N027430; N027431 COC and Work Order Summary for Samples Received 12/7/2017

Hi Marlon,
I have two corrections for this batch.

N027430:

- The sample ID N027430-0008A should be MW-28-090-Q417. It was logged in as MW-028-090-Q417

N027431

- Sample MW-20-130 should be analyzed for Potassium SW6010B, it was inadvertently left off the COC.

Thanks!
Laura

From: Sample Control [mailto:samplecontrol.lv@assetlaboratories.com]
Sent: Friday, December 8, 2017 4:11 PM
To: Bush, Dan <Dan.Bush@arcadis.com>; Dan Moore <Daniel.Moore@critigen.com>
Cc: Madsen, Laura <Laura.Madsen@arcadis.com>; Maurel, Sean <Sean.Maurel@arcadis.com>; Tina Rice <Tina.Rice@critigen.com>; Kalib Sumter <Kalib.Sumter@critigen.com>; rsunjara@blainetech.com; Vadpey, Nick <Nicholas.Vadpey@arcadis.com>; Harmon, Alison <Ali.Harmon@arcadis.com>; Serna, Erica <Erica.Serna@arcadis.com>; Bloes, Marty <mbloes@pivox.com>; jmahn@blainetech.com
Subject: N027428; N027429; N027430; N027431 COC and Work Order Summary for Samples Received 12/7/2017

Hi Dan Bush:

Enclosed are COC and WO Summary for samples received 12/7/2017. If you have any questions, please contact your Project Manager listed below.

Marlon Cartin
3151 W. Post Road
Las Vegas, Nevada
89118
Tel. No.: (702)-307-2659 Ext. 410
Cel. No.: (702)-439-0421
Email: marlon@assetlaboratories.com

Thank you for using ASSET Laboratories.

Sincerely,
Krydelle D. Ines
Sample Control Officer

ASSET Laboratories

WORK ORDER Summary

08-Dec-17

WorkOrder: N027431

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027431-001A	TW-02S-Q417	12/7/2017 12:42:00 PM	12/21/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027431-001B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027431-001C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027431-001D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027431-002A	MW-62-110-Q417	12/7/2017 3:55:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027431-002B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027431-002C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027431

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027431-002C	MW-62-110-Q417	12/7/2017 3:55:00 PM	12/21/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027431-002D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027431-003A	MW-62-190-Q417	12/7/2017 3:40:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027431-003B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027431-003C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027431-003D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027431-004A	MW-917-Q417	12/7/2017 3:45:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027431-004B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027431

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027431-004B	MW-917-Q417	12/7/2017 3:45:00 PM	12/21/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027431-004C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027431-004D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027431-005A	MW-20-070-Q417	12/7/2017 3:22:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027431-005B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027431-005C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027431-005D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

WORK ORDER Summary

08-Dec-17

WorkOrder: N027431

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027431-005E	MW-20-070-Q417	12/7/2017 3:22:00 PM	12/21/2017	Groundwater	OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027431-006A	MW-20-130-Q417	12/7/2017 3:18:00 PM	12/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027431-006B			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027431-006C			12/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N027431-006D			12/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027431-006E			12/21/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027431-007A	FOLDER	12/21/2017	12/21/2017		EDD	RWQCB	☐	☐	☐	LAB
			12/21/2017		Folder	Folder	☐	☐	☐	LAB
			12/21/2017		Folder	Folder	☐	☐	☐	LAB

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (760) 781 3338
FAX: (805) 544-8226
Acct #:

Field Sampler: Signed

11-Dec-17

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**OXY_DEUT**		
N027431-005E / MW-20-070-Q417	Groundwater	12/7/2017 3:22:00 PM	8OZP	1		
N027431-006E / MW-20-130-Q417	Groundwater	12/7/2017 3:18:00 PM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N27431A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Oxygen and Deuterium Stable Isotopes SFIRM. EDD Requirement Labspec7 edata.

Fedex #: 770961567484

		Date/Time			Date/Time
Relinquished by:		12/11/2017 16:00	**Received by:**		
Relinquished by:			**Received by:**		

List of Analysts

ASSET Laboratories Work Order: N027431

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6010B_Dissolved, EPA 6020_Dissolved
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	EPA 120.1, SM 2540C, SM 2320 B

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120750 **Analyst:** LSR

ASSET #: N027431 **Date Analyzed:** 12/8/2017

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 12/21/2017

2nd Level Reviewer RLB 12/26/2017 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 12/5/17 1700

Analyst: LSR

CONT'D

Standard	Std ID	Reading	Comments
9.43 uS/cm	CNW-1710KA	9.42 @ 21.1°C	% Rec: (90-110%)
1410	1708226	1421 @ 21.3°C	
9986	1710183	10070 @ 21.4°C	
99672	1710226E	99380 @ 21.4°C	

	Sample ID	Matrix	Reading	Comments
1	NO27430-020C	H2O	4780 @ 20.9°C	
2	NO27431-001C		2030 @ 20.7°C	
3	2C		7430 @ 20.9°C	
4	3C		13350 @ 21.1°C	
5	4C		13300 @ 21.1°C	
6	5C		1658 @ 20.8°C	
7	6C		7120 @ 20.9°C	
8	NO27459-001E		5280 @ 20.8°C	
9	2E		8080 @ 20.0°C	
10	3C		11690 @ 19.8°C	
Dup	3C DUP		11670 @ 19.8°C	Accept: 10% water, 20% soil
40	Std Chk:			% Rec: (90-110%)

Date: CONT'D

Analyst:

Silvia Ramit 12/21/2017

RB 12/26/2017

Standard	Std ID	Reading	Comments
1413 uS/cm	CNW-1706156	1473 @ 20.6°C	% Rec: (90-110%)
10000	170822F	10190 @ 20.9°C	
99672	170831B	97900 @ 21.1°C	

	Sample ID	Matrix	Reading	Comments
1	NO27459-004C	H2O	11950 @ 20.2°C	
2	5C		4460 @ 20.1°C	
3	6C		14570 @ 20.1°C	1413 CNW 1706156
4	6C DUP		14560 @ 20.0°C	= 1464 @ 21.1°C
5	7C		1788 @ 20.2°C	10000 CNW 170822F
6	8E		1647 @ 20.1°C	= 10250 @ 21.6°C
7	9C		7140 @ 20.2°C	99672 CNW 170831B
8	10C		7330 @ 20.2°C	= 98500 @ 21.6°C
9	11C		5200 @ 20.6°C	
10	12C		1269 @ 20.7°C	
Dup	13C		10580 @ 20.4°C	Accept: 10% water, 20% soil
50	Std Chk:			% Rec: (90-110%)

Logbook # 6

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66074 **Analyst:** LSR

ASSET #: N027431 **Date Analyzed:** 12/14/2017

Method: EPA 160.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 12/21/2017

2nd Level Reviewer: RLB 12/26/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N027431-001C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(70.8179 - 70.7382)*1000000}{60}$$
$$= 1328.3333 \text{ mg/L}$$

Reporting result in two significant figures,

TDS = 1300 mg/L

Julia Ramit 12/21/2017

RLB 12/26/2017

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/14/2017 1:07:13**
Prep End Date:

Reviewed/ Date: RB 12/26/2017

Initials/ Date: Lilia Ramit 12/21/2017

Prep Batch **66074** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH (Lot# 171711C)	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66074	Water		100	☐	0	0	100	1.000		
MB-66074	Water		100	☐	0	0	100	1.000		
N027431-001C 0.0175	Groundwater	2030	100 / 60	☐	0	0	100	1.000		
N027431-002C	Groundwater	7430	100 / 20	☐	0	0	100	1.000		
N027431-003C	Groundwater	13350	100 / 10	☐	0	0	100	1.000		
N027431-004C	Groundwater	13300	100 / 10	☐	0	0	100	1.000		
N027431-005C	Groundwater	1658	100 / 75	☐	0	0	100	1.000		
N027431-006C	Groundwater	7120	100 / 20	☐	0	0	100	1.000		
N027459-016E	Groundwater	1834	100 / 75	☐	0	0	100	1.000		
N027459-017E	Groundwater	1832	100 / 75	☐	0	0	100	1.000		
N027459-018C	Groundwater	13670	100 / 10	☐	0	0	100	1.000		
N027459-018C-DU	Groundwater	1	100 / 10	☐	0	0	100	1.000		
N027459-019C	Groundwater	10620	100 / 10	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9464

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/14/2017 1:07:13**
Prep End Date: **12/15/2017 11:15:0**

Reviewed/ Date: RLB 12/26/2017
Initials/ Date: Lilia Ramit 12/21/2017

Prep Batch **66074** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66074	Water		100	☐	0	0	100	1.000		
MB-66074	Water		100	☐	0	0	100	1.000		
N027431-001C	Groundwater		60	☐	0	0	100	1.667		
0.0175										
N027431-002C	Groundwater		20	☐	0	0	100	5.000		
N027431-003C	Groundwater		10	☐	0	0	100	10.000		
N027431-004C	Groundwater		10	☐	0	0	100	10.000		
N027431-005C	Groundwater		75	☐	0	0	100	1.333		
N027431-006C	Groundwater		20	☐	0	0	100	5.000		
N027459-016E	Groundwater		75	☐	0	0	100	1.333		
N027459-017E	Groundwater		75	☐	0	0	100	1.333		
N027459-018C	Groundwater		10	☐	0	0	100	10.000		
N027459-018C-DU	Groundwater		10	☐	0	0	100	10.000		
N027459-019C	Groundwater		10	☐	0	0	100	10.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9666	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171211C	1000 ppm NaCl	LCS	100

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/14/17 1317 LY	MB 66074	100	76.1837 76.1836	76.1834 76.1835	
LS	LCS 66074	100	76.5601 76.5599	76.6535 76.6537	
KL	N027431-001C	60	70.7384 70.7382	70.8182 70.8179	
9	2C	20	61.1397 61.1397	61.2460 61.2458	
IK	3C	10	62.4281 62.4278	62.5203 62.5204	
I5	4C	10	61.5226 61.5228	61.6252 61.6252	
IX	5C	75	76.5960 76.5957	76.6804 76.6805	
IW	6C	20	64.0197 64.0197	64.1291 64.1289	
L1	N027459-016E	75	74.5200 74.5196	74.6178 74.6177	
BB	17E	75	68.4625 68.4626	68.5615 68.5613	

ASSET Laboratories

Logbook#8

Julia Ramit 12/21/2017

12/26/2017

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/14/17 IF	ND27459-018C	10	60.6234 60.6232	60.7283 60.7279	
A	18C DUP	10	59.1271 59.1268	59.2363 59.2360	
S	19C	10	45.7298 45.7298	45.8035 45.8032	

Julia Ramit 12/21/2017

ASSET Laboratories Logbook#8

12/26/2017

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
12/15/2017									
MB-66074	100	76.1836	76.1835	-1	1	-1			MBLK
LCS-66074	100	76.5599	76.6537	938	1	938			LCS
N027431-001C	60	70.7382	70.8179	797	1.66666667	1328.33333	2030	0.654	SAMP
N027431-002C	20	61.1397	61.2458	1061	5	5305	7430	0.714	SAMP
N027431-003C	10	62.4278	62.5204	926	10	9260	13350	0.694	SAMP
N027431-004C	10	61.5228	61.6252	1024	10	10240	13300	0.770	SAMP
N027431-005C	75	76.5957	76.6805	848	1.33333333	1130.66667	1658	0.682	SAMP
N027431-006C	20	64.0197	64.1289	1092	5	5460	7120	0.767	SAMP
N027459-016E	75	74.5196	74.6177	981	1.33333333	1308	1834	0.713	SAMP
N027459-017E	75	68.4626	68.5613	987	1.33333333	1316	1832	0.718	SAMP
N027459-018C	10	60.6232	60.7279	1047	10	10470	13670	0.766	SAMP
N027459-018CDUP	10	59.1268	59.236	1092	10	10920	13670	0.799	DUP
N027459-019C	10	45.7298	45.8032	734	10	7340	10620	0.691	SAMP

Silvia Ramit 12/21/2017

RB 12/26/2017

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120834
ASSET #: N027431

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 12/11/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.		X			X	
11. All samples pH within 9.3-9.7 when analyzed?	X			X		
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?		X			X	
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?	X					
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:
N027431-001A is over-linear range. For dilution.
Dilution was necessary for N027431-002A to -004A due to matrix interference.
N027431-002A(218.6) = 0.35 ug/L ; N027431-002B(6020) = 3.0 ug/L MS protocol performed. Recovery within criteria.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 12/16/2017

2nd Level Reviewer RB 12/26/2017 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120835
ASSET #: N027431

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 12/12/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:
For N027431-001A dilution only.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/16/2017

2nd Level Reviewer: RLB 12/26/2017 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N027431-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 4.9968 * 50$$

$$Cr^{+6}, \mu g/L = 249.84$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 250}$$

rba 12/16/2017

12/26/2017

ANALYSIS RUN LOG

INJECTION LOG: 171128A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/28/17 10:57 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/28/17 11:08 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/28/17 11:17 AM	Reported
13	MB-R120468	MBLK	1	Hexavalent Chromium	11/28/17 11:27 AM	Reported
14	LCS-R120468	LCS	1	Hexavalent Chromium	11/28/17 11:36 AM	Reported
15	N027215-001A	SAMP	1	Hexavalent Chromium	11/28/17 11:47 AM	Reported
16	N027215-002A	SAMP	1	Hexavalent Chromium	11/28/17 11:59 AM	Reported
17	N027215-003A	SAMP	1	Hexavalent Chromium	11/28/17 12:08 PM	Reported
18	N027215-004A	SAMP	1	Hexavalent Chromium	11/28/17 12:18 PM	Reported
19	N027215-005A	SAMP	1	Hexavalent Chromium	11/28/17 12:27 PM	Reported
20	N027215-002ADUP	DUP	1	Hexavalent Chromium	11/28/17 12:37 PM	Reported
21	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 12:46 PM	Not Reported
22	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 12:56 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	11/28/17 1:05 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/28/17 1:14 PM	Reported
25	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:04 PM	Not Reported
26	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:16 PM	Not Reported
27	N027215-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:29 PM	Reported
28	N027215-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:41 PM	Reported
29	CCV-2	CCV	1	Hexavalent Chromium	11/28/17 2:50 PM	Reported
30	CCB-2	CCB	1	Hexavalent Chromium	11/28/17 3:00 PM	Reported



Injection Log Summary

Sequence Details

Name:	**IC-07_171128A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**28/Nov/17 15:47:35**
No. of Injections:	**33**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		11/28/2017 10:57	Finished	ICV @5ppb, IWST-171002A
11	PQL@0.2ppb,CCV2,1	12	1000	Unknown		11/28/2017 11:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		11/28/2017 11:17	Finished	ICB R171114C
13	MB-H2O,MBLK,1	14	1000	Unknown		11/28/2017 11:27	Finished	MB R171114C
14	LCS-H2O,LCS,1	15	1000	Unknown		11/28/2017 11:36	Finished	LCS, IWST-171002B
15	N027215-001A,SAMP	17	1000	Unknown		11/28/2017 11:47	Finished	SAMP,10mL
16	N027215-002A,SAMP	18	1000	Unknown		11/28/2017 11:59	Finished	SAMP,10mL
17	N027215-003A,SAMP	19	1000	Unknown		11/28/2017 12:08	Finished	SAMP,10mL
18	N027215-004A,SAMP	20	1000	Unknown		11/28/2017 12:18	Finished	SAMP,10mL
19	N027215-005A,SAMP	21	1000	Unknown		11/28/2017 12:27	Finished	SAMP,10mL
20	N027215-002ADUP,D	22	1000	Unknown		11/28/2017 12:37	Finished	DUP,10mL
21	N027157-001AMS,MS	23	1000	Unknown		11/28/2017 12:46	Finished	MS (5ppb), IWST-171002B,10
22	N027157-001AMSD,M	24	1000	Unknown		11/28/2017 12:56	Finished	MSD (5ppb), IWST-171002B,1(
23	CCV-1,CCV1,1,	25	1000	Unknown		11/28/2017 13:05	Finished	CCV @10ppb, IWST-171002A
24	CCB-1,CCB,1,	26	1000	Unknown		11/28/2017 13:14	Finished	CCB R171031A
25	N027157-001AMS,MS	28	1000	Unknown		11/28/2017 14:04	Finished	MS (5ppb), IWST-171002B,10
26	N027157-001AMSD,M	29	1000	Unknown		11/28/2017 14:16	Finished	MSD (5ppb), IWST-171002B,1(
27	N027215-001AMS,MS	31	1000	Unknown		11/28/2017 14:29	Finished	MS (5ppb), IWST-171002B,10
28	N027215-001AMSD,M	32	1000	Unknown		11/28/2017 14:41	Finished	MSD (5ppb), IWST-171002B,1(
29	CCV-2,CCV,1,	33	1000	Unknown		11/28/2017 14:50	Finished	CCV @5ppb, IWST-171002A
30	CCB-2,CCB,1,	34	1000	Unknown		11/28/2017 15:00	Finished	CCB R171031A
31	SHUTDOWN	35	1000	Unknown		11/28/2017 15:09	Finished	
32	Eluent: R171128A	36	1000	Unknown		n.a.	Finished	Eluent
33	PCR: R171128B	37	1000	Unknown		n.a.	Finished	Post-Column Reagent

rba 11/29/2017

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 8:57 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 9:08 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/11/17 9:18 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/11/17 9:27 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/11/17 9:37 AM	Reported
15	MB-R120833	MBLK	1	Hexavalent Chromium	12/11/17 9:46 AM	Reported
16	LCS-R120833	LCS	1	Hexavalent Chromium	12/11/17 9:56 AM	Reported
17	N027405-006AMS	MS	5	Hexavalent Chromium	12/11/17 10:09 AM	Reported
18	N027405-006A	SAMP	5	Hexavalent Chromium	12/11/17 10:20 AM	Reported
19	N027405-007AMS	MS	5	Hexavalent Chromium	12/11/17 10:29 AM	Reported
20	N027405-007A	SAMP	5	Hexavalent Chromium	12/11/17 10:39 AM	Reported
21	N027405-008AMS	MS	5	Hexavalent Chromium	12/11/17 10:48 AM	Reported
22	N027405-008A	SAMP	5	Hexavalent Chromium	12/11/17 10:58 AM	Reported
23	N027430-001A	SAMP	1	Hexavalent Chromium	12/11/17 11:07 AM	Reported
24	N027430-001AMS	MS	1	Hexavalent Chromium	12/11/17 11:17 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/11/17 11:26 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/11/17 11:36 AM	Reported
27	N027430-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:45 AM	Reported
28	N027430-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:54 AM	Reported
29	N027430-003A	SAMP	1	Hexavalent Chromium	12/11/17 12:04 PM	Reported
30	N027430-003AMS	MS	1	Hexavalent Chromium	12/11/17 12:13 PM	Reported
31	N027430-004A	SAMP	1	Hexavalent Chromium	12/11/17 12:23 PM	Reported
32	N027430-004AMS	MS	1	Hexavalent Chromium	12/11/17 12:32 PM	Reported
33	N027430-005A	SAMP	1	Hexavalent Chromium	12/11/17 12:42 PM	Reported
34	N027430-005AMS	MS	1	Hexavalent Chromium	12/11/17 12:51 PM	Reported
35	N027430-006A	SAMP	1	Hexavalent Chromium	12/11/17 1:01 PM	Reported
36	N027430-006AMS	MS	1	Hexavalent Chromium	12/11/17 1:10 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/11/17 1:20 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/11/17 1:29 PM	Reported
39	N027430-007A	SAMP	1	Hexavalent Chromium	12/11/17 1:38 PM	Reported
40	N027430-007AMS	MS	1	Hexavalent Chromium	12/11/17 1:48 PM	Reported
41	N027430-008A	SAMP	1	Hexavalent Chromium	12/11/17 1:57 PM	Reported
42	N027430-008AMS	MS	1	Hexavalent Chromium	12/11/17 2:07 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027430-009A	SAMP	1	Hexavalent Chromium	12/11/17 2:16 PM	Reported
44	N027430-009AMS	MS	1	Hexavalent Chromium	12/11/17 2:26 PM	Reported
45	N027430-010A	SAMP	1	Hexavalent Chromium	12/11/17 2:35 PM	Reported
46	N027430-010AMS	MS	1	Hexavalent Chromium	12/11/17 2:45 PM	Reported
47	N027430-020A	SAMP	20	Hexavalent Chromium	12/11/17 2:54 PM	Reported
48	N027430-020AMS	MS	20	Hexavalent Chromium	12/11/17 3:04 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/11/17 3:13 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/11/17 3:23 PM	Reported
51	N027430-012A	SAMP	1	Hexavalent Chromium	12/11/17 3:32 PM	Not Reported
52	N027430-012AMS	MS	1	Hexavalent Chromium	12/11/17 3:41 PM	Not Reported
53	N027430-019A	SAMP	1	Hexavalent Chromium	12/11/17 3:51 PM	Reported
54	N027430-019AMS	MS	1	Hexavalent Chromium	12/11/17 4:00 PM	Reported
55	N027430-011A	SAMP	1	Hexavalent Chromium	12/11/17 4:10 PM	Reported
56	N027430-011AMS	MS	1	Hexavalent Chromium	12/11/17 4:19 PM	Reported
57	N027430-013A	SAMP	5	Hexavalent Chromium	12/11/17 4:29 PM	Reported
58	N027430-013AMS	MS	5	Hexavalent Chromium	12/11/17 4:38 PM	Reported
59	N027430-014A	SAMP	5	Hexavalent Chromium	12/11/17 4:48 PM	Reported
60	N027430-014AMS	MS	5	Hexavalent Chromium	12/11/17 4:57 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/11/17 5:07 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/11/17 5:16 PM	Reported
63	N027430-015A	SAMP	5	Hexavalent Chromium	12/11/17 5:26 PM	Reported
64	N027430-015AMS	MS	5	Hexavalent Chromium	12/11/17 5:35 PM	Reported
65	N027405-006ADUP	DUP	5	Hexavalent Chromium	12/11/17 5:44 PM	Reported
66	N027430-020AMSD	MSD	20	Hexavalent Chromium	12/11/17 5:54 PM	Reported
67	N027430-002A	SAMP	1	Hexavalent Chromium	12/11/17 6:05 PM	Not Reported
68	N027430-002AMS	MS	1	Hexavalent Chromium	12/11/17 6:16 PM	Not Reported
69	N027430-013A	SAMP	1	Hexavalent Chromium	12/11/17 6:25 PM	Not Reported
70	N027430-013AMS	MS	1	Hexavalent Chromium	12/11/17 6:35 PM	Not Reported
71	N027430-014A	SAMP	1	Hexavalent Chromium	12/11/17 6:44 PM	Not Reported
72	N027430-014AMS	MS	1	Hexavalent Chromium	12/11/17 6:54 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	12/11/17 7:03 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	12/11/17 7:13 PM	Reported
75	N027430-015A	SAMP	1	Hexavalent Chromium	12/11/17 7:22 PM	Not Reported
76	N027430-015AMS	MS	1	Hexavalent Chromium	12/11/17 7:32 PM	Not Reported
77	N027430-012A	SAMP	5	Hexavalent Chromium	12/11/17 7:41 PM	Reported
78	N027430-012AMS	MS	5	Hexavalent Chromium	12/11/17 7:50 PM	Reported
79	LCS-R120834	LCS	1	Hexavalent Chromium	12/11/17 8:00 PM	Reported
80	MB-R120834	MBLK	1	Hexavalent Chromium	12/11/17 8:09 PM	Reported
81	N027431-006A	SAMP	1000	Hexavalent Chromium	12/11/17 8:19 PM	Reported
82	N027431-006AMS	MS	1000	Hexavalent Chromium	12/11/17 8:28 PM	Reported
83	N027431-006AMSD	MSD	1000	Hexavalent Chromium	12/11/17 8:38 PM	Reported
84	N027428-002A	SAMP	100	Hexavalent Chromium	12/11/17 8:47 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	12/11/17 8:57 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	12/11/17 9:06 PM	Reported
87	N027428-002ADUP	DUP	100	Hexavalent Chromium	12/11/17 9:16 PM	Reported
88	N027428-002AMS	MS	100	Hexavalent Chromium	12/11/17 9:25 PM	Reported
89	N027428-001A	SAMP	1	Hexavalent Chromium	12/11/17 9:35 PM	Reported
90	N027428-001AMS	MS	1	Hexavalent Chromium	12/11/17 9:44 PM	Reported
91	N027430-016A	SAMP	5	Hexavalent Chromium	12/11/17 9:53 PM	Reported
92	N027430-016AMS	MS	5	Hexavalent Chromium	12/11/17 10:03 PM	Reported
93	N027430-017A	SAMP	5	Hexavalent Chromium	12/11/17 10:12 PM	Reported
94	N027430-017AMS	MS	5	Hexavalent Chromium	12/11/17 10:22 PM	Reported
95	N027430-018A	SAMP	5	Hexavalent Chromium	12/11/17 10:31 PM	Reported
96	N027430-018AMS	MS	5	Hexavalent Chromium	12/11/17 10:41 PM	Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	12/11/17 10:50 PM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	12/11/17 11:00 PM	Reported
99	N027431-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:09 PM	Reported
100	N027431-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:19 PM	Reported
101	N027431-003A	SAMP	5	Hexavalent Chromium	12/11/17 11:28 PM	Reported
102	N027431-003AMS	MS	5	Hexavalent Chromium	12/11/17 11:38 PM	Reported
103	N027431-004A	SAMP	5	Hexavalent Chromium	12/11/17 11:47 PM	Reported
104	N027431-004AMS	MS	5	Hexavalent Chromium	12/11/17 11:56 PM	Reported
105	N027431-001A	SAMP	10	Hexavalent Chromium	12/12/17 12:06 AM	Not Reported
106	N027431-001AMS	MS	10	Hexavalent Chromium	12/12/17 12:15 AM	Not Reported
107	N027431-005A	SAMP	200	Hexavalent Chromium	12/12/17 12:25 AM	Reported
108	N027431-005AMS	MS	200	Hexavalent Chromium	12/12/17 12:34 AM	Reported
109	CCV-9	CCV	1	Hexavalent Chromium	12/12/17 12:44 AM	Reported
110	CCB-9	CCB	1	Hexavalent Chromium	12/12/17 12:53 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171211A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**12/Dec/17 01:24:03**
No. of Injections:	**113**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/11/2017 08:57	Finished	BLANK
11	BLANK	2	1000	Unknown		12/11/2017 09:08	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/11/2017 09:18	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/11/2017 09:27	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/11/2017 09:37	Finished	CCB R171129A
15	MB-1,MBLK,1	6	1000	Unknown		12/11/2017 09:46	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/11/2017 09:56	Finished	LCS, IWST-171002B
17	N027405-006AMS,MS	1	1000	Unknown		12/11/2017 10:09	Finished	MS (1ppb), IWST-171002B,2>1
18	N027405-006A,SAMP	2	1000	Unknown		12/11/2017 10:20	Finished	SAMP,2>10mL
19	N027405-007AMS,MS	3	1000	Unknown		12/11/2017 10:29	Finished	MS (1ppb), IWST-171002B,2>1
20	N027405-007A,SAMP	4	1000	Unknown		12/11/2017 10:39	Finished	SAMP,2>10mL
21	N027405-008AMS,MS	5	1000	Unknown		12/11/2017 10:48	Finished	SAMP,2>10mL
22	N027405-008A,SAMP	6	1000	Unknown		12/11/2017 10:58	Finished	MS (1ppb), IWST-171002B,2>1
23	N027430-001A,SAMP	7	1000	Unknown		12/11/2017 11:07	Finished	SAMP,10mL
24	N027430-001AMS,MS	8	1000	Unknown		12/11/2017 11:17	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	9	1000	Unknown		12/11/2017 11:26	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	10	1000	Unknown		12/11/2017 11:36	Finished	CCB R171129A
27	N027430-002A,SAMP	11	1000	Unknown		12/11/2017 11:45	Finished	SAMP,2>10mL
28	N027430-002AMS,MS	12	1000	Unknown		12/11/2017 11:54	Finished	MS (1ppb), IWST-171002B,2>1
29	N027430-003A,SAMP	13	1000	Unknown		12/11/2017 12:04	Finished	SAMP,10mL
30	N027430-003AMS,MS	14	1000	Unknown		12/11/2017 12:13	Finished	MS (1ppb), IWST-171002B,10
31	N027430-004A,SAMP	15	1000	Unknown		12/11/2017 12:23	Finished	SAMP,10mL
32	N027430-004AMS,MS	16	1000	Unknown		12/11/2017 12:32	Finished	MS (1ppb), IWST-171002B,10
33	N027430-005A,SAMP	17	1000	Unknown		12/11/2017 12:42	Finished	SAMP,10mL
34	N027430-005AMS,MS	18	1000	Unknown		12/11/2017 12:51	Finished	MS (1ppb), IWST-171002B,10
35	N027430-006A,SAMP	19	1000	Unknown		12/11/2017 13:01	Finished	SAMP,10mL
36	N027430-006AMS,MS	20	1000	Unknown		12/11/2017 13:10	Finished	MS (1ppb), IWST-171002B,10
37	CCV-3,CCV,1,	21	1000	Unknown		12/11/2017 13:20	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	22	1000	Unknown		12/11/2017 13:29	Finished	CCB R171129A
39	N027430-007A,SAMP	23	1000	Unknown		12/11/2017 13:38	Finished	SAMP,10mL
40	N027430-007AMS,MS	24	1000	Unknown		12/11/2017 13:48	Finished	MS (1ppb), IWST-171002B,10
41	N027430-008A,SAMP	25	1000	Unknown		12/11/2017 13:57	Finished	SAMP,10mL
42	N027430-008AMS,MS	26	1000	Unknown		12/11/2017 14:07	Finished	MS (1ppb), IWST-171002B,10
43	N027430-009A,SAMP	27	1000	Unknown		12/11/2017 14:16	Finished	SAMP,10mL
44	N027430-009AMS,MS	28	1000	Unknown		12/11/2017 14:26	Finished	MS (1ppb), IWST-171002B,10
45	N027430-010A,SAMP	29	1000	Unknown		12/11/2017 14:35	Finished	SAMP,10mL
46	N027430-010AMS,MS	30	1000	Unknown		12/11/2017 14:45	Finished	MS (1ppb), IWST-171002B,10
47	N027430-020A,SAMP	31	1000	Unknown		12/11/2017 14:54	Finished	SAMP,0.5>10mL
48	N027430-020AMS,MS	32	1000	Unknown		12/11/2017 15:04	Finished	MS (5ppb), IWST-171002B,0.5
49	CCV-4,CCV1,1,	33	1000	Unknown		12/11/2017 15:13	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	34	1000	Unknown		12/11/2017 15:23	Finished	CCB R171129A
51	N027430-012A,SAMP	35	1000	Unknown		12/11/2017 15:32	Finished	SAMP,10mL
52	N027430-012AMS,MS	36	1000	Unknown		12/11/2017 15:41	Finished	MS (1ppb), IWST-171002B,10
53	N027430-019A,SAMP	37	1000	Unknown		12/11/2017 15:51	Finished	SAMP,10mL
54	N027430-019AMS,MS	38	1000	Unknown		12/11/2017 16:00	Finished	MS (1ppb), IWST-171002B,10
55	N027430-011A,SAMP	39	1000	Unknown		12/11/2017 16:10	Finished	SAMP,10mL
56	N027430-011AMS,MS	40	1000	Unknown		12/11/2017 16:19	Finished	MS (1ppb), IWST-171002B,10
57	N027430-013A,SAMP	41	1000	Unknown		12/11/2017 16:29	Finished	SAMP,2>10mL
58	N027430-013AMS,MS	42	1000	Unknown		12/11/2017 16:38	Finished	MS (1ppb), IWST-171002B,2>1
59	N027430-014A,SAMP	43	1000	Unknown		12/11/2017 16:48	Finished	SAMP,2>10mL
60	N027430-014AMS,MS	44	1000	Unknown		12/11/2017 16:57	Finished	MS (1ppb), IWST-171002B,2>1

61	CCV-5,CCV,1,	45	1000	Unknown		12/11/2017 17:07	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	46	1000	Unknown		12/11/2017 17:16	Finished	CCB R171129A
63	N027430-015A,SAMP	47	1000	Unknown		12/11/2017 17:26	Finished	SAMP,2>10mL
64	N027430-015AMS,MS	48	1000	Unknown		12/11/2017 17:35	Finished	MS (1ppb), IWST-171002B,2>1
65	N027405-006ADUP,D	49	1000	Unknown		12/11/2017 17:44	Finished	DUP,2>10mL
66	N027430-020AMSD,M	50	1000	Unknown		12/11/2017 17:54	Finished	MSD (5ppb), IWST-171002B,0.
67	N027430-002A,SAMP	1	1000	Unknown		12/11/2017 18:05	Finished	MSD (5ppb), IWST-171002B,0.
68	N027430-002AMS,MS	2	1000	Unknown		12/11/2017 18:16	Finished	DUP,2>10mL
69	N027430-013A,SAMP	3	1000	Unknown		12/11/2017 18:25	Finished	SAMP,2>10mL
70	N027430-013AMS,MS	4	1000	Unknown		12/11/2017 18:35	Finished	MS (1ppb), IWST-171002B,2>1
71	N027430-014A,SAMP	5	1000	Unknown		12/11/2017 18:44	Finished	SAMP,10mL
72	N027430-014AMS,MS	6	1000	Unknown		12/11/2017 18:54	Finished	MS (1ppb), IWST-171002B,10
73	CCV-6,CCV1,1,	7	1000	Unknown		12/11/2017 19:03	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	8	1000	Unknown		12/11/2017 19:13	Finished	CCB R171129A
75	N027430-015A,SAMP	9	1000	Unknown		12/11/2017 19:22	Finished	LCS, IWST-171002B
76	N027430-015AMS,MS	10	1000	Unknown		12/11/2017 19:32	Finished	MB R171129A
77	N027430-012A,SAMP	11	1000	Unknown		12/11/2017 19:41	Finished	SAMP,2>10mL
78	N027430-012AMS,MS	12	1000	Unknown		12/11/2017 19:50	Finished	MS (1ppb), IWST-171002B,2>1
79	LCS-2,LCS,1	13	1000	Unknown		12/11/2017 20:00	Finished	LCS, IWST-171002B
80	MB-2,MBLK,1	14	1000	Unknown		12/11/2017 20:09	Finished	MB R171129A
81	N027431-006A,SAMP	15	1000	Unknown		12/11/2017 20:19	Finished	DUP,0.1>10mL
82	N027431-006AMS,MS	16	1000	Unknown		12/11/2017 20:28	Finished	SAMP,10mL
83	N027431-006AMSD,M	17	1000	Unknown		12/11/2017 20:38	Finished	SAMP,5>10mL
84	N027428-002A,SAMP	18	1000	Unknown		12/11/2017 20:47	Finished	SAMP,0.2>10mL
85	CCV-7,CCV,1,	19	1000	Unknown		12/11/2017 20:57	Finished	CCV @5ppb, IWST-171002A
86	CCB-7,CCB,1,	20	1000	Unknown		12/11/2017 21:06	Finished	CCB R171114C
87	N027428-002ADUP,D	21	1000	Unknown		12/11/2017 21:16	Finished	SAMP,0.2>10mL
88	N027428-002AMS,MS	22	1000	Unknown		12/11/2017 21:25	Finished	SAMP,1>10mL
89	N027428-001A,SAMP	23	1000	Unknown		12/11/2017 21:35	Finished	SAMP,0.5>10mL
90	N027428-001AMS,MS	24	1000	Unknown		12/11/2017 21:44	Finished	SAMP,5>10mL
91	N027430-016A,SAMP	25	1000	Unknown		12/11/2017 21:53	Finished	SAMP,10mL
92	N027430-016AMS,MS	26	1000	Unknown		12/11/2017 22:03	Finished	SAMP,2>10mL
93	N027430-017A,SAMP	27	1000	Unknown		12/11/2017 22:12	Finished	MS (5ppb), IWST-171002B,2>1
94	N027430-017AMS,MS	28	1000	Unknown		12/11/2017 22:22	Finished	MSD (5ppb), IWST-171002B,2>
95	N027430-018A,SAMP	29	1000	Unknown		12/11/2017 22:31	Finished	SAMP,10mL
96	N027430-018AMS,MS	30	1000	Unknown		12/11/2017 22:41	Finished	MS (1ppb), IWST-171002B,10
97	CCV-8,CCV1,1,	31	1000	Unknown		12/11/2017 22:50	Finished	CCV @10ppb, IWST-171002A
98	CCB-8,CCB,1,	32	1000	Unknown		12/11/2017 23:00	Finished	CCB R171129A
99	N027431-002A,SAMP	33	1000	Unknown		12/11/2017 23:09	Finished	SAMP,10mL
100	N027431-002AMS,MS	34	1000	Unknown		12/11/2017 23:19	Finished	MS (1ppb), IWST-171002B,10
101	N027431-003A,SAMP	35	1000	Unknown		12/11/2017 23:28	Finished	SAMP,10mL
102	N027431-003AMS,MS	36	1000	Unknown		12/11/2017 23:38	Finished	MS (1ppb), IWST-171002B,10
103	N027431-004A,SAMP	37	1000	Unknown		12/11/2017 23:47	Finished	SAMP,10mL
104	N027431-004AMS,MS	38	1000	Unknown		12/11/2017 23:56	Finished	MS (1ppb), IWST-171002B,10
105	N027431-001A,SAMP	39	1000	Unknown		12/12/2017 00:06	Finished	SAMP,10mL
106	N027431-001AMS,MS	40	1000	Unknown		12/12/2017 00:15	Finished	MS (1ppb), IWST-171002B,10
107	N027431-005A,SAMP	41	1000	Unknown		12/12/2017 00:25	Finished	SAMP,10mL
108	N027431-005AMS,MS	42	1000	Unknown		12/12/2017 00:34	Finished	MS (1ppb), IWST-171002B,10
109	CCV-9,CCV,1,	43	1000	Unknown		12/12/2017 00:44	Finished	CCV @5ppb, IWST-171002A
110	CCB-9,CCB,1,	44	1000	Unknown		12/12/2017 00:53	Finished	CCB R171114C
111	SHUTDOWN	45	1000	Unknown		12/12/2017 01:03	Finished	
112	Eluent: R171211B	46	1000	Unknown		n.a.	Finished	Eluent
113	PCR: R171211C	47	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 171212A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/12/17 8:51 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/12/17 9:02 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/12/17 9:11 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/12/17 9:21 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/12/17 9:30 AM	Reported
15	MB-R120835	MBLK	1	Hexavalent Chromium	12/12/17 9:40 AM	Reported
16	LCS-R120835	LCS	1	Hexavalent Chromium	12/12/17 9:49 AM	Reported
17	N027430-016A	SAMP	1	Hexavalent Chromium	12/12/17 9:59 AM	Not Reported
18	N027430-016AMS	MS	1	Hexavalent Chromium	12/12/17 10:08 AM	Not Reported
19	N027430-017A	SAMP	1	Hexavalent Chromium	12/12/17 10:18 AM	Not Reported
20	N027430-017AMS	MS	1	Hexavalent Chromium	12/12/17 10:27 AM	Not Reported
21	N027430-018A	SAMP	1	Hexavalent Chromium	12/12/17 10:37 AM	Not Reported
22	N027430-018AMS	MS	1	Hexavalent Chromium	12/12/17 10:46 AM	Not Reported
23	N027431-002A	SAMP	1	Hexavalent Chromium	12/12/17 10:56 AM	Not Reported
24	N027431-002AMS	MS	1	Hexavalent Chromium	12/12/17 11:05 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/12/17 11:14 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/12/17 11:24 AM	Reported
27	N027431-003A	SAMP	1	Hexavalent Chromium	12/12/17 11:33 AM	Not Reported
28	N027431-003AMS	MS	1	Hexavalent Chromium	12/12/17 11:43 AM	Not Reported
29	N027431-004A	SAMP	1	Hexavalent Chromium	12/12/17 11:52 AM	Not Reported
30	N027431-004AMS	MS	1	Hexavalent Chromium	12/12/17 12:02 PM	Not Reported
31	N027465-001A	SAMP	1	Hexavalent Chromium	12/12/17 12:11 PM	Reported
32	N027465-001AMS	MS	1	Hexavalent Chromium	12/12/17 12:21 PM	Reported
33	N027465-002A	SAMP	1	Hexavalent Chromium	12/12/17 12:30 PM	Reported
34	N027465-002AMS	MS	1	Hexavalent Chromium	12/12/17 12:40 PM	Reported
35	N027465-003A	SAMP	1	Hexavalent Chromium	12/12/17 12:49 PM	Reported
36	N027465-003AMS	MS	1	Hexavalent Chromium	12/12/17 12:58 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/12/17 1:12 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/12/17 1:23 PM	Reported
39	N027431-001A	SAMP	50	Hexavalent Chromium	12/12/17 1:33 PM	Reported
40	N027431-001AMS	MS	50	Hexavalent Chromium	12/12/17 1:42 PM	Reported
41	N027431-001ADUP	DUP	50	Hexavalent Chromium	12/12/17 2:05 PM	Reported
42	N027431-002AMS	MS	1	Hexavalent Chromium	12/12/17 2:16 PM	Not Reported

INJECTION LOG: 171212A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027429-009A	SAMP	20	Hexavalent Chromium	12/12/17 2:25 PM	Reported
44	N027429-009AMS	MS	20	Hexavalent Chromium	12/12/17 2:35 PM	Reported
45	N027429-009AMSD	MSD	20	Hexavalent Chromium	12/12/17 2:44 PM	Reported
46	N027429-001A	SAMP	1	Hexavalent Chromium	12/12/17 2:54 PM	Reported
47	N027429-001AMS	MS	1	Hexavalent Chromium	12/12/17 3:03 PM	Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	12/12/17 3:13 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	12/12/17 3:22 PM	Reported
50	N027429-002A	SAMP	1	Hexavalent Chromium	12/12/17 3:32 PM	Reported
51	N027429-002AMS	MS	1	Hexavalent Chromium	12/12/17 3:41 PM	Reported
52	N027429-003A	SAMP	50	Hexavalent Chromium	12/12/17 3:50 PM	Reported
53	N027429-003AMS	MS	50	Hexavalent Chromium	12/12/17 4:00 PM	Reported
54	N027429-004A	SAMP	1	Hexavalent Chromium	12/12/17 4:10 PM	Reported
55	N027429-004AMS	MS	1	Hexavalent Chromium	12/12/17 4:19 PM	Reported
56	N027429-005A	SAMP	5	Hexavalent Chromium	12/12/17 4:28 PM	Reported
57	N027429-005AMS	MS	5	Hexavalent Chromium	12/12/17 4:38 PM	Reported
58	N027429-006A	SAMP	5	Hexavalent Chromium	12/12/17 4:47 PM	Reported
59	N027429-006AMS	MS	5	Hexavalent Chromium	12/12/17 4:57 PM	Reported
60	CCV-5	CCV	1	Hexavalent Chromium	12/12/17 5:06 PM	Reported
61	CCB-5	CCB	1	Hexavalent Chromium	12/12/17 5:16 PM	Reported
62	N027429-007A	SAMP	1	Hexavalent Chromium	12/12/17 5:25 PM	Reported
63	N027429-007AMS	MS	1	Hexavalent Chromium	12/12/17 5:35 PM	Reported
64	N027429-008A	SAMP	1	Hexavalent Chromium	12/12/17 5:44 PM	Reported
65	N027429-008AMS	MS	1	Hexavalent Chromium	12/12/17 5:54 PM	Reported
66	N027429-010A	SAMP	1000	Hexavalent Chromium	12/12/17 6:03 PM	Reported
67	N027429-010AMS	MS	1000	Hexavalent Chromium	12/12/17 6:12 PM	Reported
68	LCS-R120836	LCS	1	Hexavalent Chromium	12/12/17 6:24 PM	Reported
69	MB-R120836	MBLK	1	Hexavalent Chromium	12/12/17 6:35 PM	Reported
70	N027508-001A	SAMP	200	Hexavalent Chromium	12/12/17 6:45 PM	Reported
71	N027508-011A	SAMP	5	Hexavalent Chromium	12/12/17 6:54 PM	Reported
72	CCV-6	CCV1	1	Hexavalent Chromium	12/12/17 7:04 PM	Reported
73	CCB-6	CCB	1	Hexavalent Chromium	12/12/17 7:13 PM	Reported
74	N027508-003A	SAMP	200	Hexavalent Chromium	12/12/17 7:23 PM	Reported
75	N027508-001AMS	MS	200	Hexavalent Chromium	12/12/17 7:32 PM	Reported
76	N027508-001AMSD	MSD	200	Hexavalent Chromium	12/12/17 7:41 PM	Reported
77	N027508-011AMS	MS	5	Hexavalent Chromium	12/12/17 7:51 PM	Reported
78	N027508-003ADUP	DUP	200	Hexavalent Chromium	12/12/17 8:00 PM	Reported
79	N027508-004A	SAMP	500	Hexavalent Chromium	12/12/17 8:10 PM	Reported
80	N027508-005A	SAMP	2000	Hexavalent Chromium	12/12/17 8:19 PM	Reported
81	N027508-006A	SAMP	2000	Hexavalent Chromium	12/12/17 8:29 PM	Reported
82	N027508-007A	SAMP	2000	Hexavalent Chromium	12/12/17 8:38 PM	Reported
83	N027508-008A	SAMP	5	Hexavalent Chromium	12/12/17 8:48 PM	Not Reported
84	CCV-7	CCV	1	Hexavalent Chromium	12/12/17 8:57 PM	Reported

INJECTION LOG: 171212A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCB-7	CCB	1	Hexavalent Chromium	12/12/17 9:07 PM	Reported
86	N027508-009A	SAMP	5	Hexavalent Chromium	12/12/17 9:16 PM	Reported
87	N027508-010A	SAMP	1	Hexavalent Chromium	12/12/17 9:26 PM	Reported
88	N027508-012A	SAMP	20	Hexavalent Chromium	12/12/17 9:35 PM	Reported
89	N027508-013A	SAMP	50	Hexavalent Chromium	12/12/17 9:44 PM	Reported
90	N027508-014A	SAMP	50	Hexavalent Chromium	12/12/17 9:54 PM	Reported
91	N027508-015A	SAMP	100	Hexavalent Chromium	12/12/17 10:03 PM	Reported
92	N027508-002A	SAMP	200	Hexavalent Chromium	12/12/17 10:13 PM	Reported
93	CCV-8	CCV1	1	Hexavalent Chromium	12/12/17 10:22 PM	Reported
94	CCB-8	CCB	1	Hexavalent Chromium	12/12/17 10:32 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171212A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**12/Dec/17 23:02:35**
No. of Injections:	**97**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/12/2017 08:51	Finished	BLANK
11	BLANK	2	1000	Unknown		12/12/2017 09:02	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/12/2017 09:11	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/12/2017 09:21	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/12/2017 09:30	Finished	CCB R171129A
15	MB-1,MBLK,1	6	1000	Unknown		12/12/2017 09:40	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/12/2017 09:49	Finished	LCS, IWST-171002B
17	N027430-016A,SAMF	8	1000	Unknown		12/12/2017 09:59	Finished	SAMP,10mL
18	N027430-016AMS,MS	9	1000	Unknown		12/12/2017 10:08	Finished	MS (1ppb), IWST-171002B,10
19	N027430-017A,SAMF	10	1000	Unknown		12/12/2017 10:18	Finished	SAMP,10mL
20	N027430-017AMS,MS	11	1000	Unknown		12/12/2017 10:27	Finished	MS (1ppb), IWST-171002B,10
21	N027430-018A,SAMF	12	1000	Unknown		12/12/2017 10:37	Finished	SAMP,10mL
22	N027430-018AMS,MS	13	1000	Unknown		12/12/2017 10:46	Finished	MS (1ppb), IWST-171002B,10
23	N027431-002A,SAMF	14	1000	Unknown		12/12/2017 10:56	Finished	SAMP,10mL
24	N027431-002AMS,MS	15	1000	Unknown		12/12/2017 11:05	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	16	1000	Unknown		12/12/2017 11:14	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	17	1000	Unknown		12/12/2017 11:24	Finished	CCB R171129A
27	N027431-003A,SAMF	18	1000	Unknown		12/12/2017 11:33	Finished	SAMP,10mL
28	N027431-003AMS,MS	19	1000	Unknown		12/12/2017 11:43	Finished	MS (1ppb), IWST-171002B,10
29	N027431-004A,SAMF	20	1000	Unknown		12/12/2017 11:52	Finished	SAMP,10mL
30	N027431-004AMS,MS	21	1000	Unknown		12/12/2017 12:02	Finished	MS (1ppb), IWST-171002B,10
31	N027465-001A,SAMF	22	1000	Unknown		12/12/2017 12:11	Finished	SAMP,10mL
32	N027465-001AMS,MS	23	1000	Unknown		12/12/2017 12:21	Finished	MS (1ppb), IWST-171002B,10
33	N027465-002A,SAMF	24	1000	Unknown		12/12/2017 12:30	Finished	SAMP,10mL
34	N027465-002AMS,MS	25	1000	Unknown		12/12/2017 12:40	Finished	MS (1ppb), IWST-171002B,10
35	N027465-003A,SAMF	26	1000	Unknown		12/12/2017 12:49	Finished	SAMP,10mL
36	N027465-003AMS,MS	27	1000	Unknown		12/12/2017 12:58	Finished	MS (1ppb), IWST-171002B,10
37	CCV-3,CCV,1,	1	1000	Unknown		12/12/2017 13:12	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	2	1000	Unknown		12/12/2017 13:23	Finished	CCB R171129A
39	N027431-001A,SAMF	3	1000	Unknown		12/12/2017 13:33	Finished	SAMP,0.2>10mL
40	N027431-001AMS,MS	4	1000	Unknown		12/12/2017 13:42	Finished	MS (5ppb), IWST-171002B,0.2
41	N027431-001ADUP,D	1	1000	Unknown		12/12/2017 14:05	Finished	SAMP,10mL
42	N027431-002AMS,MS	2	1000	Unknown		12/12/2017 14:16	Finished	MS (1ppb), IWST-171002B,10
43	N027429-009A,SAMF	3	1000	Unknown		12/12/2017 14:25	Finished	SAMP,0.5>10mL
44	N027429-009AMS,MS	4	1000	Unknown		12/12/2017 14:35	Finished	MS (5ppb), IWST-171002B,0.5
45	N027429-009AMSD,M	5	1000	Unknown		12/12/2017 14:44	Finished	MSD (5ppb), IWST-171002B,0.
46	N027429-001A,SAMF	6	1000	Unknown		12/12/2017 14:54	Finished	SAMP,10mL
47	N027429-001AMS,MS	7	1000	Unknown		12/12/2017 15:03	Finished	MS (1ppb), IWST-171002B,10
48	CCV-4,CCV1,1,	8	1000	Unknown		12/12/2017 15:13	Finished	CCV @10ppb, IWST-171002A
49	CCB-4,CCB,1,	9	1000	Unknown		12/12/2017 15:22	Finished	CCB R171129A
50	N027429-002A,SAMF	10	1000	Unknown		12/12/2017 15:32	Finished	SAMP,10mL
51	N027429-002AMS,MS	11	1000	Unknown		12/12/2017 15:41	Finished	MS (1ppb), IWST-171002B,10
52	N027429-003A,SAMF	12	1000	Unknown		12/12/2017 15:50	Finished	SAMP,0.2>10mL
53	N027429-003AMS,MS	13	1000	Unknown		12/12/2017 16:00	Finished	MS (5ppb), IWST-171002B,0.2
54	N027429-004A,SAMF	14	1000	Unknown		12/12/2017 16:10	Finished	SAMP,10mL
55	N027429-004AMS,MS	15	1000	Unknown		12/12/2017 16:19	Finished	MS (1ppb), IWST-171002B,10
56	N027429-005A,SAMF	16	1000	Unknown		12/12/2017 16:28	Finished	SAMP,2>10mL
57	N027429-005AMS,MS	17	1000	Unknown		12/12/2017 16:38	Finished	MS (1ppb), IWST-171002B,2>1
58	N027429-006A,SAMF	18	1000	Unknown		12/12/2017 16:47	Finished	SAMP,2>10mL
59	N027429-006AMS,MS	19	1000	Unknown		12/12/2017 16:57	Finished	MS (1ppb), IWST-171002B,2>1
60	CCV-5,CCV,1,	20	1000	Unknown		12/12/2017 17:06	Finished	CCV @5ppb, IWST-171002A

61	CCB-5,CCB,1,	21	1000	Unknown		12/12/2017 17:16	Finished	CCB R171129A
62	N027429-007A,SAMF	22	1000	Unknown		12/12/2017 17:25	Finished	SAMP,10mL
63	N027429-007AMS,MS	23	1000	Unknown		12/12/2017 17:35	Finished	MS (1ppb), IWST-171002B,10
64	N027429-008A,SAMF	24	1000	Unknown		12/12/2017 17:44	Finished	SAMP,10mL
65	N027429-008AMS,MS	25	1000	Unknown		12/12/2017 17:54	Finished	MS (1ppb), IWST-171002B,10
66	N027429-010A,SAMF	26	1000	Unknown		12/12/2017 18:03	Finished	SAMP,0.01>10mL
67	N027429-010AMS,MS	27	1000	Unknown		12/12/2017 18:12	Finished	MS (5ppb), IWST-171002B,0.0
68	LCS-2,LCS,1	1	1000	Unknown		12/12/2017 18:24	Finished	LCS, IWST-171002B
69	MB-2,MBLK,1	2	1000	Unknown		12/12/2017 18:35	Finished	MB R171129A
70	N027508-001A,SAMF	3	1000	Unknown		12/12/2017 18:45	Finished	SAMP,10mL
71	N027508-011A,SAMF	4	1000	Unknown		12/12/2017 18:54	Finished	MS (1ppb), IWST-171002B,10
72	CCV-6,CCV1,1,	5	1000	Unknown		12/12/2017 19:04	Finished	CCV @10ppb, IWST-171002A
73	CCB-6,CCB,1,	6	1000	Unknown		12/12/2017 19:13	Finished	CCB R171129A
74	N027508-003A,SAMF	7	1000	Unknown		12/12/2017 19:23	Finished	SAMP,0.05>10mL
75	N027508-001AMS,MS	8	1000	Unknown		12/12/2017 19:32	Finished	MS (5ppb), IWST-171002B,0.0
76	N027508-001AMSD,M	9	1000	Unknown		12/12/2017 19:41	Finished	MSD (5ppb), IWST-171002B,0.
77	N027508-0011AMS,M	10	1000	Unknown		12/12/2017 19:51	Finished	MS (5ppb), IWST-171002B,2>1
78	N027508-003ADUP,D	11	1000	Unknown		12/12/2017 20:00	Finished	DUP,0.05>10mL
79	N027508-004A,SAMF	12	1000	Unknown		12/12/2017 20:10	Finished	SAMP,0.02>10mL
80	N027508-005A,SAMF	13	1000	Unknown		12/12/2017 20:19	Finished	SAMP,0.005>10mL
81	N027508-006A,SAMF	14	1000	Unknown		12/12/2017 20:29	Finished	SAMP,0.005>10mL
82	N027508-007A,SAMF	15	1000	Unknown		12/12/2017 20:38	Finished	SAMP,0.005>10mL
83	N027508-008A,SAMF	16	1000	Unknown		12/12/2017 20:48	Finished	SAMP,2>10mL
84	CCV-7,CCV,1,	17	1000	Unknown		12/12/2017 20:57	Finished	CCV @5ppb, IWST-171002A
85	CCB-7,CCB,1,	18	1000	Unknown		12/12/2017 21:07	Finished	CCB R171114C
86	N027508-009A,SAMF	19	1000	Unknown		12/12/2017 21:16	Finished	SAMP,2>10mL
87	N027508-010A,SAMF	20	1000	Unknown		12/12/2017 21:26	Finished	SAMP,1>10mL
88	N027508-012A,SAMF	21	1000	Unknown		12/12/2017 21:35	Finished	SAMP,0.5>10mL
89	N027508-013A,SAMF	22	1000	Unknown		12/12/2017 21:44	Finished	SAMP,0.2>10mL
90	N027508-014A,SAMF	23	1000	Unknown		12/12/2017 21:54	Finished	SAMP,0.2>10mL
91	N027508-015A,SAMF	24	1000	Unknown		12/12/2017 22:03	Finished	SAMP,0.1>10mL
92	N027508-002A,SAMF	25	1000	Unknown		12/12/2017 22:13	Finished	SAMP,0.05>10mL
93	CCV-8,CCV1,1,	26	1000	Unknown		12/12/2017 22:22	Finished	CCV @10ppb, IWST-171002A
94	CCB-8,CCB,1,	27	1000	Unknown		12/12/2017 22:32	Finished	CCB R171129A
95	SHUTDOWN	28	1000	Unknown		12/12/2017 22:41	Finished	
96	Eluent: R171212A	29	1000	Unknown		n.a.	Finished	Eluent
97	PCR: R171212B	30	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 12/6/17
Time Prepared: 4:40
Prepared By: MC

Reagent ID:
Sulfuric Acid: 9465
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: ~~M71718~~ M71211B
NH4OH + NH4SO4 buffer: M71129A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N027430-12A	9.32	—	250	250		2/2 M71129A
2)	13A	9.33	—				
3)	14A	9.43	—				
4)	MC ~~14E~~	~~7.55~~					
5)	15A	9.45	—				
6)	16A	9.56	—				
7)	17A	9.52	—				
8)	18A	9.49	—				1/2
9)	18A	9.49	—				2/2
10)							
11)							
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 12/11/17
Time Prepared: 1437H
Prepared By: MDA

Reagent ID:
Sulfuric Acid: 9465
Diphenylcarbazide: CINV-170620A
NH4OH + NH4SO4 eluent: M71211B
NH4OH + NH4SO4 buffer: M71129A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N027431-1A	9.31	-	~250ml	~250ml		M71129A
2)	2A	9.31	-				
3)	3A	9.32	-				
4)	4A	9.34	-				
5)	5A	9.37	-				
6)	6A	9.33	-				
7)	N027465-1A	9.50	-				
8)	2A	9.57	-				
9)	3A	9.48	-				
10)	N027428-1A	9.38					
11)	2A	9.42					
12)							
13)							
14)							
15)							

Logbook No. 13

rba 12/16/2017

RB 12/26/2017

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 11/28/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0529	0.2484	1.2584	2.5328	3.7596	5.0155	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-171002A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 12/26/2017

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ICV**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866062**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.092	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.185	0.20	0.2000	0	92.6	80	120				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866065**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.215	0.20	0.2000	0	108	80	120				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.294	0.20	10.00	0	103	95	105				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **CCV**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.109	0.20	5.000	0	102	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-8**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ZZZZZZ**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866086**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.160	0.20	10.00	0	102	95	105				

Sample ID **CCV-9**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **CCV**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866096**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.072	0.20	5.000	0	101	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ICV**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866098**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.092	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.185	0.20	0.2000	0	92.6	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **CCV**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.112	0.20	5.000	0	102	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866102**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.216	0.20	0.2000	0	108	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866106**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.236	0.20	10.00	0	102	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **CCV**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.101	0.20	5.000	0	102	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.242	0.20	10.00	0	102	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **CCV**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866136**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.102	0.20	5.000	0	102	95	105				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ZZZZZZ**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866144**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.362	0.20	10.00	0	104	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **ICB**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **CCB**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **CCB**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866075**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **CCB**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/11/2017**	SeqNo: **2866087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-9**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120834**
Client ID: **CCB**	Batch ID: **R120834**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **ICB**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2866100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **CCB**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **CCB**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866107**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **CCB**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866115**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **CCB**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866125**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **CCB**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120835**
Client ID: **CCB**	Batch ID: **R120835**	TestNo: **EPA 218.6**		Analysis Date: **12/12/2017**	SeqNo: **2866145**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.148	
CCV-7	4.148	
CCV-8	4.140	
CCV-9	4.148	
Average	4.143	
Actual RT Window	4.063 - 4.223	
Applied RT Window	3.943 - 4.343	
MB-R120833	N.A.	N.A.
LCS-R120833	4.140	PASS
N027405-006AMS	4.090	PASS
N027405-006A	4.090	PASS
N027405-007AMS	4.090	PASS
N027405-007A	N.A.	N.A.
N027405-008AMS	4.090	PASS
N027405-008A	4.090	PASS
N027430-001A	N.A.	N.A.
N027430-001AMS	4.140	PASS
N027430-002A	4.031	PASS
N027430-002AMS	4.056	PASS
N027430-003A	N.A.	N.A.
N027430-003AMS	4.140	PASS
N027430-004A	N.A.	N.A.
N027430-004AMS	4.131	PASS
N027430-005A	N.A.	N.A.
N027430-005AMS	4.148	PASS
N027430-006A	N.A.	N.A.
N027430-006AMS	4.131	PASS



12/26/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.148	
CCV-7	4.148	
CCV-8	4.140	
CCV-9	4.148	
Average	4.143	
Actual RT Window	4.063 - 4.223	
Applied RT Window	3.943 - 4.343	
N027430-007A	N.A.	N.A.
N027430-007AMS	4.140	PASS
N027430-008A	N.A.	N.A.
N027430-008AMS	4.040	PASS
N027430-009A	N.A.	N.A.
N027430-009AMS	4.140	PASS
N027430-010A	N.A.	N.A.
N027430-010AMS	4.140	PASS
N027430-020A	4.140	PASS
N027430-020AMS	4.140	PASS
N027430-012A	N.A.	N.A.
N027430-012AMS	3.848	FAIL
N027430-019A	N.A.	N.A.
N027430-019AMS	4.140	PASS
N027430-011A	N.A.	N.A.
N027430-011AMS	4.140	PASS
N027430-013A	4.115	PASS
N027430-013AMS	4.115	PASS
N027430-014A	4.098	PASS
N027430-014AMS	4.098	PASS



12/26/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.148	
CCV-7	4.148	
CCV-8	4.140	
CCV-9	4.148	
Average	4.143	
Actual RT Window	4.063 - 4.223	
Applied RT Window	3.943 - 4.343	
N027430-015A	4.081	PASS
N027430-015AMS	4.081	PASS
N027405-006ADUP	4.090	PASS
N027430-020AMSD	4.140	PASS
N027430-002A	N.A.	N.A.
N027430-002AMS	N.A.	N.A.
N027430-013A	3.956	PASS
N027430-013AMS	3.965	PASS
N027430-014A	3.723	FAIL
N027430-014AMS	3.723	FAIL
N027430-015A	N.A.	N.A.
N027430-015AMS	N.A.	N.A.
N027430-012A	N.A.	N.A.
N027430-012AMS	4.106	PASS
LCS-R120834	4.148	PASS
MB-R120834	N.A.	N.A.
N027431-006A	4.140	PASS
N027431-006AMS	4.140	PASS
N027431-006AMSD	4.140	PASS
N027428-002A	4.140	PASS



12/26/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.148	
CCV-7	4.148	
CCV-8	4.140	
CCV-9	4.148	
Average	4.143	
Actual RT Window	4.063 - 4.223	
Applied RT Window	3.943 - 4.343	
N027428-002ADUP	4.140	PASS
N027428-002AMS	4.140	PASS
N027428-001A	N.A.	N.A.
N027428-001AMS	4.131	PASS
N027430-016A	4.081	PASS
N027430-016AMS	4.081	PASS
N027430-017A	4.056	PASS
N027430-017AMS	4.073	PASS
N027430-018A	N.A.	N.A.
N027430-018AMS	3.998	PASS
N027431-002A	4.115	PASS
N027431-002AMS	4.115	PASS
N027431-003A	4.090	PASS
N027431-003AMS	4.081	PASS
N027431-004A	4.081	PASS
N027431-004AMS	4.090	PASS
N027431-001A	4.140	PASS
N027431-001AMS	4.140	PASS
N027431-005A	4.140	PASS
N027431-005AMS	4.140	PASS

RLB 12/26/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/12/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.148	
CCV-2	4.148	
CCV-3	4.148	
CCV-4	4.148	
CCV-5	4.148	
CCV-6	4.148	
CCV-7	4.123	
CCV-8	4.123	
Average	4.142	
Actual RT Window	4.062 - 4.222	
Applied RT Window	3.942 - 4.342	
MB-R120835	N.A.	N.A.
LCS-R120835	4.148	PASS
N027430-016A	N.A.	N.A.
N027430-016AMS	N.A.	N.A.
N027430-017A	N.A.	N.A.
N027430-017AMS	N.A.	N.A.
N027430-018A	N.A.	N.A.
N027430-018AMS	N.A.	N.A.
N027431-002A	3.981	PASS
N027431-002AMS	3.965	PASS
N027431-003A	N.A.	N.A.
N027431-003AMS	N.A.	N.A.
N027431-004A	N.A.	N.A.
N027431-004AMS	N.A.	N.A.
N027465-001A	N.A.	N.A.
N027465-001AMS	4.148	PASS
N027465-002A	4.140	PASS
N027465-002AMS	4.140	PASS
N027465-003A	N.A.	N.A.
N027465-003AMS	4.148	PASS
N027431-001A	4.148	PASS

RB 12/26/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/12/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.148	
CCV-2	4.148	
CCV-3	4.148	
CCV-4	4.148	
CCV-5	4.148	
CCV-6	4.148	
CCV-7	4.123	
CCV-8	4.123	
Average	4.142	
Actual RT Window	4.062 - 4.222	
Applied RT Window	3.942 - 4.342	
N027431-001AMS	4.148	PASS
N027431-001ADUP	4.148	PASS
N027431-002AMS	3.973	PASS
N027429-009A	4.131	PASS
N027429-009AMS	4.131	PASS
N027429-009AMSD	4.140	PASS
N027429-001A	N.A.	N.A.
N027429-001AMS	4.131	PASS
N027429-002A	4.190	PASS
N027429-002AMS	4.140	PASS
N027429-003A	4.140	PASS
N027429-003AMS	4.140	PASS
N027429-004A	N.A.	N.A.
N027429-004AMS	4.148	PASS
N027429-005A	4.073	PASS
N027429-005AMS	4.073	PASS
N027429-006A	4.073	PASS
N027429-006AMS	4.073	PASS
N027429-007A	4.131	PASS
N027429-007AMS	4.131	PASS
N027429-008A	4.131	PASS

RLB 12/26/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/12/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.148	
CCV-2	4.148	
CCV-3	4.148	
CCV-4	4.148	
CCV-5	4.148	
CCV-6	4.148	
CCV-7	4.123	
CCV-8	4.123	
Average	4.142	
Actual RT Window	4.062 - 4.222	
Applied RT Window	3.942 - 4.342	
N027429-008AMS	4.131	PASS
N027429-010A	4.148	PASS
N027429-010AMS	4.148	PASS
LCS-R120836	4.148	PASS
MB-R120836	N.A.	N.A.
N027508-001A	4.148	PASS
N027508-011A	4.131	PASS
N027508-003A	4.140	PASS
N027508-001AMS	4.140	PASS
N027508-001AMSD	4.140	PASS
N027508-011AMS	4.131	PASS
N027508-003ADUP	4.140	PASS
N027508-004A	4.140	PASS
N027508-005A	4.140	PASS
N027508-006A	4.140	PASS
N027508-007A	4.140	PASS
N027508-008A	4.115	PASS
N027508-009A	4.106	PASS
N027508-010A	N.A.	N.A.
N027508-012A	4.090	PASS
N027508-013A	4.106	PASS

RJB 12/26/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/12/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.148	
CCV-2	4.148	
CCV-3	4.148	
CCV-4	4.148	
CCV-5	4.148	
CCV-6	4.148	
CCV-7	4.123	
CCV-8	4.123	
Average	4.142	
Actual RT Window	4.062 - 4.222	
Applied RT Window	3.942 - 4.342	
N027508-014A	4.106	PASS
N027508-015A	4.115	PASS
N027508-002A	4.115	PASS



12/26/2017

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 Unit: ug/L
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

MDL/LOD & PQL Verification 2017

Method Name: **Hexavalent Chromium by IC**
Method Number: EPA Method 218.6
Analysis Date(s): 5/31/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: µg/L

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.103

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.194	**97**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 171128A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/28/17 10:57 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/28/17 11:08 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/28/17 11:17 AM	Reported
13	MB-R120468	MBLK	1	Hexavalent Chromium	11/28/17 11:27 AM	Reported
14	LCS-R120468	LCS	1	Hexavalent Chromium	11/28/17 11:36 AM	Reported
15	N027215-001A	SAMP	1	Hexavalent Chromium	11/28/17 11:47 AM	Reported
16	N027215-002A	SAMP	1	Hexavalent Chromium	11/28/17 11:59 AM	Reported
17	N027215-003A	SAMP	1	Hexavalent Chromium	11/28/17 12:08 PM	Reported
18	N027215-004A	SAMP	1	Hexavalent Chromium	11/28/17 12:18 PM	Reported
19	N027215-005A	SAMP	1	Hexavalent Chromium	11/28/17 12:27 PM	Reported
20	N027215-002ADUP	DUP	1	Hexavalent Chromium	11/28/17 12:37 PM	Reported
21	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 12:46 PM	Not Reported
22	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 12:56 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	11/28/17 1:05 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/28/17 1:14 PM	Reported
25	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:04 PM	Not Reported
26	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:16 PM	Not Reported
27	N027215-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:29 PM	Reported
28	N027215-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:41 PM	Reported
29	CCV-2	CCV	1	Hexavalent Chromium	11/28/17 2:50 PM	Reported
30	CCB-2	CCB	1	Hexavalent Chromium	11/28/17 3:00 PM	Reported

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Injection Log Summary

Sequence Details

Name:	**IC-07_171128A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**28/Nov/17 15:47:35**
No. of Injections:	**33**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		11/28/2017 10:57	Finished	ICV @5ppb, IWST-171002A
11	PQL@0.2ppb,CCV2,	12	1000	Unknown		11/28/2017 11:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		11/28/2017 11:17	Finished	ICB R171114C
13	MB-H2O,MBLK,1	14	1000	Unknown		11/28/2017 11:27	Finished	MB R171114C
14	LCS-H2O,LCS,1	15	1000	Unknown		11/28/2017 11:36	Finished	LCS, IWST-171002B
15	N027215-001A,SAMF	17	1000	Unknown		11/28/2017 11:47	Finished	SAMP,10mL
16	N027215-002A,SAMF	18	1000	Unknown		11/28/2017 11:59	Finished	SAMP,10mL
17	N027215-003A,SAMF	19	1000	Unknown		11/28/2017 12:08	Finished	SAMP,10mL
18	N027215-004A,SAMF	20	1000	Unknown		11/28/2017 12:18	Finished	SAMP,10mL
19	N027215-005A,SAMF	21	1000	Unknown		11/28/2017 12:27	Finished	SAMP,10mL
20	N027215-002ADUP,D	22	1000	Unknown		11/28/2017 12:37	Finished	DUP,10mL
21	N027157-001AMS,MS	23	1000	Unknown		11/28/2017 12:46	Finished	MS (5ppb), IWST-171002B,10
22	N027157-001AMSD,M	24	1000	Unknown		11/28/2017 12:56	Finished	MSD (5ppb), IWST-171002B,1
23	CCV-1,CCV1,1,	25	1000	Unknown		11/28/2017 13:05	Finished	CCV @10ppb, IWST-171002A
24	CCB-1,CCB,1,	26	1000	Unknown		11/28/2017 13:14	Finished	CCB R171031A
25	N027157-001AMS,MS	28	1000	Unknown		11/28/2017 14:04	Finished	MS (5ppb), IWST-171002B,10
26	N027157-001AMSD,M	29	1000	Unknown		11/28/2017 14:16	Finished	MSD (5ppb), IWST-171002B,1
27	N027215-001AMS,MS	31	1000	Unknown		11/28/2017 14:29	Finished	MS (5ppb), IWST-171002B,10
28	N027215-001AMSD,M	32	1000	Unknown		11/28/2017 14:41	Finished	MSD (5ppb), IWST-171002B,1
29	CCV-2,CCV,1,	33	1000	Unknown		11/28/2017 14:50	Finished	CCV @5ppb, IWST-171002A
30	CCB-2,CCB,1,	34	1000	Unknown		11/28/2017 15:00	Finished	CCB R171031A
31	SHUTDOWN	35	1000	Unknown		11/28/2017 15:09	Finished	
32	Eluent: R171128A	36	1000	Unknown		n.a.	Finished	Eluent
33	PCR: R171128B	37	1000	Unknown		n.a.	Finished	Post-Column Reagent

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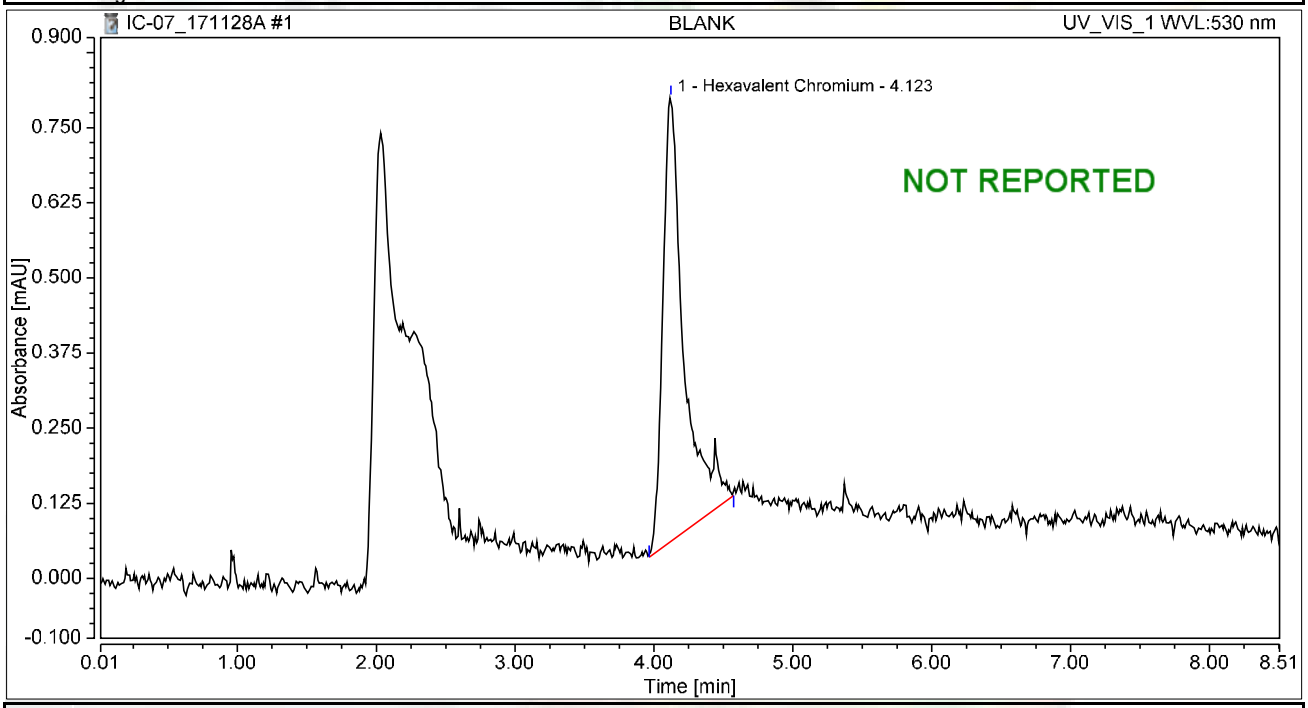
Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

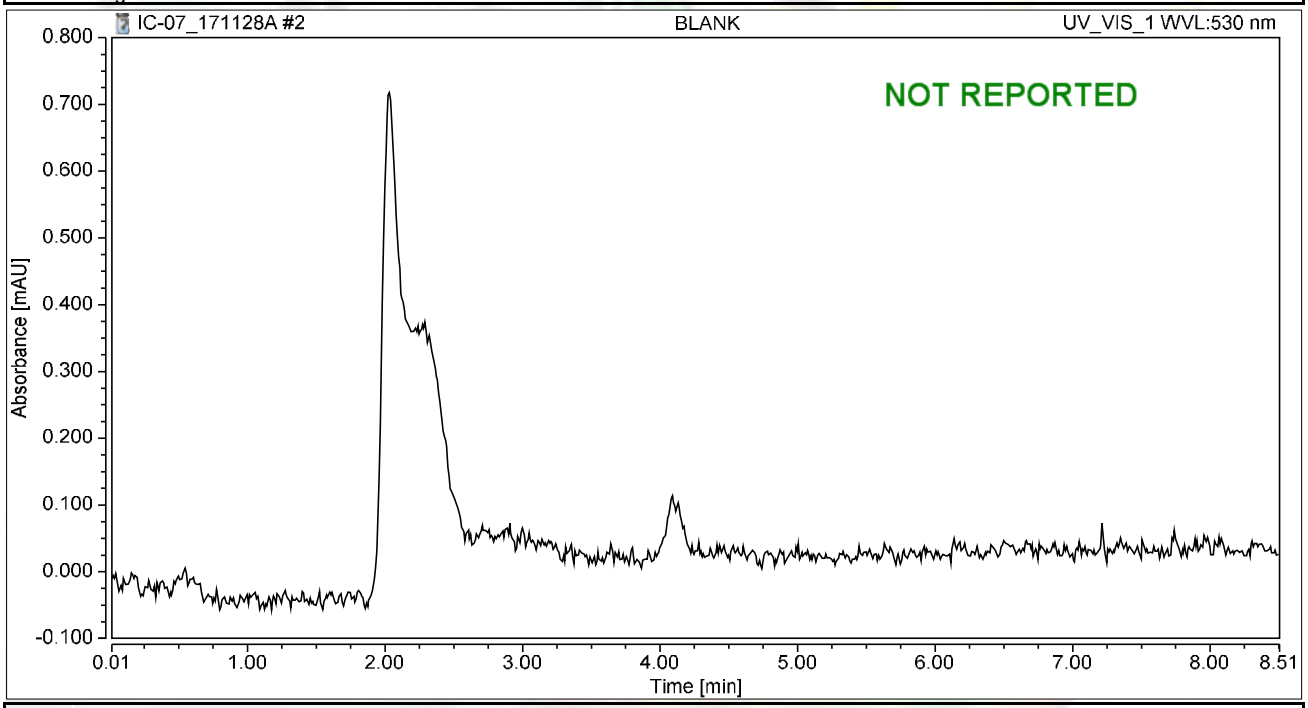
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.130	0.738	100.00	100.00	0.5193
Total:			**0.130**	**0.738**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

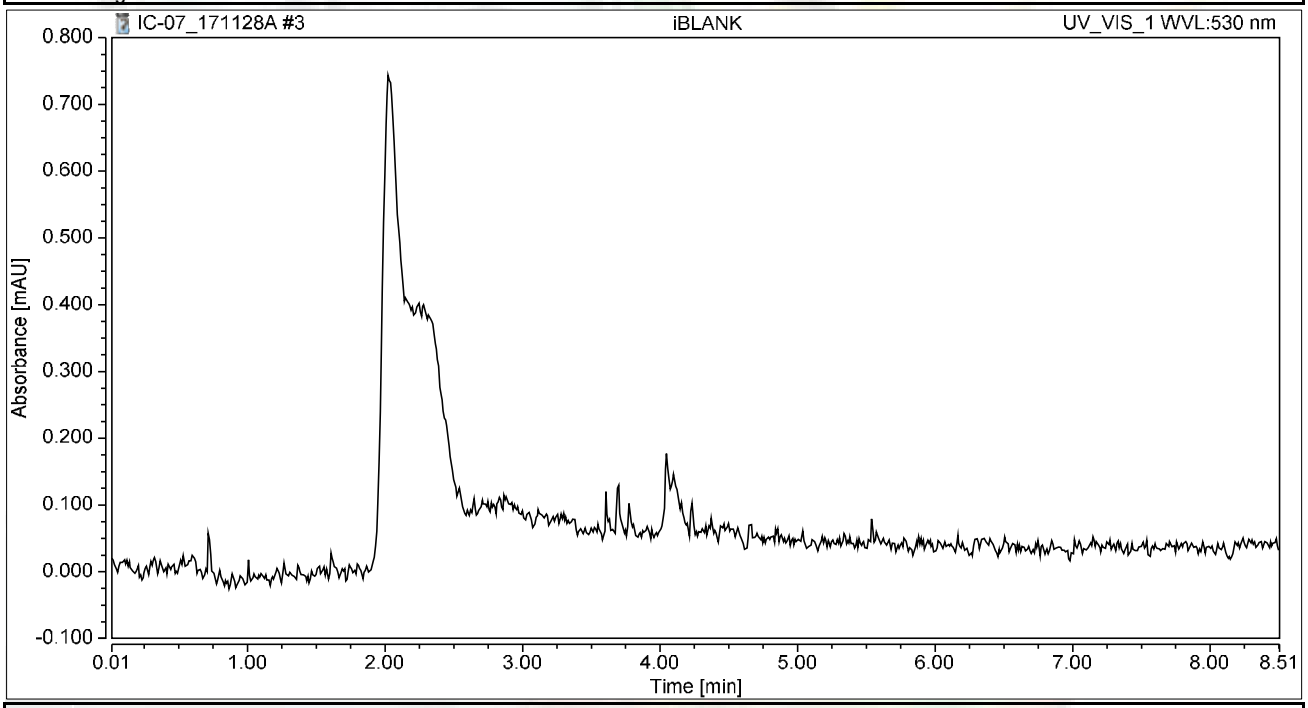
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

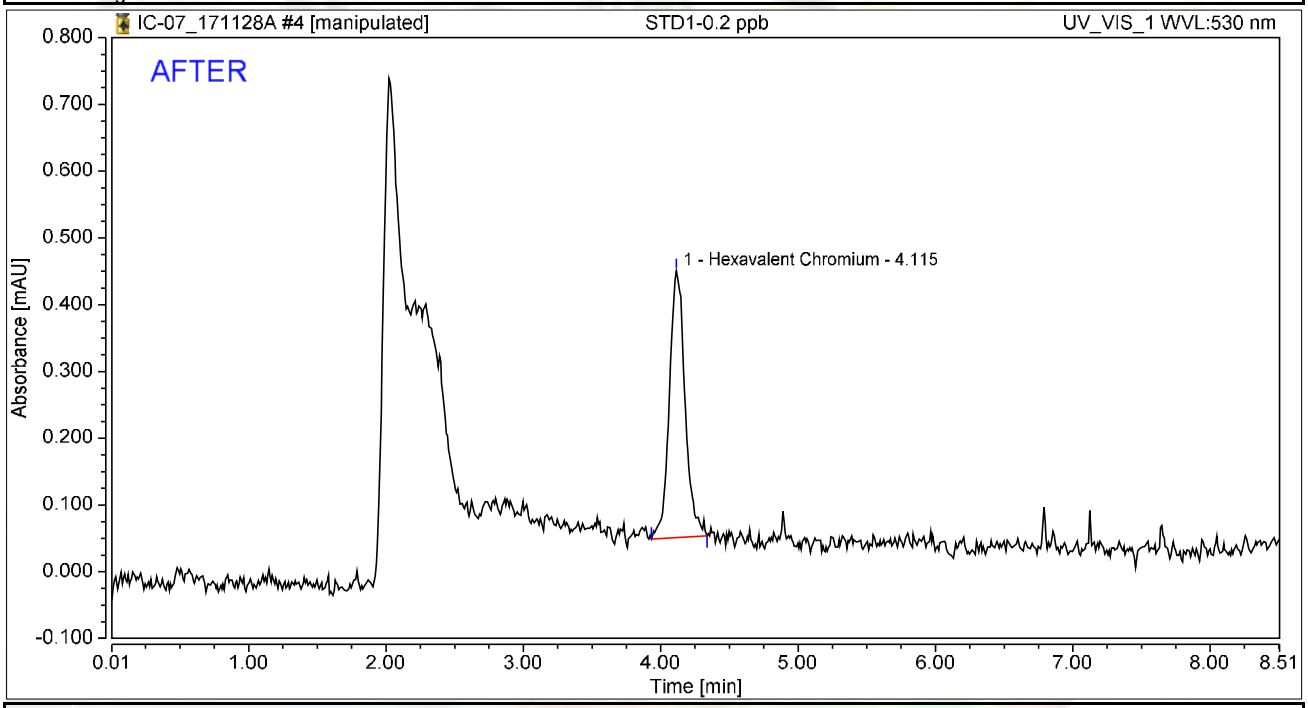
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.053	0.400	100.00	100.00	0.2108
Total:			**0.053**	**0.400**	**100.00**	**100.00**	

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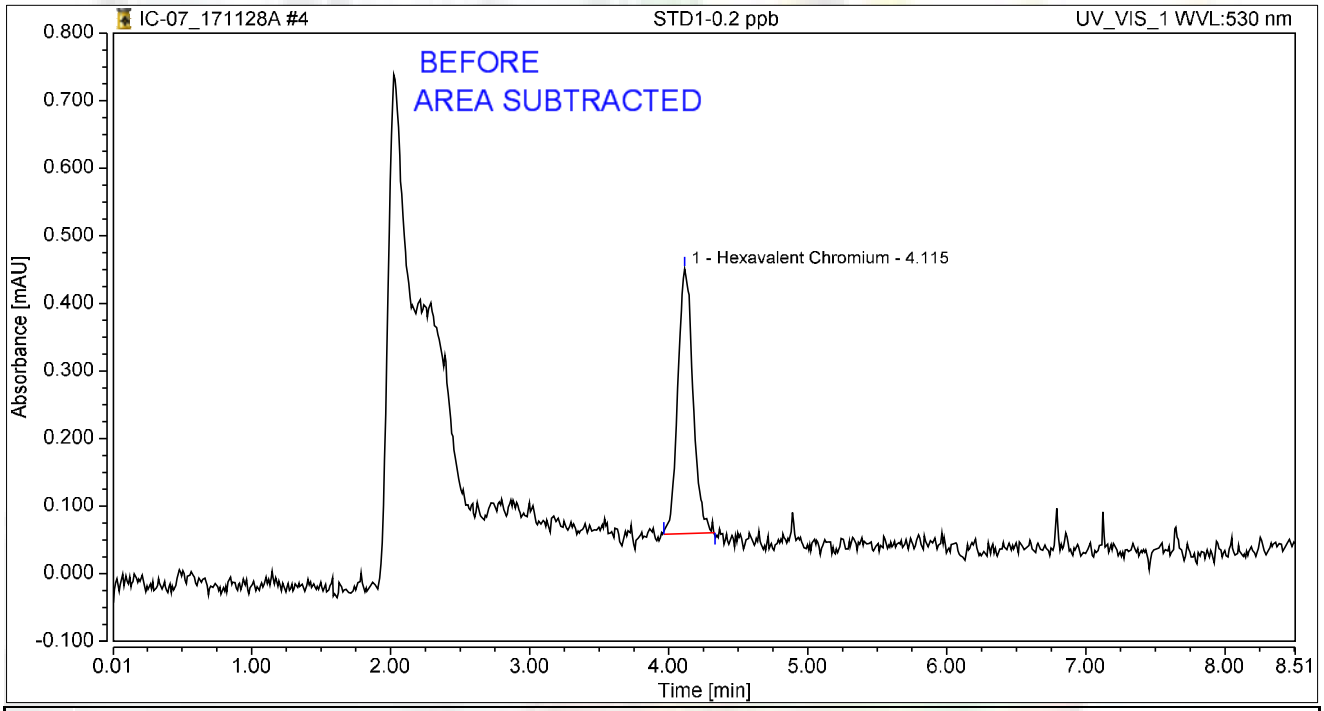
Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.050	0.391	100.00	100.00	0.1957
Total:			**0.050**	**0.391**	**100.00**	**100.00**	

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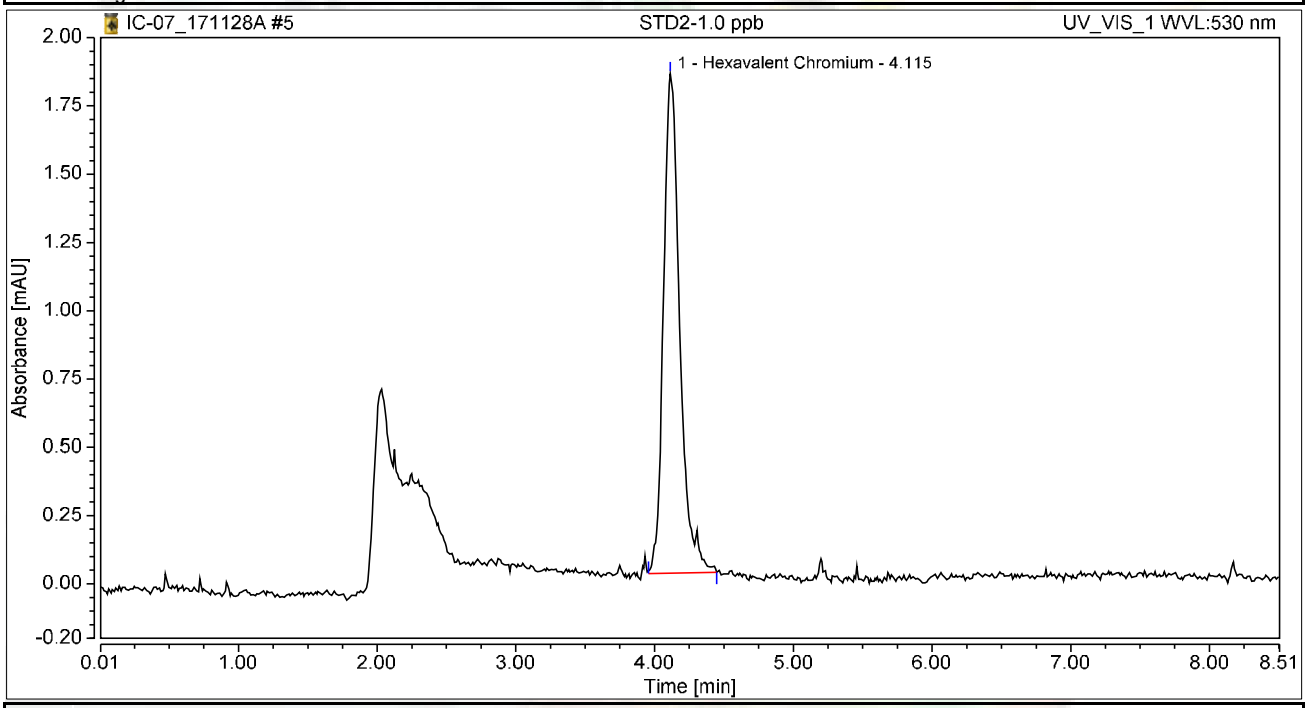
Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

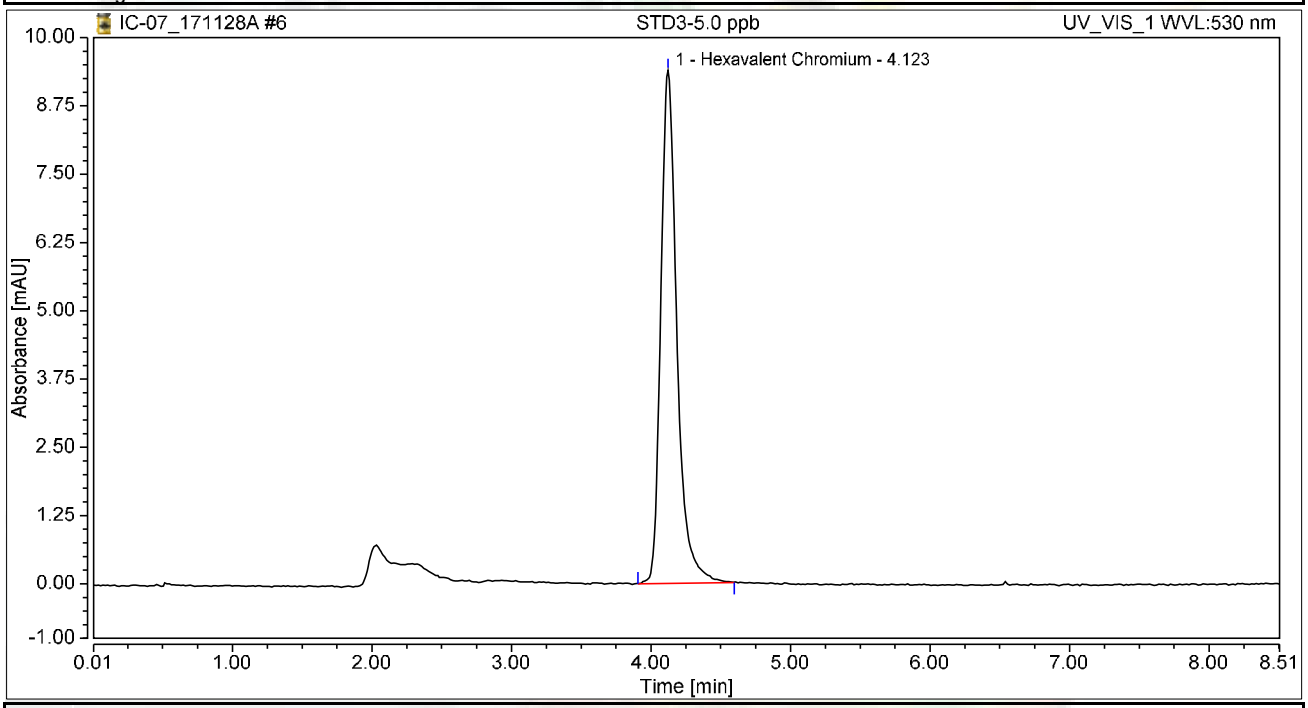
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.248	1.827	100.00	100.00	0.9892
Total:			**0.248**	**1.827**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

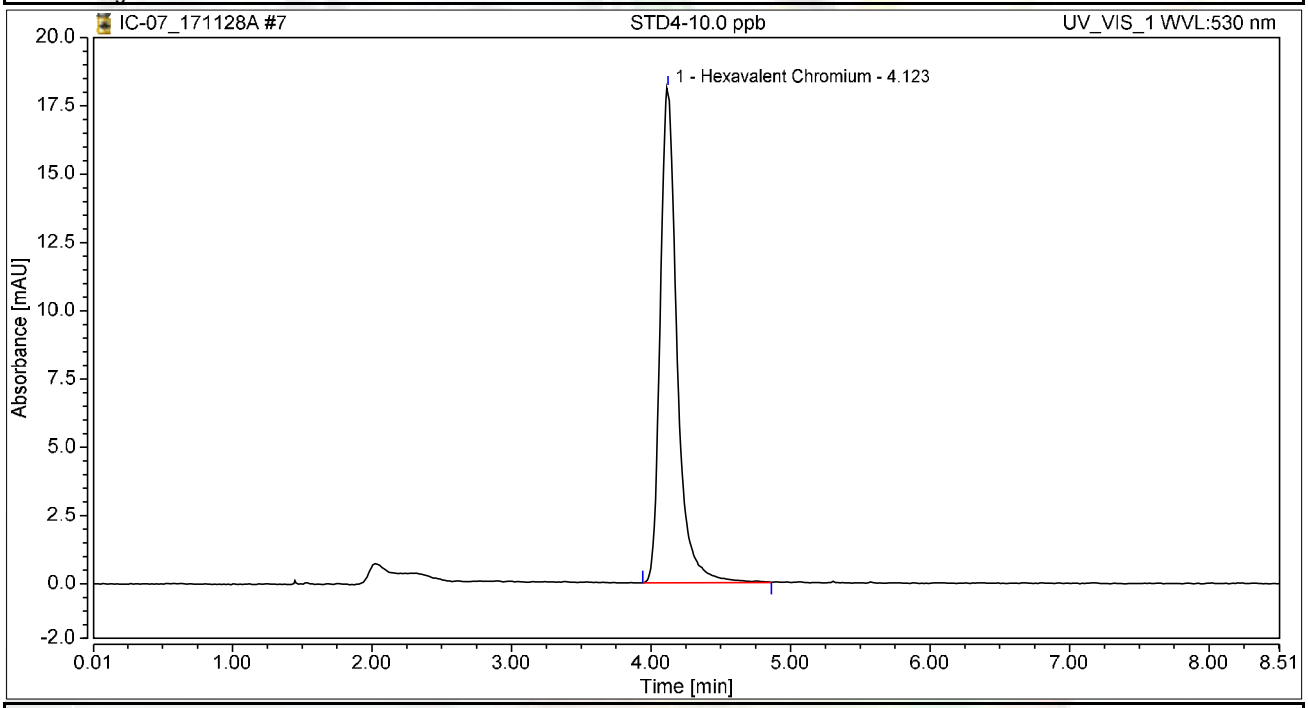
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.258	9.388	100.00	100.00	5.0118
Total:			**1.258**	**9.388**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

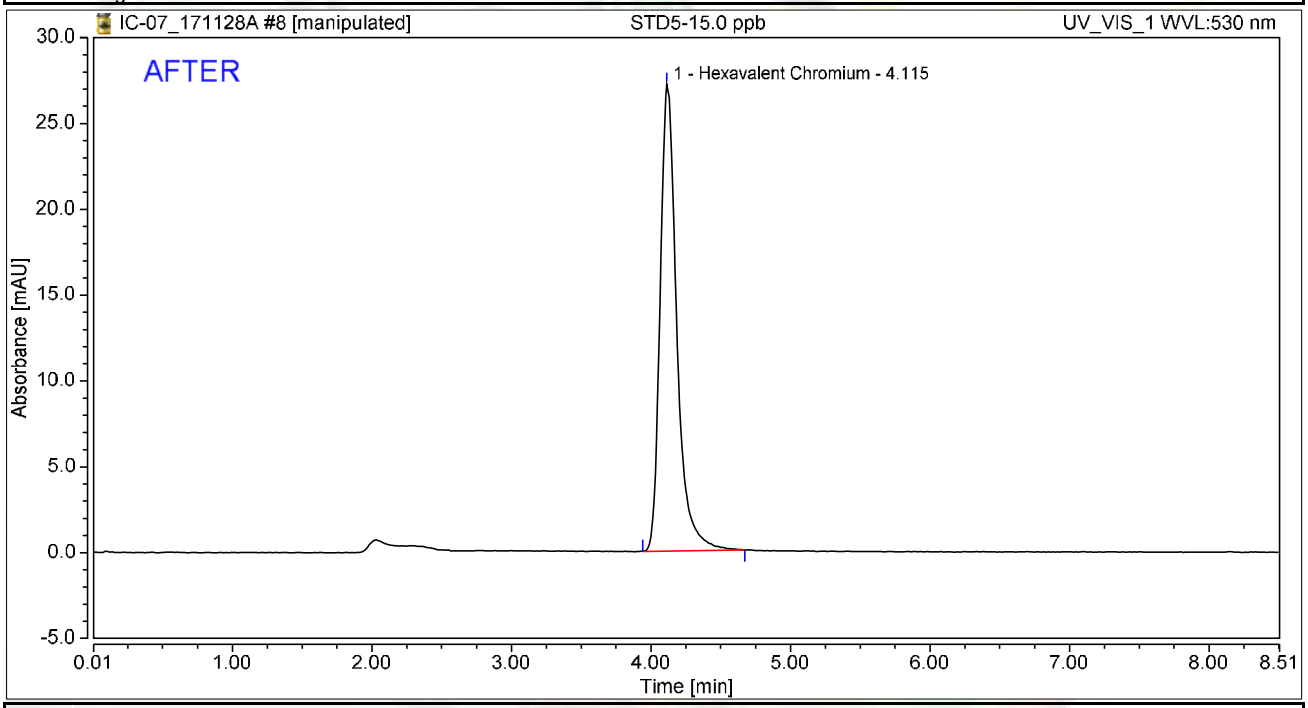
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	2.533	18.115	100.00	100.00	10.0869
Total:			**2.533**	**18.115**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	3.760	27.183	100.00	100.00	14.9728
Total:			**3.760**	**27.183**	**100.00**	**100.00**	

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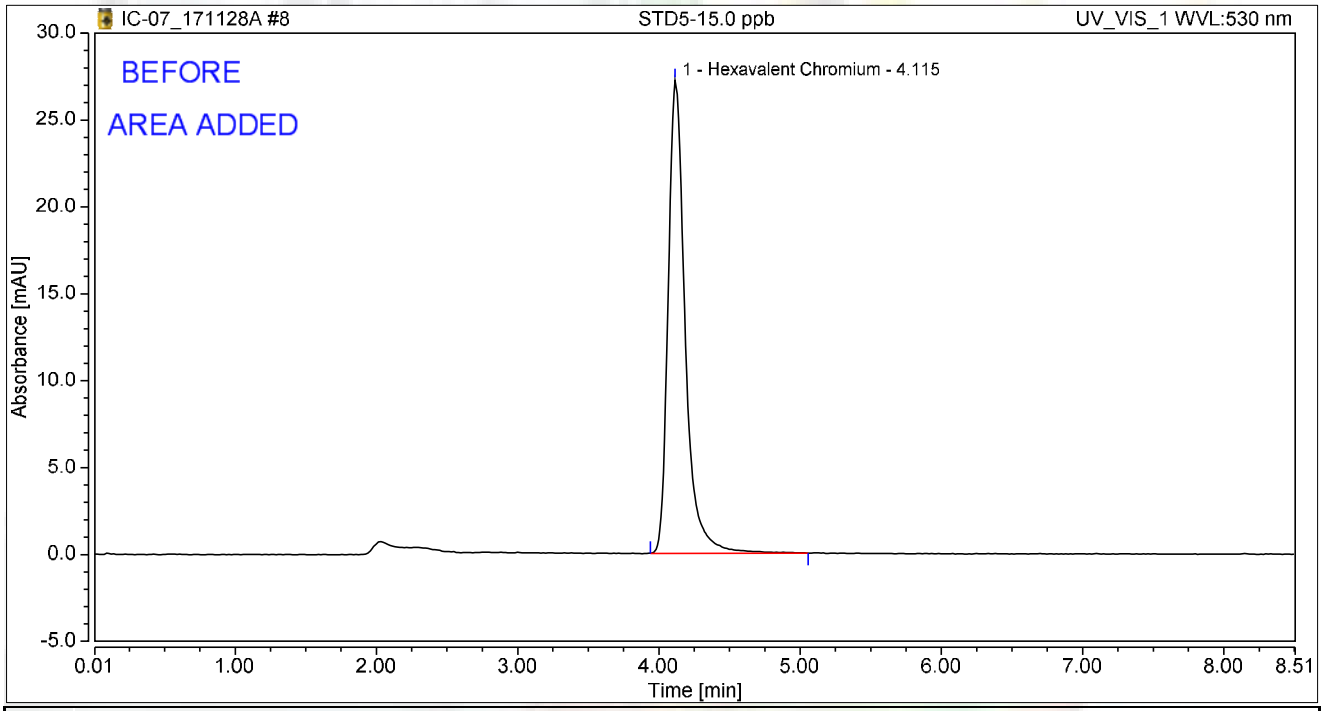
Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	3.807	27.204	100.00	100.00	14.9839
Total:			**3.807**	**27.204**	**100.00**	**100.00**	

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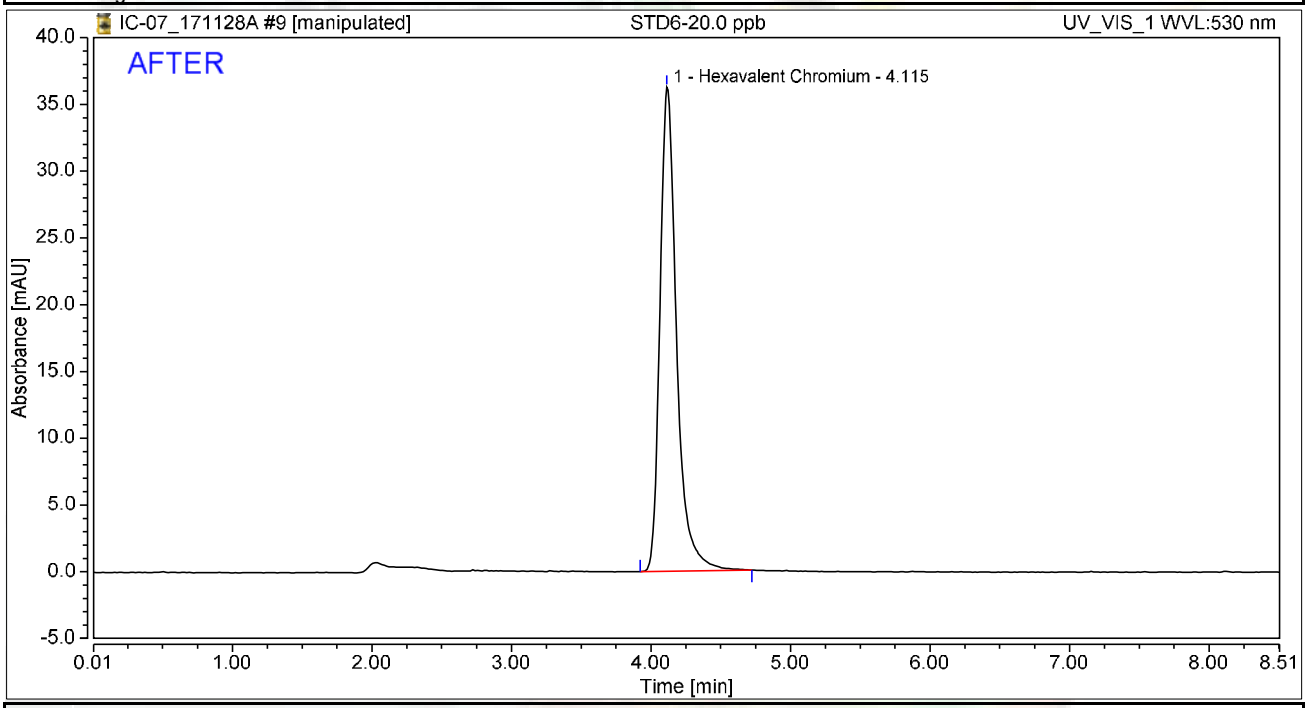
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	5.015	36.251	100.00	100.00	19.9744
Total:			**5.015**	**36.251**	**100.00**	**100.00**	

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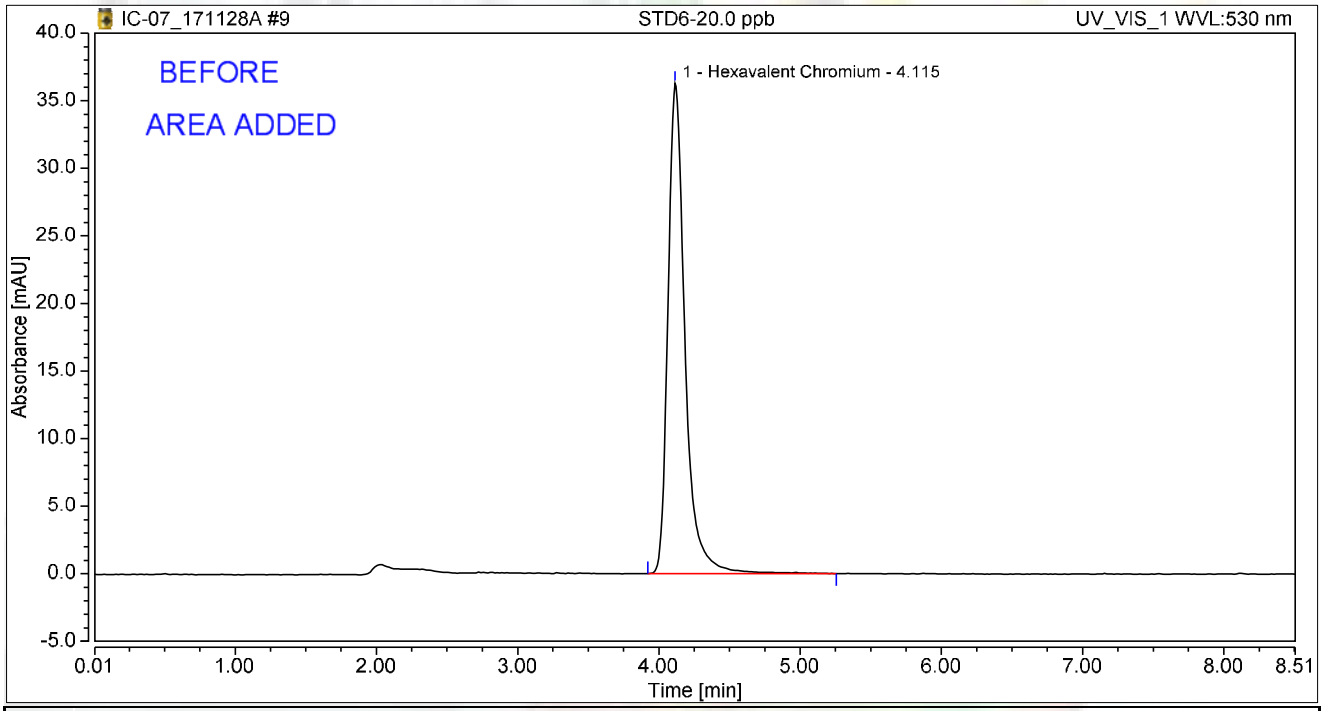
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	5.092	36.279	100.00	100.00	20.0407
Total:			**5.092**	**36.279**	**100.00**	**100.00**	

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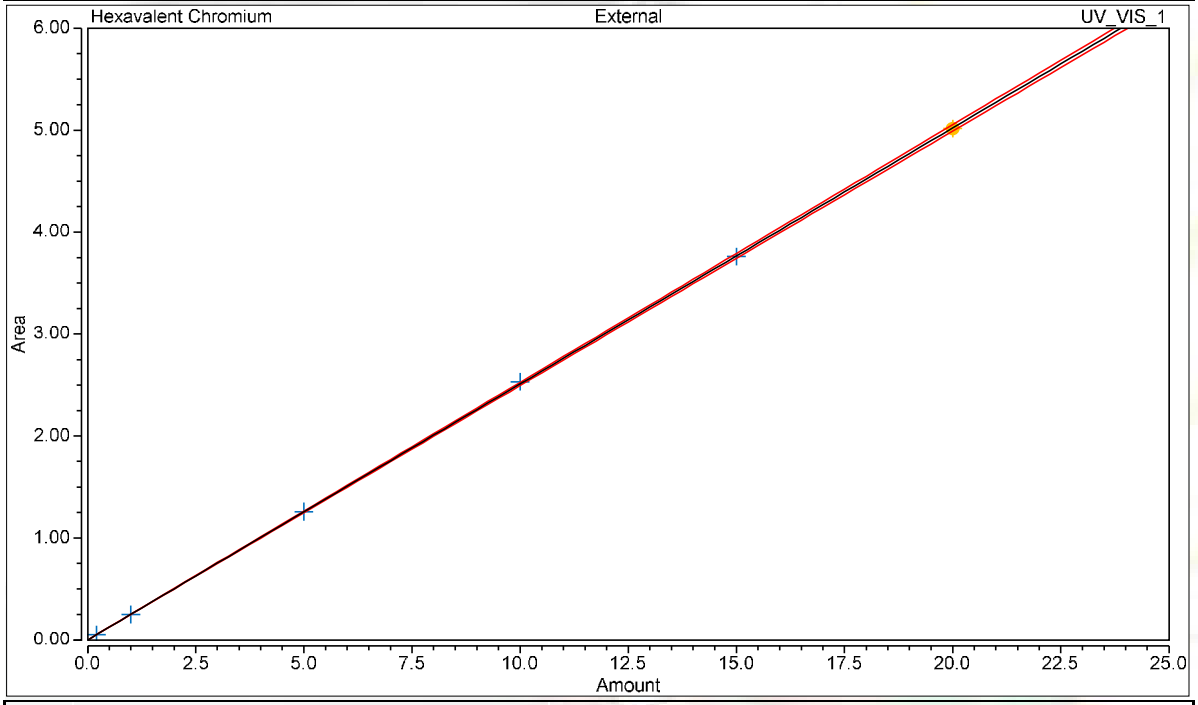
Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2511
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99997

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

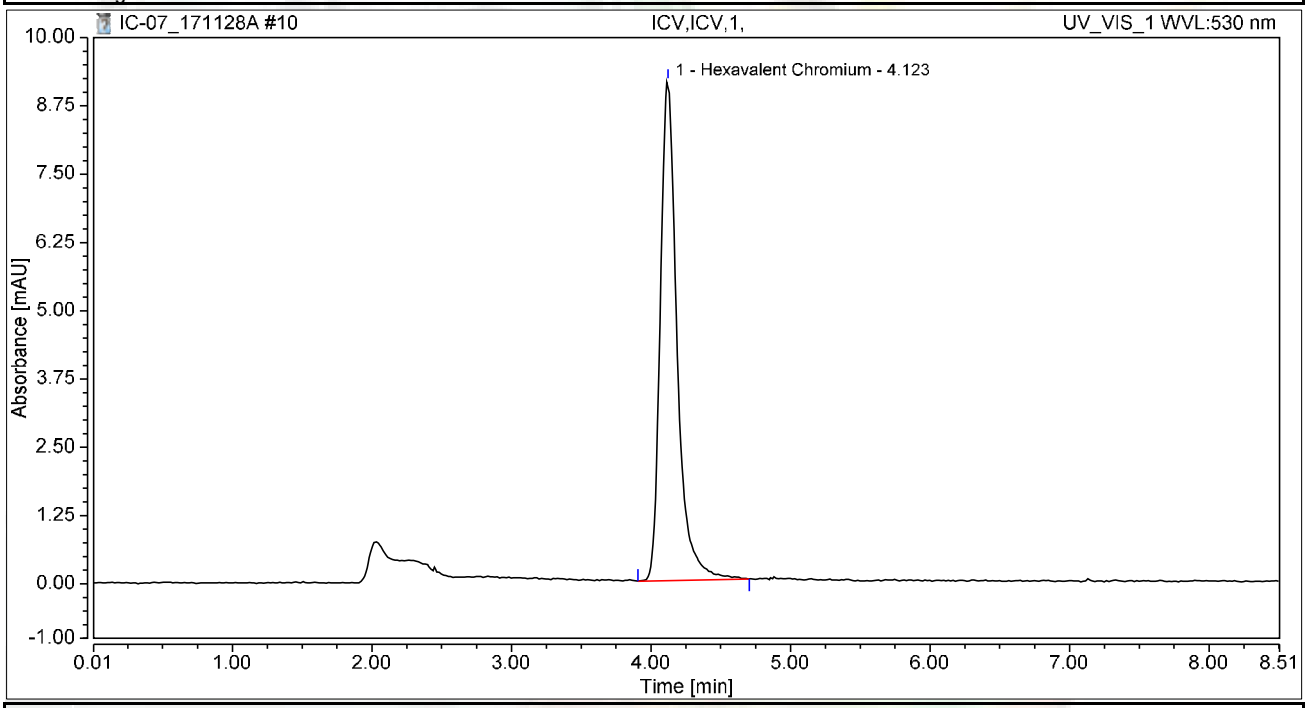
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0529	0.053	0.400
5	STD2-1.0 ppb	02	1.0000	0.2484	0.248	1.827
6	STD3-5.0 ppb	03	5.0000	1.2584	1.258	9.388
7	STD4-10.0 ppb	04	10.0000	2.5328	2.533	18.115
8	STD5-15.0 ppb	05	15.0000	3.7596	3.760	27.183
9	STD6-20.0 ppb	06	20.0000	5.0155	5.015	36.251

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

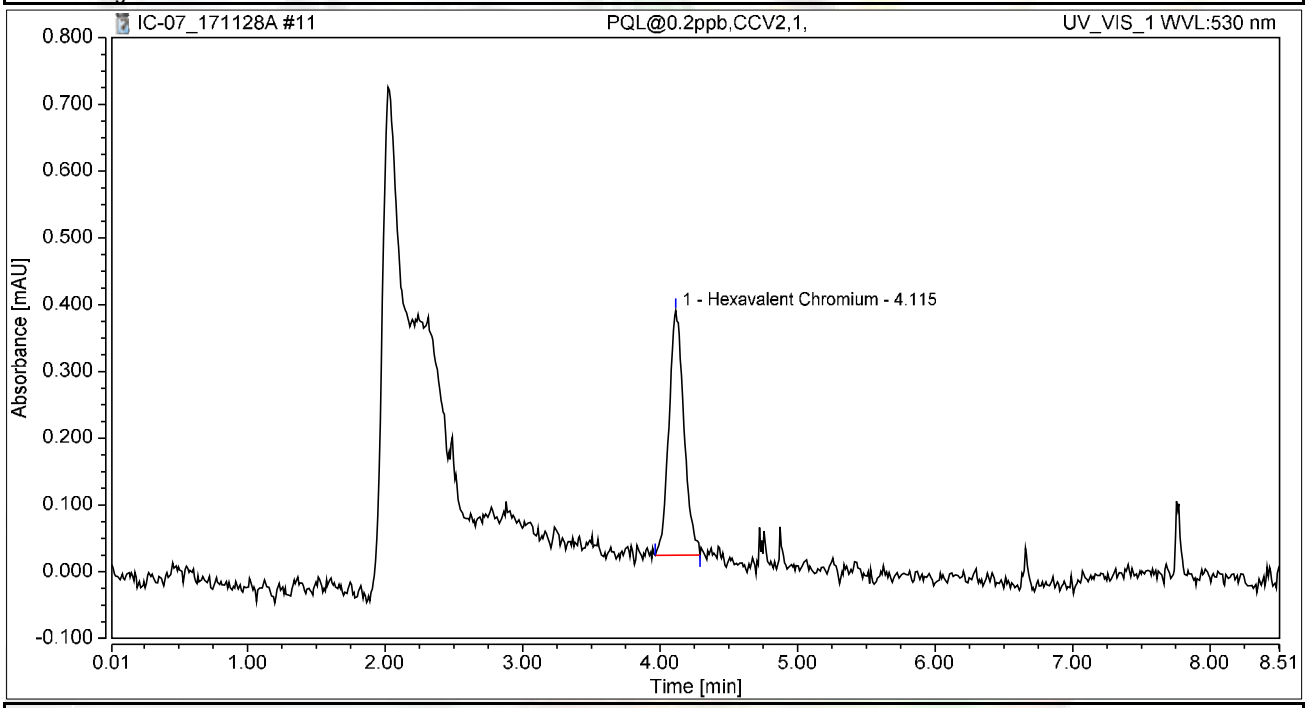
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.279	9.143	100.00	100.00	5.0922
Total:			**1.279**	**9.143**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

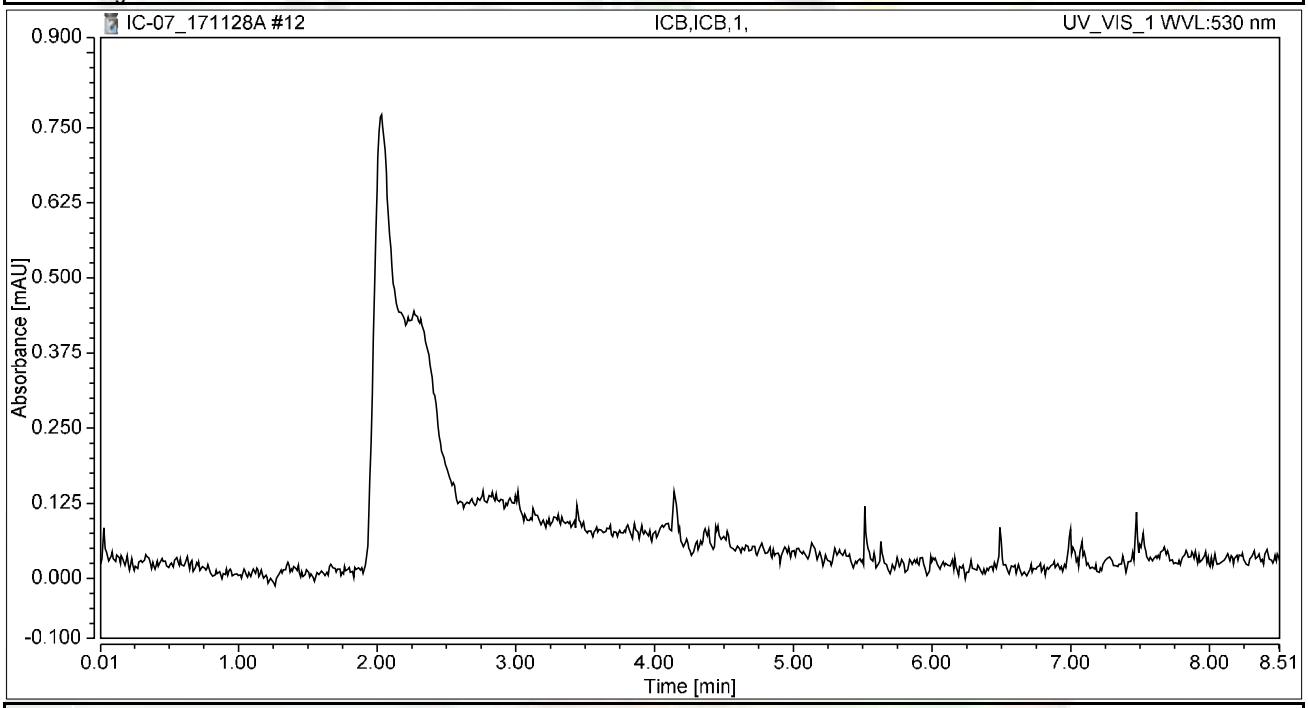
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.046	0.367	100.00	100.00	0.1851
Total:			**0.046**	**0.367**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 8:57 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/11/17 9:08 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/11/17 9:18 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/11/17 9:27 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/11/17 9:37 AM	Reported
15	MB-R120833	MBLK	1	Hexavalent Chromium	12/11/17 9:46 AM	Reported
16	LCS-R120833	LCS	1	Hexavalent Chromium	12/11/17 9:56 AM	Reported
17	N027405-006AMS	MS	5	Hexavalent Chromium	12/11/17 10:09 AM	Reported
18	N027405-006A	SAMP	5	Hexavalent Chromium	12/11/17 10:20 AM	Reported
19	N027405-007AMS	MS	5	Hexavalent Chromium	12/11/17 10:29 AM	Reported
20	N027405-007A	SAMP	5	Hexavalent Chromium	12/11/17 10:39 AM	Reported
21	N027405-008AMS	MS	5	Hexavalent Chromium	12/11/17 10:48 AM	Reported
22	N027405-008A	SAMP	5	Hexavalent Chromium	12/11/17 10:58 AM	Reported
23	N027430-001A	SAMP	1	Hexavalent Chromium	12/11/17 11:07 AM	Reported
24	N027430-001AMS	MS	1	Hexavalent Chromium	12/11/17 11:17 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/11/17 11:26 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/11/17 11:36 AM	Reported
27	N027430-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:45 AM	Reported
28	N027430-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:54 AM	Reported
29	N027430-003A	SAMP	1	Hexavalent Chromium	12/11/17 12:04 PM	Reported
30	N027430-003AMS	MS	1	Hexavalent Chromium	12/11/17 12:13 PM	Reported
31	N027430-004A	SAMP	1	Hexavalent Chromium	12/11/17 12:23 PM	Reported
32	N027430-004AMS	MS	1	Hexavalent Chromium	12/11/17 12:32 PM	Reported
33	N027430-005A	SAMP	1	Hexavalent Chromium	12/11/17 12:42 PM	Reported
34	N027430-005AMS	MS	1	Hexavalent Chromium	12/11/17 12:51 PM	Reported
35	N027430-006A	SAMP	1	Hexavalent Chromium	12/11/17 1:01 PM	Reported
36	N027430-006AMS	MS	1	Hexavalent Chromium	12/11/17 1:10 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/11/17 1:20 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/11/17 1:29 PM	Reported
39	N027430-007A	SAMP	1	Hexavalent Chromium	12/11/17 1:38 PM	Reported
40	N027430-007AMS	MS	1	Hexavalent Chromium	12/11/17 1:48 PM	Reported
41	N027430-008A	SAMP	1	Hexavalent Chromium	12/11/17 1:57 PM	Reported
42	N027430-008AMS	MS	1	Hexavalent Chromium	12/11/17 2:07 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027430-009A	SAMP	1	Hexavalent Chromium	12/11/17 2:16 PM	Reported
44	N027430-009AMS	MS	1	Hexavalent Chromium	12/11/17 2:26 PM	Reported
45	N027430-010A	SAMP	1	Hexavalent Chromium	12/11/17 2:35 PM	Reported
46	N027430-010AMS	MS	1	Hexavalent Chromium	12/11/17 2:45 PM	Reported
47	N027430-020A	SAMP	20	Hexavalent Chromium	12/11/17 2:54 PM	Reported
48	N027430-020AMS	MS	20	Hexavalent Chromium	12/11/17 3:04 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/11/17 3:13 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/11/17 3:23 PM	Reported
51	N027430-012A	SAMP	1	Hexavalent Chromium	12/11/17 3:32 PM	Not Reported
52	N027430-012AMS	MS	1	Hexavalent Chromium	12/11/17 3:41 PM	Not Reported
53	N027430-019A	SAMP	1	Hexavalent Chromium	12/11/17 3:51 PM	Reported
54	N027430-019AMS	MS	1	Hexavalent Chromium	12/11/17 4:00 PM	Reported
55	N027430-011A	SAMP	1	Hexavalent Chromium	12/11/17 4:10 PM	Reported
56	N027430-011AMS	MS	1	Hexavalent Chromium	12/11/17 4:19 PM	Reported
57	N027430-013A	SAMP	5	Hexavalent Chromium	12/11/17 4:29 PM	Reported
58	N027430-013AMS	MS	5	Hexavalent Chromium	12/11/17 4:38 PM	Reported
59	N027430-014A	SAMP	5	Hexavalent Chromium	12/11/17 4:48 PM	Reported
60	N027430-014AMS	MS	5	Hexavalent Chromium	12/11/17 4:57 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/11/17 5:07 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/11/17 5:16 PM	Reported
63	N027430-015A	SAMP	5	Hexavalent Chromium	12/11/17 5:26 PM	Reported
64	N027430-015AMS	MS	5	Hexavalent Chromium	12/11/17 5:35 PM	Reported
65	N027405-006ADUP	DUP	5	Hexavalent Chromium	12/11/17 5:44 PM	Reported
66	N027430-020AMSD	MSD	20	Hexavalent Chromium	12/11/17 5:54 PM	Reported
67	N027430-002A	SAMP	1	Hexavalent Chromium	12/11/17 6:05 PM	Not Reported
68	N027430-002AMS	MS	1	Hexavalent Chromium	12/11/17 6:16 PM	Not Reported
69	N027430-013A	SAMP	1	Hexavalent Chromium	12/11/17 6:25 PM	Not Reported
70	N027430-013AMS	MS	1	Hexavalent Chromium	12/11/17 6:35 PM	Not Reported
71	N027430-014A	SAMP	1	Hexavalent Chromium	12/11/17 6:44 PM	Not Reported
72	N027430-014AMS	MS	1	Hexavalent Chromium	12/11/17 6:54 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	12/11/17 7:03 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	12/11/17 7:13 PM	Reported
75	N027430-015A	SAMP	1	Hexavalent Chromium	12/11/17 7:22 PM	Not Reported
76	N027430-015AMS	MS	1	Hexavalent Chromium	12/11/17 7:32 PM	Not Reported
77	N027430-012A	SAMP	5	Hexavalent Chromium	12/11/17 7:41 PM	Reported
78	N027430-012AMS	MS	5	Hexavalent Chromium	12/11/17 7:50 PM	Reported
79	LCS-R120834	LCS	1	Hexavalent Chromium	12/11/17 8:00 PM	Reported
80	MB-R120834	MBLK	1	Hexavalent Chromium	12/11/17 8:09 PM	Reported
81	N027431-006A	SAMP	1000	Hexavalent Chromium	12/11/17 8:19 PM	Reported
82	N027431-006AMS	MS	1000	Hexavalent Chromium	12/11/17 8:28 PM	Reported
83	N027431-006AMSD	MSD	1000	Hexavalent Chromium	12/11/17 8:38 PM	Reported
84	N027428-002A	SAMP	100	Hexavalent Chromium	12/11/17 8:47 PM	Reported

INJECTION LOG: 171211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	12/11/17 8:57 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	12/11/17 9:06 PM	Reported
87	N027428-002ADUP	DUP	100	Hexavalent Chromium	12/11/17 9:16 PM	Reported
88	N027428-002AMS	MS	100	Hexavalent Chromium	12/11/17 9:25 PM	Reported
89	N027428-001A	SAMP	1	Hexavalent Chromium	12/11/17 9:35 PM	Reported
90	N027428-001AMS	MS	1	Hexavalent Chromium	12/11/17 9:44 PM	Reported
91	N027430-016A	SAMP	5	Hexavalent Chromium	12/11/17 9:53 PM	Reported
92	N027430-016AMS	MS	5	Hexavalent Chromium	12/11/17 10:03 PM	Reported
93	N027430-017A	SAMP	5	Hexavalent Chromium	12/11/17 10:12 PM	Reported
94	N027430-017AMS	MS	5	Hexavalent Chromium	12/11/17 10:22 PM	Reported
95	N027430-018A	SAMP	5	Hexavalent Chromium	12/11/17 10:31 PM	Reported
96	N027430-018AMS	MS	5	Hexavalent Chromium	12/11/17 10:41 PM	Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	12/11/17 10:50 PM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	12/11/17 11:00 PM	Reported
99	N027431-002A	SAMP	5	Hexavalent Chromium	12/11/17 11:09 PM	Reported
100	N027431-002AMS	MS	5	Hexavalent Chromium	12/11/17 11:19 PM	Reported
101	N027431-003A	SAMP	5	Hexavalent Chromium	12/11/17 11:28 PM	Reported
102	N027431-003AMS	MS	5	Hexavalent Chromium	12/11/17 11:38 PM	Reported
103	N027431-004A	SAMP	5	Hexavalent Chromium	12/11/17 11:47 PM	Reported
104	N027431-004AMS	MS	5	Hexavalent Chromium	12/11/17 11:56 PM	Reported
105	N027431-001A	SAMP	10	Hexavalent Chromium	12/12/17 12:06 AM	Not Reported
106	N027431-001AMS	MS	10	Hexavalent Chromium	12/12/17 12:15 AM	Not Reported
107	N027431-005A	SAMP	200	Hexavalent Chromium	12/12/17 12:25 AM	Reported
108	N027431-005AMS	MS	200	Hexavalent Chromium	12/12/17 12:34 AM	Reported
109	CCV-9	CCV	1	Hexavalent Chromium	12/12/17 12:44 AM	Reported
110	CCB-9	CCB	1	Hexavalent Chromium	12/12/17 12:53 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171211A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**12/Dec/17 01:24:03**
No. of Injections:	**113**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/11/2017 08:57	Finished	BLANK
11	BLANK	2	1000	Unknown		12/11/2017 09:08	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/11/2017 09:18	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/11/2017 09:27	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/11/2017 09:37	Finished	CCB R171129A
15	MB-1,MBLK,1	6	1000	Unknown		12/11/2017 09:46	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/11/2017 09:56	Finished	LCS, IWST-171002B
17	N027405-006AMS,MS	1	1000	Unknown		12/11/2017 10:09	Finished	MS (1ppb), IWST-171002B,2>1
18	N027405-006A,SAMP	2	1000	Unknown		12/11/2017 10:20	Finished	SAMP,2>10mL
19	N027405-007AMS,MS	3	1000	Unknown		12/11/2017 10:29	Finished	MS (1ppb), IWST-171002B,2>1
20	N027405-007A,SAMP	4	1000	Unknown		12/11/2017 10:39	Finished	SAMP,2>10mL
21	N027405-008AMS,MS	5	1000	Unknown		12/11/2017 10:48	Finished	SAMP,2>10mL
22	N027405-008A,SAMP	6	1000	Unknown		12/11/2017 10:58	Finished	MS (1ppb), IWST-171002B,2>1
23	N027430-001A,SAMP	7	1000	Unknown		12/11/2017 11:07	Finished	SAMP,10mL
24	N027430-001AMS,MS	8	1000	Unknown		12/11/2017 11:17	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	9	1000	Unknown		12/11/2017 11:26	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	10	1000	Unknown		12/11/2017 11:36	Finished	CCB R171129A
27	N027430-002A,SAMP	11	1000	Unknown		12/11/2017 11:45	Finished	SAMP,2>10mL
28	N027430-002AMS,MS	12	1000	Unknown		12/11/2017 11:54	Finished	MS (1ppb), IWST-171002B,2>1
29	N027430-003A,SAMP	13	1000	Unknown		12/11/2017 12:04	Finished	SAMP,10mL
30	N027430-003AMS,MS	14	1000	Unknown		12/11/2017 12:13	Finished	MS (1ppb), IWST-171002B,10
31	N027430-004A,SAMP	15	1000	Unknown		12/11/2017 12:23	Finished	SAMP,10mL
32	N027430-004AMS,MS	16	1000	Unknown		12/11/2017 12:32	Finished	MS (1ppb), IWST-171002B,10
33	N027430-005A,SAMP	17	1000	Unknown		12/11/2017 12:42	Finished	SAMP,10mL
34	N027430-005AMS,MS	18	1000	Unknown		12/11/2017 12:51	Finished	MS (1ppb), IWST-171002B,10
35	N027430-006A,SAMP	19	1000	Unknown		12/11/2017 13:01	Finished	SAMP,10mL
36	N027430-006AMS,MS	20	1000	Unknown		12/11/2017 13:10	Finished	MS (1ppb), IWST-171002B,10
37	CCV-3,CCV,1,	21	1000	Unknown		12/11/2017 13:20	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	22	1000	Unknown		12/11/2017 13:29	Finished	CCB R171129A
39	N027430-007A,SAMP	23	1000	Unknown		12/11/2017 13:38	Finished	SAMP,10mL
40	N027430-007AMS,MS	24	1000	Unknown		12/11/2017 13:48	Finished	MS (1ppb), IWST-171002B,10
41	N027430-008A,SAMP	25	1000	Unknown		12/11/2017 13:57	Finished	SAMP,10mL
42	N027430-008AMS,MS	26	1000	Unknown		12/11/2017 14:07	Finished	MS (1ppb), IWST-171002B,10
43	N027430-009A,SAMP	27	1000	Unknown		12/11/2017 14:16	Finished	SAMP,10mL
44	N027430-009AMS,MS	28	1000	Unknown		12/11/2017 14:26	Finished	MS (1ppb), IWST-171002B,10
45	N027430-010A,SAMP	29	1000	Unknown		12/11/2017 14:35	Finished	SAMP,10mL
46	N027430-010AMS,MS	30	1000	Unknown		12/11/2017 14:45	Finished	MS (1ppb), IWST-171002B,10
47	N027430-020A,SAMP	31	1000	Unknown		12/11/2017 14:54	Finished	SAMP,0.5>10mL
48	N027430-020AMS,MS	32	1000	Unknown		12/11/2017 15:04	Finished	MS (5ppb), IWST-171002B,0.5
49	CCV-4,CCV1,1,	33	1000	Unknown		12/11/2017 15:13	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	34	1000	Unknown		12/11/2017 15:23	Finished	CCB R171129A
51	N027430-012A,SAMP	35	1000	Unknown		12/11/2017 15:32	Finished	SAMP,10mL
52	N027430-012AMS,MS	36	1000	Unknown		12/11/2017 15:41	Finished	MS (1ppb), IWST-171002B,10
53	N027430-019A,SAMP	37	1000	Unknown		12/11/2017 15:51	Finished	SAMP,10mL
54	N027430-019AMS,MS	38	1000	Unknown		12/11/2017 16:00	Finished	MS (1ppb), IWST-171002B,10
55	N027430-011A,SAMP	39	1000	Unknown		12/11/2017 16:10	Finished	SAMP,10mL
56	N027430-011AMS,MS	40	1000	Unknown		12/11/2017 16:19	Finished	MS (1ppb), IWST-171002B,10
57	N027430-013A,SAMP	41	1000	Unknown		12/11/2017 16:29	Finished	SAMP,2>10mL
58	N027430-013AMS,MS	42	1000	Unknown		12/11/2017 16:38	Finished	MS (1ppb), IWST-171002B,2>1
59	N027430-014A,SAMP	43	1000	Unknown		12/11/2017 16:48	Finished	SAMP,2>10mL
60	N027430-014AMS,MS	44	1000	Unknown		12/11/2017 16:57	Finished	MS (1ppb), IWST-171002B,2>1

IC-07 RBA 12/14/2017 7:32:55 PM rba 12/16/2017 12/21/2017

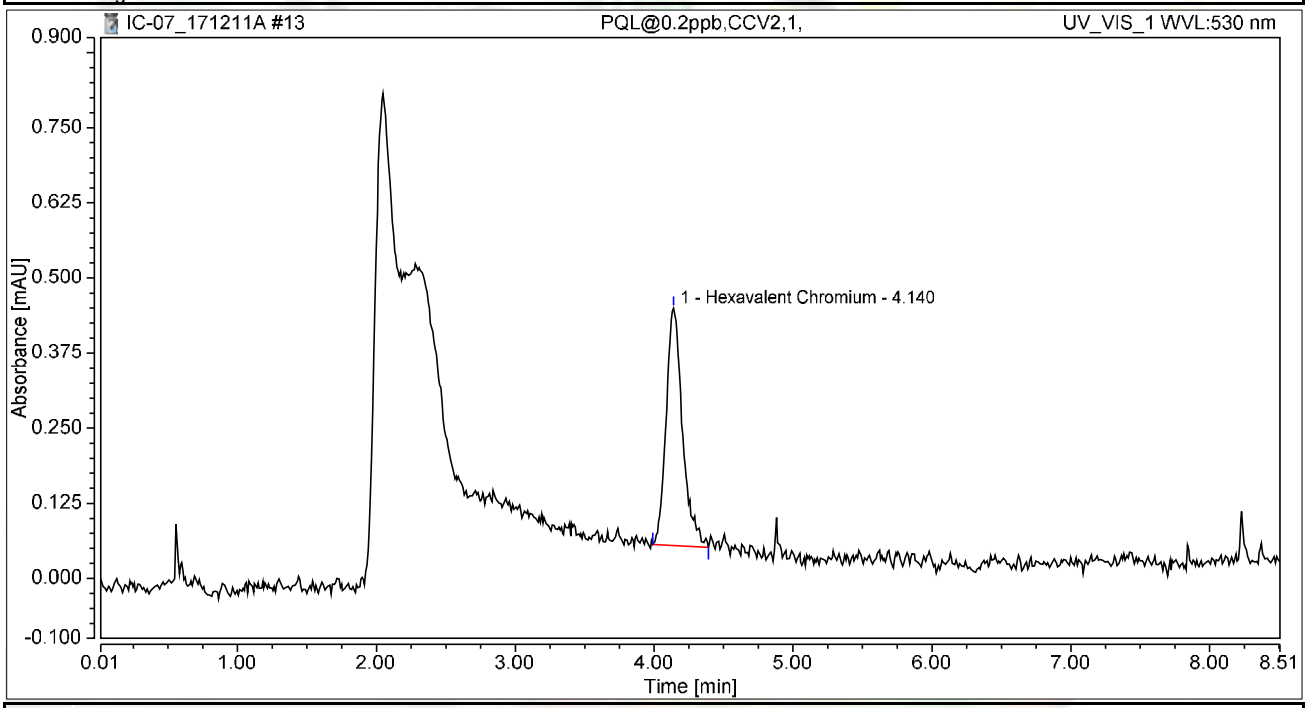
61	CCV-5,CCV,1,	45	1000	Unknown		12/11/2017 17:07	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	46	1000	Unknown		12/11/2017 17:16	Finished	CCB R171129A
63	N027430-015A,SAMF	47	1000	Unknown		12/11/2017 17:26	Finished	SAMP,2>10mL
64	N027430-015AMS,MS	48	1000	Unknown		12/11/2017 17:35	Finished	MS (1ppb), IWST-171002B,2>1
65	N027405-006ADUP,D	49	1000	Unknown		12/11/2017 17:44	Finished	DUP,2>10mL
66	N027430-020AMSD,M	50	1000	Unknown		12/11/2017 17:54	Finished	MSD (5ppb), IWST-171002B,0.
67	N027430-002A,SAMF	1	1000	Unknown		12/11/2017 18:05	Finished	MSD (5ppb), IWST-171002B,0.
68	N027430-002AMS,MS	2	1000	Unknown		12/11/2017 18:16	Finished	DUP,2>10mL
69	N027430-013A,SAMF	3	1000	Unknown		12/11/2017 18:25	Finished	SAMP,2>10mL
70	N027430-013AMS,MS	4	1000	Unknown		12/11/2017 18:35	Finished	MS (1ppb), IWST-171002B,2>1
71	N027430-014A,SAMF	5	1000	Unknown		12/11/2017 18:44	Finished	SAMP,10mL
72	N027430-014AMS,MS	6	1000	Unknown		12/11/2017 18:54	Finished	MS (1ppb), IWST-171002B,10
73	CCV-6,CCV1,1,	7	1000	Unknown		12/11/2017 19:03	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	8	1000	Unknown		12/11/2017 19:13	Finished	CCB R171129A
75	N027430-015A,SAMF	9	1000	Unknown		12/11/2017 19:22	Finished	LCS, IWST-171002B
76	N027430-015AMS,MS	10	1000	Unknown		12/11/2017 19:32	Finished	MB R171129A
77	N027430-012A,SAMF	11	1000	Unknown		12/11/2017 19:41	Finished	SAMP,2>10mL
78	N027430-012AMS,MS	12	1000	Unknown		12/11/2017 19:50	Finished	MS (1ppb), IWST-171002B,2>1
79	LCS-2,LCS,1	13	1000	Unknown		12/11/2017 20:00	Finished	LCS, IWST-171002B
80	MB-2,MBLK,1	14	1000	Unknown		12/11/2017 20:09	Finished	MB R171129A
81	N027431-006A,SAMF	15	1000	Unknown		12/11/2017 20:19	Finished	DUP,0.1>10mL
82	N027431-006AMS,MS	16	1000	Unknown		12/11/2017 20:28	Finished	SAMP,10mL
83	N027431-006AMSD,M	17	1000	Unknown		12/11/2017 20:38	Finished	SAMP,5>10mL
84	N027428-002A,SAMF	18	1000	Unknown		12/11/2017 20:47	Finished	SAMP,0.2>10mL
85	CCV-7,CCV,1,	19	1000	Unknown		12/11/2017 20:57	Finished	CCV @5ppb, IWST-171002A
86	CCB-7,CCB,1,	20	1000	Unknown		12/11/2017 21:06	Finished	CCB R171114C
87	N027428-002ADUP,D	21	1000	Unknown		12/11/2017 21:16	Finished	SAMP,0.2>10mL
88	N027428-002AMS,MS	22	1000	Unknown		12/11/2017 21:25	Finished	SAMP,1>10mL
89	N027428-001A,SAMF	23	1000	Unknown		12/11/2017 21:35	Finished	SAMP,0.5>10mL
90	N027428-001AMS,MS	24	1000	Unknown		12/11/2017 21:44	Finished	SAMP,5>10mL
91	N027430-016A,SAMF	25	1000	Unknown		12/11/2017 21:53	Finished	SAMP,10mL
92	N027430-016AMS,MS	26	1000	Unknown		12/11/2017 22:03	Finished	SAMP,2>10mL
93	N027430-017A,SAMF	27	1000	Unknown		12/11/2017 22:12	Finished	MS (5ppb), IWST-171002B,2>1
94	N027430-017AMS,MS	28	1000	Unknown		12/11/2017 22:22	Finished	MSD (5ppb), IWST-171002B,2
95	N027430-018A,SAMF	29	1000	Unknown		12/11/2017 22:31	Finished	SAMP,10mL
96	N027430-018AMS,MS	30	1000	Unknown		12/11/2017 22:41	Finished	MS (1ppb), IWST-171002B,10
97	CCV-8,CCV1,1,	31	1000	Unknown		12/11/2017 22:50	Finished	CCV @10ppb, IWST-171002A
98	CCB-8,CCB,1,	32	1000	Unknown		12/11/2017 23:00	Finished	CCB R171129A
99	N027431-002A,SAMF	33	1000	Unknown		12/11/2017 23:09	Finished	SAMP,10mL
100	N027431-002AMS,MS	34	1000	Unknown		12/11/2017 23:19	Finished	MS (1ppb), IWST-171002B,10
101	N027431-003A,SAMF	35	1000	Unknown		12/11/2017 23:28	Finished	SAMP,10mL
102	N027431-003AMS,MS	36	1000	Unknown		12/11/2017 23:38	Finished	MS (1ppb), IWST-171002B,10
103	N027431-004A,SAMF	37	1000	Unknown		12/11/2017 23:47	Finished	SAMP,10mL
104	N027431-004AMS,MS	38	1000	Unknown		12/11/2017 23:56	Finished	MS (1ppb), IWST-171002B,10
105	N027431-001A,SAMF	39	1000	Unknown		12/12/2017 00:06	Finished	SAMP,10mL
106	N027431-001AMS,MS	40	1000	Unknown		12/12/2017 00:15	Finished	MS (1ppb), IWST-171002B,10
107	N027431-005A,SAMF	41	1000	Unknown		12/12/2017 00:25	Finished	SAMP,10mL
108	N027431-005AMS,MS	42	1000	Unknown		12/12/2017 00:34	Finished	MS (1ppb), IWST-171002B,10
109	CCV-9,CCV,1,	43	1000	Unknown		12/12/2017 00:44	Finished	CCV @5ppb, IWST-171002A
110	CCB-9,CCB,1,	44	1000	Unknown		12/12/2017 00:53	Finished	CCB R171114C
111	SHUTDOWN	45	1000	Unknown		12/12/2017 01:03	Finished	
112	Eluent: R171211B	46	1000	Unknown		n.a.	Finished	Eluent
113	PCR: R171211C	47	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 09:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

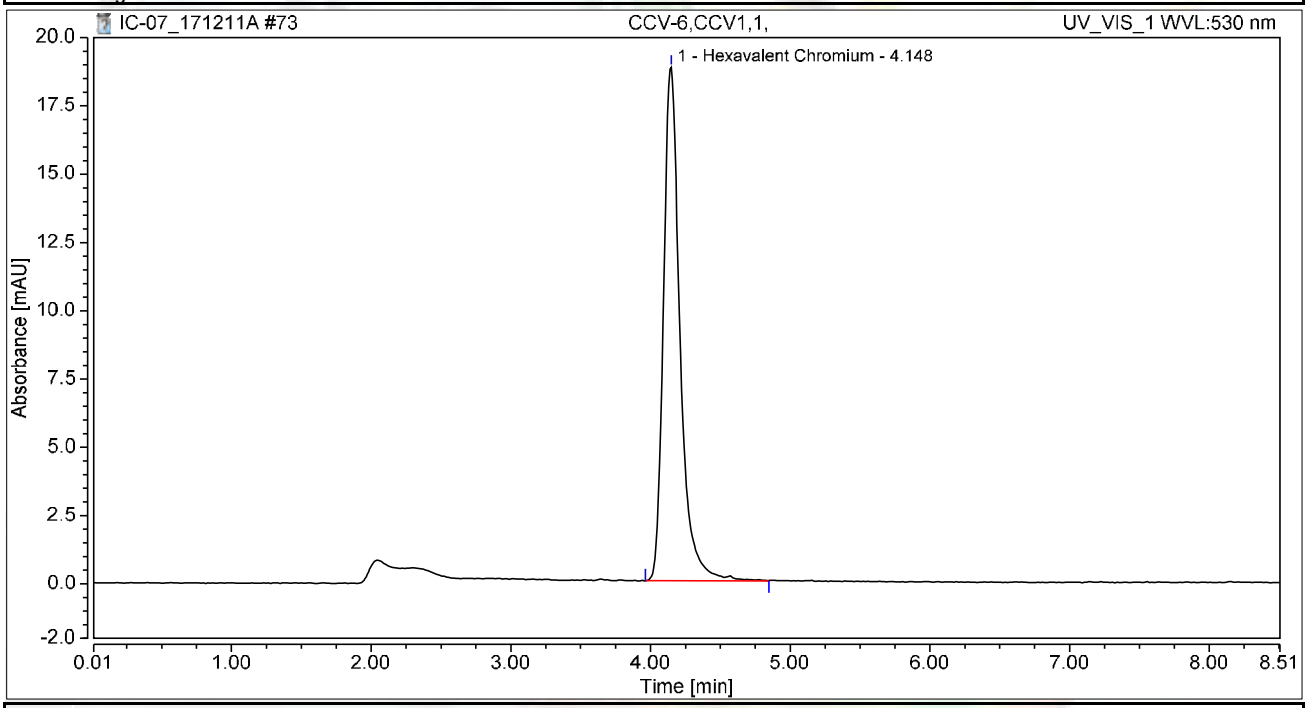
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.054	0.395	100.00	100.00	0.2151
Total:			**0.054**	**0.395**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

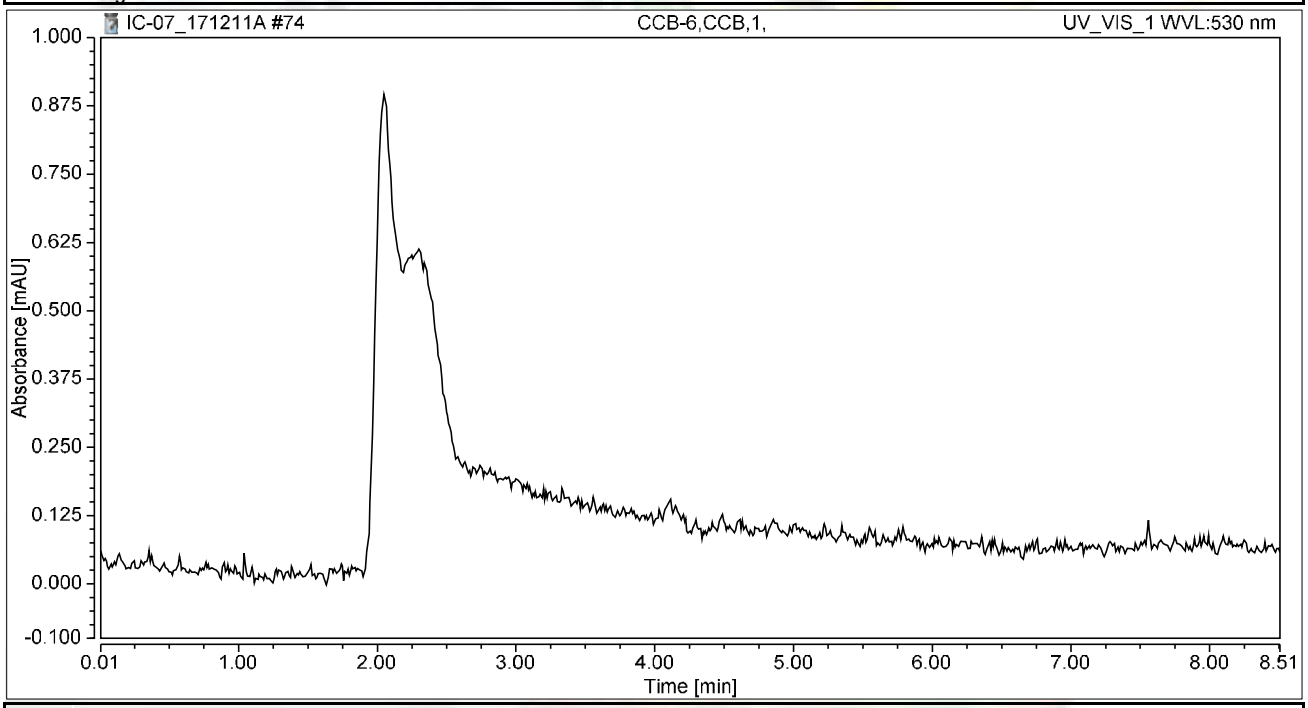
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.585	18.801	100.00	100.00	10.2939
Total:			**2.585**	**18.801**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 19:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

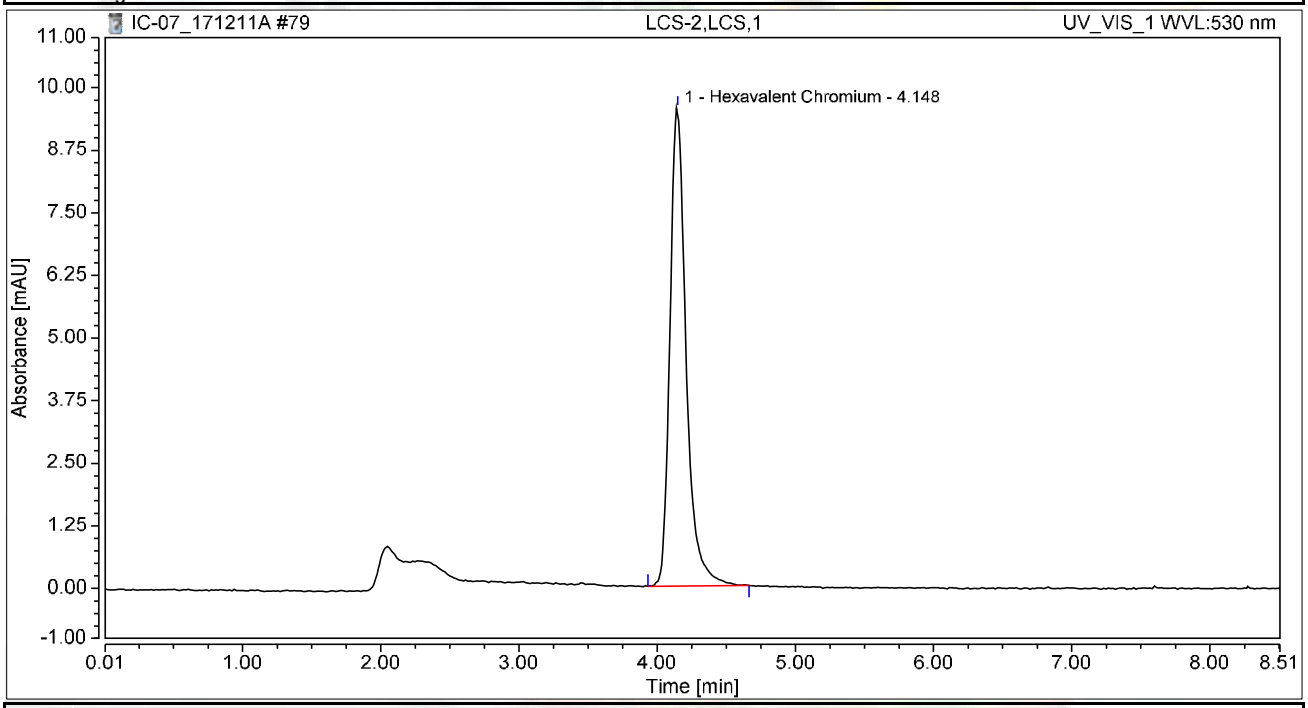
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-2,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

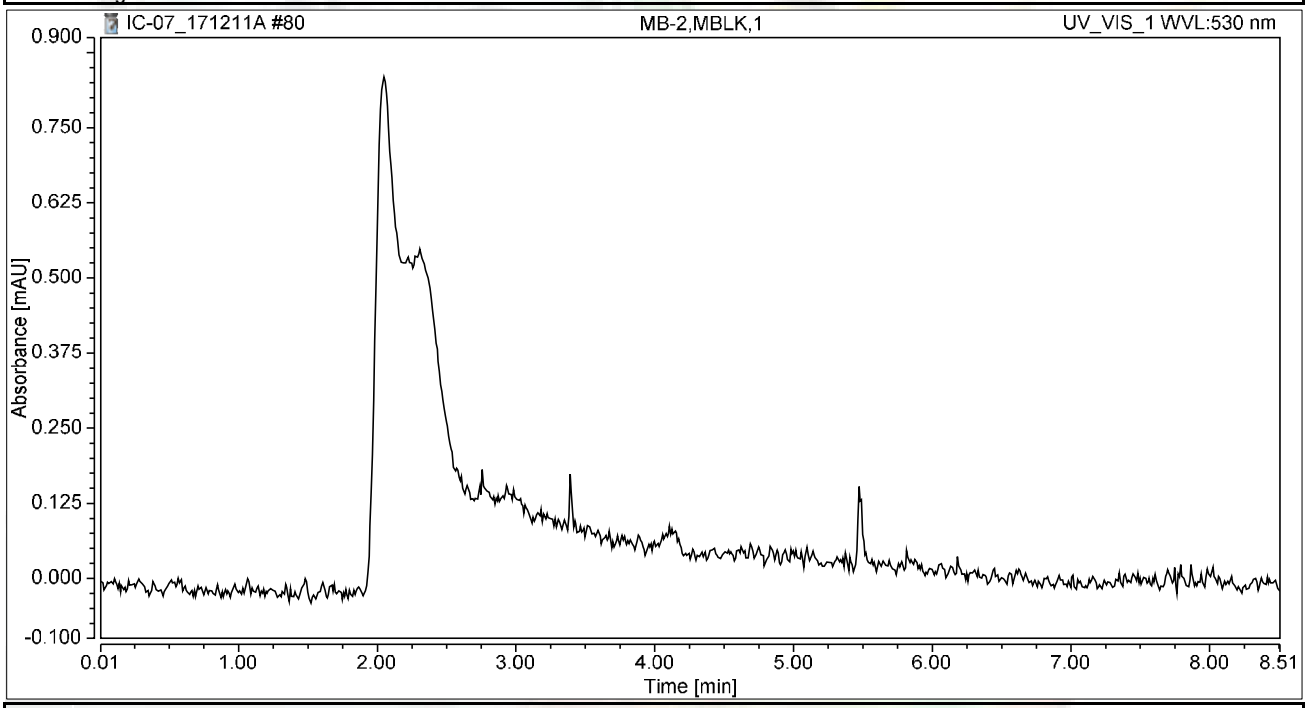
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.299	9.550	100.00	100.00	5.1752
Total:			**1.299**	**9.550**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-2,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

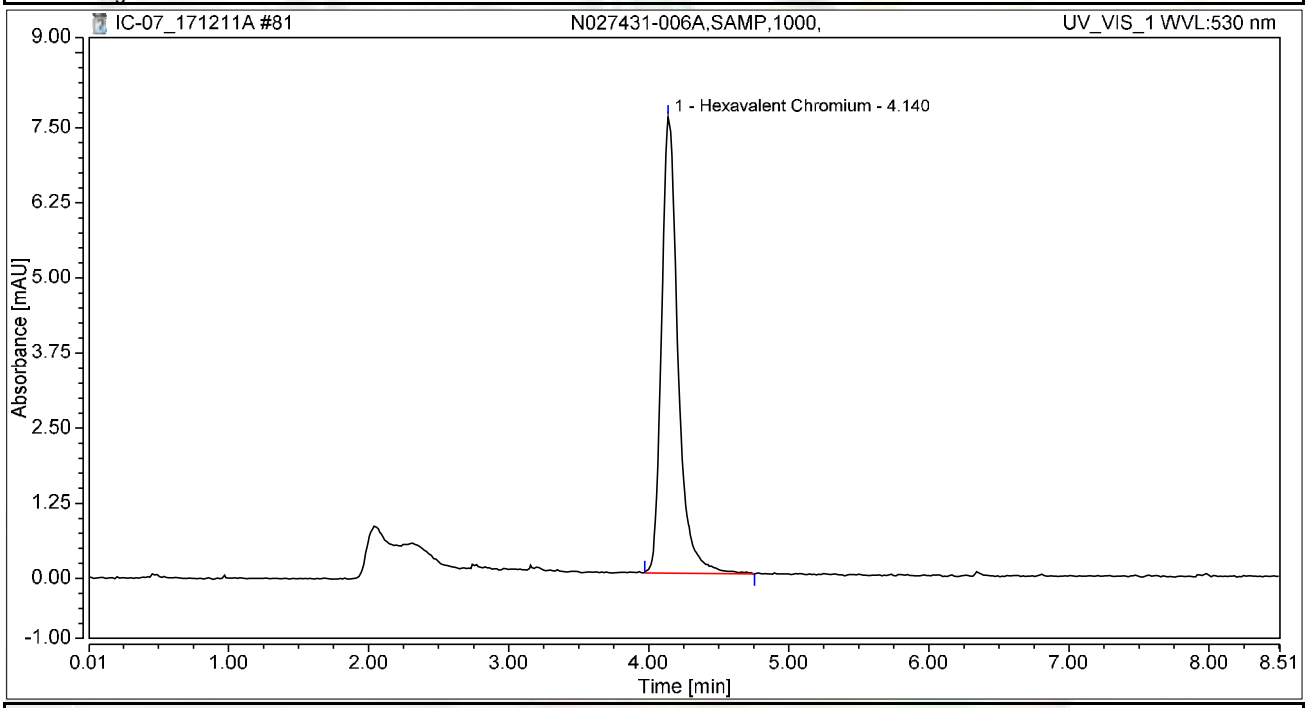
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-006A,SAMP,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

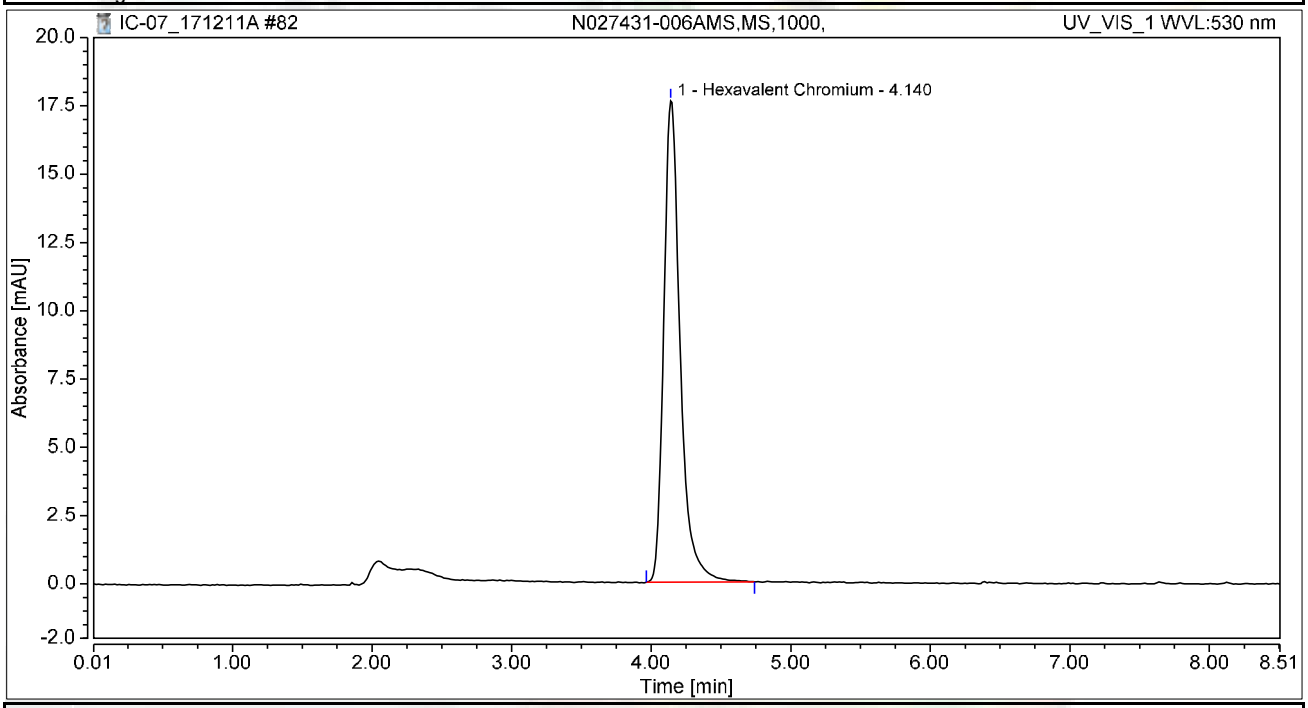
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.040	7.590	100.00	100.00	4.1412
Total:			**1.040**	**7.590**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-006AMS,MS,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

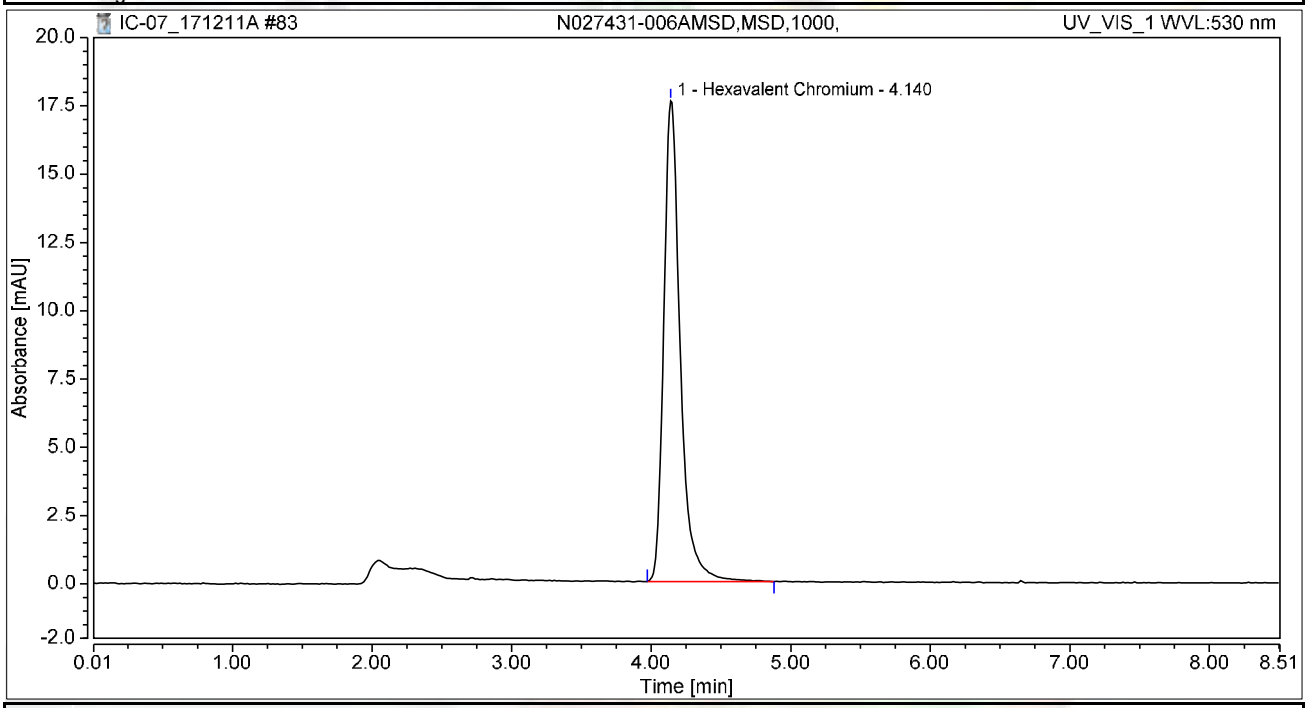
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.408	17.620	100.00	100.00	9.5916
Total:			**2.408**	**17.620**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-006AMSD,MSD,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

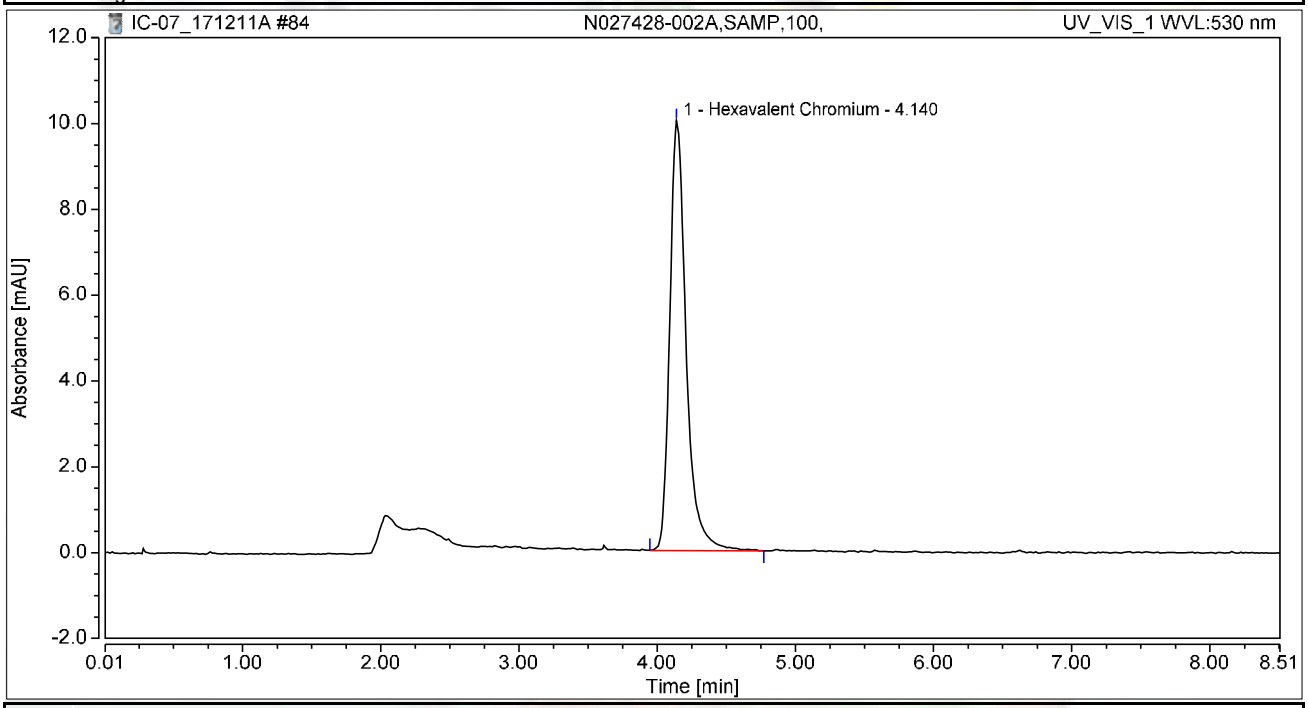
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.418	17.606	100.00	100.00	9.6302
Total:			**2.418**	**17.606**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027428-002A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

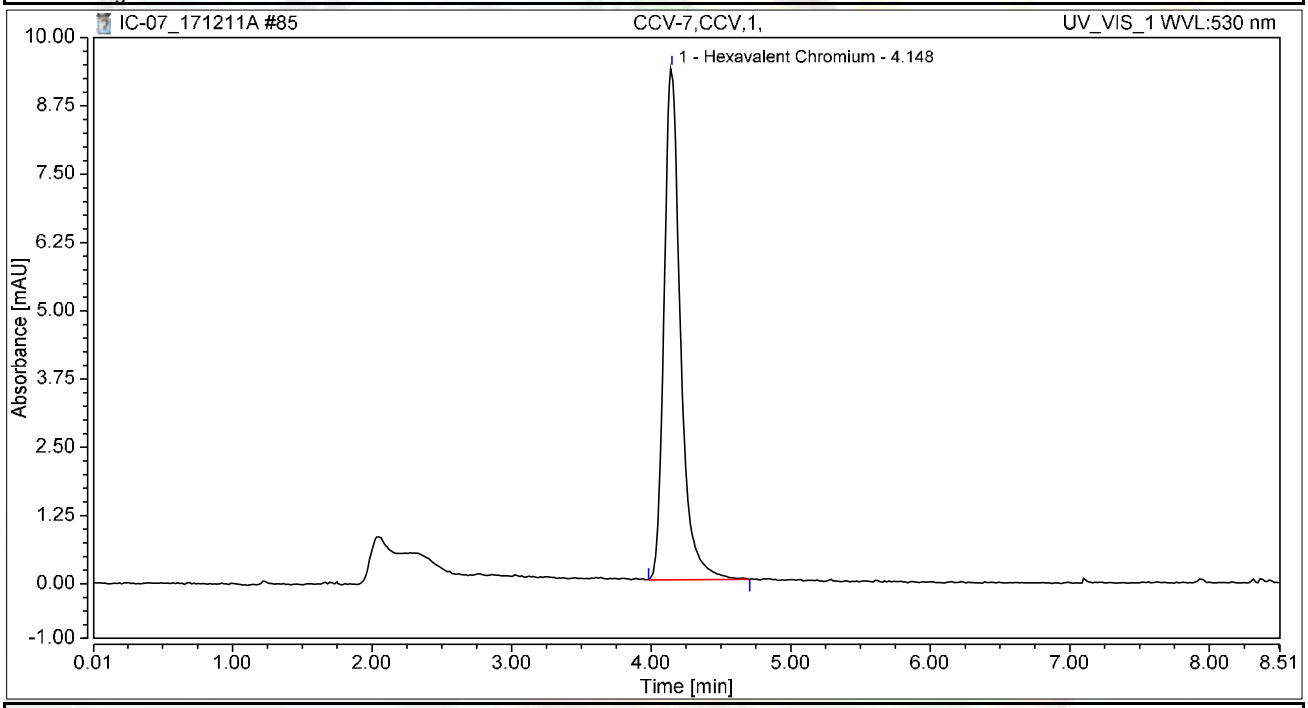
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.380	10.020	100.00	100.00	5.4968
Total:			**1.380**	**10.020**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 20:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

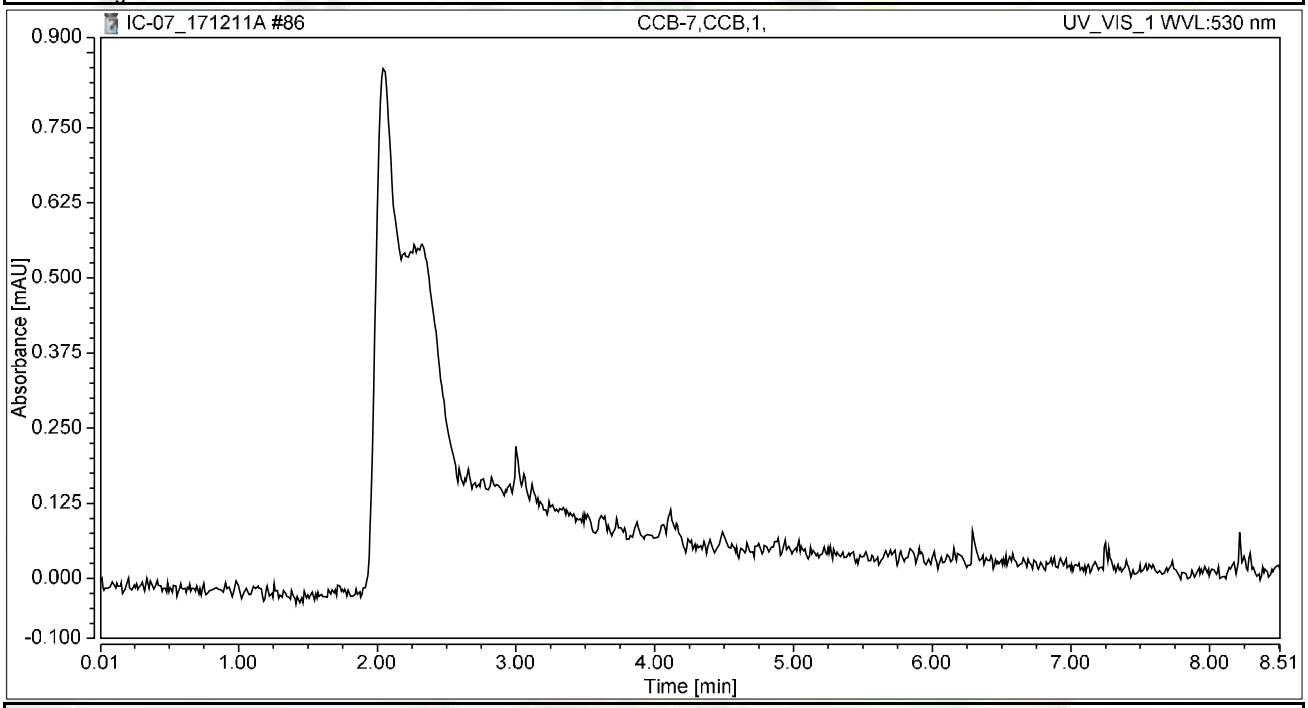
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.283	9.373	100.00	100.00	5.1094
Total:			**1.283**	**9.373**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

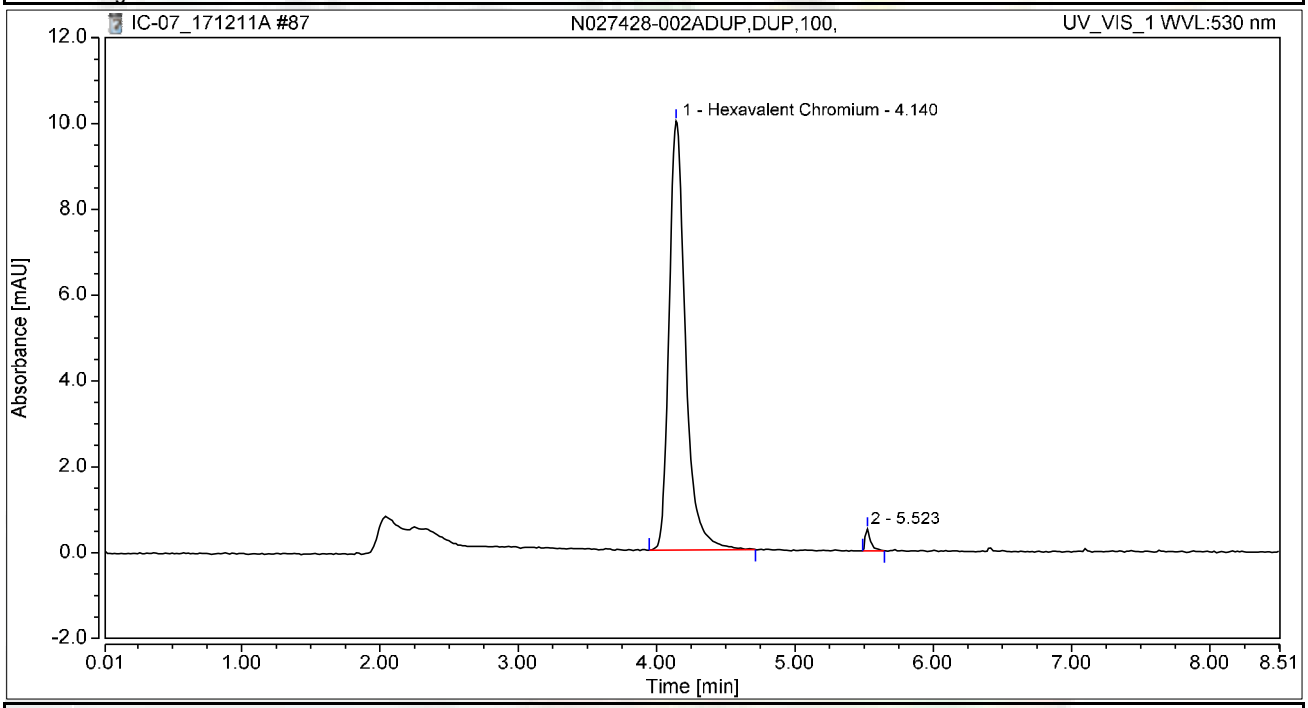
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027428-002ADUP,DUP,100,**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

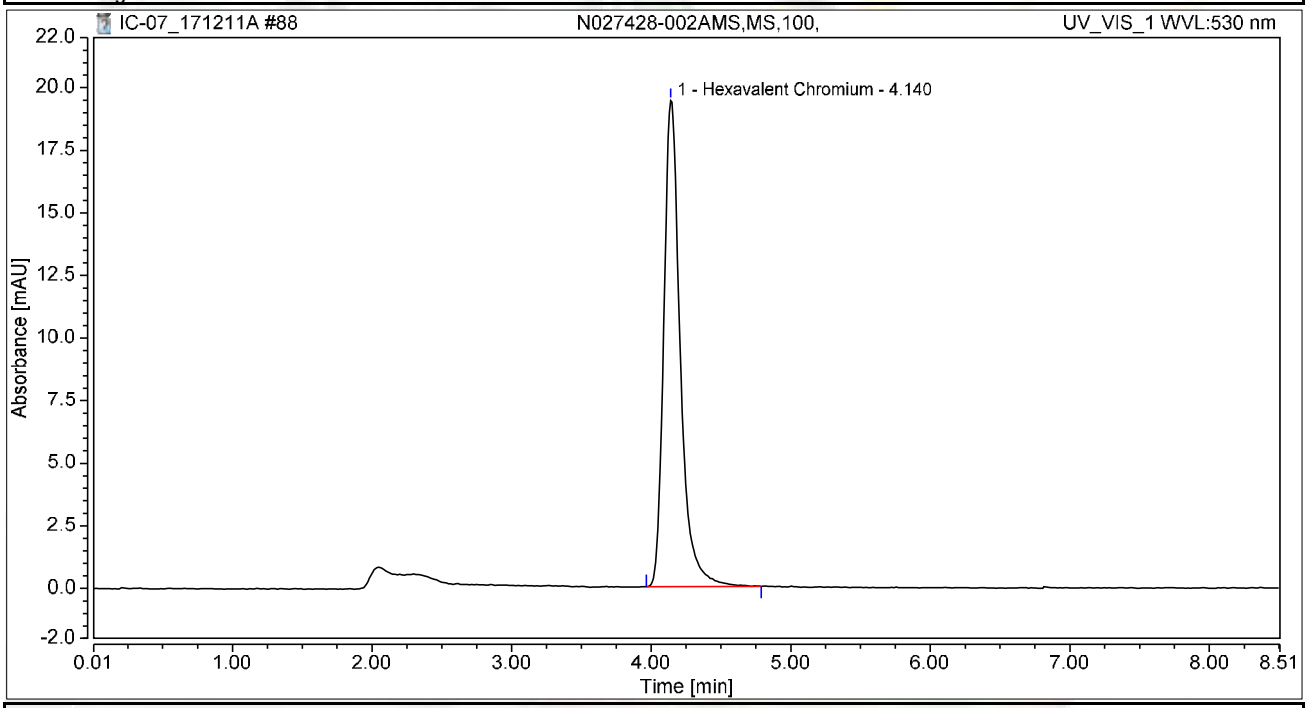
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.373	9.989	98.33	95.21	5.4689
2		5.523	0.023	0.502	1.67	4.79	n.a.
Total:			**1.397**	**10.491**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027428-002AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

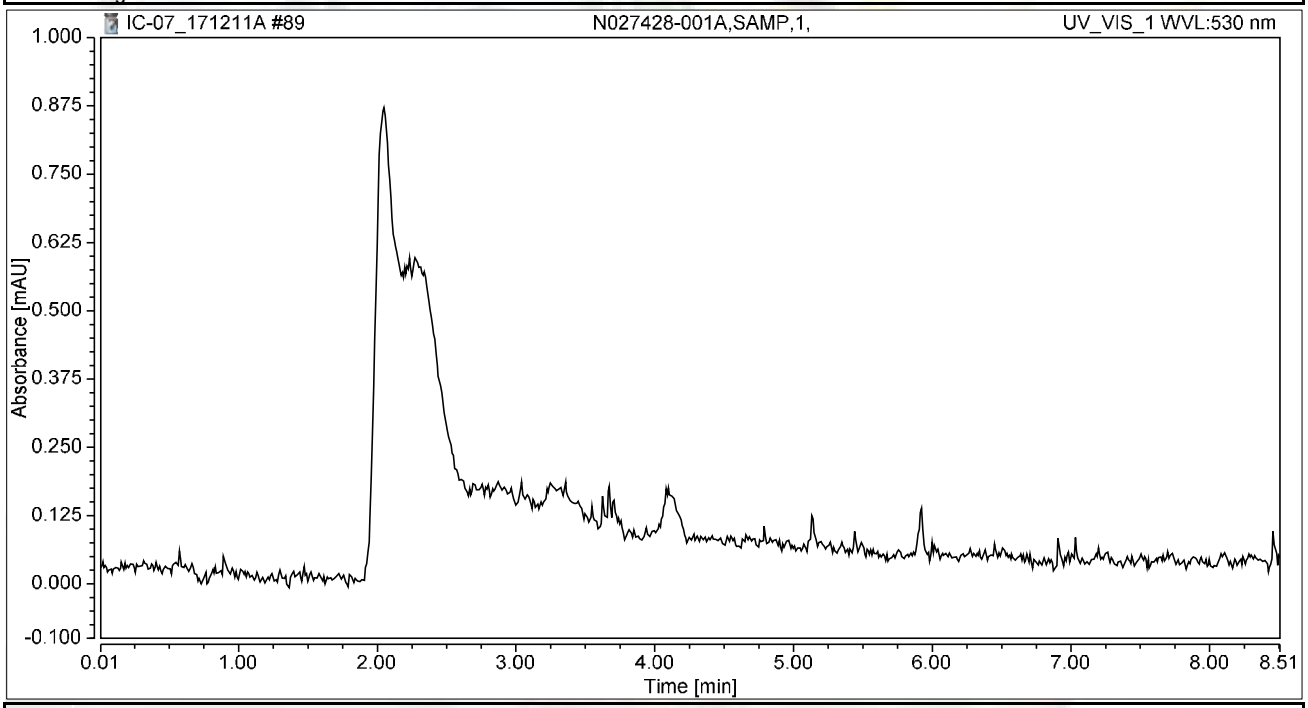
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.661	19.412	100.00	100.00	10.5980
Total:			**2.661**	**19.412**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027428-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

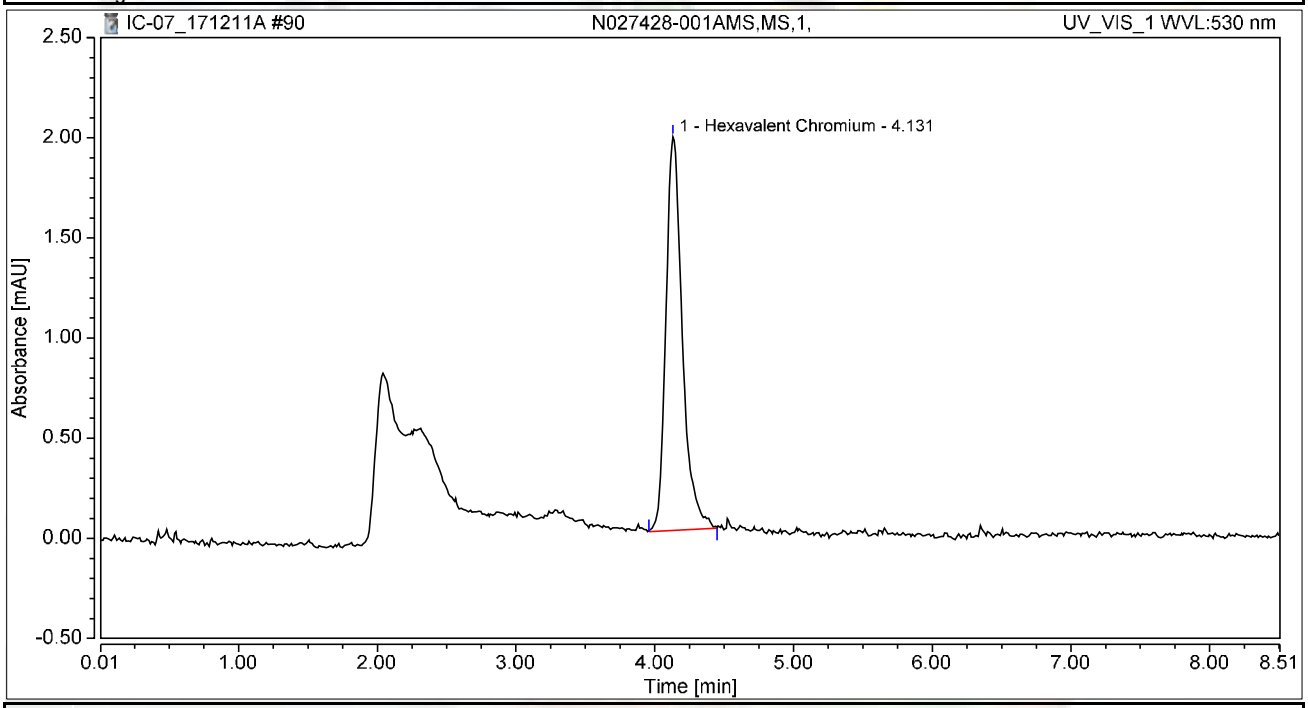
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027428-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

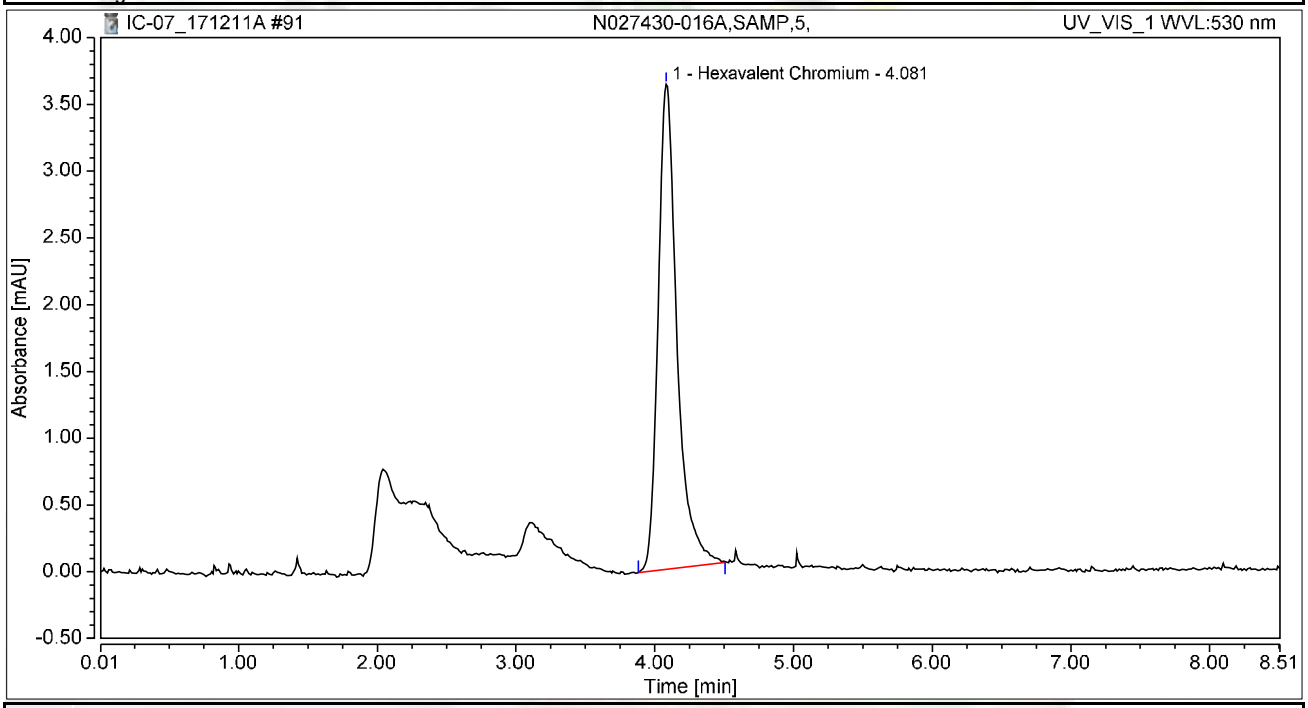
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.271	1.965	100.00	100.00	1.0787
Total:			**0.271**	**1.965**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-016A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 21:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

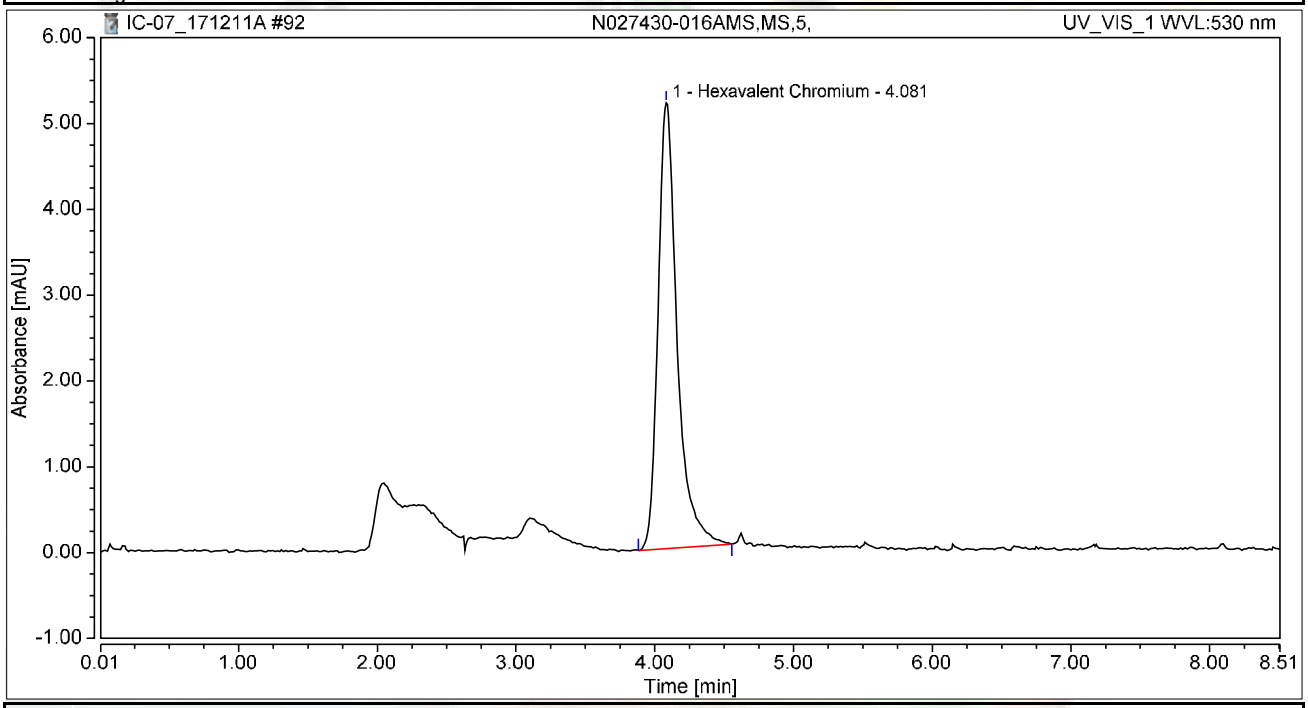
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.575	3.632	100.00	100.00	2.2917
Total:			**0.575**	**3.632**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-016AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

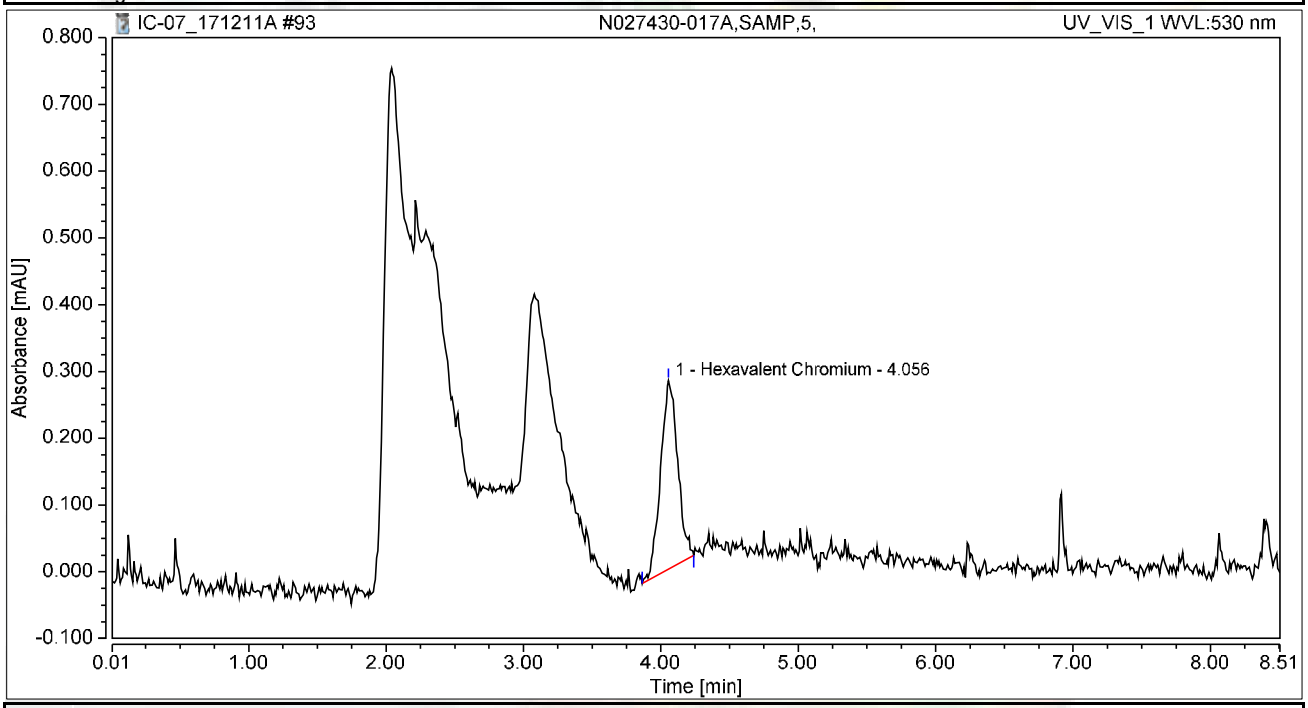
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.832	5.194	100.00	100.00	3.3146
Total:			**0.832**	**5.194**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-017A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

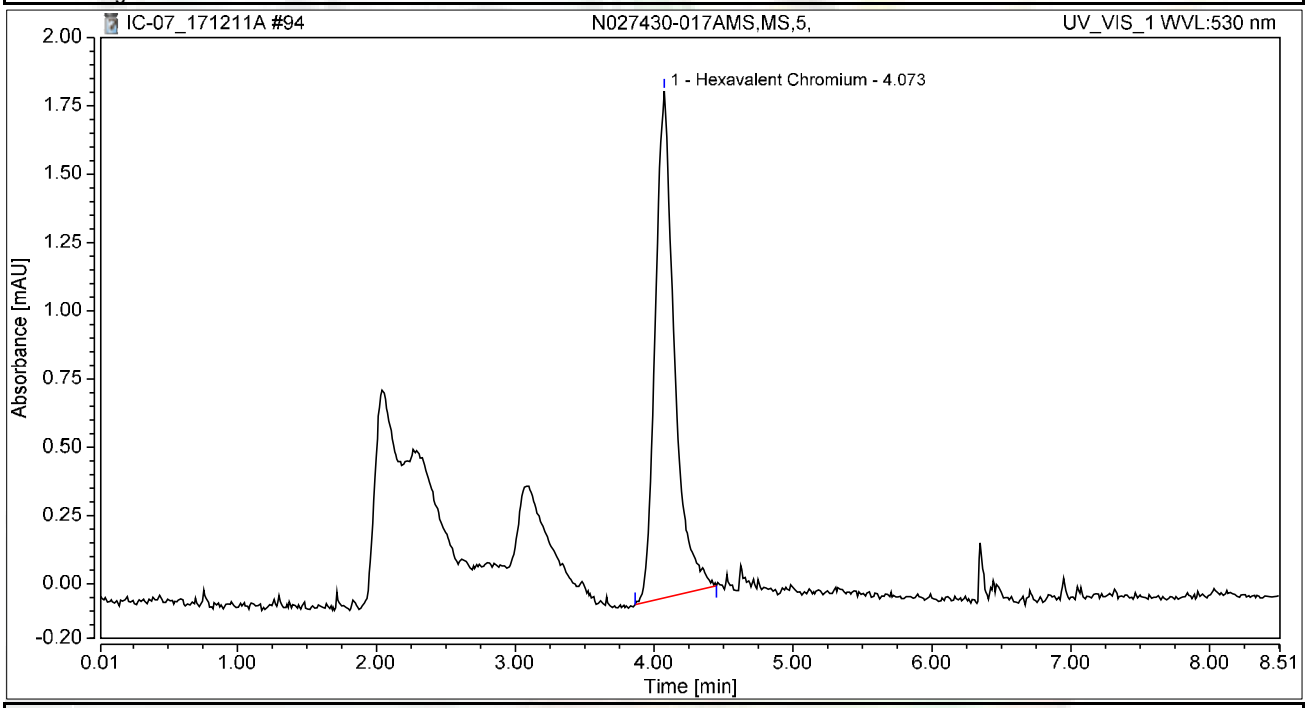
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.041	0.283	100.00	100.00	0.1618
Total:			**0.041**	**0.283**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-017AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

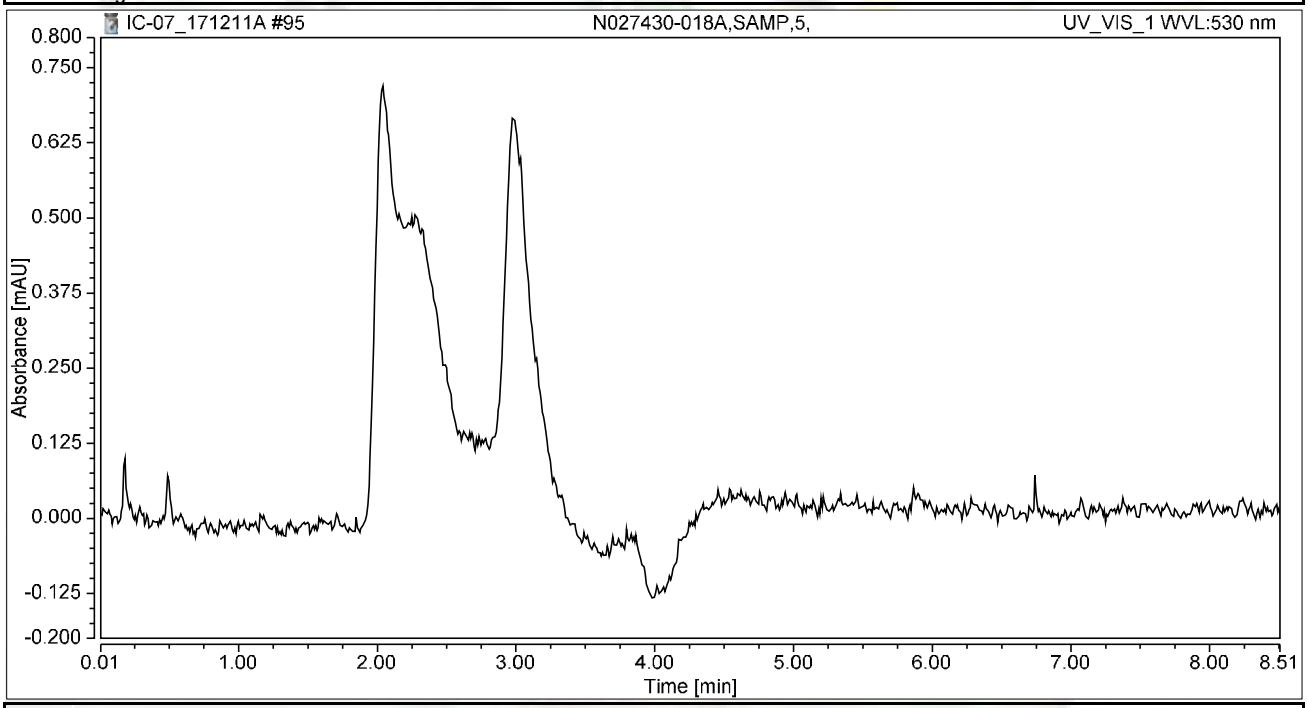
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	0.296	1.856	100.00	100.00	1.1798
Total:			**0.296**	**1.856**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-018A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

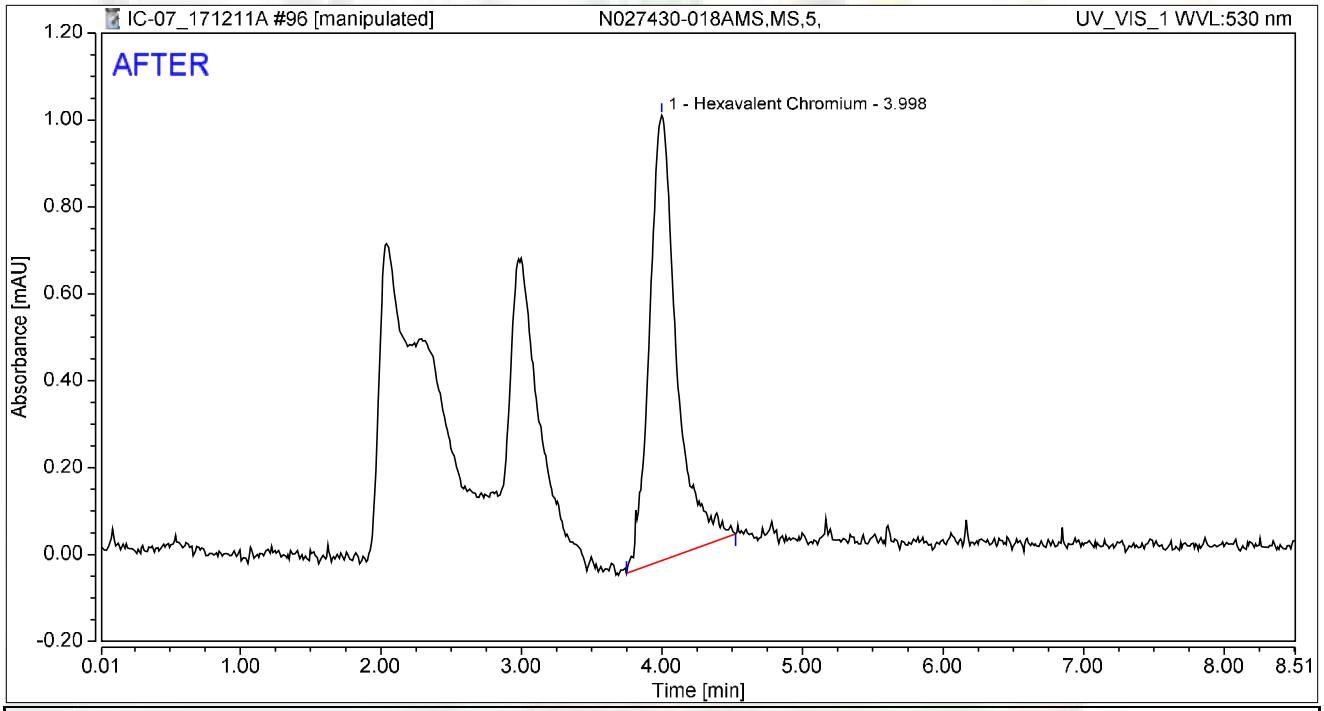
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-018AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.998	0.230	1.025	100.00	100.00	0.9160
Total:			**0.230**	**1.025**	**100.00**	**100.00**	

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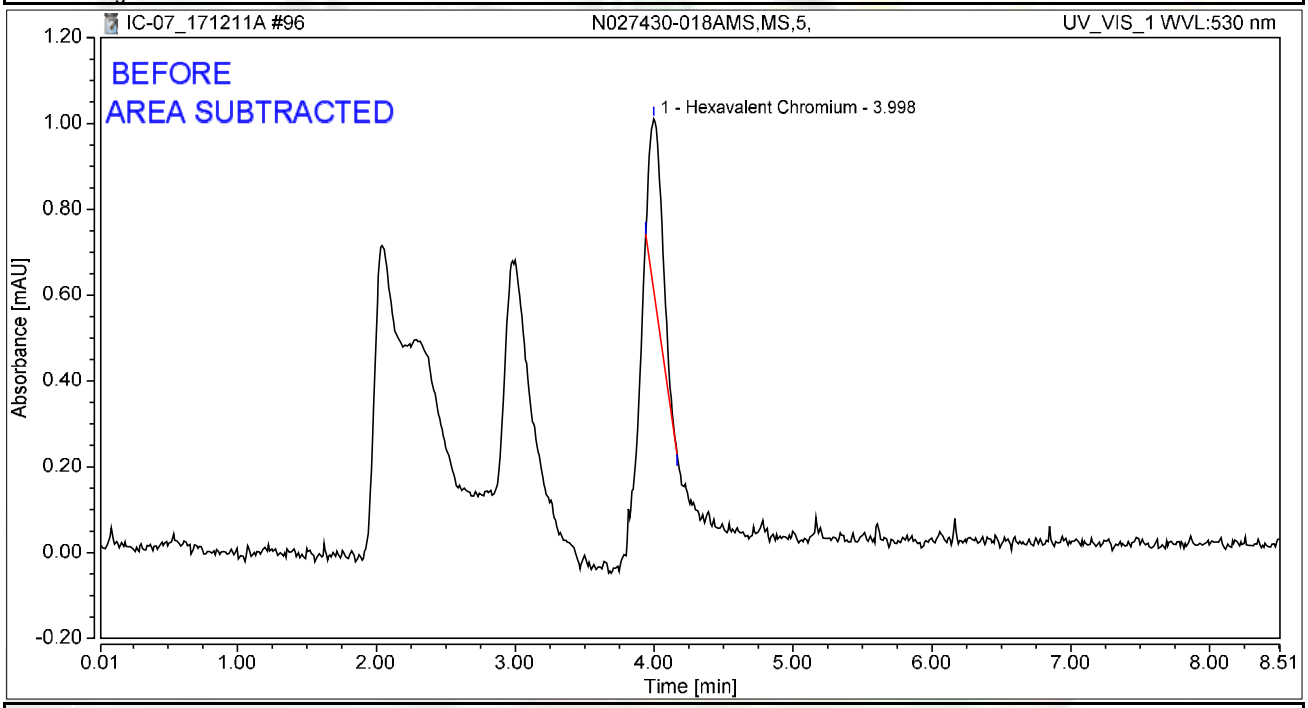
Chromatogram and Results

Injection Details

Injection Name:	**N027430-018AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.998	0.045	0.401	100.00	100.00	0.1811
Total:			**0.045**	**0.401**	**100.00**	**100.00**	

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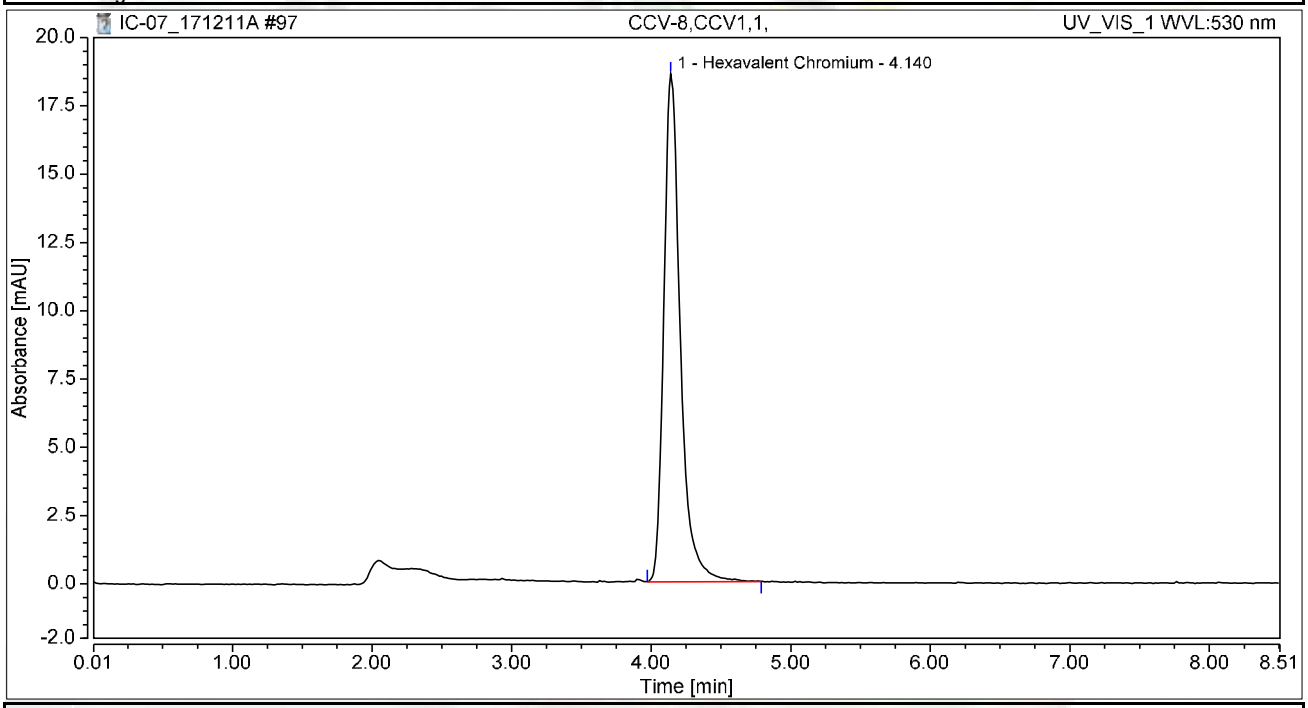
Chromatogram and Results

Injection Details

Injection Name:	**CCV-8,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 22:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

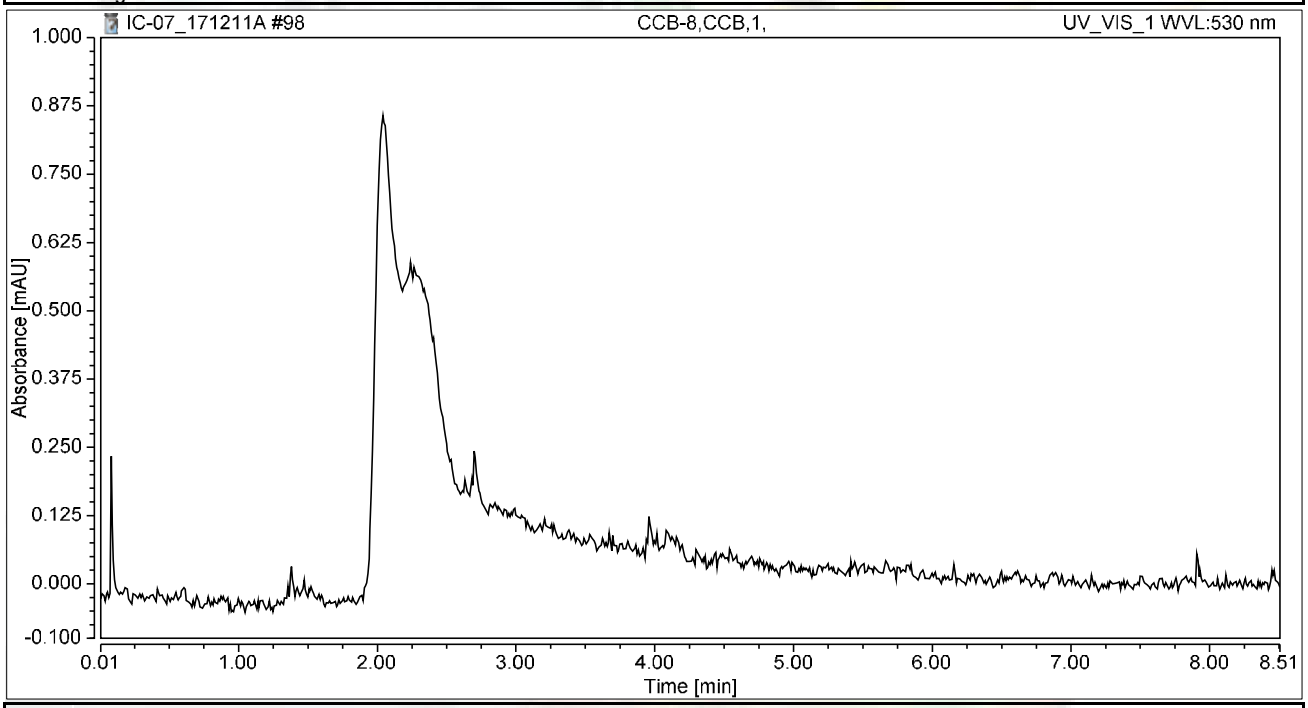
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.551	18.593	100.00	100.00	10.1602
Total:			**2.551**	**18.593**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-8,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

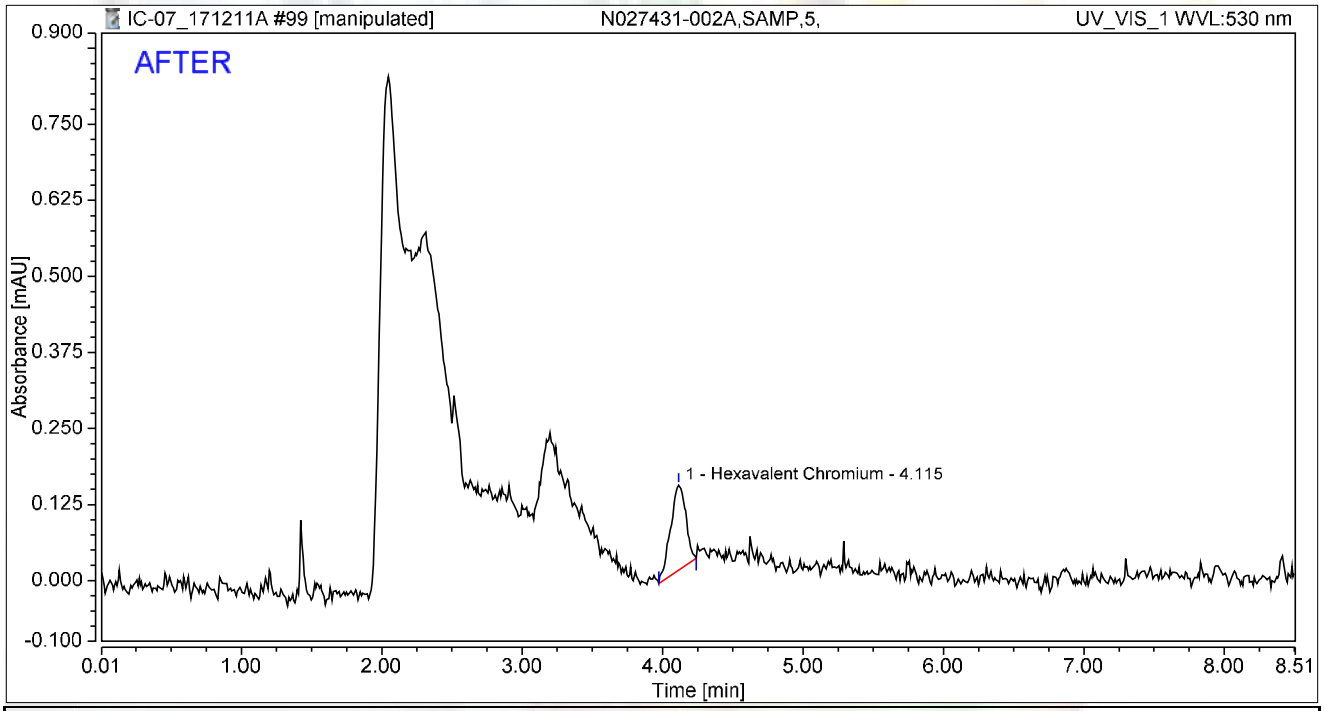
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.018	0.140	100.00	100.00	0.0709
Total:			**0.018**	**0.140**	**100.00**	**100.00**	

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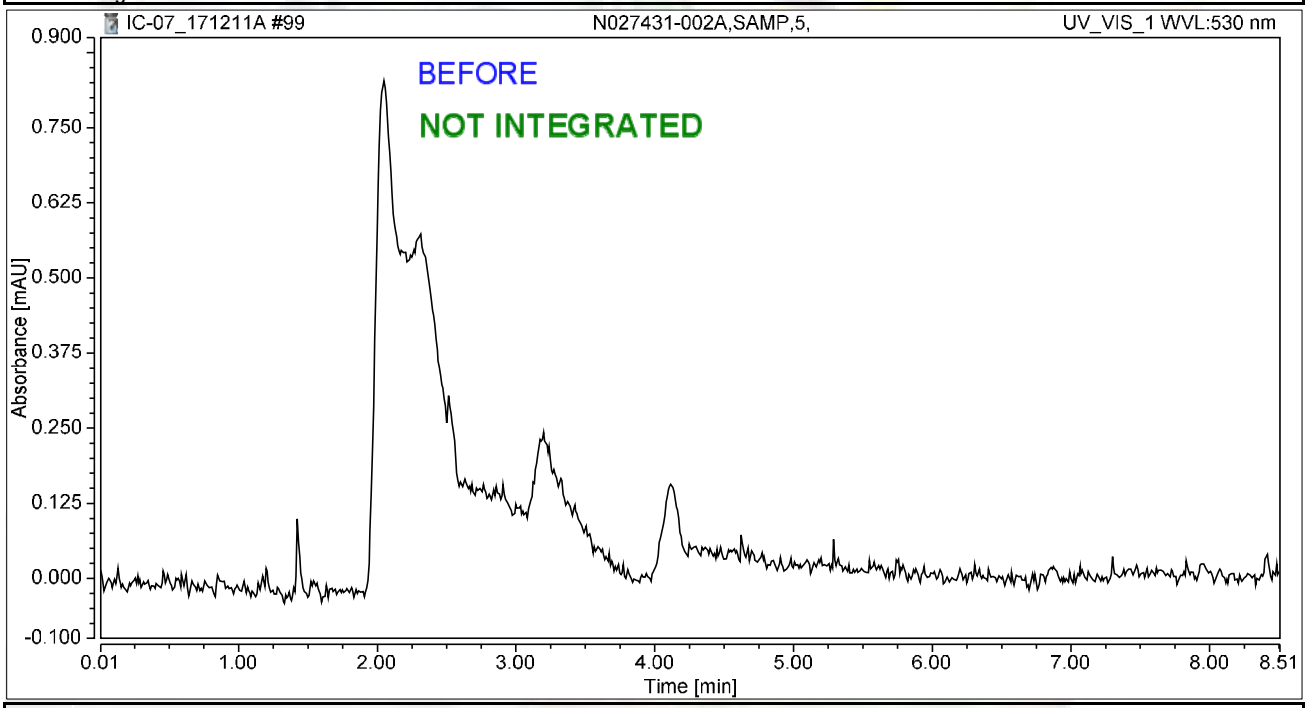
Chromatogram and Results

Injection Details

Injection Name:	**N027431-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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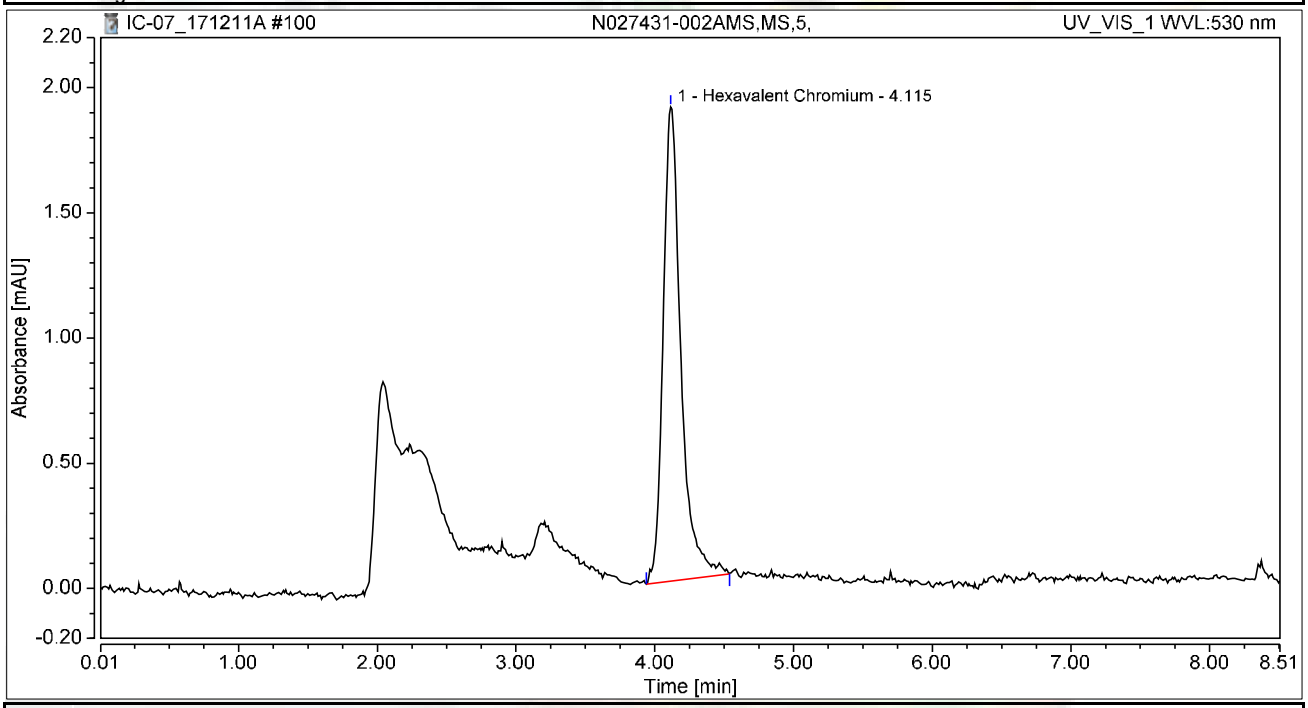
Chromatogram and Results

Injection Details

Injection Name:	**N027431-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

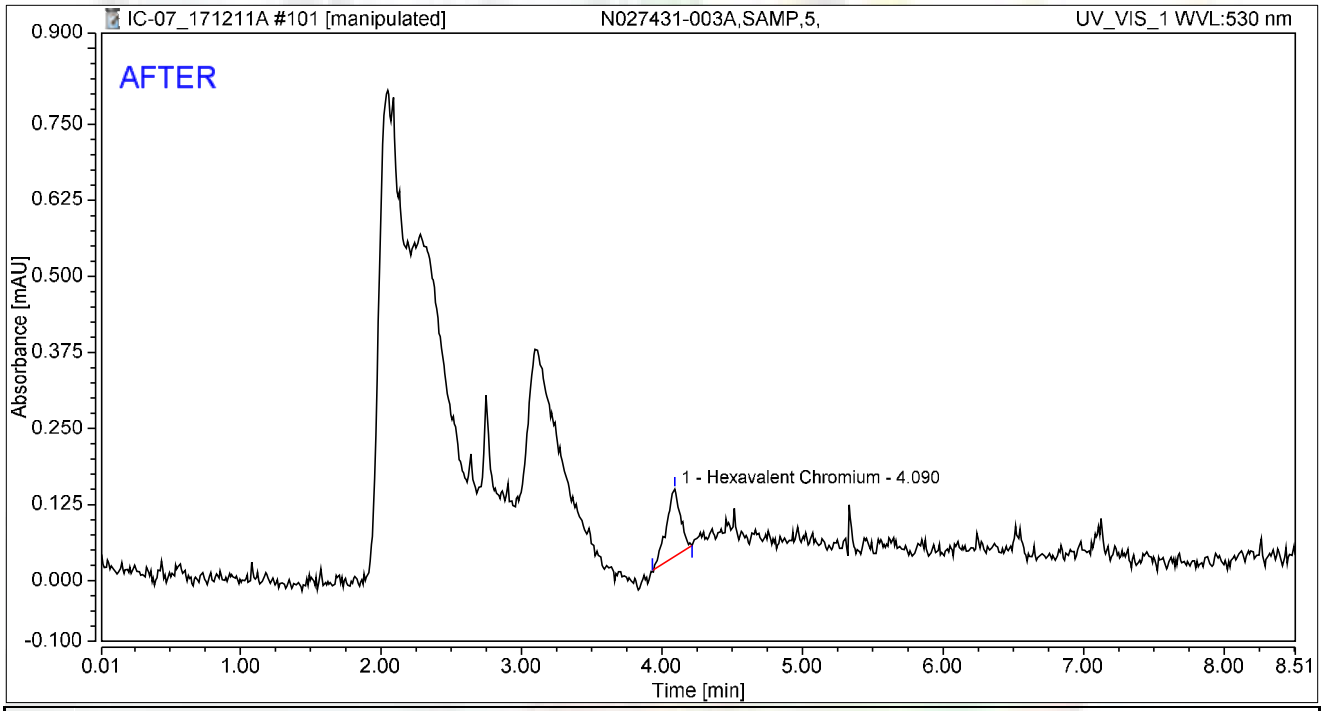
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.283	1.894	100.00	100.00	1.1274
Total:			**0.283**	**1.894**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-003A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.013	0.111	100.00	100.00	0.0510
Total:			**0.013**	**0.111**	**100.00**	**100.00**	

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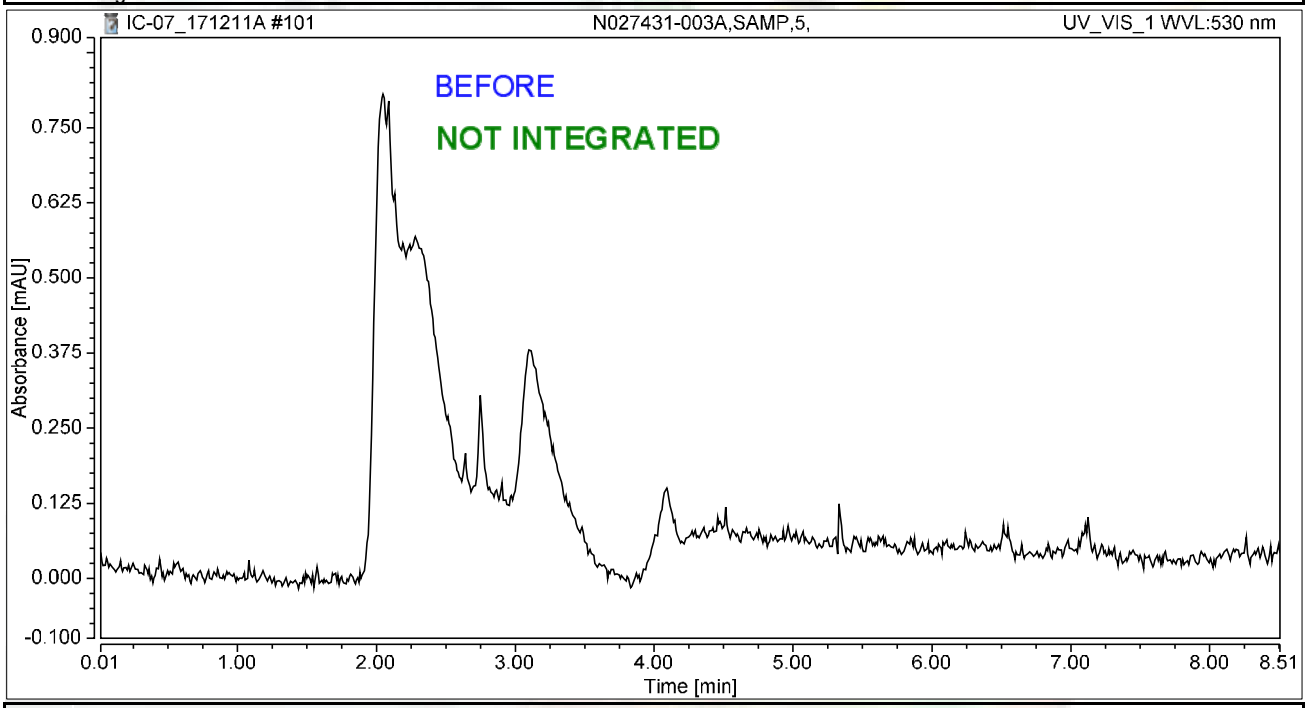
Chromatogram and Results

Injection Details

Injection Name:	**N027431-003A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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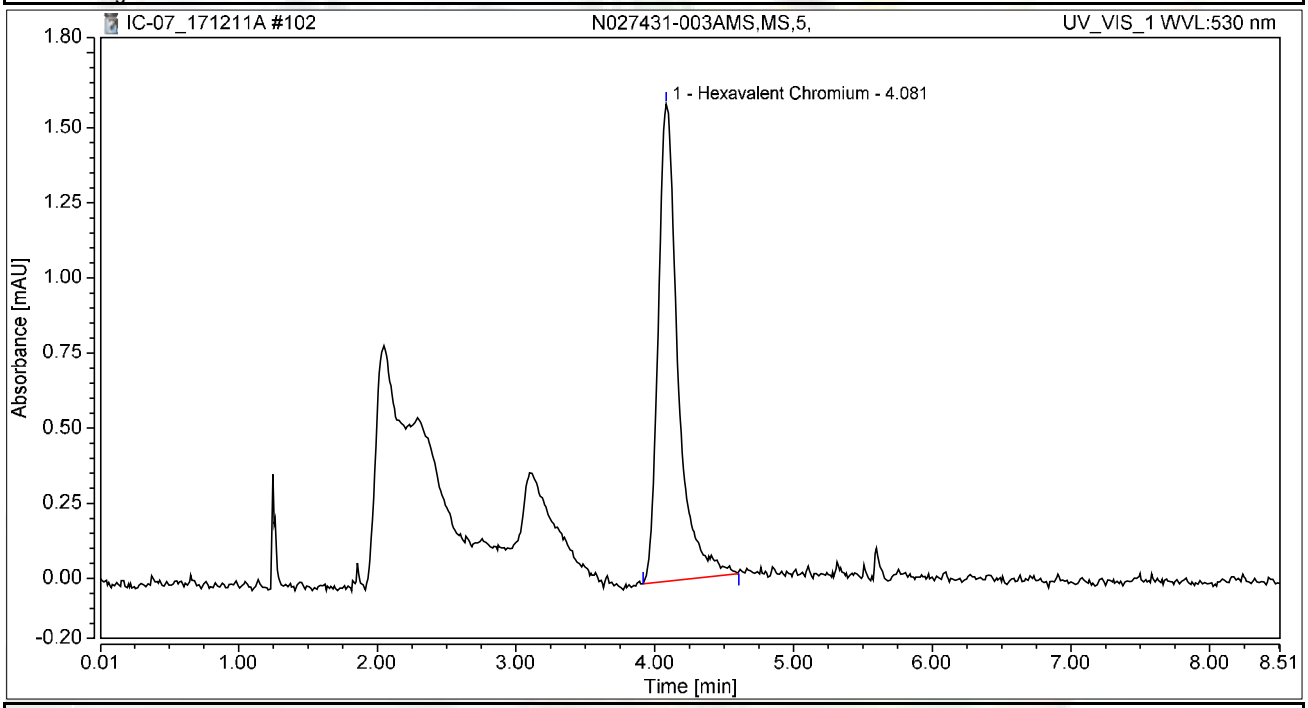
Chromatogram and Results

Injection Details

Injection Name:	**N027431-003AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

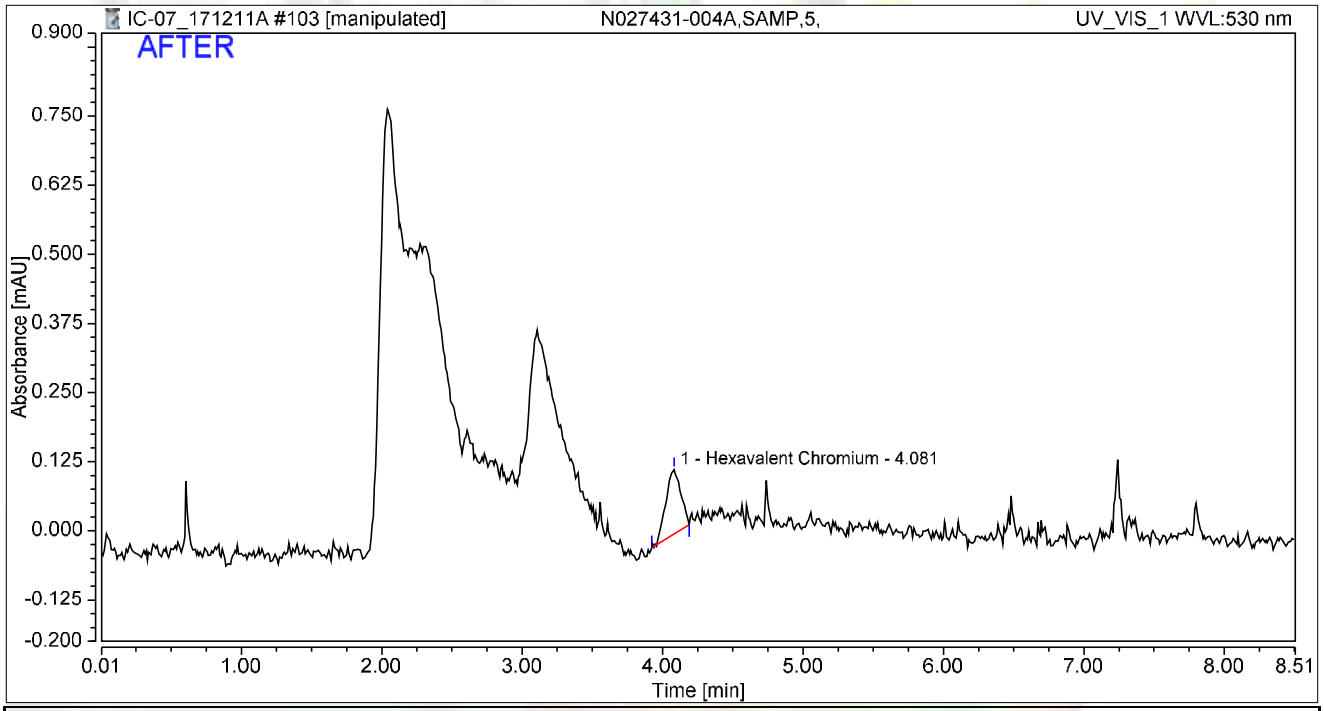
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.264	1.589	100.00	100.00	1.0512
Total:			**0.264**	**1.589**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.014	0.117	100.00	100.00	0.0571
Total:			**0.014**	**0.117**	**100.00**	**100.00**	

rba 12/16/2017

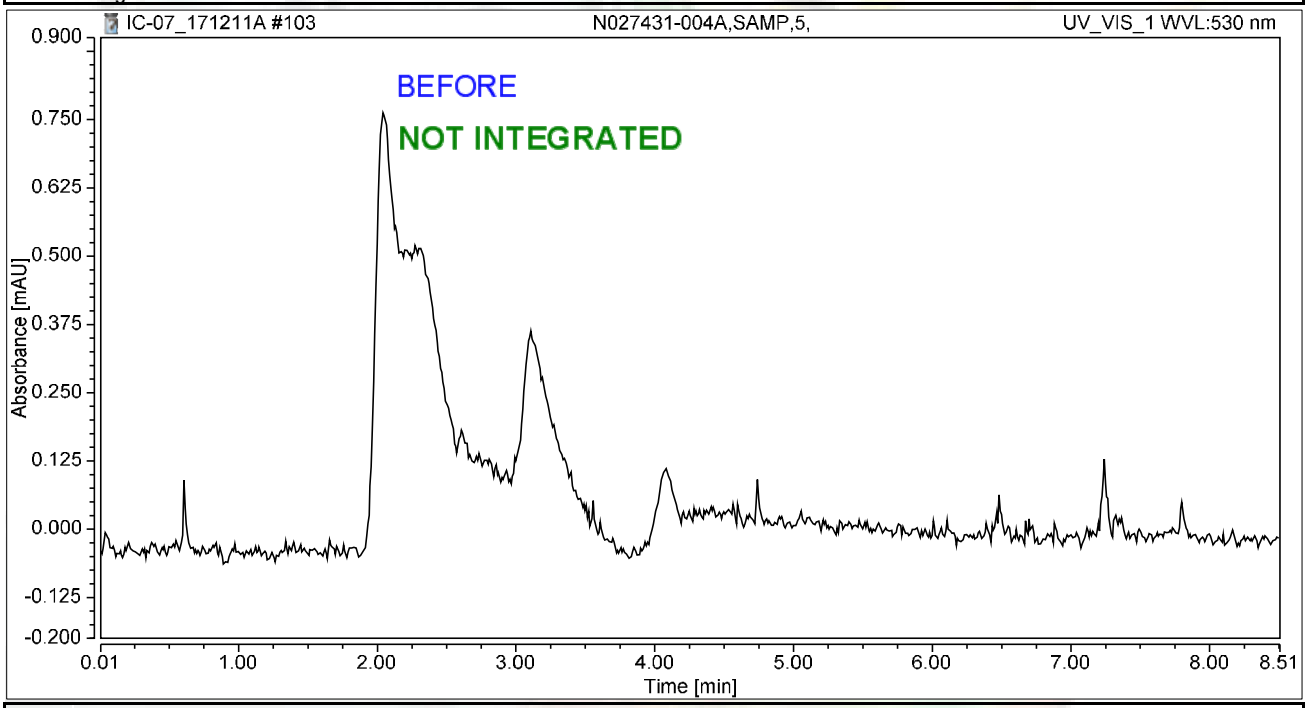
RB 12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027431-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

rba 12/16/2017

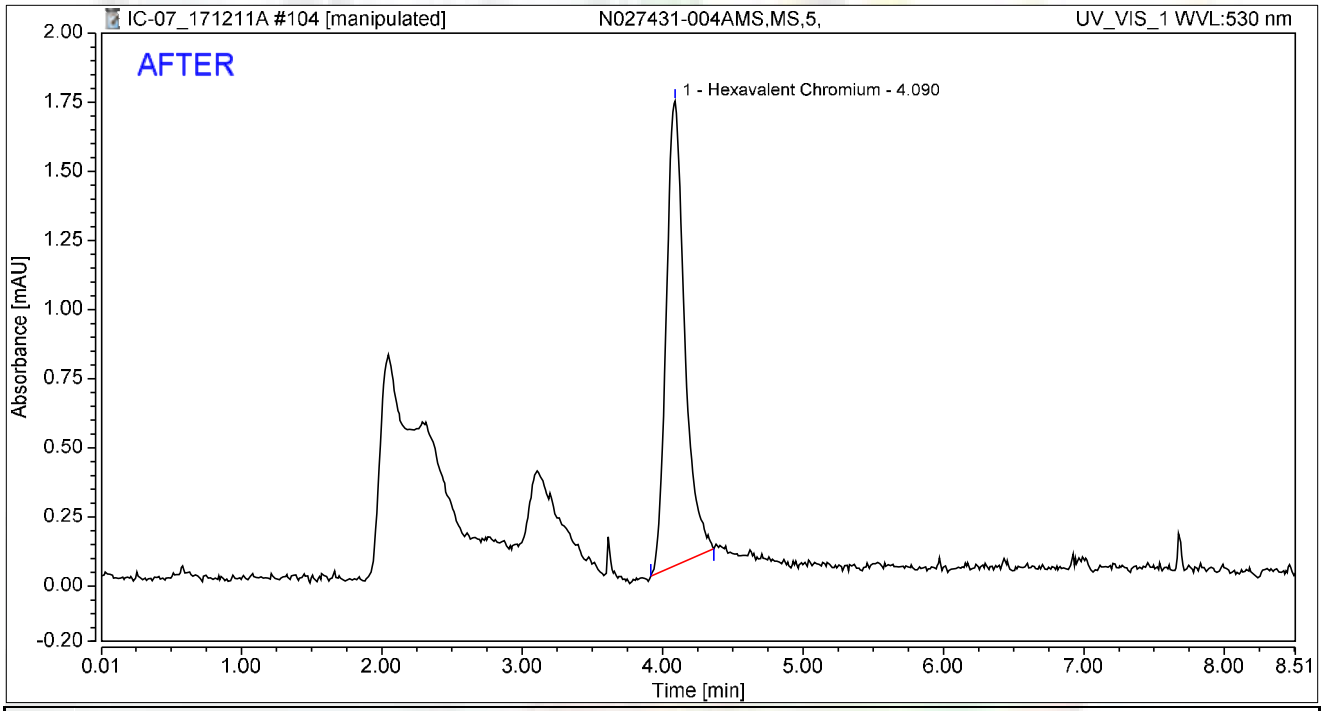
12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027431-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.256	1.679	100.00	100.00	1.0207
Total:			**0.256**	**1.679**	**100.00**	**100.00**	

rba 12/16/2017

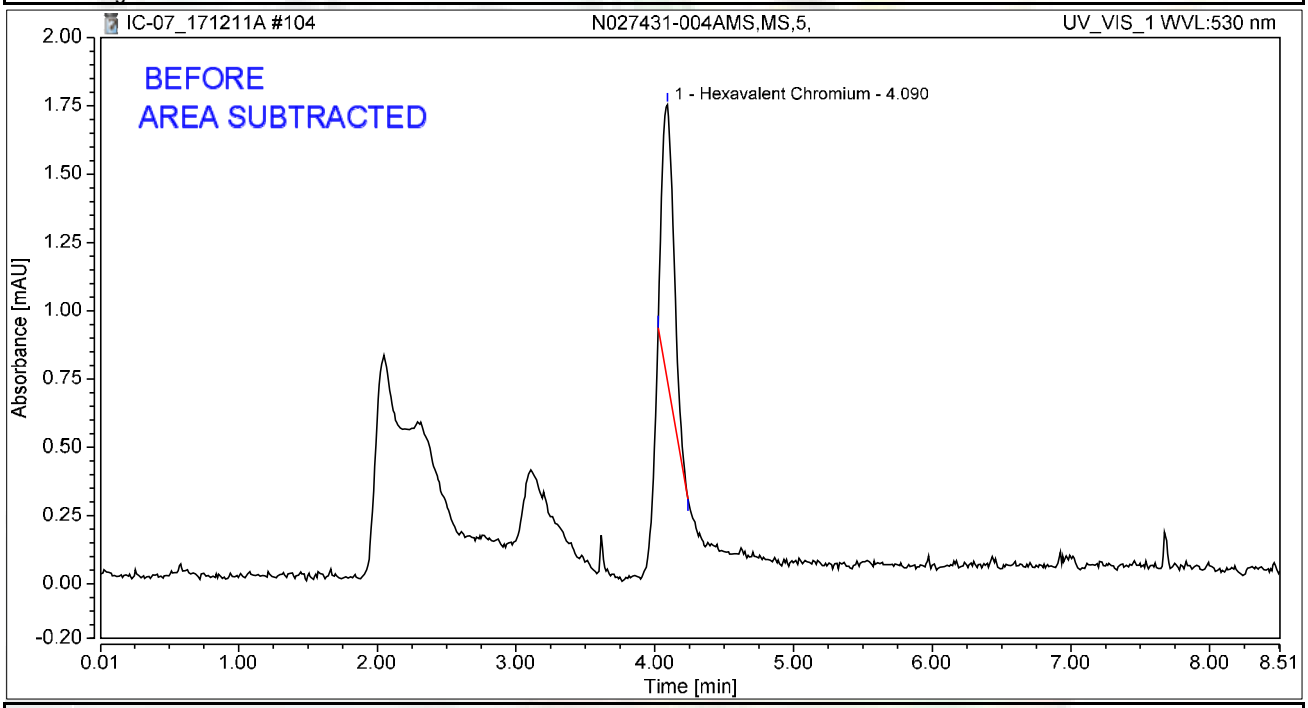
RB 12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027431-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Dec/17 23:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.101	1.009	100.00	100.00	0.4041
Total:			**0.101**	**1.009**	**100.00**	**100.00**	

rba 12/16/2017

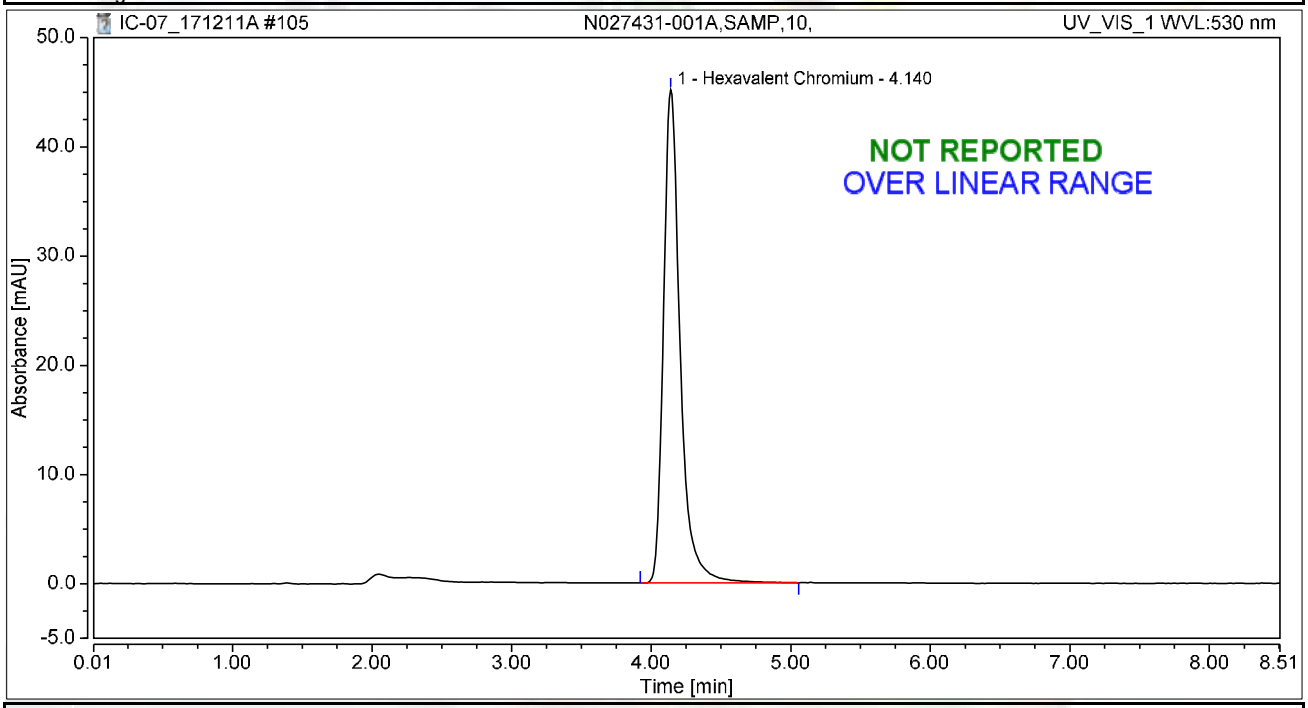
12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027431-001A,SAMP,10,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 00:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	6.271	45.157	100.00	100.00	24.9758
Total:			**6.271**	**45.157**	**100.00**	**100.00**	

rba 12/16/2017

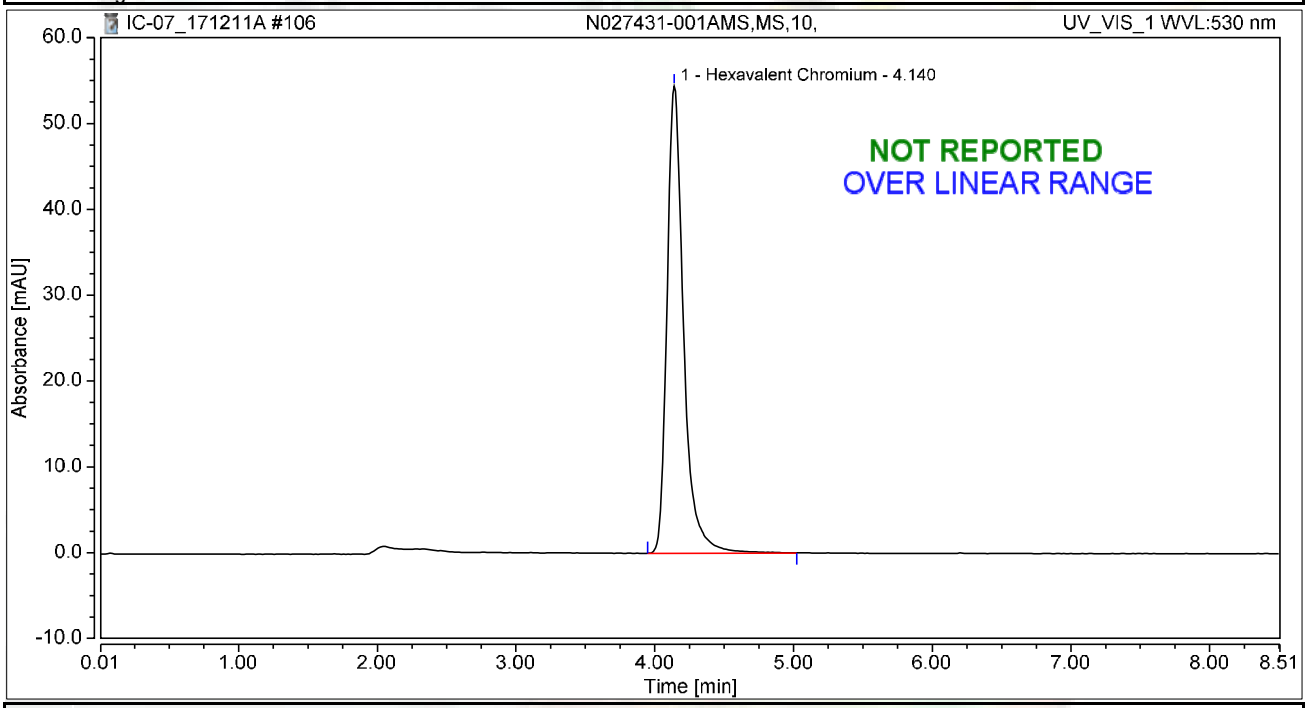
RB 12/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027431-001AMS,MS,10,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 00:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	7.562	54.427	100.00	100.00	30.1165
Total:			**7.562**	**54.427**	**100.00**	**100.00**	

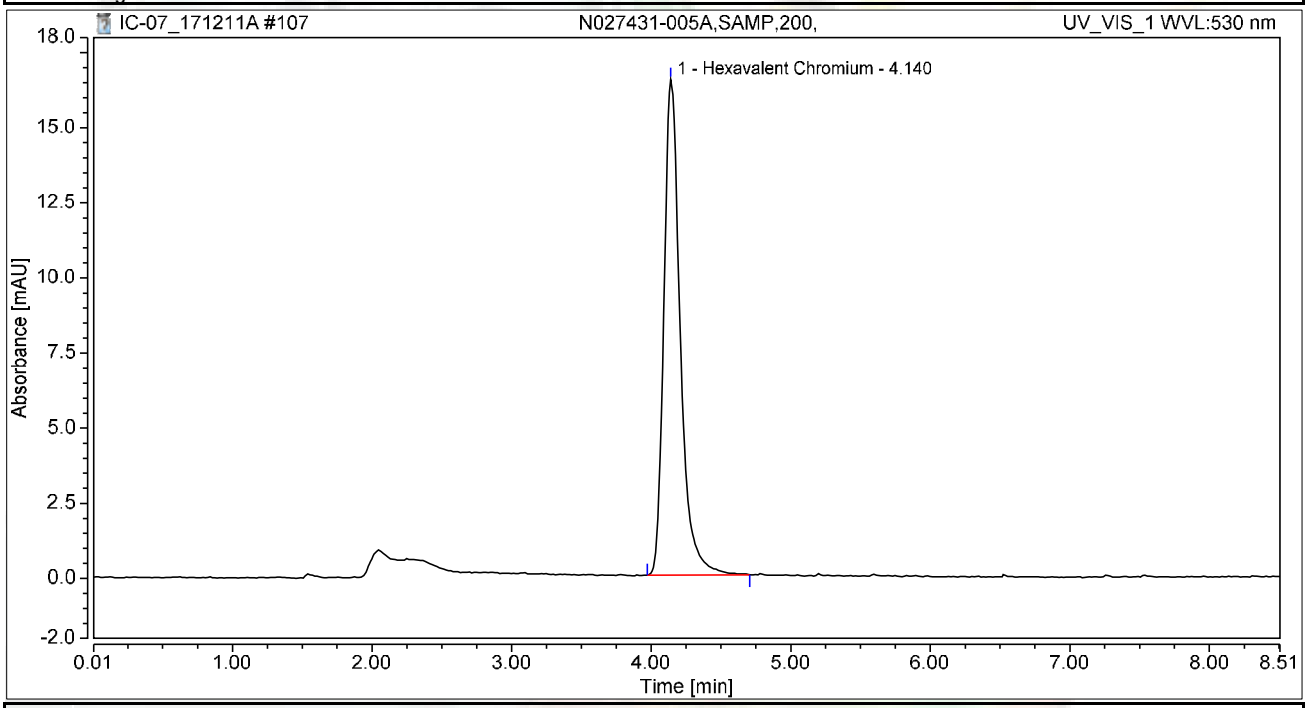
rba 12/16/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027431-005A,SAMP,200,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 00:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

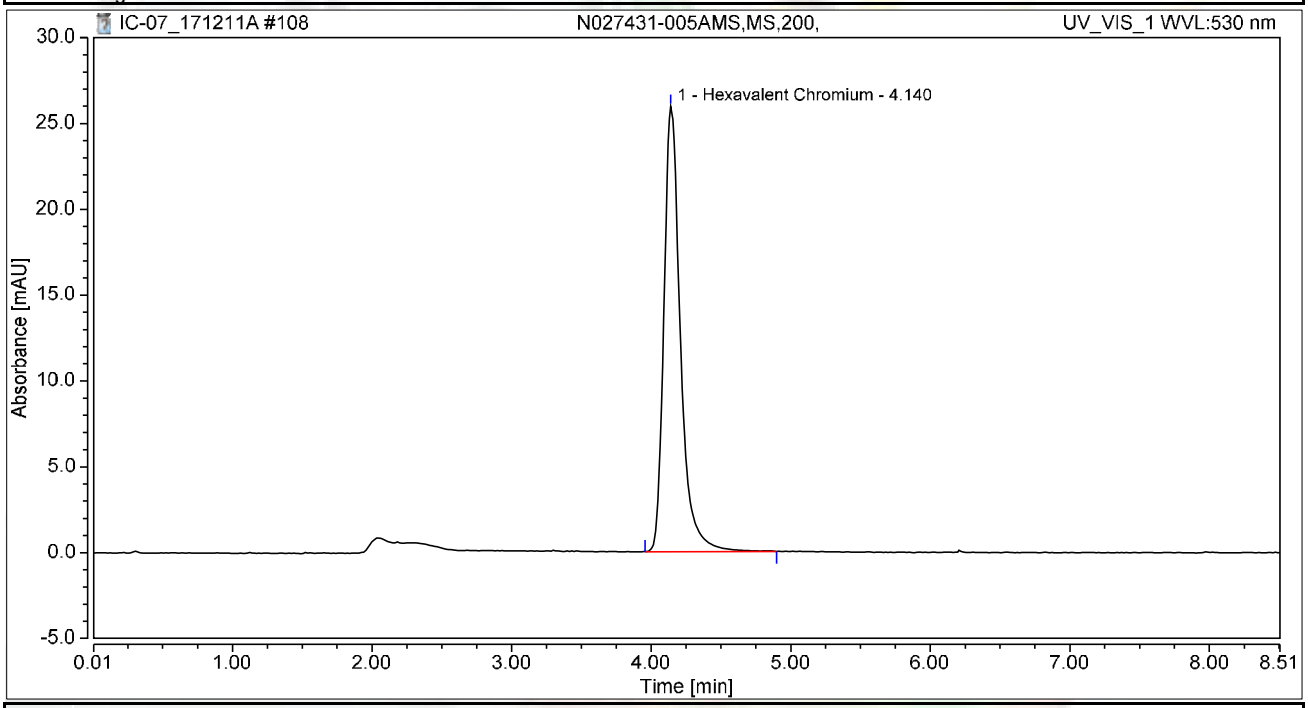
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.258	16.507	100.00	100.00	8.9923
Total:			**2.258**	**16.507**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-005AMS,MS,200,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 00:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

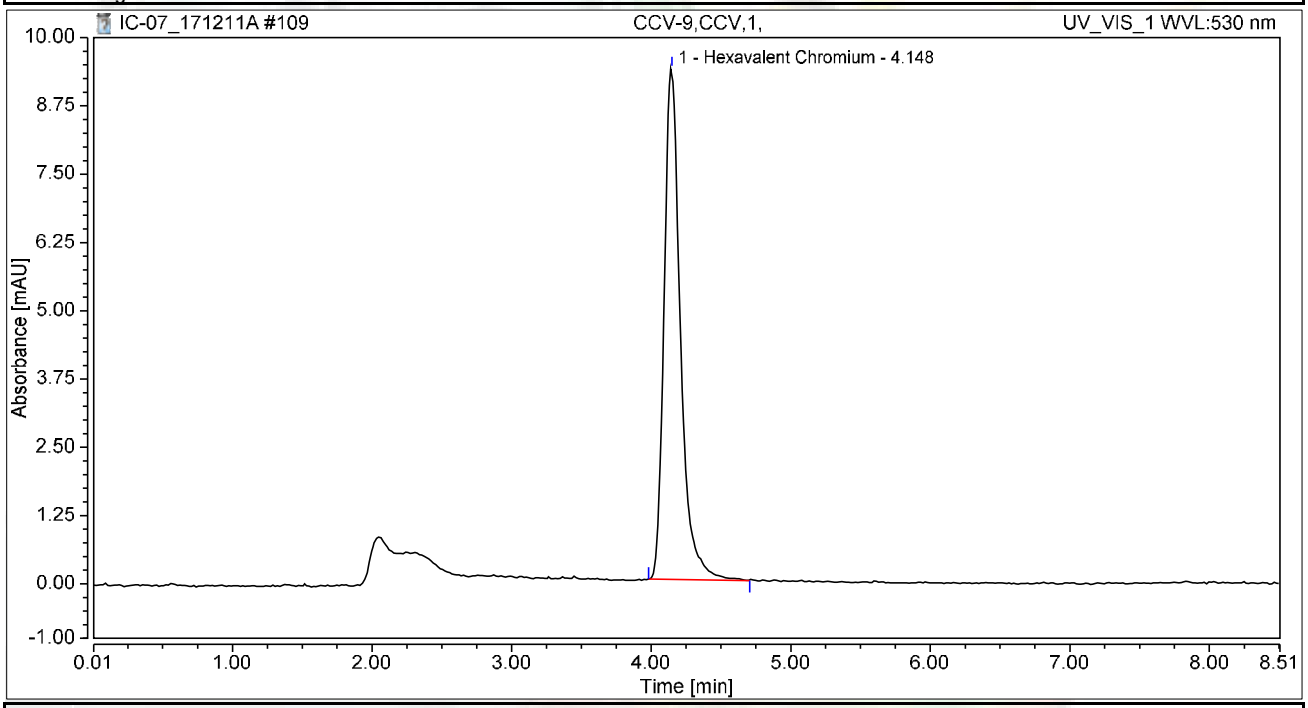
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	3.571	25.942	100.00	100.00	14.2232
Total:			**3.571**	**25.942**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-9,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 00:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

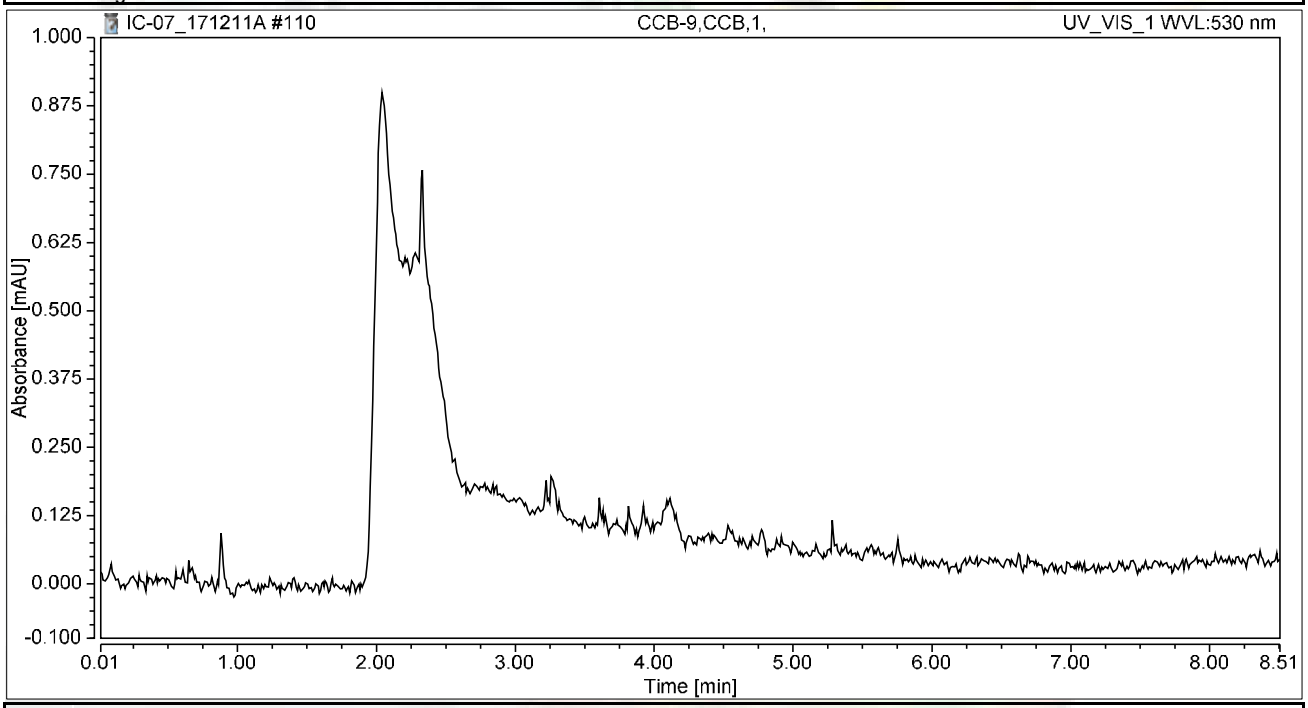
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.274	9.350	100.00	100.00	5.0724
Total:			**1.274**	**9.350**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-9,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 00:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 171212A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/12/17 8:51 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/12/17 9:02 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/12/17 9:11 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/12/17 9:21 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/12/17 9:30 AM	Reported
15	MB-R120835	MBLK	1	Hexavalent Chromium	12/12/17 9:40 AM	Reported
16	LCS-R120835	LCS	1	Hexavalent Chromium	12/12/17 9:49 AM	Reported
17	N027430-016A	SAMP	1	Hexavalent Chromium	12/12/17 9:59 AM	Not Reported
18	N027430-016AMS	MS	1	Hexavalent Chromium	12/12/17 10:08 AM	Not Reported
19	N027430-017A	SAMP	1	Hexavalent Chromium	12/12/17 10:18 AM	Not Reported
20	N027430-017AMS	MS	1	Hexavalent Chromium	12/12/17 10:27 AM	Not Reported
21	N027430-018A	SAMP	1	Hexavalent Chromium	12/12/17 10:37 AM	Not Reported
22	N027430-018AMS	MS	1	Hexavalent Chromium	12/12/17 10:46 AM	Not Reported
23	N027431-002A	SAMP	1	Hexavalent Chromium	12/12/17 10:56 AM	Not Reported
24	N027431-002AMS	MS	1	Hexavalent Chromium	12/12/17 11:05 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/12/17 11:14 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/12/17 11:24 AM	Reported
27	N027431-003A	SAMP	1	Hexavalent Chromium	12/12/17 11:33 AM	Not Reported
28	N027431-003AMS	MS	1	Hexavalent Chromium	12/12/17 11:43 AM	Not Reported
29	N027431-004A	SAMP	1	Hexavalent Chromium	12/12/17 11:52 AM	Not Reported
30	N027431-004AMS	MS	1	Hexavalent Chromium	12/12/17 12:02 PM	Not Reported
31	N027465-001A	SAMP	1	Hexavalent Chromium	12/12/17 12:11 PM	Reported
32	N027465-001AMS	MS	1	Hexavalent Chromium	12/12/17 12:21 PM	Reported
33	N027465-002A	SAMP	1	Hexavalent Chromium	12/12/17 12:30 PM	Reported
34	N027465-002AMS	MS	1	Hexavalent Chromium	12/12/17 12:40 PM	Reported
35	N027465-003A	SAMP	1	Hexavalent Chromium	12/12/17 12:49 PM	Reported
36	N027465-003AMS	MS	1	Hexavalent Chromium	12/12/17 12:58 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/12/17 1:12 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/12/17 1:23 PM	Reported
39	N027431-001A	SAMP	50	Hexavalent Chromium	12/12/17 1:33 PM	Reported
40	N027431-001AMS	MS	50	Hexavalent Chromium	12/12/17 1:42 PM	Reported
41	N027431-001ADUP	DUP	50	Hexavalent Chromium	12/12/17 2:05 PM	Reported
42	N027431-002AMS	MS	1	Hexavalent Chromium	12/12/17 2:16 PM	Not Reported

rba 12/16/2017

IC7 RBA 12/15/2017 2:21 PM

12/26/2017

INJECTION LOG: 171212A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027429-009A	SAMP	20	Hexavalent Chromium	12/12/17 2:25 PM	Reported
44	N027429-009AMS	MS	20	Hexavalent Chromium	12/12/17 2:35 PM	Reported
45	N027429-009AMSD	MSD	20	Hexavalent Chromium	12/12/17 2:44 PM	Reported
46	N027429-001A	SAMP	1	Hexavalent Chromium	12/12/17 2:54 PM	Reported
47	N027429-001AMS	MS	1	Hexavalent Chromium	12/12/17 3:03 PM	Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	12/12/17 3:13 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	12/12/17 3:22 PM	Reported
50	N027429-002A	SAMP	1	Hexavalent Chromium	12/12/17 3:32 PM	Reported
51	N027429-002AMS	MS	1	Hexavalent Chromium	12/12/17 3:41 PM	Reported
52	N027429-003A	SAMP	50	Hexavalent Chromium	12/12/17 3:50 PM	Reported
53	N027429-003AMS	MS	50	Hexavalent Chromium	12/12/17 4:00 PM	Reported
54	N027429-004A	SAMP	1	Hexavalent Chromium	12/12/17 4:10 PM	Reported
55	N027429-004AMS	MS	1	Hexavalent Chromium	12/12/17 4:19 PM	Reported
56	N027429-005A	SAMP	5	Hexavalent Chromium	12/12/17 4:28 PM	Reported
57	N027429-005AMS	MS	5	Hexavalent Chromium	12/12/17 4:38 PM	Reported
58	N027429-006A	SAMP	5	Hexavalent Chromium	12/12/17 4:47 PM	Reported
59	N027429-006AMS	MS	5	Hexavalent Chromium	12/12/17 4:57 PM	Reported
60	CCV-5	CCV	1	Hexavalent Chromium	12/12/17 5:06 PM	Reported
61	CCB-5	CCB	1	Hexavalent Chromium	12/12/17 5:16 PM	Reported
62	N027429-007A	SAMP	1	Hexavalent Chromium	12/12/17 5:25 PM	Reported
63	N027429-007AMS	MS	1	Hexavalent Chromium	12/12/17 5:35 PM	Reported
64	N027429-008A	SAMP	1	Hexavalent Chromium	12/12/17 5:44 PM	Reported
65	N027429-008AMS	MS	1	Hexavalent Chromium	12/12/17 5:54 PM	Reported
66	N027429-010A	SAMP	1000	Hexavalent Chromium	12/12/17 6:03 PM	Reported
67	N027429-010AMS	MS	1000	Hexavalent Chromium	12/12/17 6:12 PM	Reported
68	LCS-R120836	LCS	1	Hexavalent Chromium	12/12/17 6:24 PM	Reported
69	MB-R120836	MBLK	1	Hexavalent Chromium	12/12/17 6:35 PM	Reported
70	N027508-001A	SAMP	200	Hexavalent Chromium	12/12/17 6:45 PM	Reported
71	N027508-011A	SAMP	5	Hexavalent Chromium	12/12/17 6:54 PM	Reported
72	CCV-6	CCV1	1	Hexavalent Chromium	12/12/17 7:04 PM	Reported
73	CCB-6	CCB	1	Hexavalent Chromium	12/12/17 7:13 PM	Reported
74	N027508-003A	SAMP	200	Hexavalent Chromium	12/12/17 7:23 PM	Reported
75	N027508-001AMS	MS	200	Hexavalent Chromium	12/12/17 7:32 PM	Reported
76	N027508-001AMSD	MSD	200	Hexavalent Chromium	12/12/17 7:41 PM	Reported
77	N027508-011AMS	MS	5	Hexavalent Chromium	12/12/17 7:51 PM	Reported
78	N027508-003ADUP	DUP	200	Hexavalent Chromium	12/12/17 8:00 PM	Reported
79	N027508-004A	SAMP	500	Hexavalent Chromium	12/12/17 8:10 PM	Reported
80	N027508-005A	SAMP	2000	Hexavalent Chromium	12/12/17 8:19 PM	Reported
81	N027508-006A	SAMP	2000	Hexavalent Chromium	12/12/17 8:29 PM	Reported
82	N027508-007A	SAMP	2000	Hexavalent Chromium	12/12/17 8:38 PM	Reported
83	N027508-008A	SAMP	5	Hexavalent Chromium	12/12/17 8:48 PM	Not Reported
84	CCV-7	CCV	1	Hexavalent Chromium	12/12/17 8:57 PM	Reported

INJECTION LOG: 171212A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCB-7	CCB	1	Hexavalent Chromium	12/12/17 9:07 PM	Reported
86	N027508-009A	SAMP	5	Hexavalent Chromium	12/12/17 9:16 PM	Reported
87	N027508-010A	SAMP	1	Hexavalent Chromium	12/12/17 9:26 PM	Reported
88	N027508-012A	SAMP	20	Hexavalent Chromium	12/12/17 9:35 PM	Reported
89	N027508-013A	SAMP	50	Hexavalent Chromium	12/12/17 9:44 PM	Reported
90	N027508-014A	SAMP	50	Hexavalent Chromium	12/12/17 9:54 PM	Reported
91	N027508-015A	SAMP	100	Hexavalent Chromium	12/12/17 10:03 PM	Reported
92	N027508-002A	SAMP	200	Hexavalent Chromium	12/12/17 10:13 PM	Reported
93	CCV-8	CCV1	1	Hexavalent Chromium	12/12/17 10:22 PM	Reported
94	CCB-8	CCB	1	Hexavalent Chromium	12/12/17 10:32 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171212A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**12/Dec/17 23:02:35**
No. of Injections:	**97**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/12/2017 08:51	Finished	BLANK
11	BLANK	2	1000	Unknown		12/12/2017 09:02	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/12/2017 09:11	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/12/2017 09:21	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/12/2017 09:30	Finished	CCB R171129A
15	MB-1,MBLK,1	6	1000	Unknown		12/12/2017 09:40	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/12/2017 09:49	Finished	LCS, IWST-171002B
17	N027430-016A,SAMF	8	1000	Unknown		12/12/2017 09:59	Finished	SAMP,10mL
18	N027430-016AMS,MS	9	1000	Unknown		12/12/2017 10:08	Finished	MS (1ppb), IWST-171002B,10
19	N027430-017A,SAMF	10	1000	Unknown		12/12/2017 10:18	Finished	SAMP,10mL
20	N027430-017AMS,MS	11	1000	Unknown		12/12/2017 10:27	Finished	MS (1ppb), IWST-171002B,10
21	N027430-018A,SAMF	12	1000	Unknown		12/12/2017 10:37	Finished	SAMP,10mL
22	N027430-018AMS,MS	13	1000	Unknown		12/12/2017 10:46	Finished	MS (1ppb), IWST-171002B,10
23	N027431-002A,SAMF	14	1000	Unknown		12/12/2017 10:56	Finished	SAMP,10mL
24	N027431-002AMS,MS	15	1000	Unknown		12/12/2017 11:05	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	16	1000	Unknown		12/12/2017 11:14	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	17	1000	Unknown		12/12/2017 11:24	Finished	CCB R171129A
27	N027431-003A,SAMF	18	1000	Unknown		12/12/2017 11:33	Finished	SAMP,10mL
28	N027431-003AMS,MS	19	1000	Unknown		12/12/2017 11:43	Finished	MS (1ppb), IWST-171002B,10
29	N027431-004A,SAMF	20	1000	Unknown		12/12/2017 11:52	Finished	SAMP,10mL
30	N027431-004AMS,MS	21	1000	Unknown		12/12/2017 12:02	Finished	MS (1ppb), IWST-171002B,10
31	N027465-001A,SAMF	22	1000	Unknown		12/12/2017 12:11	Finished	SAMP,10mL
32	N027465-001AMS,MS	23	1000	Unknown		12/12/2017 12:21	Finished	MS (1ppb), IWST-171002B,10
33	N027465-002A,SAMF	24	1000	Unknown		12/12/2017 12:30	Finished	SAMP,10mL
34	N027465-002AMS,MS	25	1000	Unknown		12/12/2017 12:40	Finished	MS (1ppb), IWST-171002B,10
35	N027465-003A,SAMF	26	1000	Unknown		12/12/2017 12:49	Finished	SAMP,10mL
36	N027465-003AMS,MS	27	1000	Unknown		12/12/2017 12:58	Finished	MS (1ppb), IWST-171002B,10
37	CCV-3,CCV,1,	1	1000	Unknown		12/12/2017 13:12	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	2	1000	Unknown		12/12/2017 13:23	Finished	CCB R171129A
39	N027431-001A,SAMF	3	1000	Unknown		12/12/2017 13:33	Finished	SAMP,0.2>10mL
40	N027431-001AMS,MS	4	1000	Unknown		12/12/2017 13:42	Finished	MS (5ppb), IWST-171002B,0.2
41	N027431-001ADUP,D	1	1000	Unknown		12/12/2017 14:05	Finished	SAMP,10mL
42	N027431-002AMS,MS	2	1000	Unknown		12/12/2017 14:16	Finished	MS (1ppb), IWST-171002B,10
43	N027429-009A,SAMF	3	1000	Unknown		12/12/2017 14:25	Finished	SAMP,0.5>10mL
44	N027429-009AMS,MS	4	1000	Unknown		12/12/2017 14:35	Finished	MS (5ppb), IWST-171002B,0.5
45	N027429-009AMSD,M	5	1000	Unknown		12/12/2017 14:44	Finished	MSD (5ppb), IWST-171002B,0.
46	N027429-001A,SAMF	6	1000	Unknown		12/12/2017 14:54	Finished	SAMP,10mL
47	N027429-001AMS,MS	7	1000	Unknown		12/12/2017 15:03	Finished	MS (1ppb), IWST-171002B,10
48	CCV-4,CCV1,1,	8	1000	Unknown		12/12/2017 15:13	Finished	CCV @10ppb, IWST-171002A
49	CCB-4,CCB,1,	9	1000	Unknown		12/12/2017 15:22	Finished	CCB R171129A
50	N027429-002A,SAMF	10	1000	Unknown		12/12/2017 15:32	Finished	SAMP,10mL
51	N027429-002AMS,MS	11	1000	Unknown		12/12/2017 15:41	Finished	MS (1ppb), IWST-171002B,10
52	N027429-003A,SAMF	12	1000	Unknown		12/12/2017 15:50	Finished	SAMP,0.2>10mL
53	N027429-003AMS,MS	13	1000	Unknown		12/12/2017 16:00	Finished	MS (5ppb), IWST-171002B,0.2
54	N027429-004A,SAMF	14	1000	Unknown		12/12/2017 16:10	Finished	SAMP,10mL
55	N027429-004AMS,MS	15	1000	Unknown		12/12/2017 16:19	Finished	MS (1ppb), IWST-171002B,10
56	N027429-005A,SAMF	16	1000	Unknown		12/12/2017 16:28	Finished	SAMP,2>10mL
57	N027429-005AMS,MS	17	1000	Unknown		12/12/2017 16:38	Finished	MS (1ppb), IWST-171002B,2>1
58	N027429-006A,SAMF	18	1000	Unknown		12/12/2017 16:47	Finished	SAMP,2>10mL
59	N027429-006AMS,MS	19	1000	Unknown		12/12/2017 16:57	Finished	MS (1ppb), IWST-171002B,2>1
60	CCV-5,CCV,1,	20	1000	Unknown		12/12/2017 17:06	Finished	CCV @5ppb, IWST-171002A

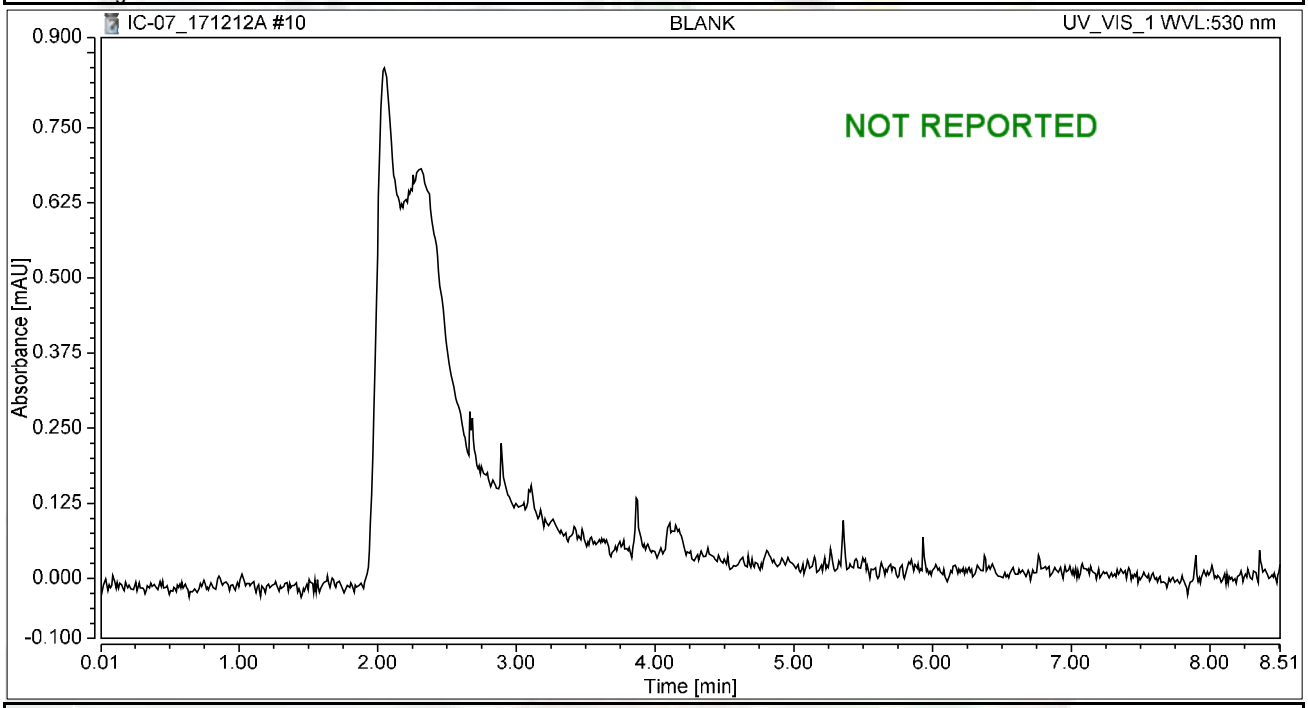
61	CCB-5,CCB,1,	21	1000	Unknown		12/12/2017 17:16	Finished	CCB R171129A
62	N027429-007A,SAMF	22	1000	Unknown		12/12/2017 17:25	Finished	SAMP,10mL
63	N027429-007AMS,MS	23	1000	Unknown		12/12/2017 17:35	Finished	MS (1ppb), IWST-171002B,10
64	N027429-008A,SAMF	24	1000	Unknown		12/12/2017 17:44	Finished	SAMP,10mL
65	N027429-008AMS,MS	25	1000	Unknown		12/12/2017 17:54	Finished	MS (1ppb), IWST-171002B,10
66	N027429-010A,SAMF	26	1000	Unknown		12/12/2017 18:03	Finished	SAMP,0.01>10mL
67	N027429-010AMS,MS	27	1000	Unknown		12/12/2017 18:12	Finished	MS (5ppb), IWST-171002B,0.0
68	LCS-2,LCS,1	1	1000	Unknown		12/12/2017 18:24	Finished	LCS, IWST-171002B
69	MB-2,MBLK,1	2	1000	Unknown		12/12/2017 18:35	Finished	MB R171129A
70	N027508-001A,SAMF	3	1000	Unknown		12/12/2017 18:45	Finished	SAMP,10mL
71	N027508-011A,SAMF	4	1000	Unknown		12/12/2017 18:54	Finished	MS (1ppb), IWST-171002B,10
72	CCV-6,CCV1,1,	5	1000	Unknown		12/12/2017 19:04	Finished	CCV @10ppb, IWST-171002A
73	CCB-6,CCB,1,	6	1000	Unknown		12/12/2017 19:13	Finished	CCB R171129A
74	N027508-003A,SAMF	7	1000	Unknown		12/12/2017 19:23	Finished	SAMP,0.05>10mL
75	N027508-001AMS,MS	8	1000	Unknown		12/12/2017 19:32	Finished	MS (5ppb), IWST-171002B,0.0
76	N027508-001AMSD,M	9	1000	Unknown		12/12/2017 19:41	Finished	MSD (5ppb), IWST-171002B,0.
77	N027508-0011AMS,M	10	1000	Unknown		12/12/2017 19:51	Finished	MS (5ppb), IWST-171002B,2>1
78	N027508-003ADUP,D	11	1000	Unknown		12/12/2017 20:00	Finished	DUP,0.05>10mL
79	N027508-004A,SAMF	12	1000	Unknown		12/12/2017 20:10	Finished	SAMP,0.02>10mL
80	N027508-005A,SAMF	13	1000	Unknown		12/12/2017 20:19	Finished	SAMP,0.005>10mL
81	N027508-006A,SAMF	14	1000	Unknown		12/12/2017 20:29	Finished	SAMP,0.005>10mL
82	N027508-007A,SAMF	15	1000	Unknown		12/12/2017 20:38	Finished	SAMP,0.005>10mL
83	N027508-008A,SAMF	16	1000	Unknown		12/12/2017 20:48	Finished	SAMP,2>10mL
84	CCV-7,CCV,1,	17	1000	Unknown		12/12/2017 20:57	Finished	CCV @5ppb, IWST-171002A
85	CCB-7,CCB,1,	18	1000	Unknown		12/12/2017 21:07	Finished	CCB R171114C
86	N027508-009A,SAMF	19	1000	Unknown		12/12/2017 21:16	Finished	SAMP,2>10mL
87	N027508-010A,SAMF	20	1000	Unknown		12/12/2017 21:26	Finished	SAMP,1>10mL
88	N027508-012A,SAMF	21	1000	Unknown		12/12/2017 21:35	Finished	SAMP,0.5>10mL
89	N027508-013A,SAMF	22	1000	Unknown		12/12/2017 21:44	Finished	SAMP,0.2>10mL
90	N027508-014A,SAMF	23	1000	Unknown		12/12/2017 21:54	Finished	SAMP,0.2>10mL
91	N027508-015A,SAMF	24	1000	Unknown		12/12/2017 22:03	Finished	SAMP,0.1>10mL
92	N027508-002A,SAMF	25	1000	Unknown		12/12/2017 22:13	Finished	SAMP,0.05>10mL
93	CCV-8,CCV1,1,	26	1000	Unknown		12/12/2017 22:22	Finished	CCV @10ppb, IWST-171002A
94	CCB-8,CCB,1,	27	1000	Unknown		12/12/2017 22:32	Finished	CCB R171129A
95	SHUTDOWN	28	1000	Unknown		12/12/2017 22:41	Finished	
96	Eluent: R171212A	29	1000	Unknown		n.a.	Finished	Eluent
97	PCR: R171212B	30	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 08:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

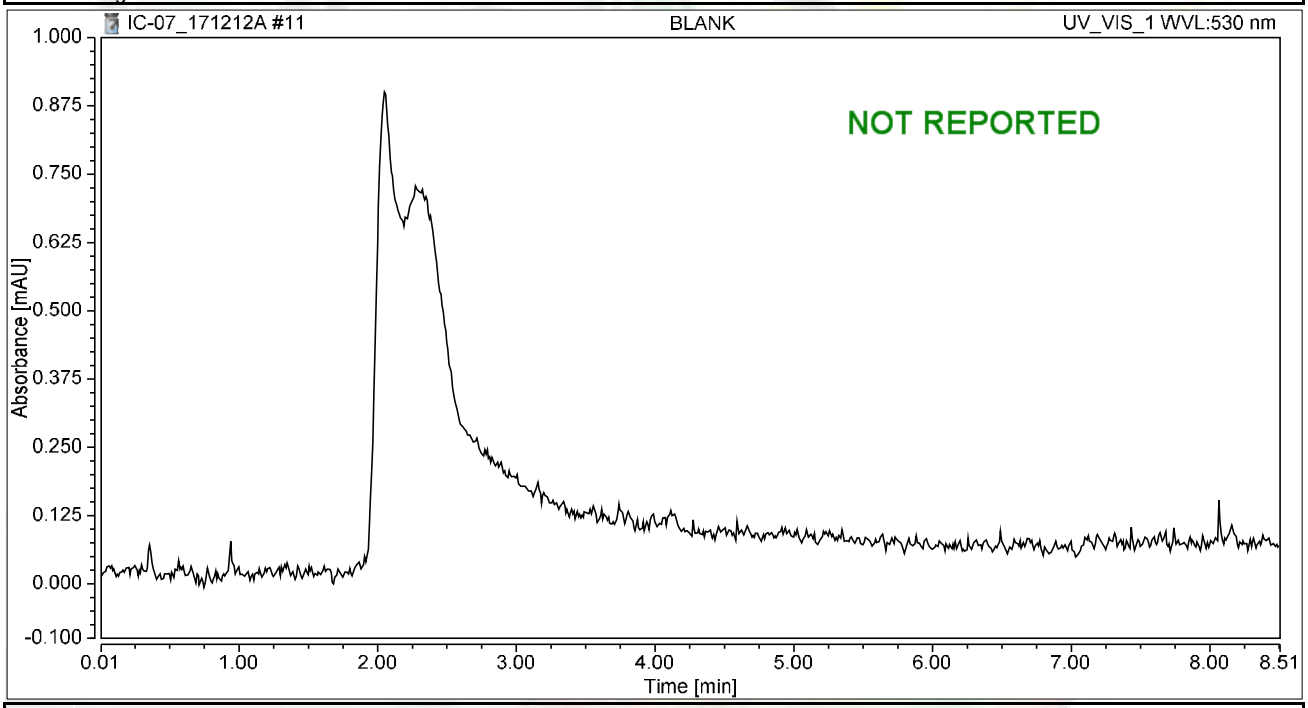
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 09:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

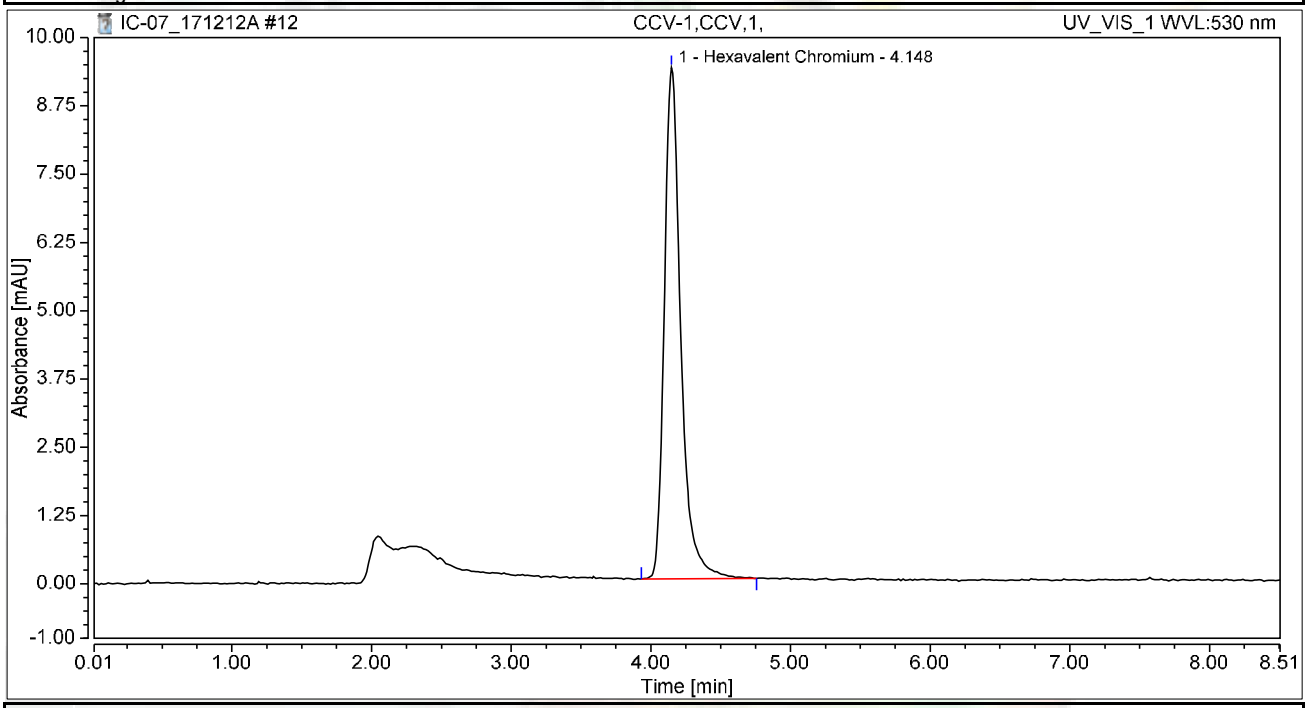
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 09:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

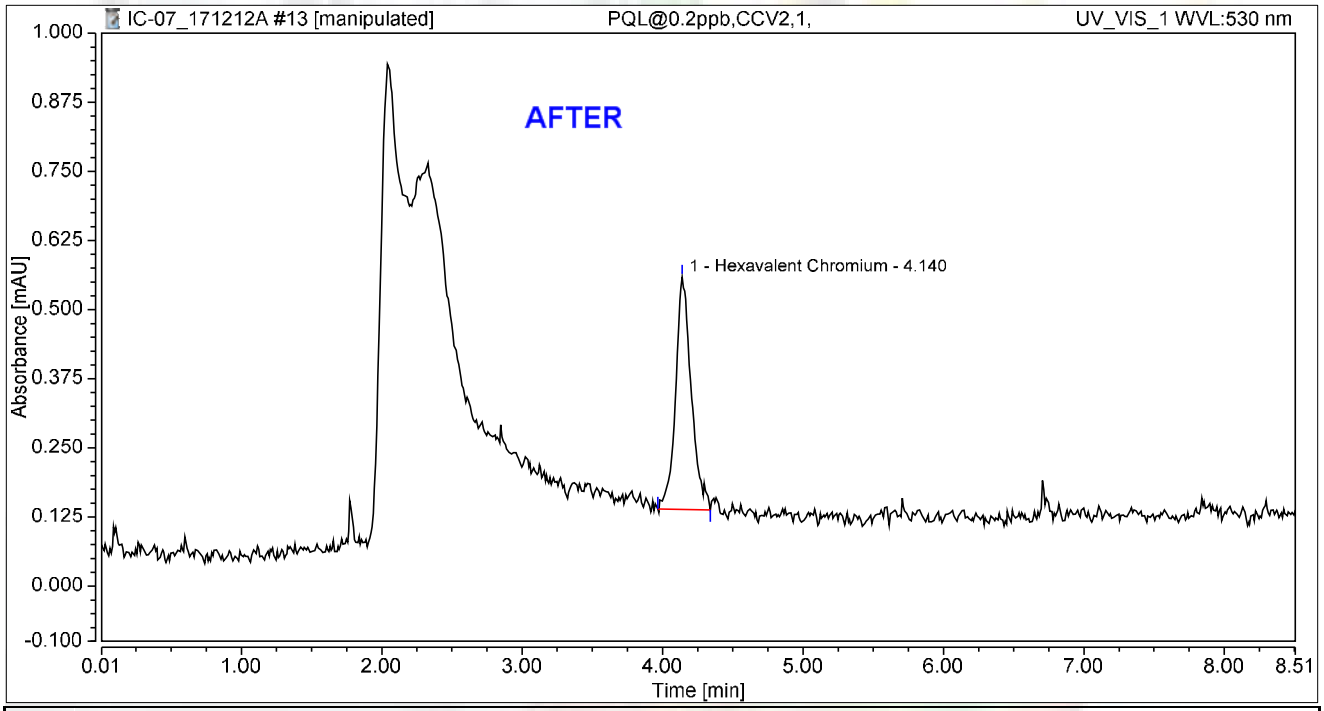
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.283	9.359	100.00	100.00	5.1115
Total:			**1.283**	**9.359**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 09:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.054	0.420	100.00	100.00	0.2156
Total:			**0.054**	**0.420**	**100.00**	**100.00**	

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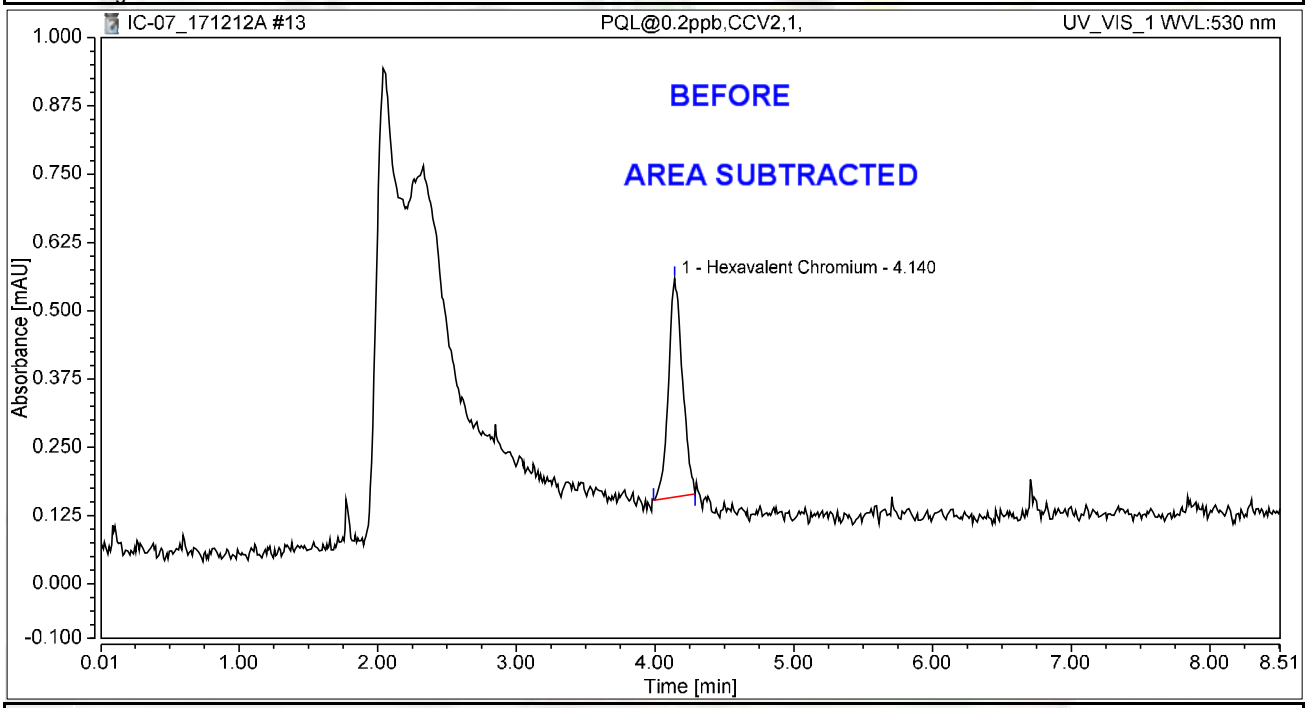
Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 09:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.047	0.400	100.00	100.00	0.1856
Total:			**0.047**	**0.400**	**100.00**	**100.00**	

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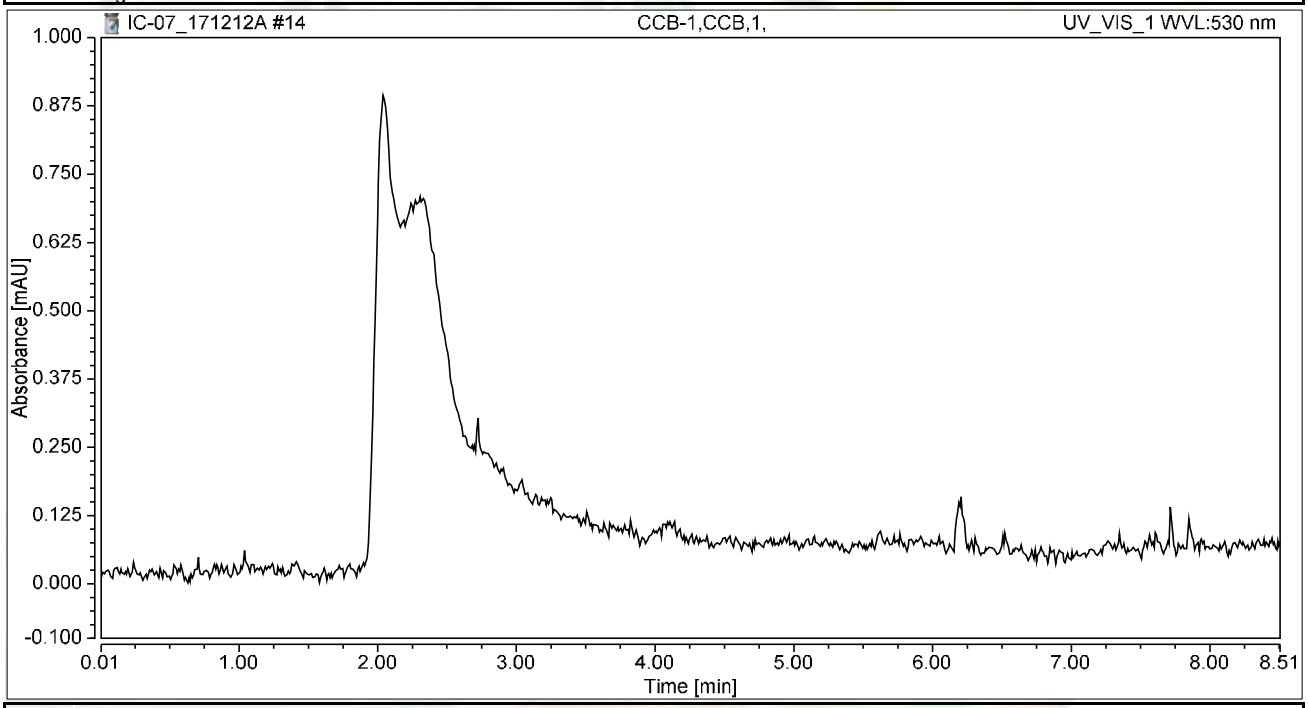
Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 09:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

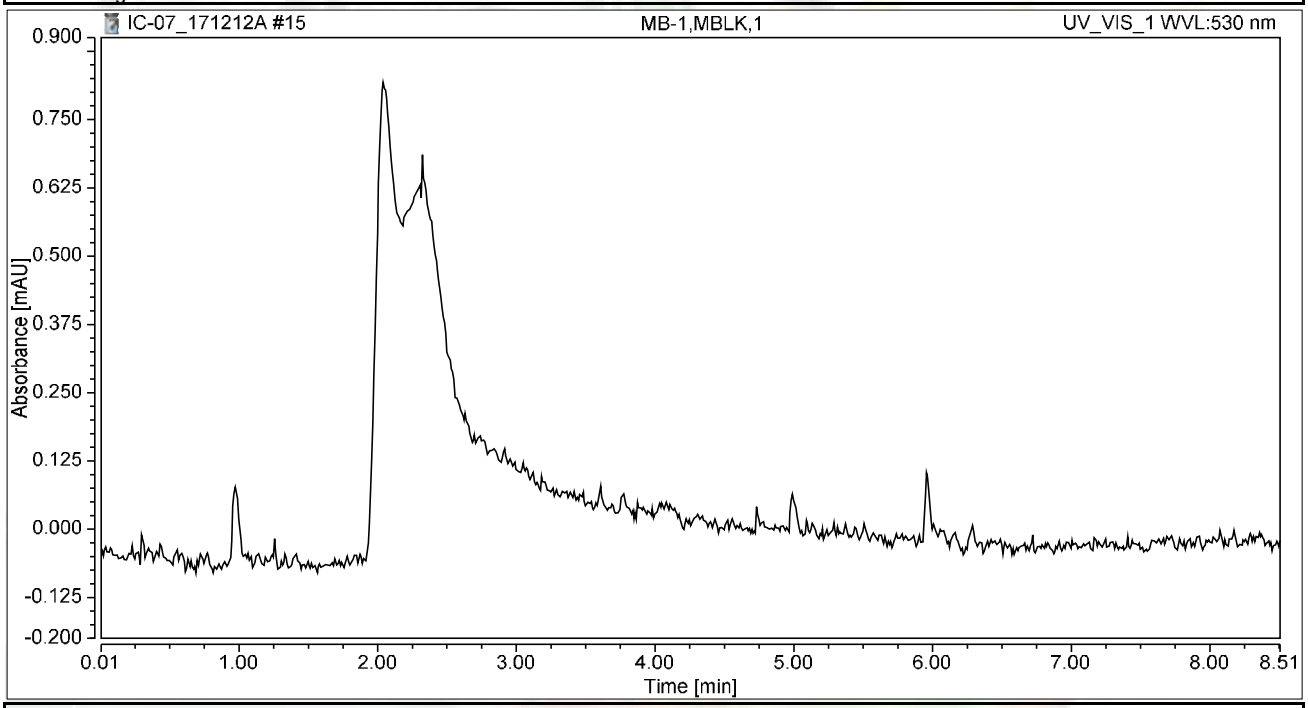
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-1,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 09:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

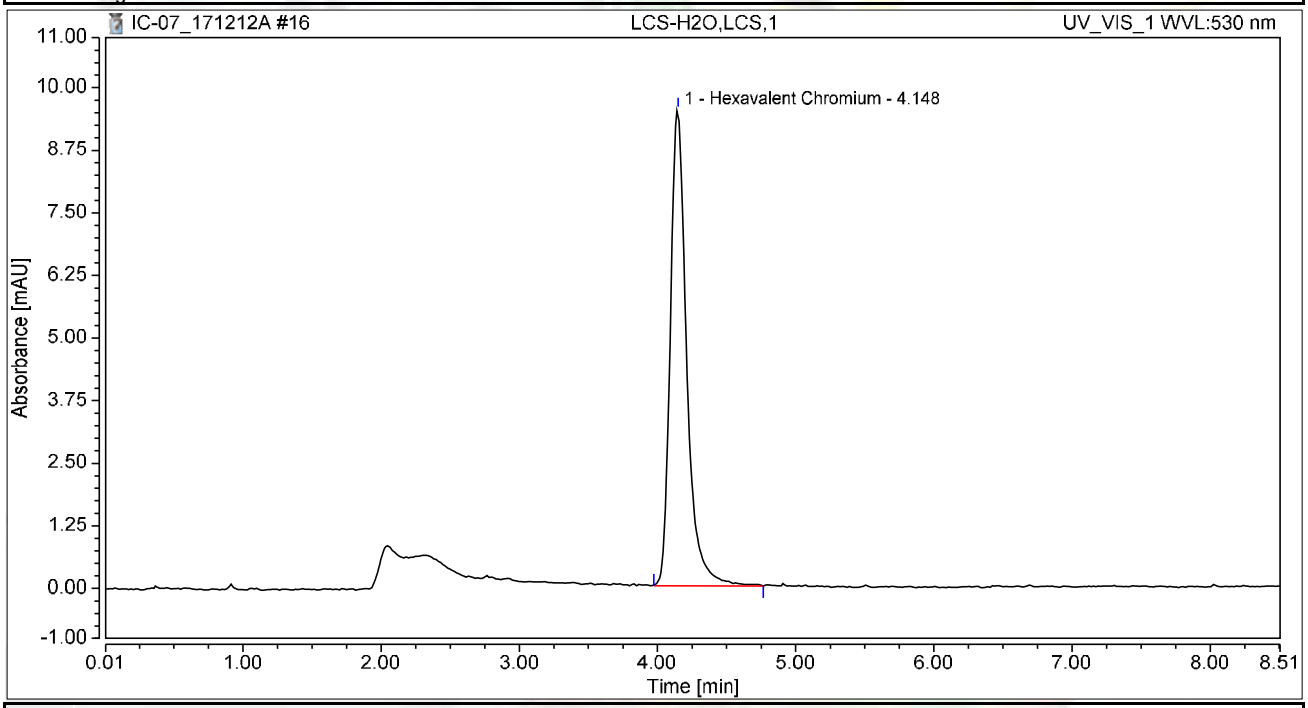
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 09:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

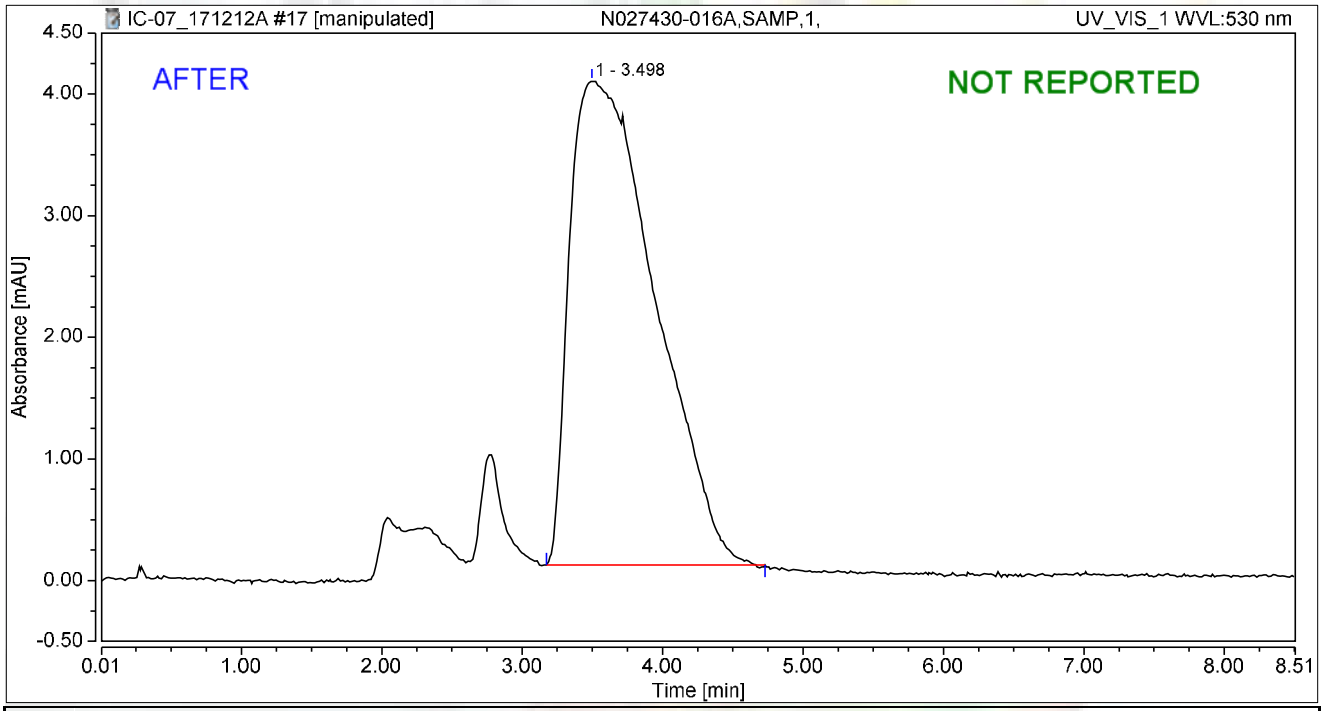
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.308	9.504	100.00	100.00	5.2106
Total:			**1.308**	**9.504**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-016A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 09:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.498	2.794	3.978	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**2.794**	**3.978**	**100.00**	**100.00**	

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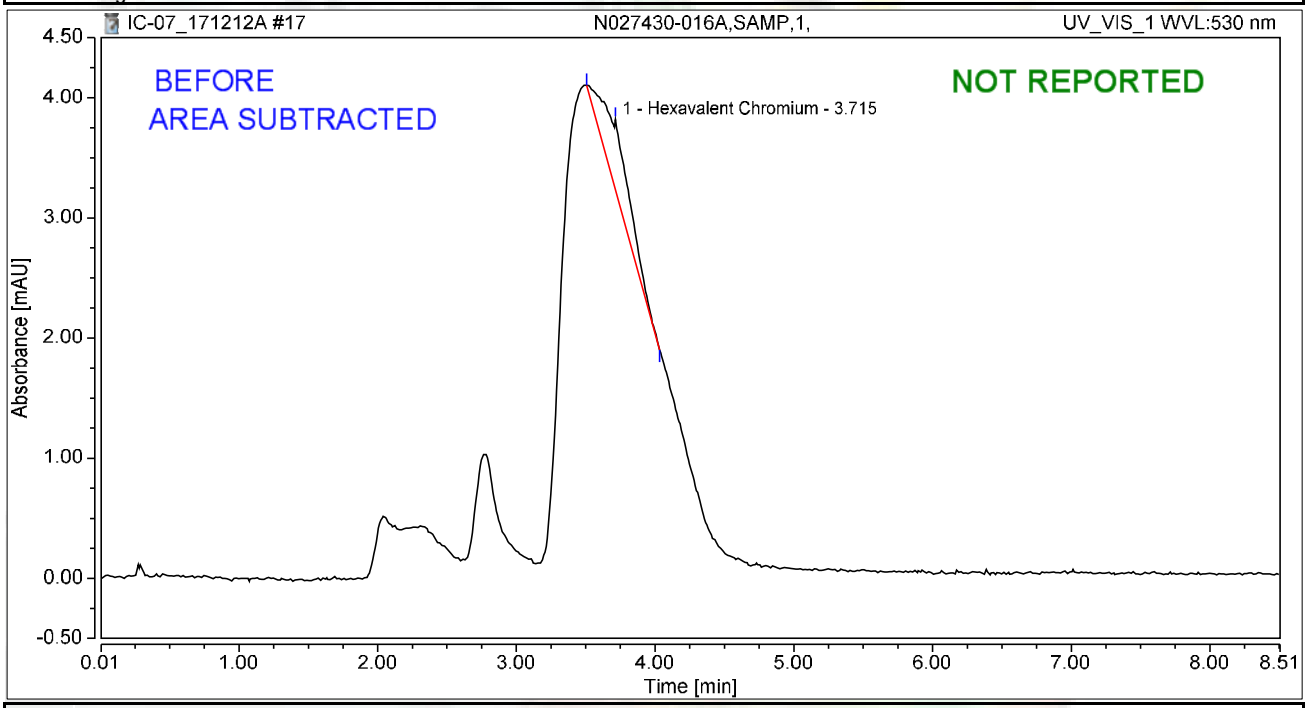
Chromatogram and Results

Injection Details

Injection Name:	**N027430-016A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 09:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.715	0.136	0.590	100.00	100.00	0.5417
Total:			**0.136**	**0.590**	**100.00**	**100.00**	

rba 12/16/2017

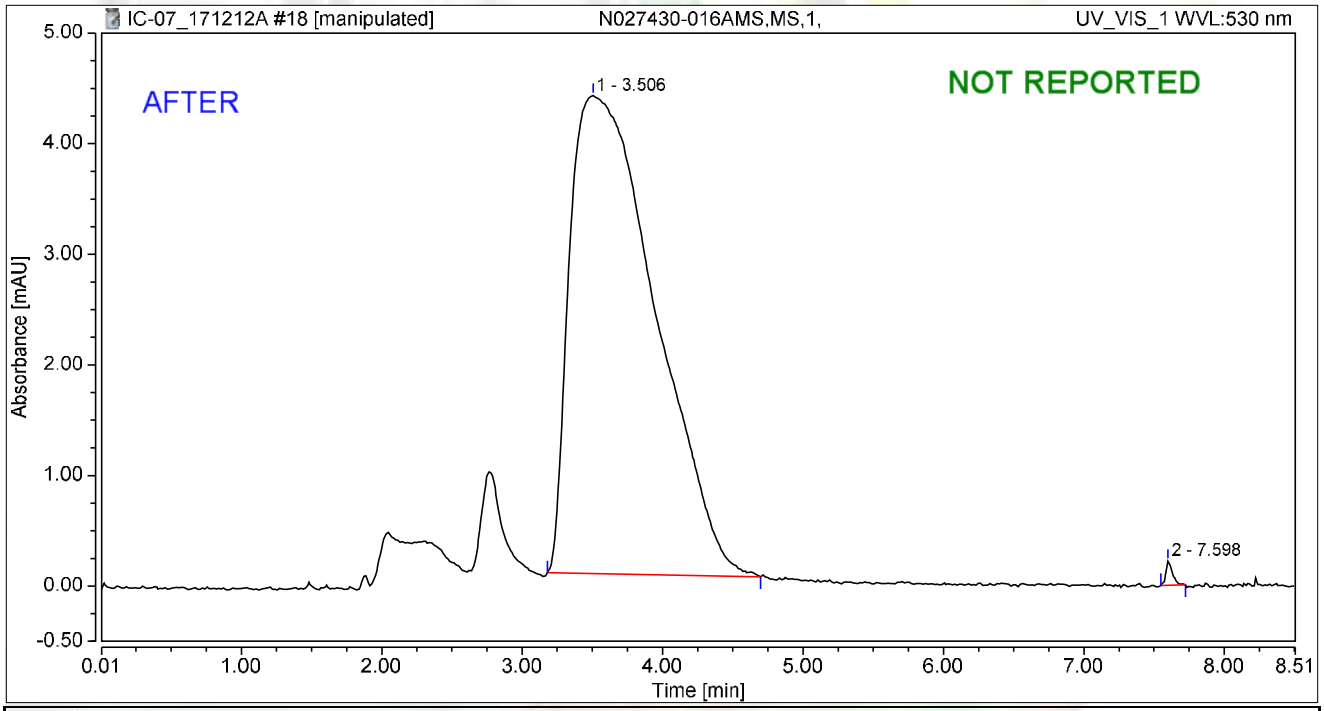
12/26/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027430-016AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 10:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.506	3.049	4.323	99.61	95.22	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2		7.598	0.012	0.217	0.39	4.78	n.a.
Total:			**3.061**	**4.540**	**100.00**	**100.00**	

rba 12/16/2017

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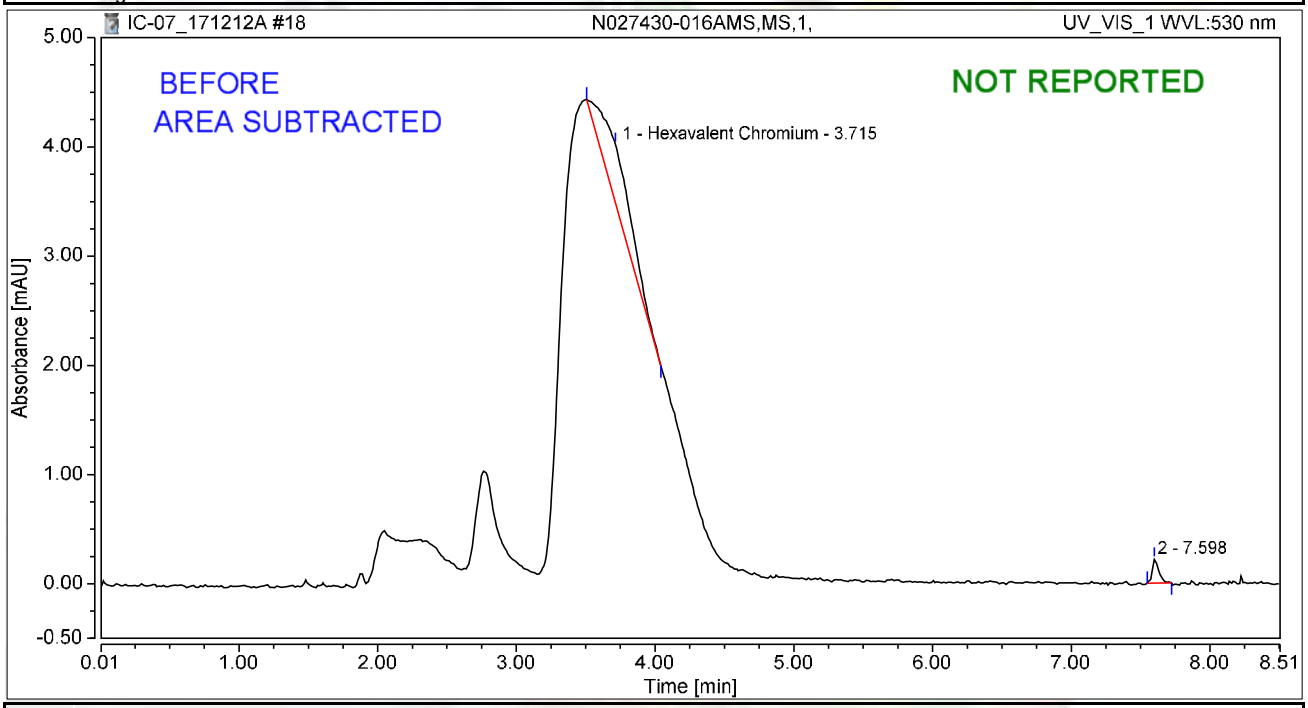
Chromatogram and Results

Injection Details

Injection Name:	**N027430-016AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 10:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.715	0.148	0.540	92.50	71.37	0.5888
2		7.598	0.012	0.217	7.50	28.63	n.a.
Total:			**0.160**	**0.757**	**100.00**	**100.00**	

rba 12/16/2017

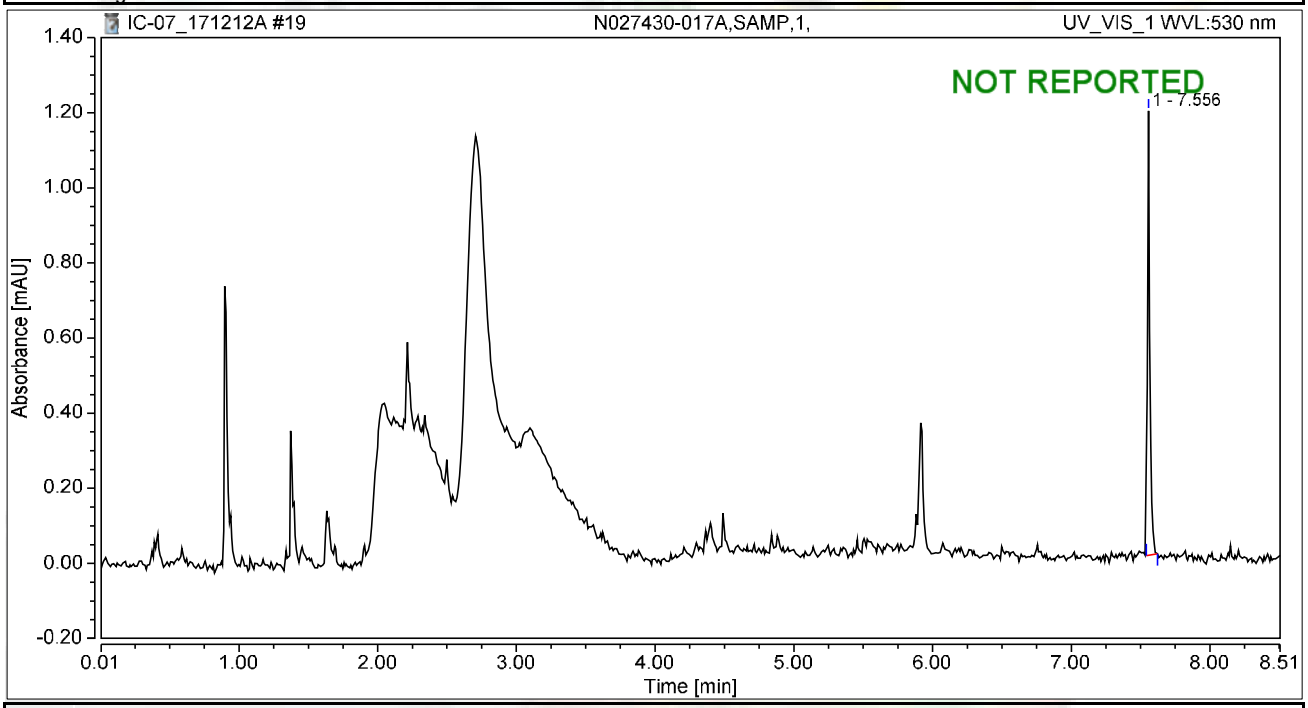
12/26/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027430-017A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

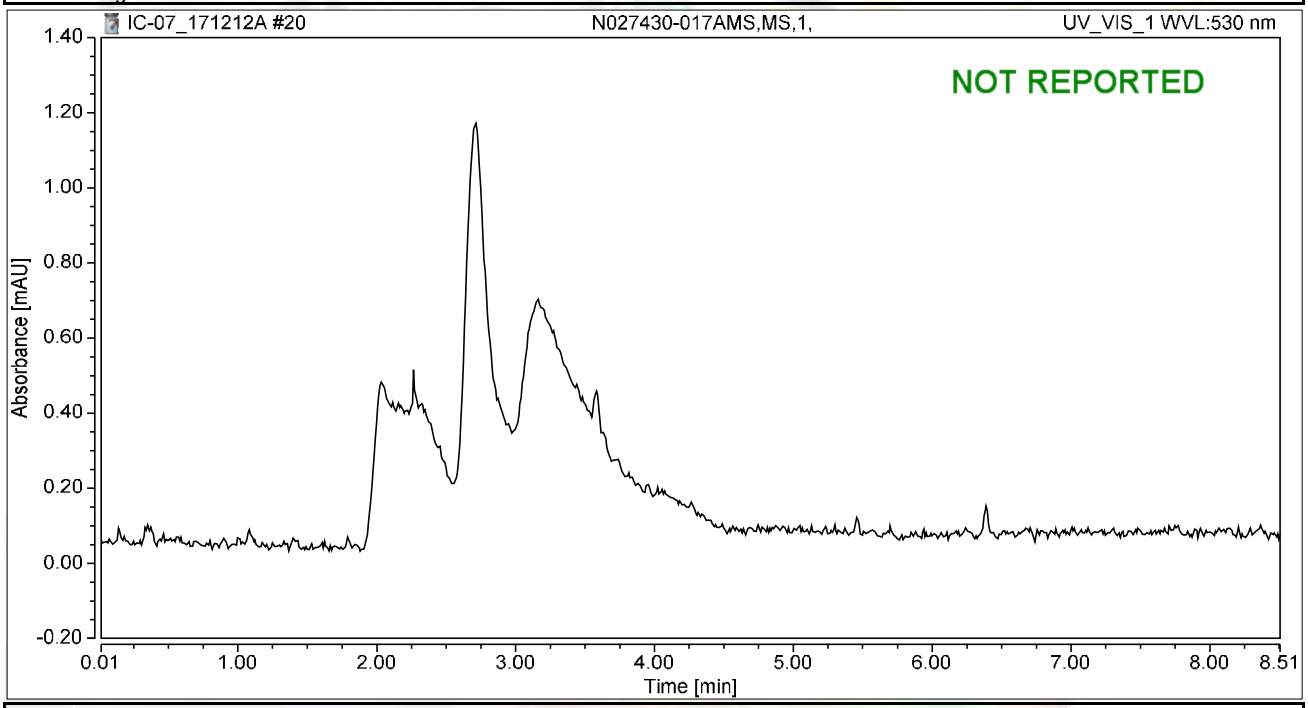
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.556	0.023	1.183	100.00	100.00	n.a.
Total:			**0.023**	**1.183**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-017AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 10:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

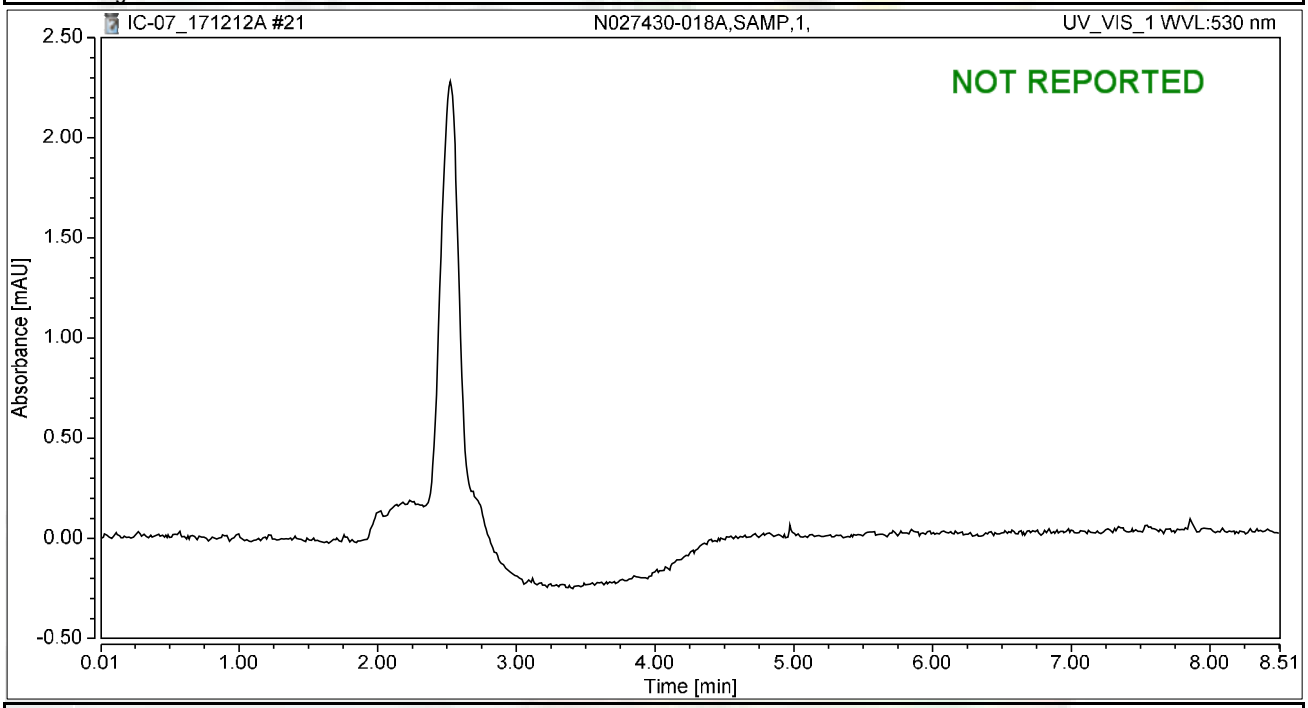
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-018A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 10:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

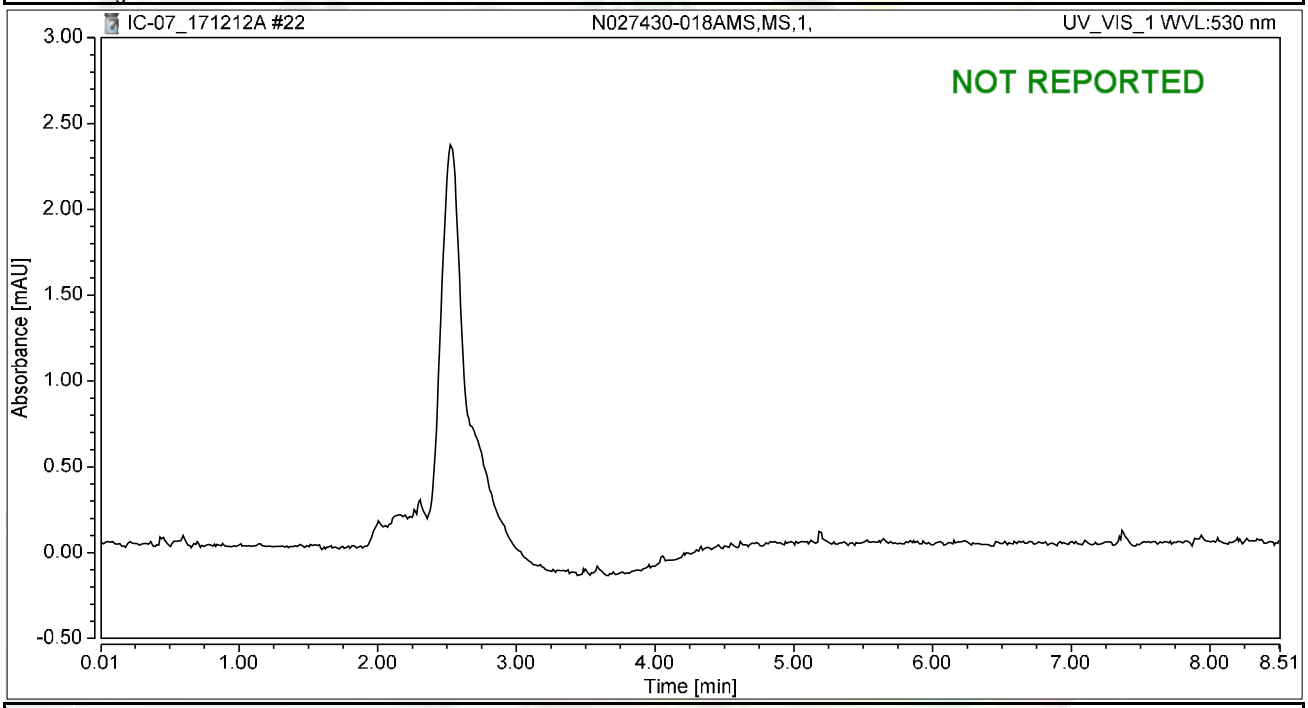
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-018AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 10:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

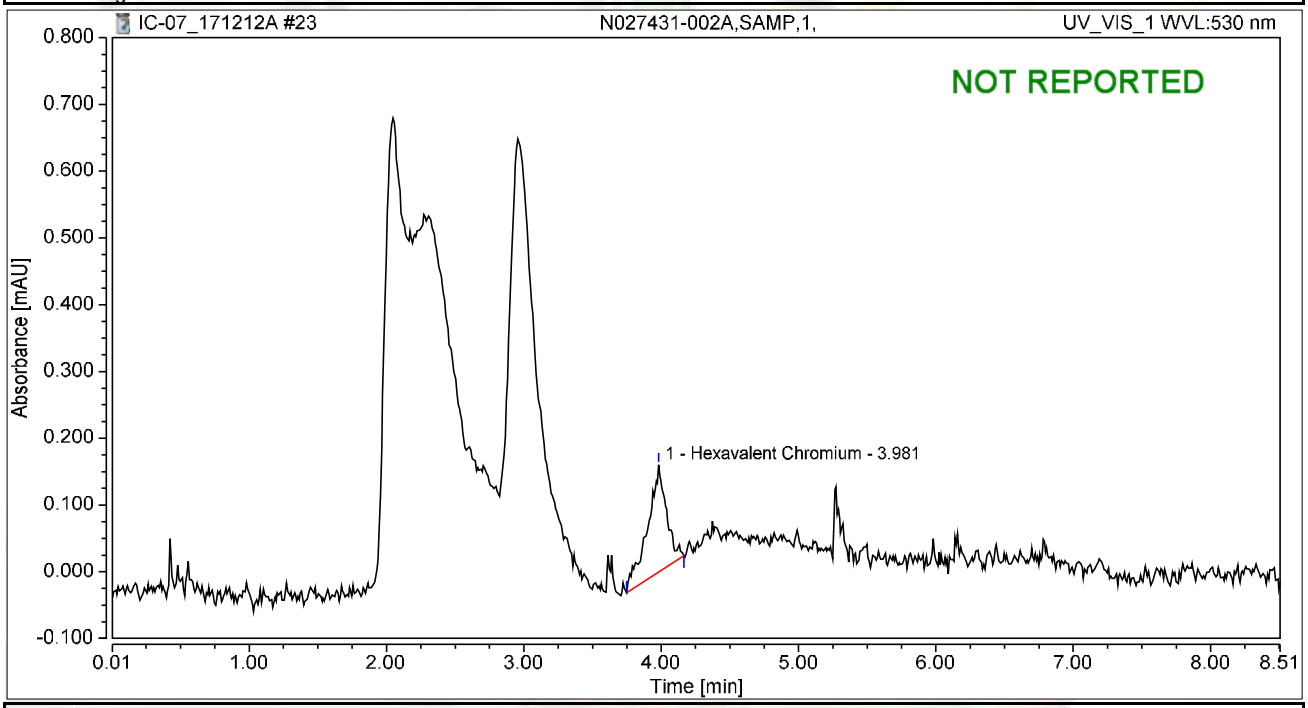
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 10:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

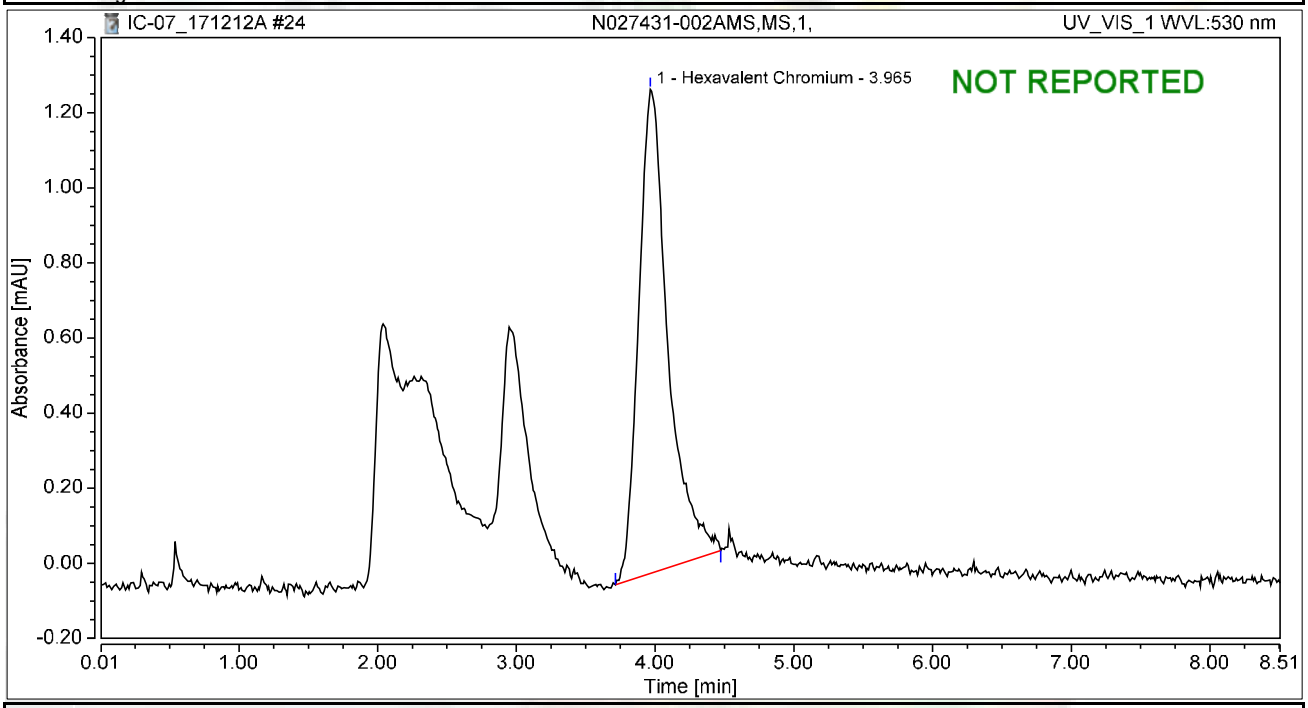
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.981	0.025	0.161	100.00	100.00	0.1015
Total:			**0.025**	**0.161**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 11:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

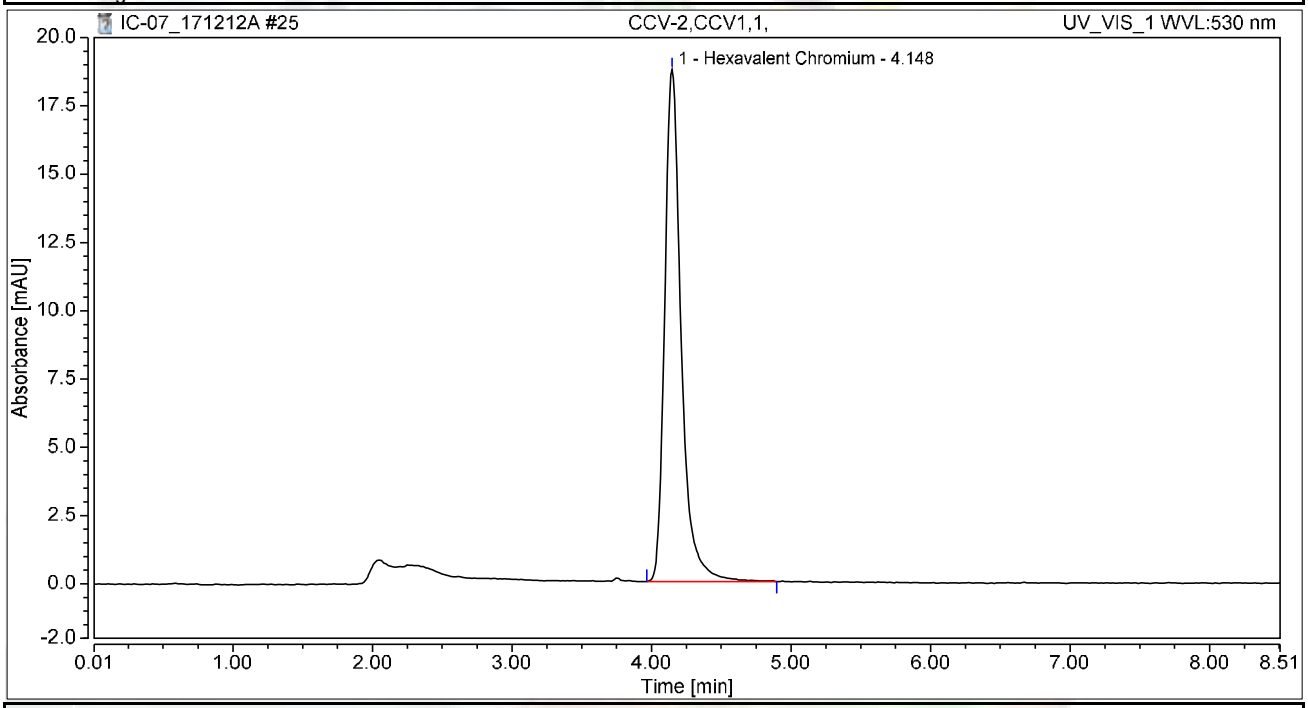
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.965	0.316	1.289	100.00	100.00	1.2583
Total:			**0.316**	**1.289**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 11:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

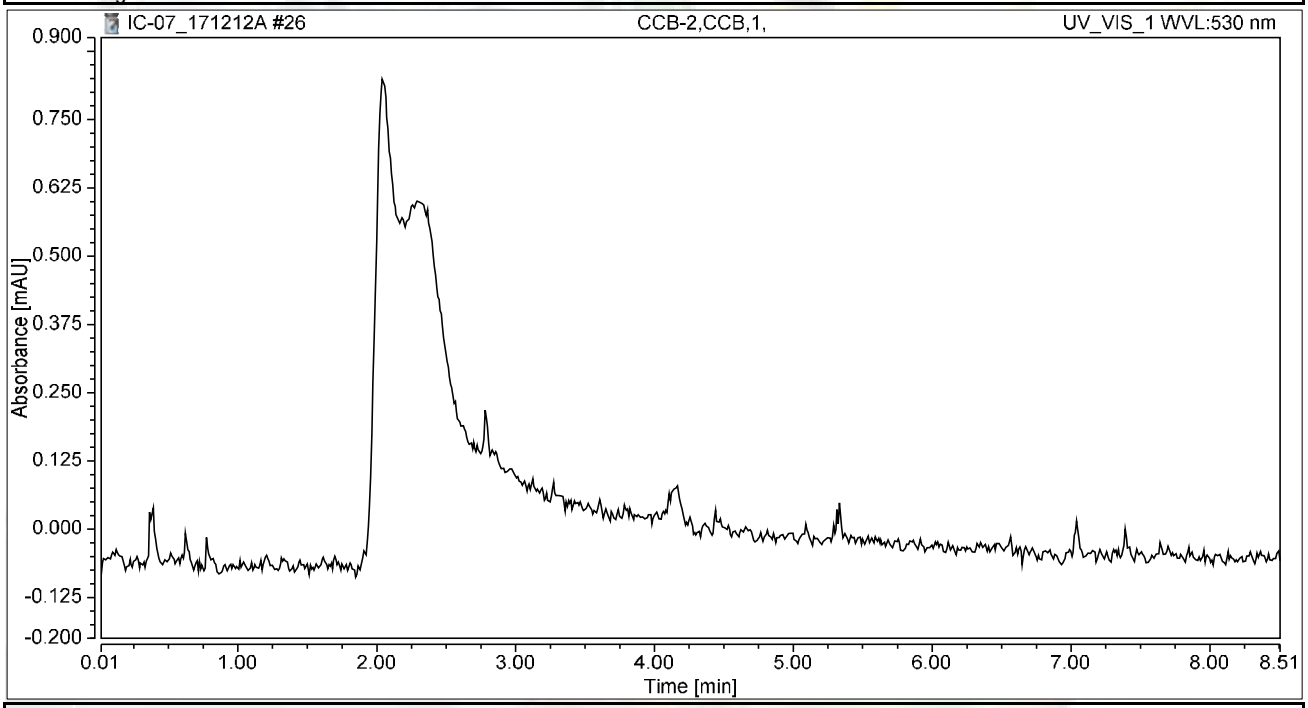
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.570	18.741	100.00	100.00	10.2355
Total:			**2.570**	**18.741**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 11:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

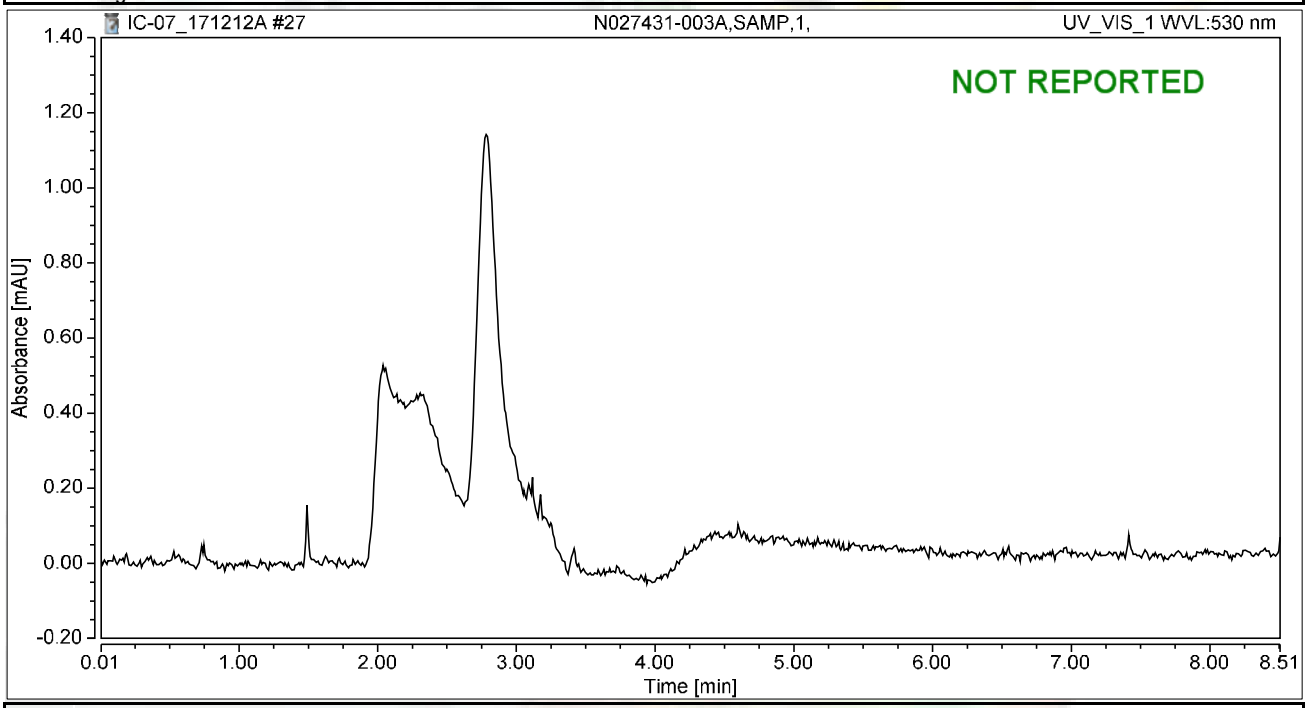
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 11:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

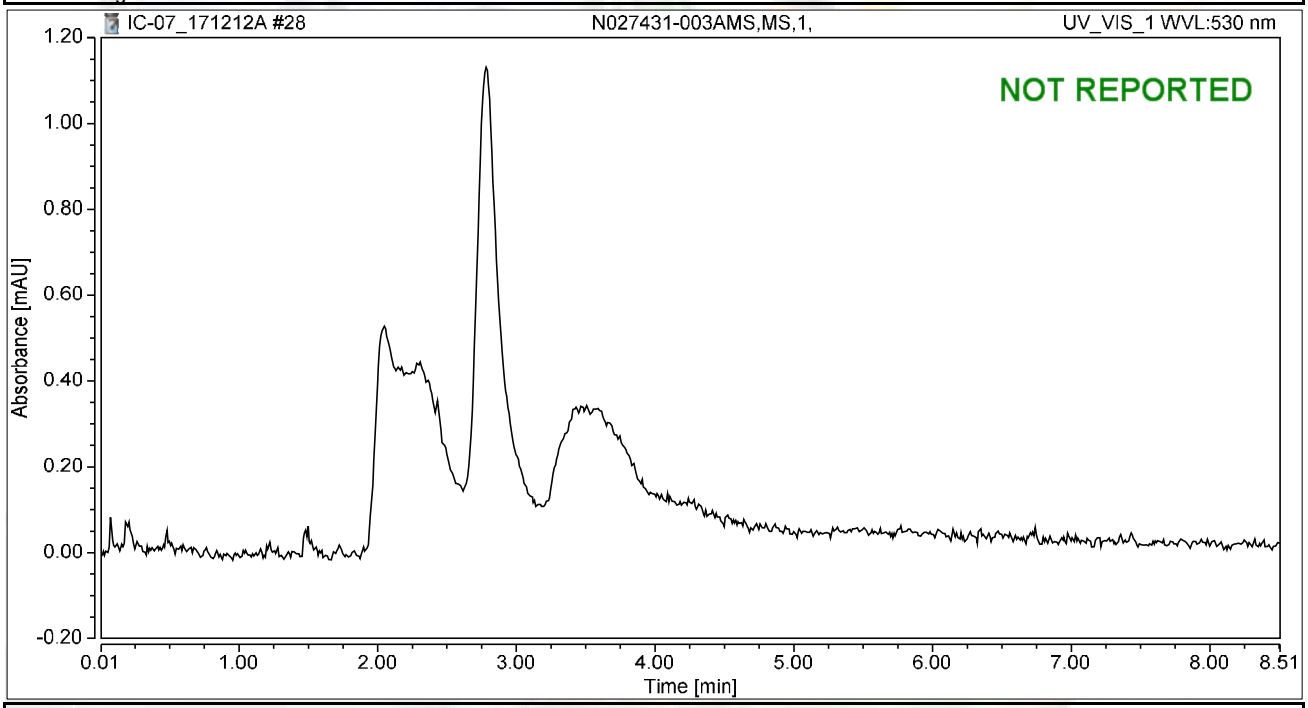
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 11:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

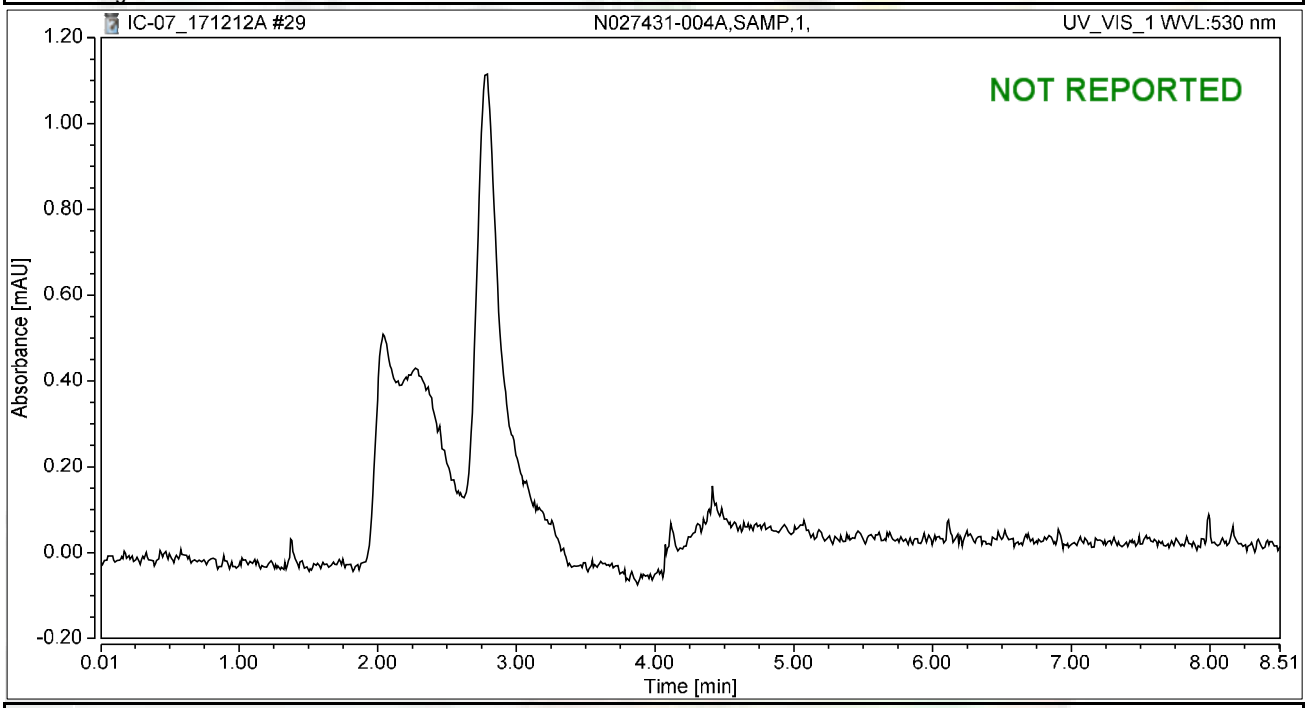
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 11:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

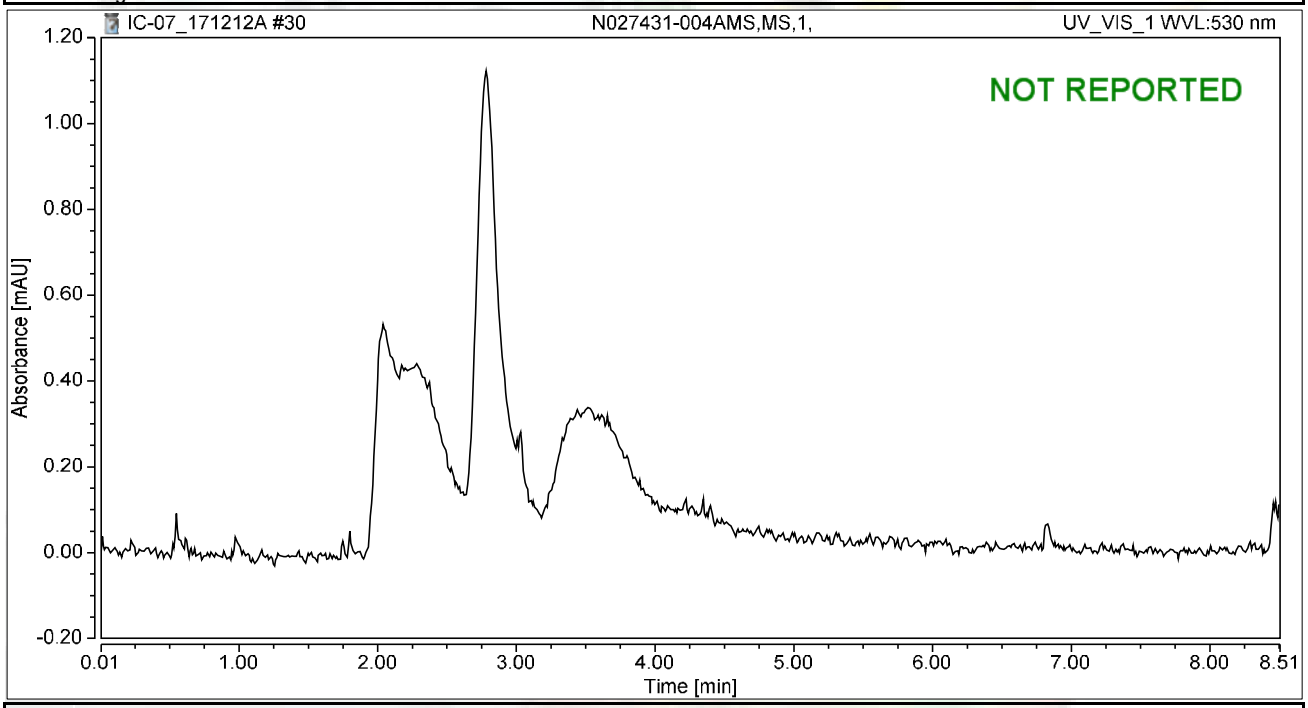
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 12:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

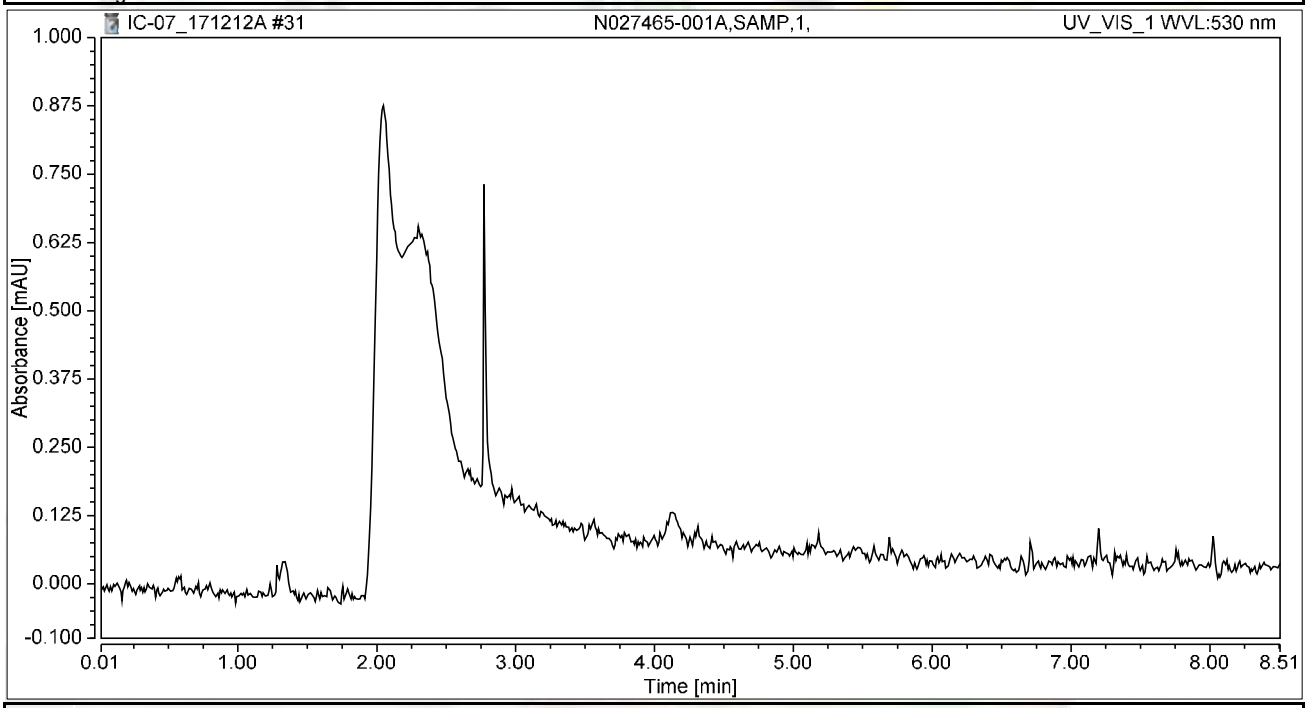
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027465-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 12:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

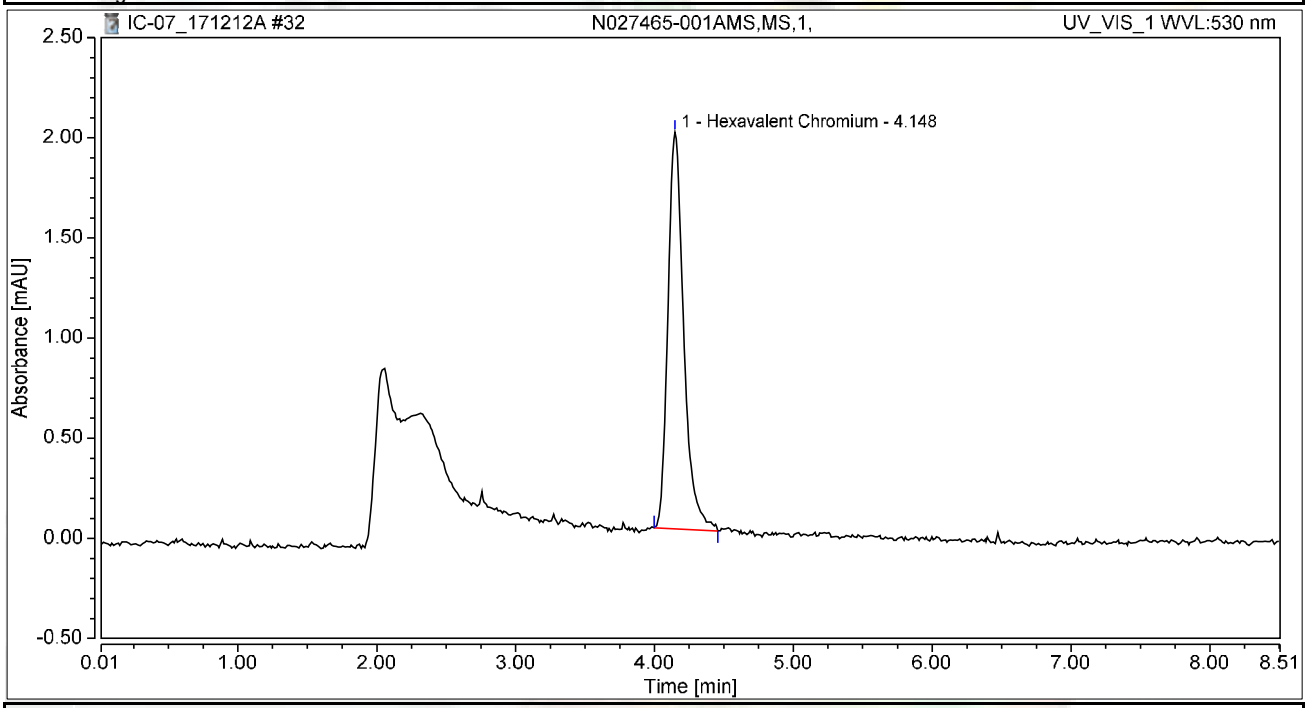
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027465-001AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 12:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

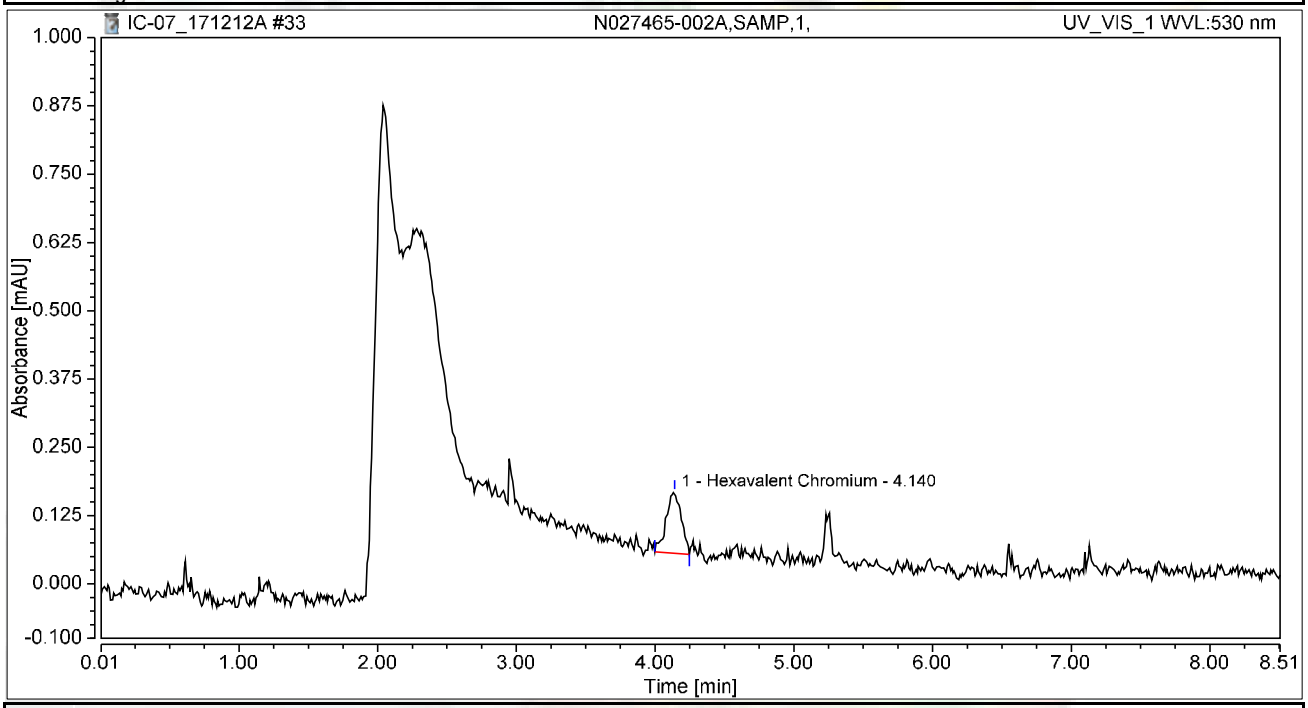
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.262	1.979	100.00	100.00	1.0426
Total:			**0.262**	**1.979**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027465-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 12:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

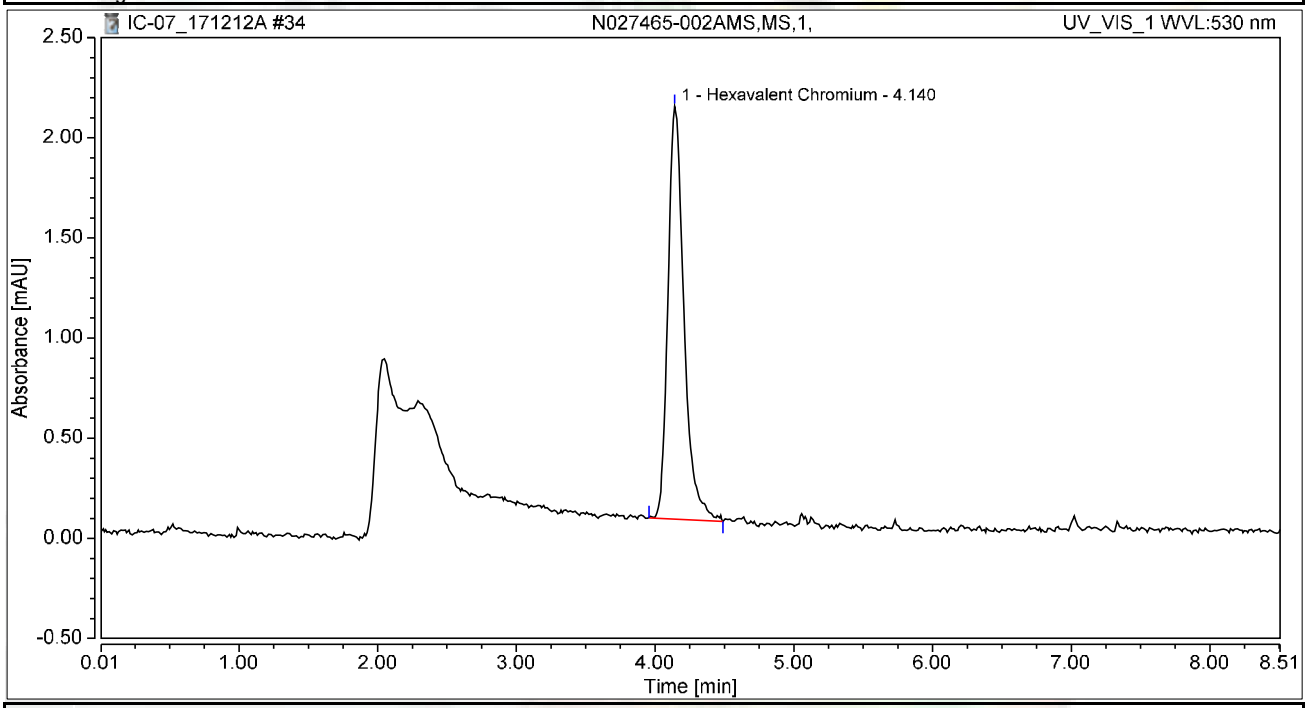
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.014	0.112	100.00	100.00	0.0564
Total:			**0.014**	**0.112**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027465-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 12:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

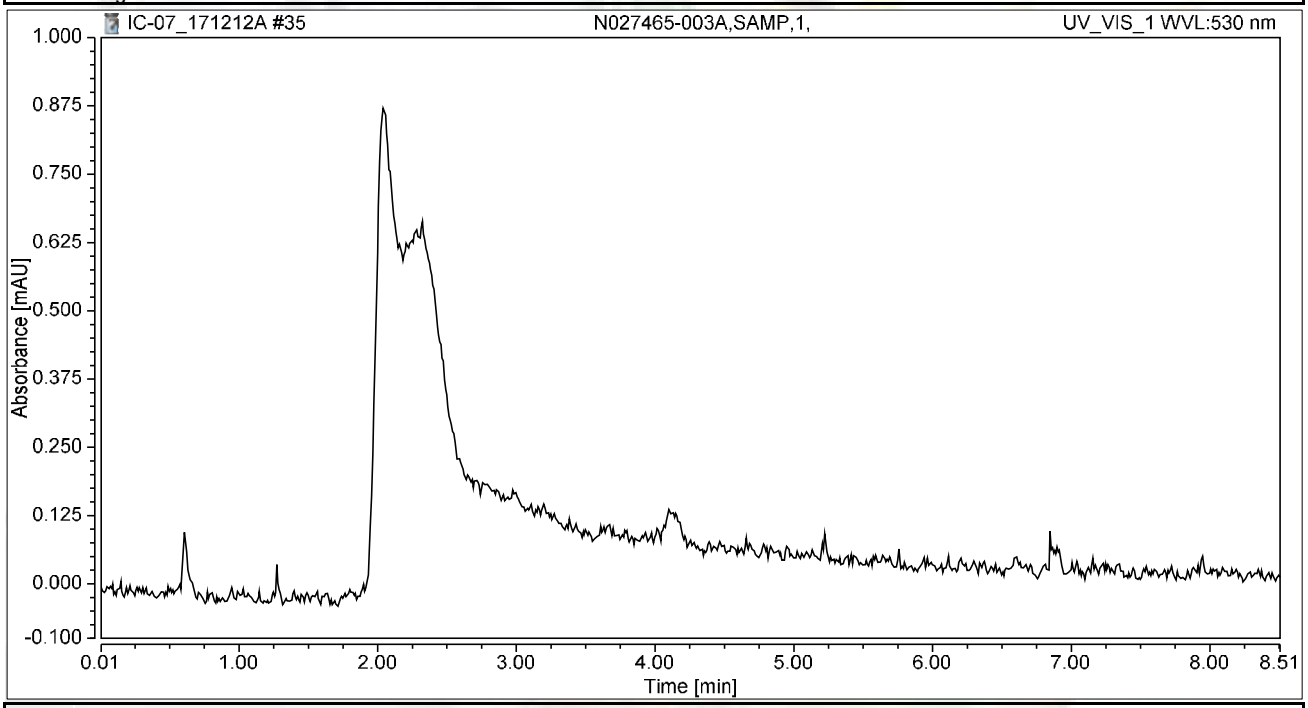
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.275	2.060	100.00	100.00	1.0970
Total:			**0.275**	**2.060**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027465-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 12:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

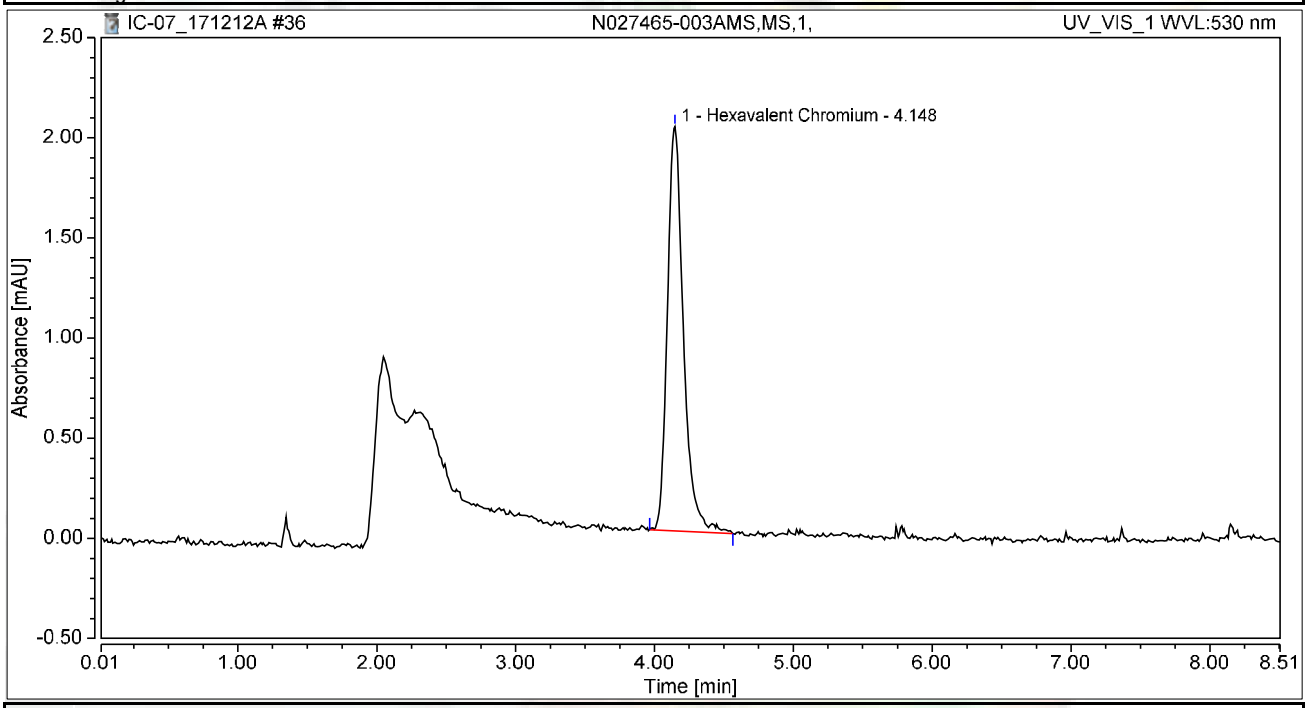
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027465-003AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 12:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

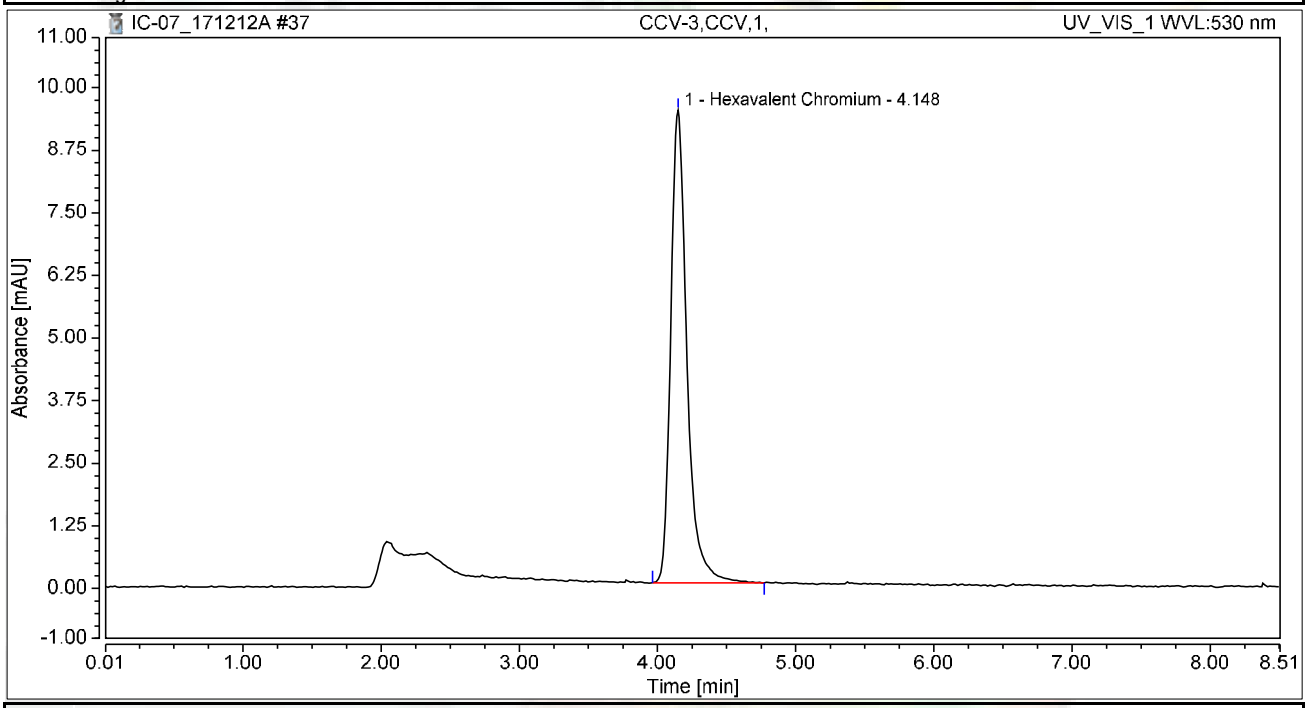
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.272	2.019	100.00	100.00	1.0814
Total:			**0.272**	**2.019**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 13:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

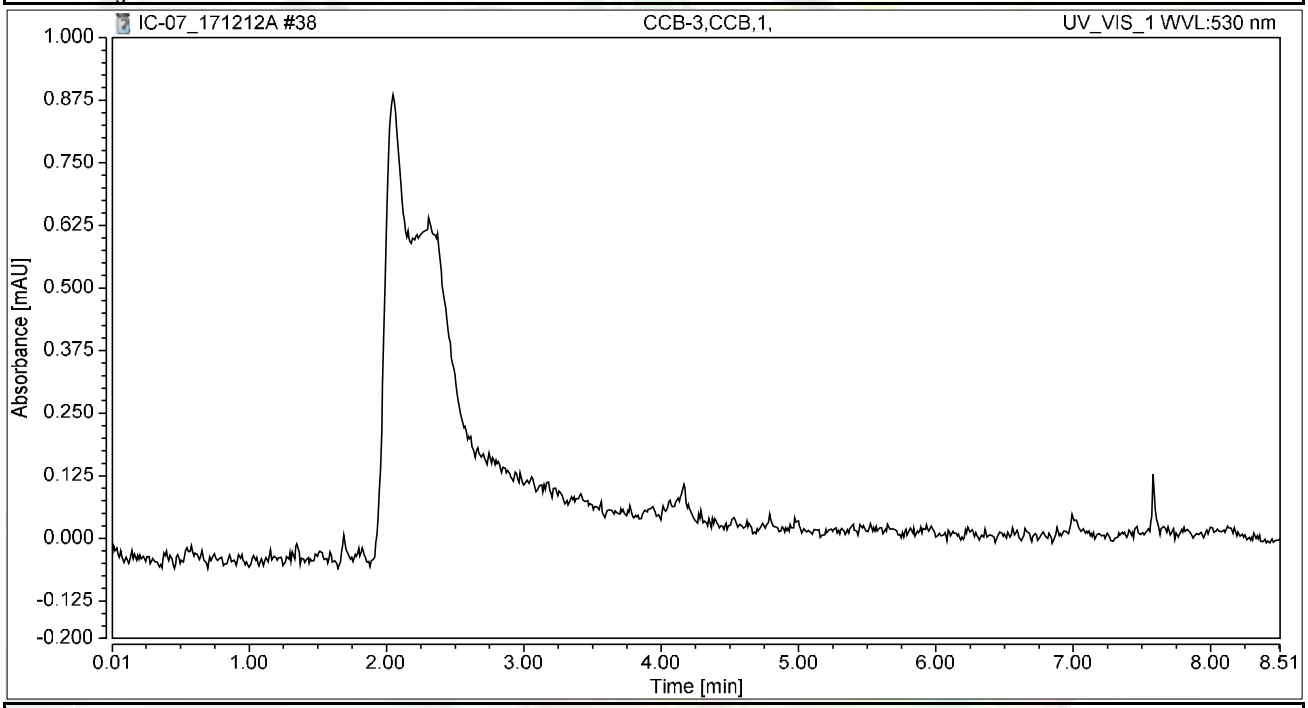
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.281	9.434	100.00	100.00	5.1007
Total:			**1.281**	**9.434**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 13:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

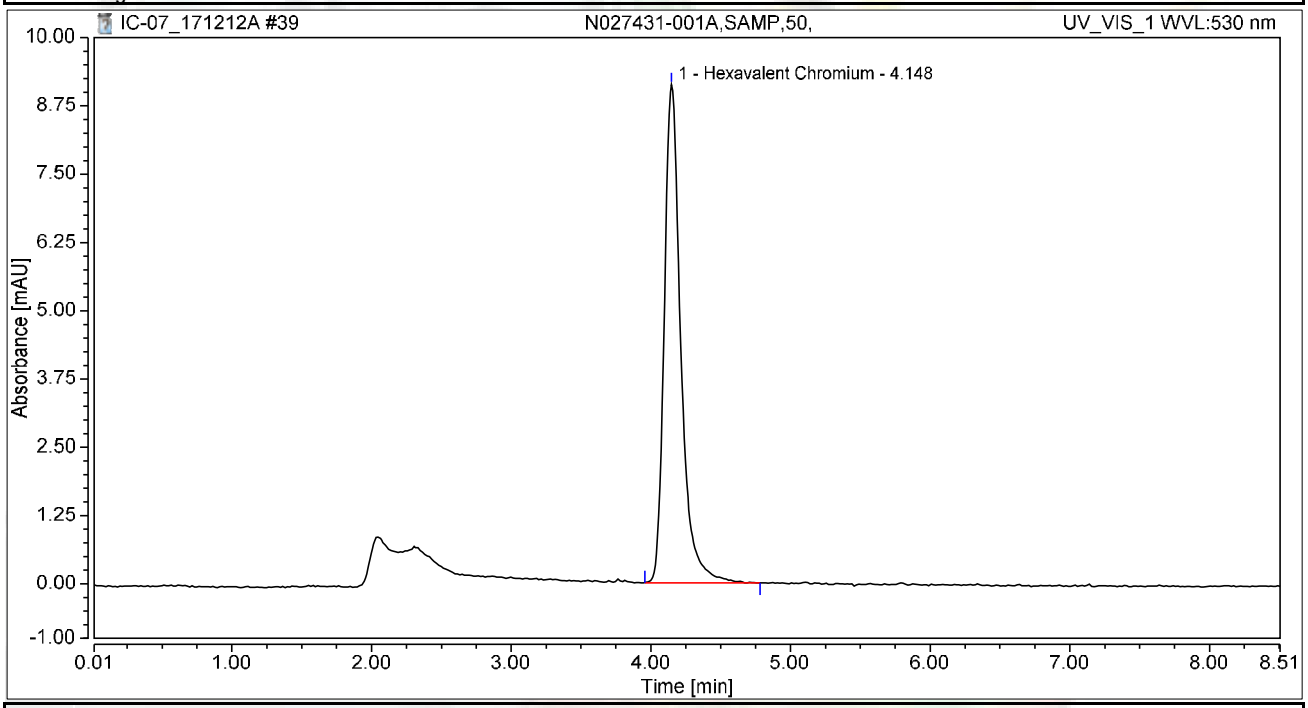
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-001A,SAMP,50,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 13:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

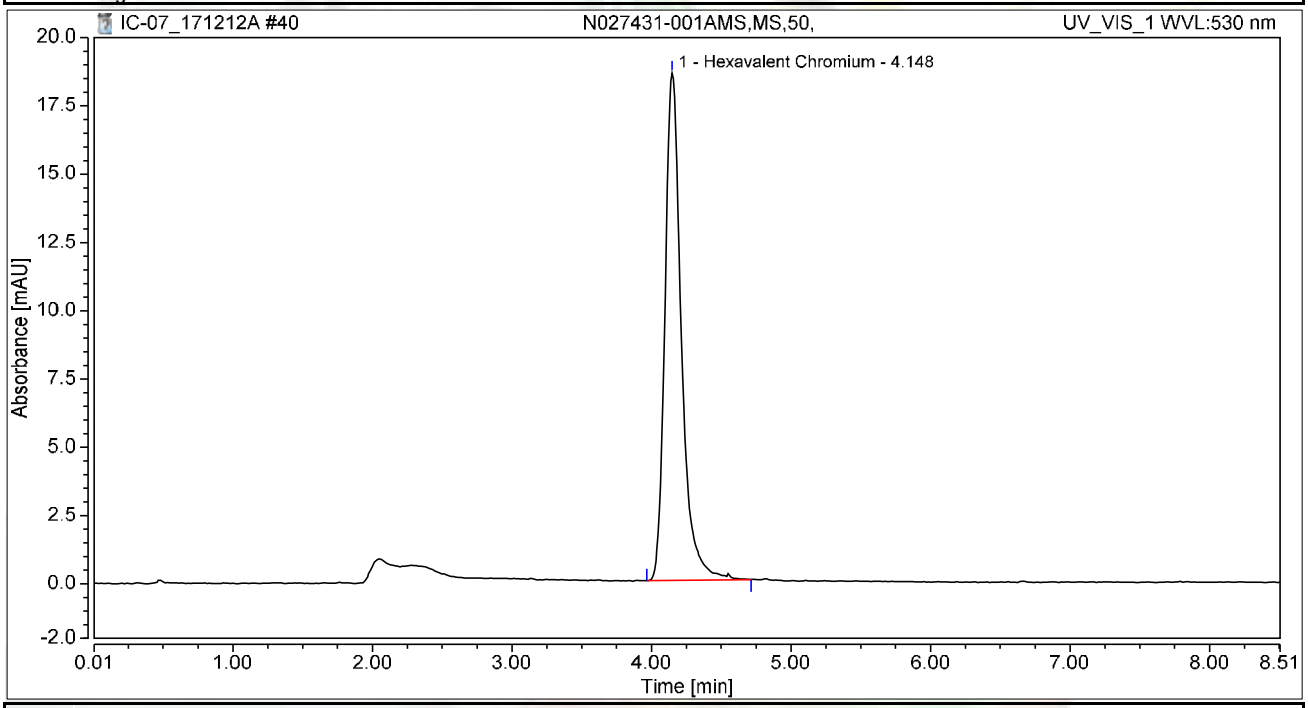
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.255	9.120	100.00	100.00	4.9968
Total:			**1.255**	**9.120**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-001AMS,MS,50,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 13:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

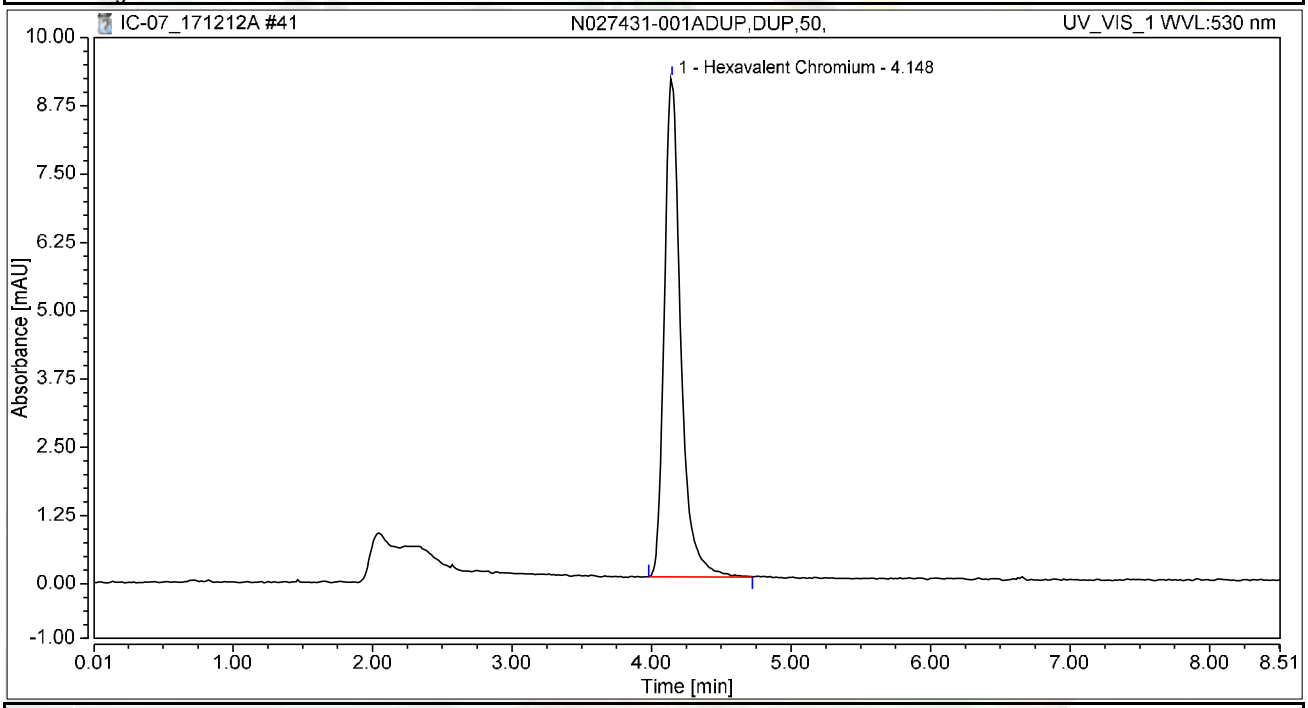
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.540	18.587	100.00	100.00	10.1175
Total:			**2.540**	**18.587**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-001ADUP,DUP,50,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 14:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

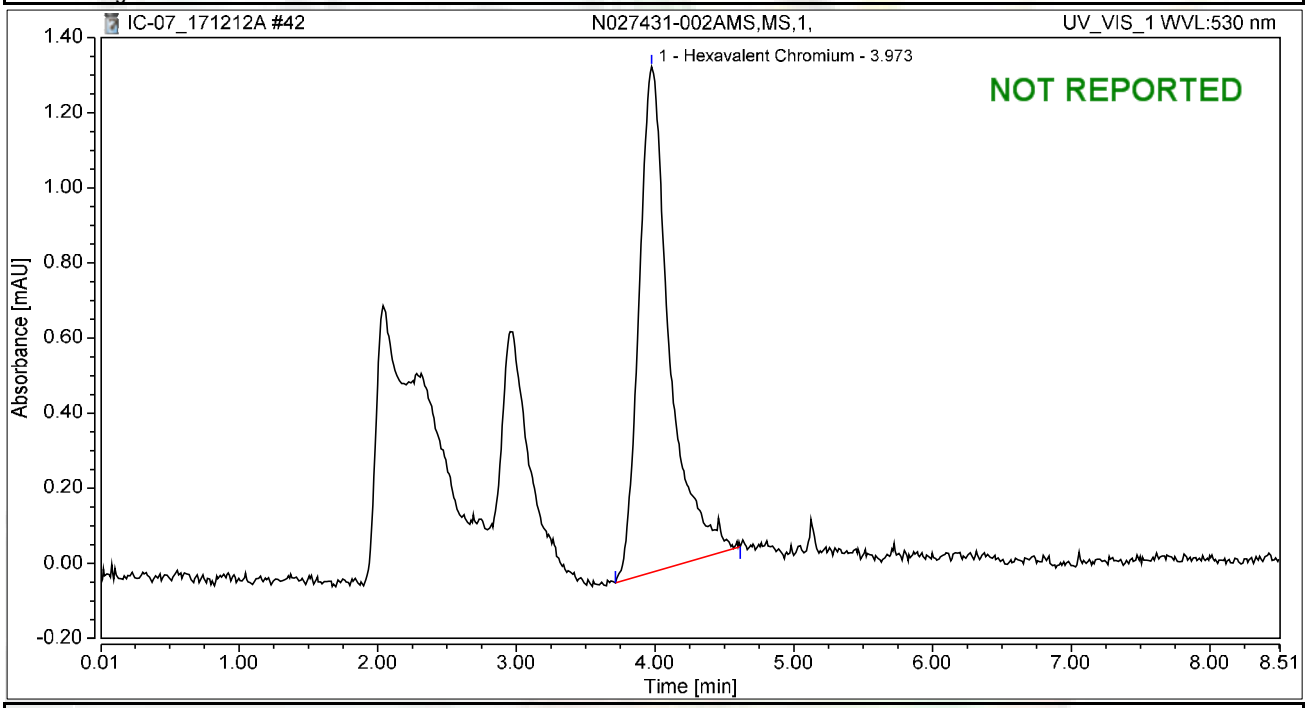
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.246	9.128	100.00	100.00	4.9623
Total:			**1.246**	**9.128**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 14:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

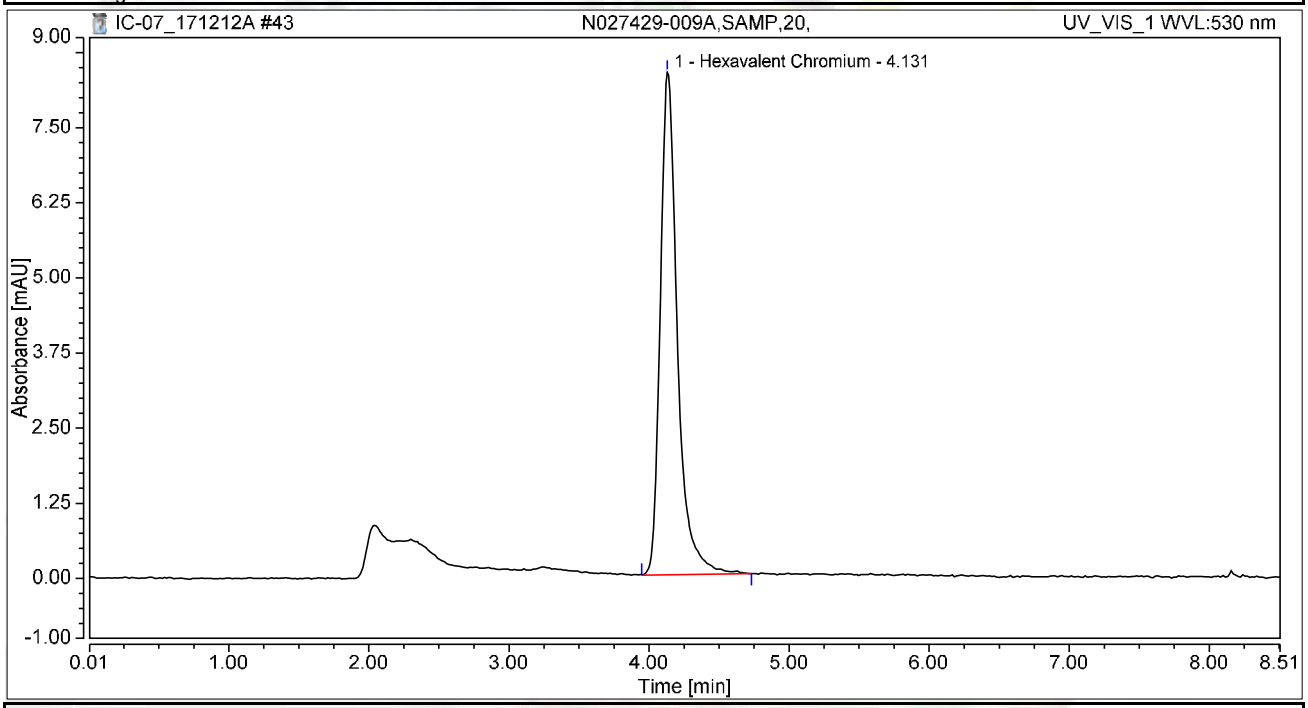
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.973	0.342	1.347	100.00	100.00	1.3626
Total:			**0.342**	**1.347**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-009A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 14:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

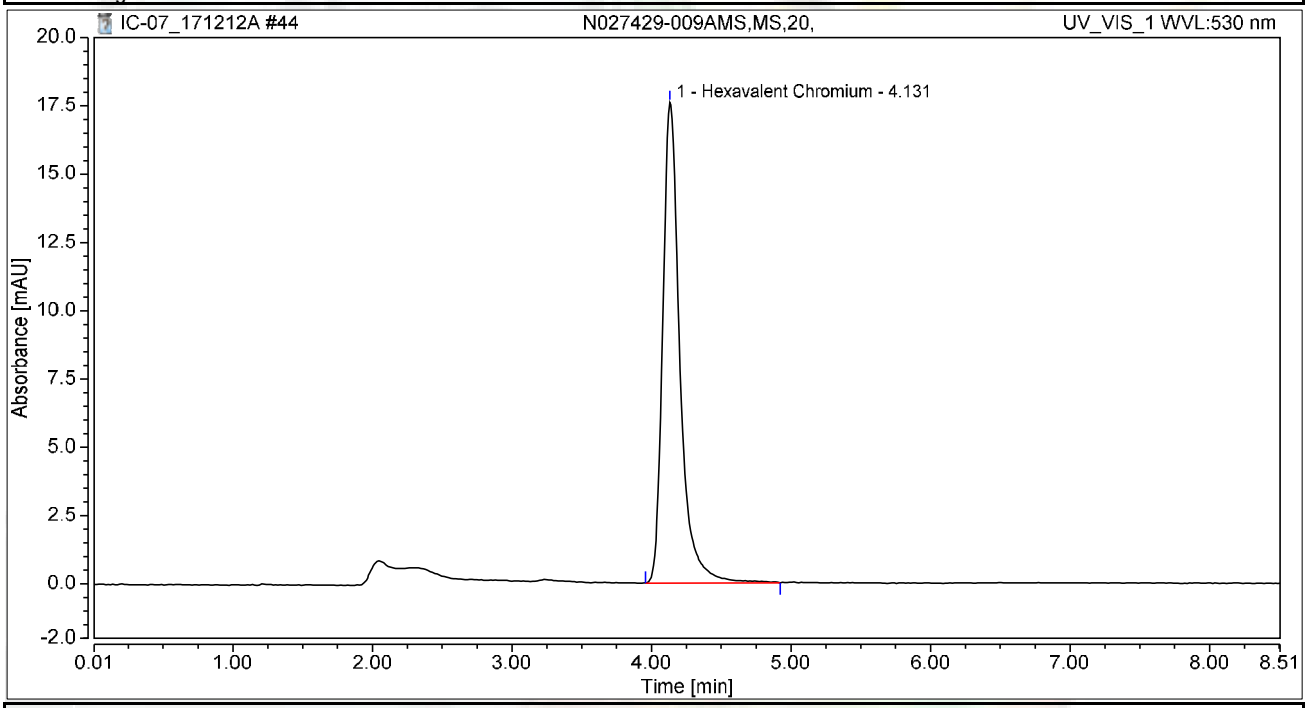
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.183	8.362	100.00	100.00	4.7126
Total:			**1.183**	**8.362**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-009AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 14:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

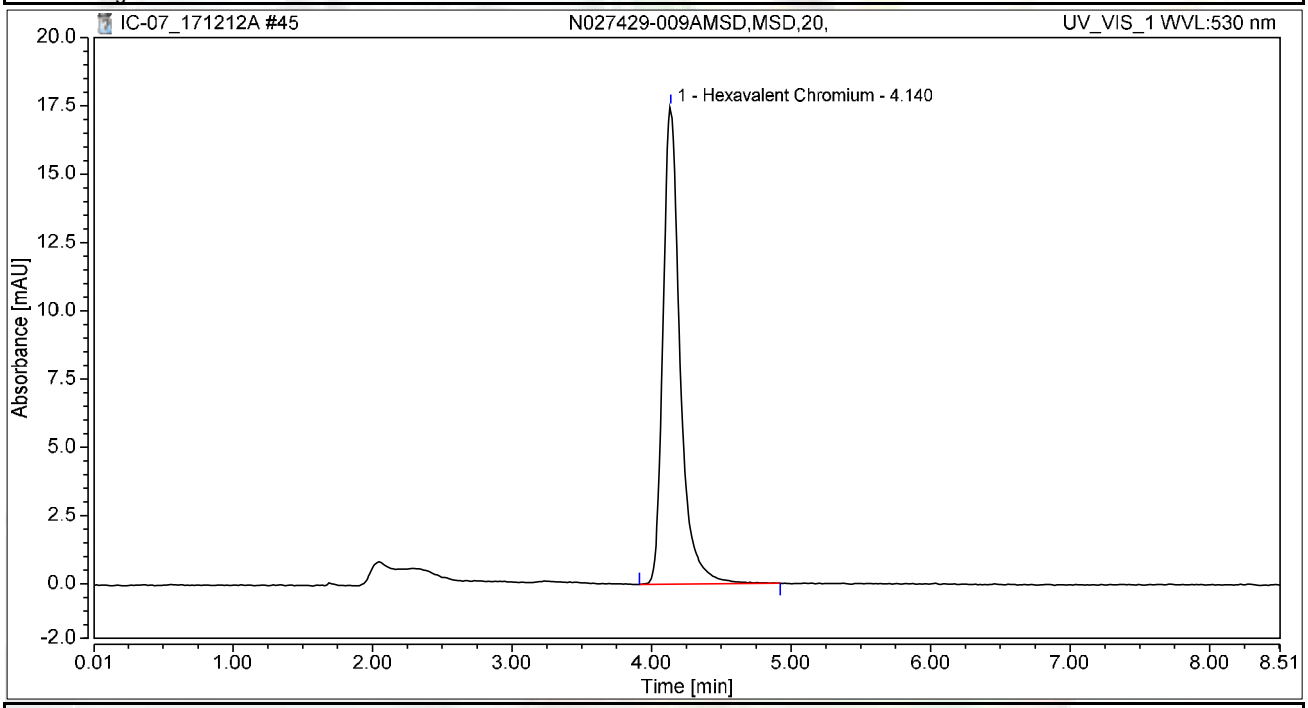
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.507	17.595	100.00	100.00	9.9836
Total:			**2.507**	**17.595**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-009AMSD,MSD,20,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 14:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

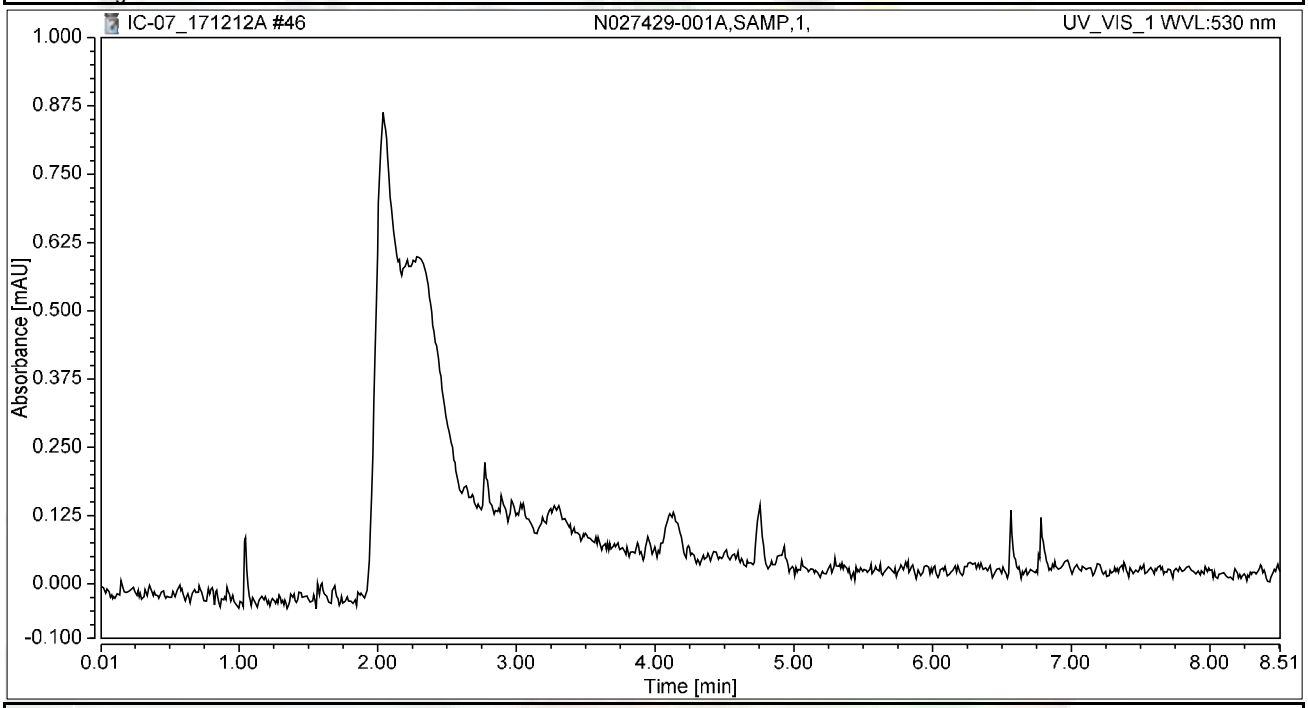
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.487	17.494	100.00	100.00	9.9046
Total:			**2.487**	**17.494**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 14:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

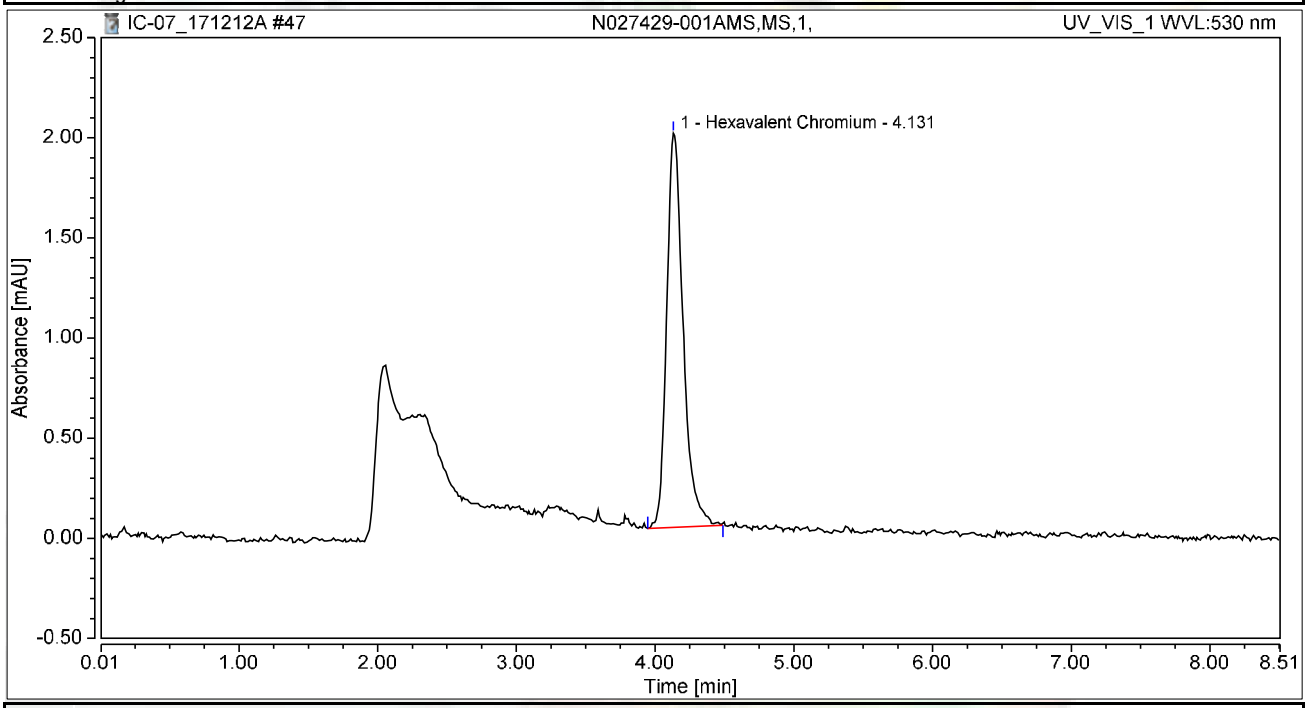
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 15:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

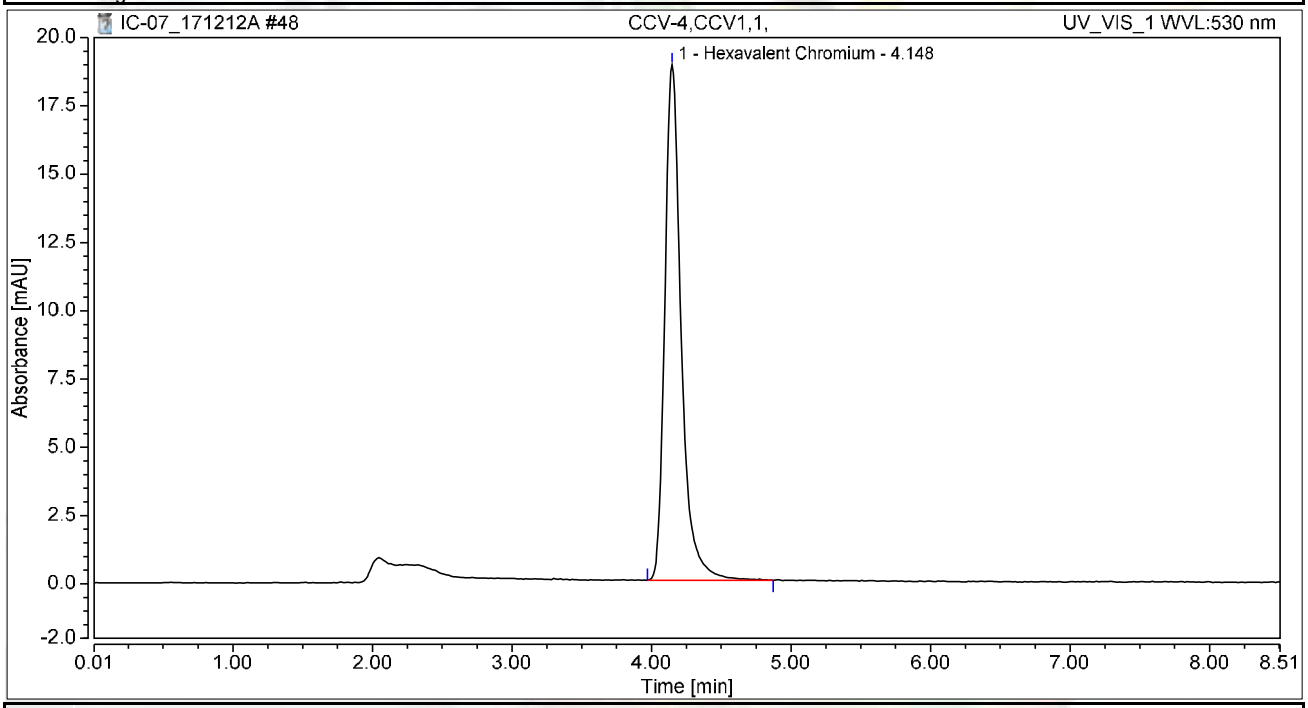
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.271	1.967	100.00	100.00	1.0807
Total:			**0.271**	**1.967**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 15:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

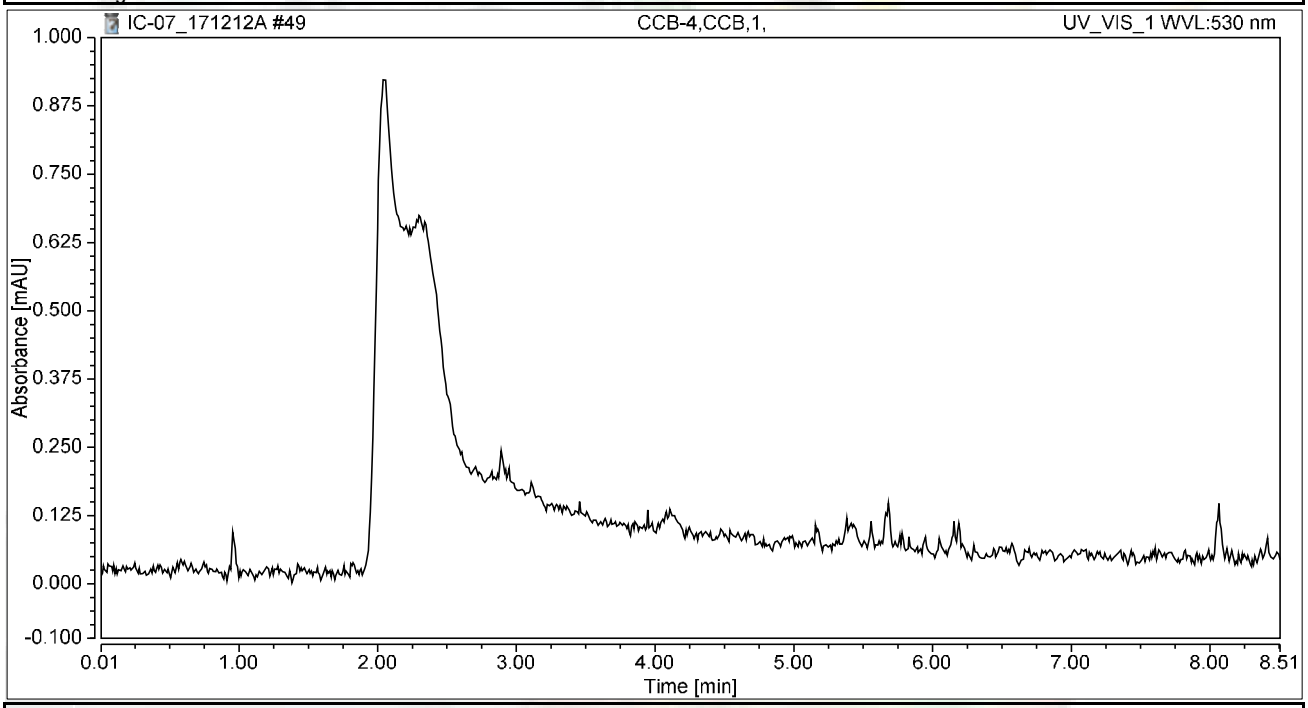
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.572	18.872	100.00	100.00	10.2418
Total:			**2.572**	**18.872**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 15:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

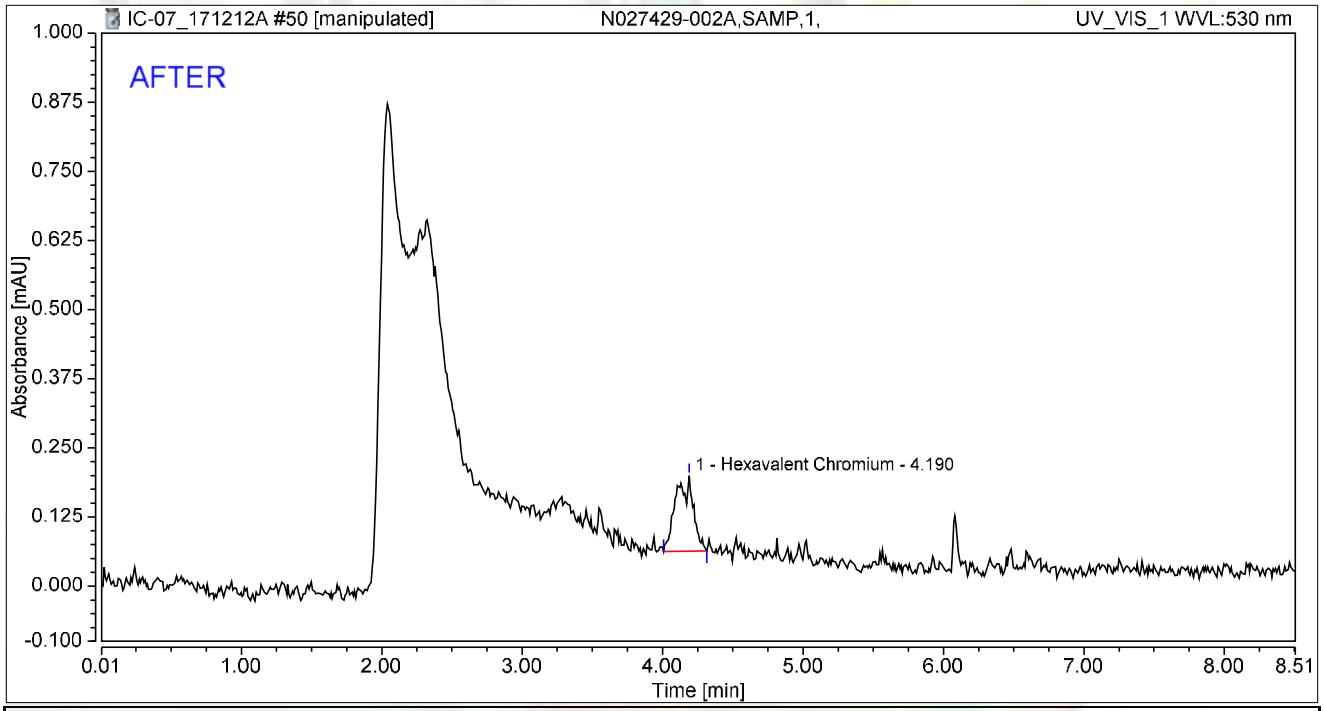
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 15:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.020	0.137	100.00	100.00	0.0780
Total:			**0.020**	**0.137**	**100.00**	**100.00**	

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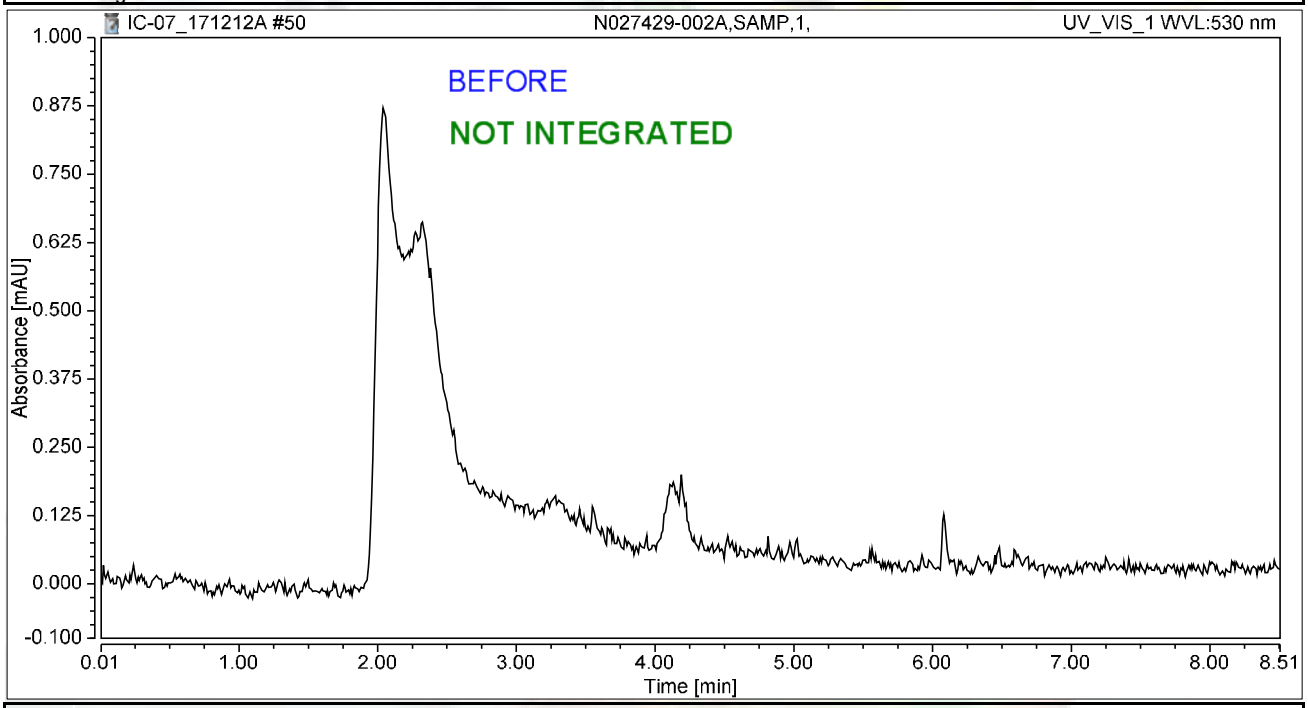
Chromatogram and Results

Injection Details

Injection Name:	**N027429-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 15:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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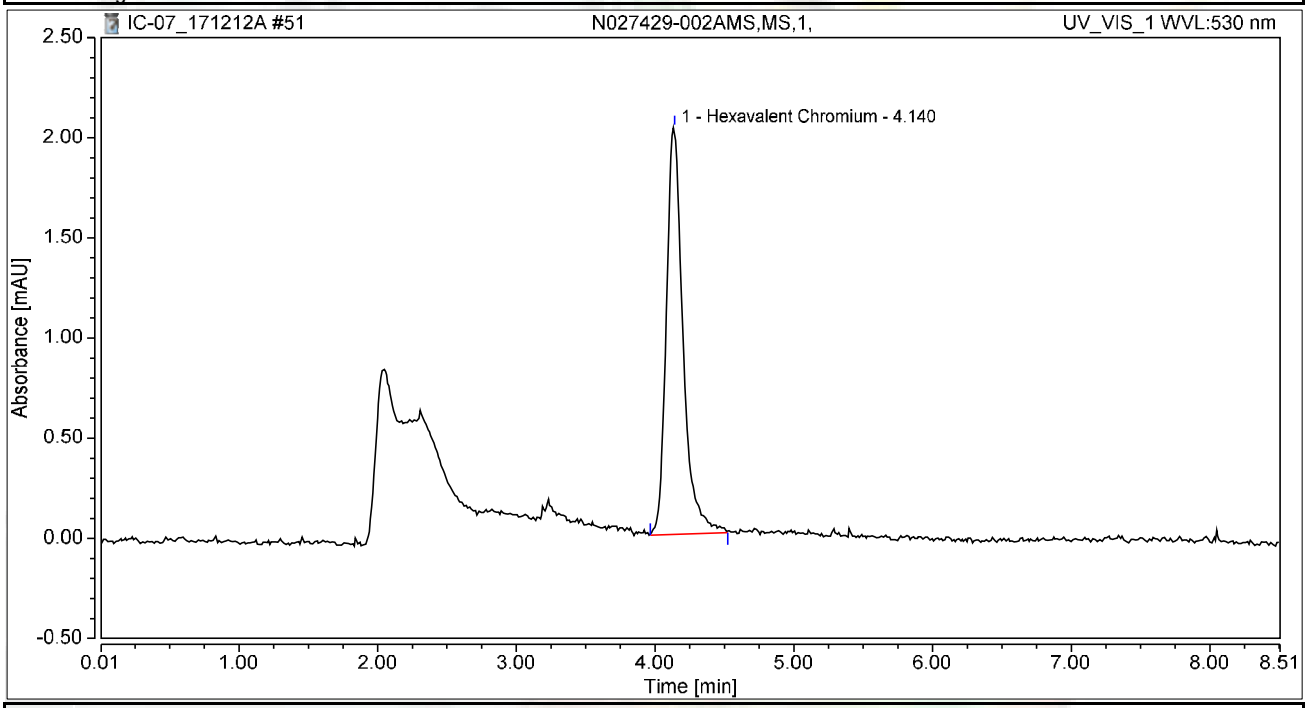
Chromatogram and Results

Injection Details

Injection Name:	**N027429-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 15:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

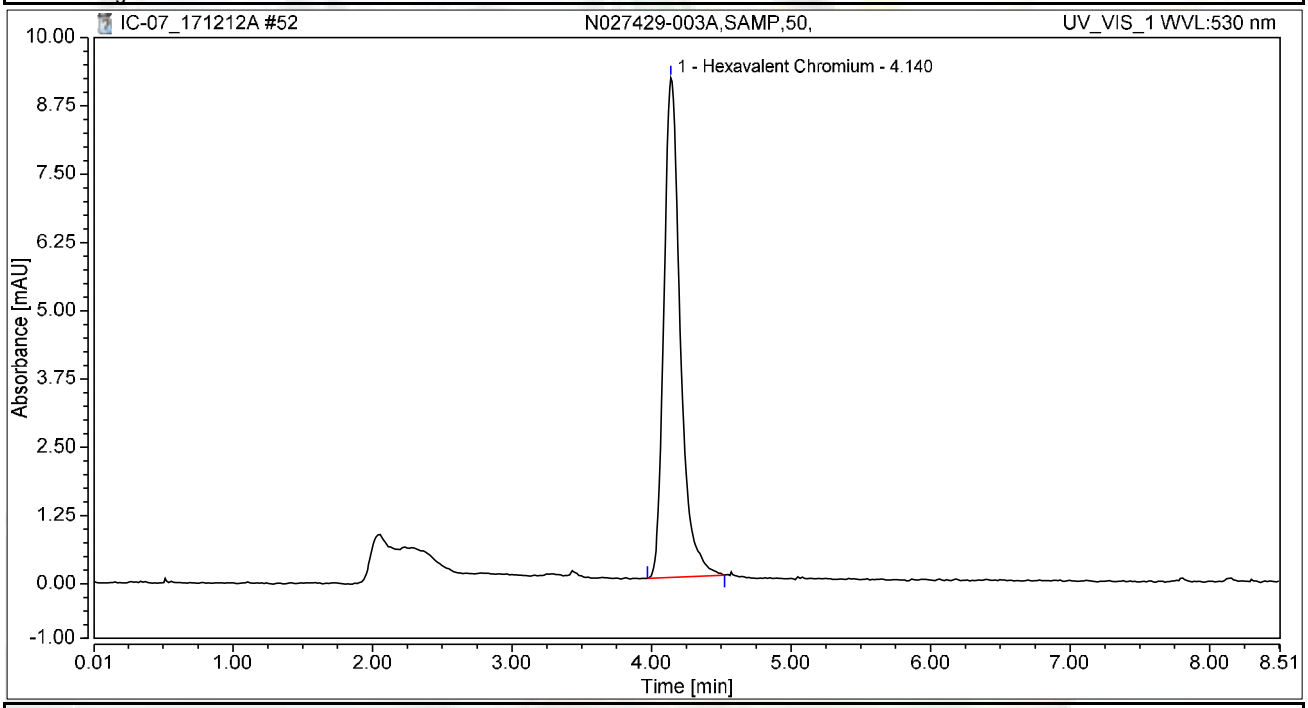
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.284	2.031	100.00	100.00	1.1317
Total:			**0.284**	**2.031**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-003A,SAMP,50,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 15:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

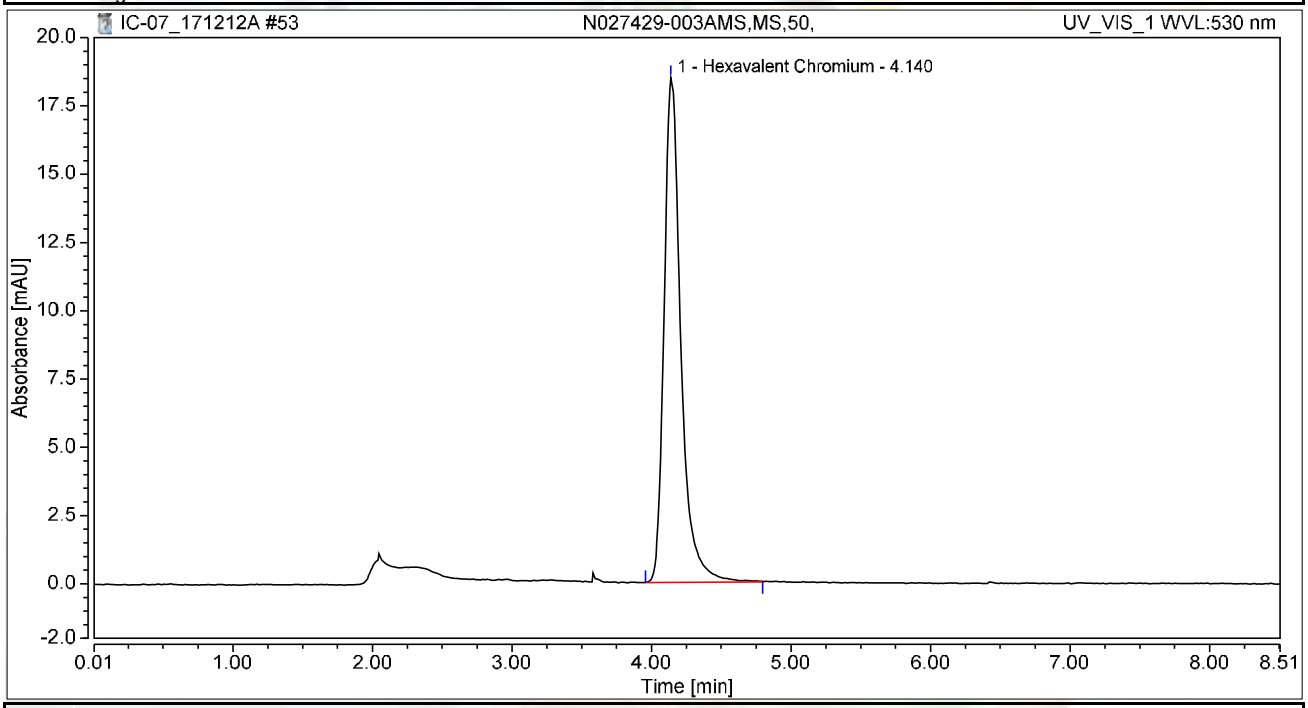
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.248	9.146	100.00	100.00	4.9708
Total:			**1.248**	**9.146**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-003AMS,MS,50,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 16:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

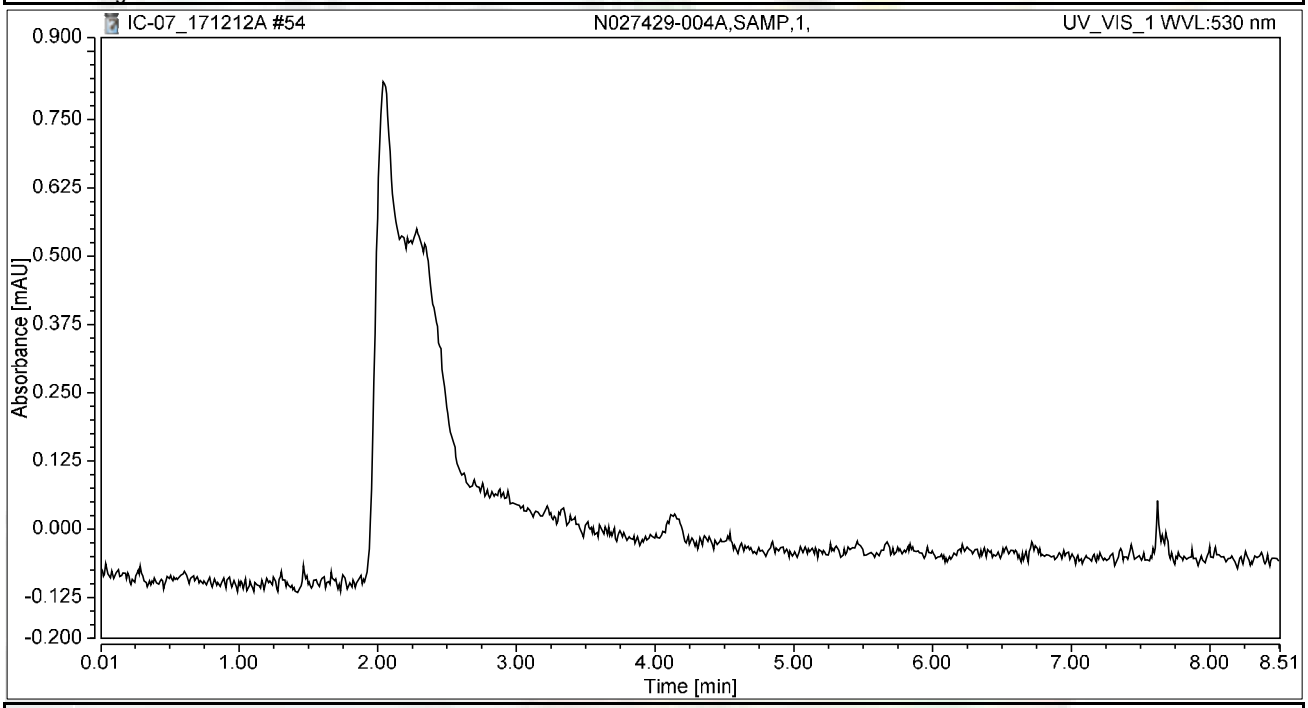
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.575	18.486	100.00	100.00	10.2538
Total:			**2.575**	**18.486**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

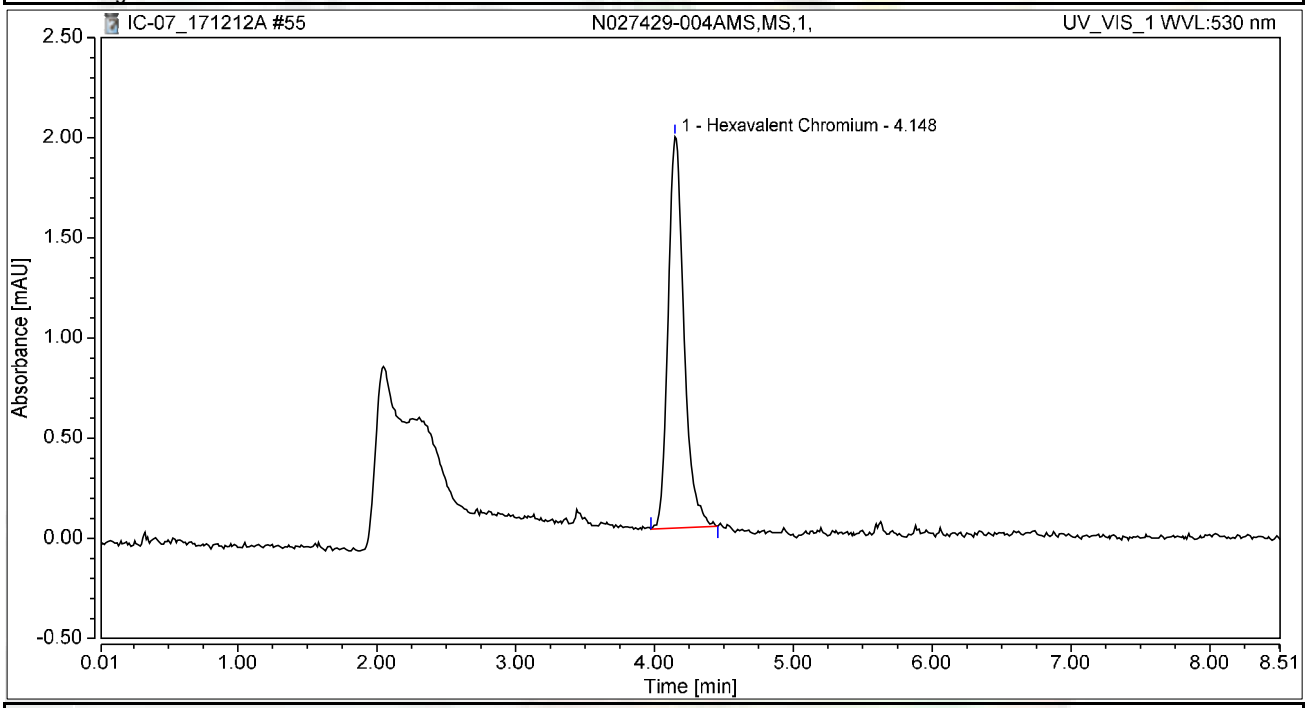
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-004AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 16:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

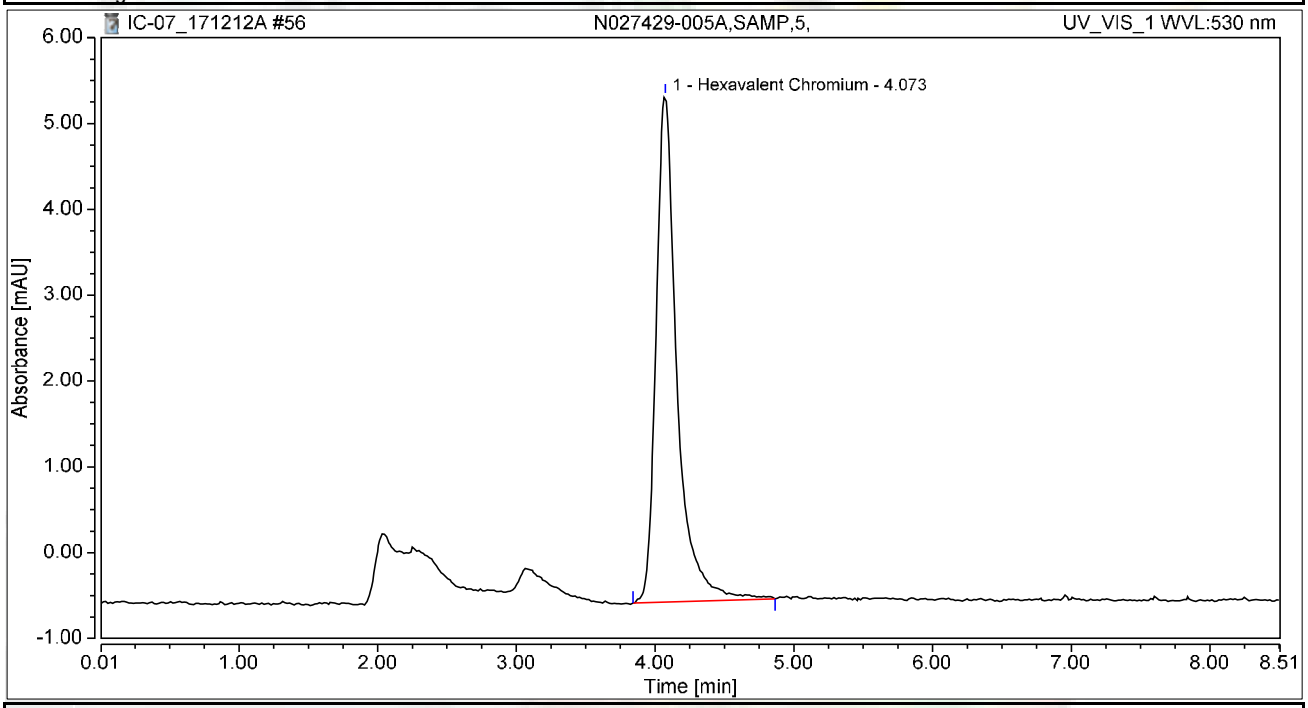
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.259	1.954	100.00	100.00	1.0327
Total:			**0.259**	**1.954**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-005A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 16:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

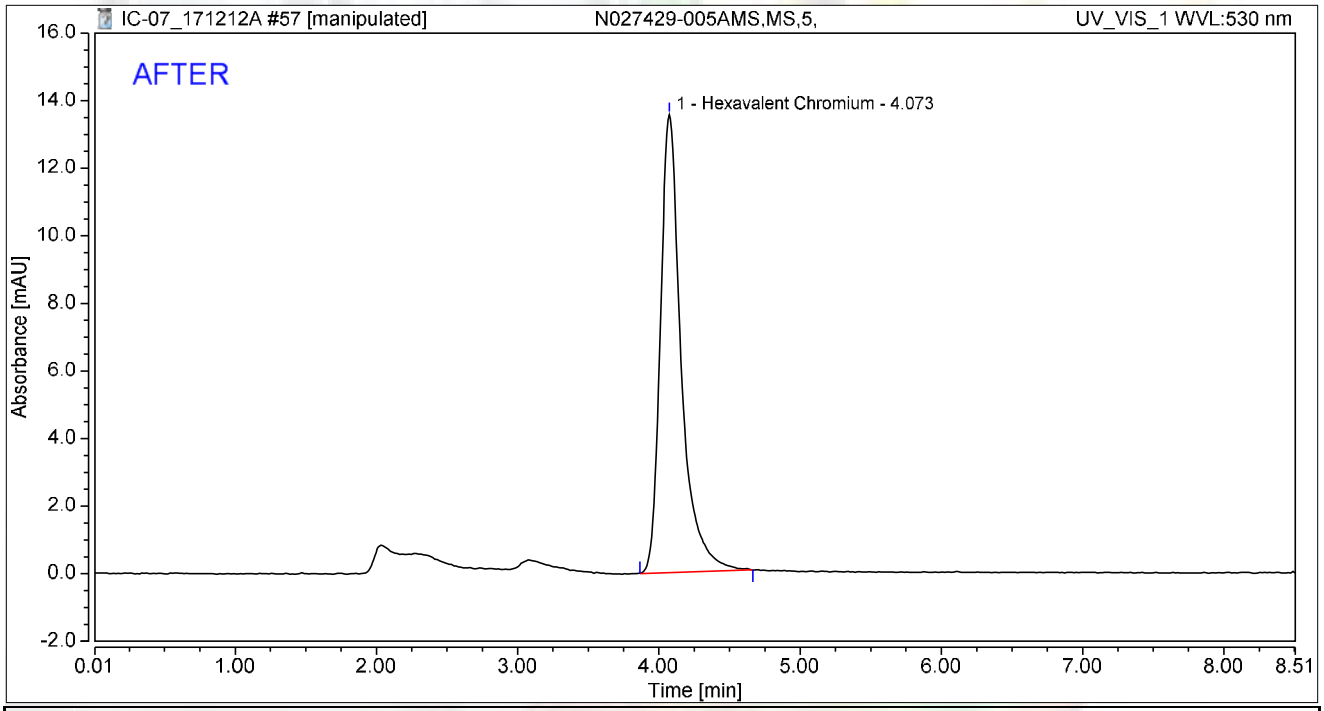
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	1.034	5.897	100.00	100.00	4.1198
Total:			**1.034**	**5.897**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 16:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	2.314	13.558	100.00	100.00	9.2145
Total:			**2.314**	**13.558**	**100.00**	**100.00**	

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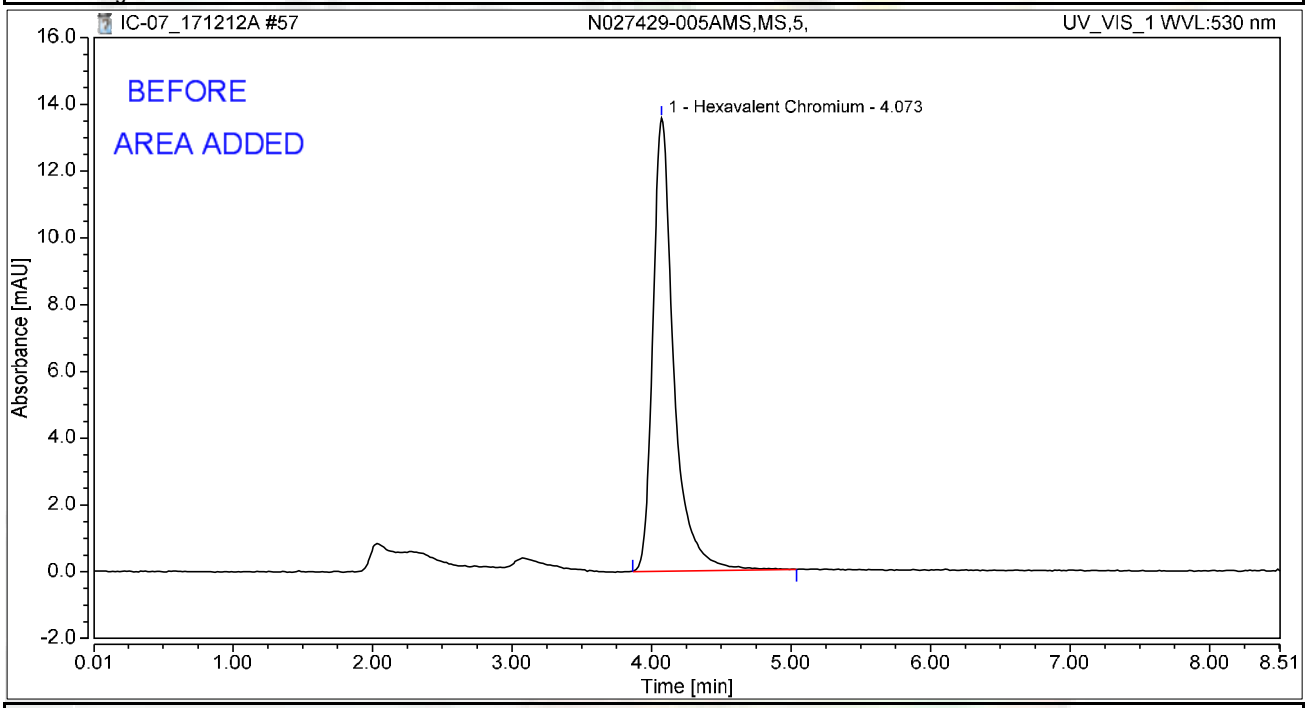
Chromatogram and Results

Injection Details

Injection Name:	**N027429-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 16:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	2.357	13.577	100.00	100.00	9.3872
Total:			**2.357**	**13.577**	**100.00**	**100.00**	

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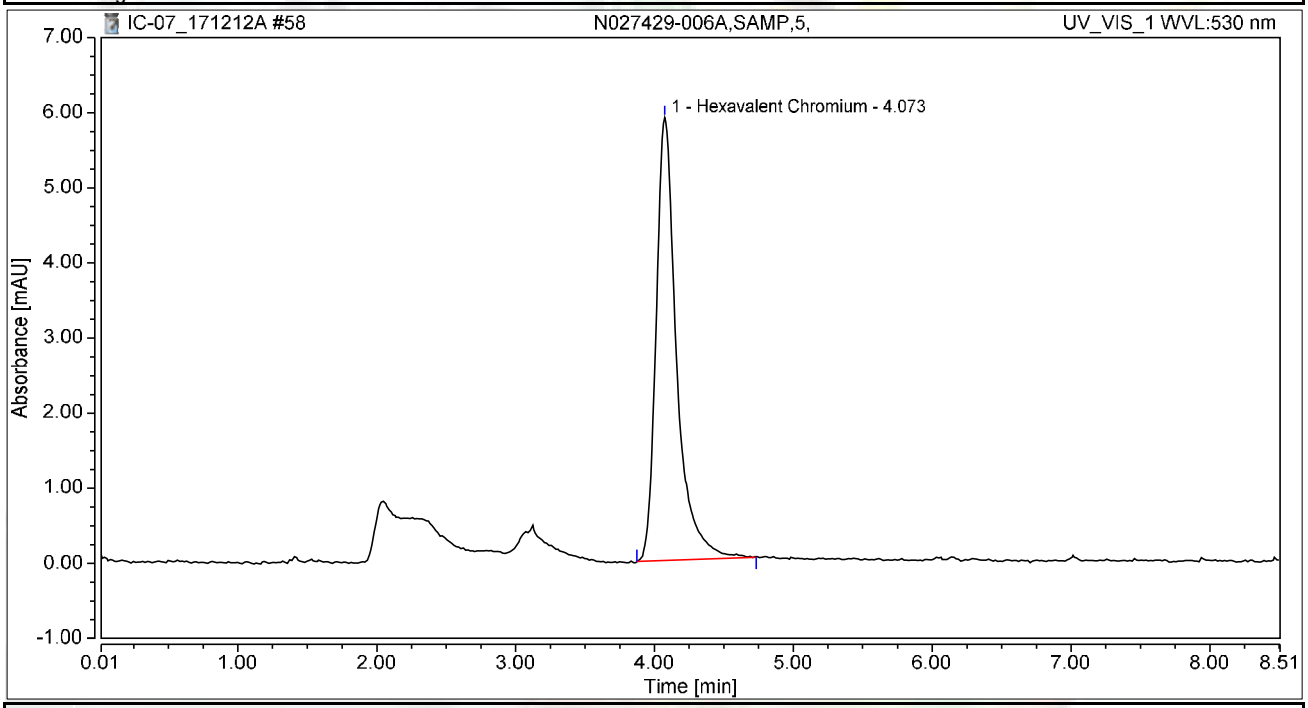
Chromatogram and Results

Injection Details

Injection Name:	**N027429-006A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 16:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

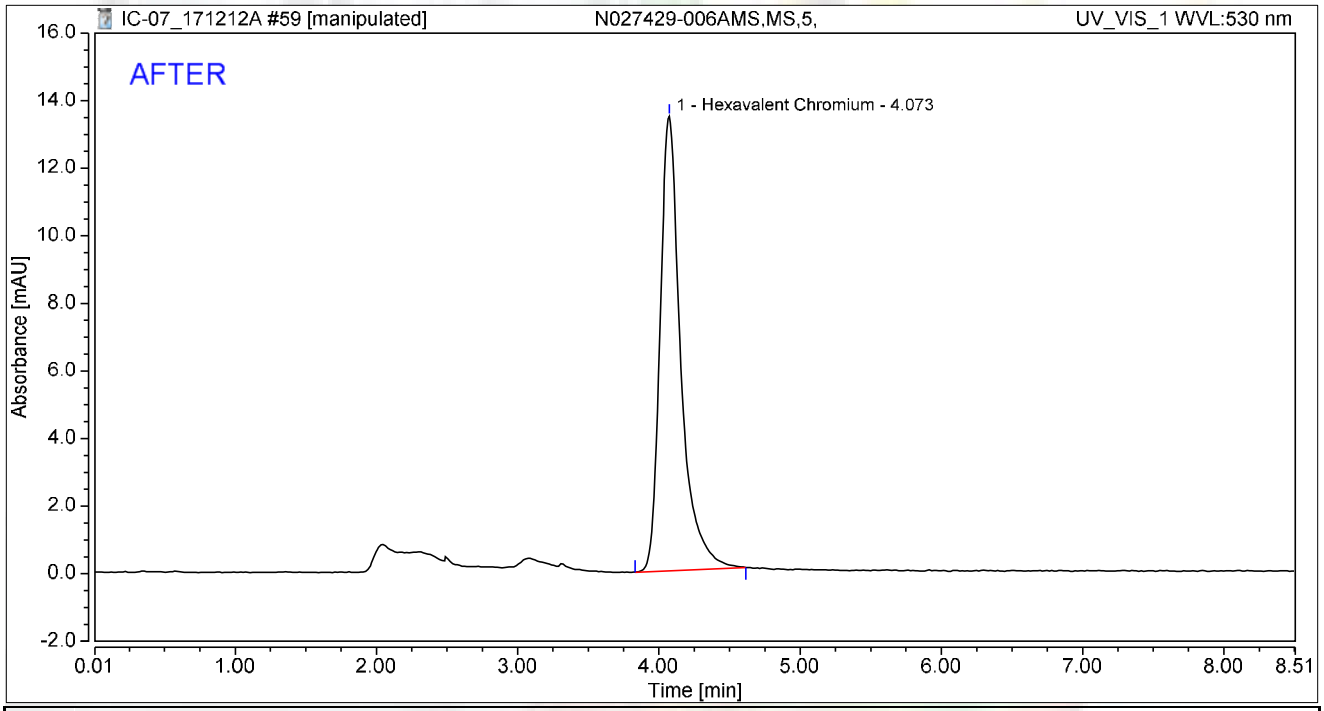
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	1.009	5.898	100.00	100.00	4.0191
Total:			**1.009**	**5.898**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-006AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 16:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	2.282	13.441	100.00	100.00	9.0883
Total:			**2.282**	**13.441**	**100.00**	**100.00**	

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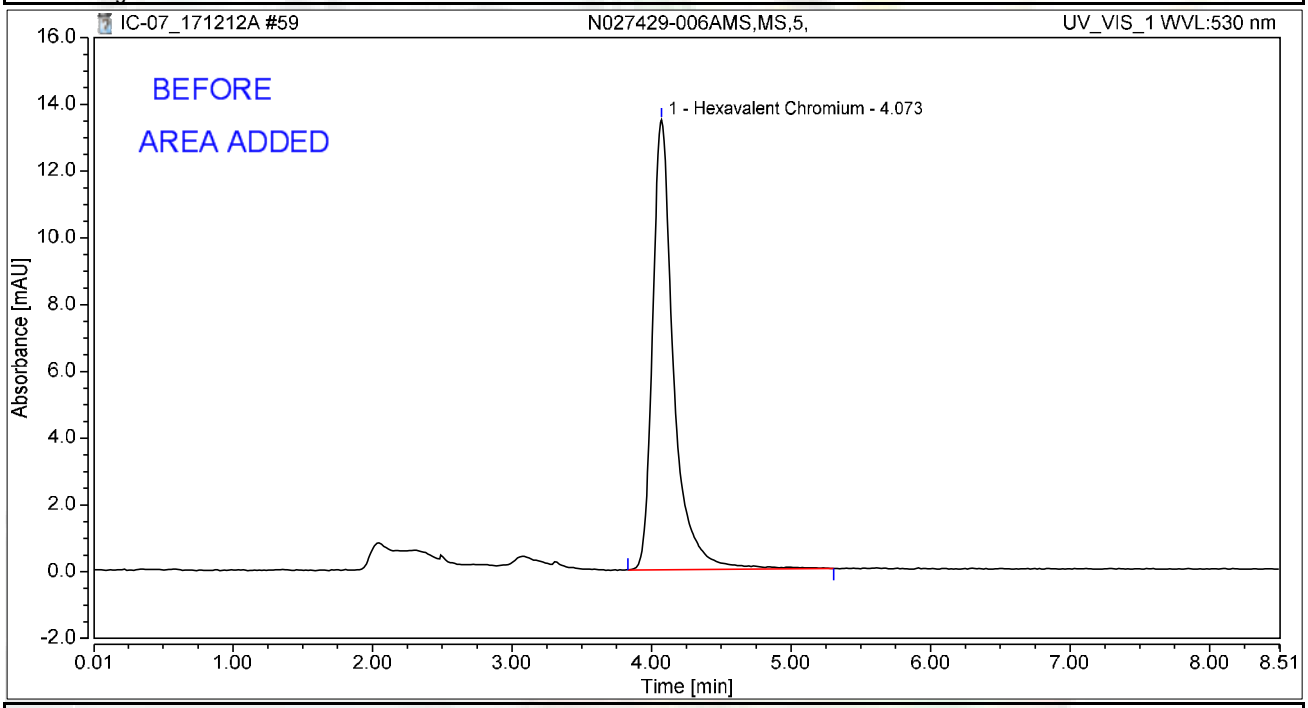
Chromatogram and Results

Injection Details

Injection Name:	**N027429-006AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 16:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	2.358	13.475	100.00	100.00	9.3923
Total:			**2.358**	**13.475**	**100.00**	**100.00**	

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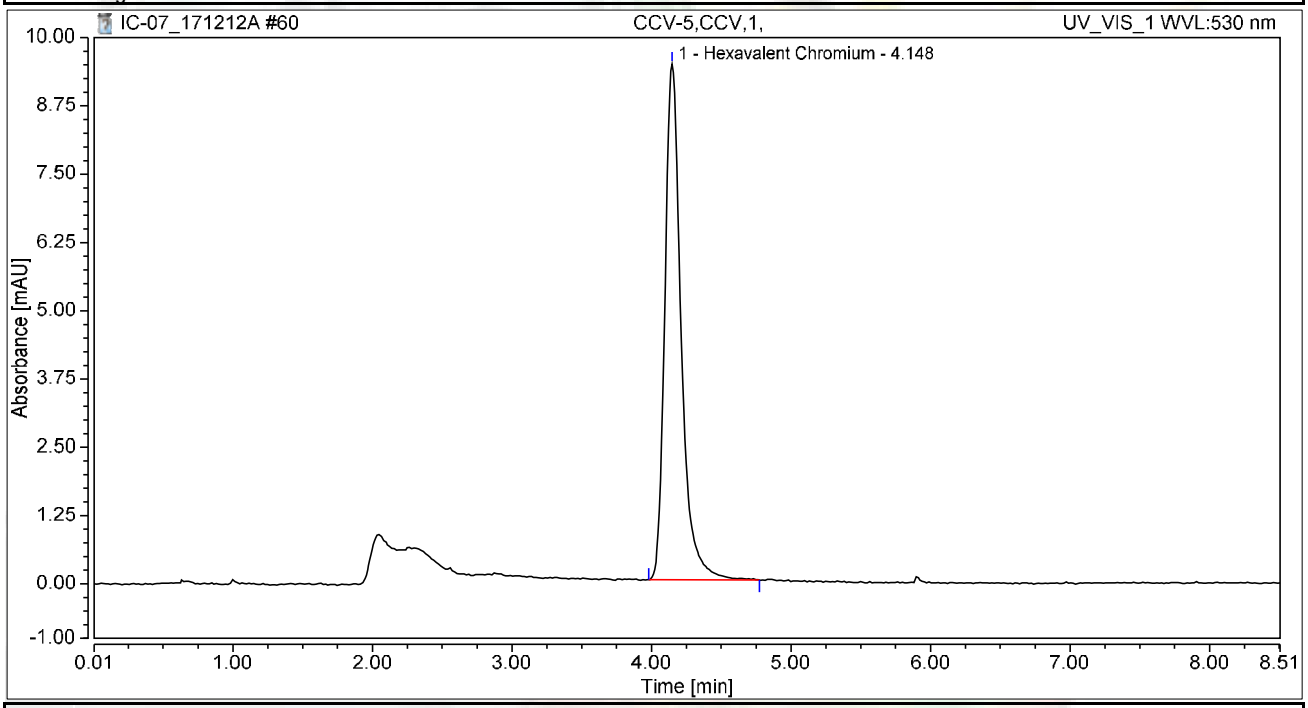
Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 17:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

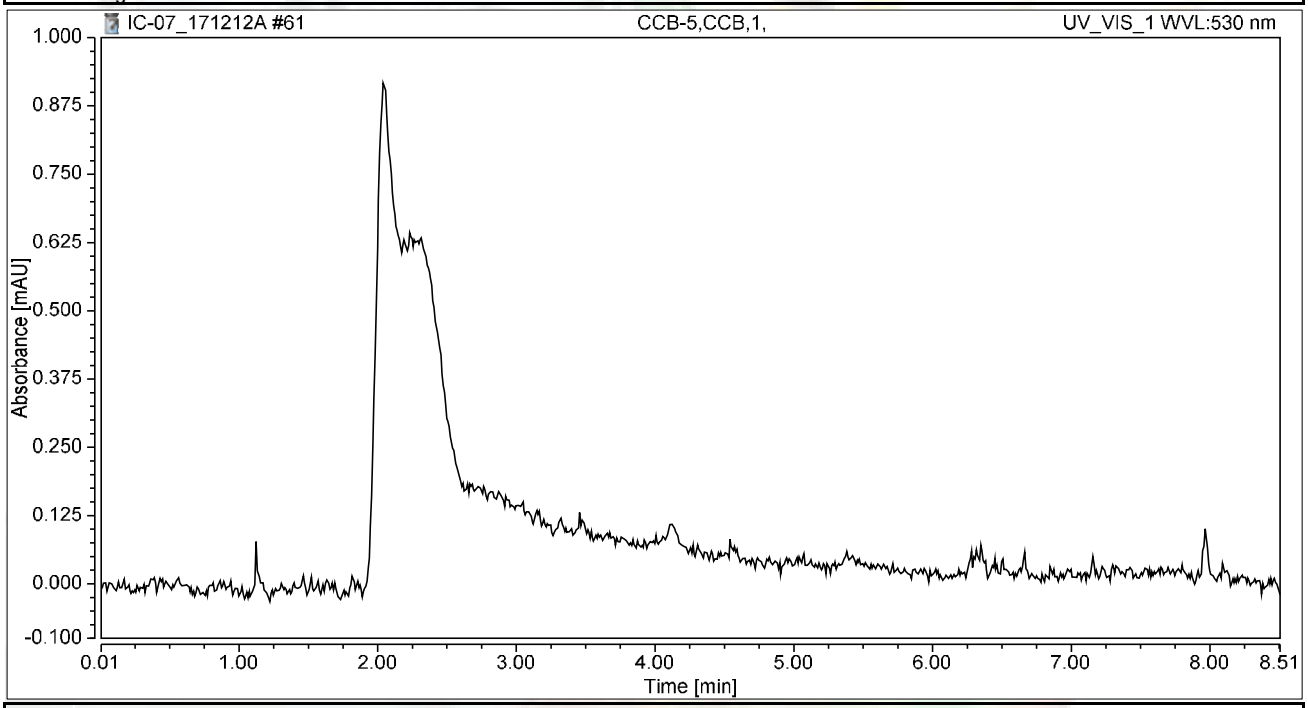
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.281	9.445	100.00	100.00	5.1023
Total:			**1.281**	**9.445**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 17:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

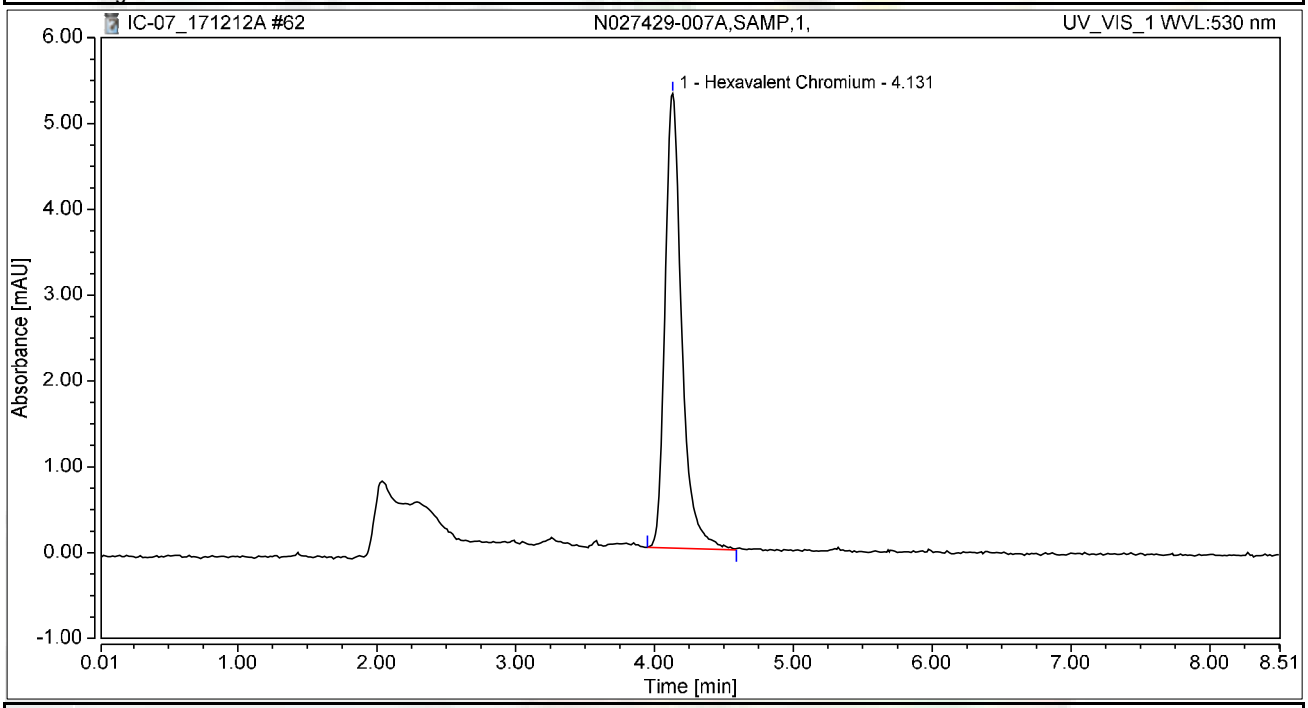
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-007A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 17:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

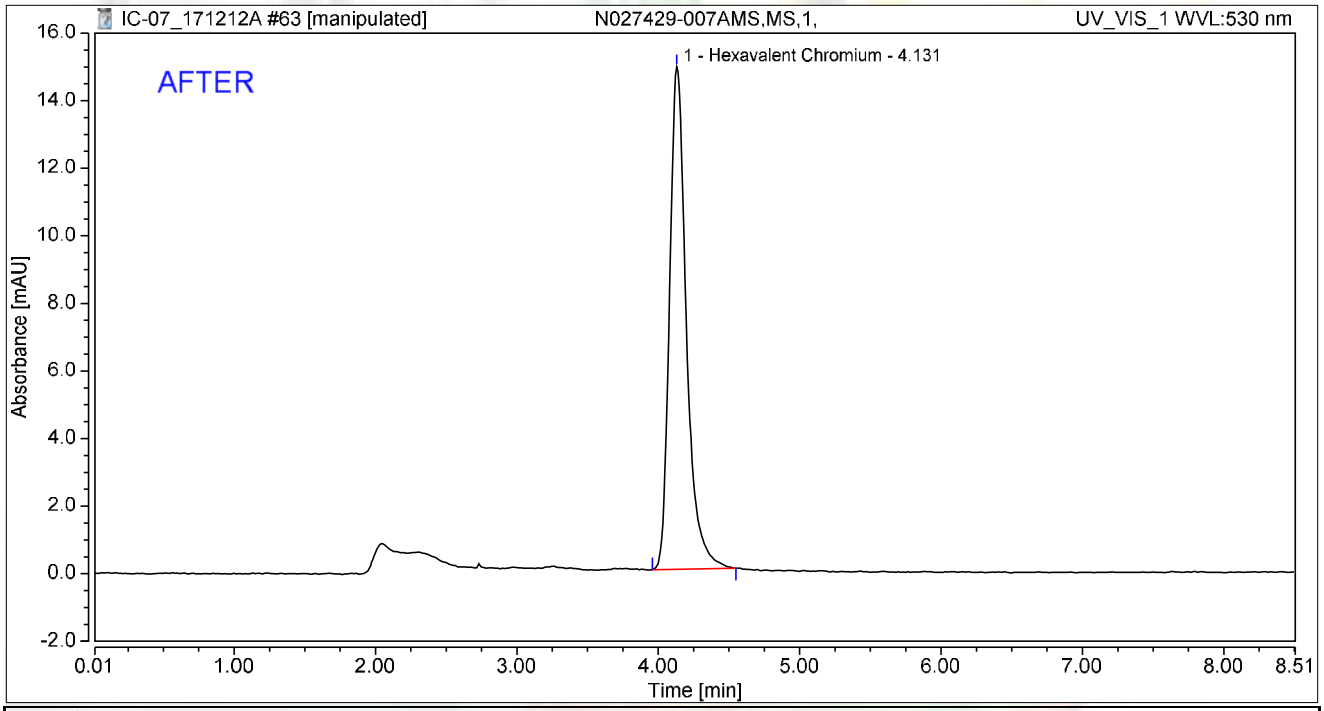
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.739	5.295	100.00	100.00	2.9449
Total:			**0.739**	**5.295**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-007AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 17:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.052	14.868	100.00	100.00	8.1706
Total:			**2.052**	**14.868**	**100.00**	**100.00**	

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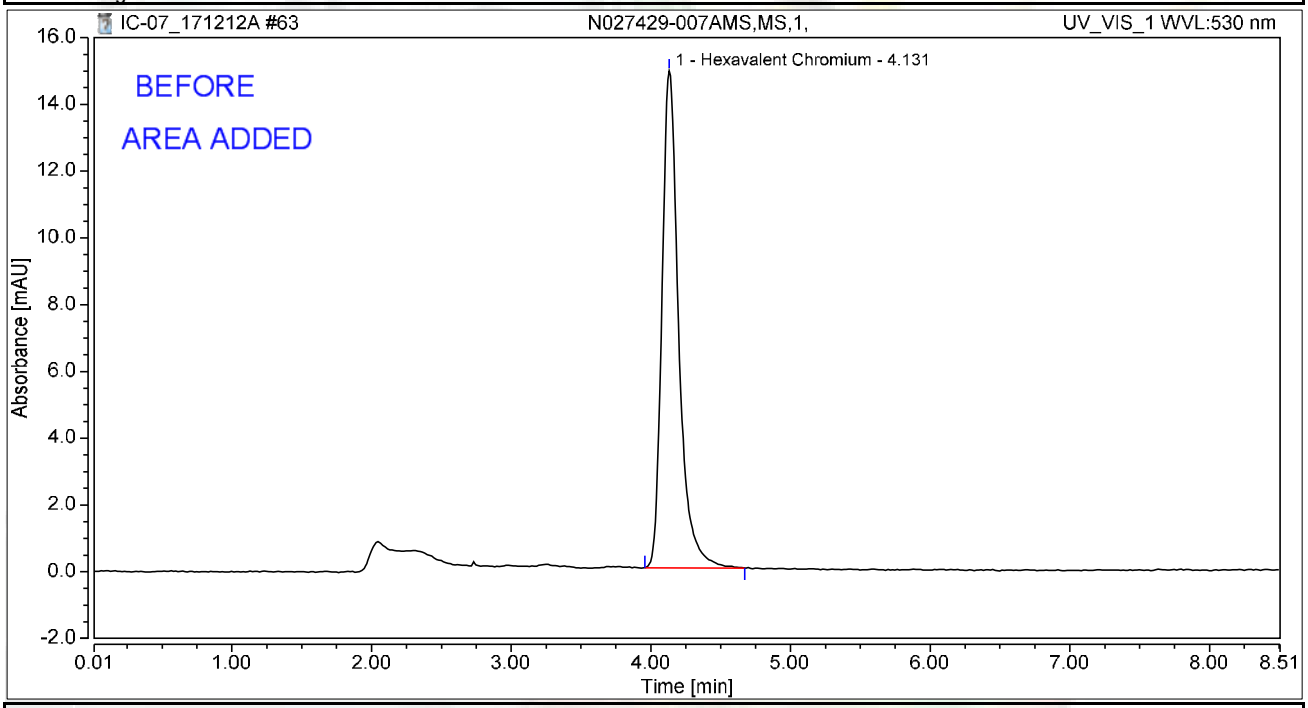
Chromatogram and Results

Injection Details

Injection Name:	**N027429-007AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 17:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.070	14.883	100.00	100.00	8.2457
Total:			**2.070**	**14.883**	**100.00**	**100.00**	

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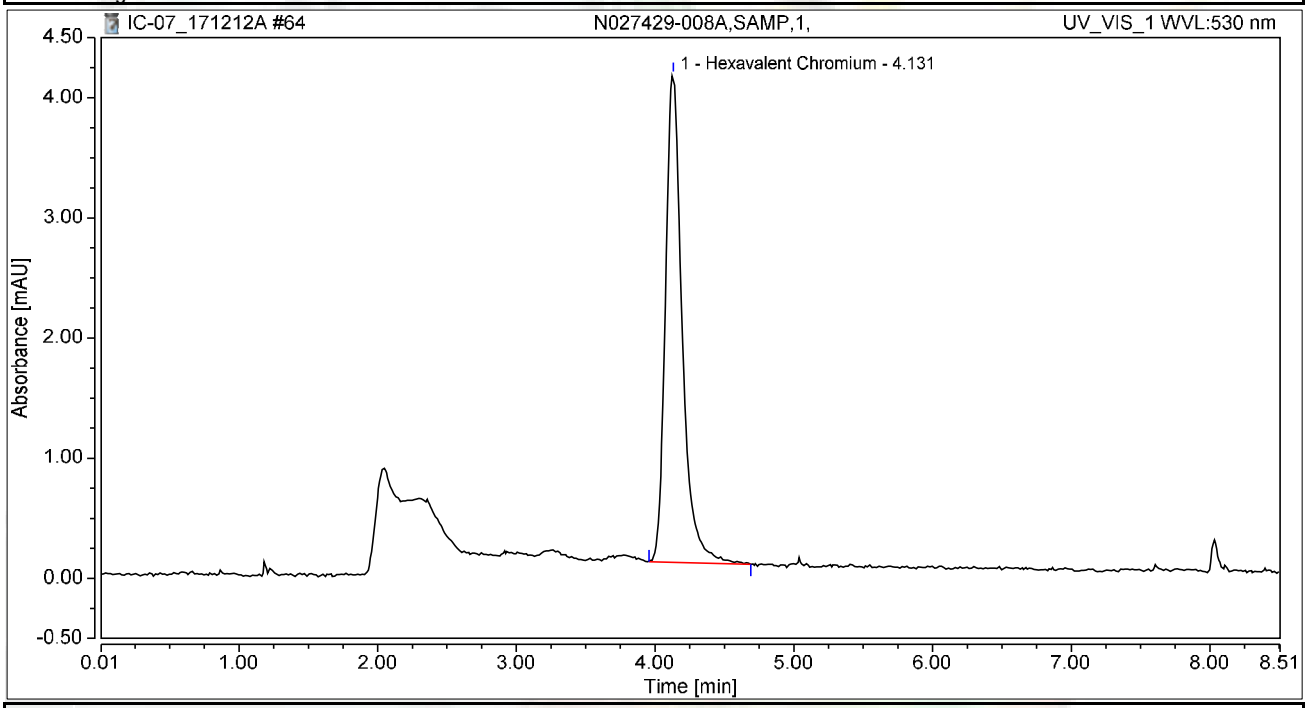
Chromatogram and Results

Injection Details

Injection Name:	**N027429-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 17:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

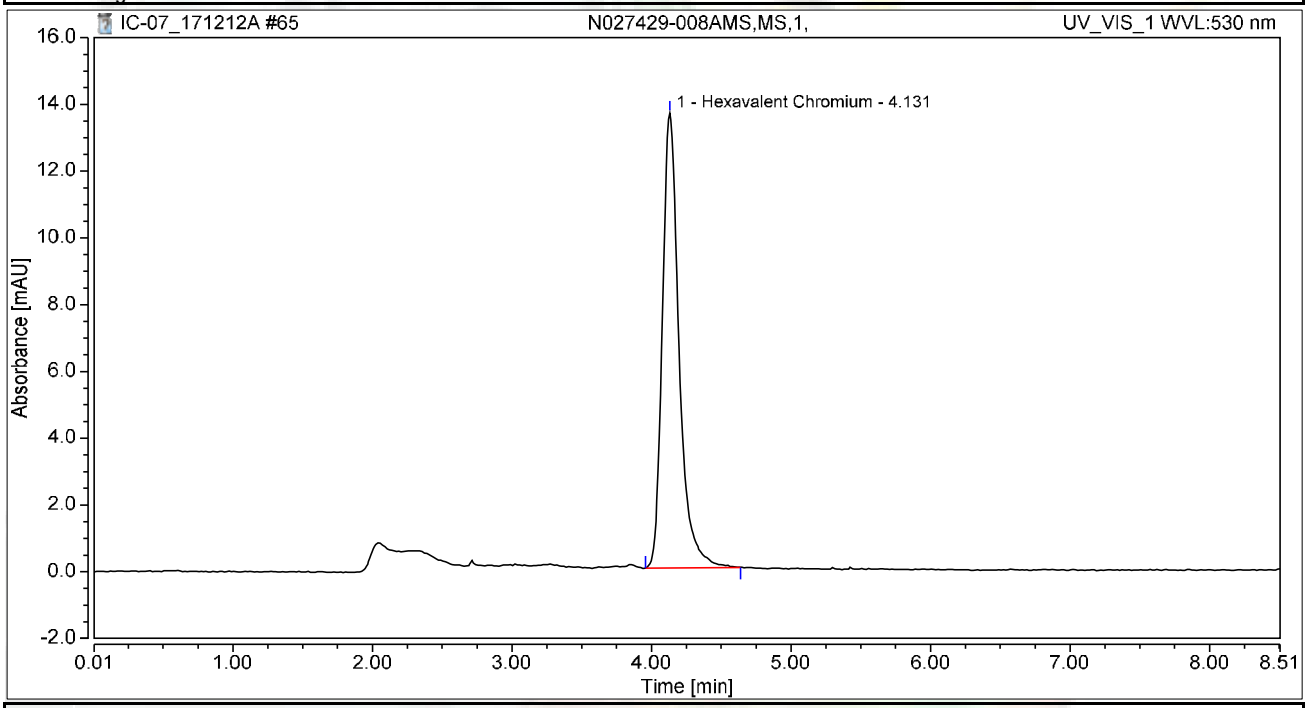
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.569	4.059	100.00	100.00	2.2658
Total:			**0.569**	**4.059**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 17:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

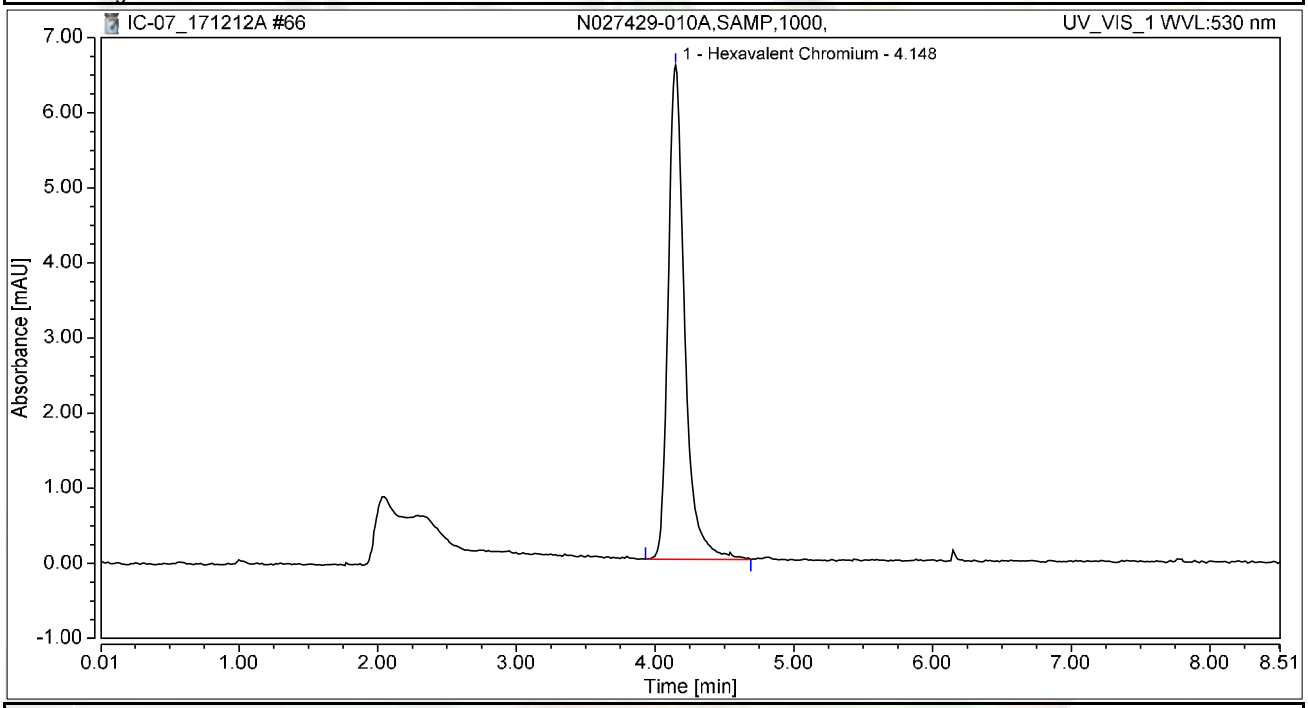
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.891	13.622	100.00	100.00	7.5297
Total:			**1.891**	**13.622**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-010A,SAMP,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 18:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

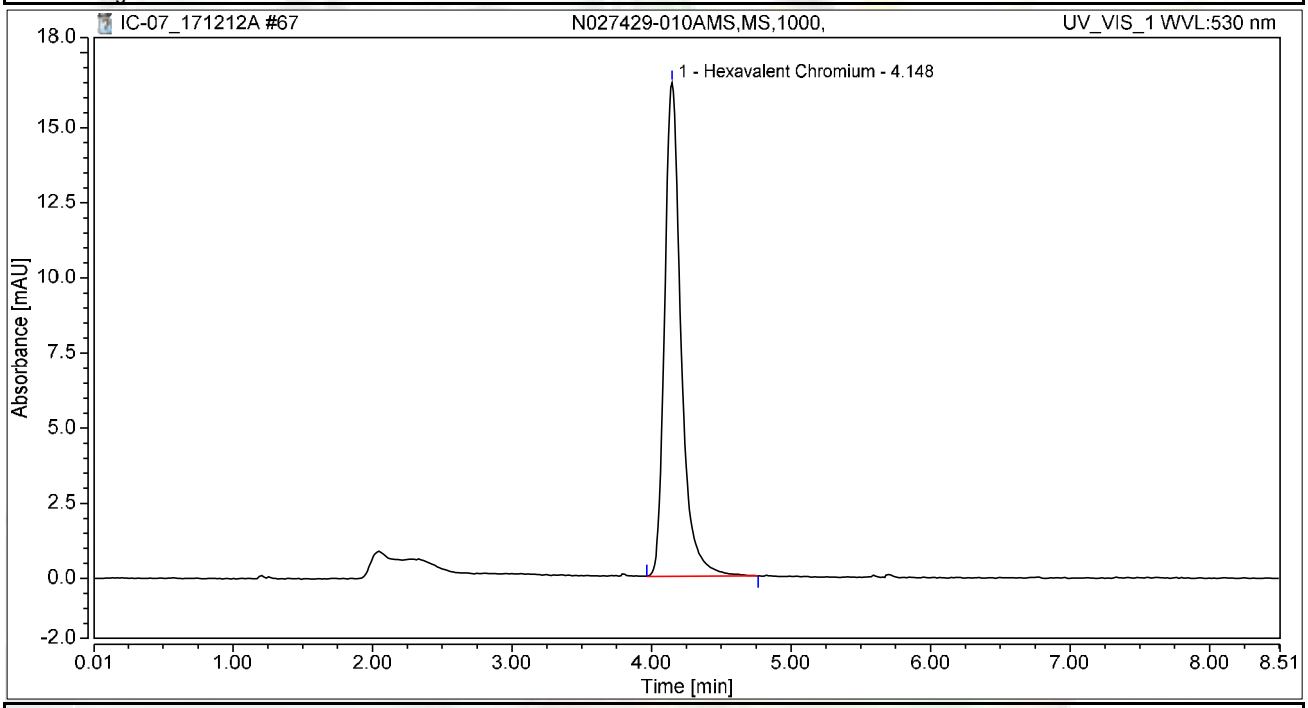
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.905	6.579	100.00	100.00	3.6031
Total:			**0.905**	**6.579**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-010AMS,MS,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 18:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

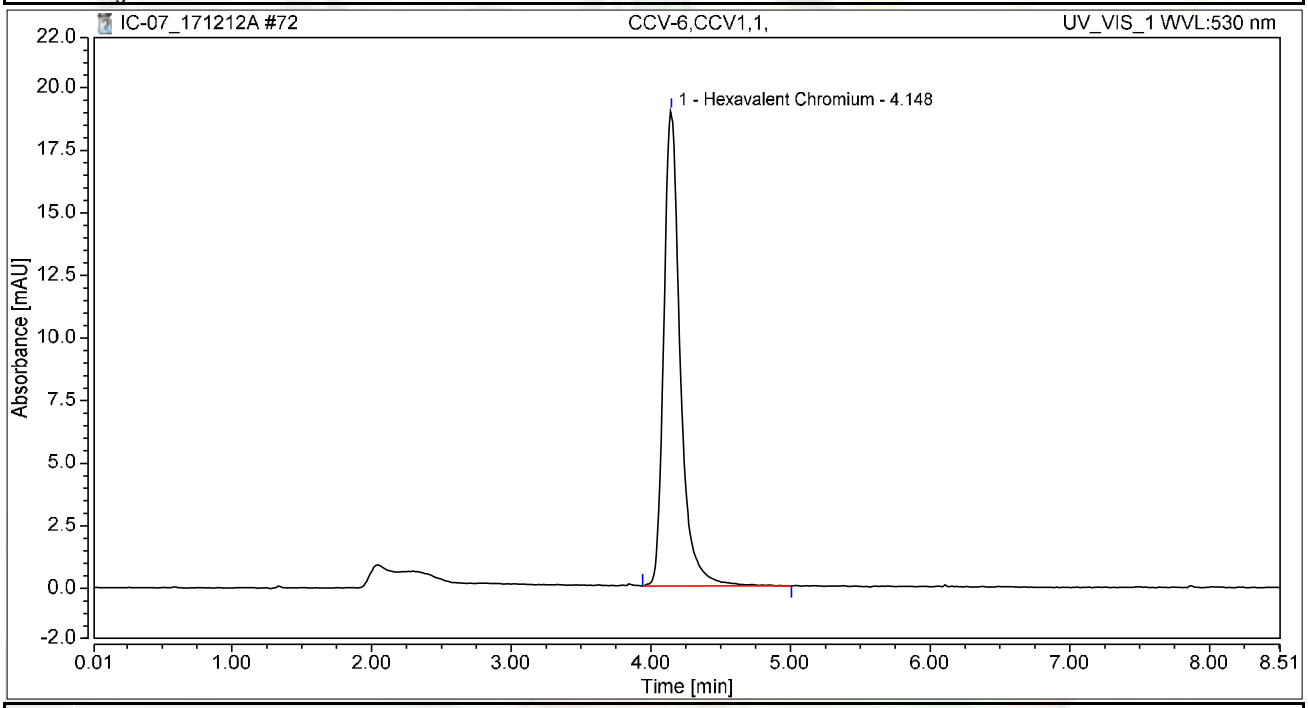
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.242	16.430	100.00	100.00	8.9273
Total:			**2.242**	**16.430**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 19:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

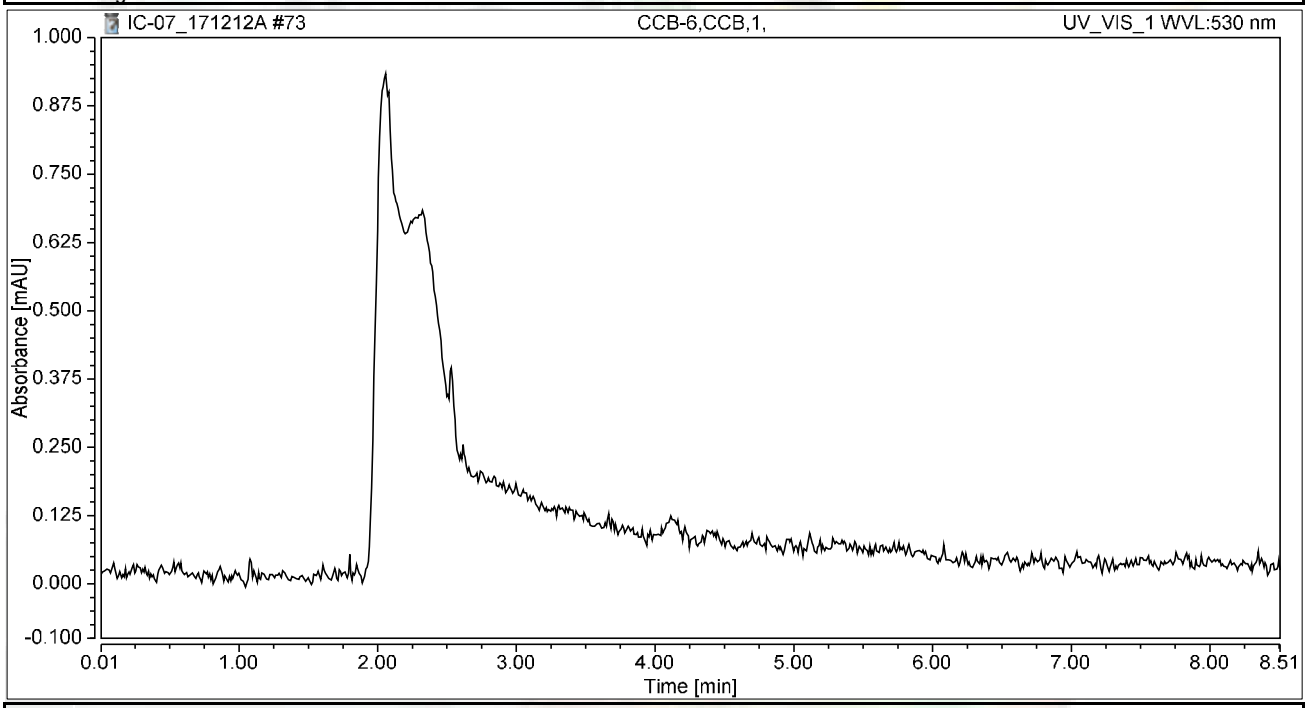
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.602	18.999	100.00	100.00	10.3617
Total:			**2.602**	**18.999**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/Dec/17 19:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

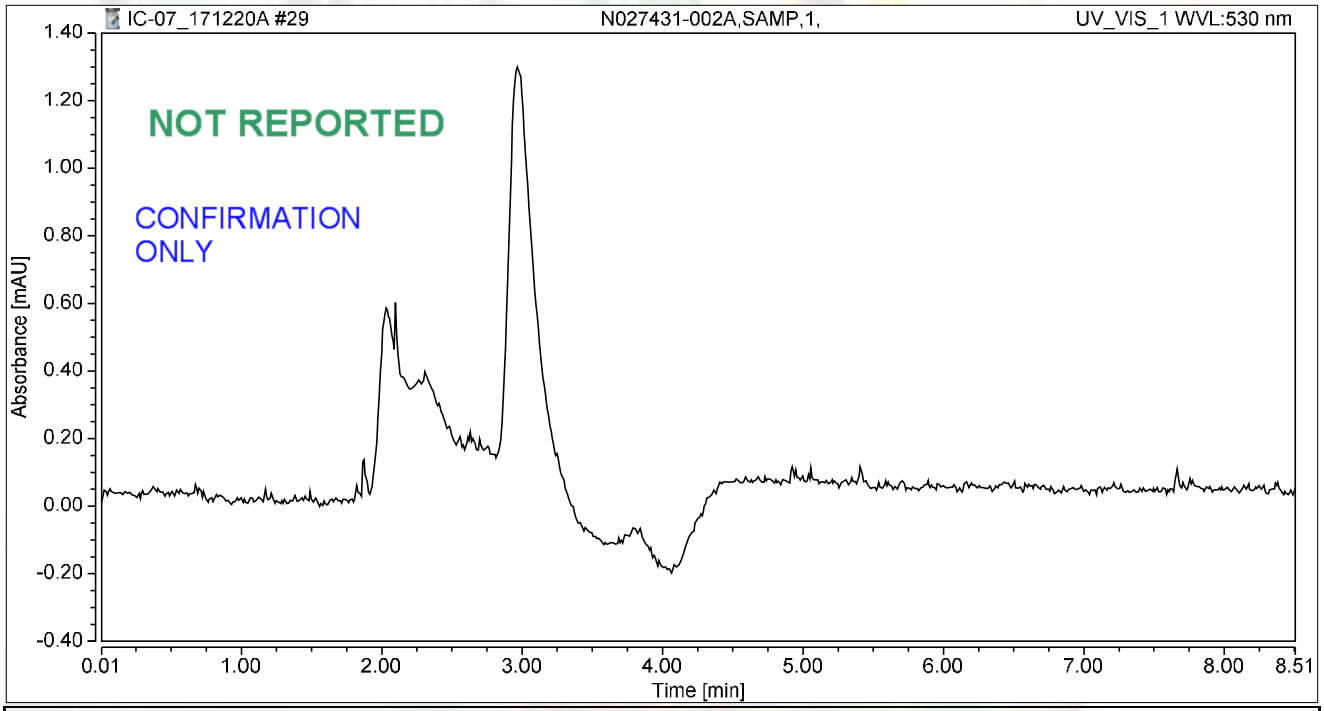
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 11:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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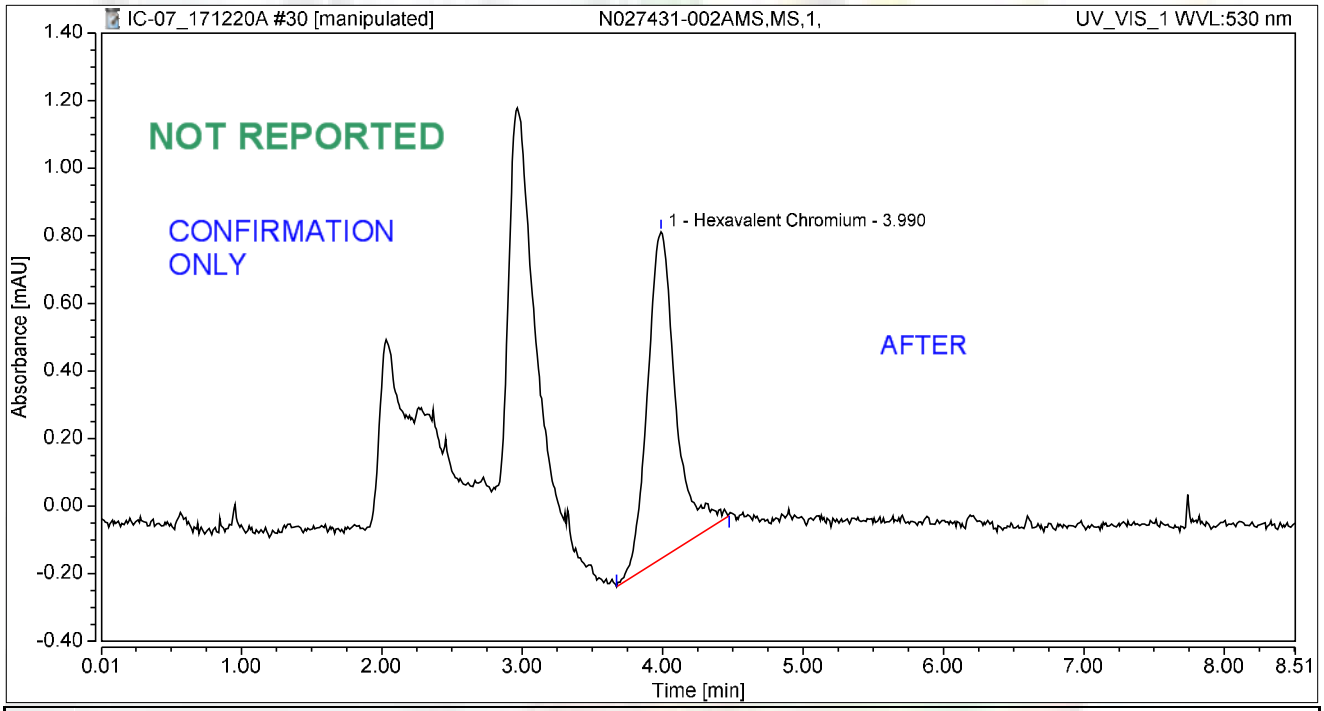
Chromatogram and Results

Injection Details

Injection Name:	**N027431-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 11:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.990	0.226	0.967	100.00	100.00	0.9011
Total:			**0.226**	**0.967**	**100.00**	**100.00**	

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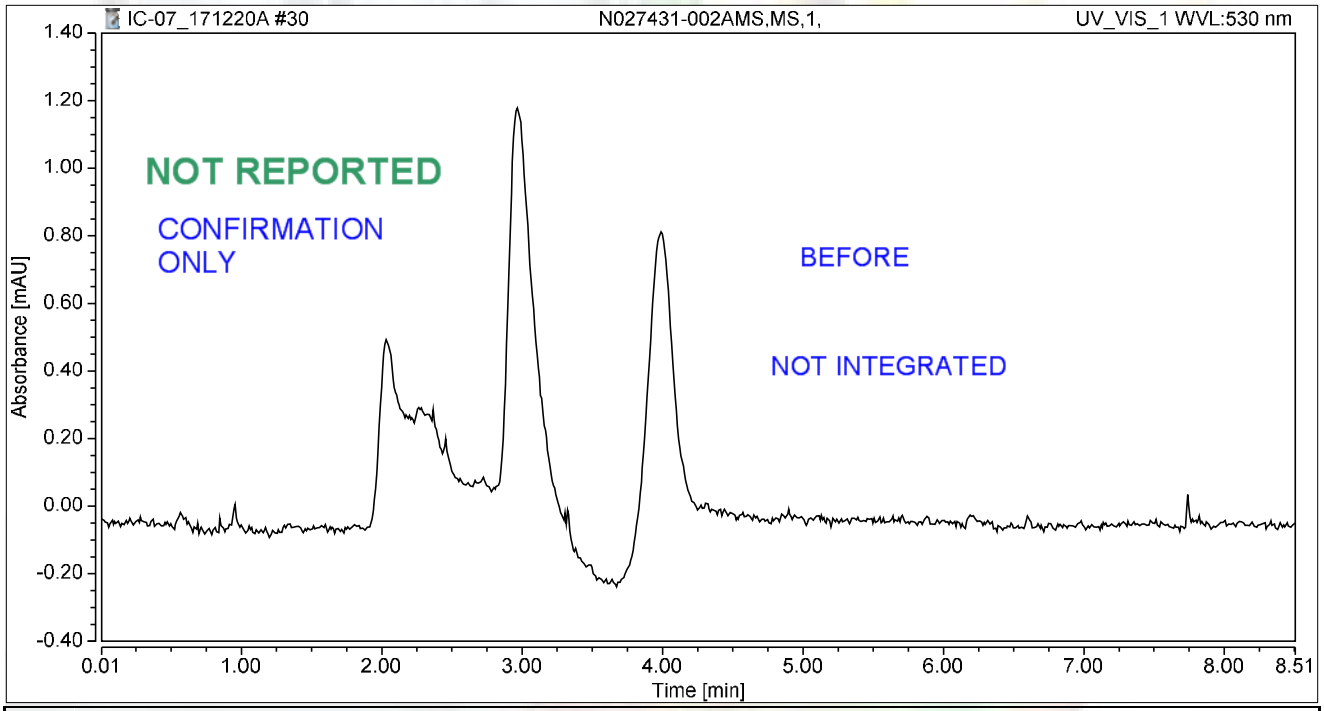
Chromatogram and Results

Injection Details

Injection Name:	**N027431-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 11:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120816 **Analyst:** LSR

ASSET #: N027431 **Date Analyzed:** 12/14/2017

Method: EPA 2320

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X			X		
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 12/21/2017

2nd Level Reviewer RLB 12/26/2017 Date:

SAMPLE CALCULATION

Sample ID: **N027431-001C @ pH 7.76**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (12.45 mL)

= **0.02008 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (4.70) (0.02008 N) (1) * 1000

= 94.3760 mg**/L**

Reporting results in two significant figures,

= **94 mg/L** as CaCO3

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C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02008 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (4.70 mL) (0.02008) (1) * 1000

= 94.3760 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 94.3760 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **94 mg/L**

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LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.69	50	0.00	0.050	MBLK
LCS-1	8.77	50	0.10	4.90	LCS
N027430-002C	8.00	50	0.00	1.90	SAMP
N027430-004C	7.77	50	0.00	22.70	SAMP
N027430-006C	7.68	50	0.00	10.60	SAMP
N027430-008C	7.61	50	0.00	13.70	SAMP
N027430-012C	7.96	50	0.00	20.70	SAMP
N027430-013C	7.59	50	0.00	6.20	SAMP
N027430-014C	7.69	50	0.00	2.90	SAMP
N027430-015C	7.58	50	0.00	2.95	SAMP
N027430-016C	8.21	50	0.00	2.20	SAMP
N027430-017C	8.21	50	0.00	2.35	SAMP
N027430-018C	7.75	50	0.00	2.20	SAMP
N027430-020C	7.63	50	0.00	8.20	SAMP
N027431-001C	7.76	50	0.00	4.70	SAMP
N027431-002C	7.61	50	0.00	4.95	SAMP
N027431-003C	7.61	50	0.00	2.90	SAMP
N027431-004C	7.65	50	0.00	3.00	SAMP
N027431-005C	7.96	50	0.00	5.20	SAMP
N027431-006C	7.60	50	0.00	4.90	SAMP
N027459-001E	7.60	50	0.00	3.90	SAMP
N027459-002E	7.72	50	0.00	2.45	SAMP
N027430-002CDDUP	8.00	50	0.00	1.90	DUP
N027431-002CMS	8.23	50	0.00	9.80	MS
N027431-002CMSD	8.24	50	0.00	9.80	MSD

Standardization:

Spike amt:	**5**	ml
Titrant used:	**12.45**	ml
N H2SO4	**0.02008**	Normal
Date Analyzed:	**12/14/17**	
Time:	**8:15 AM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-161205A**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R171211A**	

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Date Analyzed:	12/14/17		Reagents:					Standardization:					P = 0
Time Started:	8:15 AM			Sodium Carbonate:		CINV-161205A			Spike amt:	5	mL		P < 1/2 T
Analyzed By:	LSR			Hydrochloric Acid:		0			Titrant used:	12.45	mL		P = 1/2 T
				Sulfuric Acid:		R171211A							P > 1/2 T
									N H2SO4	0.02008	N		P = T

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.69				0.02008	0.00	0.05	0.05	1	0.00	1.00	
LCS-1	50	8.77				0.02008	0.10	4.80	4.90	1	2.01	98.39	
N027430-002C	50	8				0.02008	0.00	1.90	1.90	1	0.00	38.15	
N027430-004C	50	7.77				0.02008	0.00	22.70	22.70	1	0.00	455.82	
N027430-006C	50	7.68				0.02008	0.00	10.60	10.60	1	0.00	212.85	
N027430-008C	50	7.61				0.02008	0.00	13.70	13.70	1	0.00	275.10	
N027430-012C	50	7.96				0.02008	0.00	20.70	20.70	1	0.00	415.66	
N027430-013C	50	7.59				0.02008	0.00	6.20	6.20	1	0.00	124.50	
N027430-014C	50	7.69				0.02008	0.00	2.90	2.90	1	0.00	58.23	
N027430-015C	50	7.58				0.02008	0.00	2.95	2.95	1	0.00	59.24	
N027430-016C	50	8.21				0.02008	0.00	2.20	2.20	1	0.00	44.18	
N027430-017C	50	8.21				0.02008	0.00	2.35	2.35	1	0.00	47.19	
N027430-018C	50	7.75				0.02008	0.00	2.20	2.20	1	0.00	44.18	
N027430-020C	50	7.63				0.02008	0.00	8.20	8.20	1	0.00	164.66	
N027431-001C	50	7.76				0.02008	0.00	4.70	4.70	1	0.00	94.38	
N027431-002C	50	7.61				0.02008	0.00	4.95	4.95	1	0.00	99.40	
N027431-003C	50	7.61				0.02008	0.00	2.90	2.90	1	0.00	58.23	
N027431-004C	50	7.65				0.02008	0.00	3.00	3.00	1	0.00	60.24	
N027431-005C	50	7.96				0.02008	0.00	5.20	5.20	1	0.00	104.42	
N027431-006C	50	7.6				0.02008	0.00	4.90	4.90	1	0.00	98.39	
N027459-001E	50	7.6				0.02008	0.00	3.90	3.90	1	0.00	78.31	
N027459-002E	50	7.72				0.02008	0.00	2.45	2.45	1	0.00	49.20	
N027430-002CDD	50	8				0.02008	0.00	1.90	1.90	1	0.00	38.15	
N027431-002CMS	50	8.23				0.02008	0.00	9.80	9.80	1	0.00	196.79	
N027431-002CMS	50	8.24				0.02008	0.00	9.80	9.80	1	0.00	196.79	

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Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	12/14/17
Time:	8:15 AM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.00	1.00	1.00		P = 0
LCS-1	0.00	4.02	94.38	98.39	98.39		P < 1/2 T
N027430-002C	0.00	0.00	38.15	38.15	38.15		P = 0
N027430-004C	0.00	0.00	455.82	455.82	455.82		P = 0
N027430-006C	0.00	0.00	212.85	212.85	212.85		P = 0
N027430-008C	0.00	0.00	275.10	275.10	275.10		P = 0
N027430-012C	0.00	0.00	415.66	415.66	415.66		P = 0
N027430-013C	0.00	0.00	124.50	124.50	124.50		P = 0
N027430-014C	0.00	0.00	58.23	58.23	58.23		P = 0
N027430-015C	0.00	0.00	59.24	59.24	59.24		P = 0
N027430-016C	0.00	0.00	44.18	44.18	44.18		P = 0
N027430-017C	0.00	0.00	47.19	47.19	47.19		P = 0
N027430-018C	0.00	0.00	44.18	44.18	44.18		P = 0
N027430-020C	0.00	0.00	164.66	164.66	164.66		P = 0
N027431-001C	0.00	0.00	94.38	94.38	94.38		P = 0
N027431-002C	0.00	0.00	99.40	99.40	99.40		P = 0
N027431-003C	0.00	0.00	58.23	58.23	58.23		P = 0
N027431-004C	0.00	0.00	60.24	60.24	60.24		P = 0
N027431-005C	0.00	0.00	104.42	104.42	104.42		P = 0
N027431-006C	0.00	0.00	98.39	98.39	98.39		P = 0
N027459-001E	0.00	0.00	78.31	78.31	78.31		P = 0
N027459-002E	0.00	0.00	49.20	49.20	49.20		P = 0
N027430-002CDDUP	0.00	0.00	38.15	38.15	38.15		P = 0
N027431-002CMS	0.00	0.00	196.79	196.79	196.79		P = 0
N027431-002CMSD	0.00	0.00	196.79	196.79	196.79		P = 0

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RLB 12/26/2017

Alkalinity Preparation and Runlog

Book #6

Matrix: H_2O

Date Extracted: 12/14/17
Time Extracted: USN
Extracted By:

Date Analyzed: 12/14/17
Time Analyzed: 8:15
Analyzed By: USN

Reagent Lot # / Reagent ID
Sodium Carbonate: CINV161205A
Hydrochloric Acid: –
Sulfuric Acid: R171211A
Sodium Bicarbonate: CINV150601A

pH meter Calibration:
SLOPE: 98.7%
pH 7 - 7.03 CINV170615F
4 - 4.03 170615E
10 - 10.01 170822D

	Sample ID	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50mL	10.61	INST171211A	5mL	0.05N	-	-	12.50	50/50	$N\ H_2SO_4 = \frac{(2.65g/L)(5mL)}{(53)(V\ titrant)}$	= 0.020000
	#2	↓	10.58	↓	↓	↓	-	-	12.40	↓		= 0.02016129
1)	MBLK	50mL	5.69	-	-	-	0.02008	0	0.05	50/50		Ave: 0.02008
2)	LCS		8.77	INST171211B	1mL	0.05N		0.10	4.90			
3)	N027430-2C		8.00					0	1.90			
4)	4C		7.77					0	22.70			
5)	6C		7.68					0	10.60			
6)	8C		7.61					0	13.70			
7)	12C		7.96					0	20.70			
8)	13C		7.59					0	6.20			
9)	14C		7.69					0	2.90			
10)	15C		7.58					0	2.95		$P = \frac{(V\ pH\ 8.3)(N\ H_2SO_4)(50,000)}{V_{sx}}$	
11)	16C		8.21					0	2.20			
12)	17C		8.21					0	2.35			
13)	18C		7.75					0	2.20		$T = \frac{(V\ pH\ 4.5)(N\ H_2SO_4)(50,000)}{V_{sx}}$	
14)	20C		7.63					0	8.20			
15)	N027431-1C		7.76					0	4.70			
16)	2C		7.61					0	4.95			
17)	3C		7.61					0	2.90			
18)	4C		7.65					0	3.00			
19)	5C		7.96					0	5.20			
20)	6C		7.60					0	4.90			
	MS N027459-1E		7.60					0	3.90			
	MSD 2E		7.72					0	2.45			
	LCS N027430-2C DUP		8.00					0	1.90			
	N027431-2C MS		8.23	INST171211B	1mL	0.05N		0	9.80			
	2C MSD		8.24					0	9.80			

Julia Ramit 12/21/2017
RB 12/26/2017

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120803
ASSET #: N027430 / N027431

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/13/2017

Method:

[X] EPA 300.0
[ ] EPA 7199

[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.		X			X	
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

%Rec of Bromide in N027431-005CMS/MSD failed. However, LCS passed criteria.
Several samples were diluted due to precipitate formed when mixed with eluent.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/17/2017

2nd Level Reviewer: RB 12/26/2017 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120853
ASSET #: N027429 / N027431

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/14/2017

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/17/2017

2nd Level Reviewer: RB 12/26/2017 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Chloride concentration, in mg/L, in the orignal sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N027431-001C** concentration in mg/L is calculated as follows:

Chloride, mg/L = 3.0618 * 200

= 612.36

Reporting result in two significant values,

Chloride, mg/L = 610

rba 12/20/2017

12/26/2017

ANALYSIS RUN LOG

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 25
Created: 11/29/2017 9:35:17 AM by IC-05
Last Update: 11/30/2017 12:33:04 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	ICV,ICV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	ICB,ICB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	N027210-002A,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027232-001A,SAMP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027210-002A,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027210-002ADUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027210-002AMS,MS,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027210-002AMSD,MSD,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027232-001AMS,MS,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027232-001AMSD,MSD,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	N027232-001ADUP,DUP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished



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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 25
Created: 11/29/2017 9:35:17 AM by IC-05
Last Update: 11/30/2017 12:33:04 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	ICV,ICV,1	11/29/2017 12:22:10 PM	ICV
10	ICB,ICB,1	11/29/2017 12:37:28 PM	ICB
11	MB-H2O,MBLK,1	11/29/2017 12:52:47 PM	METHOD BLANK
12	LCS-H2O,LCS,1	11/29/2017 1:08:05 PM	LCS
13	N027210-002A,SAMP,10	11/29/2017 1:23:23 PM	SAMP,1>10mL
14	N027232-001A,SAMP,2	11/29/2017 1:38:41 PM	SAMP,5>10mL
15	N027210-002A,SAMP,50	11/29/2017 2:44:14 PM	SAMP,0.2>10mL
16	N027210-002ADUP,DUP,50	11/29/2017 2:59:31 PM	DUP,0.2>10mL
17	N027210-002AMS,MS,10	11/29/2017 3:14:50 PM	MS,0.2>10mL
18	N027210-002AMSD,MSD,10	11/29/2017 3:30:07 PM	MSD,0.2>10mL
19	N027232-001AMS,MS,2	11/29/2017 3:45:25 PM	MS,5>10mL
20	N027232-001AMSD,MSD,2	11/29/2017 4:00:43 PM	MSD,5>10mL
21	CCV-1,CCV,1	11/29/2017 4:16:01 PM	CCV
22	CCB-1,CCB,1	11/29/2017 4:31:19 PM	CCB
23	N027232-001ADUP,DUP,2	11/29/2017 4:46:38 PM	DUP,5>10mL
24	CCV-2,CCV,1	11/29/2017 5:01:56 PM	CCV
25	CCB-2,CCB,1	11/29/2017 5:17:14 PM	CCB

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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 81
Created: 12/13/2017 9:09:27 AM by IC-05
Last Update: 12/13/2017 7:11:29 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	MB-SOIL,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	LCS-SOIL,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027418-001D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027418-002D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027418-001D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027418-002D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027418-001DDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027418-001DMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	N027418-001DMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	N027418-001DPS,PS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
26	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
27	N027518-001A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
28	N027510-001B,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
29	N027510-002B,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
30	N027510-003B,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
31	N027482-002A,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
32	N027482-002AMS,MS,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
33	N027510-003BMS,MS,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
34	N027510-003BMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
35	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
36	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
37	N027510-003BDUP,DUP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
38	N027510-001B,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
39	N027510-001BDUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
40	N027510-001BMS,MS,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
41	N027510-001BMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_171129	Finished

rba 12/17/2017

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 81
Created: 12/13/2017 9:09:27 AM by IC-05
Last Update: 12/13/2017 7:11:29 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	BLANK,BLANK,1	12/13/2017 9:10:15 AM	BLANK
10	CCV-1,CCV,1	12/13/2017 9:25:33 AM	CCV
11	CCV-1,CCV,1	12/13/2017 9:40:50 AM	CCV
12	CCB-1,CCB,1	12/13/2017 9:56:08 AM	CCB
13	MB-SOIL,MBLK,1	12/13/2017 10:11:26 AM	METHOD BLANK
14	LCS-SOIL,LCS,1	12/13/2017 10:26:44 AM	LCS
15	N027418-001D,SAMP,10	12/13/2017 10:42:02 AM	SAMP,1>10mL
16	N027418-002D,SAMP,10	12/13/2017 10:57:20 AM	SAMP,1>10mL
17	N027418-001D,SAMP,1	12/13/2017 11:12:38 AM	SAMP,10mL
18	N027418-002D,SAMP,1	12/13/2017 11:27:56 AM	SAMP,10mL
19	N027418-001DDUP,DUP,1	12/13/2017 11:43:13 AM	DUP,10mL
20	N027418-001DMS,MS,1	12/13/2017 11:58:31 AM	MS,10mL
21	N027418-001DMSD,MSD,1	12/13/2017 12:13:49 PM	MSD,10mL
22	N027418-001DPS,PS,1	12/13/2017 12:29:07 PM	PS,10mL
23	CCV-2,CCV,1	12/13/2017 12:44:25 PM	CCV
24	CCB-2,CCB,1	12/13/2017 12:59:42 PM	CCB
25	MB-H2O,MBLK,1	12/13/2017 1:15:00 PM	METHOD BLANK
26	LCS-H2O,LCS,1	12/13/2017 1:30:18 PM	LCS
27	N027518-001A,SAMP,5	12/13/2017 1:45:36 PM	SAMP,2>10mL
28	N027510-001B,SAMP,5	12/13/2017 2:00:53 PM	SAMP,2>10mL
29	N027510-002B,SAMP,5	12/13/2017 2:16:11 PM	SAMP,2>10mL
30	N027510-003B,SAMP,5	12/13/2017 2:31:30 PM	SAMP,2>10mL
31	N027482-002A,SAMP,5	12/13/2017 2:46:48 PM	SAMP,2>10mL
32	N027482-002AMS,MS,5	12/13/2017 3:02:05 PM	MS,2>10mL
33	N027510-003BMS,MS,5	12/13/2017 3:17:23 PM	MS,2>10mL
34	N027510-003BMSD,MSD,5	12/13/2017 3:32:41 PM	MSD,2>10mL
35	CCV-3,CCV,1	12/13/2017 3:47:59 PM	CCV
36	CCB-3,CCB,1	12/13/2017 4:03:16 PM	CCB
37	N027510-003BDUP,DUP,5	12/13/2017 4:18:34 PM	DUP,2>10mL
38	N027510-001B,SAMP,50	12/13/2017 4:33:52 PM	SAMP,0.2>10mL
39	N027510-001BDUP,DUP,50	12/13/2017 4:49:10 PM	DUP,0.2>10mL
40	N027510-001BMS,MS,50	12/13/2017 5:04:27 PM	MS,0.2>10mL
41	N027510-001BMSD,MSD,50	12/13/2017 5:19:45 PM	MSD,0.2>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 81
Created: 12/13/2017 9:09:27 AM by IC-05
Last Update: 12/13/2017 7:11:29 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027510-002B,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
43	N027510-003B,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
44	N027431-005C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
45	N027431-005CMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
46	N027431-005CMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
47	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
48	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
49	N027431-001C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
50	N027431-001CDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
51	N027431-001CMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
52	N027431-001CMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
53	N027431-002C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
54	N027431-003C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
55	N027431-004C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
56	N027431-006C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
57	N027430-008C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
58	N027430-008CDUP,DUP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
59	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
60	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
61	N027430-008CMS,MS,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
62	N027430-008CMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
63	N027430-012C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
64	N027430-013C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
65	N027430-014C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
66	N027430-015C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
67	N027539-001C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
68	N027539-001C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
69	N027539-002C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
70	N027539-002C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
71	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
72	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
73	N027539-004C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
74	N027539-004C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
75	N027482-002A,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
76	N027482-002AMS,MS,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
77	N027482-002A,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
78	N027482-002AMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
79	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
80	CCV-7,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
81	CCB-7,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 81
Created: 12/13/2017 9:09:27 AM by IC-05
Last Update: 12/13/2017 7:11:29 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027510-002B,SAMP,100	12/13/2017 5:35:03 PM	SAMP,0.1>10mL
43	N027510-003B,SAMP,100	12/13/2017 5:50:22 PM	SAMP,0.1>10mL
44	N027431-005C,SAMP,1	12/13/2017 6:13:17 PM	SAMP,10mL
45	N027431-005CMS,MS,1	12/13/2017 6:28:35 PM	MS,10mL
46	N027431-005CMSD,MSD,1	12/13/2017 6:43:53 PM	MSD,10mL
47	CCV-4,CCV,1	12/13/2017 6:59:11 PM	CCV
48	CCB-4,CCB,1	12/13/2017 7:14:28 PM	CCB
49	N027431-001C,SAMP,1	12/13/2017 7:29:46 PM	SAMP,10mL
50	N027431-001CDUP,DUP,1	12/13/2017 7:45:04 PM	DUP,10mL
51	N027431-001CMS,MS,1	12/13/2017 8:00:22 PM	MS,10mL
52	N027431-001CMSD,MSD,1	12/13/2017 8:15:40 PM	MSD,10mL
53	N027431-002C,SAMP,5	12/13/2017 8:30:58 PM	SAMP,2>10mL
54	N027431-003C,SAMP,5	12/13/2017 8:46:16 PM	SAMP,2>10mL
55	N027431-004C,SAMP,5	12/13/2017 9:01:34 PM	SAMP,2>10mL
56	N027431-006C,SAMP,5	12/13/2017 9:16:51 PM	SAMP,2>10mL
57	N027430-008C,SAMP,5	12/13/2017 9:32:09 PM	SAMP,2>10mL
58	N027430-008CDUP,DUP,5	12/13/2017 9:47:27 PM	DUP,2>10mL
59	CCV-5,CCV,1	12/13/2017 10:02:45 PM	CCV
60	CCB-5,CCB,1	12/13/2017 10:18:02 PM	CCB
61	N027430-008CMS,MS,5	12/13/2017 10:33:20 PM	MS,2>10mL
62	N027430-008CMSD,MSD,5	12/13/2017 10:48:38 PM	MSD,2>10mL
63	N027430-012C,SAMP,1	12/13/2017 11:03:56 PM	SAMP,10mL
64	N027430-013C,SAMP,5	12/13/2017 11:19:14 PM	SAMP,2>10mL
65	N027430-014C,SAMP,5	12/13/2017 11:34:32 PM	SAMP,2>10mL
66	N027430-015C,SAMP,5	12/13/2017 11:49:50 PM	SAMP,2>10mL
67	N027539-001C,SAMP,5	12/14/2017 12:05:08 AM	SAMP,2>10mL
68	N027539-001C,SAMP,100	12/14/2017 12:20:26 AM	SAMP,0.1>10mL
69	N027539-002C,SAMP,1	12/14/2017 12:35:43 AM	SAMP,10mL
70	N027539-002C,SAMP,50	12/14/2017 12:51:01 AM	SAMP,0.2>10mL
71	CCV-6,CCV,1	12/14/2017 1:06:19 AM	CCV
72	CCB-6,CCB,1	12/14/2017 1:21:37 AM	CCB
73	N027539-004C,SAMP,1	12/14/2017 1:36:55 AM	SAMP,10mL
74	N027539-004C,SAMP,50	12/14/2017 1:52:14 AM	SAMP,0.2>10mL
75	N027482-002A,SAMP,10	12/14/2017 2:07:31 AM	SAMP,1>10mL
76	N027482-002AMS,MS,10	12/14/2017 2:22:49 AM	MS,1>10mL
77	N027482-002A,SAMP,20	12/14/2017 2:38:07 AM	SAMP,0.5>10mL
78	N027482-002AMS,MS,20	12/14/2017 2:53:25 AM	MS,0.5>10mL
79	BLANK,BLANK,1	12/14/2017 3:08:43 AM	BLANK
80	CCV-7,CCV,1	12/14/2017 3:24:00 AM	CCV
81	CCB-7,CCB,1	12/14/2017 3:39:19 AM	CCB

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 113
Created: 12/14/2017 8:36:45 AM by IC-05
Last Update: 12/15/2017 4:10:57 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027429-005D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027429-005D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027429-006D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027429-006D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027429-007D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027429-007D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027429-008D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	N027429-008D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	N027429-008DMS,MS,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	N027429-008DMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
26	N027429-013D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
27	N027429-013DMS,MS,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
28	N027429-013DMSD,MSD,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
29	N027429-013D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
30	N027429-013DMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
31	N027429-013DMSD,MSD,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
32	N027429-009D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
33	N027429-009D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
34	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
35	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
36	N027429-010D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
37	N027429-010D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
38	N027429-012D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
39	N027429-012D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
40	N027429-014D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
41	N027429-014D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 113
Created: 12/14/2017 8:36:45 AM by IC-05
Last Update: 12/15/2017 4:10:57 AM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	BLANK,BLANK,1	12/14/2017 8:37:30 AM	BLANK
10	CCV-1,CCV,1	12/14/2017 8:52:48 AM	CCV
11	CCB-1,CCB,1	12/14/2017 9:08:06 AM	CCB
12	MB-H2O,MBLK,1	12/14/2017 9:23:24 AM	METHOD BLANK
13	LCS-H2O,LCS,1	12/14/2017 9:38:42 AM	LCS
14	N027429-005D,SAMP,2000	12/14/2017 10:12:46 AM	SAMP,0.005>>10mL
15	N027429-005D,SAMP,100	12/14/2017 10:28:05 AM	SAMP,0.1>10mL
16	N027429-006D,SAMP,2000	12/14/2017 10:43:23 AM	SAMP,0.005>>10mL
17	N027429-006D,SAMP,100	12/14/2017 10:58:41 AM	SAMP,0.1>10mL
18	N027429-007D,SAMP,100	12/14/2017 11:13:59 AM	SAMP,0.1>10mL
19	N027429-007D,SAMP,20	12/14/2017 11:29:17 AM	SAMP,0.5>10mL
20	N027429-008D,SAMP,100	12/14/2017 11:44:35 AM	SAMP,0.1>10mL
21	N027429-008D,SAMP,20	12/14/2017 11:59:52 AM	SAMP,0.5>10mL
22	CCV-2,CCV,1	12/14/2017 12:15:10 PM	CCV
23	CCB-2,CCB,1	12/14/2017 12:30:28 PM	CCB
24	N027429-008DMS,MS,100	12/14/2017 12:49:52 PM	MS,0.1>10mL
25	N027429-008DMS,MS,20	12/14/2017 1:05:10 PM	MS,0.5>10mL
26	N027429-013D,SAMP,100	12/14/2017 1:20:28 PM	SAMP,0.1>10mL
27	N027429-013DMS,MS,100	12/14/2017 1:35:46 PM	MS,0.1>10mL
28	N027429-013DMSD,MSD,100	12/14/2017 1:51:03 PM	MSD,0.1>10mL
29	N027429-013D,SAMP,20	12/14/2017 2:06:21 PM	SAMP,0.5>10mL
30	N027429-013DMS,MS,20	12/14/2017 2:21:39 PM	MS,0.5>10mL
31	N027429-013DMSD,MSD,20	12/14/2017 2:36:57 PM	MSD,0.5>10mL
32	N027429-009D,SAMP,2000	12/14/2017 2:52:15 PM	SAMP,0.005>10mL
33	N027429-009D,SAMP,100	12/14/2017 3:07:32 PM	SAMP,0.1>10mL
34	CCV-3,CCV,1	12/14/2017 3:22:50 PM	CCV
35	CCB-3,CCB,1	12/14/2017 3:38:08 PM	CCB
36	N027429-010D,SAMP,1000	12/14/2017 3:53:26 PM	SAMP,0.01>10mL
37	N027429-010D,SAMP,100	12/14/2017 4:08:44 PM	SAMP,0.1>10mL
38	N027429-012D,SAMP,200	12/14/2017 4:24:02 PM	SAMP,0.05>10mL
39	N027429-012D,SAMP,20	12/14/2017 4:39:20 PM	SAMP,05>10mL
40	N027429-014D,SAMP,100	12/14/2017 4:56:46 PM	SAMP,0.1>10mL
41	N027429-014D,SAMP,20	12/14/2017 5:12:04 PM	SAMP,0.5>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 113
Created: 12/14/2017 8:36:45 AM by IC-05
Last Update: 12/15/2017 4:10:57 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027429-015D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
43	N027429-015D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
44	N027429-016D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
45	N027429-016D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
46	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
47	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
48	N027429-015DDUP,DUP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
49	N027429-015DDUP,DUP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
50	N027429-017D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
51	N027429-017D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
52	N027429-018D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
53	N027429-018D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
54	N027429-020D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
55	N027429-020D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
56	N027431-001C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
57	N027431-001C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
58	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
59	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
60	N027431-002C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
61	N027431-002C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
62	N027431-003C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
63	N027431-003C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
64	N027431-004C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
65	N027431-004C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
66	N027431-005C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
67	N027431-005C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
68	N027431-006C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
69	N027431-006C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
70	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
71	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
72	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
73	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
74	N027430-004C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
75	N027430-004CDUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
76	N027430-004CMS,MS,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
77	N027430-004CMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
78	N027430-004C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
79	N027430-004CDUP,DUP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
80	N027430-004CMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
81	N027430-004CMSD,MSD,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
82	CCV-7,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 113
Created: 12/14/2017 8:36:45 AM by IC-05
Last Update: 12/15/2017 4:10:57 AM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027429-015D,SAMP,200	12/14/2017 5:27:22 PM	SAMP,0.05>10mL
43	N027429-015D,SAMP,20	12/14/2017 5:42:40 PM	SAMP,0.5>10mL
44	N027429-016D,SAMP,500	12/14/2017 5:57:57 PM	SAMP,0.02>10mL
45	N027429-016D,SAMP,20	12/14/2017 6:13:16 PM	SAMP,0.5>10mL
46	CCV-4,CCV,1	12/14/2017 6:28:34 PM	CCV
47	CCB-4,CCB,1	12/14/2017 6:43:51 PM	CCB
48	N027429-015DDUP,DUP,200	12/14/2017 6:59:09 PM	DUP,0.05>10mL
49	N027429-015DDUP,DUP,20	12/14/2017 7:14:27 PM	DUP,0.5>10mL
50	N027429-017D,SAMP,500	12/14/2017 7:29:45 PM	SAMP,0.02>10mL
51	N027429-017D,SAMP,20	12/14/2017 7:45:03 PM	SAMP,0.5>10mL
52	N027429-018D,SAMP,1000	12/14/2017 8:00:21 PM	SAMP,0.01>10mL
53	N027429-018D,SAMP,100	12/14/2017 8:15:39 PM	SAMP,0.1>10mL
54	N027429-020D,SAMP,1000	12/14/2017 8:30:57 PM	SAMP,0.01>10mL
55	N027429-020D,SAMP,100	12/14/2017 8:46:15 PM	SAMP,0.1>10mL
56	N027431-001C,SAMP,200	12/14/2017 9:01:34 PM	SAMP,0.05>10mL
57	N027431-001C,SAMP,20	12/14/2017 9:16:52 PM	SAMP,0.5>10mL
58	CCV-5,CCV,1	12/14/2017 9:32:10 PM	CCV
59	CCB-5,CCB,1	12/14/2017 9:47:28 PM	CCB
60	N027431-002C,SAMP,1000	12/14/2017 10:02:46 PM	SAMP,0.01>10mL
61	N027431-002C,SAMP,50	12/14/2017 10:18:04 PM	SAMP,0.2>10mL
62	N027431-003C,SAMP,2000	12/14/2017 10:33:21 PM	SAMP,0.005>10mL
63	N027431-003C,SAMP,100	12/14/2017 10:48:39 PM	SAMP,0.1>10mL
64	N027431-004C,SAMP,2000	12/14/2017 11:03:57 PM	SAMP,0.005>10mL
65	N027431-004C,SAMP,100	12/14/2017 11:19:15 PM	SAMP,0.1>10mL
66	N027431-005C,SAMP,100	12/14/2017 11:34:33 PM	SAMP,0.1>10mL
67	N027431-005C,SAMP,20	12/14/2017 11:49:51 PM	SAMP,0.5>10mL
68	N027431-006C,SAMP,1000	12/15/2017 12:05:09 AM	SAMP,0.01>10mL
69	N027431-006C,SAMP,200	12/15/2017 12:20:27 AM	SAMP,0.05>10mL
70	CCV-6,CCV,1	12/15/2017 12:35:44 AM	CCV
71	CCB-6,CCB,1	12/15/2017 12:51:02 AM	CCB
72	LCS-2,LCS,1	12/15/2017 1:06:20 AM	LCS
73	MB-2,MBLK,1	12/15/2017 1:21:38 AM	METHOD BLANK
74	N027430-004C,SAMP,50	12/15/2017 1:36:55 AM	SAMP,0.2>10mL
75	N027430-004CDUP,DUP,50	12/15/2017 1:52:13 AM	DUP,0.2>10mL
76	N027430-004CMS,MS,50	12/15/2017 2:07:31 AM	MS,0.2>10mL
77	N027430-004CMSD,MSD,50	12/15/2017 2:22:49 AM	MSD,0.2>10mL
78	N027430-004C,SAMP,20	12/15/2017 2:38:07 AM	SAMP,0.5>10mL
79	N027430-004CDUP,DUP,20	12/15/2017 2:53:25 AM	DUP,0.5>10mL
80	N027430-004CMS,MS,20	12/15/2017 3:08:43 AM	MS,0.5>10mL
81	N027430-004CMSD,MSD,20	12/15/2017 3:24:01 AM	MSD,0.5>10mL
82	CCV-7,CCV,1	12/15/2017 3:39:19 AM	CCV

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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 113
Created: 12/14/2017 8:36:45 AM by IC-05
Last Update: 12/15/2017 4:10:57 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
83	CCB-7,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
84	N027430-020C,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
85	N027430-020CMS,MS,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
86	N027430-020C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
87	N027430-020CMS,MS,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
88	N027430-002C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
89	N027430-002C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
90	N027430-006C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
91	N027430-006C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
92	N027430-008C,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
93	N027430-008C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
94	CCV-8,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
95	CCB-8,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
96	N027430-012C,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
97	N027430-012C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
98	N027430-013C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
99	N027430-013C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
100	N027430-014C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
101	N027430-014C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
102	N027430-015C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
103	N027430-015C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
104	N027430-016C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
105	N027430-016C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
106	CCV-9,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
107	CCB-9,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
108	N027430-017C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
109	N027430-017C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
110	N027430-018C,SAMP,5000	Unknown	1000.0	Anions Default	Anions_171129	Finished
111	N027430-018C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
112	CCV-10,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
113	CCB-10,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 113
Created: 12/14/2017 8:36:45 AM by IC-05
Last Update: 12/15/2017 4:10:57 AM by IC-05

No.	Name	Inj. Date/Time	Comment
83	CCB-7,CCB,1	12/15/2017 3:54:37 AM	CCB
84	N027430-020C,SAMP,500	12/15/2017 4:09:54 AM	SAMP,0.02>10mL
85	N027430-020CMS,MS,500	12/15/2017 4:25:12 AM	MS,0.02>10mL
86	N027430-020C,SAMP,50	12/15/2017 4:40:30 AM	SAMP,0.2>10mL
87	N027430-020CMS,MS,50	12/15/2017 4:55:48 AM	MS,0.2>10mL
88	N027430-002C,SAMP,2000	12/15/2017 5:11:06 AM	SAMP,0.005>10mL
89	N027430-002C,SAMP,200	12/15/2017 5:26:23 AM	SAMP,0.05>10mL
90	N027430-006C,SAMP,20	12/15/2017 5:41:41 AM	SAMP,0.5>10mL
91	N027430-006C,SAMP,50	12/15/2017 5:56:59 AM	SAMP,0.2>10mL
92	N027430-008C,SAMP,500	12/15/2017 6:12:17 AM	SAMP,0.02>10mL
93	N027430-008C,SAMP,50	12/15/2017 6:27:35 AM	SAMP,0.2>10mL
94	CCV-8,CCV,1	12/15/2017 6:42:53 AM	CCV
95	CCB-8,CCB,1	12/15/2017 6:58:11 AM	CCB
96	N027430-012C,SAMP,500	12/15/2017 7:13:28 AM	SAMP,0.02>10mL
97	N027430-012C,SAMP,200	12/15/2017 7:28:46 AM	SAMP,0.05>10mL
98	N027430-013C,SAMP,1000	12/15/2017 7:44:04 AM	SAMP,0.01>10mL
99	N027430-013C,SAMP,100	12/15/2017 7:59:22 AM	SAMP,0.1>10mL
100	N027430-014C,SAMP,2000	12/15/2017 8:14:40 AM	SAMP,0.005>10mL
101	N027430-014C,SAMP,100	12/15/2017 8:29:58 AM	SAMP,0.1>10mL
102	N027430-015C,SAMP,2000	12/15/2017 8:45:15 AM	SAMP,0.005>10mL
103	N027430-015C,SAMP,100	12/15/2017 9:00:33 AM	SAMP,0.1>10mL
104	N027430-016C,SAMP,1000	12/15/2017 9:15:51 AM	SAMP,0.01>10mL
105	N027430-016C,SAMP,100	12/15/2017 9:31:09 AM	SAMP,0.1>10mL
106	CCV-9,CCV,1	12/15/2017 9:46:27 AM	CCV
107	CCB-9,CCB,1	12/15/2017 10:01:44 AM	CCB
108	N027430-017C,SAMP,1000	12/15/2017 10:17:03 AM	SAMP,0.01>10mL
109	N027430-017C,SAMP,100	12/15/2017 10:32:21 AM	SAMP,0.1>10mL
110	N027430-018C,SAMP,5000	12/15/2017 10:47:39 AM	SAMP,0.002>10mL
111	N027430-018C,SAMP,200	12/15/2017 11:02:56 AM	SAMP,0.05>10mL
112	CCV-10,CCV,1	12/15/2017 11:18:14 AM	CCV
113	CCB-10,CCB,1	12/15/2017 11:33:32 AM	CCB

INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0709	0.1410	0.2824	0.7275	1.5389	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.



12/26/2017

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Bromide	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.05	0.25	0.5	1.25	2.5	R^2
Area,mAU*min	0.0000	0.0033	0.0139	0.0287	0.0714	0.1448	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814D

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 12/26/2017

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0532	0.2181	0.4423	1.1375	2.3683	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.



12/26/2017

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **ICV**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2867971**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.235	0.50	1.250	0	98.8	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCV**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/13/2017**	SeqNo: **2867975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.212	0.50	1.250	0	96.9	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCV**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/13/2017**	SeqNo: **2867979**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.232	0.50	1.250	0	98.6	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCV**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/13/2017**	SeqNo: **2867984**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.216	0.50	1.250	0	97.3	90	110				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCV**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/13/2017**	SeqNo: **2867994**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.210	0.50	1.250	0	96.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCV**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2867996**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.204	0.50	1.250	0	96.4	90	110				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCV**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2867998**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.215	0.50	1.250	0	97.2	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **ICV**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2868185**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.042	0.50	2.000	0	102	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCV**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868187**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.928	0.50	2.000	0	96.4	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCV**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.928	0.50	2.000	0	96.4	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCV**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868202**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.924	0.50	2.000	0	96.2	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCV**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868209**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.932	0.50	2.000	0	96.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCV**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868216**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.941	0.50	2.000	0	97.1	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCV**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2868223**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.947	0.50	2.000	0	97.4	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **ICV**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2868225**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.936	0.50	4.000	0	98.4	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCV**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868227**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.810	0.50	4.000	0	95.3	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCV**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.776	0.50	4.000	0	94.4	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCV**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868242**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.747	0.50	4.000	0	93.7	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCV**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868249**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.801	0.50	4.000	0	95.0	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCV**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.725	0.50	4.000	0	93.1	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCV**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2868263**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.750	0.50	4.000	0	93.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	**ICB**	SampType:	**ICB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**120803**
Client ID:	**ICB**	Batch ID:	**R120803**	TestNo:	**EPA 300.0**			Analysis Date:	**11/29/2017**	SeqNo:	**2867972**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-2**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**120803**
Client ID:	**CCB**	Batch ID:	**R120803**	TestNo:	**EPA 300.0**			Analysis Date:	**12/13/2017**	SeqNo:	**2867976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-3**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**120803**
Client ID:	**CCB**	Batch ID:	**R120803**	TestNo:	**EPA 300.0**			Analysis Date:	**12/13/2017**	SeqNo:	**2867980**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-4**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**120803**
Client ID:	**CCB**	Batch ID:	**R120803**	TestNo:	**EPA 300.0**			Analysis Date:	**12/13/2017**	SeqNo:	**2867985**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-5**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**120803**
Client ID:	**CCB**	Batch ID:	**R120803**	TestNo:	**EPA 300.0**			Analysis Date:	**12/13/2017**	SeqNo:	**2867995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCB**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2867997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120803**
Client ID: **CCB**	Batch ID: **R120803**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2867999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **ICB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2868186**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868188**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868203**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868210**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868217**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2868224**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **ICB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2868226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868228**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868243**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868250**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/14/2017**	SeqNo: **2868257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120853**
Client ID: **CCB**	Batch ID: **R120853**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2868264**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/13/2017

Sample Name		Retention Time	Evaluation
CCV-2	Bromide	4.880	
CCV-3	Bromide	4.877	
CCV-4	Bromide	4.854	
CCV-5	Bromide	4.847	
CCV-6	Bromide	4.864	
CCV-7	Bromide	4.860	

Average 4.864

Applied RT Window 4.664 - 5.064

	MB-R120803_BR	Bromide	N.A.	N.A.
	LCS-R120803_BR	Bromide	4.874	PASS
	N027431-005C	Bromide	N.A.	N.A.
	N027431-005CMS	Bromide	4.820	PASS
	N027431-005CMSD	Bromide	4.820	PASS
	N027431-001C	Bromide	N.A.	N.A.
	N027431-001CDUP	Bromide	N.A.	N.A.
NR	N027431-001CMS	Bromide	N.A.	N.A.
NR	N027431-001CMSD	Bromide	N.A.	N.A.
	N027431-002C	Bromide	N.A.	N.A.
	N027431-003C	Bromide	N.A.	N.A.
	N027431-004C	Bromide	N.A.	N.A.
	N027431-006C	Bromide	N.A.	N.A.

rba 12/20/2017

RLB 12/26/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/14/2017

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	7.447	
CCV-2	Sulfate	7.454	
CCV-3	Sulfate	7.454	
CCV-4	Sulfate	7.457	
CCV-5	Sulfate	7.440	
CCV-6	Sulfate	7.430	
	Average	7.447	
	Applied RT Window	7.247 - 7.647	
MB-R120853_SO4	Sulfate	N.A.	N.A.
LCS-R120853_SO4	Sulfate	7.450	PASS
N027429-008DMS	Sulfate	7.460	PASS
N027429-013DMS	Sulfate	7.457	PASS
N027429-013DMSD	Sulfate	7.457	PASS
N027429-015DDUP	Sulfate	7.457	PASS
N027431-001C	Sulfate	7.447	PASS
N027431-002C	Sulfate	7.447	PASS
N027431-003C	Sulfate	7.437	PASS
N027431-004C	Sulfate	7.437	PASS
N027431-005C	Sulfate	7.440	PASS
N027431-006C	Sulfate	7.433	PASS


12/20/2017


12/26/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/14/2017

Sample Name		Retention Time	Evaluation
CCV-1	Chloride	3.757	
CCV-2	Chloride	3.764	
CCV-3	Chloride	3.767	
CCV-4	Chloride	3.770	
CCV-5	Chloride	3.770	
CCV-6	Chloride	3.767	
	Average	3.766	
	Applied RT Window	3.566 - 3.966	
MB-R120853_CL	Chloride	N.A.	N.A.
LCS-R120853_CL	Chloride	3.757	PASS
N027429-008DMS	Chloride	3.764	PASS
N027429-013DMS	Chloride	3.767	PASS
N027429-013DMSD	Chloride	3.767	PASS
N027429-015DDUP	Chloride	3.770	PASS
N027431-001C	Chloride	3.767	PASS
N027431-002C	Chloride	3.767	PASS
N027431-003C	Chloride	3.770	PASS
N027431-004C	Chloride	3.770	PASS
N027431-005C	Chloride	3.770	PASS
N027431-006C	Chloride	3.767	PASS

rba 12/20/2017

RLB 12/26/2017

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 5/23/2017 ; 5/24/2017; 5/25/2017
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Datafile	170523A D36	170523A D37	170523A D38	170524A D17	170524A D18	170525A D45	170525A D46					
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**MDL**	**LOD**	**PQL**
Fluoride	0.020	0.022	0.021	0.020	0.023	0.026	0.024	0.020	0.0021	**0.0065**	0.020	0.10
Chloride	0.133	0.136	0.136	0.133	0.141	0.133	0.136	0.025	0.0029	**0.0091**	0.020	0.50
Nitrite	0.030	0.028	0.027	0.028	0.028	0.027	0.027	0.020	0.0010	**0.0030**	0.010	0.05
Bromide	0.037	0.042	0.043	0.038	0.040	0.032	0.025	0.040	0.0062	**0.0196**	0.040	0.20
Nitrate	0.035	0.034	0.033	0.033	0.033	0.031	0.030	0.020	0.0016	**0.0050**	0.010	0.05
Phosphate	0.047	0.051	0.049	0.046	0.052	0.047	0.059	0.040	0.0043	**0.0135**	0.030	0.10
Sulfate	0.213	0.199	0.208	0.216	0.199	0.201	0.198	0.050	0.0073	**0.0229**	0.050	0.50

MDL/LOD & PQL Verification 2017

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)**
Method Number: EPA Method 300.0
Analysis Date(s): 5/26/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0065**	0.020	0.024	0.10	0.0906	**91**
Chloride	**0.0091**	0.020	0.130	0.50	0.5635	**113**
Nitrite	**0.0030**	0.010	0.023	0.05	0.0581	**116**
Bromide	**0.0196**	0.040	0.048	0.20	0.194	**97**
Nitrate	**0.0050**	0.010	0.023	0.05	0.0599	**120**
Phosphate	**0.0135**	0.030	0.043	0.10	0.1111	**111**
Sulfate	**0.0229**	0.050	0.195	0.50	0.6178	**124**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121010 **Analyst:** QBM

ASSET #: N027429, N027430, N027431 **Date Analyzed:** 12/21/2017

Method: **4500_NO3**

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 12/26/2017

2nd Level Reviewer RLB 12/26/2017 Date:

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121010/R121034 **Analyst:** QBM

ASSET #: N027431, N027459, N027485 **Date Analyzed:** 12/22/2017

Method: **4500_NO3**

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 12/26/2017

2nd Level Reviewer RLB 12/26/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N027431-001D**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.9053	*	5
	=	4.5265	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 4.5 mg/L

RJB 12/26/2017

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

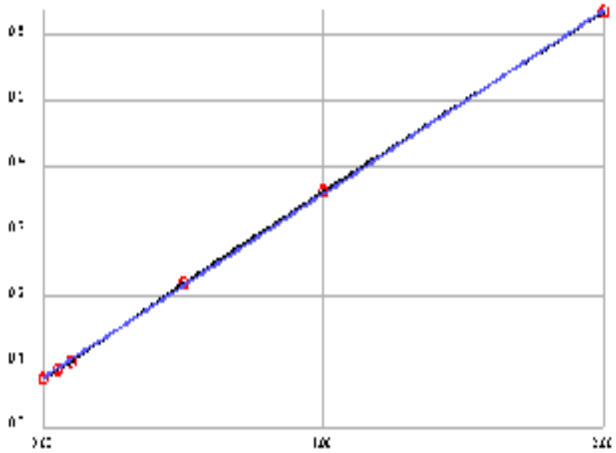
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2815x + 0.076
Correlation	.99987

Calibrant	Energy	Set	Conc
1	0.0736	0.0000	-0.0084
2	0.0899	0.0500	0.0495
3	0.1009	0.1000	0.0886
4	0.2217	0.5000	0.5177
5	0.3611	1.0000	1.0130
6	0.6360	2.0000	1.9897

Notes:

12/26/2017

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

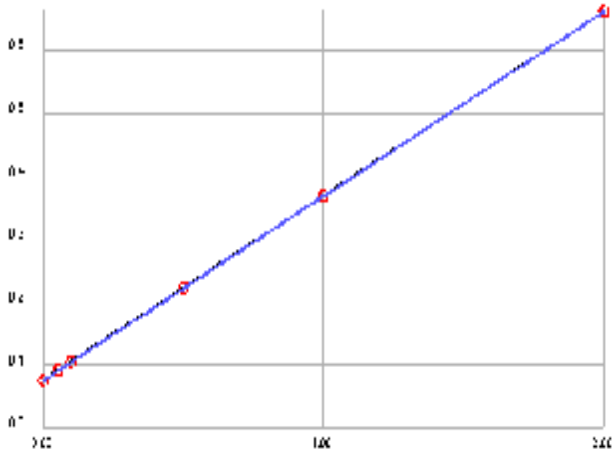
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2922x + 0.0757
Correlation	.999995

Calibrant	Energy	Set	Conc
1	0.0748	0.0000	-0.0031
2	0.0909	0.0500	0.0520
3	0.1050	0.1000	0.1003
4	0.2227	0.5000	0.5031
5	0.3670	1.0000	0.9969
6	0.6603	2.0000	2.0007

Notes:

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **ICV**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.504	0.050	0.5000	0	101	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **CCV**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.512	0.050	0.5000	0	102	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **CCV**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876094**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.465	0.050	0.5000	0	93.0	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **CCV**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.474	0.050	0.5000	0	94.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **ICV**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877766**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.537	0.050	0.5000	0	107	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **CCV**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877777**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.507	0.050	0.5000	0	101	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **CCV**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.548	0.050	0.5000	0	110	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **CCV**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877800**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.478	0.050	0.5000	0	95.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **ICB**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876072**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **CCB**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **CCB**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876095**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121010**
Client ID: **CCB**	Batch ID: **R121010**	TestNo: **SM4500-NO3**		Analysis Date: **12/21/2017**	SeqNo: **2876106**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **ICB**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **CCB**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877778**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **CCB**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877789**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **CCB**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877801**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 12-21-2017 16:29
Time end: 12-21-2017 19:31

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	18:48:51	0.0022		0.0766
2	<BLANK>	18:49:50	-0.0113		0.0728
3	<CAL1>	18:50:45	-0.0084	[0]	0.0736
4	<CAL2>	18:51:47	0.0495	[0.05]	0.0899
5	<CAL3>	18:52:44	0.0886	[0.1]	0.1009
6	<CAL4>	18:53:38	0.5177	[0.5]	0.2217
7	<CAL5>	18:54:33	1.0130	[1]	0.3611
8	<CAL6>	18:55:35	1.9897	[2]	0.6360
9	,BLANK,BLANK,1, NOT REPORTED	18:56:29	0.0168		0.0807
10	,ICV,ICV,1,	18:57:24	0.5035		0.2177
11	,ICB,ICB,1,	18:58:26	-0.0013		0.0756
12	,MB-H2O,MBLK,1,	18:59:21	-0.0148		0.0718
13	,LCS-H2O,LCS,1,	19:00:21	0.5263		0.2241
14	,N027429-007C,SAMP,5,	19:01:17	0.5618		0.2341
15	,N027429-007CMS,MS,5,	19:02:12	1.1242		0.3924
16	,N027429-007CMSD,MSD,5,	19:03:13	1.0968		0.3847
17	,N027429-008C,SAMP,5,	19:04:08	0.5902		0.2421
18	,N027429-008CDUP,DUP,5,	19:05:04	0.6353		0.2548
19	,N027429-009C,SAMP,1,	19:06:00	0.7494		0.2869
20	,N027429-010C,SAMP,5,	19:07:00	0.4527		0.2034
21	,CCV-1,CCV,1, NOT REPORTED	19:07:56	0.5415		0.2284
22	,CCV-1,CCV,1,	19:08:51	0.5117		0.2200
23	,CCB-1,CCB,1,	19:09:51	0.0079		0.0782
24	,N027429-012C,SAMP,10,	19:10:47	1.1313		0.3944
25	,N027429-013C,SAMP,10,	19:11:48	1.2539		0.4289
26	,N027429-014C,SAMP,10,	19:12:44	1.1579		0.4019

RLB 12/26/2017

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N027429-015C,SAMP,10,	19:13:44	0.5955		0.2436
28	,N027430-004D,SAMP,1,	19:14:40	0.0211		0.0819
29	,N027430-006D,SAMP,1,	19:15:35	-0.0070		0.0740
30	,N027430-008D,SAMP,1,	19:16:23	-0.0095		0.0733
31	,N027430-012D,SAMP,1,	19:17:07	0.2968		0.1595
32	,BLANK, NOT REPORTED	19:17:56	-0.0116		0.0727
33	,CCV-2,CCV,1, NOT REPORTED	19:18:38	0.5131		0.2204
34	,CCV-2,CCV,1,	19:19:22	0.4648		0.2068
35	,CCB-2,CCB,1,	19:20:10	-0.0184		0.0708
36	,N027430-013D,SAMP,1,	19:20:53	1.1398		0.3968
37	,N027430-014D,SAMP,1,	19:21:41	1.5800		0.5207
38	,N027430-015D,SAMP,2,	19:22:24	0.8801		0.3237
39	,N027430-016D,SAMP,1,	19:23:06	1.1064		0.3874
40	,N027431-001D,SAMP,5,	19:23:56	0.9053		0.3308
41	,N027431-002D,SAMP,1,	19:24:39	0.0235		0.0826
42	,N027431-003D,SAMP,1,	19:25:21	0.0392		0.0870
43	,N027431-004D,SAMP,1,	19:26:10	0.0541		0.0912
44	,BLANK, NOT REPORTED	19:26:52	-0.0312		0.0672
45	,BLANK, NOT REPORTED	19:27:36	-0.0351		0.0661
46	,CCV-3,CCV,1,	19:28:24	0.4744		0.2095
47	,CCV-3,CCV,1, NOT REPORTED	19:29:07	0.4485		0.2022
48	,CCB-3,CCB,1,	19:29:50	-0.0287		0.0679

RB 12/26/2017

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Time start: 12-22-2017 12:36
Time end: 12-22-2017 15:38

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK> NOT REPORTED	14:55:32	-0.0027		0.0749
2	<BLANK> NOT REPORTED	14:56:26	0.0004		0.0758
3	<CAL1>	14:57:27	-0.0031	[0]	0.0748
4	<CAL2>	14:58:23	0.0520	[0.05]	0.0909
5	<CAL3>	14:59:24	0.1003	[0.1]	0.1050
6	<CAL4>	15:00:18	0.5031	[0.5]	0.2227
7	<CAL5>	15:01:14	0.9969	[1]	0.3670
8	<CAL6>	15:02:09	2.0007	[2]	0.6603
9	,BLANK,BLANK,1, NOT REPORTED	15:03:09	0.0503		0.0904
10	,ICV,ICV,1,	15:04:05	0.5370		0.2326
11	,ICB,ICB,1,	15:05:00	0.0096		0.0785
12	,MB-H2O,MBLK,1,	15:06:02	-0.0017		0.0752
13	,LCS-H2O,LCS,1,	15:06:56	0.4963		0.2207
14	,N027431-005D,SAMP,10,	15:07:57	0.9004		0.3388
15	,N027431-005DDUP,DUP,10,	15:08:53	0.9148		0.3430
16	,N027431-006D,SAMP,20,	15:09:47	0.7522		0.2955
17	,N027431-006DMS,MS,20,	15:10:49	1.2546		0.4423
18	,N027431-006DMSD,MSD,20,	15:11:44	1.2392		0.4378
19	,N027459-001D,SAMP,5,	15:12:40	0.4579		0.2095
20	,BLANK, NOT REPORTED	15:13:40	0.0141		0.0798
21	,CCV-1,CCV,1, NOT REPORTED	15:14:36	0.5243		0.2289
22	,CCV-1,CCV,1,	15:15:31	0.5065		0.2237
23	,CCB-1,CCB,1,	15:16:32	0.0055		0.0773
24	,N027459-002D,SAMP,5,	15:17:27	0.5349		0.2320
25	,N027459-008D,SAMP,10	15:18:22	1.2396		0.4379
26	,N027459-013D,SAMP,1,	15:19:24	0.3310		0.1724

RJB 12/26/2017

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N027459-016D,SAMP,10,	15:20:18	0.8255		0.3169
28	,N027459-017D,SAMP,10,	15:21:20	0.8409		0.3214
29	,N027459-019D,SAMP,1,	15:22:15	0.0219		0.0821
30	,N027485-001C,SAMP,10,	15:23:03	0.4459		0.2060
31	,N027485-002C,SAMP,5,	15:23:47	0.7646		0.2991
32	,BLANK, NOT REPORTED	15:24:36	0.0028		0.0765
33	,CCV-2,CCV,1, NOT REPORTED	15:25:18	0.4963		0.2207
34	,CCV-2,CCV,1,	15:26:02	0.5483		0.2359
35	,CCB-2,CCB,1,	15:26:50	-0.0068		0.0737
36	,N027485-003C,SAMP,5,	15:27:33	0.6667		0.2705
37	,N027485-004C,SAMP,10,	15:28:15	0.8696		0.3298
38	,N027485-005C,SAMP,1,	15:29:04	0.0493		0.0901
39	,N027485-006C,SAMP,1,	15:29:46	0.1393		0.1164
40	,N027485-007C,SAMP,1,	15:30:30	0.1482		0.1190
41	,N027485-008C,SAMP,10,	15:31:19	0.9504		0.3534
42	,N027485-009C,SAMP,20,	15:32:01	0.7338		0.2901
43	,N027485-010C,SAMP,1,	15:32:44	1.1852		0.4220
44	,N027485-011D,SAMP,20,	15:33:32	1.0421		0.3802
45	,BLANK, NOT REPORTED	15:34:16	-0.0034		0.0747
46	,CCV-3,CCV,1, NOT REPORTED	15:35:04	0.4689		0.2127
47	,CCV-3,CCV,1,	15:35:47	0.4778		0.2153
48	,CCB-3,CCB,1,	15:36:31	-0.0079		0.0734

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 12/21/2017
Time Analyzed: 4:23 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171220B
Color reagent: R171220C
2% Copper Sulfate: R171220A
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027429-007C		7.70							
N027429-008C		7.43							
N027429-009C		7.37							
N027429-010C		8.61							
N027429-012C		8.03							
N027429-013C		8.22							
N027429-014C		7.65							
N027429-015C		7.74							
N027430-004D		7.98							
N027430-006D		7.98							
N027430-008D		8.28							
N027430-012D		7.84							
N027430-013D		8.40							
N027430-014D		8.31							
N027430-015D		8.14							
N027430-016D		8.41							
N027431-001D		8.75							
N027431-002D		8.14							
N027431-003D		8.24							
N027431-004D		8.29							

Advanced Technology Laboratories, Inc.
Book # 1
RLB 12/26/2017

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 12/22/2017
Time Analyzed: 12:31 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171220B
Color reagent: R171220C
2% Copper Sulfate: R171220A
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027431-005D		8.50							
N027431-006D		7.91							
N027459-001D		8.06							
N027459-002D		8.01							
N027459-008D		7.82							
N027459-013D		8.31							
N027459-016D		8.24							
N027459-017D		7.16							
N027459-019D		8.23							
N027485-001C		8.24							
N027485-002C		7.90							
N027485-003C		8.15							
N027485-004C		8.07							
N027485-005C		8.01							
N027485-006C		8.17							
N027485-007C		8.08							
N027485-008C		8.38							
N027485-009C		7.92							
N027485-010C		7.92							
N027485-011D		7.96							

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65993
ASSET #: N027431

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/18/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?		X				
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.		X				
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

B in ICSA3 > PQL. B in N027431-003B to 006B for rerun.
%Rec of Ca, Fe & Mg in N027430-002B PS/MS/MSD failed. However LCS passed criteria.
Dilution test failed for Mg.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/22/17

2nd Level Reviewer 12/22/2017 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65993
ASSET #: N027431

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/20/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For K & Na run only.
%Rec of Na in N027430-004B PS/MS/MSD failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/22/17

2nd Level Reviewer 12/22/2017 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65993
ASSET #: N027431

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/21/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .			X			
24. LCS compounds within control limits.			X			
25. MS/MSD, RPD's are within control limits			X			
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For B in N027431-003B to 006B rerun only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/22/17

2nd Level Reviewer 12/22/2017 Date: –

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N027431-001B** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.02336 * 1 * (25/25) * 1000

Iron , ug/L = 23.36

Reporting results in two significant figures,

Iron , ug/L = 23

% RSD SUMMARY

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	B	0	0.59	15	PASS
Standard1	ICAL	1	B	0.1	1.15	15	PASS
Standard3	ICAL	1	B	1	0.087	15	PASS
Standard4	ICAL	1	B	2.5	0.59	15	PASS
Standard5	ICAL	1	B	3.75	1.54	15	PASS
Standard6	ICAL	1	B	5	0.48	15	PASS
Standard7	ICAL	1	B	10	0.68	15	PASS
ICV	ICV	1	B	4.98	0.36	15	PASS
ICB	ICB	1	B	0.011	11.2	15	PASS
LLICV	CCV1	1	B	0.15	0.7	20	PASS
LLICV	CCV1	1	B	0.097	1.87	20	PASS
ICSA1	ICSA	1	B	0.077	3.84	15	PASS
ICSAB1	ICSAB	1	B	1.17	0.22	15	PASS
CCV1	CCV	1	B	4.8	0.61	15	PASS
CCB1	CCB	1	B	0.017	19.94	15	<PQL
CCV2	CCV	1	B	4.7	0.74	15	PASS
CCB2	CCB	1	B	0.019	18.28	15	<PQL
MB-65993	MBLK	1	B	-0.0022	24.9	15	<PQL
LCS1-65993	LCS	1	B	4.52	1.084	15	PASS
N027430-002B	SAMP	1	B	2.39	0.7	15	PASS
N027430-002B	SAMP	5	B	0.54	0.5	15	PASS
N027430-002B-PS	PS	1	B	6.84	0.76	15	PASS
N027430-002B-MS1	MS	1	B	6.94	0.76	15	PASS
N027430-002B-MSD1	MSD	1	B	6.97	0.45	15	PASS
N027430-004B	SAMP	1	B	0.37	0.86	15	PASS
N027430-006B	SAMP	1	B	0.17	0.78	15	PASS
N027430-008B	SAMP	1	B	0.77	0.26	15	PASS
CCV3	CCV	1	B	4.68	0.68	15	PASS
CCB3	CCB	1	B	0.021	15.084	15	<PQL
N027430-012B	SAMP	1	B	2.16	0.48	15	PASS
N027430-013B	SAMP	1	B	1.088	0.23	15	PASS
N027430-014B	SAMP	1	B	1.04	0.63	15	PASS
N027430-015B	SAMP	1	B	1.4	0.56	15	PASS
N027430-016B	SAMP	1	B	1.88	0.45	15	PASS
N027430-017B	SAMP	1	B	3	0.89	15	PASS
N027430-018B	SAMP	1	B	3.7	0.61	15	PASS
N027430-020B	SAMP	1	B	0.82	0.38	15	PASS
N027431-001B	SAMP	1	B	0.38	0.2	15	PASS
N027431-002B	SAMP	1	B	1.25	0.55	15	PASS
CCV4	CCV	1	B	4.63	0.81	15	PASS
CCB4	CCB	1	B	0.016	20.33	15	<PQL
LLCCV1	CCV2	1	B	0.087	1.74	20	PASS

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
ICSA2	ICSA	1	B	0.078	2.16	15	PASS
ICSAB2	ICSAB	1	B	1.091	0.32	15	PASS
N027431-003B	SAMP	1	B	1.98	0.78	15	PASS
N027431-004B	SAMP	1	B	2.0009	0.49	15	PASS
N027431-005B	SAMP	1	B	0.42	0.33	15	PASS
N027431-006B	SAMP	1	B	1.88	0.38	15	PASS
CCV5	CCV	1	B	4.57	0.88	15	PASS
CCB5	CCB	1	B	0.032	17.76	15	<PQL
CCV6	CCV	1	B	4.54	0.67	15	PASS
CCB6	CCB	1	B	0.026	8.48	15	PASS
LLCCV2	CCV2	1	B	0.097	3.16	20	PASS
ICSA3	ICSA	1	B	0.1	2.31	15	PASS
ICSAB3	ICSAB	1	B	1.077	0.35	15	PASS
CCV7	CCV	1	B	4.87	0.75	15	PASS
CCB7	CCB	1	B	0.03	2.69	15	PASS
LLCCV3	CCV2	1	B	0.1	1.79	20	PASS
ICSA4	ICSA	1	B	0.099	0.24	15	PASS
ICSAB4	ICSAB	1	B	1.17	0.46	15	PASS
CalBlk	IBLK	1	Ca	0	3.65	15	PASS
Standard1	ICAL	1	Ca	0.2	11.17	15	PASS
Standard2	ICAL	1	Ca	1	1.87	15	PASS
Standard3	ICAL	1	Ca	2	2.47	15	PASS
Standard4	ICAL	1	Ca	5	0.83	15	PASS
Standard5	ICAL	1	Ca	7.5	0.61	15	PASS
Standard6	ICAL	1	Ca	10	0.51	15	PASS
Standard7	ICAL	1	Ca	20	0.3	15	PASS
ICV	ICV	1	Ca	10.088	0.21	15	PASS
ICB	ICB	1	Ca	-0.0018	778.17	15	<PQL
LLICV	CCV1	1	Ca	0.34	5.65	20	PASS
LLICV	CCV1	1	Ca	0.2	11.79	20	PASS
ICSA1	ICSA	1	Ca	498.55	0.67	15	PASS
ICSAB1	ICSAB	1	Ca	536.96	0.1	15	PASS
CCV1	CCV	1	Ca	9.97	0.27	15	PASS
CCB1	CCB	1	Ca	0.016	132.15	15	<PQL
CCV2	CCV	1	Ca	9.91	0.43	15	PASS
CCB2	CCB	1	Ca	0.029	24.8	15	<PQL
MB-65993	MBLK	1	Ca	0.049	23.35	15	<PQL
LCS1-65993	LCS	1	Ca	9.59	0.4	15	PASS
N027430-002B	SAMP	1	Ca	211.04	0.51	15	PASS
N027430-002B	SAMP	5	Ca	43.85	0.3	15	PASS
N027430-002B-PS	PS	1	Ca	211.39	0.19	15	PASS
N027430-002B-MS1	MS	1	Ca	214.32	0.13	15	PASS

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027430-002B-MSD1	MSD	1	Ca	215.35	0.023	15	PASS
N027430-004B	SAMP	1	Ca	70.47	0.28	15	PASS
N027430-006B	SAMP	1	Ca	92.97	0.29	15	PASS
N027430-008B	SAMP	1	Ca	181.66	0.1	15	PASS
CCV3	CCV	1	Ca	9.99	0.7	15	PASS
CCB3	CCB	1	Ca	-0.011	317.39	15	<PQL
N027430-012B	SAMP	1	Ca	54.36	0.51	15	PASS
N027430-013B	SAMP	1	Ca	264.05	0.072	15	PASS
N027430-014B	SAMP	1	Ca	370.67	0.31	15	PASS
N027430-015B	SAMP	1	Ca	494.84	0.42	15	PASS
N027430-016B	SAMP	1	Ca	97.77	0.12	15	PASS
N027430-017B	SAMP	1	Ca	104.48	0.24	15	PASS
N027430-018B	SAMP	1	Ca	324.12	0.21	15	PASS
N027430-020B	SAMP	1	Ca	158.46	0.4	15	PASS
N027431-001B	SAMP	1	Ca	79.8	0.12	15	PASS
N027431-002B	SAMP	1	Ca	145.69	0.14	15	PASS
CCV4	CCV	1	Ca	9.89	0.33	15	PASS
CCB4	CCB	1	Ca	-0.0036	655.17	15	<PQL
LLCCV1	CCV2	1	Ca	0.23	25.2	20	<PQL
ICSA2	ICSA	1	Ca	487.27	0.25	15	PASS
ICSAB2	ICSAB	1	Ca	537.05	0.61	15	PASS
N027431-003B	SAMP	1	Ca	307.84	0.38	15	PASS
N027431-004B	SAMP	1	Ca	310.18	0.12	15	PASS
N027431-005B	SAMP	1	Ca	54.46	0.45	15	PASS
N027431-006B	SAMP	1	Ca	243.52	0.21	15	PASS
CCV5	CCV	1	Ca	9.74	0.6	15	PASS
CCB5	CCB	1	Ca	0.015	48.034	15	<PQL
CCV6	CCV	1	Ca	9.73	0.54	15	PASS
CCB6	CCB	1	Ca	0.022	18.88	15	<PQL
LLCCV2	CCV2	1	Ca	0.24	14.45	20	PASS
ICSA3	ICSA	1	Ca	473.64	0.25	15	PASS
ICSAB3	ICSAB	1	Ca	525.29	0.57	15	PASS
CCV7	CCV	1	Ca	10.062	0.85	15	PASS
CCB7	CCB	1	Ca	0.013	111.0015	15	<PQL
LLCCV3	CCV2	1	Ca	0.22	7.62	20	PASS
ICSA4	ICSA	1	Ca	491.53	0.12	15	PASS
ICSAB4	ICSAB	1	Ca	539.93	0.17	15	PASS
CalBlk	IBLK	1	Fe	0	7.094	15	PASS
Standard1	ICAL	1	Fe	0.02	2.33	15	PASS
Standard2	ICAL	1	Fe	0.05	0.25	15	PASS
Standard3	ICAL	1	Fe	2	0.41	15	PASS
Standard4	ICAL	1	Fe	5	0.1	15	PASS

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard5	ICAL	1	Fe	7.5	1.055	15	PASS
Standard6	ICAL	1	Fe	10	0.12	15	PASS
Standard7	ICAL	1	Fe	20	0.043	15	PASS
ICV	ICV	1	Fe	10.026	0.075	15	PASS
ICB	ICB	1	Fe	0.00024	127.55	15	<PQL
LLICV	CCV1	1	Fe	0.035	1.7	20	PASS
LLICV	CCV1	1	Fe	0.023	4.14	20	PASS
ICSA1	ICSA	1	Fe	179.89	0.11	15	PASS
ICSAB1	ICSAB	1	Fe	190.03	0.14	15	PASS
CCV1	CCV	1	Fe	9.78	0.18	15	PASS
CCB1	CCB	1	Fe	0.00026	80.41	15	<PQL
CCV2	CCV	1	Fe	9.64	0.025	15	PASS
CCB2	CCB	1	Fe	0.00052	63.31	15	<PQL
MB-65993	MBLK	1	Fe	0.0012	59.24	15	<PQL
LCS1-65993	LCS	1	Fe	0.11	0.6	15	PASS
N027430-002B	SAMP	1	Fe	0.053	2.32	15	PASS
N027430-002B	SAMP	5	Fe	0.012	3.56	15	PASS
N027430-002B-PS	PS	1	Fe	0.14	0.57	15	PASS
N027430-002B-MS1	MS	1	Fe	0.12	0.75	15	PASS
N027430-002B-MSD1	MSD	1	Fe	0.12	0.24	15	PASS
N027430-004B	SAMP	1	Fe	1.0098	0.061	15	PASS
N027430-006B	SAMP	1	Fe	0.017	4.99	15	PASS
N027430-008B	SAMP	1	Fe	0.5	0.19	15	PASS
CCV3	CCV	1	Fe	9.64	0.14	15	PASS
CCB3	CCB	1	Fe	0.00084	63.96	15	<PQL
N027430-012B	SAMP	1	Fe	0.14	1.1	15	PASS
N027430-013B	SAMP	1	Fe	0.02	3.57	15	PASS
N027430-014B	SAMP	1	Fe	0.019	8.5	15	PASS
N027430-015B	SAMP	1	Fe	0.068	1.91	15	PASS
N027430-016B	SAMP	1	Fe	0.07	0.83	15	PASS
N027430-017B	SAMP	1	Fe	0.014	5.75	15	PASS
N027430-018B	SAMP	1	Fe	0.24	0.7	15	PASS
N027430-020B	SAMP	1	Fe	0.015	2.064	15	PASS
N027431-001B	SAMP	1	Fe	0.023	1.88	15	PASS
N027431-002B	SAMP	1	Fe	0.052	0.72	15	PASS
CCV4	CCV	1	Fe	9.57	0.057	15	PASS
CCB4	CCB	1	Fe	0.0017	65.66	15	<PQL
LLCCV1	CCV2	1	Fe	0.023	3.17	20	PASS
ICSA2	ICSA	1	Fe	171.22	0.055	15	PASS
ICSAB2	ICSAB	1	Fe	177.82	0.22	15	PASS
N027431-003B	SAMP	1	Fe	0.053	1.47	15	PASS
N027431-004B	SAMP	1	Fe	0.045	0.38	15	PASS

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027431-005B	SAMP	1	Fe	0.046	0.85	15	PASS
N027431-006B	SAMP	1	Fe	0.019	3.14	15	PASS
CCV5	CCV	1	Fe	9.54	0.1	15	PASS
CCB5	CCB	1	Fe	0.0016	45.74	15	<PQL
CCV6	CCV	1	Fe	9.53	0.14	15	PASS
CCB6	CCB	1	Fe	0.0022	12.11	15	PASS
LLCCV2	CCV2	1	Fe	0.023	2.84	20	PASS
ICSA3	ICSA	1	Fe	172.78	0.29	15	PASS
ICSAB3	ICSAB	1	Fe	178.26	0.14	15	PASS
CCV7	CCV	1	Fe	10.079	0.16	15	PASS
CCB7	CCB	1	Fe	0.00004	522.00022	15	<PQL
LLCCV3	CCV2	1	Fe	0.023	2.21	20	PASS
ICSA4	ICSA	1	Fe	183.12	0.28	15	PASS
ICSAB4	ICSAB	1	Fe	193.13	0.029	15	PASS
CalBlk	IBLK	1	Mg	0	0.61	15	PASS
Standard1	ICAL	1	Mg	0.1	0.95	15	PASS
Standard2	ICAL	1	Mg	1	1.084	15	PASS
Standard3	ICAL	1	Mg	2	0.64	15	PASS
Standard4	ICAL	1	Mg	5	0.048	15	PASS
Standard5	ICAL	1	Mg	7.5	1.03	15	PASS
Standard6	ICAL	1	Mg	10	0.17	15	PASS
Standard7	ICAL	1	Mg	20	0.096	15	PASS
ICV	ICV	1	Mg	10	0.2	15	PASS
ICB	ICB	1	Mg	0.0014	23.22	15	<PQL
LLICV	CCV1	1	Mg	0.16	1.15	20	PASS
LLICV	CCV1	1	Mg	0.11	0.91	20	PASS
ICSA1	ICSA	1	Mg	485.04	0.27	15	PASS
ICSAB1	ICSAB	1	Mg	511.69	0.39	15	PASS
CCV1	CCV	1	Mg	9.74	0.21	15	PASS
CCB1	CCB	1	Mg	0.0017	20.16	15	<PQL
CCV2	CCV	1	Mg	9.66	0.29	15	PASS
CCB2	CCB	1	Mg	0.0024	41.23	15	<PQL
MB-65993	MBLK	1	Mg	0.0048	9.2	15	PASS
LCS1-65993	LCS	1	Mg	9.31	0.026	15	PASS
N027430-002B	SAMP	1	Mg	4.66	0.55	15	PASS
N027430-002B	SAMP	5	Mg	1.15	0.2	15	PASS
N027430-002B-PS	PS	1	Mg	11.71	0.33	15	PASS
N027430-002B-MS1	MS	1	Mg	11.86	0.04	15	PASS
N027430-002B-MSD1	MSD	1	Mg	11.84	0.13	15	PASS
N027430-004B	SAMP	1	Mg	30.43	0.13	15	PASS
N027430-006B	SAMP	1	Mg	27.48	0.19	15	PASS
N027430-008B	SAMP	1	Mg	37.039	0.25	15	PASS

RSD SUMMARY: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV3	CCV	1	Mg	9.72	0.18	15	PASS
CCB3	CCB	1	Mg	0.0014	27.16	15	<PQL
N027430-012B	SAMP	1	Mg	71.73	0.098	15	PASS
N027430-013B	SAMP	1	Mg	23.91	0.14	15	PASS
N027430-014B	SAMP	1	Mg	41.26	0.19	15	PASS
N027430-015B	SAMP	1	Mg	51.51	0.1	15	PASS
N027430-016B	SAMP	1	Mg	2.57	0.35	15	PASS
N027430-017B	SAMP	1	Mg	2.46	0.4	15	PASS
N027430-018B	SAMP	1	Mg	6.46	0.26	15	PASS
N027430-020B	SAMP	1	Mg	36.79	0.44	15	PASS
N027431-001B	SAMP	1	Mg	20.54	0.25	15	PASS
N027431-002B	SAMP	1	Mg	6.65	0.078	15	PASS
CCV4	CCV	1	Mg	9.64	0.14	15	PASS
CCB4	CCB	1	Mg	0.0011	26.28	15	<PQL
LLCCV1	CCV2	1	Mg	0.1	0.46	20	PASS
ICSA2	ICSA	1	Mg	463.52	0.1	15	PASS
ICSAB2	ICSAB	1	Mg	501.44	0.17	15	PASS
N027431-003B	SAMP	1	Mg	11.75	0.13	15	PASS
N027431-004B	SAMP	1	Mg	11.87	0.16	15	PASS
N027431-005B	SAMP	1	Mg	12.52	0.15	15	PASS
N027431-006B	SAMP	1	Mg	21.63	0.16	15	PASS
CCV5	CCV	1	Mg	9.63	0.039	15	PASS
CCB5	CCB	1	Mg	0.0019	35.79	15	<PQL
CCV6	CCV	1	Mg	9.62	0.13	15	PASS
CCB6	CCB	1	Mg	0.0011	28.96	15	<PQL
LLCCV2	CCV2	1	Mg	0.1	2.15	20	PASS
ICSA3	ICSA	1	Mg	451.31	0.71	15	PASS
ICSAB3	ICSAB	1	Mg	504.86	0.33	15	PASS
CCV7	CCV	1	Mg	10.17	0.14	15	PASS
CCB7	CCB	1	Mg	0.0017	60.33	15	<PQL
LLCCV3	CCV2	1	Mg	0.11	1.71	20	PASS
ICSA4	ICSA	1	Mg	474.19	0.6	15	PASS
ICSAB4	ICSAB	1	Mg	522.59	0.21	15	PASS

RSD SUMMARY: 171220B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	K	0	5.86	15	PASS
Standard1	ICAL	1	K	0.1	7.057	15	PASS
Standard2	ICAL	1	K	1	1.35	15	PASS
Standard3	ICAL	1	K	5	0.73	15	PASS
Standard4	ICAL	1	K	10	0.064	15	PASS
Standard5	ICAL	1	K	20	0.34	15	PASS
Standard6	ICAL	1	K	40	0.068	15	PASS
ICV	ICV	1	K	10.16	0.14	15	PASS
ICB	ICB	1	K	-0.00031	3229.85	15	<PQL
ICSA1	ICSA	1	K	-0.00096	1485.24	15	<PQL
ICSAB1	ICSAB	1	K	10.18	0.058	15	PASS
MB-65993	MBLK	1	K	0.011	27.69	15	<PQL
LCS2-65993	LCS	1	K	19.56	0.024	15	PASS
N027430-002B	SAMP	250	K	0.22	5	15	PASS
N027430-004B	SAMP	1	K	4.52	0.39	15	PASS
N027430-004B	SAMP	5	K	0.96	0.39	15	PASS
N027430-004B-PS	PS	1	K	25.66	0.17	15	PASS
N027430-004B-MS2	MS	1	K	25.79	0.098	15	PASS
N027430-004B-MSD2	MSD	1	K	25.85	0.046	15	PASS
N027430-004B	SAMP	10	K	0.51	1.044	15	PASS
N027430-004B	SAMP	50	K	0.13	8.12	15	PASS
CCV1	CCV	1	K	0.038	26.36	15	<PQL
CCV1	CCV	1	K	10.14	0.086	15	PASS
CCB1	CCB	1	K	0.0016	323.8	15	<PQL
N027430-004B-PS	PS	10	K	2.58	0.47	15	PASS
N027430-004B-MS2	MS	10	K	2.62	0.33	15	PASS
N027430-004B-MSD2	MSD	10	K	2.61	0.62	15	PASS
N027430-006B	SAMP	10	K	0.52	2.089	15	PASS
N027430-008B	SAMP	100	K	0.13	10.96	15	PASS
N027430-012B	SAMP	100	K	0.093	7.35	15	PASS
N027430-013B	SAMP	100	K	0.17	6.59	15	PASS
N027430-014B	SAMP	100	K	0.25	1.7	15	PASS
N027430-015B	SAMP	250	K	0.17	7.7	15	PASS
N027430-016B	SAMP	250	K	0.15	7.042	15	PASS
CCV2	CCV	1	K	10.24	0.099	15	PASS
CCB2	CCB	1	K	0.0098	94.43	15	<PQL
N027430-017B	SAMP	250	K	0.19	6.86	15	PASS
N027430-018B	SAMP	500	K	0.16	3.3	15	PASS
N027430-020B	SAMP	100	K	0.13	4.18	15	PASS
N027431-001B	SAMP	25	K	0.32	4.1	15	PASS
N027431-002B	SAMP	100	K	0.23	2.86	15	PASS
N027431-003B	SAMP	250	K	0.17	8.29	15	PASS

RSD SUMMARY: 171220B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027431-004B	SAMP	250	K	0.16	6.36	15	PASS
N027431-005B	SAMP	1	K	5.15	0.12	15	PASS
N027431-005B	SAMP	25	K	0.24	5.38	15	PASS
N027431-006B	SAMP	1	K	22.49	0.2	15	PASS
CCV3	CCV	1	K	10.3	0.25	15	PASS
CCB3	CCB	1	K	0.024	56.55	15	<PQL
N027431-006B	SAMP	100	K	0.25	3.068	15	PASS
CCV4	CCV	1	K	10.29	0.035	15	PASS
CCB4	CCB	1	K	0.00007	11481.36	15	<PQL
ICSA2	ICSA	1	K	0.0018	627.18	15	<PQL
ICSAB2	ICSAB	1	K	10.28	0.12	15	PASS
CalBlk	IBLK	1	Na	0	2.95	15	PASS
Standard1	ICAL	1	Na	0.1	6.067	15	PASS
Standard2	ICAL	1	Na	1	0.45	15	PASS
Standard3	ICAL	1	Na	5	0.3	15	PASS
Standard4	ICAL	1	Na	10	0.24	15	PASS
Standard5	ICAL	1	Na	20	0.39	15	PASS
Standard6	ICAL	1	Na	40	0.1	15	PASS
ICV	ICV	1	Na	10.2	0.38	15	PASS
ICB	ICB	1	Na	0.013	38.44	15	<PQL
ICSA1	ICSA	1	Na	0.024	15	15	PASS
ICSAB1	ICSAB	1	Na	10.22	0.24	15	PASS
MB-65993	MBLK	1	Na	0.027	8.25	15	PASS
LCS2-65993	LCS	1	Na	20.34	0.2	15	PASS
N027430-002B	SAMP	250	Na	22.77	0.044	15	PASS
N027430-004B	SAMP	1	Na	217.23	0.39	15	PASS
N027430-004B	SAMP	5	Na	46.47	0.48	15	PASS
N027430-004B-PS	PS	1	Na	241.81	0.25	15	PASS
N027430-004B-MS2	MS	1	Na	246.08	0.33	15	PASS
N027430-004B-MSD2	MSD	1	Na	247.07	0.12	15	PASS
N027430-004B	SAMP	10	Na	22.67	0.035	15	PASS
N027430-004B	SAMP	50	Na	4.76	0.097	15	PASS
CCV1	CCV	1	Na	17.3	0.17	15	PASS
CCV1	CCV	1	Na	10.19	0.36	15	PASS
CCB1	CCB	1	Na	0.062	2.87	15	PASS
N027430-004B-PS	PS	10	Na	25.3	0.26	15	PASS
N027430-004B-MS2	MS	10	Na	26.12	0.15	15	PASS
N027430-004B-MSD2	MSD	10	Na	25.89	0.32	15	PASS
N027430-006B	SAMP	10	Na	10.69	1.29	15	PASS
N027430-008B	SAMP	100	Na	12.27	0.054	15	PASS
N027430-012B	SAMP	100	Na	30.38	0.22	15	PASS
N027430-013B	SAMP	100	Na	18.84	0.26	15	PASS

RSD SUMMARY: 171220B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027430-014B	SAMP	100	Na	30.53	0.18	15	PASS
N027430-015B	SAMP	250	Na	15.39	0.16	15	PASS
N027430-016B	SAMP	250	Na	16.26	0.14	15	PASS
CCV2	CCV	1	Na	10.31	0.25	15	PASS
CCB2	CCB	1	Na	0.05	2.62	15	PASS
N027430-017B	SAMP	250	Na	20.09	0.047	15	PASS
N027430-018B	SAMP	500	Na	16.79	0.18	15	PASS
N027430-020B	SAMP	100	Na	11.28	0.39	15	PASS
N027431-001B	SAMP	25	Na	13.68	0.17	15	PASS
N027431-002B	SAMP	100	Na	18.43	0.14	15	PASS
N027431-003B	SAMP	250	Na	14.87	0.39	15	PASS
N027431-004B	SAMP	250	Na	15.39	0.24	15	PASS
N027431-005B	SAMP	1	Na	290.31	0.81	15	PASS
N027431-005B	SAMP	25	Na	12.35	0.11	15	PASS
N027431-006B	SAMP	1	Na	1411.8	0.24	15	PASS
CCV3	CCV	1	Na	10.46	0.35	15	PASS
CCB3	CCB	1	Na	0.17	2.12	15	PASS
N027431-006B	SAMP	100	Na	16.31	0.25	15	PASS
CCV4	CCV	1	Na	10.33	0.15	15	PASS
CCB4	CCB	1	Na	0.098	3.11	15	PASS
ICSA2	ICSA	1	Na	0.085	7.067	15	PASS
ICSAB2	ICSAB	1	Na	10.32	0.067	15	PASS

RSD SUMMARY: 171221B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	B	0	0.54	15	PASS
Standard1	ICAL	1	B	0.1	0.66	15	PASS
Standard3	ICAL	1	B	1	0.17	15	PASS
Standard4	ICAL	1	B	2.5	0.31	15	PASS
Standard5	ICAL	1	B	3.75	0.33	15	PASS
Standard6	ICAL	1	B	5	0.36	15	PASS
Standard7	ICAL	1	B	10	0.16	15	PASS
ICV	ICV	1	B	4.93	0.4	15	PASS
ICB	ICB	1	B	0.03	9.77	15	PASS
LLICV	CCV1	1	B	0.16	1.29	20	PASS
LLICV	CCV1	1	B	0.1	1.85	20	PASS
ICSA1	ICSA	1	B	0.023	5.15	15	PASS
ICSAB1	ICSAB	1	B	1.069	0.099	15	PASS
N027431-003B	SAMP	1	B	2.011	0.082	15	PASS
N027431-004B	SAMP	1	B	2.048	0.099	15	PASS
N027431-005B	SAMP	1	B	0.5	0.17	15	PASS
N027431-006B	SAMP	1	B	2.15	0.25	15	PASS
CCV1	CCV	1	B	4.96	0.24	15	PASS
CCB1	CCB	1	B	0.013	16.33	15	<PQL
LLCCV1	CCV2	1	B	0.099	1.25	20	PASS
ICSA2	ICSA	1	B	-0.041	274.72	15	<PQL
ICSA2	ICSA	1	B	0.044	3.62	15	PASS
ICSAB2	ICSAB	1	B	1.065	0.39	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 171218C

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201K/MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201K/-171030G/-171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/18/2017	10:32:48 PM
2	Standard1	ICAL	1	12/18/2017	10:42:09 PM
3	Standard2	ICAL	1	12/18/2017	10:47:29 PM
11	Standard3	ICAL	1	12/18/2017	10:52:47 PM
12	Standard4	ICAL	1	12/18/2017	10:58:08 PM
6	Standard5	ICAL	1	12/18/2017	11:05:01 PM
7	Standard6	ICAL	1	12/18/2017	11:12:21 PM
8	Standard7	ICAL	1	12/18/2017	11:19:11 PM
9	ICV	ICV	1	12/18/2017	11:26:02 PM
1	ICB	ICB	1	12/18/2017	11:32:54 PM
2	LLICV	CCV1	1	12/18/2017	11:37:43 PM
2	LLICV	CCV1	1	12/18/2017	11:42:16 PM
4	ICSA1	ICSA	1	12/18/2017	11:47:34 PM
5	ICSAB1	ICSAB	1	12/18/2017	11:55:02 PM
64	MB-65992	MBLK	1	12/19/2017	12:02:34 AM
65	LCS1-65992	LCS	1	12/19/2017	12:07:25 AM
66	N027429-010B	SAMP	1	12/19/2017	12:14:46 AM
67	N027429-012B	SAMP	1	12/19/2017	12:21:46 AM
68	N027429-013B	SAMP	1	12/19/2017	12:28:38 AM
69	N027429-014B	SAMP	1	12/19/2017	12:35:29 AM
70	N027429-015B	SAMP	1	12/19/2017	12:42:20 AM
71	N027429-016C	SAMP	1	12/19/2017	12:49:12 AM
72	N027429-017C	SAMP	1	12/19/2017	12:56:03 AM
73	N027429-018C	SAMP	1	12/19/2017	01:02:55 AM
7	CCV1	CCV	1	12/19/2017	01:09:48 AM
1	CCB1	CCB	1	12/19/2017	01:16:38 AM
74	N027429-020C	SAMP	1	12/19/2017	01:21:27 AM
75	N027437-001B	SAMP	1	12/19/2017	01:28:19 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
76	N027437-002B	SAMP	1	12/19/2017	01:33:41 AM
77	N027437-002B	SAMP	5	12/19/2017	01:40:33 AM
78	N027437-002B-PS	PS	1	12/19/2017	01:45:55 AM
79	N027437-002BMS1	MS	1	12/19/2017	01:53:18 AM
80	N027437-002BMSD1	MSD	1	12/19/2017	02:00:10 AM
81	N027437-003D	SAMP	1	12/19/2017	02:07:02 AM
82	N027437-004B	SAMP	1	12/19/2017	02:11:55 AM
83	N027437-005B	SAMP	1	12/19/2017	02:17:17 AM
7	CCV2	CCV	1	12/19/2017	02:22:08 AM
1	CCB2	CCB	1	12/19/2017	02:28:59 AM
84	MB-65993	MBLK	1	12/19/2017	02:33:47 AM
85	LCS1-65993	LCS	1	12/19/2017	02:38:38 AM
86	N027430-002B	SAMP	1	12/19/2017	02:46:00 AM
87	N027430-002B	SAMP	5	12/19/2017	02:52:53 AM
88	N027430-002B-PS	PS	1	12/19/2017	02:57:45 AM
89	N027430-002B-MS1	MS	1	12/19/2017	03:04:37 AM
90	N027430-002B-MSD1	MSD	1	12/19/2017	03:11:30 AM
91	N027430-004B	SAMP	1	12/19/2017	03:18:23 AM
92	N027430-006B	SAMP	1	12/19/2017	03:23:16 AM
93	N027430-008B	SAMP	1	12/19/2017	03:28:09 AM
7	CCV3	CCV	1	12/19/2017	03:35:01 AM
1	CCB3	CCB	1	12/19/2017	03:41:52 AM
94	N027430-012B	SAMP	1	12/19/2017	03:46:40 AM
95	N027430-013B	SAMP	1	12/19/2017	03:53:31 AM
96	N027430-014B	SAMP	1	12/19/2017	04:00:23 AM
97	N027430-015B	SAMP	1	12/19/2017	04:07:15 AM
98	N027430-016B	SAMP	1	12/19/2017	04:14:08 AM
99	N027430-017B	SAMP	1	12/19/2017	04:20:59 AM
100	N027430-018B	SAMP	1	12/19/2017	04:27:52 AM
101	N027430-020B	SAMP	1	12/19/2017	04:34:45 AM
102	N027431-001B	SAMP	1	12/19/2017	04:41:38 AM
103	N027431-002B	SAMP	1	12/19/2017	04:46:31 AM
7	CCV4	CCV	1	12/19/2017	04:53:25 AM
1	CCB4	CCB	1	12/19/2017	05:00:16 AM
2	LLCCV1	CCV2	1	12/19/2017	05:05:04 AM
4	ICSA2	ICSA	1	12/19/2017	05:10:23 AM
5	ICSAB2	ICSAB	1	12/19/2017	05:17:50 AM
104	N027431-003B	SAMP	1	12/19/2017	05:25:19 AM
105	N027431-004B	SAMP	1	12/19/2017	05:32:11 AM
106	N027431-005B	SAMP	1	12/19/2017	05:39:05 AM
107	N027431-006B	SAMP	1	12/19/2017	05:45:58 AM
108	MB-65991	MBLK	1	12/19/2017	05:52:51 AM
109	LCS1-65991	LCS	1	12/19/2017	05:57:43 AM
110	N027437-001A	SAMP	1	12/19/2017	06:04:35 AM
111	N027437-002A	SAMP	1	12/19/2017	06:09:57 AM
112	N027437-002A	SAMP	5	12/19/2017	06:16:50 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
113	N027437-002A-PS	PS	1	12/19/2017	06:22:12 AM
7	CCV5	CCV	1	12/19/2017	06:29:05 AM
1	CCB5	CCB	1	12/19/2017	06:35:56 AM
114	N027437-002AMS1	MS	1	12/19/2017	06:41:14 AM
115	N027437-002AMSD1	MSD	1	12/19/2017	06:48:08 AM
116	N027437-003C	SAMP	1	12/19/2017	06:55:02 AM
117	N027437-004A	SAMP	1	12/19/2017	07:01:56 AM
118	N027437-005A	SAMP	1	12/19/2017	07:07:18 AM
119	N027405-013B	SAMP	5	12/19/2017	07:12:10 AM
120	N027429-010B	SAMP	5	12/19/2017	07:17:03 AM
7	CCV6	CCV	1	12/19/2017	07:23:56 AM
1	CCB6	CCB	1	12/19/2017	07:30:48 AM
2	LLCCV2	CCV2	1	12/19/2017	07:35:36 AM
4	ICSA3	ICSA	1	12/19/2017	07:40:54 AM
5	ICSAB3	ICSAB	1	12/19/2017	07:48:24 AM
121	N027405-012B	SAMP	5	12/19/2017	08:01:04 AM
38	MB-65994	MBLK	1	12/19/2017	08:07:56 AM
39	LCS1-65994	LCS	1	12/19/2017	08:12:45 AM
40	N027459-001C	SAMP	1	12/19/2017	08:20:04 AM
41	N027459-001C	SAMP	5	12/19/2017	08:26:54 AM
42	N027459-001C-PS	PS	1	12/19/2017	08:31:43 AM
43	N027459-001C-MS1	MS	1	12/19/2017	08:38:34 AM
44	N027459-001C-MSD1	MSD	1	12/19/2017	08:45:25 AM
45	N027459-002C	SAMP	1	12/19/2017	08:52:15 AM
46	N027459-003B	SAMP	1	12/19/2017	08:59:06 AM
7	CCV7	CCV	1	12/19/2017	09:07:07 AM
1	CCB7	CCB	1	12/19/2017	09:17:06 AM
2	LLCCV3	CCV2	1	12/19/2017	09:24:34 AM
4	ICSA4	ICSA	1	12/19/2017	09:34:26 AM
5	ICSAB4	ICSAB	1	12/19/2017	09:41:57 AM

INJECTION LOG: 171220B

Instrument ID: ICP-02

STANDARD CODE		
Standard1	MWST-170601A,0.025<50mL	MWST-171201R
Standard2	MWST-170601A,0.25<50mL	
Standard3	MWST-170601A,1.25<50mL	
Standard4	MWST-170601A,2.5<50mL	
Standard5	MWST-170601A,5<50mL	
Standard6	MWST-170601A,10<50mL	
ICV	MWST-171030L	
CCV	MWST-170601A,2.5<50mL	MWST-171201R
ICSA/ICSAB	MWST-170601L/MWST-170601B	MWST-171201P/ MWST-171201S
Int. Std. (Sc):	MSST-171009C/B	
PS Spike	MSST-130329D/E	

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/20/2017	06:47:08 PM
26	Standard1	ICAL	1	12/20/2017	06:50:25 PM
27	Standard2	ICAL	1	12/20/2017	06:53:42 PM
28	Standard3	ICAL	1	12/20/2017	06:57:31 PM
29	Standard4	ICAL	1	12/20/2017	07:01:22 PM
30	Standard5	ICAL	1	12/20/2017	07:06:47 PM
31	Standard6	ICAL	1	12/20/2017	07:10:51 PM
32	ICV	ICV	1	12/20/2017	07:15:00 PM
1	ICB	ICB	1	12/20/2017	07:18:55 PM
33	ICSA1	ICSA	1	12/20/2017	07:24:12 PM
34	ICSAB1	ICSAB	1	12/20/2017	07:27:31 PM
98	MB-65993	MBLK	1	12/20/2017	07:35:18 PM
99	LCS2-65993	LCS	1	12/20/2017	07:39:03 PM
100	N027430-002B	SAMP	250	12/20/2017	07:44:07 PM
101	N027430-004B	SAMP	1	12/20/2017	07:47:27 PM
102	N027430-004B	SAMP	5	12/20/2017	07:52:21 PM
103	N027430-004B-PS	PS	1	12/20/2017	07:56:13 PM
104	N027430-004B-MS2	MS	1	12/20/2017	07:59:33 PM
105	N027430-004B-MSD2	MSD	1	12/20/2017	08:04:40 PM
106	N027430-004B	SAMP	10	12/20/2017	08:09:48 PM
107	N027430-004B	SAMP	50	12/20/2017	08:13:07 PM
8	CCV1	CCV	1	12/20/2017	08:16:27 PM
29	CCV1	CCV	1	12/20/2017	08:19:28 PM
1	CCB1	CCB	1	12/20/2017	08:23:22 PM
108	N027430-004B-PS	PS	10	12/20/2017	08:26:40 PM
109	N027430-004B-MS2	MS	10	12/20/2017	08:30:32 PM
110	N027430-004B-MSD2	MSD	10	12/20/2017	08:34:24 PM
111	N027430-006B	SAMP	10	12/20/2017	08:38:17 PM
112	N027430-008B	SAMP	100	12/20/2017	08:41:38 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
113	N027430-012B	SAMP	100	12/20/2017	08:44:59 PM
114	N027430-013B	SAMP	100	12/20/2017	08:48:21 PM
115	N027430-014B	SAMP	100	12/20/2017	08:51:42 PM
116	N027430-015B	SAMP	250	12/20/2017	08:55:03 PM
117	N027430-016B	SAMP	250	12/20/2017	08:58:24 PM
29	CCV2	CCV	1	12/20/2017	09:01:45 PM
1	CCB2	CCB	1	12/20/2017	09:05:40 PM
118	N027430-017B	SAMP	250	12/20/2017	09:08:58 PM
119	N027430-018B	SAMP	500	12/20/2017	09:12:20 PM
120	N027430-020B	SAMP	100	12/20/2017	09:16:18 PM
121	N027431-001B	SAMP	25	12/20/2017	09:19:39 PM
122	N027431-002B	SAMP	100	12/20/2017	09:23:01 PM
123	N027431-003B	SAMP	250	12/20/2017	09:26:23 PM
124	N027431-004B	SAMP	250	12/20/2017	09:29:45 PM
125	N027431-005B	SAMP	1	12/20/2017	09:33:07 PM
126	N027431-005B	SAMP	25	12/20/2017	09:38:01 PM
127	N027431-006B	SAMP	1	12/20/2017	09:41:20 PM
29	CCV3	CCV	1	12/20/2017	09:46:36 PM
1	CCB3	CCB	1	12/20/2017	09:50:31 PM
128	N027431-006B	SAMP	100	12/20/2017	09:53:49 PM
29	CCV4	CCV	1	12/20/2017	09:57:11 PM
1	CCB4	CCB	1	12/20/2017	10:01:06 PM
33	ICSA2	ICSA	1	12/20/2017	10:04:23 PM
34	ICSAB2	ICSAB	1	12/20/2017	10:07:42 PM

INJECTION LOG: 171221B

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201K/MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201K/-171030G/-171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/21/2017	09:59:39 AM
2	Standard1	ICAL	1	12/21/2017	10:04:28 AM
3	Standard2	ICAL	1	12/21/2017	10:09:16 AM
11	Standard3	ICAL	1	12/21/2017	10:14:05 AM
12	Standard4	ICAL	1	12/21/2017	10:18:56 AM
6	Standard5	ICAL	1	12/21/2017	10:25:48 AM
7	Standard6	ICAL	1	12/21/2017	10:32:09 AM
8	Standard7	ICAL	1	12/21/2017	10:38:30 AM
9	ICV	ICV	1	12/21/2017	10:44:54 AM
1	ICB	ICB	1	12/21/2017	10:53:34 AM
2	LLICV	CCV1	1	12/21/2017	10:58:23 AM
2	LLICV	CCV1	1	12/21/2017	11:12:56 AM
4	ICSA1	ICSA	1	12/21/2017	11:17:45 AM
5	ICSAB1	ICSAB	1	12/21/2017	11:24:45 AM
104	N027431-003B	SAMP	1	12/21/2017	11:37:06 AM
105	N027431-004B	SAMP	1	12/21/2017	11:43:27 AM
106	N027431-005B	SAMP	1	12/21/2017	11:49:48 AM
107	N027431-006B	SAMP	1	12/21/2017	11:54:09 AM
7	CCV1	CCV	1	12/21/2017	12:00:30 PM
1	CCB1	CCB	1	12/21/2017	12:07:15 PM
2	LLCCV1	CCV2	1	12/21/2017	12:12:03 PM
4	ICSA2	ICSA	1	12/21/2017	12:16:51 PM
4	ICSA2	ICSA	1	12/21/2017	01:06:02 PM
5	ICSAB2	ICSAB	1	12/21/2017	01:13:01 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/11/2017 7:56:26**
Prep End Date: **12/11/2017 3:00:00**
Reviewed/ Date: 12/22/2017
Initials/ Date: for MG

Prep Batch **65993** Prep Code: **3010_W_DISS** Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-48**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-65993	Aqueous		25	☐	0	0	25	1.000		
LCS2-65993	Aqueous		25	☐	0	0	25	1.000		
MB-65993	Aqueous		25	☐	0	0	25	1.000		
N027430-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-004B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-004B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-014B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9589	HYDROCHLORIC ACID
9601	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/11/2017 7:56:26**
Prep End Date: **12/11/2017 3:00:00**
Prep Batch **65993** Prep Code: **3010_W_DISS**

Reviewed/ Date: 12/22/2017
Initials/ Date: for MG
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-48**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027430-015B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-016B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-017B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-018B	Groundwater	<2	25	☐	0	0	25	1.000		
N027430-020B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-006B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9589	HYDROCHLORIC ACID
9601	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 171218C

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Boron								
CalBlk	12/18/2017	10:32:48 PM	B	249.677	5579	0.00	mg/L	
Standard1	12/18/2017	10:42:09 PM	B	249.677	5366	0.1000	mg/L	
Standard3	12/18/2017	10:52:47 PM	B	249.677	37786	1.000	mg/L	
Standard4	12/18/2017	10:58:08 PM	B	249.677	92149	2.500	mg/L	
Standard5	12/18/2017	11:05:01 PM	B	249.677	145677	3.750	mg/L	
Standard6	12/18/2017	11:12:21 PM	B	249.677	188926	5.000	mg/L	
Standard7	12/18/2017	11:19:11 PM	B	249.677	380951	10.000	mg/L	0.9999
Magnesium								
CalBlk	12/18/2017	10:32:48 PM	Mg	279.079	227	0.00	mg/L	
Standard1	12/18/2017	10:42:09 PM	Mg	279.079	2071	0.1000	mg/L	
Standard2	12/18/2017	10:47:29 PM	Mg	279.079	12904	1.000	mg/L	
Standard3	12/18/2017	10:52:47 PM	Mg	279.079	27082	2.000	mg/L	
Standard4	12/18/2017	10:58:08 PM	Mg	279.079	64266	5.000	mg/L	
Standard5	12/18/2017	11:05:01 PM	Mg	279.079	101143	7.500	mg/L	
Standard6	12/18/2017	11:12:21 PM	Mg	279.079	129171	10.000	mg/L	
Standard7	12/18/2017	11:19:11 PM	Mg	279.079	257123	20.000	mg/L	0.9999
Calcium								
CalBlk	12/18/2017	10:32:48 PM	Ca	227.546	-142	0.00	mg/L	
Standard1	12/18/2017	10:42:09 PM	Ca	227.546	97	0.2000	mg/L	
Standard2	12/18/2017	10:47:29 PM	Ca	227.546	304	1.000	mg/L	
Standard3	12/18/2017	10:52:47 PM	Ca	227.546	661	2.000	mg/L	
Standard4	12/18/2017	10:58:08 PM	Ca	227.546	1578	5.000	mg/L	
Standard5	12/18/2017	11:05:01 PM	Ca	227.546	2445	7.500	mg/L	
Standard6	12/18/2017	11:12:21 PM	Ca	227.546	3145	10.000	mg/L	
Standard7	12/18/2017	11:19:11 PM	Ca	227.546	6220	20.000	mg/L	0.9999
Iron								
CalBlk	12/18/2017	10:32:48 PM	Fe	273.953	-156	0.00	mg/L	
Standard1	12/18/2017	10:42:09 PM	Fe	273.953	739	0.0200	mg/L	
Standard2	12/18/2017	10:47:29 PM	Fe	273.953	1640	0.050	mg/L	
Standard3	12/18/2017	10:52:47 PM	Fe	273.953	44945	2.000	mg/L	
Standard4	12/18/2017	10:58:08 PM	Fe	273.953	107029	5.000	mg/L	
Standard5	12/18/2017	11:05:01 PM	Fe	273.953	168392	7.500	mg/L	
Standard6	12/18/2017	11:12:21 PM	Fe	273.953	214592	10.000	mg/L	
Standard7	12/18/2017	11:19:11 PM	Fe	273.953	426001	20.000	mg/L	0.9999

INITIAL CALIBRATION SUMMARY: 171220B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	12/20/2017	06:47:08 PM	Na	589.594	416	0.00	mg/L	
Standard1	12/20/2017	06:50:25 PM	Na	589.594	456	0.1000	mg/L	
Standard2	12/20/2017	06:53:42 PM	Na	589.594	4185	1.000	mg/L	
Standard3	12/20/2017	06:57:31 PM	Na	589.594	21120	5.000	mg/L	
Standard4	12/20/2017	07:01:22 PM	Na	589.594	41806	10.000	mg/L	
Standard5	12/20/2017	07:06:47 PM	Na	589.594	83648	20.000	mg/L	
Standard6	12/20/2017	07:10:51 PM	Na	589.594	163117	40.000	mg/L	0.9999
Potassium								
CalBlk	12/20/2017	06:47:08 PM	K	766.451	439	0.00	mg/L	
Standard1	12/20/2017	06:50:25 PM	K	766.451	548	0.1000	mg/L	
Standard2	12/20/2017	06:53:42 PM	K	766.451	5094	1.000	mg/L	
Standard3	12/20/2017	06:57:31 PM	K	766.451	25988	5.000	mg/L	
Standard4	12/20/2017	07:01:22 PM	K	766.451	51732	10.000	mg/L	
Standard5	12/20/2017	07:06:47 PM	K	766.451	104113	20.000	mg/L	
Standard6	12/20/2017	07:10:51 PM	K	766.451	203704	40.000	mg/L	1.0000

INITIAL CALIBRATION SUMMARY: 171221B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Boron								
CalBlk	12/21/2017	09:59:39 AM	B	249.677	6942	0.00	mg/L	
Standard1	12/21/2017	10:04:28 AM	B	249.677	6234	0.1000	mg/L	
Standard3	12/21/2017	10:14:05 AM	B	249.677	41689	1.000	mg/L	
Standard4	12/21/2017	10:18:56 AM	B	249.677	107846	2.500	mg/L	
Standard5	12/21/2017	10:25:48 AM	B	249.677	162571	3.750	mg/L	
Standard6	12/21/2017	10:32:09 AM	B	249.677	216944	5.000	mg/L	
Standard7	12/21/2017	10:38:30 AM	B	249.677	429184	10.000	mg/L	1.0000

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4981.624	100	5000	0	99.6	90	110				
Calcium	10088.062	500	10000	0	101	90	110				
Iron	10025.747	20	10000	0	100	90	110				
Magnesium	9999.066	100	10000	0	100	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	96.642	100	100.0	0	96.6	80	120				
Calcium	204.883	500	200.0	0	102	80	120				
Iron	23.129	20	20.00	0	116	80	120				
Magnesium	106.139	100	100.0	0	106	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871592**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4800.518	100	5000	0	96.0	90	110				
Calcium	9969.207	500	10000	0	99.7	90	110				
Iron	9776.470	20	10000	0	97.8	90	110				
Magnesium	9740.502	100	10000	0	97.4	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871604**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4702.076	100	5000	0	94.0	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **CCV** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2871604**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9908.640	500	10000	0	99.1	90	110				
Iron	9641.235	20	10000	0	96.4	90	110				
Magnesium	9655.505	100	10000	0	96.6	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **CCV** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2871616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4675.269	100	5000	0	93.5	90	110				
Calcium	9993.795	500	10000	0	99.9	90	110				
Iron	9644.149	20	10000	0	96.4	90	110				
Magnesium	9720.978	100	10000	0	97.2	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **CCV** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2871628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4627.448	100	5000	0	92.5	90	110				
Calcium	9894.698	500	10000	0	98.9	90	110				
Iron	9566.690	20	10000	0	95.7	90	110				
Magnesium	9638.896	100	10000	0	96.4	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120920**
Client ID: **ZZZZZZ** Batch ID: **R120920** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2871630**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	86.971	100	100.0	0	87.0	70	130				
Calcium	231.543	500	200.0	0	116	70	130				
Iron	23.093	20	20.00	0	115	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871630**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	102.266	100	100.0	0	102	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871643**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4565.887	100	5000	0	91.3	90	110				
Calcium	9735.929	500	10000	0	97.4	90	110				
Iron	9541.151	20	10000	0	95.4	90	110				
Magnesium	9628.434	100	10000	0	96.3	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871652**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4537.337	100	5000	0	90.7	90	110				
Calcium	9734.042	500	10000	0	97.3	90	110				
Iron	9531.319	20	10000	0	95.3	90	110				
Magnesium	9621.434	100	10000	0	96.2	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871654**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	96.701	100	100.0	0	96.7	70	130				
Calcium	240.192	500	200.0	0	120	70	130				
Iron	22.875	20	20.00	0	114	70	130				
Magnesium	103.462	100	100.0	0	103	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCV**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871667**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4870.263	100	5000	0	97.4	90	110				
Calcium	10062.017	500	10000	0	101	90	110				
Iron	10079.268	20	10000	0	101	90	110				
Magnesium	10170.430	100	10000	0	102	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871669**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	104.049	100	100.0	0	104	70	130				
Calcium	222.727	500	200.0	0	111	70	130				
Iron	23.158	20	20.00	0	116	70	130				
Magnesium	110.310	100	100.0	0	110	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **ICV**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874504**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10157.305	500	10000	0	102	90	110				
Sodium	10199.627	500	10000	0	102	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **CCV**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10145.229	500	10000	0	101	90	110				
Sodium	10193.558	500	10000	0	102	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **CCV**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874531**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10240.748	500	10000	0	102	90	110				
Sodium	10312.936	500	10000	0	103	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **CCV**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874543**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10296.829	500	10000	0	103	90	110				
Sodium	10462.425	500	10000	0	105	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **CCV**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874546**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10286.987	500	10000	0	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **CCV**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874546**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10332.651	500	10000	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120989**
Client ID: **ICV**	Batch ID: **R120989**	TestNo: **EPA 6010B**		Analysis Date: **12/21/2017**	SeqNo: **2875278**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4930.094	100	5000	0	98.6	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120989**
Client ID: **ZZZZZZ**	Batch ID: **R120989**	TestNo: **EPA 6010B**		Analysis Date: **12/21/2017**	SeqNo: **2875281**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	101.333	100	100.0	0	101	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120989**
Client ID: **CCV**	Batch ID: **R120989**	TestNo: **EPA 6010B**		Analysis Date: **12/21/2017**	SeqNo: **2875288**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4962.722	100	5000	0	99.3	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120989**
Client ID: **ZZZZZZ**	Batch ID: **R120989**	TestNo: **EPA 6010B**		Analysis Date: **12/21/2017**	SeqNo: **2875290**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	99.365	100	100.0	0	99.4	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	11.230	100									
Calcium	-1.802075	500									
Iron	0.239	20									
Magnesium	1.384	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871593**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	17.004	100									
Calcium	16.292	500									
Iron	0.264	20									
Magnesium	1.657	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871605**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	18.575	100									
Calcium	29.130	500									
Iron	0.524	20									
Magnesium	2.381	100									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	20.882	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-10.673498	500									
Iron	0.841	20									
Magnesium	1.354	100									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	16.066	100									
Calcium	-3.575705	500									
Iron	1.730	20									
Magnesium	1.130	100									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	32.298	100									
Calcium	15.024	500									
Iron	1.554	20									
Magnesium	1.859	100									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871653**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	26.422	100									
Calcium	21.639	500									
Iron	2.167	20									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871653**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	1.109	100									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **CCB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871668**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	30.018	100									
Calcium	13.349	500									
Iron	0.043	20									
Magnesium	1.712	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **ICB**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	-0.30698	500									
Sodium	12.902	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **CCB**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	1.645	500									
Sodium	62.235	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **CCB**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874532**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9.779	500									
Sodium	49.622	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **CCB**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874544**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	23.890	500									
Sodium	172.283	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **CCB**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	0.068	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **CCB**	Batch ID: **R120973**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2874547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	98.184	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120989**
Client ID: **ICB**	Batch ID: **R120989**	TestNo: **EPA 6010B**		Analysis Date: **12/21/2017**	SeqNo: **2875279**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	30.199	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120989**
Client ID: **CCB**	Batch ID: **R120989**	TestNo: **EPA 6010B**		Analysis Date: **12/21/2017**	SeqNo: **2875289**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	13.012	100									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICSA**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871580**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	499606.293	50	500000	0	99.9	80	120				
Boron	77.045	100									
Calcium	498548.809	500	500000	0	99.7	80	120				
Iron	179892.137	20	200000	0	89.9	80	120				
Magnesium	485043.587	100	500000	0	97.0	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICSAB**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/18/2017**	SeqNo: **2871581**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	549867.041	50	500000	0	110	80	120				
Boron	1174.793	100	1000	0	117	80	120				
Calcium	536964.037	500	500000	0	107	80	120				
Iron	190028.308	20	200000	0	95.0	80	120				
Magnesium	511694.882	100	500000	0	102	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ICSA**	Batch ID: **R120920**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2871631**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	484031.618	50	500000	0	96.8	80	120				
Boron	78.420	100									
Calcium	487269.052	500	500000	0	97.5	80	120				
Iron	171216.397	20	200000	0	85.6	80	120				
Magnesium	463520.732	100	500000	0	92.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	ICSAB	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871632

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	526793.741	50	500000	0	105	80	120				
Boron	1090.925	100	1000	0	109	80	120				
Calcium	537053.293	500	500000	0	107	80	120				
Iron	177822.006	20	200000	0	88.9	80	120				
Magnesium	501435.284	100	500000	0	100	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	ICSA	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871655

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	484725.819	50	500000	0	96.9	80	120				
Boron	103.973	100									
Calcium	473640.507	500	500000	0	94.7	80	120				
Iron	172781.452	20	200000	0	86.4	80	120				
Magnesium	451305.649	100	500000	0	90.3	80	120				

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120920
Client ID:	ICSAB	Batch ID:	R120920	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2871656

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	525073.791	50	500000	0	105	80	120				
Boron	1076.987	100	1000	0	108	80	120				
Calcium	525291.517	500	500000	0	105	80	120				
Iron	178260.199	20	200000	0	89.1	80	120				
Magnesium	504862.836	100	500000	0	101	80	120				

B on ICSA3 is biased high however, reported samples for B were closed by CCV4/CCB4/LLCCV1/ICSA2/ICSAB2. Affected samples were reanalyzed for B on 12/21/17.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

12/21/2017

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120973
Client ID:	ICSA	Batch ID:	R120973	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2874506

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	-0.96434	500									
Sodium	23.807	500									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120973
Client ID:	ICSAB	Batch ID:	R120973	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2874507

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10174.994	500	10000	0	102	80	120				
Sodium	10216.986	500	10000	0	102	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120973
Client ID:	ICSA	Batch ID:	R120973	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2874548

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	1.767	500									
Sodium	85.340	500									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120973
Client ID:	ICSAB	Batch ID:	R120973	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2874549

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10283.253	500	10000	0	103	80	120				
Sodium	10321.702	500	10000	0	103	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120989**
Client ID: **ICSA**	Batch ID: **R120989**	TestNo: **EPA 6010B**		Analysis Date: **12/21/2017**	SeqNo: **2875282**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	487799.850	50	500000	0	97.6	80	120				
Boron	23.074	100									
Calcium	496439.478	500	500000	0	99.3	80	120				
Iron	176231.949	20	200000	0	88.1	80	120				
Magnesium	471985.059	100	500000	0	94.4	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120989**
Client ID: **ICSAB**	Batch ID: **R120989**	TestNo: **EPA 6010B**		Analysis Date: **12/21/2017**	SeqNo: **2875283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	521959.450	50	500000	0	104	80	120				
Boron	1069.507	100	1000	0	107	80	120				
Calcium	531225.405	500	500000	0	106	80	120				
Iron	183934.028	20	200000	0	92.0	80	120				
Magnesium	495697.718	100	500000	0	99.1	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120989**
Client ID: **ICSA**	Batch ID: **R120989**	TestNo: **EPA 6010B**		Analysis Date: **12/21/2017**	SeqNo: **2875292**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	481266.125	50	500000	0	96.3	80	120				
Boron	44.367	100									
Calcium	492671.032	500	500000	0	98.5	80	120				
Iron	172799.031	20	200000	0	86.4	80	120				
Magnesium	454039.170	100	500000	0	90.8	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120989**
Client ID: **ICSAB**	Batch ID: **R120989**	TestNo: **EPA 6010B**		Analysis Date: **12/21/2017**	SeqNo: **2875293**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	518908.068	50	500000	0	104	80	120				
Boron	1065.264	100	1000	0	107	80	120				
Calcium	533682.728	500	500000	0	107	80	120				
Iron	176683.904	20	200000	0	88.3	80	120				
Magnesium	490860.199	100	500000	0	98.2	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.01	101.02	65-125	PASS
Standard2	ICAL	1	1.0028	100.28	65-125	PASS
Standard3	ICAL	1	1.048	104.75	65-125	PASS
Standard4	ICAL	1	1.088	108.84	65-125	PASS
Standard5	ICAL	1	1.19	118.58	65-125	PASS
Standard6	ICAL	1	0.96	96.25	65-125	PASS
Standard7	ICAL	1	0.95	94.86	65-125	PASS
ICV	ICV	1	0.97	96.72	65-125	PASS
ICB	ICB	1	1	99.76	65-125	PASS
LLICV	CCV1	1	1.0008	100.08	65-125	PASS
LLICV	CCV1	1	1	99.79	65-125	PASS
ICSA1	ICSA	1	0.87	86.92	65-125	PASS
ICSAB1	ICSAB	1	0.79	78.77	65-125	PASS
CCV1	CCV	1	0.97	96.66	65-125	PASS
CCB1	CCB	1	1.0021	100.21	65-125	PASS
CCV2	CCV	1	0.98	97.53	65-125	PASS
CCB2	CCB	1	1.0038	100.38	65-125	PASS
MB-65993	MBLK	1	1.056	105.55	65-125	PASS
LCS1-65993	LCS	1	0.92	92.37	65-125	PASS
N027430-002B	SAMP	1	0.8	80.15	65-125	PASS
N027430-002B	SAMP	5	0.9	90.019	65-125	PASS
N027430-002B-PS	PS	1	0.81	81.11	65-125	PASS
N027430-002B-MS1	MS	1	0.8	80.48	65-125	PASS
N027430-002B-MSD1	MSD	1	0.82	81.7	65-125	PASS
N027430-004B	SAMP	1	1.035	103.54	65-125	PASS
N027430-006B	SAMP	1	1.015	101.47	65-125	PASS
N027430-008B	SAMP	1	0.94	93.84	65-125	PASS
CCV3	CCV	1	0.97	96.71	65-125	PASS
CCB3	CCB	1	1	99.8	65-125	PASS
N027430-012B	SAMP	1	0.86	85.96	65-125	PASS
N027430-013B	SAMP	1	0.89	89.086	65-125	PASS
N027430-014B	SAMP	1	0.84	83.56	65-125	PASS
N027430-015B	SAMP	1	0.82	82.4	65-125	PASS
N027430-016B	SAMP	1	0.85	84.58	65-125	PASS
N027430-017B	SAMP	1	0.83	82.71	65-125	PASS
N027430-018B	SAMP	1	0.74	73.87	65-125	PASS
N027430-020B	SAMP	1	0.92	92.28	65-125	PASS
N027431-001B	SAMP	1	0.96	96.36	65-125	PASS
N027431-002B	SAMP	1	0.87	87.35	65-125	PASS
CCV4	CCV	1	0.98	97.87	65-125	PASS

INTERNAL STANDARD: 171218C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCB4	CCB	1	1	99.62	65-125	PASS
LLCCV1	CCV2	1	1.016	101.59	65-125	PASS
ICSA2	ICSA	1	0.87	86.98	65-125	PASS
ICSAB2	ICSAB	1	0.79	78.92	65-125	PASS
N027431-003B	SAMP	1	0.84	84.34	65-125	PASS
N027431-004B	SAMP	1	0.86	85.75	65-125	PASS
N027431-005B	SAMP	1	0.99	98.83	65-125	PASS
N027431-006B	SAMP	1	0.89	89.26	65-125	PASS
CCV5	CCV	1	0.98	97.84	65-125	PASS
CCB5	CCB	1	1.015	101.51	65-125	PASS
CCV6	CCV	1	0.98	98.036	65-125	PASS
CCB6	CCB	1	1.0083	100.83	65-125	PASS
LLCCV2	CCV2	1	1.018	101.82	65-125	PASS
ICSA3	ICSA	1	0.88	88.075	65-125	PASS
ICSAB3	ICSAB	1	0.8	79.74	65-125	PASS
CCV7	CCV	1	0.98	97.56	65-125	PASS
CCB7	CCB	1	0.99	99.13	65-125	PASS
LLCCV3	CCV2	1	1.0075	100.75	65-125	PASS
ICSA4	ICSA	1	0.87	87.1	65-125	PASS
ICSAB4	ICSAB	1	0.8	79.67	65-125	PASS

INTERNAL STANDARD: 171220B

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1	99.73	65-125	PASS
Standard2	ICAL	1	1.0062	100.62	65-125	PASS
Standard3	ICAL	1	0.99	98.52	65-125	PASS
Standard4	ICAL	1	0.97	97.31	65-125	PASS
Standard5	ICAL	1	0.96	96.35	65-125	PASS
Standard6	ICAL	1	0.95	95.47	65-125	PASS
ICV	ICV	1	0.97	96.67	65-125	PASS
ICB	ICB	1	1	99.53	65-125	PASS
ICSA1	ICSA	1	1.0002	100.02	65-125	PASS
ICSAB1	ICSAB	1	0.97	96.83	65-125	PASS
MB-65993	MBLK	1	0.99	98.85	65-125	PASS
LCS2-65993	LCS	1	1.036	103.55	65-125	PASS
N027430-002B	SAMP	250	0.98	97.68	65-125	PASS
N027430-004B	SAMP	1	1	99.74	65-125	PASS
N027430-004B	SAMP	5	0.98	98.26	65-125	PASS
N027430-004B-PS	PS	1	0.98	98.31	65-125	PASS
N027430-004B-MS2	MS	1	0.98	98.33	65-125	PASS
N027430-004B-MSD2	MSD	1	0.98	97.95	65-125	PASS
N027430-004B	SAMP	10	0.97	96.6	65-125	PASS
N027430-004B	SAMP	50	0.98	97.63	65-125	PASS
CCV1	CCV	1	1.015	101.53	65-125	PASS
CCV1	CCV	1	0.96	96.11	65-125	PASS
CCB1	CCB	1	0.98	97.78	65-125	PASS
N027430-004B-PS	PS	10	0.97	96.97	65-125	PASS
N027430-004B-MS2	MS	10	0.97	97.098	65-125	PASS
N027430-004B-MSD2	MSD	10	0.97	96.96	65-125	PASS
N027430-006B	SAMP	10	0.97	97.4	65-125	PASS
N027430-008B	SAMP	100	0.97	96.8	65-125	PASS
N027430-012B	SAMP	100	0.96	96.11	65-125	PASS
N027430-013B	SAMP	100	0.97	96.71	65-125	PASS
N027430-014B	SAMP	100	0.96	96.025	65-125	PASS
N027430-015B	SAMP	250	0.96	95.93	65-125	PASS
N027430-016B	SAMP	250	0.97	96.73	65-125	PASS
CCV2	CCV	1	0.95	95.46	65-125	PASS
CCB2	CCB	1	0.98	97.96	65-125	PASS
N027430-017B	SAMP	250	0.97	96.66	65-125	PASS
N027430-018B	SAMP	500	0.97	96.56	65-125	PASS
N027430-020B	SAMP	100	0.96	96.37	65-125	PASS
N027431-001B	SAMP	25	0.96	96.072	65-125	PASS
N027431-002B	SAMP	100	0.97	97.16	65-125	PASS

INTERNAL STANDARD: 171220B

Instrument ID: ICP-02

Scandium

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N027431-003B	SAMP	250	0.96	96.05	65-125	PASS
N027431-004B	SAMP	250	0.97	97.12	65-125	PASS
N027431-005B	SAMP	1	0.95	95.025	65-125	PASS
N027431-005B	SAMP	25	0.96	96.36	65-125	PASS
N027431-006B	SAMP	1	0.9	90.062	65-125	PASS
CCV3	CCV	1	0.95	95.48	65-125	PASS
CCB3	CCB	1	0.97	97.064	65-125	PASS
N027431-006B	SAMP	100	0.96	96.25	65-125	PASS
CCV4	CCV	1	0.95	95.4	65-125	PASS
CCB4	CCB	1	0.98	97.55	65-125	PASS
ICSA2	ICSA	1	0.97	96.79	65-125	PASS
ICSAB2	ICSAB	1	0.95	95.45	65-125	PASS

INTERNAL STANDARD: 171221B

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.058	105.77	65-125	PASS
Standard2	ICAL	1	1.025	102.53	65-125	PASS
Standard3	ICAL	1	1.023	102.28	65-125	PASS
Standard4	ICAL	1	1	99.52	65-125	PASS
Standard5	ICAL	1	0.99	99.2	65-125	PASS
Standard6	ICAL	1	1	99.53	65-125	PASS
Standard7	ICAL	1	1	99.95	65-125	PASS
ICV	ICV	1	1.018	101.81	65-125	PASS
ICB	ICB	1	1.01	101.02	65-125	PASS
LLICV	CCV1	1	1.069	106.9	65-125	PASS
LLICV	CCV1	1	1.058	105.78	65-125	PASS
ICSA1	ICSA	1	1.12	112.44	65-125	PASS
ICSAB1	ICSAB	1	0.89	88.99	65-125	PASS
N027431-003B	SAMP	1	0.84	84.16	65-125	PASS
N027431-004B	SAMP	1	0.84	83.7	65-125	PASS
N027431-005B	SAMP	1	0.96	96.48	65-125	PASS
N027431-006B	SAMP	1	0.89	88.88	65-125	PASS
CCV1	CCV	1	1	99.8	65-125	PASS
CCB1	CCB	1	1.04	103.96	65-125	PASS
LLCCV1	CCV2	1	1.086	108.62	65-125	PASS
ICSA2	ICSA	1	1.14	113.74	65-125	PASS
ICSA2	ICSA	1	0.94	94.18	65-125	PASS
ICSAB2	ICSAB	1	0.9	90.1	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N027430 / N027431
Test Method: EPA 6010B
Analysis Date: 12/18/2017 & 12/20/2017

Matrix: Groundwater
Batch No.: 65993

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B & Fe. The calculated concentration is <25RL.
Dilution test failed for Mg.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027430-002B DT 5X	Boron	ug/L	2691.515	NA	2388.723	12.68%	10
N027430-002B DT 5X	Calcium	ug/L	219251	PASS	211040.5	3.89%	10
N027430-002B DT 5X	Iron	ug/L	60.30838	NA	52.83901	14.14%	10
N027430-002B DT 5X	Magnesium	ug/L	5739.538	FAIL	4660.336	23.16%	10
N027430-004B DT 5X	Potassium	ug/L	4779.087	PASS	4522.645	5.67%	
N027430-004B DT 50X	Sodium	ug/L	238153.7	PASS	226728.1	5.04%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N027430-002B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120920**
Client ID: **ZZZZZZ**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2871610**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6840.260	100	5000	2389	89.0	80	120				
Calcium	211388.844	500	10000	211000	3.48	80	120				S
Iron	135.616	20	100.0	52.84	82.8	80	120				
Magnesium	11715.362	100	10000	4660	70.6	80	120				S

Sample ID **N027430-004B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **ZZZZZZ**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2874513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	25657.099	500	20000	4523	106	80	120				

Sample ID **N027430-004B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120973**
Client ID: **ZZZZZZ**	Batch ID: **65993**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2874521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	253014.845	5000	20000	226700	131	80	120				S

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

LOD & PQL VERIFICATION

Analytical Method: EPA 6010B / 200.7 **Matrix:** Water
Date of Analysis: 2/21/2017 **Units:** mg/L
Instrument Name: ICP2
Analyst: MI

Compound	MDL	LOD		PQL		
		Spike	Recovered	Spike	Recovered	% Recovery
Sodium	0.02621	0.10	0.08408	0.5	0.52080	104.2
Potassium	0.03815	0.10	0.13587	0.5	0.48231	96.5
Strontium	0.00545	0.02	0.02459	0.05	0.06052	121.0

Method Detection Limit

Analytical Method: EPA 6010B / 200.7
Digestion Method: EPA 3010A
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: mg/L

Analyte	1	2	3	4	5	6	7	SD	Ave	AMT SPIKED	%RSD	MDL	PQL
Potassium	0.15443	0.16201	0.14301	0.16141	0.16124	0.12965	0.14652	0.01215	0.15118	0.1000	8.0	0.03815	0.5
Sodium	0.11445	0.11459	0.11678	0.11286	0.11394	0.09515	0.10066	0.00835	0.10978	0.1000	7.6	0.02621	0.5
Strontium	0.02939	0.03046	0.0307	0.02962	0.03209	0.02708	0.02772	0.00174	0.02958	0.0250	5.9	0.00545	0.05

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65979
ASSET #: N027405 / 431

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 12/18/2017

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X				
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%RSD of Se in STD2 failed > 15%. However %RSD of LLICV passed criteria.
IS in N027431-001B to 004B failed. For rerun.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/21/17
2nd Level Reviewer [signature] 12/21/2017 Date: ____

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65979
ASSET #: N027405 / 431

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 12/19/2017

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?		X				
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .			X			
24. LCS compounds within control limits.			X			
25. MS/MSD, RPD's are within control limits			X			
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For N027431-001B to 004B rerun only.
For Confirmation:
N027431-002B (6020) = 3.0 ug/L :confirmation: 2.4 ug/L ; N027431-002A (218.6) = 0.35 ug/L :confirmationl: 1.2 ug/L

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 12/21/17
2nd Level Reviewer 12/21/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N027431-001B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 51.6158 * 5 * (25/25)

Chromium , ug/L = 258.079

Reporting results in two significant figures,

Chromium , ug/L = 260

% RSD SUMMARY

PERCENT RSD SUMMARY: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	7.74	15	PASS	0.16	9.46	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.54	3.89	15	PASS	0.58	6.038	15	PASS
Std3-5/50 ppb	ICAL	1	5.28	1.45	15	PASS	5.21	0.43	15	PASS
Std4-10/100 ppb	ICAL	1	10.44	1.011	15	PASS	10.38	0.31	15	PASS
Std5-20/200 ppb	ICAL	1	21.11	1.91	15	PASS	20.63	1.4	15	PASS
Std6-40/400 ppb	ICAL	1	41.17	2	15	PASS	40.77	2.27	15	PASS
Std7-100/1000 ppb	ICAL	1	101.81	1.4	15	PASS	99.51	1.38	15	PASS
Std8-200/2000 ppb	ICAL	1	198.72	0.74	15	PASS	195.54	0.72	15	PASS
ICV	ICV	1	10.34	1.82	15	PASS	99.26	1.61	15	PASS
ICB	ICB	1	0.017	5.097	15	PASS	0.031	20.71	15	<PQL
LLICV	CCV1	1	1.042	5.72	20	PASS	0.5	11.72	20	PASS
ICSA1	ICSA	1	0.091	17.0063	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.63	1.18	15	PASS	18.58	0.12	15	PASS
LLICV	CCV1	1	1.0078	1.94	20	PASS	0.51	7.6	20	PASS
MB-65979	MBLK	1	0.012	85.95	15	<PQL	<0.000	N/A	15	<PQL
LCS-65979	LCS	1	10.19	0.8	15	PASS	99.052	0.85	15	PASS
N027405-001C	SAMP	1	0.077	22.89	15	<PQL	126.37	1.36	15	PASS
N027405-001C	SAMP	5	0.018	86.34	15	<PQL	27.71	0.93	15	PASS
N027405-001C	SAMP	25	0.0028	239.24	15	<PQL	5.64	0.85	15	PASS
N027405-001C-PS	PS	1	9.86	3.31	15	PASS	218.0085	1.67	15	PASS
N027405-001C-PS	PS	5	2.044	2.83	15	PASS	45.98	1.26	15	PASS
N027405-001C-MS	MS	1	9.57	2.032	15	PASS	215.61	1.59	15	PASS
N027405-001C-MS	MS	5	2.044	2.17	15	PASS	46.89	1.6	15	PASS
N027405-001C-MSD	MSD	1	9.55	1.35	15	PASS	216.47	1.07	15	PASS
CCV1	CCV	1	20.47	0.91	15	PASS	20.29	1.78	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0081	69.21	15	<PQL
N027405-001C-MSD	MSD	5	2.091	0.79	15	PASS	47.45	0.85	15	PASS
N027405-002C	SAMP	1	14.19	1.48	15	PASS	291.21	1.2	15	PASS
N027405-002C	SAMP	5	2.98	3.64	15	PASS	62.49	1.83	15	PASS
N027405-003C	SAMP	1	14.96	2.66	15	PASS	306.65	1.84	15	PASS
N027405-003C	SAMP	5	3.18	1.74	15	PASS	66.74	0.3	15	PASS
N027405-004B	SAMP	1	0.039	31.22	15	<PQL	219.0069	0.22	15	PASS
N027405-004B	SAMP	5	0.002	330.7	15	<PQL	46.93	0.28	15	PASS
N027405-006B	SAMP	1	3.84	4.35	15	PASS	10.92	1.34	15	PASS
N027405-006B	SAMP	5	0.85	1.67	15	PASS	2.35	5.55	15	PASS
N027405-007B	SAMP	1	<0.000	N/A	15	<PQL	104.26	1.41	15	PASS
CCV2	CCV	1	20.76	1.52	15	PASS	20.65	2.74	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.03	27.98	15	<PQL
N027405-007B	SAMP	5	<0.000	N/A	15	<PQL	22.96	1.65	15	PASS
N027405-008B	SAMP	1	1.72	1.18	15	PASS	36.08	1.39	15	PASS

PERCENT RSD SUMMARY: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027405-008B	SAMP	5	0.38	2.47	15	PASS	7.83	1.11	15	PASS
N027405-009B	SAMP	1	497.52	0.85	15	PASS	2.038	5.53	15	PASS
N027405-009B	SAMP	5	99.85	0.79	15	PASS	0.64	4.052	15	PASS
N027405-011B	SAMP	1	<0.000	N/A	15	<PQL	899.33	0.51	15	PASS
N027405-011B	SAMP	5	<0.000	N/A	15	<PQL	192.62	2.032	15	PASS
N027405-012B	SAMP	1	677.75	0.75	15	PASS	11.43	1.7	15	PASS
N027405-012B	SAMP	5	145.82	0.57	15	PASS	2.99	2.63	15	PASS
N027405-013B	SAMP	1	28.55	2.12	15	PASS	33.94	3.42	15	PASS
CCV3	CCV	1	20.82	1.77	15	PASS	21.53	1.62	15	PASS
CCB3	CCB	1	0.14	16.3	15	<PQL	0.17	34.26	15	<PQL
N027405-013B	SAMP	5	6.4	1.2	15	PASS	7.61	2.22	15	PASS
N027405-014B	SAMP	1	5.35	0.53	15	PASS	42.6	2.069	15	PASS
N027405-014B	SAMP	5	1.22	3.36	15	PASS	9.8	2.32	15	PASS
N027431-001B	SAMP	1	242.77	0.3	15	PASS	<0.000	N/A	15	<PQL
N027431-001B	SAMP	5	51.62	1.87	15	PASS	0.06	29.19	15	<PQL
N027431-002B	SAMP	1	2.67	2.22	15	PASS	199.62	1.021	15	PASS
N027431-002B	SAMP	5	0.61	8.08	15	PASS	44.3	3.18	15	PASS
N027431-003B	SAMP	1	<0.000	N/A	15	<PQL	1008.57	1.29	15	PASS
N027431-003B	SAMP	5	<0.000	N/A	15	<PQL	215.15	0.77	15	PASS
N027431-004B	SAMP	1	<0.000	N/A	15	<PQL	982.41	2.068	15	PASS
CCV4	CCV	1	20.49	0.83	15	PASS	21.47	1.24	15	PASS
CCB4	CCB	1	0.019	50.14	15	<PQL	0.15	13.58	15	PASS
LLCCV1	CCV2	1	0.86	2.73	20	PASS	0.57	3.35	20	PASS
ICSA2	ICSA	1	0.093	9.2	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.53	0.89	15	PASS	18.64	1.37	15	PASS

PERCENT RSD SUMMARY: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.099	19.4	15	<PQL	0.15	53.73	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.53	10.27	15	PASS	0.52	38.51	15	NR!
Std3-5/50 ppb	ICAL	1	5.14	3.21	15	PASS	4.83	2.66	15	PASS
Std4-10/100 ppb	ICAL	1	10.3	2.43	15	PASS	9.72	3.36	15	PASS
Std5-20/200 ppb	ICAL	1	20.67	0.74	15	PASS	20.47	3.57	15	PASS
Std6-40/400 ppb	ICAL	1	40.69	0.46	15	PASS	40.8	1.42	15	PASS
Std7-100/1000 ppb	ICAL	1	100.94	0.66	15	PASS	100.66	2.66	15	PASS
Std8-200/2000 ppb	ICAL	1	199.3	1.53	15	PASS	199.48	1.067	15	PASS
ICV	ICV	1	10.088	3.013	15	PASS	10.5	3.66	15	PASS
ICB	ICB	1	0.013	170.09	15	<PQL	0.03	99.3	15	<PQL
LLICV	CCV1	1	0.12	14.55	20	PASS	0.55	2.53	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.03	69.37	15	<PQL
ICSAB1	ICSAB	1	20.36	1.09	15	PASS	18.45	3.49	15	PASS
LLICV	CCV1	1	0.13	9.48	20	PASS	0.51	6.93	20	PASS
MB-65979	MBLK	1	0.014	66.5	15	<PQL	0.016	100.7	15	<PQL
LCS-65979	LCS	1	10	0.9	15	PASS	9.78	3.77	15	PASS
N027405-001C	SAMP	1	4.63	3.027	15	PASS	0.15	42.59	15	<PQL
N027405-001C	SAMP	5	0.95	6.85	15	PASS	0.023	41.82	15	<PQL
N027405-001C	SAMP	25	0.21	2.32	15	PASS	0.016	0.9	15	PASS
N027405-001C-PS	PS	1	14.65	1.41	15	PASS	9.02	6.43	15	PASS
N027405-001C-PS	PS	5	3.062	2.48	15	PASS	2.21	14.056	15	PASS
N027405-001C-MS	MS	1	14.74	2.38	15	PASS	9.25	5.4	15	PASS
N027405-001C-MS	MS	5	3.12	2.13	15	PASS	2.074	8.46	15	PASS
N027405-001C-MSD	MSD	1	14.55	3.35	15	PASS	8.87	3.97	15	PASS
CCV1	CCV	1	20.64	1.32	15	PASS	19.58	0.49	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.025	124.63	15	<PQL
N027405-001C-MSD	MSD	5	3.027	3	15	PASS	2.17	18.59	15	NR!
N027405-002C	SAMP	1	4.34	1.56	15	PASS	0.081	49.97	15	<PQL
N027405-002C	SAMP	5	0.92	2.74	15	PASS	0.016	100.27	15	<PQL
N027405-003C	SAMP	1	4.46	1.22	15	PASS	0.031	125.45	15	<PQL
N027405-003C	SAMP	5	0.93	9.77	15	PASS	0.042	114.63	15	<PQL
N027405-004B	SAMP	1	2.25	0.54	15	PASS	0.065	74.065	15	<PQL
N027405-004B	SAMP	5	0.46	9.81	15	PASS	0.025	91.66	15	<PQL
N027405-006B	SAMP	1	14.72	2.97	15	PASS	0.31	19.48	15	<PQL
N027405-006B	SAMP	5	3.28	0.95	15	PASS	0.098	80.25	15	<PQL
N027405-007B	SAMP	1	11.42	2.71	15	PASS	0.047	98.91	15	<PQL
CCV2	CCV	1	20.44	1.38	15	PASS	20.88	3.6	15	PASS
CCB2	CCB	1	0.017	51.56	15	<PQL	0.071	48.55	15	<PQL
N027405-007B	SAMP	5	2.53	5.35	15	PASS	0.012	173.21	15	<PQL
N027405-008B	SAMP	1	13.39	0.81	15	PASS	0.24	18.94	15	<PQL

PERCENT RSD SUMMARY: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027405-008B	SAMP	5	2.9	5.49	15	PASS	0.054	88.45	15	<PQL
N027405-009B	SAMP	1	1.72	4.73	15	PASS	3.7	4.62	15	PASS
N027405-009B	SAMP	5	0.38	11.28	15	PASS	0.84	6.87	15	PASS
N027405-011B	SAMP	1	4.2	2.72	15	PASS	0.032	115.68	15	<PQL
N027405-011B	SAMP	5	0.91	18.8	15	NR!	0.019	99.096	15	<PQL
N027405-012B	SAMP	1	1.57	3.73	15	PASS	5.4	6.78	15	PASS
N027405-012B	SAMP	5	0.35	12.069	15	PASS	1.11	11.2	15	PASS
N027405-013B	SAMP	1	1.57	1.65	15	PASS	3.6	9.58	15	PASS
CCV3	CCV	1	20.34	2.69	15	PASS	21.56	4.85	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.012	173.21	15	<PQL
N027405-013B	SAMP	5	0.34	12.073	15	PASS	0.68	6.99	15	PASS
N027405-014B	SAMP	1	13.32	2.55	15	PASS	0.64	14.13	15	PASS
N027405-014B	SAMP	5	2.85	6.087	15	PASS	0.15	53.71	15	<PQL
N027431-001B	SAMP	1	2.064	0.83	15	PASS	3.25	3.76	15	PASS
N027431-001B	SAMP	5	0.45	7.36	15	PASS	0.53	13.46	15	PASS
N027431-002B	SAMP	1	19.58	0.99	15	PASS	0.24	12.18	15	PASS
N027431-002B	SAMP	5	4.2	3.59	15	PASS	0.071	91.45	15	<PQL
N027431-003B	SAMP	1	3.53	0.64	15	PASS	0.063	49.94	15	<PQL
N027431-003B	SAMP	5	0.7	7.35	15	PASS	0.024	99.86	15	<PQL
N027431-004B	SAMP	1	5.34	3.47	15	PASS	0.043	42.35	15	<PQL
CCV4	CCV	1	20.36	0.31	15	PASS	22.51	2.96	15	PASS
CCB4	CCB	1	0.0076	245.51	15	<PQL	0.014	86.61	15	<PQL
LLCCV1	CCV2	1	0.11	17.092	20	PASS	0.38	13.47	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.014	173.21	15	<PQL
ICSAB2	ICSAB	1	19.7	3.22	15	PASS	19.99	5.17	15	PASS

PERCENT RSD SUMMARY: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.09	8.2	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.48	6.35	15	PASS
Std3-5/50 ppb	ICAL	1	4.9	1.45	15	PASS
Std4-10/100 ppb	ICAL	1	9.81	1.43	15	PASS
Std5-20/200 ppb	ICAL	1	19.68	1.29	15	PASS
Std6-40/400 ppb	ICAL	1	39.4	0.57	15	PASS
Std7-100/1000 ppb	ICAL	1	99.34	1.12	15	PASS
Std8-200/2000 ppb	ICAL	1	200.49	0.98	15	PASS
ICV	ICV	1	10.28	2	15	PASS
ICB	ICB	1	0.13	5.88	15	PASS
LLICV	CCV1	1	0.55	1.38	20	PASS
ICSA1	ICSA	1	0.075	12.31	15	PASS
ICSAB1	ICSAB	1	22.13	0.12	15	PASS
LLICV	CCV1	1	0.57	3.3	20	PASS
MB-65979	MBLK	1	0.021	18.78	15	<PQL
LCS-65979	LCS	1	9.72	2.16	15	PASS
N027405-001C	SAMP	1	10.82	1.32	15	PASS
N027405-001C	SAMP	5	2.095	5.48	15	PASS
N027405-001C	SAMP	25	0.4	4.86	15	PASS
N027405-001C-PS	PS	1	22.6	0.69	15	PASS
N027405-001C-PS	PS	5	4.28	1.22	15	PASS
N027405-001C-MS	MS	1	22.78	1.12	15	PASS
N027405-001C-MS	MS	5	4.37	2.28	15	PASS
N027405-001C-MSD	MSD	1	22.86	0.68	15	PASS
CCV1	CCV	1	20.0058	0.49	15	PASS
CCB1	CCB	1	0.085	22.17	15	<PQL
N027405-001C-MSD	MSD	5	4.43	1.89	15	PASS
N027405-002C	SAMP	1	22.75	1.37	15	PASS
N027405-002C	SAMP	5	4.34	1.96	15	PASS
N027405-003C	SAMP	1	23.64	1.79	15	PASS
N027405-003C	SAMP	5	4.4	1.15	15	PASS
N027405-004B	SAMP	1	4.079	1.56	15	PASS
N027405-004B	SAMP	5	0.81	3.7	15	PASS
N027405-006B	SAMP	1	83.41	0.63	15	PASS
N027405-006B	SAMP	5	15.82	0.44	15	PASS
N027405-007B	SAMP	1	79.37	0.92	15	PASS
CCV2	CCV	1	19.82	0.68	15	PASS
CCB2	CCB	1	0.096	9.33	15	PASS
N027405-007B	SAMP	5	14.99	1.44	15	PASS
N027405-008B	SAMP	1	80.22	0.96	15	PASS

PERCENT RSD SUMMARY: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N027405-008B	SAMP	5	15.52	1.021	15	PASS
N027405-009B	SAMP	1	14.69	1.12	15	PASS
N027405-009B	SAMP	5	2.71	1.23	15	PASS
N027405-011B	SAMP	1	69.25	0.82	15	PASS
N027405-011B	SAMP	5	13.51	1.3	15	PASS
N027405-012B	SAMP	1	19.096	1.49	15	PASS
N027405-012B	SAMP	5	3.71	2.79	15	PASS
N027405-013B	SAMP	1	36.91	0.4	15	PASS
CCV3	CCV	1	19.56	1.42	15	PASS
CCB3	CCB	1	0.078	14.7	15	PASS
N027405-013B	SAMP	5	7.37	2.36	15	PASS
N027405-014B	SAMP	1	30.89	1.27	15	PASS
N027405-014B	SAMP	5	6.12	3.085	15	PASS
N027431-001B	SAMP	1	11.56	1.2	15	PASS
N027431-001B	SAMP	5	2.3	0.19	15	PASS
N027431-002B	SAMP	1	46.37	0.89	15	PASS
N027431-002B	SAMP	5	9.081	0.79	15	PASS
N027431-003B	SAMP	1	41.5	1.061	15	PASS
N027431-003B	SAMP	5	7.91	1.22	15	PASS
N027431-004B	SAMP	1	41.34	1.63	15	PASS
CCV4	CCV	1	19.96	0.47	15	PASS
CCB4	CCB	1	0.08	27.17	15	<PQL
LLCCV1	CCV2	1	0.4	7.33	20	PASS
ICSA2	ICSA	1	0.048	15.64	15	<PQL
ICSAB2	ICSAB	1	22.69	1.1	15	PASS

PERCENT RSD SUMMARY: 171219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	7.87	15	PASS	0.15	15.69	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.51	5.28	15	PASS	0.6	6.46	15	PASS
Std3-5/50 ppb	ICAL	1	5.27	0.5	15	PASS	5.14	1.22	15	PASS
Std4-10/100 ppb	ICAL	1	10.63	1.55	15	PASS	10.55	1.2	15	PASS
Std5-20/200 ppb	ICAL	1	20.67	1.042	15	PASS	20.86	1.38	15	PASS
Std6-40/400 ppb	ICAL	1	41.17	1.21	15	PASS	41.18	1.9	15	PASS
Std7-100/1000 ppb	ICAL	1	101.068	1.26	15	PASS	100.98	1.37	15	PASS
Std8-200/2000 ppb	ICAL	1	199.13	0.63	15	PASS	199.16	0.46	15	PASS
ICV	ICV	1	10.16	1.37	15	PASS	100.78	1.26	15	PASS
ICB	ICB	1	0.0048	252.04	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.044	3.44	20	PASS	0.54	5.86	20	PASS
ICSA1	ICSA	1	0.064	9.56	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.92	0.91	15	PASS	18.25	0.32	15	PASS
LLICV	CCV1	1	1.013	1.19	20	PASS	0.55	12.57	20	PASS
N027405-011B	SAMP	10	<0.000	N/A	15	<PQL	100.3	1.27	15	PASS
N027405-013B	SAMP	5	6.55	3.32	15	PASS	7.68	2.6	15	PASS
N027405-014B	SAMP	1	5.57	1.56	15	PASS	43.26	1.11	15	PASS
N027431-001B	SAMP	1	258.56	1.85	15	PASS	<0.000	N/A	15	<PQL
N027431-002B	SAMP	5	0.61	2.68	15	PASS	43.72	2.12	15	PASS
N027431-003B	SAMP	5	<0.000	N/A	15	<PQL	215.82	0.38	15	PASS
N027431-003B	SAMP	25	<0.000	N/A	15	<PQL	46.64	1.83	15	PASS
N027431-004B	SAMP	5	<0.000	N/A	15	<PQL	212.61	1.54	15	PASS
N027431-004B	SAMP	25	<0.000	N/A	15	<PQL	46.33	0.78	15	PASS
CCV1	CCV	1	20.61	2.36	15	PASS	20.68	2.24	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027431-005B	SAMP	1	1673.49	0.88	15	PASS	<0.000	N/A	15	<PQL
N027431-005B	SAMP	5	358.72	1.55	15	PASS	<0.000	N/A	15	<PQL
N027431-005B	SAMP	25	76.92	2.2	15	PASS	<0.000	N/A	15	<PQL
N027431-006B	SAMP	1	3806.16	0.76	15	PASS	1.6	2.7	15	PASS
N027431-006B	SAMP	5	817.64	0.94	15	PASS	0.35	5.2	15	PASS
N027431-006B	SAMP	25	176.2	1.93	15	PASS	0.084	23.39	15	<PQL
N027431-004B	SAMP	1	<0.000	N/A	15	<PQL	957.28	0.8	15	PASS
N027431-003B	SAMP	1	<0.000	N/A	15	<PQL	997.72	0.12	15	PASS
N027431-002B	SAMP	1	2.96	7.81	15	PASS	205.54	1.16	15	PASS
CCV2	CCV	1	21.58	2.42	15	PASS	21.038	2.041	15	PASS
CCB2	CCB	1	0.033	17.95	15	<PQL	0.031	134.71	15	<PQL
LLCCV1	CCV2	1	1.1	3.12	20	PASS	0.56	3.51	20	PASS
ICSA2	ICSA	1	0.026	37.048	15	<PQL	0.024	40.7	15	<PQL
ICSAB2	ICSAB	1	21.44	0.22	15	PASS	18.55	0.82	15	PASS

PERCENT RSD SUMMARY: 171219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	16.043	15	NR!	0.071	14.11	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.52	0.57	15	PASS	0.46	37.61	15	<PQL
Std3-5/50 ppb	ICAL	1	5.11	4.47	15	PASS	5.08	4.0044	15	PASS
Std4-10/100 ppb	ICAL	1	10.054	0.88	15	PASS	9.78	1.43	15	PASS
Std5-20/200 ppb	ICAL	1	20.29	1.45	15	PASS	19.58	1.34	15	PASS
Std6-40/400 ppb	ICAL	1	40.3	1.23	15	PASS	41.27	1.78	15	PASS
Std7-100/1000 ppb	ICAL	1	100.77	1.82	15	PASS	99.82	0.65	15	PASS
Std8-200/2000 ppb	ICAL	1	199.52	1.71	15	PASS	199.89	1.089	15	PASS
ICV	ICV	1	9.85	1.49	15	PASS	9.53	8.48	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.0046	382.72	15	<PQL
LLICV	CCV1	1	0.067	33.21	20	<PQL	0.48	25.93	20	<PQL
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.042	77.84	15	<PQL
ICSAB1	ICSAB	1	19.81	2.55	15	PASS	18.53	1.86	15	PASS
LLICV	CCV1	1	0.08	11.57	20	PASS	0.48	30.96	20	<PQL
N027405-011B	SAMP	10	0.42	14.12	15	PASS	<0.000	N/A	15	<PQL
N027405-013B	SAMP	5	0.29	12.17	15	PASS	0.64	3.88	15	PASS
N027405-014B	SAMP	1	13.39	2	15	PASS	0.66	13.89	15	PASS
N027431-001B	SAMP	1	2.014	6.85	15	PASS	3.1	11.22	15	PASS
N027431-002B	SAMP	5	4.085	2.71	15	PASS	0.11	48.4	15	<PQL
N027431-003B	SAMP	5	0.67	6.31	15	PASS	0.015	118.083	15	<PQL
N027431-003B	SAMP	25	0.13	10.037	15	PASS	<0.000	N/A	15	<PQL
N027431-004B	SAMP	5	1.096	7.72	15	PASS	0.0048	186.054	15	<PQL
N027431-004B	SAMP	25	0.23	5.0014	15	PASS	<0.000	N/A	15	<PQL
CCV1	CCV	1	20.014	1.69	15	PASS	19.8	0.77	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.014	121.8	15	<PQL
N027431-005B	SAMP	1	2.53	2.65	15	PASS	5.032	8.5	15	PASS
N027431-005B	SAMP	5	0.51	8.51	15	PASS	1.11	13.3	15	PASS
N027431-005B	SAMP	25	0.071	42.96	15	<PQL	0.22	29.18	15	<PQL
N027431-006B	SAMP	1	3.58	0.28	15	PASS	42.33	3.97	15	PASS
N027431-006B	SAMP	5	0.73	3.4	15	PASS	8.69	4.09	15	PASS
N027431-006B	SAMP	25	0.12	24.59	15	NR!	1.65	9.17	15	PASS
N027431-004B	SAMP	1	5.25	1.51	15	PASS	0.13	56.25	15	<PQL
N027431-003B	SAMP	1	3.39	3.84	15	PASS	0.11	18.94	15	<PQL
N027431-002B	SAMP	1	19.57	1.25	15	PASS	0.44	32.33	15	<PQL
CCV2	CCV	1	19.54	2.36	15	PASS	21.029	1.63	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.017	151.98	15	<PQL
LLCCV1	CCV2	1	0.091	6.59	20	PASS	0.65	5.76	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.018	227.7	15	<PQL
ICSAB2	ICSAB	1	19.71	1.49	15	PASS	19.25	5.37	15	PASS

PERCENT RSD SUMMARY: 171219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.094	8.49	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.5	13.39	15	PASS
Std3-5/50 ppb	ICAL	1	4.91	1.51	15	PASS
Std4-10/100 ppb	ICAL	1	9.75	0.87	15	PASS
Std5-20/200 ppb	ICAL	1	19.86	0.69	15	PASS
Std6-40/400 ppb	ICAL	1	39.32	0.55	15	PASS
Std7-100/1000 ppb	ICAL	1	98.93	0.12	15	PASS
Std8-200/2000 ppb	ICAL	1	200.7	1.48	15	PASS
ICV	ICV	1	10.51	1.97	15	PASS
ICB	ICB	1	0.16	6.81	15	PASS
LLICV	CCV1	1	0.57	2.78	20	PASS
ICSA1	ICSA	1	0.071	24.21	15	<PQL
ICSAB1	ICSAB	1	22.43	1.21	15	PASS
LLICV	CCV1	1	0.56	2.45	20	PASS
N027405-011B	SAMP	10	6.47	1.27	15	PASS
N027405-013B	SAMP	5	7.24	1.87	15	PASS
N027405-014B	SAMP	1	30.99	0.37	15	PASS
N027431-001B	SAMP	1	11.6	0.14	15	PASS
N027431-002B	SAMP	5	9.12	0.63	15	PASS
N027431-003B	SAMP	5	7.77	0.44	15	PASS
N027431-003B	SAMP	25	1.59	6.0012	15	PASS
N027431-004B	SAMP	5	7.99	3.043	15	PASS
N027431-004B	SAMP	25	1.65	1.33	15	PASS
CCV1	CCV	1	19.85	1.73	15	PASS
CCB1	CCB	1	0.061	45.18	15	<PQL
N027431-005B	SAMP	1	36.43	1.086	15	PASS
N027431-005B	SAMP	5	7.08	1.59	15	PASS
N027431-005B	SAMP	25	1.48	1.23	15	PASS
N027431-006B	SAMP	1	21.27	1.09	15	PASS
N027431-006B	SAMP	5	4.16	1.47	15	PASS
N027431-006B	SAMP	25	0.83	4.34	15	PASS
N027431-004B	SAMP	1	42.29	1.27	15	PASS
N027431-003B	SAMP	1	41.56	0.33	15	PASS
N027431-002B	SAMP	1	46.022	1.79	15	PASS
CCV2	CCV	1	19.58	1.55	15	PASS
CCB2	CCB	1	0.064	8.64	15	PASS
LLCCV1	CCV2	1	0.51	2.39	20	PASS
ICSA2	ICSA	1	0.00015	2742.055	15	<PQL
ICSAB2	ICSAB	1	21.89	1.36	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 171216A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1216001.D	RINSE	RINSE	1	12/16/17 11:47 AM
A1216002.D	Cal Blank	IBLK	1	12/16/17 11:52 AM
A1216003.D	Std1-0.1/1 ppb	ICAL	1	12/16/17 11:58 AM
A1216004.D	Std2-0.5/5 ppb	ICAL	1	12/16/17 12:03 PM
A1216005.D	Std3-5/50 ppb	ICAL	1	12/16/17 12:09 PM
A1216006.D	Std4-10/100 ppb	ICAL	1	12/16/17 12:15 PM
A1216007.D	Std5-20/200 ppb	ICAL	1	12/16/17 12:20 PM
A1216008.D	Std6-40/400 ppb	ICAL	1	12/16/17 12:26 PM
A1216009.D	Std7-100/1000 ppb	ICAL	1	12/16/17 12:31 PM
A1216010.D	Std8-200/2000 ppb	ICAL	1	12/16/17 12:38 PM
A1216011.D	ICV	ICV	1	12/16/17 12:44 PM
A1216012.D	ICB	ICB	1	12/16/17 12:50 PM
A1216013.D	LLICV	CCV1	1	12/16/17 12:56 PM
A1216014.D	ICSA1	ICSA	1	12/16/17 1:01 PM
A1216015.D	ICSAB1	ICSAB	1	12/16/17 1:07 PM
A1216016.D	LLICV	CCV1	1	12/16/17 1:12 PM
A1216017.D	MB-65979	MBLK	1	12/16/17 1:18 PM
A1216018.D	LCS-65979	LCS	1	12/16/17 1:24 PM
A1216019.D	N027405-001C	SAMP	1	12/16/17 1:29 PM
A1216020.D	N027405-001C	SAMP	5	12/16/17 1:35 PM
A1216021.D	N027405-001C	SAMP	25	12/16/17 1:40 PM
A1216022.D	N027405-001C-PS	PS	1	12/16/17 1:46 PM
A1216023.D	N027405-001C-PS	PS	5	12/16/17 1:51 PM
A1216024.D	N027405-001C-MS	MS	1	12/16/17 1:57 PM
A1216025.D	N027405-001C-MS	MS	5	12/16/17 2:02 PM
A1216026.D	N027405-001C-MSD	MSD	1	12/16/17 2:08 PM
A1216027.D	CCV1	CCV	1	12/16/17 2:14 PM
A1216028.D	CCB1	CCB	1	12/16/17 2:19 PM
A1216029.D	N027405-001C-MSD	MSD	5	12/16/17 2:25 PM
A1216030.D	N027405-002C	SAMP	1	12/16/17 2:30 PM
A1216031.D	N027405-002C	SAMP	5	12/16/17 2:36 PM
A1216032.D	N027405-003C	SAMP	1	12/16/17 2:41 PM
A1216033.D	N027405-003C	SAMP	5	12/16/17 2:47 PM
A1216034.D	N027405-004B	SAMP	1	12/16/17 2:53 PM
A1216035.D	N027405-004B	SAMP	5	12/16/17 2:58 PM
A1216036.D	N027405-006B	SAMP	1	12/16/17 3:04 PM
A1216037.D	N027405-006B	SAMP	5	12/16/17 3:09 PM
A1216038.D	N027405-007B	SAMP	1	12/16/17 3:15 PM
A1216039.D	CCV2	CCV	1	12/16/17 3:21 PM
A1216040.D	CCB2	CCB	1	12/16/17 3:26 PM
A1216041.D	N027405-007B	SAMP	5	12/16/17 3:32 PM
A1216042.D	N027405-008B	SAMP	1	12/16/17 3:37 PM

INJECTION LOG: 171216A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1216043.D	N027405-008B	SAMP	5	12/16/17 3:43 PM
A1216044.D	N027405-009B	SAMP	1	12/16/17 3:48 PM
A1216045.D	N027405-009B	SAMP	5	12/16/17 3:54 PM
A1216046.D	N027405-011B	SAMP	1	12/16/17 4:00 PM
A1216047.D	N027405-011B	SAMP	5	12/16/17 4:05 PM
A1216048.D	N027405-012B	SAMP	1	12/16/17 4:11 PM
A1216049.D	N027405-012B	SAMP	5	12/16/17 4:16 PM
A1216050.D	N027405-013B	SAMP	1	12/16/17 4:22 PM
A1216051.D	CCV3	CCV	1	12/16/17 4:27 PM
A1216052.D	CCB3	CCB	1	12/16/17 4:33 PM
A1216053.D	N027405-013B	SAMP	5	12/16/17 4:39 PM
A1216054.D	N027405-014B	SAMP	1	12/16/17 4:44 PM
A1216055.D	N027405-014B	SAMP	5	12/16/17 4:50 PM
A1216056.D	N027431-001B	SAMP	1	12/16/17 4:55 PM
A1216057.D	N027431-001B	SAMP	5	12/16/17 5:01 PM
A1216058.D	N027431-002B	SAMP	1	12/16/17 5:06 PM
A1216059.D	N027431-002B	SAMP	5	12/16/17 5:12 PM
A1216060.D	N027431-003B	SAMP	1	12/16/17 5:17 PM
A1216061.D	N027431-003B	SAMP	5	12/16/17 5:23 PM
A1216062.D	N027431-004B	SAMP	1	12/16/17 5:29 PM
A1216063.D	CCV4	CCV	1	12/16/17 5:34 PM
A1216064.D	CCB4	CCB	1	12/16/17 5:40 PM
A1216065.D	LLCCV1	CCV2	1	12/16/17 5:46 PM
A1216066.D	ICSA2	ICSA	1	12/16/17 5:50 PM
A1216067.D	ICSAB2	ICSAB	1	12/16/17 5:56 PM

INJECTION LOG: 171219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1219001.D	RINSE	RINSE	1	12/19/17 11:37 AM
A1219002.D	Cal Blank	IBLK	1	12/19/17 11:42 AM
A1219003.D	Std1-0.1/1 ppb	ICAL	1	12/19/17 11:48 AM
A1219004.D	Std2-0.5/5 ppb	ICAL	1	12/19/17 11:53 AM
A1219005.D	Std3-5/50 ppb	ICAL	1	12/19/17 11:59 AM
A1219006.D	Std4-10/100 ppb	ICAL	1	12/19/17 12:05 PM
A1219007.D	Std5-20/200 ppb	ICAL	1	12/19/17 12:10 PM
A1219008.D	Std6-40/400 ppb	ICAL	1	12/19/17 12:16 PM
A1219009.D	Std7-100/1000 ppb	ICAL	1	12/19/17 12:21 PM
A1219010.D	Std8-200/2000 ppb	ICAL	1	12/19/17 12:27 PM
A1219011.D	ICV	ICV	1	12/19/17 12:33 PM
A1219012.D	ICB	ICB	1	12/19/17 12:38 PM
A1219013.D	LLICV	CCV1	1	12/19/17 12:44 PM
A1219014.D	ICSA1	ICSA	1	12/19/17 12:49 PM
A1219015.D	ICSAB1	ICSAB	1	12/19/17 12:54 PM
A1219016.D	LLICV	CCV1	1	12/19/17 1:00 PM
A1219017.D	N027406-004D	SAMP	25	12/19/17 1:06 PM
A1219018.D	N027405-011B	SAMP	10	12/19/17 1:11 PM
A1219019.D	N027405-013B	SAMP	5	12/19/17 1:17 PM
A1219020.D	N027405-014B	SAMP	1	12/19/17 1:18 PM
A1219021.D	N027431-001B	SAMP	1	12/19/17 1:25 PM
A1219022.D	N027431-002B	SAMP	5	12/19/17 1:30 PM
A1219023.D	N027431-003B	SAMP	5	12/19/17 1:36 PM
A1219024.D	N027431-003B	SAMP	25	12/19/17 1:41 PM
A1219025.D	N027431-004B	SAMP	5	12/19/17 1:47 PM
A1219026.D	N027431-004B	SAMP	25	12/19/17 1:53 PM
A1219027.D	CCV1	CCV	1	12/19/17 1:58 PM
A1219028.D	CCB1	CCB	1	12/19/17 2:04 PM
A1219029.D	N027431-005B	SAMP	1	12/19/17 2:09 PM
A1219030.D	N027431-005B	SAMP	5	12/19/17 2:15 PM
A1219031.D	N027431-005B	SAMP	25	12/19/17 2:21 PM
A1219032.D	N027431-006B	SAMP	1	12/19/17 2:26 PM
A1219033.D	N027431-006B	SAMP	5	12/19/17 2:32 PM
A1219034.D	N027431-006B	SAMP	25	12/19/17 2:37 PM
A1219035.D	N027431-004B	SAMP	1	12/19/17 2:43 PM
A1219036.D	N027431-003B	SAMP	1	12/19/17 2:48 PM
A1219037.D	N027431-002B	SAMP	1	12/19/17 2:54 PM
A1219038.D	CCV2	CCV	1	12/19/17 3:00 PM
A1219039.D	CCB2	CCB	1	12/19/17 3:06 PM
A1219040.D	LLCCV1	CCV2	1	12/19/17 3:12 PM
A1219041.D	ICSA2	ICSA	1	12/19/17 3:17 PM
A1219042.D	ICSAB2	ICSAB	1	12/19/17 3:23 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/8/2017 2:07:45**
Prep End Date: **12/8/2017 6:30:00**
Prep Batch **65979** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 12/21/2017
Initials/ Date: 12/21/2017
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**01-10**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-65979	Aqueous		25	☐	0	0	25	1.000		
MB-65979	Aqueous		25	☐	0	0	25	1.000		
N027405-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-012B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/8/2017 2:07:45**
Prep End Date: **12/8/2017 6:30:00**
Reviewed/ Date: 12/21/2017
Initials/ Date: 12/21/2017

Prep Batch **65979** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**01-10**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027405-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N027405-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027431-006B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 16 Dec 2017 11:35:33 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	68698.00	0.00	
24 Mg	388178.00	0.00	
25 Mg	51186.10	0.00	
26 Mg	59257.10	0.00	
59 Co	420163.00	0.00	
115 In	841199.00	0.00	
206 Pb	242955.00	0.00	
207 Pb	211665.00	0.00	
208 Pb	520321.00	0.00	

RSD (%)

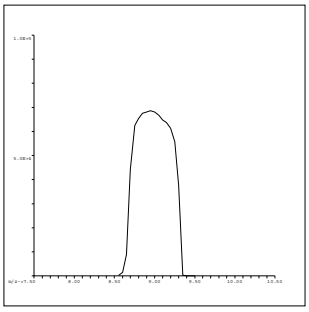
Element	Actual	Required	Flag
9 Be	0.87	5.00	
24 Mg	0.87	5.00	
25 Mg	1.46	5.00	
26 Mg	3.23	5.00	
59 Co	0.78	5.00	
115 In	0.70	5.00	
206 Pb	0.38	5.00	
207 Pb	0.95	5.00	
208 Pb	0.77	5.00	

Ion Ratio

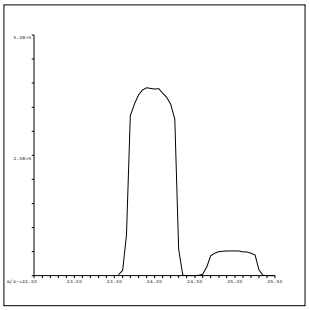
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

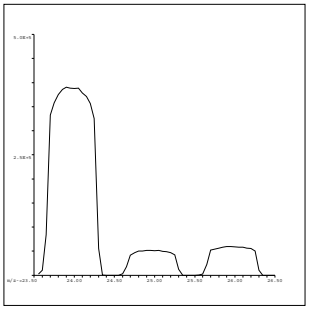
Element	Actual	Required	Flag



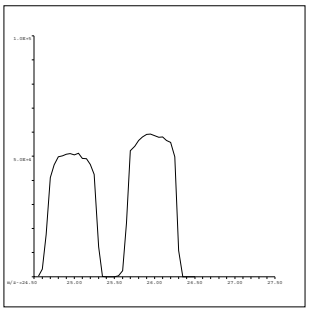
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



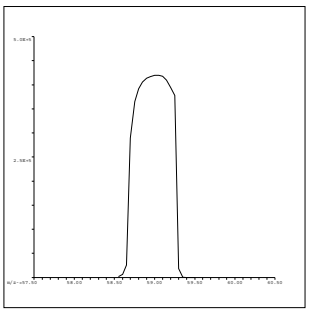
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



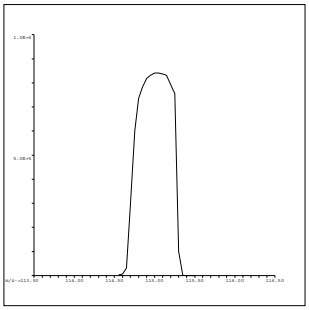
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



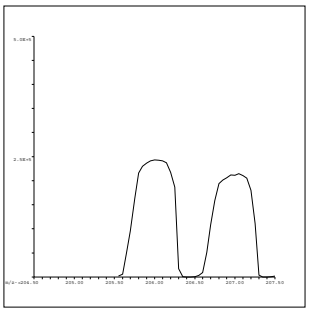
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



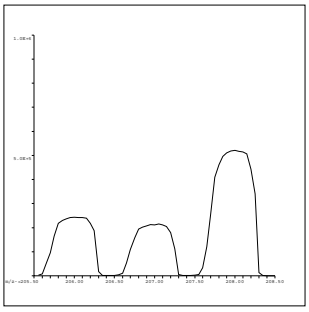
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



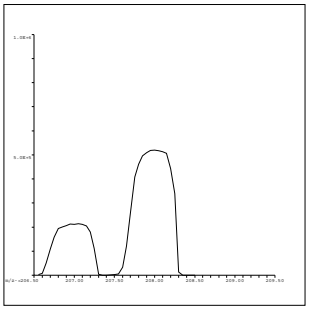
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.05
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 19 Dec 2017 11:23:55 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	92961.80	0.00	
24 Mg	265522.00	0.00	
25 Mg	35031.40	0.00	
26 Mg	41235.30	0.00	
59 Co	383642.00	0.00	
115 In	673609.00	0.00	
206 Pb	196601.00	0.00	
207 Pb	170749.00	0.00	
208 Pb	417665.00	0.00	

RSD (%)

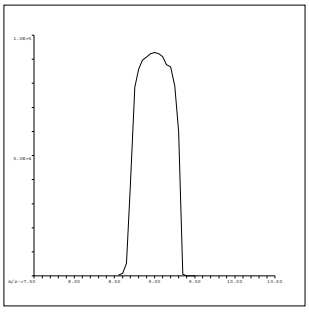
Element	Actual	Required	Flag
9 Be	1.37	5.00	
24 Mg	2.23	5.00	
25 Mg	1.65	5.00	
26 Mg	2.49	5.00	
59 Co	0.70	5.00	
115 In	0.16	5.00	
206 Pb	0.54	5.00	
207 Pb	0.50	5.00	
208 Pb	0.72	5.00	

Ion Ratio

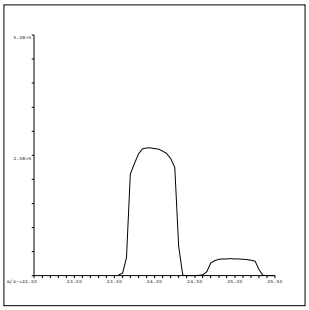
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

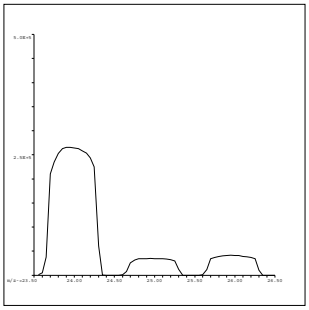
Element	Actual	Required	Flag



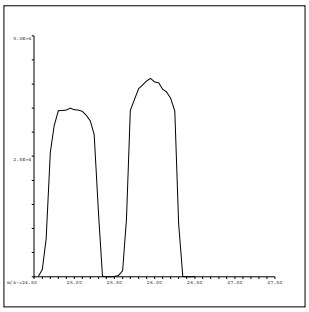
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



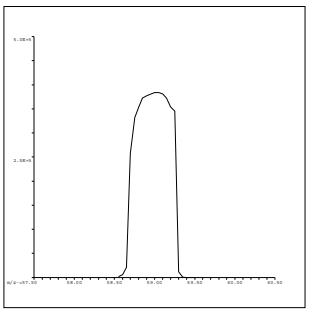
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



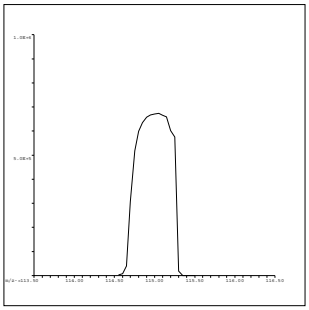
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



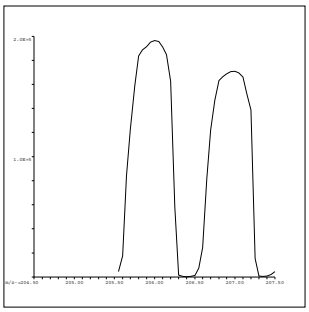
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



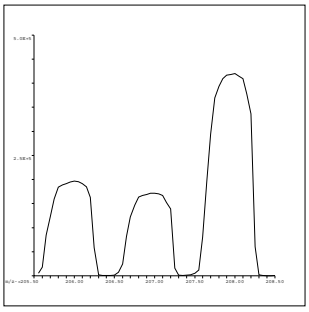
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



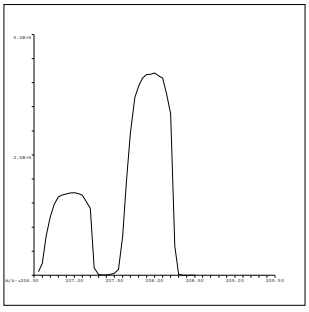
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 171216A

Instrument ID: ICPMS-02

Analyte	Data File	A1216002.D	A1216003.D	A1216004.D	A1216005.D	A1216006.D	A1216007.D	A1216008.D	A1216009.D	A1216010.D	
	Acq. Date-Time	12/16/2017 11:52 AM	12/16/2017 11:58 AM	12/16/2017 12:03 PM	12/16/2017 12:09 PM	12/16/2017 12:15 PM	12/16/2017 12:20 PM	12/16/2017 12:26 PM	12/16/2017 12:31 PM	12/16/2017 12:38 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	56760.6		61134.9	63363.4	63996.8	64339.3	66015.8	65952.3	67440.5	
55 Mn [2]	CPS	69.6		1520.5	13619.9	27345	54535.6	110487	269338.3	541129	0.9999
52 Cr [2]	CPS	165.4		2780.2	26441.5	52614.6	106702.6	213312.8	526818.2	1051424.9	0.9999
72 Ge (ISTD) [1]	CPS	46562.7		49459	50322.7	50976	49323	49929.3	49116	50092	
78 Se [1]	CPS	0		115.6	1090.1	2223.6	4533	9144.1	22190.2	44856.1	1.0000
72 Ge (ISTD) [2]	CPS	40150.2	43448.6	43385.2	44451.5	44957.1	44622.9	45726.9	45460.8	46062.5	
75 As [2]	CPS	11.6	63.1	283.6	2706.9	5474.7	10893.5	21959.7	54138.4	108292.5	1.0000
103 Rh (ISTD) [2]	CPS	1341995.8		1470745.7	1493548	1514129.1	1515157.9	1528551.2	1506260.5	1498170.5	
95 Mo [2]	CPS	53.3		1700.2	16937.3	34305.3	68773.2	138865	344936.2	692370.9	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 171219A

Instrument ID: ICPMS-02

Analyte	Data File	A1219002.D	A1219003.D	A1219004.D	A1219005.D	A1219006.D	A1219007.D	A1219008.D	A1219009.D	A1219010.D	
	Acq. Date-Time	12/19/2017 11:42 AM	12/19/2017 11:48 AM	12/19/2017 11:53 AM	12/19/2017 11:59 AM	12/19/2017 12:05 PM	12/19/2017 12:10 PM	12/19/2017 12:16 PM	12/19/2017 12:21 PM	12/19/2017 12:27 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	59462.6		59631.9	59907.7	59801.3	61105.3	60956.8	61988.3	62035.3	
55 Mn [2]	CPS	140.2		1570.3	12514.2	25483	51319.4	100936.6	251449.4	496246.9	1.0000
52 Cr [2]	CPS	210		2583.5	24605.2	49319.2	97764.7	194065.3	484153.1	954527.6	1.0000
72 Ge (ISTD) [1]	CPS	50646.1		50406.2	51001.7	50596.8	50445.4	51376.1	51917.7	51124.1	
78 Se [1]	CPS	1.1		95.6	1049	2002.4	3996.2	8575.9	20959.7	41326.9	1.0000
72 Ge (ISTD) [2]	CPS	39877.4	39333.8	39715.8	39610.1	40161.4	40095.7	39731.4	40037.8	40097.8	
75 As [2]	CPS	25.8	74.2	278.7	2521.1	4997.7	10042.7	19741.3	49703.7	98525.4	1.0000
103 Rh (ISTD) [2]	CPS	1337447.5		1332810.8	1327343	1342310.9	1332371.2	1338883.9	1333989.1	1311763	
95 Mo [2]	CPS	82.2		1623.5	15195.5	30413	61392.7	122074.8	305948.8	610244.8	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.088	0.10	10.00	0	101	90	110				
Manganese	99.262	0.50	100.0	0	99.3	90	110				
Molybdenum	10.284	0.50	10.00	0	103	90	110				
Selenium	10.503	0.50	10.00	0	105	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ZZZZZZ**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870942**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.115	0.10	0.1000	0	115	80	120				
Manganese	0.501	0.50	0.5000	0	100	80	120				
Molybdenum	0.546	0.50	0.5000	0	109	80	120				
Selenium	0.547	0.50	0.5000	0	109	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.641	0.10	20.00	0	103	90	110				
Manganese	20.286	0.50	20.00	0	101	90	110				
Molybdenum	20.006	0.50	20.00	0	100	90	110				
Selenium	19.583	0.50	20.00	0	97.9	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.442	0.10	20.00	0	102	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.647	0.50	20.00	0	103	90	110				
Molybdenum	19.824	0.50	20.00	0	99.1	90	110				
Selenium	20.879	0.50	20.00	0	104	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870980**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.343	0.10	20.00	0	102	90	110				
Manganese	21.534	0.50	20.00	0	108	90	110				
Molybdenum	19.559	0.50	20.00	0	97.8	90	110				
Selenium	21.562	0.50	20.00	0	108	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ZZZZZZ**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870994**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.106	0.10	0.1000	0	106	70	130				
Manganese	0.566	0.50	0.5000	0	113	70	130				
Molybdenum	0.396	0.50	0.5000	0	79.3	70	130				
Selenium	0.378	0.50	0.5000	0	75.6	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICV**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.853	0.10	10.00	0	98.5	90	110				
Manganese	100.779	0.50	100.0	0	101	90	110				
Molybdenum	10.512	0.50	10.00	0	105	90	110				
Selenium	9.533	0.50	10.00	0	95.3	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ZZZZZZ**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872287**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.476	0.50	0.5000	0	95.2	80	120				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ZZZZZZ**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872290**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.080	0.10	0.1000	0	80.0	80	120				S
Manganese	0.548	0.50	0.5000	0	110	80	120				
Molybdenum	0.561	0.50	0.5000	0	112	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **CCV**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.014	0.10	20.00	0	100	90	110				
Manganese	20.685	0.50	20.00	0	103	90	110				
Molybdenum	19.851	0.50	20.00	0	99.3	90	110				
Selenium	19.801	0.50	20.00	0	99.0	90	110				

12/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

As on LLICV is biased low however, ICV and CCVs passed QC criteria. Arsenic on samples analyzed on this run is > than the LLICV concentration

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **CCV**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872312**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.538	0.10	20.00	0	97.7	90	110				
Manganese	21.038	0.50	20.00	0	105	90	110				
Molybdenum	19.578	0.50	20.00	0	97.9	90	110				
Selenium	21.029	0.50	20.00	0	105	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ZZZZZZ**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.091	0.10	0.1000	0	90.7	70	130				
Manganese	0.560	0.50	0.5000	0	112	70	130				
Molybdenum	0.505	0.50	0.5000	0	101	70	130				
Selenium	0.648	0.50	0.5000	0	130	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870883**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.342	1.0	10.00	0	103	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ZZZZZZ**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870885**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.042	1.0	1.000	0	104	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870899**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.469	1.0	20.00	0	102	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.759	1.0	20.00	0	104	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.821	1.0	20.00	0	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCV**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.495	1.0	20.00	0	102	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ZZZZZZ**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870937**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.855	1.0	1.000	0	85.5	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICV**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872253**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.160	1.0	10.00	0	102	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ZZZZZZ**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872255**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.044	1.0	1.000	0	104	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **CCV**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872269**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.605	1.0	20.00	0	103	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **CCV**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872280**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.584	1.0	20.00	0	108	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ZZZZZZ**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872282**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.102	1.0	1.000	0	110	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870941**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.129	0.50									
Selenium	0.030	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.085	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.096	0.50									
Selenium	0.071	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.174	0.50									
Molybdenum	0.078	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICB**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872286**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.163	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **CCB**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.061	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **CCB**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.064	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870900**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0						0	0	0	

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.138	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **CCB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870936**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.019	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICB**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872254**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **CCB**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872270**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **CCB**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872281**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.033	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	120912
Client ID:	ICSA	Batch ID:	R120912	TestNo:	EPA 6020			Analysis Date:	12/16/2017	SeqNo:	2870943

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.075	0.50									
Selenium	0.030	0.50									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	120912
Client ID:	ICSAB	Batch ID:	R120912	TestNo:	EPA 6020			Analysis Date:	12/16/2017	SeqNo:	2870944

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.358	0.10	20.00	0	102	80	120				
Manganese	18.583	0.50	20.00	0	92.9	80	120				
Molybdenum	22.132	0.50	20.00	0	111	80	120				
Selenium	18.451	0.50	20.00	0	92.3	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	120912
Client ID:	ICSA	Batch ID:	R120912	TestNo:	EPA 6020			Analysis Date:	12/16/2017	SeqNo:	2870995

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.048	0.50									
Selenium	ND	0.50									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	120912
Client ID:	ICSAB	Batch ID:	R120912	TestNo:	EPA 6020			Analysis Date:	12/16/2017	SeqNo:	2870996

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.701	0.10	20.00	0	98.5	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120912**
Client ID: **ICSAB**	Batch ID: **R120912**	TestNo: **EPA 6020**		Analysis Date: **12/16/2017**	SeqNo: **2870996**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	18.644	0.50	20.00	0	93.2	80	120				
Molybdenum	22.689	0.50	20.00	0	113	80	120				
Selenium	19.988	0.50	20.00	0	99.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICSA**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872288**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.071	0.50									
Selenium	0.042	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICSAB**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872289**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.808	0.10	20.00	0	99.0	80	120				
Manganese	18.249	0.50	20.00	0	91.2	80	120				
Molybdenum	22.426	0.50	20.00	0	112	80	120				
Selenium	18.534	0.50	20.00	0	92.7	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICSA**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICSAB**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.712	0.10	20.00	0	98.6	80	120				
Manganese	18.549	0.50	20.00	0	92.7	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICSAB**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	21.889	0.50	20.00	0	109	80	120				
Selenium	19.253	0.50	20.00	0	96.3	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**ICSA1**	SampType:	**ICSA**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**120912**
Client ID:	**ICSA**	Batch ID:	**R120912**	TestNo:	**EPA 6020**			Analysis Date:	**12/16/2017**	SeqNo:	**2870886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.091	1.0									

Sample ID	**ICSAB1**	SampType:	**ICSAB**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**120912**
Client ID:	**ICSAB**	Batch ID:	**R120912**	TestNo:	**EPA 6020**			Analysis Date:	**12/16/2017**	SeqNo:	**2870887**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.634	1.0	20.00	0	103	80	120				

Sample ID	**ICSA2**	SampType:	**ICSA**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**120912**
Client ID:	**ICSA**	Batch ID:	**R120912**	TestNo:	**EPA 6020**			Analysis Date:	**12/16/2017**	SeqNo:	**2870938**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.093	1.0									

Sample ID	**ICSAB2**	SampType:	**ICSAB**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**120912**
Client ID:	**ICSAB**	Batch ID:	**R120912**	TestNo:	**EPA 6020**			Analysis Date:	**12/16/2017**	SeqNo:	**2870939**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.534	1.0	20.00	0	97.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICSA**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.064	1.0									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICSAB**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.920	1.0	20.00	0	105	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICSA**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.026	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **120935**
Client ID: **ICSAB**	Batch ID: **R120935**	TestNo: **EPA 6020**		Analysis Date: **12/19/2017**	SeqNo: **2872284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.442	1.0	20.00	0	107	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	56760.6	56760.6	100	PASS	70-125	40150.2	40150.2	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	61176.1	56760.6	107.78	PASS	70-125	43448.6	40150.2	108.22	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	61134.9	56760.6	107.71	PASS	70-125	43385.2	40150.2	108.06	PASS	70-125
Std3-5/50 ppb	ICAL	1	63363.4	56760.6	111.63	PASS	70-125	44451.5	40150.2	110.71	PASS	70-125
Std4-10/100 ppb	ICAL	1	63996.8	56760.6	112.75	PASS	70-125	44957.1	40150.2	111.97	PASS	70-125
Std5-20/200 ppb	ICAL	1	64339.3	56760.6	113.35	PASS	70-125	44622.9	40150.2	111.14	PASS	70-125
Std6-40/400 ppb	ICAL	1	66015.8	56760.6	116.31	PASS	70-125	45726.9	40150.2	113.89	PASS	70-125
Std7-100/1000 ppb	ICAL	1	65952.3	56760.6	116.19	PASS	70-125	45460.8	40150.2	113.23	PASS	70-125
Std8-200/2000 ppb	ICAL	1	67440.5	56760.6	118.82	PASS	70-125	46062.5	40150.2	114.73	PASS	70-125
ICV	ICV	1	66524.4	56760.6	117.2	PASS	70-125	47110.9	40150.2	117.34	PASS	70-125
ICB	ICB	1	64749.9	56760.6	114.08	PASS	70-125	45646.8	40150.2	113.69	PASS	70-125
LLICV	CCV1	1	67006.4	56760.6	118.05	PASS	70-125	47194.5	40150.2	117.54	PASS	70-125
ICSA1	ICSA	1	57972.6	56760.6	102.14	PASS	70-125	39203.4	40150.2	97.64	PASS	70-125
ICSAB1	ICSAB	1	66045.8	56760.6	116.36	PASS	70-125	44241.9	40150.2	110.19	PASS	70-125
LLICV	CCV1	1	68420.1	56760.6	120.54	PASS	70-125	47905.5	40150.2	119.32	PASS	70-125
MB-65979	MBLK	1	58629.2	56760.6	103.29	PASS	70-125	41665	40150.2	103.77	PASS	70-125
LCS-65979	LCS	1	63380.2	56760.6	111.66	PASS	70-125	44724.4	40150.2	111.39	PASS	70-125
N027405-001C	SAMP	1	48114.8	56760.6	84.77	PASS	70-125	31770.7	40150.2	79.13	PASS	70-125
N027405-001C	SAMP	5	54662.5	56760.6	96.3	PASS	70-125	38032.9	40150.2	94.73	PASS	70-125
N027405-001C	SAMP	25	57412.9	56760.6	101.15	PASS	70-125	40576.7	40150.2	101.06	PASS	70-125
N027405-001C-PS	PS	1	50124.1	56760.6	88.31	PASS	70-125	32941.8	40150.2	82.046	PASS	70-125
N027405-001C-PS	PS	5	58272.7	56760.6	102.66	PASS	70-125	39658.8	40150.2	98.78	PASS	70-125
N027405-001C-MS	MS	1	55117.5	56760.6	97.11	PASS	70-125	35332.4	40150.2	88.001	PASS	70-125
N027405-001C-MS	MS	5	60627.8	56760.6	106.81	PASS	70-125	40662.7	40150.2	101.28	PASS	70-125
N027405-001C-MSD	MSD	1	57647.1	56760.6	101.56	PASS	70-125	36920.5	40150.2	91.96	PASS	70-125
CCV1	CCV	1	70225	56760.6	123.72	PASS	70-125	47897.8	40150.2	119.3	PASS	70-125
CCB1	CCB	1	61090.7	56760.6	107.63	PASS	70-125	42434.7	40150.2	105.69	PASS	70-125
N027405-001C-MSD	MSD	5	58167.7	56760.6	102.48	PASS	70-125	39489.7	40150.2	98.35	PASS	70-125
N027405-002C	SAMP	1	54506.8	56760.6	96.029	PASS	70-125	33730.1	40150.2	84.01	PASS	70-125
N027405-002C	SAMP	5	63837.2	56760.6	112.47	PASS	70-125	41478	40150.2	103.31	PASS	70-125
N027405-003C	SAMP	1	58410.9	56760.6	102.91	PASS	70-125	36367.9	40150.2	90.58	PASS	70-125
N027405-003C	SAMP	5	64480	56760.6	113.6	PASS	70-125	42809.1	40150.2	106.62	PASS	70-125
N027405-004B	SAMP	1	67548.5	56760.6	119.01	PASS	70-125	45033.9	40150.2	112.16	PASS	70-125
N027405-004B	SAMP	5	64773	56760.6	114.12	PASS	70-125	44331.9	40150.2	110.42	PASS	70-125
N027405-006B	SAMP	1	50294.5	56760.6	88.61	PASS	70-125	30027.3	40150.2	74.79	PASS	70-125
N027405-006B	SAMP	5	60454.5	56760.6	106.51	PASS	70-125	38936.1	40150.2	96.98	PASS	70-125
N027405-007B	SAMP	1	50714.7	56760.6	89.35	PASS	70-125	29775.7	40150.2	74.16	PASS	70-125
CCV2	CCV	1	68215.5	56760.6	120.18	PASS	70-125	46921.4	40150.2	116.86	PASS	70-125
CCB2	CCB	1	61989.3	56760.6	109.21	PASS	70-125	43116.8	40150.2	107.39	PASS	70-125
N027405-007B	SAMP	5	57568.9	56760.6	101.42	PASS	70-125	37144.3	40150.2	92.51	PASS	70-125
N027405-008B	SAMP	1	50089.5	56760.6	88.25	PASS	70-125	29981.7	40150.2	74.67	PASS	70-125

INTERNAL STANDARD: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027405-008B	SAMP	5	58384.1	56760.6	102.86	PASS	70-125	37571.8	40150.2	93.58	PASS	70-125
N027405-009B	SAMP	1	54110.6	56760.6	95.33	PASS	70-125	34400.4	40150.2	85.68	PASS	70-125
N027405-009B	SAMP	5	58662.9	56760.6	103.35	PASS	70-125	38961.7	40150.2	97.04	PASS	70-125
N027405-011B	SAMP	1	48236.2	56760.6	84.98	PASS	70-125	28571.4	40150.2	71.16	PASS	70-125
N027405-011B	SAMP	5	53261.7	56760.6	93.84	PASS	70-125	34111.9	40150.2	84.96	PASS	70-125
N027405-012B	SAMP	1	48830.2	56760.6	86.028	PASS	70-125	29441.8	40150.2	73.33	PASS	70-125
N027405-012B	SAMP	5	48982.8	56760.6	86.3	PASS	70-125	32745.9	40150.2	81.56	PASS	70-125
N027405-013B	SAMP	1	43655.9	56760.6	76.91	PASS	70-125	25843.4	40150.2	64.37	NR!	70-125
CCV3	CCV	1	52290.4	56760.6	92.12	PASS	70-125	36773.3	40150.2	91.59	PASS	70-125
CCB3	CCB	1	49842.1	56760.6	87.81	PASS	70-125	34914.8	40150.2	86.96	PASS	70-125
N027405-013B	SAMP	5	47783.9	56760.6	84.18	PASS	70-125	31031.3	40150.2	77.29	PASS	70-125
N027405-014B	SAMP	1	52157.1	56760.6	91.89	PASS	70-125	34421.4	40150.2	85.73	PASS	70-125
N027405-014B	SAMP	5	52257.2	56760.6	92.066	PASS	70-125	36078.5	40150.2	89.86	PASS	70-125
N027431-001B	SAMP	1	49133.3	56760.6	86.56	PASS	70-125	31912	40150.2	79.48	PASS	70-125
N027431-001B	SAMP	5	51576.2	56760.6	90.87	PASS	70-125	35059.6	40150.2	87.32	PASS	70-125
N027431-002B	SAMP	1	43744	56760.6	77.068	PASS	70-125	27012	40150.2	67.28	NR!	70-125
N027431-002B	SAMP	5	47479.7	56760.6	83.65	PASS	70-125	31020.3	40150.2	77.26	PASS	70-125
N027431-003B	SAMP	1	37812.7	56760.6	66.62	NR!	70-125	22241.4	40150.2	55.4	NR!	70-125
N027431-003B	SAMP	5	42452.8	56760.6	74.79	PASS	70-125	27363.7	40150.2	68.15	NR!	70-125
N027431-004B	SAMP	1	36996.4	56760.6	65.18	NR!	70-125	21271.1	40150.2	52.98	NR!	70-125
CCV4	CCV	1	46254	56760.6	81.49	PASS	70-125	32231.5	40150.2	80.28	PASS	70-125
CCB4	CCB	1	42827.1	56760.6	75.45	PASS	70-125	30510.3	40150.2	75.99	PASS	70-125
LLCCV1	CCV2	1	59699.9	56760.6	105.18	PASS	70-125	40228.3	40150.2	100.19	PASS	70-125
ICSA2	ICSA	1	62827	56760.6	110.69	PASS	70-125	40977.7	40150.2	102.06	PASS	70-125
ICSAB2	ICSAB	1	45994.4	56760.6	81.032	PASS	70-125	29723.3	40150.2	74.03	PASS	70-125

INTERNAL STANDARD: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	46562.7	46562.7	100	PASS	70-125	1341995.8	1341995.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	50038.6	46562.7	107.46	PASS	70-125	1438897.6	1341995.8	107.22	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	49459	46562.7	106.22	PASS	70-125	1470745.7	1341995.8	109.59	PASS	70-125
Std3-5/50 ppb	ICAL	1	50322.7	46562.7	108.08	PASS	70-125	1493548	1341995.8	111.29	PASS	70-125
Std4-10/100 ppb	ICAL	1	50976	46562.7	109.48	PASS	70-125	1514129.1	1341995.8	112.83	PASS	70-125
Std5-20/200 ppb	ICAL	1	49323	46562.7	105.93	PASS	70-125	1515157.9	1341995.8	112.9	PASS	70-125
Std6-40/400 ppb	ICAL	1	49929.3	46562.7	107.23	PASS	70-125	1528551.2	1341995.8	113.9	PASS	70-125
Std7-100/1000 ppb	ICAL	1	49116	46562.7	105.48	PASS	70-125	1506260.5	1341995.8	112.24	PASS	70-125
Std8-200/2000 ppb	ICAL	1	50092	46562.7	107.58	PASS	70-125	1498170.5	1341995.8	111.64	PASS	70-125
ICV	ICV	1	50250.5	46562.7	107.92	PASS	70-125	1570216.3	1341995.8	117.01	PASS	70-125
ICB	ICB	1	49938.3	46562.7	107.25	PASS	70-125	1555141.5	1341995.8	115.88	PASS	70-125
LLICV	CCV1	1	50712.8	46562.7	108.91	PASS	70-125	1603761.4	1341995.8	119.51	PASS	70-125
ICSA1	ICSA	1	41790	46562.7	89.75	PASS	70-125	1250719	1341995.8	93.2	PASS	70-125
ICSAB1	ICSAB	1	47903.4	46562.7	102.88	PASS	70-125	1394623.4	1341995.8	103.92	PASS	70-125
LLICV	CCV1	1	52923.3	46562.7	113.66	PASS	70-125	1616916.2	1341995.8	120.49	PASS	70-125
MB-65979	MBLK	1	46676.6	46562.7	100.24	PASS	70-125	1412258.9	1341995.8	105.24	PASS	70-125
LCS-65979	LCS	1	49889.2	46562.7	107.14	PASS	70-125	1518023.1	1341995.8	113.12	PASS	70-125
N027405-001C	SAMP	1	36152	46562.7	77.64	PASS	70-125	955964.3	1341995.8	71.23	PASS	70-125
N027405-001C	SAMP	5	42526.1	46562.7	91.33	PASS	70-125	1187178	1341995.8	88.46	PASS	70-125
N027405-001C	SAMP	25	46255.3	46562.7	99.34	PASS	70-125	1312230.3	1341995.8	97.78	PASS	70-125
N027405-001C-PS	PS	1	36157.6	46562.7	77.65	PASS	70-125	979635.9	1341995.8	73	PASS	70-125
N027405-001C-PS	PS	5	44146.1	46562.7	94.81	PASS	70-125	1224258.4	1341995.8	91.23	PASS	70-125
N027405-001C-MS	MS	1	39381.7	46562.7	84.58	PASS	70-125	1033405.9	1341995.8	77.005	PASS	70-125
N027405-001C-MS	MS	5	45577.6	46562.7	97.88	PASS	70-125	1273632.2	1341995.8	94.91	PASS	70-125
N027405-001C-MSD	MSD	1	40478.6	46562.7	86.93	PASS	70-125	1067174.4	1341995.8	79.52	PASS	70-125
CCV1	CCV	1	54460.5	46562.7	116.96	PASS	70-125	1562877.7	1341995.8	116.46	PASS	70-125
CCB1	CCB	1	48152.8	46562.7	103.41	PASS	70-125	1419998.5	1341995.8	105.81	PASS	70-125
N027405-001C-MSD	MSD	5	43108.7	46562.7	92.58	PASS	70-125	1224436.2	1341995.8	91.24	PASS	70-125
N027405-002C	SAMP	1	36674.2	46562.7	78.76	PASS	70-125	982408.2	1341995.8	73.21	PASS	70-125
N027405-002C	SAMP	5	46107	46562.7	99.021	PASS	70-125	1287433.4	1341995.8	95.93	PASS	70-125
N027405-003C	SAMP	1	39375.1	46562.7	84.56	PASS	70-125	1033506.6	1341995.8	77.013	PASS	70-125
N027405-003C	SAMP	5	47681.6	46562.7	102.4	PASS	70-125	1301507.4	1341995.8	96.98	PASS	70-125
N027405-004B	SAMP	1	49642.9	46562.7	106.62	PASS	70-125	1364982.8	1341995.8	101.71	PASS	70-125
N027405-004B	SAMP	5	50063.1	46562.7	107.52	PASS	70-125	1410214.9	1341995.8	105.08	PASS	70-125
N027405-006B	SAMP	1	31953.4	46562.7	68.62	NR!	70-125	832715.7	1341995.8	62.051	NR!	70-125
N027405-006B	SAMP	5	43053.2	46562.7	92.46	PASS	70-125	1181974.6	1341995.8	88.076	PASS	70-125
N027405-007B	SAMP	1	31770.6	46562.7	68.23	NR!	70-125	829505.8	1341995.8	61.81	NR!	70-125
CCV2	CCV	1	52518.6	46562.7	112.79	PASS	70-125	1555707.3	1341995.8	115.92	PASS	70-125
CCB2	CCB	1	48855	46562.7	104.92	PASS	70-125	1435821.9	1341995.8	106.99	PASS	70-125
N027405-007B	SAMP	5	40939.9	46562.7	87.92	PASS	70-125	1100743.7	1341995.8	82.023	PASS	70-125
N027405-008B	SAMP	1	31608	46562.7	67.88	NR!	70-125	831807.8	1341995.8	61.98	NR!	70-125

INTERNAL STANDARD: 171216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027405-008B	SAMP	5	41568.3	46562.7	89.27	PASS	70-125	1123239.4	1341995.8	83.7	PASS	70-125
N027405-009B	SAMP	1	37726.7	46562.7	81.023	PASS	70-125	997840.5	1341995.8	74.35	PASS	70-125
N027405-009B	SAMP	5	43443	46562.7	93.3	PASS	70-125	1212655.9	1341995.8	90.36	PASS	70-125
N027405-011B	SAMP	1	30936.8	46562.7	66.44	NR!	70-125	822765.7	1341995.8	61.31	NR!	70-125
N027405-011B	SAMP	5	38039.6	46562.7	81.7	PASS	70-125	1054323.4	1341995.8	78.56	PASS	70-125
N027405-012B	SAMP	1	33023.1	46562.7	70.92	PASS	70-125	871594.7	1341995.8	64.95	NR!	70-125
N027405-012B	SAMP	5	35987.1	46562.7	77.29	PASS	70-125	1008104.4	1341995.8	75.12	PASS	70-125
N027405-013B	SAMP	1	27794.4	46562.7	59.69	NR!	70-125	767447.1	1341995.8	57.19	NR!	70-125
CCV3	CCV	1	40717.1	46562.7	87.45	PASS	70-125	1258175.3	1341995.8	93.75	PASS	70-125
CCB3	CCB	1	38966.3	46562.7	83.69	PASS	70-125	1201878	1341995.8	89.56	PASS	70-125
N027405-013B	SAMP	5	34620.8	46562.7	74.35	PASS	70-125	957323.2	1341995.8	71.34	PASS	70-125
N027405-014B	SAMP	1	37388	46562.7	80.3	PASS	70-125	1075314.6	1341995.8	80.13	PASS	70-125
N027405-014B	SAMP	5	40221.4	46562.7	86.38	PASS	70-125	1187981.9	1341995.8	88.52	PASS	70-125
N027431-001B	SAMP	1	35914.8	46562.7	77.13	PASS	70-125	986601.2	1341995.8	73.52	PASS	70-125
N027431-001B	SAMP	5	39215.8	46562.7	84.22	PASS	70-125	1101973.6	1341995.8	82.11	PASS	70-125
N027431-002B	SAMP	1	29366.1	46562.7	63.068	NR!	70-125	802237.9	1341995.8	59.78	NR!	70-125
N027431-002B	SAMP	5	34972.7	46562.7	75.11	PASS	70-125	982179.2	1341995.8	73.19	PASS	70-125
N027431-003B	SAMP	1	23505.4	46562.7	50.48	NR!	70-125	645931.7	1341995.8	48.13	NR!	70-125
N027431-003B	SAMP	5	30885.5	46562.7	66.33	NR!	70-125	860292.4	1341995.8	64.11	NR!	70-125
N027431-004B	SAMP	1	22866.7	46562.7	49.11	NR!	70-125	640043.5	1341995.8	47.69	NR!	70-125
CCV4	CCV	1	35718.7	46562.7	76.71	PASS	70-125	1117603.5	1341995.8	83.28	PASS	70-125
CCB4	CCB	1	34839.1	46562.7	74.82	PASS	70-125	1041973.2	1341995.8	77.64	PASS	70-125
LLCCV1	CCV2	1	48381.4	46562.7	103.91	PASS	70-125	1302629	1341995.8	97.067	PASS	70-125
ICSA2	ICSA	1	51421.8	46562.7	110.44	PASS	70-125	1208457.8	1341995.8	90.049	PASS	70-125
ICSAB2	ICSAB	1	33660	46562.7	72.29	PASS	70-125	963971.6	1341995.8	71.83	PASS	70-125

INTERNAL STANDARD: 171219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	59462.6	59462.6	100	PASS	70-125	39877.4	39877.4	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	59538.2	59462.6	100.13	PASS	70-125	39333.8	39877.4	98.64	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	59631.9	59462.6	100.28	PASS	70-125	39715.8	39877.4	99.59	PASS	70-125
Std3-5/50 ppb	ICAL	1	59907.7	59462.6	100.75	PASS	70-125	39610.1	39877.4	99.33	PASS	70-125
Std4-10/100 ppb	ICAL	1	59801.3	59462.6	100.57	PASS	70-125	40161.4	39877.4	100.71	PASS	70-125
Std5-20/200 ppb	ICAL	1	61105.3	59462.6	102.76	PASS	70-125	40095.7	39877.4	100.55	PASS	70-125
Std6-40/400 ppb	ICAL	1	60956.8	59462.6	102.51	PASS	70-125	39731.4	39877.4	99.63	PASS	70-125
Std7-100/1000 ppb	ICAL	1	61988.3	59462.6	104.25	PASS	70-125	40037.8	39877.4	100.4	PASS	70-125
Std8-200/2000 ppb	ICAL	1	62035.3	59462.6	104.33	PASS	70-125	40097.8	39877.4	100.55	PASS	70-125
ICV	ICV	1	74138.7	59462.6	124.68	PASS	70-125	49226.1	39877.4	123.44	PASS	70-125
ICB	ICB	1	63007.7	59462.6	105.96	PASS	70-125	42029.4	39877.4	105.4	PASS	70-125
LLICV	CCV1	1	64905	59462.6	109.15	PASS	70-125	43650.3	39877.4	109.46	PASS	70-125
ICSA1	ICSA	1	72099.7	59462.6	121.25	PASS	70-125	45899.8	39877.4	115.1	PASS	70-125
ICSAB1	ICSAB	1	67656	59462.6	113.78	PASS	70-125	43731.6	39877.4	109.67	PASS	70-125
LLICV	CCV1	1	72115.5	59462.6	121.28	PASS	70-125	48508.5	39877.4	121.64	PASS	70-125
N027405-011B	SAMP	10	66222.1	59462.6	111.37	PASS	70-125	43028.7	39877.4	107.9	PASS	70-125
N027405-013B	SAMP	5	69385.1	59462.6	116.69	PASS	70-125	44408.1	39877.4	111.36	PASS	70-125
N027405-014B	SAMP	1	62358.7	59462.6	104.87	PASS	70-125	40872.1	39877.4	102.49	PASS	70-125
N027431-001B	SAMP	1	60612	59462.6	101.93	PASS	70-125	39859.6	39877.4	99.96	PASS	70-125
N027431-002B	SAMP	5	68850.6	59462.6	115.79	PASS	70-125	44945	39877.4	112.71	PASS	70-125
N027431-003B	SAMP	5	65602.2	59462.6	110.33	PASS	70-125	42368.1	39877.4	106.25	PASS	70-125
N027431-003B	SAMP	25	68206.9	59462.6	114.71	PASS	70-125	45657.8	39877.4	114.5	PASS	70-125
N027431-004B	SAMP	5	66176.6	59462.6	111.29	PASS	70-125	42492.9	39877.4	106.56	PASS	70-125
N027431-004B	SAMP	25	69423.2	59462.6	116.75	PASS	70-125	45507.6	39877.4	114.12	PASS	70-125
CCV1	CCV	1	68605	59462.6	115.38	PASS	70-125	45982.1	39877.4	115.31	PASS	70-125
CCB1	CCB	1	64893.6	59462.6	109.13	PASS	70-125	45325	39877.4	113.66	PASS	70-125
N027431-005B	SAMP	1	64355.9	59462.6	108.23	PASS	70-125	42493.9	39877.4	106.56	PASS	70-125
N027431-005B	SAMP	5	70996.1	59462.6	119.4	PASS	70-125	47846.3	39877.4	119.98	PASS	70-125
N027431-005B	SAMP	25	66345.1	59462.6	111.57	PASS	70-125	46423.5	39877.4	116.42	PASS	70-125
N027431-006B	SAMP	1	62635.1	59462.6	105.34	PASS	70-125	38515	39877.4	96.58	PASS	70-125
N027431-006B	SAMP	5	72986	59462.6	122.74	PASS	70-125	47497.7	39877.4	119.11	PASS	70-125
N027431-006B	SAMP	25	72820.7	59462.6	122.46	PASS	70-125	48267.8	39877.4	121.04	PASS	70-125
N027431-004B	SAMP	1	68125.5	59462.6	114.57	PASS	70-125	38874.9	39877.4	97.49	PASS	70-125
N027431-003B	SAMP	1	71322.1	59462.6	119.94	PASS	70-125	40799.4	39877.4	102.31	PASS	70-125
N027431-002B	SAMP	1	56715.4	59462.6	95.38	PASS	70-125	34973.9	39877.4	87.7	PASS	70-125
CCV2	CCV	1	66920.8	59462.6	112.54	PASS	70-125	45963.3	39877.4	115.26	PASS	70-125
CCB2	CCB	1	59914.4	59462.6	100.76	PASS	70-125	40731.6	39877.4	102.14	PASS	70-125
LLCCV1	CCV2	1	60256.5	59462.6	101.34	PASS	70-125	42365.8	39877.4	106.24	PASS	70-125
ICSA2	ICSA	1	57422	59462.6	96.57	PASS	70-125	39060.9	39877.4	97.95	PASS	70-125
ICSAB2	ICSAB	1	71420.3	59462.6	120.11	PASS	70-125	47148.8	39877.4	118.23	PASS	70-125

INTERNAL STANDARD: 171219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	50646.1	50646.1	100	PASS	70-125	1337447.5	1337447.5	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	50096.7	50646.1	98.92	PASS	70-125	1337148.9	1337447.5	99.98	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	50406.2	50646.1	99.53	PASS	70-125	1332810.8	1337447.5	99.65	PASS	70-125
Std3-5/50 ppb	ICAL	1	51001.7	50646.1	100.7	PASS	70-125	1327343	1337447.5	99.24	PASS	70-125
Std4-10/100 ppb	ICAL	1	50596.8	50646.1	99.9	PASS	70-125	1342310.9	1337447.5	100.36	PASS	70-125
Std5-20/200 ppb	ICAL	1	50445.4	50646.1	99.6	PASS	70-125	1332371.2	1337447.5	99.62	PASS	70-125
Std6-40/400 ppb	ICAL	1	51376.1	50646.1	101.44	PASS	70-125	1338883.9	1337447.5	100.11	PASS	70-125
Std7-100/1000 ppb	ICAL	1	51917.7	50646.1	102.51	PASS	70-125	1333989.1	1337447.5	99.74	PASS	70-125
Std8-200/2000 ppb	ICAL	1	51124.1	50646.1	100.94	PASS	70-125	1311763	1337447.5	98.08	PASS	70-125
ICV	ICV	1	62693.5	50646.1	123.79	PASS	70-125	1631263.7	1337447.5	121.97	PASS	70-125
ICB	ICB	1	54274.5	50646.1	107.16	PASS	70-125	1403011.3	1337447.5	104.9	PASS	70-125
LLICV	CCV1	1	56021.2	50646.1	110.61	PASS	70-125	1454004	1337447.5	108.71	PASS	70-125
ICSA1	ICSA	1	57642.6	50646.1	113.81	PASS	70-125	1388533.5	1337447.5	103.82	PASS	70-125
ICSAB1	ICSAB	1	53311.2	50646.1	105.26	PASS	70-125	1321126.6	1337447.5	98.78	PASS	70-125
LLICV	CCV1	1	63884.4	50646.1	126.14	NR!	70-125	1533848.6	1337447.5	114.68	PASS	70-125
N027405-011B	SAMP	10	53797.1	50646.1	106.22	PASS	70-125	1299585.3	1337447.5	97.17	PASS	70-125
N027405-013B	SAMP	5	57472.8	50646.1	113.48	PASS	70-125	1324110.6	1337447.5	99.003	PASS	70-125
N027405-014B	SAMP	1	49900.6	50646.1	98.53	PASS	70-125	1238929.7	1337447.5	92.63	PASS	70-125
N027431-001B	SAMP	1	48634.4	50646.1	96.028	PASS	70-125	1178494.8	1337447.5	88.12	PASS	70-125
N027431-002B	SAMP	5	57626.7	50646.1	113.78	PASS	70-125	1299520.5	1337447.5	97.16	PASS	70-125
N027431-003B	SAMP	5	53301.1	50646.1	105.24	PASS	70-125	1223625.6	1337447.5	91.49	PASS	70-125
N027431-003B	SAMP	25	57451.9	50646.1	113.44	PASS	70-125	1357299.4	1337447.5	101.48	PASS	70-125
N027431-004B	SAMP	5	53084.7	50646.1	104.81	PASS	70-125	1236099.7	1337447.5	92.42	PASS	70-125
N027431-004B	SAMP	25	57526.8	50646.1	113.59	PASS	70-125	1373039.9	1337447.5	102.66	PASS	70-125
CCV1	CCV	1	58603.8	50646.1	115.71	PASS	70-125	1475194.2	1337447.5	110.3	PASS	70-125
CCB1	CCB	1	57336	50646.1	113.21	PASS	70-125	1438095.6	1337447.5	107.53	PASS	70-125
N027431-005B	SAMP	1	53888.7	50646.1	106.4	PASS	70-125	1240752.6	1337447.5	92.77	PASS	70-125
N027431-005B	SAMP	5	61189.7	50646.1	120.82	PASS	70-125	1448384	1337447.5	108.29	PASS	70-125
N027431-005B	SAMP	25	58492.1	50646.1	115.49	PASS	70-125	1427883.7	1337447.5	106.76	PASS	70-125
N027431-006B	SAMP	1	45818.4	50646.1	90.47	PASS	70-125	1102538.3	1337447.5	82.44	PASS	70-125
N027431-006B	SAMP	5	58634.8	50646.1	115.77	PASS	70-125	1404611.6	1337447.5	105.02	PASS	70-125
N027431-006B	SAMP	25	58987.5	50646.1	116.47	PASS	70-125	1489414.9	1337447.5	111.36	PASS	70-125
N027431-004B	SAMP	1	40898.7	50646.1	80.75	PASS	70-125	1036029.9	1337447.5	77.46	PASS	70-125
N027431-003B	SAMP	1	44047.9	50646.1	86.97	PASS	70-125	1102066.5	1337447.5	82.4	PASS	70-125
N027431-002B	SAMP	1	37374.7	50646.1	73.8	PASS	70-125	992930.9	1337447.5	74.24	PASS	70-125
CCV2	CCV	1	51858.7	50646.1	102.39	PASS	70-125	1445185.3	1337447.5	108.06	PASS	70-125
CCB2	CCB	1	48892.9	50646.1	96.54	PASS	70-125	1314668.4	1337447.5	98.3	PASS	70-125
LLCCV1	CCV2	1	50008.6	50646.1	98.74	PASS	70-125	1315798.9	1337447.5	98.38	PASS	70-125
ICSA2	ICSA	1	47387.4	50646.1	93.57	PASS	70-125	1260976.2	1337447.5	94.28	PASS	70-125
ICSAB2	ICSAB	1	52946.6	50646.1	104.54	PASS	70-125	1427813.7	1337447.5	106.76	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N027431
Test Method: EPA 6020
Analysis Date: 12/16/2017

Matrix: Groundwater
Batch No.: 65979

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to severala analytes. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027405-001C DT 5X	Arsenic	ug/L	4.73769	PASS	4.629015	2.35%	10
N027405-001C DT 5X	Chromium	ug/L	0	NA	0.076638	100.00%	10
N027405-001C DT 5X	Manganese	ug/L	140.9829	PASS	138.534	1.77%	10
N027405-001C DT 5X	Molybdenum	ug/L	10.47355	NA	10.82288	3.23%	10
N027405-001C DT 5X	Selenium	ug/L	0	NA	0.151013	100.00%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027405-001C-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	120912
Client ID:	ZZZZZZ	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870951

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.649	0.10	10.00	4.629	100	80	120				
Molybdenum	22.604	0.50	10.00	10.82	118	80	120				
Selenium	9.020	0.50	10.00	0.1510	88.7	80	120				

Sample ID	N027405-001C-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	120912
Client ID:	ZZZZZZ	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870952

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	229.920	2.5	100.0	138.5	91.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027431
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N027405-001C-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	120912
Client ID:	ZZZZZZ	Batch ID:	65979	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/16/2017	SeqNo:	2870894

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.860	1.0	10.00	0.07664	97.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

January 03, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027459

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 08, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Litucas for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027459

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (6.4 ug/L) and hexavalent chromium (5.0 ug/L) for sample N027459-013 (MW-37D-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (93 ug/L) and hexavalent chromium (12 ug/L) for sample N027459-015 (MW-13-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Dilution was necessary for samples N027459-004, -013, -018 and -019 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 300.0:

Dilution was necessary for most of the samples due to precipitation upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N027459-001C-MS1 and N027459-001C-MSD1 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N027459-002C-MS2 and N027459-002C-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N027459-001C-MS and N027459-001C-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary on some analytes for most of the samples due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Because the results for total dissolved chromium (6.4 ug/L) and hexavalent chromium (5.0 ug/L) for sample N027459-013 (MW-37D-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 7.1 and 4.8 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (93 ug/L) and hexavalent chromium (12 ug/L) for sample N027459-015 (MW-13-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 76 and 65 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027459
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027459-001A	MW-35-060-Q417	Groundwater	12/8/2017 9:14:00 AM	12/8/2017	1/3/2018
N027459-001B	MW-35-060-Q417	Groundwater	12/8/2017 9:14:00 AM	12/8/2017	1/3/2018
N027459-001C	MW-35-060-Q417	Groundwater	12/8/2017 9:14:00 AM	12/8/2017	1/3/2018
N027459-001D	MW-35-060-Q417	Groundwater	12/8/2017 9:14:00 AM	12/8/2017	1/3/2018
N027459-001E	MW-35-060-Q417	Groundwater	12/8/2017 9:14:00 AM	12/8/2017	1/3/2018
N027459-002A	MW-35-135-Q417	Groundwater	12/8/2017 8:28:00 AM	12/8/2017	1/3/2018
N027459-002B	MW-35-135-Q417	Groundwater	12/8/2017 8:28:00 AM	12/8/2017	1/3/2018
N027459-002C	MW-35-135-Q417	Groundwater	12/8/2017 8:28:00 AM	12/8/2017	1/3/2018
N027459-002D	MW-35-135-Q417	Groundwater	12/8/2017 8:28:00 AM	12/8/2017	1/3/2018
N027459-002E	MW-35-135-Q417	Groundwater	12/8/2017 8:28:00 AM	12/8/2017	1/3/2018
N027459-003A	MW-23-060-Q417	Groundwater	12/8/2017 10:48:00 AM	12/8/2017	1/3/2018
N027459-003B	MW-23-060-Q417	Groundwater	12/8/2017 10:48:00 AM	12/8/2017	1/3/2018
N027459-003C	MW-23-060-Q417	Groundwater	12/8/2017 10:48:00 AM	12/8/2017	1/3/2018
N027459-004A	MW-23-080-Q417	Groundwater	12/8/2017 10:12:00 AM	12/8/2017	1/3/2018
N027459-004B	MW-23-080-Q417	Groundwater	12/8/2017 10:12:00 AM	12/8/2017	1/3/2018
N027459-004C	MW-23-080-Q417	Groundwater	12/8/2017 10:12:00 AM	12/8/2017	1/3/2018
N027459-005A	MW-50-095-Q417	Groundwater	12/8/2017 9:24:00 AM	12/8/2017	1/3/2018
N027459-005B	MW-50-095-Q417	Groundwater	12/8/2017 9:24:00 AM	12/8/2017	1/3/2018
N027459-005C	MW-50-095-Q417	Groundwater	12/8/2017 9:24:00 AM	12/8/2017	1/3/2018
N027459-006A	MW-50-200-Q417	Groundwater	12/8/2017 8:45:00 AM	12/8/2017	1/3/2018
N027459-006B	MW-50-200-Q417	Groundwater	12/8/2017 8:45:00 AM	12/8/2017	1/3/2018
N027459-006C	MW-50-200-Q417	Groundwater	12/8/2017 8:45:00 AM	12/8/2017	1/3/2018
N027459-007A	MW-19-Q417	Groundwater	12/8/2017 9:58:00 AM	12/8/2017	1/3/2018
N027459-007B	MW-19-Q417	Groundwater	12/8/2017 9:58:00 AM	12/8/2017	1/3/2018
N027459-007C	MW-19-Q417	Groundwater	12/8/2017 9:58:00 AM	12/8/2017	1/3/2018
N027459-008A	MW-25-Q417	Groundwater	12/8/2017 10:42:00 AM	12/8/2017	1/3/2018
N027459-008B	MW-25-Q417	Groundwater	12/8/2017 10:42:00 AM	12/8/2017	1/3/2018
N027459-008C	MW-25-Q417	Groundwater	12/8/2017 10:42:00 AM	12/8/2017	1/3/2018
N027459-008D	MW-25-Q417	Groundwater	12/8/2017 10:42:00 AM	12/8/2017	1/3/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027459
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027459-008E	MW-25-Q417	Groundwater	12/8/2017 10:42:00 AM	12/8/2017	1/3/2018
N027459-009A	MW-919-Q417	Groundwater	12/8/2017 9:26:00 AM	12/8/2017	1/3/2018
N027459-009B	MW-919-Q417	Groundwater	12/8/2017 9:26:00 AM	12/8/2017	1/3/2018
N027459-009C	MW-919-Q417	Groundwater	12/8/2017 9:26:00 AM	12/8/2017	1/3/2018
N027459-010A	OW-03D-Q417	Groundwater	12/8/2017 9:21:00 AM	12/8/2017	1/3/2018
N027459-010B	OW-03D-Q417	Groundwater	12/8/2017 9:21:00 AM	12/8/2017	1/3/2018
N027459-010C	OW-03D-Q417	Groundwater	12/8/2017 9:21:00 AM	12/8/2017	1/3/2018
N027459-011A	OW-03M-Q417	Groundwater	12/8/2017 8:41:00 AM	12/8/2017	1/3/2018
N027459-011B	OW-03M-Q417	Groundwater	12/8/2017 8:41:00 AM	12/8/2017	1/3/2018
N027459-011C	OW-03M-Q417	Groundwater	12/8/2017 8:41:00 AM	12/8/2017	1/3/2018
N027459-012A	OW-03S-Q417	Groundwater	12/8/2017 10:13:00 AM	12/8/2017	1/3/2018
N027459-012B	OW-03S-Q417	Groundwater	12/8/2017 10:13:00 AM	12/8/2017	1/3/2018
N027459-012C	OW-03S-Q417	Groundwater	12/8/2017 10:13:00 AM	12/8/2017	1/3/2018
N027459-013A	MW-37D-Q417	Groundwater	12/8/2017 9:25:00 AM	12/8/2017	1/3/2018
N027459-013B	MW-37D-Q417	Groundwater	12/8/2017 9:25:00 AM	12/8/2017	1/3/2018
N027459-013C	MW-37D-Q417	Groundwater	12/8/2017 9:25:00 AM	12/8/2017	1/3/2018
N027459-013D	MW-37D-Q417	Groundwater	12/8/2017 9:25:00 AM	12/8/2017	1/3/2018
N027459-014A	MW-37S-Q417	Groundwater	12/8/2017 10:15:00 AM	12/8/2017	1/3/2018
N027459-014B	MW-37S-Q417	Groundwater	12/8/2017 10:15:00 AM	12/8/2017	1/3/2018
N027459-014C	MW-37S-Q417	Groundwater	12/8/2017 10:15:00 AM	12/8/2017	1/3/2018
N027459-015A	MW-13-Q417	Groundwater	12/8/2017 11:15:00 AM	12/8/2017	1/3/2018
N027459-015B	MW-13-Q417	Groundwater	12/8/2017 11:15:00 AM	12/8/2017	1/3/2018
N027459-015C	MW-13-Q417	Groundwater	12/8/2017 11:15:00 AM	12/8/2017	1/3/2018
N027459-016A	MW-20-100-Q417	Groundwater	12/8/2017 8:15:00 AM	12/8/2017	1/3/2018
N027459-016B	MW-20-100-Q417	Groundwater	12/8/2017 8:15:00 AM	12/8/2017	1/3/2018
N027459-016C	MW-20-100-Q417	Groundwater	12/8/2017 8:15:00 AM	12/8/2017	1/3/2018
N027459-016D	MW-20-100-Q417	Groundwater	12/8/2017 8:15:00 AM	12/8/2017	1/3/2018
N027459-016E	MW-20-100-Q417	Groundwater	12/8/2017 8:15:00 AM	12/8/2017	1/3/2018
N027459-017A	MW-905-Q417	Groundwater	12/8/2017 8:25:00 AM	12/8/2017	1/3/2018
N027459-017B	MW-905-Q417	Groundwater	12/8/2017 8:25:00 AM	12/8/2017	1/3/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027459
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027459-017C	MW-905-Q417	Groundwater	12/8/2017 8:25:00 AM	12/8/2017	1/3/2018
N027459-017D	MW-905-Q417	Groundwater	12/8/2017 8:25:00 AM	12/8/2017	1/3/2018
N027459-017E	MW-905-Q417	Groundwater	12/8/2017 8:25:00 AM	12/8/2017	1/3/2018
N027459-018A	PGE-07BR-Q417	Groundwater	12/8/2017 10:57:00 AM	12/8/2017	1/3/2018
N027459-018B	PGE-07BR-Q417	Groundwater	12/8/2017 10:57:00 AM	12/8/2017	1/3/2018
N027459-018C	PGE-07BR-Q417	Groundwater	12/8/2017 10:57:00 AM	12/8/2017	1/3/2018
N027459-019A	MW-24BR-Q417	Groundwater	12/8/2017 11:25:00 AM	12/8/2017	1/3/2018
N027459-019B	MW-24BR-Q417	Groundwater	12/8/2017 11:25:00 AM	12/8/2017	1/3/2018
N027459-019C	MW-24BR-Q417	Groundwater	12/8/2017 11:25:00 AM	12/8/2017	1/3/2018
N027459-019D	MW-24BR-Q417	Groundwater	12/8/2017 11:25:00 AM	12/8/2017	1/3/2018
N027459-020A	MW-725-Q417	Groundwater	12/8/2017 11:30:00 AM	12/8/2017	1/3/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-060-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:14:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	5300	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-002

Client Sample ID: MW-35-135-Q417
Collection Date: 12/8/2017 8:28:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	8100	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-003

Client Sample ID: MW-23-060-Q417
Collection Date: 12/8/2017 10:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-004

Client Sample ID: MW-23-080-Q417
Collection Date: 12/8/2017 10:12:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-005

Client Sample ID: MW-50-095-Q417
Collection Date: 12/8/2017 9:24:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	4500	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-50-200-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 8:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-007

Client Sample ID: MW-19-Q417
Collection Date: 12/8/2017 9:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	1800	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-008

Client Sample ID: MW-25-Q417
Collection Date: 12/8/2017 10:42:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	1600	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-009

Client Sample ID: MW-919-Q417
Collection Date: 12/8/2017 9:26:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	7100	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-03D-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:21:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	7200	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-03M-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 8:41:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	5200	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-012

Client Sample ID: OW-03S-Q417
Collection Date: 12/8/2017 10:13:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	1300	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-37D-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-37S-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 10:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	5300	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-015

Client Sample ID: MW-13-Q417
Collection Date: 12/8/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	2100	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-016

Client Sample ID: MW-20-100-Q417
Collection Date: 12/8/2017 8:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	1800	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 8:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	1800	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-018

Client Sample ID: PGE-07BR-Q417
Collection Date: 12/8/2017 10:57:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24BR-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 11:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N027430-018CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120750
Client ID:	ZZZZZZ	Batch ID:	R120750	TestNo:	EPA 120.1			Analysis Date:	12/8/2017	SeqNo:	2860752

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	24900.000	0.10						24700	0.806	10	

Sample ID	N027459-003CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120750
Client ID:	ZZZZZZ	Batch ID:	R120750	TestNo:	EPA 120.1			Analysis Date:	12/8/2017	SeqNo:	2860769

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	11670.000	0.10						11690	0.171	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N027459-006CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120751
Client ID:	ZZZZZZ	Batch ID:	R120751	TestNo:	EPA 120.1			Analysis Date:	12/8/2017	SeqNo:	2860774

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	14560.000	0.10						14570	0.0687	10	

Sample ID	N027459-018CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120751
Client ID:	ZZZZZZ	Batch ID:	R120751	TestNo:	EPA 120.1			Analysis Date:	12/8/2017	SeqNo:	2860788

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	13620.000	0.10						13670	0.366	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-060-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:14:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3700	50	50		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-135-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 8:28:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	6200	50	50		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-003

Client Sample ID: MW-23-060-Q417
Collection Date: 12/8/2017 10:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**				PrepDate	**12/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	9600	100	100		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-080-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 10:12:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	10000	100	100		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-50-095-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:24:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3000	33	33		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-006

Client Sample ID: MW-50-200-Q417
Collection Date: 12/8/2017 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213E**	QC Batch: **66056**				PrepDate	**12/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	12000	100	100		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-19-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:58:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213E**	QC Batch: **66056**				PrepDate	**12/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1200	13	13		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-25-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 10:42:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213E**	QC Batch: **66056**				PrepDate	**12/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1200	13	13		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-919-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:26:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213E**	QC Batch: **66056**				PrepDate	**12/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	5200	50	50		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-010

Client Sample ID: OW-03D-Q417
Collection Date: 12/8/2017 9:21:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213E**	QC Batch: **66056**				PrepDate	**12/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	5300	50	50		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-03M-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 8:41:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213E**	QC Batch: **66056**				PrepDate	**12/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3600	50	50		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-03S-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 10:13:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213E**	QC Batch: **66056**				PrepDate	**12/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	810	10	10		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-37D-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213E**	QC Batch: **66056**				PrepDate	**12/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	8100	100	100		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-37S-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 10:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213E**	QC Batch: **66056**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3800	50	50		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-13-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 11:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213E**	QC Batch: **66056**				PrepDate	**12/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1400	17	17		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-100-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 8:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214G**	QC Batch: **66074**				PrepDate	**12/14/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1300	13	13		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 8:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214G**	QC Batch: **66074**			PrepDate	**12/14/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1300	13	13		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PGE-07BR-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 10:57:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214G**	QC Batch: **66074**				PrepDate	**12/14/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	10000	100	100		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24BR-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 11:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214G**	QC Batch: **66074**			PrepDate	**12/14/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	7300	100	100		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66055**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/13/2017**	RunNo: **120820**
Client ID: **LCSW**	Batch ID: **66055**	TestNo: **SM2540C**		Analysis Date: **12/13/2017**	SeqNo: **2865495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	953.000	10	1000	0	95.3	80	120				

Sample ID **MB-66055**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/13/2017**	RunNo: **120820**
Client ID: **PBW**	Batch ID: **66055**	TestNo: **SM2540C**		Analysis Date: **12/13/2017**	SeqNo: **2865496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N027430-018CDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/13/2017**	RunNo: **120820**
Client ID: **ZZZZZZ**	Batch ID: **66055**	TestNo: **SM2540C**		Analysis Date: **12/13/2017**	SeqNo: **2865501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	22760.000	200						21820	4.22	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66056** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/13/2017** RunNo: **120821**
Client ID: **LCSW** Batch ID: **66056** TestNo: **SM2540C** Analysis Date: **12/13/2017** SeqNo: **2865508**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	979.000	10	1000	0	97.9	80	120				

Sample ID **MB-66056** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/13/2017** RunNo: **120821**
Client ID: **PBW** Batch ID: **66056** TestNo: **SM2540C** Analysis Date: **12/13/2017** SeqNo: **2865509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N027459-006CDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/13/2017** RunNo: **120821**
Client ID: **ZZZZZZ** Batch ID: **66056** TestNo: **SM2540C** Analysis Date: **12/13/2017** SeqNo: **2865511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	12470.000	100						11980	4.01	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-66074	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/14/2017	RunNo:	120876
Client ID:	LCSW	Batch ID:	66074	TestNo:	SM2540C			Analysis Date:	12/14/2017	SeqNo:	2869155

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	938.000	10	1000	0	93.8	80	120				

Sample ID	MB-66074	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/14/2017	RunNo:	120876
Client ID:	PBW	Batch ID:	66074	TestNo:	SM2540C			Analysis Date:	12/14/2017	SeqNo:	2869156

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N027459-018CDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/14/2017	RunNo:	120876
Client ID:	ZZZZZZ	Batch ID:	66074	TestNo:	SM2540C			Analysis Date:	12/14/2017	SeqNo:	2869166

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	10920.000	100						10470	4.21	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-001

Client Sample ID: MW-35-060-Q417
Collection Date: 12/8/2017 9:14:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A** QC Batch: **R120870**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	21	0.17	1.0		µg/L	5	12/14/2017 10:51 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	20	0.019	1.0		µg/L	1	12/21/2017 01:36 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-002

Client Sample ID: MW-35-135-Q417
Collection Date: 12/8/2017 8:28:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A** QC Batch: **R120870**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	29	0.17	1.0		µg/L	5	12/14/2017 11:10 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	29	0.019	1.0		µg/L	1	12/21/2017 02:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-003

Client Sample ID: MW-23-060-Q417
Collection Date: 12/8/2017 10:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A** QC Batch: **R120870**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	40	0.17	1.0		µg/L	5	12/14/2017 12:23 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	35	0.019	1.0		µg/L	1	12/21/2017 02:49 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-004

Client Sample ID: MW-23-080-Q417
Collection Date: 12/8/2017 10:12:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A** QC Batch: **R120870**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	1.5	0.17	1.0		µg/L	5	12/14/2017 12:42 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate **12/12/2017**			Analyst: **CEI**
Chromium	1.9	0.019	1.0		µg/L	1	12/21/2017 03:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-005

Client Sample ID: MW-50-095-Q417
Collection Date: 12/8/2017 9:24:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A** QC Batch: **R120870**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	13	0.17	1.0		µg/L	5	12/14/2017 01:01 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	14	0.019	1.0		µg/L	1	12/21/2017 03:12 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-006

Client Sample ID: MW-50-200-Q417
Collection Date: 12/8/2017 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A**	QC Batch: **R120870**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	4100	33	200		µg/L	1000	12/14/2017 02:31 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	4300	0.97	50		µg/L	50	12/21/2017 07:05 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-007

Client Sample ID: MW-19-Q417
Collection Date: 12/8/2017 9:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A**	QC Batch: **R120870**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	340	1.7	10		µg/L	50	12/14/2017 02:50 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	340	0.096	5.0		µg/L	5	12/21/2017 04:08 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-008

Client Sample ID: MW-25-Q417
Collection Date: 12/8/2017 10:42:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A** QC Batch: **R120870**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	91	0.66	4.0		µg/L	20	12/14/2017 03:18 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	90	0.019	1.0		µg/L	1	12/21/2017 04:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-009

Client Sample ID: MW-919-Q417
Collection Date: 12/8/2017 9:26:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	7.9	0.066	0.40		µg/L	2	12/15/2017 07:52 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	8.4	0.019	1.0		µg/L	1	12/21/2017 04:24 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-010

Client Sample ID: OW-03D-Q417
Collection Date: 12/8/2017 9:21:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A** QC Batch: **R120870**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	7.9	0.066	0.40		µg/L	2	12/14/2017 04:24 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	8.1	0.019	1.0		µg/L	1	12/21/2017 04:36 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-011

Client Sample ID: OW-03M-Q417
Collection Date: 12/8/2017 8:41:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A** QC Batch: **R120870**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	16	0.066	0.40		µg/L	2	12/14/2017 04:43 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	16	0.019	1.0		µg/L	1	12/21/2017 04:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-012

Client Sample ID: OW-03S-Q417
Collection Date: 12/8/2017 10:13:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A** QC Batch: **R120870**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	18	0.17	1.0		µg/L	5	12/14/2017 05:02 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	18	0.019	1.0		µg/L	1	12/21/2017 05:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-37D-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_171214A** QC Batch: **R120870**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	5.0	0.17	1.0		µg/L	5	12/14/2017 04:05 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	6.4	0.019	1.0		µg/L	1	12/21/2017 05:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-014

Client Sample ID: MW-37S-Q417
Collection Date: 12/8/2017 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A** QC Batch: **R120870**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	12	0.17	1.0		µg/L	5	12/14/2017 05:59 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	12	0.019	1.0		µg/L	1	12/21/2017 05:32 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-015

Client Sample ID: MW-13-Q417
Collection Date: 12/8/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A** QC Batch: **R120870**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	12	0.066	0.40		µg/L	2	12/14/2017 08:49 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	93	0.019	1.0		µg/L	1	12/21/2017 05:44 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-016

Client Sample ID: MW-20-100-Q417
Collection Date: 12/8/2017 8:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A**	QC Batch: **R120870**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1500	6.6	40		µg/L	200	12/14/2017 06:37 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	1400	0.19	10		µg/L	10	12/21/2017 05:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-017

Client Sample ID: MW-905-Q417
Collection Date: 12/8/2017 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A**	QC Batch: **R120870**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1500	6.6	40		µg/L	200	12/14/2017 06:56 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	1400	0.19	10		µg/L	10	12/21/2017 06:48 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-018

Client Sample ID: PGE-07BR-Q417
Collection Date: 12/8/2017 10:57:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A** QC Batch: **R120903**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/15/2017 05:11 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	ND	0.096	5.0		µg/L	5	12/21/2017 06:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-019

Client Sample ID: MW-24BR-Q417
Collection Date: 12/8/2017 11:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A** QC Batch: **R120903**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/15/2017 05:30 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/21/2017 06:36 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-725-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 11:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A**	QC Batch: **R120870**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/14/2017 07:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R120870	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120870	
Client ID:	PBW	Batch ID:	R120870	TestNo:	EPA 218.6			Analysis Date:	12/14/2017	SeqNo:	2868937	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		ND	0.20									

Sample ID	LCS-R120870	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120870	
Client ID:	LCSW	Batch ID:	R120870	TestNo:	EPA 218.6			Analysis Date:	12/14/2017	SeqNo:	2868938	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		5.214	0.20	5.000	0	104	90	110				

Sample ID	N027459-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120870	
Client ID:	ZZZZZZ	Batch ID:	R120870	TestNo:	EPA 218.6			Analysis Date:	12/14/2017	SeqNo:	2868943	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		47.180	1.0	25.00	21.12	104	90	110				

Sample ID	N027459-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120870	
Client ID:	ZZZZZZ	Batch ID:	R120870	TestNo:	EPA 218.6			Analysis Date:	12/14/2017	SeqNo:	2868945	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		55.089	1.0	25.00	29.09	104	90	110				

Sample ID	N027459-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120870	
Client ID:	ZZZZZZ	Batch ID:	R120870	TestNo:	EPA 218.6			Analysis Date:	12/14/2017	SeqNo:	2868951	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		66.002	1.0	25.00	39.93	104	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027459-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.960	1.0	5.000	1.546	108	90	110				

Sample ID **N027459-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868955**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	17.863	1.0	5.000	12.86	100	90	110				

Sample ID **N027544-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868959**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	211.622	4.0						215.1	1.62	20	

Sample ID **N027459-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9447.300	200	5000	4128	106	90	110				

Sample ID **N027459-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	608.430	10	250.0	344.9	105	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027459-007AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120870
Client ID:	ZZZZZZ	Batch ID:	R120870	TestNo:	EPA 218.6			Analysis Date:	12/14/2017	SeqNo:	2868966

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	610.675	10	250.0	344.9	106	90	110	608.4	0.368	20	

Sample ID	N027459-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120870
Client ID:	ZZZZZZ	Batch ID:	R120870	TestNo:	EPA 218.6			Analysis Date:	12/14/2017	SeqNo:	2868968

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	196.484	4.0	100.0	91.32	105	90	110				

Sample ID	N027459-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120870
Client ID:	ZZZZZZ	Batch ID:	R120870	TestNo:	EPA 218.6			Analysis Date:	12/14/2017	SeqNo:	2868973

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.205	1.0	5.000	4.970	105	90	110				

Sample ID	N027459-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120870
Client ID:	ZZZZZZ	Batch ID:	R120870	TestNo:	EPA 218.6			Analysis Date:	12/14/2017	SeqNo:	2868975

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	18.511	0.40	10.00	7.877	106	90	110				

Sample ID	N027459-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120870
Client ID:	ZZZZZZ	Batch ID:	R120870	TestNo:	EPA 218.6			Analysis Date:	12/14/2017	SeqNo:	2868977

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	26.047	0.40	10.00	15.70	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027459-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868979**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	44.357	1.0	25.00	18.34	104	90	110				

Sample ID **N027459-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868985**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	17.310	1.0	5.000	12.03	106	90	110				

Sample ID **N027459-016AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868989**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2556.640	40	1000	1503	105	90	110				

Sample ID **N027459-017AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868991**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2569.620	40	1000	1507	106	90	110				

Sample ID **N027459-020AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.148	0.20	1.000	0.1126	104	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027459-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120870
Client ID:	ZZZZZZ	Batch ID:	R120870	TestNo:	EPA 218.6			Analysis Date:	12/14/2017	SeqNo:	2868997

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	22.396	0.40	10.00	11.76	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R120903	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903		
Client ID:	PBW	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870594		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		ND	0.20										

Sample ID	LCS-R120903	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903		
Client ID:	LCSW	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870595		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		5.228	0.20	5.000	0	105	90	110					

Sample ID	N027485-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903		
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870599		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		260.554	4.0	100.0	156.5	104	90	110					

Sample ID	N027485-001AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903		
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870600		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		260.346	4.0	100.0	156.5	104	90	110	260.6	0.0799	20		

Sample ID	N027485-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903		
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870603		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		2757.320	40	1000	1730	103	90	110					

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027485-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870604**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2468.720	40	1000	1430	104	90	110				

Sample ID **N027485-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9037.100	200	5000	3727	106	90	110				

Sample ID **N027485-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870608**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.460	1.0	5.000	8.194	105	90	110				

Sample ID **N027485-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870610**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.309	1.0	5.000	3.066	105	90	110				

Sample ID **N027485-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.394	1.0	5.000	3.029	107	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027485-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870616

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	938.900	20	500.0	419.0	104	90	110				

Sample ID	N027485-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870618

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4392.300	100	2500	1795	104	90	110				

Sample ID	N027485-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870620

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	65.788	1.0	25.00	38.85	108	90	110				

Sample ID	N027485-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870622

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4952.800	100	2500	2341	104	90	110				

Sample ID	N027485-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870624

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4983.750	100	2500	2388	104	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027485-003ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870627

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1430.860	40						1430	0.0671	20	

Sample ID	N027485-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870629

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.056	0.20	1.000	0	106	90	110				

Sample ID	N027485-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870631

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.086	0.20	1.000	0	109	90	110				

Sample ID	N027485-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870632

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.057	0.20	1.000	0	106	90	110				

Sample ID	N027485-016AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870634

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0	106	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027459-018AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120903**
Client ID: **ZZZZZZ** Batch ID: **R120903** TestNo: **EPA 218.6** Analysis Date: **12/15/2017** SeqNo: **2870638**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.654	1.0	5.000	0	93.1	90	110				

Sample ID **N027459-019AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120903**
Client ID: **ZZZZZZ** Batch ID: **R120903** TestNo: **EPA 218.6** Analysis Date: **12/15/2017** SeqNo: **2870640**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.193	1.0	5.000	0	104	90	110				

Sample ID **N027459-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120903**
Client ID: **ZZZZZZ** Batch ID: **R120903** TestNo: **EPA 218.6** Analysis Date: **12/15/2017** SeqNo: **2870644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	17.987	0.40	10.00	7.873	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66021	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121008
Client ID:	PBW	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876372

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66021	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121008
Client ID:	LCSW	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876373

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.444	1.0	10.00	0	104	85	115				

Sample ID	N027459-001C-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121008
Client ID:	ZZZZZZ	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876379

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	28.311	1.0	10.00	20.05	82.6	75	125				

Sample ID	N027459-001C-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121008
Client ID:	ZZZZZZ	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876381

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	28.099	1.0	10.00	20.05	80.5	75	125	28.31	0.752	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-060-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:14:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	78	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-135-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 8:28:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	49	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-060-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 10:48:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	16	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-004

Client Sample ID: MW-23-080-Q417
Collection Date: 12/8/2017 10:12:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	44	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-50-095-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:24:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	53	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-006

Client Sample ID: MW-50-200-Q417
Collection Date: 12/8/2017 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	33	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-19-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:58:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	95	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-008

Client Sample ID: MW-25-Q417
Collection Date: 12/8/2017 10:42:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	130	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-919-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:26:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	36	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-03D-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:21:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	36	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-03M-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 8:41:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	48	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-03S-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 10:13:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	73	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-37D-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	32	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-37S-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 10:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	47	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-015

Client Sample ID: MW-13-Q417
Collection Date: 12/8/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	79	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-016

Client Sample ID: MW-20-100-Q417
Collection Date: 12/8/2017 8:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	120	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-017

Client Sample ID: MW-905-Q417
Collection Date: 12/8/2017 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	92	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-018

Client Sample ID: PGE-07BR-Q417
Collection Date: 12/8/2017 10:57:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	ND	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24BR-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 11:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	42	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R120816**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **LCSW**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	98.394	5.0	100.0	0	98.4	85	115				

Sample ID **MB-R120816**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **PBW**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N027430-002CDDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **ZZZZZZ**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865286**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	38.153	5.0						38.15	0	30	

Sample ID **N027431-002CMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **ZZZZZZ**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865300**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	196.787	5.0	100.0	99.40	97.4	75	125				

Sample ID **N027431-002CMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **ZZZZZZ**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	196.787	5.0	100.0	99.40	97.4	75	125	196.8	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID	LCS-R120856	SampType:	LCS	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120856		
Client ID:	LCSW	Batch ID:	R120856	TestNo:	SM 2320 B			Analysis Date:	12/14/2017	SeqNo:	2868272		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Alkalinity, Total (As CaCO3)	101.464	5.0	100.0	0	101	85	115						

Sample ID	MB-R120856	SampType:	MBLK	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120856		
Client ID:	PBW	Batch ID:	R120856	TestNo:	SM 2320 B			Analysis Date:	12/14/2017	SeqNo:	2868273		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Alkalinity, Total (As CaCO3)	ND	5.0											

Sample ID	N027459-003CDUP	SampType:	DUP	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120856		
Client ID:	ZZZZZZ	Batch ID:	R120856	TestNo:	SM 2320 B			Analysis Date:	12/14/2017	SeqNo:	2868275		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Alkalinity, Total (As CaCO3)	16.736	5.0						15.69	6.45	30			

Sample ID	N027459-017EMS	SampType:	MS	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120856		
Client ID:	ZZZZZZ	Batch ID:	R120856	TestNo:	SM 2320 B			Analysis Date:	12/14/2017	SeqNo:	2868290		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Alkalinity, Total (As CaCO3)	188.285	5.0	100.0	92.05	96.2	75	125						

Sample ID	N027459-017EMSD	SampType:	MSD	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120856		
Client ID:	ZZZZZZ	Batch ID:	R120856	TestNo:	SM 2320 B			Analysis Date:	12/14/2017	SeqNo:	2868291		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Alkalinity, Total (As CaCO3)	190.377	5.0	100.0	92.05	98.3	75	125	188.3	1.10	20			

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-001

Client Sample ID: MW-35-060-Q417
Collection Date: 12/8/2017 9:14:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/19/2017 01:05 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Chloride	2200	4.6	250		mg/L	500	12/15/2017 03:55 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Sulfate	330	1.1	25		mg/L	50	12/15/2017 04:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-002

Client Sample ID: MW-35-135-Q417
Collection Date: 12/8/2017 8:28:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/19/2017 01:20 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Chloride	3300	9.1	500		mg/L	1000	12/15/2017 07:29 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Sulfate	760	2.3	50		mg/L	100	12/15/2017 07:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-003

Client Sample ID: MW-23-060-Q417
Collection Date: 12/8/2017 10:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**				PrepDate			Analyst: **RAB**
Bromide	ND	0.20	5.0		mg/L	10	12/19/2017 01:35 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Chloride	5600	18	1000		mg/L	2000	12/15/2017 08:00 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Sulfate	660	2.3	50		mg/L	100	12/15/2017 08:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-004

Client Sample ID: MW-23-080-Q417
Collection Date: 12/8/2017 10:12:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**				PrepDate			Analyst: **RAB**
Bromide	ND	0.20	5.0		mg/L	10	12/19/2017 01:50 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Chloride	5600	18	1000		mg/L	2000	12/15/2017 08:31 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Sulfate	970	2.3	50		mg/L	100	12/15/2017 08:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-005

Client Sample ID: MW-50-095-Q417
Collection Date: 12/8/2017 9:24:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/19/2017 02:06 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Chloride	1700	4.6	250		mg/L	500	12/15/2017 05:27 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Sulfate	290	1.1	25		mg/L	50	12/15/2017 05:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-006

Client Sample ID: MW-50-200-Q417
Collection Date: 12/8/2017 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/19/2017 02:21 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Chloride	6800	18	1000		mg/L	2000	12/15/2017 09:01 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Sulfate	890	2.3	50		mg/L	100	12/15/2017 09:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-007

Client Sample ID: MW-19-Q417
Collection Date: 12/8/2017 9:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**			PrepDate				Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/19/2017 02:36 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Chloride	530	1.8	100		mg/L	200	12/15/2017 10:02 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Sulfate	170	0.46	10		mg/L	20	12/15/2017 10:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-008

Client Sample ID: MW-25-Q417
Collection Date: 12/8/2017 10:42:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/19/2017 02:52 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Chloride	420	0.91	50		mg/L	100	12/15/2017 10:33 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Sulfate	200	0.46	10		mg/L	20	12/15/2017 10:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-009

Client Sample ID: MW-919-Q417
Collection Date: 12/8/2017 9:26:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/19/2017 04:39 PM
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Chloride	2900	9.1	500		mg/L	1000	12/15/2017 11:04 PM
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Sulfate	410	1.1	25		mg/L	50	12/15/2017 11:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-010

Client Sample ID: OW-03D-Q417
Collection Date: 12/8/2017 9:21:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/19/2017 04:54 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Chloride	2900	9.1	500		mg/L	1000	12/15/2017 11:34 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Sulfate	410	1.1	25		mg/L	50	12/15/2017 11:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-011

Client Sample ID: OW-03M-Q417
Collection Date: 12/8/2017 8:41:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**			PrepDate				Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/19/2017 05:09 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Chloride	2000	4.6	250		mg/L	500	12/16/2017 12:05 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Sulfate	330	1.1	25		mg/L	50	12/16/2017 12:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-012

Client Sample ID: OW-03S-Q417
Collection Date: 12/8/2017 10:13:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**			PrepDate				Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/19/2017 05:25 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Chloride	360	0.91	50		mg/L	100	12/16/2017 01:06 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Sulfate	81	0.46	10		mg/L	20	12/16/2017 01:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-013

Client Sample ID: MW-37D-Q417
Collection Date: 12/8/2017 9:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/19/2017 05:40 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Chloride	4800	18	1000		mg/L	2000	12/16/2017 01:37 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Sulfate	660	2.3	50		mg/L	100	12/16/2017 01:52 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-014

Client Sample ID: MW-37S-Q417
Collection Date: 12/8/2017 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/19/2017 05:55 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Chloride	2100	4.6	250		mg/L	500	12/16/2017 02:07 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Sulfate	310	1.1	25		mg/L	50	12/16/2017 02:22 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-015

Client Sample ID: MW-13-Q417
Collection Date: 12/8/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**				PrepDate			Analyst: **RAB**
Bromide	ND	0.039	1.0		mg/L	2	12/19/2017 06:41 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Chloride	680	1.8	100		mg/L	200	12/16/2017 02:38 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Sulfate	150	0.46	10		mg/L	20	12/16/2017 02:53 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-016

Client Sample ID: MW-20-100-Q417
Collection Date: 12/8/2017 8:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**			PrepDate				Analyst: **RAB**
Bromide	0.57	0.020	0.50		mg/L	1	12/19/2017 06:56 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Chloride	480	1.8	100		mg/L	200	12/16/2017 03:08 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Sulfate	240	1.1	25		mg/L	50	12/16/2017 03:24 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-017

Client Sample ID: MW-905-Q417
Collection Date: 12/8/2017 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**				PrepDate			Analyst: **RAB**
Bromide	0.58	0.020	0.50		mg/L	1	12/19/2017 07:12 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218B** QC Batch: **R120938**				PrepDate			Analyst: **RAB**
Chloride	490	0.91	50		mg/L	100	12/19/2017 04:39 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Sulfate	270	1.1	25		mg/L	50	12/16/2017 04:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-018

Client Sample ID: PGE-07BR-Q417
Collection Date: 12/8/2017 10:57:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**				PrepDate			Analyst: **RAB**
Bromide	ND	0.20	5.0		mg/L	10	12/19/2017 07:27 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218B** QC Batch: **R120938**				PrepDate			Analyst: **RAB**
Chloride	7500	18	1000		mg/L	2000	12/19/2017 04:55 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Sulfate	470	2.3	50		mg/L	100	12/16/2017 04:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-019

Client Sample ID: MW-24BR-Q417
Collection Date: 12/8/2017 11:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/19/2017 07:42 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218B** QC Batch: **R120938**				PrepDate			Analyst: **RAB**
Chloride	4800	9.1	500		mg/L	1000	12/19/2017 05:10 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Sulfate	460	2.3	50		mg/L	100	12/16/2017 05:26 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	MB-R120969_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120969
Client ID:	PBW	Batch ID:	R120969	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874376

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	LCS-R120969_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120969
Client ID:	LCSW	Batch ID:	R120969	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874377

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.228	0.50	1.250	0	98.3	90	110				

Sample ID	N027459-001EMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120969
Client ID:	ZZZZZZ	Batch ID:	R120969	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874388

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	6.242	2.5	6.250	0.1315	97.8	80	120				

Sample ID	N027459-001EMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120969
Client ID:	ZZZZZZ	Batch ID:	R120969	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874389

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	6.665	2.5	6.250	0.1315	105	80	120	6.242	6.55	20	

Sample ID	N027459-008EMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120969
Client ID:	ZZZZZZ	Batch ID:	R120969	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874390

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	7.078	2.5	6.250	0.2905	109	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	N027459-004CDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120969
Client ID:	ZZZZZZ	Batch ID:	R120969	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874391

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.893	5.0						1.104	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R120893_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120893
Client ID:	PBW	Batch ID:	R120893	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2871029

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R120893_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120893
Client ID:	LCSW	Batch ID:	R120893	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2871030

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.019	0.50	2.000	0	101	90	110				

Sample ID	N027459-001EMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120893
Client ID:	ZZZZZZ	Batch ID:	R120893	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2871034

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3236.100	250	1000	2203	103	80	120				

Sample ID	N027459-001EMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120893
Client ID:	ZZZZZZ	Batch ID:	R120893	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2871035

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3244.350	250	1000	2203	104	80	120	3236	0.255	20	

Sample ID	N027459-005CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120893
Client ID:	ZZZZZZ	Batch ID:	R120893	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2871037

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2794.550	250	1000	1713	108	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N027459-005CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120893
Client ID:	ZZZZZZ	Batch ID:	R120893	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2871040

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1722.450	250						1713	0.573	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	LCS-R120938_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120938
Client ID:	LCSW	Batch ID:	R120938	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2872691

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.984	0.50	2.000	0	99.2	90	110				

Sample ID	MB-R120938_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120938
Client ID:	PBW	Batch ID:	R120938	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2872692

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	N027459-019CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120938
Client ID:	ZZZZZZ	Batch ID:	R120938	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2872696

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	4750.300	500						4767	0.347	20	

Sample ID	N027459-019CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120938
Client ID:	ZZZZZZ	Batch ID:	R120938	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2872697

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	6823.900	500	2000	4767	103	80	120				

Sample ID	N027459-019CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120938
Client ID:	ZZZZZZ	Batch ID:	R120938	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2872698

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	6865.300	500	2000	4767	105	80	120	6824	0.605	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R120893_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120893
Client ID:	PBW	Batch ID:	R120893	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2871074

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R120893_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120893
Client ID:	LCSW	Batch ID:	R120893	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2871075

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.805	0.50	4.000	0	95.1	90	110				

Sample ID	N027459-001EMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120893
Client ID:	ZZZZZZ	Batch ID:	R120893	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2871079

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	520.875	25	200.0	327.0	96.9	80	120				

Sample ID	N027459-001EMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120893
Client ID:	ZZZZZZ	Batch ID:	R120893	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2871080

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	525.775	25	200.0	327.0	99.4	80	120	520.9	0.936	20	

Sample ID	N027459-005CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120893
Client ID:	ZZZZZZ	Batch ID:	R120893	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2871082

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	479.935	25	200.0	286.0	97.0	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N027459-005CDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120893
Client ID:	ZZZZZZ	Batch ID:	R120893	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2871085

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	285.905	25						286.0	0.0367	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-060-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:14:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	2.3	0.11	0.25		mg/L	5	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-135-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 8:28:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	2.7	0.11	0.25		mg/L	5	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-25-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 10:42:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B** QC Batch: **R121034** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	12	0.22	0.50		mg/L	10	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-013

Client Sample ID: MW-37D-Q417
Collection Date: 12/8/2017 9:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.33	0.022	0.050		mg/L	1	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-100-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 8:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	8.3	0.22	0.50		mg/L	10	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 8:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	8.4	0.22	0.50		mg/L	10	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24BR-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 11:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R121034**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **PBW**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877768**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R121034**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **LCSW**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.496	0.050	0.5000	0	99.3	85	115				

Sample ID **N027431-005DDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **ZZZZZZ**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877771**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.148	0.50						9.004	1.59	20	

Sample ID **N027431-006DMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **ZZZZZZ**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877773**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	25.092	1.0	10.00	15.04	100	75	125				

Sample ID **N027431-006DMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **ZZZZZZ**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877774**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	24.784	1.0	10.00	15.04	97.4	75	125	25.09	1.24	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-001

Client Sample ID: MW-35-060-Q417
Collection Date: 12/8/2017 9:14:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	740	38	100		ug/L	1	12/19/2017 01:46 PM
Calcium	240000	28	500		ug/L	1	12/19/2017 01:46 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 01:46 PM
Magnesium	28000	4.4	100		ug/L	1	12/19/2017 01:46 PM
Sodium	1200000	2600	50000		ug/L	100	12/21/2017 09:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-135-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 8:28:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	780	38	100		ug/L	1	12/19/2017 02:30 PM
Calcium	270000	28	500		ug/L	1	12/19/2017 02:30 PM
Iron	62	1.8	20		ug/L	1	12/19/2017 02:30 PM
Magnesium	29000	4.4	100		ug/L	1	12/19/2017 02:30 PM
Sodium	2100000	2600	50000		ug/L	100	12/21/2017 09:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-003

Client Sample ID: MW-23-060-Q417
Collection Date: 12/8/2017 10:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	650	38	100		ug/L	1	12/19/2017 02:37 PM
Calcium	860000	140	2500		ug/L	5	12/19/2017 09:05 PM
Iron	25	1.8	20		ug/L	1	12/19/2017 02:37 PM
Magnesium	3200	4.4	100		ug/L	1	12/19/2017 02:37 PM
Sodium	3100000	2600	50000		ug/L	100	12/21/2017 10:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-004

Client Sample ID: MW-23-080-Q417
Collection Date: 12/8/2017 10:12:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	770	38	100		ug/L	1	12/19/2017 02:44 PM
Calcium	740000	140	2500		ug/L	5	12/19/2017 09:12 PM
Iron	33	1.8	20		ug/L	1	12/19/2017 02:44 PM
Magnesium	370	4.4	100		ug/L	1	12/19/2017 02:44 PM
Sodium	3200000	2600	50000		ug/L	100	12/21/2017 10:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-005

Client Sample ID: MW-50-095-Q417
Collection Date: 12/8/2017 9:24:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	790	38	100		ug/L	1	12/19/2017 02:51 PM
Calcium	120000	28	500		ug/L	1	12/19/2017 02:51 PM
Iron	36	1.8	20		ug/L	1	12/19/2017 02:51 PM
Magnesium	12000	4.4	100		ug/L	1	12/19/2017 02:51 PM
Sodium	990000	2600	50000		ug/L	100	12/21/2017 10:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-006

Client Sample ID: MW-50-200-Q417
Collection Date: 12/8/2017 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1800	38	100		ug/L	1	12/19/2017 02:58 PM
Calcium	500000	140	2500		ug/L	5	12/19/2017 09:19 PM
Iron	110	1.8	20		ug/L	1	12/19/2017 02:58 PM
Magnesium	26000	4.4	100		ug/L	1	12/19/2017 02:58 PM
Sodium	4200000	6600	120000		ug/L	250	12/22/2017 09:53 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-007

Client Sample ID: MW-19-Q417
Collection Date: 12/8/2017 9:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	390	38	100		ug/L	1	12/19/2017 03:05 PM
Calcium	110000	28	500		ug/L	1	12/19/2017 03:05 PM
Iron	40	1.8	20		ug/L	1	12/19/2017 03:05 PM
Magnesium	17000	4.4	100		ug/L	1	12/19/2017 03:05 PM
Sodium	300000	260	5000		ug/L	10	12/21/2017 10:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-008

Client Sample ID: MW-25-Q417
Collection Date: 12/8/2017 10:42:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	370	38	100		ug/L	1	12/19/2017 03:12 PM
Calcium	120000	28	500		ug/L	1	12/19/2017 03:12 PM
Iron	64	1.8	20		ug/L	1	12/19/2017 03:12 PM
Magnesium	24000	4.4	100		ug/L	1	12/19/2017 03:12 PM
Potassium	8800	38	500		ug/L	1	12/21/2017 10:41 PM
Sodium	240000	260	5000		ug/L	10	12/21/2017 10:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-009

Client Sample ID: MW-919-Q417
Collection Date: 12/8/2017 9:26:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1300	38	100		ug/L	1	12/19/2017 03:20 PM
Calcium	170000	28	500		ug/L	1	12/19/2017 03:20 PM
Iron	43	1.8	20		ug/L	1	12/19/2017 03:20 PM
Magnesium	13000	4.4	100		ug/L	1	12/19/2017 03:20 PM
Sodium	1800000	2600	50000		ug/L	100	12/21/2017 10:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-010

Client Sample ID: OW-03D-Q417
Collection Date: 12/8/2017 9:21:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1300	38	100		ug/L	1	12/19/2017 03:26 PM
Calcium	180000	28	500		ug/L	1	12/19/2017 03:26 PM
Iron	60	1.8	20		ug/L	1	12/19/2017 03:26 PM
Magnesium	13000	4.4	100		ug/L	1	12/19/2017 03:26 PM
Sodium	1800000	2600	50000		ug/L	100	12/21/2017 11:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-011

Client Sample ID: OW-03M-Q417
Collection Date: 12/8/2017 8:41:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1500	38	100		ug/L	1	12/19/2017 03:33 PM
Calcium	100000	28	500		ug/L	1	12/19/2017 03:33 PM
Iron	54	1.8	20		ug/L	1	12/19/2017 03:33 PM
Magnesium	10000	4.4	100		ug/L	1	12/19/2017 03:33 PM
Sodium	1300000	2600	50000		ug/L	100	12/22/2017 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-012

Client Sample ID: OW-03S-Q417
Collection Date: 12/8/2017 10:13:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	200	38	100		ug/L	1	12/19/2017 04:03 PM
Calcium	71000	28	500		ug/L	1	12/19/2017 04:03 PM
Iron	49	1.8	20		ug/L	1	12/19/2017 04:03 PM
Magnesium	11000	4.4	100		ug/L	1	12/19/2017 04:03 PM
Sodium	190000	260	5000		ug/L	10	12/22/2017 09:56 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-013

Client Sample ID: MW-37D-Q417
Collection Date: 12/8/2017 9:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1700	38	100		ug/L	1	12/19/2017 04:08 PM
Calcium	350000	28	500		ug/L	1	12/19/2017 04:08 PM
Iron	45	1.8	20		ug/L	1	12/19/2017 04:08 PM
Magnesium	17000	4.4	100		ug/L	1	12/19/2017 04:08 PM
Sodium	2700000	2600	50000		ug/L	100	12/21/2017 11:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-014

Client Sample ID: MW-37S-Q417
Collection Date: 12/8/2017 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	800	38	100		ug/L	1	12/19/2017 04:15 PM
Calcium	200000	28	500		ug/L	1	12/19/2017 04:15 PM
Iron	35	1.8	20		ug/L	1	12/19/2017 04:15 PM
Magnesium	24000	4.4	100		ug/L	1	12/19/2017 04:15 PM
Sodium	1100000	2600	50000		ug/L	100	12/21/2017 11:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-015

Client Sample ID: MW-13-Q417
Collection Date: 12/8/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	410	38	100		ug/L	1	12/19/2017 04:22 PM
Calcium	120000	28	500		ug/L	1	12/19/2017 04:22 PM
Iron	4000	1.8	20		ug/L	1	12/19/2017 04:22 PM
Magnesium	18000	4.4	100		ug/L	1	12/19/2017 04:22 PM
Sodium	350000	660	12000		ug/L	25	12/21/2017 11:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-016

Client Sample ID: MW-20-100-Q417
Collection Date: 12/8/2017 8:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	880	38	100		ug/L	1	12/19/2017 04:29 PM
Calcium	110000	28	500		ug/L	1	12/19/2017 04:29 PM
Iron	67	1.8	20		ug/L	1	12/19/2017 04:29 PM
Magnesium	18000	4.4	100		ug/L	1	12/19/2017 04:29 PM
Potassium	6900	38	500		ug/L	1	12/21/2017 11:41 PM
Sodium	310000	260	5000		ug/L	10	12/21/2017 11:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-017

Client Sample ID: MW-905-Q417
Collection Date: 12/8/2017 8:25:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_171219B** QC Batch: **65994** PrepDate **12/11/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	900	38	100		ug/L	1	12/19/2017 04:36 PM
Calcium	110000	28	500		ug/L	1	12/19/2017 04:36 PM
Iron	390	1.8	20		ug/L	1	12/19/2017 04:36 PM
Magnesium	18000	4.4	100		ug/L	1	12/19/2017 04:36 PM
Potassium	7000	38	500		ug/L	1	12/21/2017 11:50 PM
Sodium	320000	260	5000		ug/L	10	12/21/2017 11:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-018

Client Sample ID: PGE-07BR-Q417
Collection Date: 12/8/2017 10:57:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	2200	38	100		ug/L	1	12/19/2017 04:43 PM
Calcium	540000	140	2500		ug/L	5	12/19/2017 09:24 PM
Iron	42000	1.8	20		ug/L	1	12/19/2017 04:43 PM
Magnesium	11000	4.4	100		ug/L	1	12/19/2017 04:43 PM
Sodium	4500000	6600	120000		ug/L	250	12/22/2017 10:03 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-019

Client Sample ID: MW-24BR-Q417
Collection Date: 12/8/2017 11:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	2200	38	100		ug/L	1	12/19/2017 04:50 PM
Calcium	110000	28	500		ug/L	1	12/19/2017 04:50 PM
Iron	280	1.8	20		ug/L	1	12/19/2017 04:50 PM
Magnesium	2800	4.4	100		ug/L	1	12/19/2017 04:50 PM
Sodium	2900000	2600	50000		ug/L	100	12/22/2017 06:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-65994**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120943**
Client ID: **PBW**	Batch ID: **65994**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2872888**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-65994**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120943**
Client ID: **LCSW**	Batch ID: **65994**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2872889**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5010.250	100	5000	0	100	85	115				
Calcium	10259.712	500	10000	0	103	85	115				
Iron	110.364	20	100.0	0	110	85	115				
Magnesium	9996.420	100	10000	0	100	85	115				

Sample ID **N027459-001C-MS1**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **65994**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2872893**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5645.864	100	5000	737.0	98.2	75	125				
Calcium	259439.787	500	10000	242300	171	75	125				S
Iron	116.966	20	100.0	14.16	103	75	125				
Magnesium	37817.823	100	10000	27940	98.8	75	125				

Sample ID **N027459-001C-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/11/2017**	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **65994**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2872894**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5662.698	100	5000	737.0	98.5	75	125	5646	0.298	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027459-001C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120943
Client ID:	ZZZZZZ	Batch ID:	65994	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2872894

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	258895.119	500	10000	242300	166	75	125	259400	0.210	20	S
Iron	116.787	20	100.0	14.16	103	75	125	117.0	0.153	20	
Magnesium	37824.026	100	10000	27940	98.9	75	125	37820	0.0164	20	

Sample ID	MB-65994	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	121017
Client ID:	PBW	Batch ID:	65994	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876743

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	ND	500									
Sodium	ND	500									

Sample ID	LCS2-65994	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	121017
Client ID:	LCSW	Batch ID:	65994	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876744

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	19533.174	500	20000	0	97.7	85	115				
Sodium	20908.752	500	20000	0	105	85	115				

Sample ID	N027459-002C-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	121017
Client ID:	ZZZZZZ	Batch ID:	65994	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876756

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2195480.512	50000	20000	2076000	597	75	125				S

Sample ID	N027459-002C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	121017
Client ID:	ZZZZZZ	Batch ID:	65994	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876757

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2204072.046	50000	20000	2076000	640	75	125	2195000	0.391	20	S

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027459-002C-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	121017
Client ID:	ZZZZZZ	Batch ID:	65994	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876760

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	36761.165	2500	20000	14260	112	75	125				

Sample ID	N027459-002C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	121017
Client ID:	ZZZZZZ	Batch ID:	65994	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876761

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	36683.164	2500	20000	14260	112	75	125	36760	0.212	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-001

Client Sample ID: MW-35-060-Q417
Collection Date: 12/8/2017 9:14:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_171220B** QC Batch: **66021** PrepDate **12/12/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.031	0.50		µg/L	1	12/21/2017 01:36 AM
Arsenic	0.99	0.025	0.10		µg/L	1	12/21/2017 01:36 AM
Barium	70	0.070	1.0		µg/L	1	12/21/2017 01:36 AM
Beryllium	ND	0.22	2.5		µg/L	5	12/21/2017 01:42 AM
Cadmium	ND	0.047	0.50		µg/L	1	12/21/2017 01:36 AM
Cobalt	ND	0.026	0.50		µg/L	1	12/21/2017 01:36 AM
Copper	ND	0.26	1.0		µg/L	1	12/22/2017 05:51 PM
Lead	ND	0.18	5.0		µg/L	5	12/21/2017 01:42 AM
Manganese	ND	0.056	0.50		µg/L	1	12/21/2017 01:36 AM
Molybdenum	8.9	0.19	2.5		µg/L	5	12/21/2017 01:42 AM
Nickel	ND	0.040	1.0		µg/L	1	12/21/2017 01:36 AM
Selenium	1.1	0.028	0.50		µg/L	1	1/2/2018 04:37 PM
Silver	ND	0.30	2.5		µg/L	5	12/21/2017 01:42 AM
Thallium	ND	0.15	2.5		µg/L	5	12/21/2017 01:42 AM
Vanadium	2.7	0.021	1.0		µg/L	1	12/21/2017 01:36 AM
Zinc	ND	0.27	10		µg/L	1	12/22/2017 05:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-002

Client Sample ID: MW-35-135-Q417
Collection Date: 12/8/2017 8:28:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_171220B** QC Batch: **66021** PrepDate **12/12/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.031	0.50		µg/L	1	12/21/2017 02:38 AM
Arsenic	0.84	0.025	0.10		µg/L	1	12/21/2017 02:38 AM
Barium	35	0.070	1.0		µg/L	1	12/21/2017 02:38 AM
Beryllium	ND	0.043	0.50		µg/L	1	12/21/2017 02:38 AM
Cadmium	ND	0.047	0.50		µg/L	1	12/21/2017 02:38 AM
Cobalt	ND	0.026	0.50		µg/L	1	12/21/2017 02:38 AM
Copper	ND	0.26	1.0		µg/L	1	12/22/2017 06:34 PM
Lead	ND	0.18	5.0		µg/L	5	12/21/2017 02:44 AM
Manganese	4.9	0.056	0.50		µg/L	1	12/21/2017 02:38 AM
Molybdenum	24	0.039	0.50		µg/L	1	12/21/2017 02:38 AM
Nickel	ND	0.040	1.0		µg/L	1	12/21/2017 02:38 AM
Selenium	1.1	0.028	0.50		µg/L	1	1/2/2018 04:43 PM
Silver	ND	0.059	0.50		µg/L	1	12/21/2017 02:38 AM
Thallium	ND	0.15	2.5		µg/L	5	12/21/2017 02:44 AM
Vanadium	1.6	0.021	1.0		µg/L	1	12/21/2017 02:38 AM
Zinc	ND	0.27	10		µg/L	1	12/22/2017 06:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-003

Client Sample ID: MW-23-060-Q417
Collection Date: 12/8/2017 10:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Arsenic	4.0	0.025	0.10		µg/L	1	12/21/2017 02:49 AM
Manganese	3.5	0.056	0.50		µg/L	1	1/2/2018 04:48 PM
Molybdenum	23	0.039	0.50		µg/L	1	12/21/2017 02:49 AM
Selenium	4.8	0.028	0.50		µg/L	1	1/2/2018 04:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-080-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 10:12:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Arsenic	4.9	0.025	0.10		µg/L	1	12/21/2017 03:00 AM
Manganese	4.2	0.056	0.50		µg/L	1	12/21/2017 03:00 AM
Molybdenum	40	0.19	2.5		µg/L	5	12/21/2017 03:06 AM
Selenium	5.1	0.14	2.5		µg/L	5	1/2/2018 07:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-005

Client Sample ID: MW-50-095-Q417
Collection Date: 12/8/2017 9:24:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	1.1	0.056	0.50		µg/L	1	12/21/2017 03:12 AM
Molybdenum	17	0.039	0.50		µg/L	1	12/21/2017 03:12 AM
Selenium	0.82	0.028	0.50		µg/L	1	1/2/2018 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-006

Client Sample ID: MW-50-200-Q417
Collection Date: 12/8/2017 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	4.6	0.056	0.50		µg/L	1	12/21/2017 03:23 AM
Molybdenum	42	0.19	2.5		µg/L	5	12/21/2017 03:56 AM
Selenium	2.6	0.14	2.5		µg/L	5	1/2/2018 06:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-007

Client Sample ID: MW-19-Q417
Collection Date: 12/8/2017 9:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	ND	0.056	0.50		µg/L	1	12/21/2017 04:02 AM
Molybdenum	10	0.039	0.50		µg/L	1	12/21/2017 04:02 AM
Selenium	3.6	0.028	0.50		µg/L	1	1/2/2018 05:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-008

Client Sample ID: MW-25-Q417
Collection Date: 12/8/2017 10:42:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180102A**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Arsenic	1.2	0.025	0.10		µg/L	1	1/2/2018 05:19 PM
Manganese	ND	0.056	0.50		µg/L	1	12/21/2017 04:13 AM
Molybdenum	4.7	0.039	0.50		µg/L	1	12/21/2017 04:13 AM
Selenium	7.6	0.028	0.50		µg/L	1	1/2/2018 05:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-009

Client Sample ID: MW-919-Q417
Collection Date: 12/8/2017 9:26:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	1.9	0.056	0.50		µg/L	1	12/21/2017 04:24 AM
Molybdenum	26	0.19	2.5		µg/L	5	12/21/2017 04:30 AM
Selenium	ND	0.14	2.5		µg/L	5	1/2/2018 05:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-03D-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:21:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**				PrepDate	**12/12/2017**	Analyst: **CEI**
Manganese	2.0	0.056	0.50		µg/L	1	12/21/2017 04:36 AM
Molybdenum	25	0.19	2.5		µg/L	5	12/21/2017 04:41 AM
Selenium	ND	0.14	2.5		µg/L	5	1/2/2018 05:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-03M-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 8:41:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**				PrepDate	**12/12/2017**	Analyst: **CEI**
Manganese	2.0	0.056	0.50		µg/L	1	12/21/2017 04:47 AM
Molybdenum	16	0.19	2.5		µg/L	5	12/21/2017 05:03 AM
Selenium	ND	0.14	2.5		µg/L	5	1/2/2018 05:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-012

Client Sample ID: OW-03S-Q417
Collection Date: 12/8/2017 10:13:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	ND	0.056	0.50		µg/L	1	12/21/2017 05:09 AM
Molybdenum	6.1	0.039	0.50		µg/L	1	12/21/2017 05:09 AM
Selenium	5.3	0.028	0.50		µg/L	1	1/2/2018 05:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-013

Client Sample ID: MW-37D-Q417
Collection Date: 12/8/2017 9:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	5.9	0.056	0.50		µg/L	1	12/21/2017 05:20 AM
Molybdenum	53	0.19	2.5		µg/L	5	12/21/2017 05:26 AM
Selenium	ND	0.14	2.5		µg/L	5	1/2/2018 05:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-014

Client Sample ID: MW-37S-Q417
Collection Date: 12/8/2017 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Arsenic	1.8	0.025	0.10		µg/L	1	12/21/2017 05:32 AM
Manganese	ND	0.056	0.50		µg/L	1	12/21/2017 05:32 AM
Molybdenum	15	0.19	2.5		µg/L	5	12/21/2017 05:38 AM
Selenium	ND	0.14	2.5		µg/L	5	1/2/2018 06:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-015

Client Sample ID: MW-13-Q417
Collection Date: 12/8/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	12/21/2017 05:44 AM
Manganese	160	0.056	0.50		µg/L	1	12/21/2017 05:44 AM
Molybdenum	14	0.039	0.50		µg/L	1	12/21/2017 05:44 AM
Selenium	3.1	0.028	0.50		µg/L	1	1/2/2018 06:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-016

Client Sample ID: MW-20-100-Q417
Collection Date: 12/8/2017 8:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	ND	0.056	0.50		µg/L	1	12/21/2017 05:49 AM
Molybdenum	4.7	0.039	0.50		µg/L	1	12/21/2017 05:49 AM
Selenium	5.3	0.028	0.50		µg/L	1	1/2/2018 06:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-017

Client Sample ID: MW-905-Q417
Collection Date: 12/8/2017 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	ND	0.056	0.50		µg/L	1	12/21/2017 06:14 AM
Molybdenum	4.8	0.039	0.50		µg/L	1	12/21/2017 06:14 AM
Selenium	5.0	0.14	2.5		µg/L	5	1/2/2018 07:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-018

Client Sample ID: PGE-07BR-Q417
Collection Date: 12/8/2017 10:57:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	3800	1.4	12		µg/L	25	12/21/2017 06:53 AM
Molybdenum	ND	0.19	2.5		µg/L	5	12/21/2017 06:30 AM
Selenium	ND	0.14	2.5		µg/L	5	1/2/2018 06:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-019

Client Sample ID: MW-24BR-Q417
Collection Date: 12/8/2017 11:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Arsenic	0.37	0.025	0.10		µg/L	1	12/21/2017 06:36 AM
Manganese	140	0.056	0.50		µg/L	1	12/21/2017 06:36 AM
Molybdenum	58	0.19	2.5		µg/L	5	12/21/2017 06:41 AM
Selenium	ND	0.14	2.5		µg/L	5	1/2/2018 06:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66021**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **121008**
Client ID: **PBW**	Batch ID: **66021**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/21/2017**	SeqNo: **2876444**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	0.105	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	0.085	0.50									
Lead	ND	1.0									
Manganese	0.072	0.50									
Molybdenum	ND	0.50									
Nickel	ND	1.0									
Silver	ND	0.50									
Thallium	0.092	0.50									
Vanadium	ND	1.0									

Sample ID **LCS-66021**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **121008**
Client ID: **LCSW**	Batch ID: **66021**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/21/2017**	SeqNo: **2876445**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.548	0.50	10.00	0	95.5	85	115				
Arsenic	9.896	0.10	10.00	0	99.0	85	115				
Barium	10.416	1.0	10.00	0	104	85	115				
Beryllium	9.481	0.50	10.00	0	94.8	85	115				
Cadmium	10.158	0.50	10.00	0	102	85	115				
Cobalt	9.982	0.50	10.00	0	99.8	85	115				
Lead	9.735	1.0	10.00	0	97.3	85	115				
Manganese	98.538	0.50	100.0	0	98.5	85	115				
Molybdenum	9.623	0.50	10.00	0	96.2	85	115				
Nickel	10.779	1.0	10.00	0	108	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	LCS-66021	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121008
Client ID:	LCSW	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876445

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	9.626	0.50	10.00	0	96.3	85	115				
Thallium	10.591	0.50	10.00	0	106	85	115				
Vanadium	10.753	1.0	10.00	0	108	85	115				

Sample ID	N027459-001C-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121008
Client ID:	ZZZZZZ	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876451

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.631	0.50	10.00	0.07316	95.6	75	125				
Arsenic	10.609	0.10	10.00	0.9945	96.1	75	125				
Barium	75.895	1.0	10.00	70.12	57.7	75	125				S
Cadmium	8.858	0.50	10.00	0	88.6	75	125				
Cobalt	8.550	0.50	10.00	0	85.5	75	125				
Manganese	90.680	0.50	100.0	0	90.7	75	125				
Nickel	9.057	1.0	10.00	0	90.6	75	125				
Vanadium	12.878	1.0	10.00	2.691	102	75	125				

Sample ID	N027459-001C-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121008
Client ID:	ZZZZZZ	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876452

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	10.437	2.5	10.00	0	104	75	125				
Lead	9.982	5.0	10.00	0	99.8	75	125				
Molybdenum	19.691	2.5	10.00	8.946	107	75	125				
Silver	10.663	2.5	10.00	0	107	75	125				
Thallium	9.843	2.5	10.00	0	98.4	75	125				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027459-001C-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121008
Client ID:	ZZZZZZ	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876453

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.603	0.50	10.00	0.07316	95.3	75	125	9.631	0.296	20	
Arsenic	10.586	0.10	10.00	0.9945	95.9	75	125	10.61	0.221	20	
Barium	76.891	1.0	10.00	70.12	67.7	75	125	75.89	1.30	20	S
Cadmium	8.843	0.50	10.00	0	88.4	75	125	8.858	0.173	20	
Cobalt	8.441	0.50	10.00	0	84.4	75	125	8.550	1.28	20	
Manganese	90.165	0.50	100.0	0	90.2	75	125	90.68	0.569	20	
Nickel	8.797	1.0	10.00	0	88.0	75	125	9.057	2.91	20	
Vanadium	12.767	1.0	10.00	2.691	101	75	125	12.88	0.861	20	

Sample ID	N027459-001C-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121008
Client ID:	ZZZZZZ	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876456

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	10.003	2.5	10.00	0	100	75	125	10.39	3.77	20	
Lead	9.977	5.0	10.00	0	99.8	75	125	10.21	2.32	20	
Molybdenum	19.504	2.5	10.00	8.946	106	75	125	20.55	5.24	20	
Silver	10.413	2.5	10.00	0	104	75	125	9.779	6.29	20	
Thallium	9.400	2.5	10.00	0	94.0	75	125	9.715	3.30	20	

Sample ID	MB-66021	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121154
Client ID:	PBW	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2881328

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	1.0									
Zinc	ND	10									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	LCS-66021	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121154
Client ID:	LCSW	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2881329

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	10.698	1.0	10.00	0	107	85	115				
Zinc	96.775	10	100.0	0	96.8	85	115				

Sample ID	N027459-001C-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121154
Client ID:	ZZZZZZ	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2881335

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	4.579	1.0	10.00	0	45.8	75	125				S
Zinc	95.517	10	100.0	0	95.5	75	125				

Sample ID	N027459-001C-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121154
Client ID:	ZZZZZZ	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2881336

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	4.688	1.0	10.00	0	46.9	75	125	4.579	2.36	20	S
Zinc	95.759	10	100.0	0	95.8	75	125	95.52	0.253	20	

Sample ID	MB-66021	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121160
Client ID:	PBW	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2881588

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	LCS-66021	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121160
Client ID:	LCSW	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2881589

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.567	0.50	10.00	0	106	85	115				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027459-001C-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121160
Client ID:	ZZZZZZ	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2881593

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.865	0.50	10.00	1.106	87.6	75	125				

Sample ID	N027459-001C-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121160
Client ID:	ZZZZZZ	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2881596

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.114	0.50	10.00	1.106	90.1	75	125	9.865	2.49	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-060-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:14:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 7470A							
RunID: **NV00922-AA1_171211D** QC Batch: **65990** PrepDate **12/11/2017** Analyst: **MG**							
Mercury	ND	0.087	0.20		µg/L	1	12/11/2017 04:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-135-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 8:28:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **NV00922-AA1_171211D**	QC Batch: **65990**			PrepDate	**12/11/2017**		Analyst: **MG**
Mercury	ND	0.087	0.20		µg/L	1	12/11/2017 04:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID **MB-65990**	SampType: **MBLK**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **12/11/2017**	RunNo: **120738**
Client ID: **PBW**	Batch ID: **65990**	TestNo: **EPA 7470A**		Analysis Date: **12/11/2017**	SeqNo: **2863464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID **LCS-65990**	SampType: **LCS**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **12/11/2017**	RunNo: **120738**
Client ID: **LCSW**	Batch ID: **65990**	TestNo: **EPA 7470A**		Analysis Date: **12/11/2017**	SeqNo: **2863465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.934	0.20	5.000	0	98.7	85	115				

Sample ID **N027437-002BMS**	SampType: **MS**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **12/11/2017**	RunNo: **120738**
Client ID: **ZZZZZZ**	Batch ID: **65990**	TestNo: **EPA 7470A**		Analysis Date: **12/11/2017**	SeqNo: **2863466**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.165	0.20	5.000	0.1394	101	75	125				

Sample ID **N027437-002BMSD**	SampType: **MSD**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date: **12/11/2017**	RunNo: **120738**
Client ID: **ZZZZZZ**	Batch ID: **65990**	TestNo: **EPA 7470A**		Analysis Date: **12/11/2017**	SeqNo: **2863467**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.162	0.20	5.000	0.1394	100	75	125	5.165	0.0674	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Page 1 of 3

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement / QA/QC / Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD; Geotracker; Labspec; Others ✓ (Specify: RWQCB) / RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory / Global ID: / Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition: 1. Chilled ✓; 2. Headspace; 3. Container Intact ✓; 4. Seal Present ✓; 5. IR number 2; 6. Method of Cooling: Ice
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Sample Temp: 3.1°C/4.0°C/2.8°C
Submitted By: Gantt Jeffers	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	Courier:
Title: Geologist II	Sampled By: Gantt Jeffers	Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface	Tracking No.:
Signature: Date: 12/8/2017			

I hereby authorize ASSET Labs to perform the tests indicated below.

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Project Name: PG&E Topock - GMP — Signature: — Date: 12/8/2017

Project Number: RC000753.801B

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM — 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3 — 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 — 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3 — 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3 — 500 mL poly	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3 — 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3 — 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4 — 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) — 1 liter poly	Specific Conductance (EPA 120.1) — 1 liter poly	Total Dissolved Solids (SM2540C) — 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) — 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027459-01	MW-35-060-Q417	12/8/2017	9:14		X		X				X	X			X	X	X	X	X	X	E	5	P	BNS	
2	-02	MW-35-135-Q417	12/8/2017	8:28		X		X				X	X			X	X	X	X	X	X	E	5	P	BNS	
3	-03	MW-23-060-Q417	12/8/2017	10:48		X			X		X						X	X	X	X	X	E	3	P	BN	
4	-04	MW-23-080-Q417	12/8/2017	10:12		X			X		X						X	X	X	X	X	E	3	P	BN	
5	-05	MW-50-095-Q417	12/8/2017	9:24		X					X					X			X	X	X	E	3	P	BN	
6	-06	MW-50-200-Q417	12/8/2017	8:45		X					X					X			X	X	X	E	3	P	BN	
7	-07	MW-19-Q417	12/8/2017	9:58		X					X					X			X	X	X	E	3	P	BN	
8	-08	MW-25-Q417	12/8/2017	10:42		X		X	X	X	X							X	X	X	X	E	5	P	BNS	
9	-09	MW-919-Q417	12/8/2017	9:26		X					X					X			X	X	X	E	3	P	BN	
10	-10	OW-03D-Q417	12/8/2017	9:21		X					X					X			X	X	X	E	3	P	BN	

Relinquished by (Signature and Printed Name): Gantt Jeffers — Date/Time: 12.8.17 1851

Relinquished by (Signature and Printed Name): — Date/Time: 12/8/17 @ 1151

Relinquished by (Signature and Printed Name): — Date/Time: 12/8/17 @ 1430

Relinquished by (Signature and Printed Name): Joanna Reyes — Date/Time: 12/8/17 14:30

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B = (NH4)2SO4/NH4OH		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

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California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:
Title: Geologist II	Phone: 916-786-3302 Fax:	
Signature: Date: 12/8/2017	Sampled By: Gantt Jeffers	
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*	
Project Name: PG&E Topock - GMP	Signature: Date: 12/8/2017	
Project Number: RC000753.801B		

EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Excel EDD		RTNE		1. Chilled	✓	
Geotracker		RWQCB	✓	2. Headspace		
Labspec		CalTrans		3. Container Intact	✓	
Others	✓	LEVEL III		4. Seal Present		✓
Specify: RWQCB		LEVEL IV		5. IR number	2	
Global ID:		Regulatory		6. Method of Cooling: Ice		
		Specify State:		Sample Temp: 3.1°c/4.0°c/2.8°c		

Matrix: Ground | Potable | NPDES | Surface; x Sediment | Soil | Other Solid

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3 500 mL poly	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) 1 liter poly	Specific Conductance (EPA 120.1) 1 liter poly	Total Dissolved Solids (SM2540C) 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027459-11	OW-03M-Q417	12/8/2017	8:41		X					X					X			X	X	X	X	E	3	P	BN	
2	-12	OW-03S-Q417	12/8/2017	10:13		X					X					X			X	X	X	X	E	3	P	BN	
3	-13	MW-37D-Q417	12/8/2017	9:25		X					X					X		X	X	X	X	X	E	4	P	BNS	
4	-14	MW-37S-Q417	12/8/2017	10:15		X			X		X								X	X	X	X	E	3	P	BN	
5	-15	MW-13-Q417	12/8/2017	11:15		X			X		X								X	X	X	X	E	3	P	BN	
6	-16	MW-20-100-Q417	12/8/2017	8:15		X		X		X	X					X		X	X	X	X	X	E	5	P	BNS	
7	-17	MW-905-Q417	12/8/2017	8:25		X		X		X	X					X		X	X	X	X	X	E	5	P	BNS	
8	-18	PGE-07BR-Q417	12/8/2017	10:57		X					X					X			X	X	X	X	E	3	P	BN	
9	-19	MW-24BR-Q417	12/8/2017	11:25		X			X		X							X	X	X	X	X	E	4	P	BNS	
10	-20	MW-725-Q417	12/8/2017	11:30		X																	E	1	P	B	

Courier:

Tracking No.:

Reliquished by (Signature and Printed Name): Gantt Jeffers Date/Time: 12.8.17 1151

Reliquished by (Signature and Printed Name): Date/Time: 12/8/17 @ 1151

Reliquished by (Signature and Printed Name): Date/Time: 12/8/17 @ 1430

Reliquished by (Signature and Printed Name): Joanna Reliquez Date/Time: 12/8/17 14:30

Reliquished by (Signature and Printed Name): Date/Time:

Reliquished by (Signature and Printed Name): Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B = (NH4)2SO4/NH4OH		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/8/2017	Workorder:	N027459
Rep sample Temp (Deg C):	3.1/4.0/2.8	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: N/A Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 12/19/2017

Reviewed By: 12/21/2017

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (760) 781 3338
FAX: (805) 544-8226
Acct #:

Field Sampler: Gantt Jeffers

11-Dec-17

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**OXY_DEUT**		
N027459-001B / MW-35-060-Q417	Groundwater	12/8/2017 9:14:00 AM	8OZP	1		
N027459-002B / MW-35-135-Q417	Groundwater	12/8/2017 8:28:00 AM	8OZP	1		
N027459-008B / MW-25-Q417	Groundwater	12/8/2017 10:42:00 AM	8OZP	1		
N027459-016B / MW-20-100-Q417	Groundwater	12/8/2017 8:15:00 AM	8OZP	1		
N027459-017B / MW-905-Q417	Groundwater	12/8/2017 8:25:00 AM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N27459A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Oxygen and Deuterium Stable Isotopes SFIRM. EDD Requirement Labspec7 edata.

Fedex #: 770961567484

		Date/Time			**Date/Time**
Relinquished by:	12/11/2017 16:00		**Received by:**		
Relinquished by:			**Received by:**		

ASSET Laboratories

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-001A	MW-35-060-Q417	12/8/2017 9:14:00 AM	12/22/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-001B			12/22/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027459-001C			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017			DISSOLVED MERCURY PREP	☐	☐	☐	WW
			12/22/2017		EPA 7470A	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N027459-001D			12/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027459-001E			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-002A	MW-35-135-Q417	12/8/2017 8:28:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-002B			12/22/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027459-002C			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-002C	MW-35-135-Q417	12/8/2017 8:28:00 AM	12/22/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017			DISSOLVED MERCURY PREP	☐	☐	☐	WW
			12/22/2017		EPA 7470A	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N027459-002D			12/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027459-002E			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-003A	MW-23-060-Q417	12/8/2017 10:48:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-003B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-003C	MW-23-060-Q417	12/8/2017 10:48:00 AM	12/22/2017	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-004A	MW-23-080-Q417	12/8/2017 10:12:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-004B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-004C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-005A	MW-50-095-Q417	12/8/2017 9:24:00 AM	12/22/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-005B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-005C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-006A	MW-50-200-Q417	12/8/2017 8:45:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-006B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-006C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-006C	MW-50-200-Q417	12/8/2017 8:45:00 AM	12/22/2017	Groundwater		Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-007A	MW-19-Q417	12/8/2017 9:58:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-007B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-007C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-008A	MW-25-Q417	12/8/2017 10:42:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-008B			12/22/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB

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WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-008C	MW-25-Q417	12/8/2017 10:42:00 AM	12/22/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-008D			12/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027459-008E			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-009A	MW-919-Q417	12/8/2017 9:26:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-009B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-009C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-009C	MW-919-Q417	12/8/2017 9:26:00 AM	12/22/2017	Groundwater		Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-010A	OW-03D-Q417	12/8/2017 9:21:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-010B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-010C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-011A	OW-03M-Q417	12/8/2017 8:41:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-011B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-011B	OW-03M-Q417	12/8/2017 8:41:00 AM	12/22/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-011C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-012A	OW-03S-Q417	12/8/2017 10:13:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-012B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-012C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-012C	OW-03S-Q417	12/8/2017 10:13:00 AM	12/22/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-013A	MW-37D-Q417	12/8/2017 9:25:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-013B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-013C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-013D			12/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027459-014A	MW-37S-Q417	12/8/2017 10:15:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-014B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-014B	MW-37S-Q417	12/8/2017 10:15:00 AM	12/22/2017	Groundwater	EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-014C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-015A	MW-13-Q417	12/8/2017 11:15:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-015B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-015C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-015C	MW-13-Q417	12/8/2017 11:15:00 AM	12/22/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-016A	MW-20-100-Q417	12/8/2017 8:15:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-016B			12/22/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027459-016C			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-016D			12/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027459-016E			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-017A	MW-905-Q417	12/8/2017 8:25:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-017B			12/22/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027459-017C			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-017C	MW-905-Q417	12/8/2017 8:25:00 AM	12/22/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-017D			12/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027459-017E			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-018A	PGE-07BR-Q417	12/8/2017 10:57:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-018B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-018C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-018C	PGE-07BR-Q417	12/8/2017 10:57:00 AM	12/22/2017	Groundwater	SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-019A	MW-24BR-Q417	12/8/2017 11:25:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-019B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-019C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N027459-019D			12/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027459-020A	MW-725-Q417	12/8/2017 11:30:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-021A	FOLDER	12/22/2017	12/22/2017		EDD	RWQCB	☐	☐	☐	LAB
			12/22/2017		Folder	Folder	☐	☐	☐	LAB

ASSET Laboratories

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-021A	FOLDER	12/22/2017	12/22/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP

Project No.: RC000753.801B

ASSET Laboratories Work Order:

N027459

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

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January 03, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027459

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 08, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Litucas for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (6.4 ug/L) and hexavalent chromium (5.0 ug/L) for sample N027459-013 (MW-37D-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (93 ug/L) and hexavalent chromium (12 ug/L) for sample N027459-015 (MW-13-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Dilution was necessary for samples N027459-004, -013, -018 and -019 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 300.0:

Dilution was necessary for most of the samples due to precipitation upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N027459-001C-MS1 and N027459-001C-MSD1 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N027459-002C-MS2 and N027459-002C-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N027459-001C-MS and N027459-001C-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary on some analytes for most of the samples due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Because the results for total dissolved chromium (6.4 ug/L) and hexavalent chromium (5.0 ug/L) for sample N027459-013 (MW-37D-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 7.1 and 4.8 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (93 ug/L) and hexavalent chromium (12 ug/L) for sample N027459-015 (MW-13-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 76 and 65 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

ASSET Laboratories

Date: *03-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027459
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027459-001A	MW-35-060-Q417	Groundwater	12/8/2017 9:14:00 AM	12/8/2017	1/3/2018
N027459-001B	MW-35-060-Q417	Groundwater	12/8/2017 9:14:00 AM	12/8/2017	1/3/2018
N027459-001C	MW-35-060-Q417	Groundwater	12/8/2017 9:14:00 AM	12/8/2017	1/3/2018
N027459-001D	MW-35-060-Q417	Groundwater	12/8/2017 9:14:00 AM	12/8/2017	1/3/2018
N027459-001E	MW-35-060-Q417	Groundwater	12/8/2017 9:14:00 AM	12/8/2017	1/3/2018
N027459-002A	MW-35-135-Q417	Groundwater	12/8/2017 8:28:00 AM	12/8/2017	1/3/2018
N027459-002B	MW-35-135-Q417	Groundwater	12/8/2017 8:28:00 AM	12/8/2017	1/3/2018
N027459-002C	MW-35-135-Q417	Groundwater	12/8/2017 8:28:00 AM	12/8/2017	1/3/2018
N027459-002D	MW-35-135-Q417	Groundwater	12/8/2017 8:28:00 AM	12/8/2017	1/3/2018
N027459-002E	MW-35-135-Q417	Groundwater	12/8/2017 8:28:00 AM	12/8/2017	1/3/2018
N027459-003A	MW-23-060-Q417	Groundwater	12/8/2017 10:48:00 AM	12/8/2017	1/3/2018
N027459-003B	MW-23-060-Q417	Groundwater	12/8/2017 10:48:00 AM	12/8/2017	1/3/2018
N027459-003C	MW-23-060-Q417	Groundwater	12/8/2017 10:48:00 AM	12/8/2017	1/3/2018
N027459-004A	MW-23-080-Q417	Groundwater	12/8/2017 10:12:00 AM	12/8/2017	1/3/2018
N027459-004B	MW-23-080-Q417	Groundwater	12/8/2017 10:12:00 AM	12/8/2017	1/3/2018
N027459-004C	MW-23-080-Q417	Groundwater	12/8/2017 10:12:00 AM	12/8/2017	1/3/2018
N027459-005A	MW-50-095-Q417	Groundwater	12/8/2017 9:24:00 AM	12/8/2017	1/3/2018
N027459-005B	MW-50-095-Q417	Groundwater	12/8/2017 9:24:00 AM	12/8/2017	1/3/2018
N027459-005C	MW-50-095-Q417	Groundwater	12/8/2017 9:24:00 AM	12/8/2017	1/3/2018
N027459-006A	MW-50-200-Q417	Groundwater	12/8/2017 8:45:00 AM	12/8/2017	1/3/2018
N027459-006B	MW-50-200-Q417	Groundwater	12/8/2017 8:45:00 AM	12/8/2017	1/3/2018
N027459-006C	MW-50-200-Q417	Groundwater	12/8/2017 8:45:00 AM	12/8/2017	1/3/2018
N027459-007A	MW-19-Q417	Groundwater	12/8/2017 9:58:00 AM	12/8/2017	1/3/2018
N027459-007B	MW-19-Q417	Groundwater	12/8/2017 9:58:00 AM	12/8/2017	1/3/2018
N027459-007C	MW-19-Q417	Groundwater	12/8/2017 9:58:00 AM	12/8/2017	1/3/2018
N027459-008A	MW-25-Q417	Groundwater	12/8/2017 10:42:00 AM	12/8/2017	1/3/2018
N027459-008B	MW-25-Q417	Groundwater	12/8/2017 10:42:00 AM	12/8/2017	1/3/2018
N027459-008C	MW-25-Q417	Groundwater	12/8/2017 10:42:00 AM	12/8/2017	1/3/2018
N027459-008D	MW-25-Q417	Groundwater	12/8/2017 10:42:00 AM	12/8/2017	1/3/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027459
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027459-008E	MW-25-Q417	Groundwater	12/8/2017 10:42:00 AM	12/8/2017	1/3/2018
N027459-009A	MW-919-Q417	Groundwater	12/8/2017 9:26:00 AM	12/8/2017	1/3/2018
N027459-009B	MW-919-Q417	Groundwater	12/8/2017 9:26:00 AM	12/8/2017	1/3/2018
N027459-009C	MW-919-Q417	Groundwater	12/8/2017 9:26:00 AM	12/8/2017	1/3/2018
N027459-010A	OW-03D-Q417	Groundwater	12/8/2017 9:21:00 AM	12/8/2017	1/3/2018
N027459-010B	OW-03D-Q417	Groundwater	12/8/2017 9:21:00 AM	12/8/2017	1/3/2018
N027459-010C	OW-03D-Q417	Groundwater	12/8/2017 9:21:00 AM	12/8/2017	1/3/2018
N027459-011A	OW-03M-Q417	Groundwater	12/8/2017 8:41:00 AM	12/8/2017	1/3/2018
N027459-011B	OW-03M-Q417	Groundwater	12/8/2017 8:41:00 AM	12/8/2017	1/3/2018
N027459-011C	OW-03M-Q417	Groundwater	12/8/2017 8:41:00 AM	12/8/2017	1/3/2018
N027459-012A	OW-03S-Q417	Groundwater	12/8/2017 10:13:00 AM	12/8/2017	1/3/2018
N027459-012B	OW-03S-Q417	Groundwater	12/8/2017 10:13:00 AM	12/8/2017	1/3/2018
N027459-012C	OW-03S-Q417	Groundwater	12/8/2017 10:13:00 AM	12/8/2017	1/3/2018
N027459-013A	MW-37D-Q417	Groundwater	12/8/2017 9:25:00 AM	12/8/2017	1/3/2018
N027459-013B	MW-37D-Q417	Groundwater	12/8/2017 9:25:00 AM	12/8/2017	1/3/2018
N027459-013C	MW-37D-Q417	Groundwater	12/8/2017 9:25:00 AM	12/8/2017	1/3/2018
N027459-013D	MW-37D-Q417	Groundwater	12/8/2017 9:25:00 AM	12/8/2017	1/3/2018
N027459-014A	MW-37S-Q417	Groundwater	12/8/2017 10:15:00 AM	12/8/2017	1/3/2018
N027459-014B	MW-37S-Q417	Groundwater	12/8/2017 10:15:00 AM	12/8/2017	1/3/2018
N027459-014C	MW-37S-Q417	Groundwater	12/8/2017 10:15:00 AM	12/8/2017	1/3/2018
N027459-015A	MW-13-Q417	Groundwater	12/8/2017 11:15:00 AM	12/8/2017	1/3/2018
N027459-015B	MW-13-Q417	Groundwater	12/8/2017 11:15:00 AM	12/8/2017	1/3/2018
N027459-015C	MW-13-Q417	Groundwater	12/8/2017 11:15:00 AM	12/8/2017	1/3/2018
N027459-016A	MW-20-100-Q417	Groundwater	12/8/2017 8:15:00 AM	12/8/2017	1/3/2018
N027459-016B	MW-20-100-Q417	Groundwater	12/8/2017 8:15:00 AM	12/8/2017	1/3/2018
N027459-016C	MW-20-100-Q417	Groundwater	12/8/2017 8:15:00 AM	12/8/2017	1/3/2018
N027459-016D	MW-20-100-Q417	Groundwater	12/8/2017 8:15:00 AM	12/8/2017	1/3/2018
N027459-016E	MW-20-100-Q417	Groundwater	12/8/2017 8:15:00 AM	12/8/2017	1/3/2018
N027459-017A	MW-905-Q417	Groundwater	12/8/2017 8:25:00 AM	12/8/2017	1/3/2018
N027459-017B	MW-905-Q417	Groundwater	12/8/2017 8:25:00 AM	12/8/2017	1/3/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027459
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027459-017C	MW-905-Q417	Groundwater	12/8/2017 8:25:00 AM	12/8/2017	1/3/2018
N027459-017D	MW-905-Q417	Groundwater	12/8/2017 8:25:00 AM	12/8/2017	1/3/2018
N027459-017E	MW-905-Q417	Groundwater	12/8/2017 8:25:00 AM	12/8/2017	1/3/2018
N027459-018A	PGE-07BR-Q417	Groundwater	12/8/2017 10:57:00 AM	12/8/2017	1/3/2018
N027459-018B	PGE-07BR-Q417	Groundwater	12/8/2017 10:57:00 AM	12/8/2017	1/3/2018
N027459-018C	PGE-07BR-Q417	Groundwater	12/8/2017 10:57:00 AM	12/8/2017	1/3/2018
N027459-019A	MW-24BR-Q417	Groundwater	12/8/2017 11:25:00 AM	12/8/2017	1/3/2018
N027459-019B	MW-24BR-Q417	Groundwater	12/8/2017 11:25:00 AM	12/8/2017	1/3/2018
N027459-019C	MW-24BR-Q417	Groundwater	12/8/2017 11:25:00 AM	12/8/2017	1/3/2018
N027459-019D	MW-24BR-Q417	Groundwater	12/8/2017 11:25:00 AM	12/8/2017	1/3/2018
N027459-020A	MW-725-Q417	Groundwater	12/8/2017 11:30:00 AM	12/8/2017	1/3/2018

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-001

Client Sample ID: MW-35-060-Q417
Collection Date: 12/8/2017 9:14:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	5300	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-002

Client Sample ID: MW-35-135-Q417
Collection Date: 12/8/2017 8:28:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	8100	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-003

Client Sample ID: MW-23-060-Q417
Collection Date: 12/8/2017 10:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208G**	QC Batch: **R120750**			PrepDate			Analyst: **LR**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-004

Client Sample ID: MW-23-080-Q417
Collection Date: 12/8/2017 10:12:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-005

Client Sample ID: MW-50-095-Q417
Collection Date: 12/8/2017 9:24:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	4500	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-006

Client Sample ID: MW-50-200-Q417
Collection Date: 12/8/2017 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-007

Client Sample ID: MW-19-Q417
Collection Date: 12/8/2017 9:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	1800	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-008

Client Sample ID: MW-25-Q417
Collection Date: 12/8/2017 10:42:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	1600	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-009

Client Sample ID: MW-919-Q417
Collection Date: 12/8/2017 9:26:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	7100	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-010

Client Sample ID: OW-03D-Q417
Collection Date: 12/8/2017 9:21:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	7200	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-011

Client Sample ID: OW-03M-Q417
Collection Date: 12/8/2017 8:41:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	5200	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-012

Client Sample ID: OW-03S-Q417
Collection Date: 12/8/2017 10:13:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	1300	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-013

Client Sample ID: MW-37D-Q417
Collection Date: 12/8/2017 9:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-014

Client Sample ID: MW-37S-Q417
Collection Date: 12/8/2017 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	5300	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-015

Client Sample ID: MW-13-Q417
Collection Date: 12/8/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	2100	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-016

Client Sample ID: MW-20-100-Q417
Collection Date: 12/8/2017 8:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	1800	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-017

Client Sample ID: MW-905-Q417
Collection Date: 12/8/2017 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	1800	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-018

Client Sample ID: PGE-07BR-Q417
Collection Date: 12/8/2017 10:57:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-019

Client Sample ID: MW-24BR-Q417
Collection Date: 12/8/2017 11:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171208H**	QC Batch: **R120751**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	12/8/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N027430-018CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120750
Client ID:	ZZZZZZ	Batch ID:	R120750	TestNo:	EPA 120.1			Analysis Date:	12/8/2017	SeqNo:	2860752

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	24900.000	0.10						24700	0.806	10	

Sample ID	N027459-003CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120750
Client ID:	ZZZZZZ	Batch ID:	R120750	TestNo:	EPA 120.1			Analysis Date:	12/8/2017	SeqNo:	2860769

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	11670.000	0.10						11690	0.171	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N027459-006CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120751
Client ID:	ZZZZZZ	Batch ID:	R120751	TestNo:	EPA 120.1			Analysis Date:	12/8/2017	SeqNo:	2860774

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	14560.000	0.10						14570	0.0687	10	

Sample ID	N027459-018CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120751
Client ID:	ZZZZZZ	Batch ID:	R120751	TestNo:	EPA 120.1			Analysis Date:	12/8/2017	SeqNo:	2860788

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	13620.000	0.10						13670	0.366	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-001

Client Sample ID: MW-35-060-Q417
Collection Date: 12/8/2017 9:14:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**				PrepDate	**12/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3700	50	50		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-135-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 8:28:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	6200	50	50		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-060-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 10:48:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	9600	100	100		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-080-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 10:12:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	10000	100	100		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-005

Client Sample ID: MW-50-095-Q417
Collection Date: 12/8/2017 9:24:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213D**	QC Batch: **66055**				PrepDate	**12/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3000	33	33		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-006

Client Sample ID: MW-50-200-Q417
Collection Date: 12/8/2017 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213E**	QC Batch: **66056**				PrepDate	**12/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	12000	100	100		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-19-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:58:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213E**	QC Batch: **66056**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1200	13	13		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-008

Client Sample ID: MW-25-Q417
Collection Date: 12/8/2017 10:42:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213E**	QC Batch: **66056**				PrepDate	**12/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1200	13	13		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-919-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:26:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213E**	QC Batch: **66056**			PrepDate	**12/13/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	5200	50	50		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-010

Client Sample ID: OW-03D-Q417
Collection Date: 12/8/2017 9:21:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213E**	QC Batch: **66056**				PrepDate	**12/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	5300	50	50		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-011

Client Sample ID: OW-03M-Q417
Collection Date: 12/8/2017 8:41:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213E**	QC Batch: **66056**				PrepDate	**12/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3600	50	50		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-012

Client Sample ID: OW-03S-Q417
Collection Date: 12/8/2017 10:13:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213E**	QC Batch: **66056**				PrepDate	**12/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	810	10	10		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-37D-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213E**	QC Batch: **66056**				PrepDate	**12/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	8100	100	100		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-014

Client Sample ID: MW-37S-Q417
Collection Date: 12/8/2017 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213E**	QC Batch: **66056**				PrepDate	**12/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3800	50	50		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-015

Client Sample ID: MW-13-Q417
Collection Date: 12/8/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171213E**	QC Batch: **66056**				PrepDate	**12/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1400	17	17		mg/L	1	12/13/2017 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-016

Client Sample ID: MW-20-100-Q417
Collection Date: 12/8/2017 8:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214G**	QC Batch: **66074**				PrepDate	**12/14/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1300	13	13		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 8:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214G**	QC Batch: **66074**			PrepDate	**12/14/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1300	13	13		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-018

Client Sample ID: PGE-07BR-Q417
Collection Date: 12/8/2017 10:57:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214G**	QC Batch: **66074**				PrepDate	**12/14/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	10000	100	100		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24BR-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 11:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214G**	QC Batch: **66074**				PrepDate	**12/14/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	7300	100	100		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-66055	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/13/2017	RunNo:	120820
Client ID:	LCSW	Batch ID:	66055	TestNo:	SM2540C			Analysis Date:	12/13/2017	SeqNo:	2865495

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	953.000	10	1000	0	95.3	80	120				

Sample ID	MB-66055	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/13/2017	RunNo:	120820
Client ID:	PBW	Batch ID:	66055	TestNo:	SM2540C			Analysis Date:	12/13/2017	SeqNo:	2865496

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N027430-018CDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/13/2017	RunNo:	120820
Client ID:	ZZZZZZ	Batch ID:	66055	TestNo:	SM2540C			Analysis Date:	12/13/2017	SeqNo:	2865501

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	22760.000	200						21820	4.22	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-66056	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/13/2017	RunNo:	120821
Client ID:	LCSW	Batch ID:	66056	TestNo:	SM2540C			Analysis Date:	12/13/2017	SeqNo:	2865508

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	979.000	10	1000	0	97.9	80	120				

Sample ID	MB-66056	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/13/2017	RunNo:	120821
Client ID:	PBW	Batch ID:	66056	TestNo:	SM2540C			Analysis Date:	12/13/2017	SeqNo:	2865509

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N027459-006CDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/13/2017	RunNo:	120821
Client ID:	ZZZZZZ	Batch ID:	66056	TestNo:	SM2540C			Analysis Date:	12/13/2017	SeqNo:	2865511

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	12470.000	100						11980	4.01	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-66074	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/14/2017	RunNo:	120876
Client ID:	LCSW	Batch ID:	66074	TestNo:	SM2540C			Analysis Date:	12/14/2017	SeqNo:	2869155

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	938.000	10	1000	0	93.8	80	120				

Sample ID	MB-66074	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/14/2017	RunNo:	120876
Client ID:	PBW	Batch ID:	66074	TestNo:	SM2540C			Analysis Date:	12/14/2017	SeqNo:	2869156

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N027459-018CDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/14/2017	RunNo:	120876
Client ID:	ZZZZZZ	Batch ID:	66074	TestNo:	SM2540C			Analysis Date:	12/14/2017	SeqNo:	2869166

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	10920.000	100						10470	4.21	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-001

Client Sample ID: MW-35-060-Q417
Collection Date: 12/8/2017 9:14:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A** QC Batch: **R120870**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	21	0.17	1.0		µg/L	5	12/14/2017 10:51 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	20	0.019	1.0		µg/L	1	12/21/2017 01:36 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-002

Client Sample ID: MW-35-135-Q417
Collection Date: 12/8/2017 8:28:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A** QC Batch: **R120870**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	29	0.17	1.0		µg/L	5	12/14/2017 11:10 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A	**EPA 6020**			
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	29	0.019	1.0		µg/L	1	12/21/2017 02:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-060-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 10:48:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_171214A** QC Batch: **R120870**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	40	0.17	1.0		µg/L	5	12/14/2017 12:23 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	35	0.019	1.0		µg/L	1	12/21/2017 02:49 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-004

Client Sample ID: MW-23-080-Q417
Collection Date: 12/8/2017 10:12:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A** QC Batch: **R120870**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	1.5	0.17	1.0		µg/L	5	12/14/2017 12:42 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate **12/12/2017**			Analyst: **CEI**
Chromium	1.9	0.019	1.0		µg/L	1	12/21/2017 03:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-005

Client Sample ID: MW-50-095-Q417
Collection Date: 12/8/2017 9:24:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A** QC Batch: **R120870**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	13	0.17	1.0		µg/L	5	12/14/2017 01:01 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A	**EPA 6020**			
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	14	0.019	1.0		µg/L	1	12/21/2017 03:12 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-006

Client Sample ID: MW-50-200-Q417
Collection Date: 12/8/2017 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A**	QC Batch: **R120870**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	4100	33	200		µg/L	1000	12/14/2017 02:31 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	4300	0.97	50		µg/L	50	12/21/2017 07:05 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-007

Client Sample ID: MW-19-Q417
Collection Date: 12/8/2017 9:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A**	QC Batch: **R120870**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	340	1.7	10		µg/L	50	12/14/2017 02:50 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	340	0.096	5.0		µg/L	5	12/21/2017 04:08 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-008

Client Sample ID: MW-25-Q417
Collection Date: 12/8/2017 10:42:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A** QC Batch: **R120870**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	91	0.66	4.0		µg/L	20	12/14/2017 03:18 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	90	0.019	1.0		µg/L	1	12/21/2017 04:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-009

Client Sample ID: MW-919-Q417
Collection Date: 12/8/2017 9:26:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	7.9	0.066	0.40		µg/L	2	12/15/2017 07:52 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	8.4	0.019	1.0		µg/L	1	12/21/2017 04:24 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-010

Client Sample ID: OW-03D-Q417
Collection Date: 12/8/2017 9:21:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A** QC Batch: **R120870**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	7.9	0.066	0.40		µg/L	2	12/14/2017 04:24 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	8.1	0.019	1.0		µg/L	1	12/21/2017 04:36 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-011

Client Sample ID: OW-03M-Q417
Collection Date: 12/8/2017 8:41:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A** QC Batch: **R120870**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	16	0.066	0.40		µg/L	2	12/14/2017 04:43 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	16	0.019	1.0		µg/L	1	12/21/2017 04:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-012

Client Sample ID: OW-03S-Q417
Collection Date: 12/8/2017 10:13:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A** QC Batch: **R120870**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	18	0.17	1.0		µg/L	5	12/14/2017 05:02 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	18	0.019	1.0		µg/L	1	12/21/2017 05:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-37D-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A**	QC Batch: **R120870**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	5.0	0.17	1.0		µg/L	5	12/14/2017 04:05 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	6.4	0.019	1.0		µg/L	1	12/21/2017 05:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-014

Client Sample ID: MW-37S-Q417
Collection Date: 12/8/2017 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A** QC Batch: **R120870**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	12	0.17	1.0		µg/L	5	12/14/2017 05:59 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A	**EPA 6020**			
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	12	0.019	1.0		µg/L	1	12/21/2017 05:32 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-015

Client Sample ID: MW-13-Q417
Collection Date: 12/8/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A** QC Batch: **R120870**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	12	0.066	0.40		µg/L	2	12/14/2017 08:49 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	93	0.019	1.0		µg/L	1	12/21/2017 05:44 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-016

Client Sample ID: MW-20-100-Q417
Collection Date: 12/8/2017 8:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A**	QC Batch: **R120870**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1500	6.6	40		µg/L	200	12/14/2017 06:37 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	1400	0.19	10		µg/L	10	12/21/2017 05:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-017

Client Sample ID: MW-905-Q417
Collection Date: 12/8/2017 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A**	QC Batch: **R120870**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1500	6.6	40		µg/L	200	12/14/2017 06:56 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	1400	0.19	10		µg/L	10	12/21/2017 06:48 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-018

Client Sample ID: PGE-07BR-Q417
Collection Date: 12/8/2017 10:57:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/15/2017 05:11 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	ND	0.096	5.0		µg/L	5	12/21/2017 06:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-019

Client Sample ID: MW-24BR-Q417
Collection Date: 12/8/2017 11:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A** QC Batch: **R120903**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/15/2017 05:30 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_171220B** QC Batch: **66021**				PrepDate	**12/12/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	12/21/2017 06:36 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-020

Client Sample ID: MW-725-Q417
Collection Date: 12/8/2017 11:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171214A**	QC Batch: **R120870**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/14/2017 07:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R120870**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **PBW**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868937**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R120870**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **LCSW**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868938**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.214	0.20	5.000	0	104	90	110				

Sample ID **N027459-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868943**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	47.180	1.0	25.00	21.12	104	90	110				

Sample ID **N027459-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868945**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	55.089	1.0	25.00	29.09	104	90	110				

Sample ID **N027459-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	66.002	1.0	25.00	39.93	104	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027459-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.960	1.0	5.000	1.546	108	90	110				

Sample ID **N027459-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868955**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	17.863	1.0	5.000	12.86	100	90	110				

Sample ID **N027544-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868959**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	211.622	4.0						215.1	1.62	20	

Sample ID **N027459-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9447.300	200	5000	4128	106	90	110				

Sample ID **N027459-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	608.430	10	250.0	344.9	105	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027459-007AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	610.675	10	250.0	344.9	106	90	110	608.4	0.368	20	

Sample ID **N027459-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	196.484	4.0	100.0	91.32	105	90	110				

Sample ID **N027459-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.205	1.0	5.000	4.970	105	90	110				

Sample ID **N027459-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	18.511	0.40	10.00	7.877	106	90	110				

Sample ID **N027459-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	26.047	0.40	10.00	15.70	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027459-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120870**
Client ID: **ZZZZZZ** Batch ID: **R120870** TestNo: **EPA 218.6** Analysis Date: **12/14/2017** SeqNo: **2868979**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	44.357	1.0	25.00	18.34	104	90	110				

Sample ID **N027459-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120870**
Client ID: **ZZZZZZ** Batch ID: **R120870** TestNo: **EPA 218.6** Analysis Date: **12/14/2017** SeqNo: **2868985**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	17.310	1.0	5.000	12.03	106	90	110				

Sample ID **N027459-016AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120870**
Client ID: **ZZZZZZ** Batch ID: **R120870** TestNo: **EPA 218.6** Analysis Date: **12/14/2017** SeqNo: **2868989**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2556.640	40	1000	1503	105	90	110				

Sample ID **N027459-017AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120870**
Client ID: **ZZZZZZ** Batch ID: **R120870** TestNo: **EPA 218.6** Analysis Date: **12/14/2017** SeqNo: **2868991**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2569.620	40	1000	1507	106	90	110				

Sample ID **N027459-020AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120870**
Client ID: **ZZZZZZ** Batch ID: **R120870** TestNo: **EPA 218.6** Analysis Date: **12/14/2017** SeqNo: **2868995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.148	0.20	1.000	0.1126	104	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027459-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120870
Client ID:	ZZZZZZ	Batch ID:	R120870	TestNo:	EPA 218.6			Analysis Date:	12/14/2017	SeqNo:	2868997

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	22.396	0.40	10.00	11.76	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R120903**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **PBW**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870594**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R120903**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **LCSW**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870595**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.228	0.20	5.000	0	105	90	110				

Sample ID **N027485-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870599**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	260.554	4.0	100.0	156.5	104	90	110				

Sample ID **N027485-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870600**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	260.346	4.0	100.0	156.5	104	90	110	260.6	0.0799	20	

Sample ID **N027485-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870603**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2757.320	40	1000	1730	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027485-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870604**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2468.720	40	1000	1430	104	90	110				

Sample ID **N027485-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9037.100	200	5000	3727	106	90	110				

Sample ID **N027485-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870608**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.460	1.0	5.000	8.194	105	90	110				

Sample ID **N027485-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870610**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.309	1.0	5.000	3.066	105	90	110				

Sample ID **N027485-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.394	1.0	5.000	3.029	107	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027485-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	938.900	20	500.0	419.0	104	90	110				

Sample ID **N027485-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870618**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4392.300	100	2500	1795	104	90	110				

Sample ID **N027485-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870620**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	65.788	1.0	25.00	38.85	108	90	110				

Sample ID **N027485-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4952.800	100	2500	2341	104	90	110				

Sample ID **N027485-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870624**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4983.750	100	2500	2388	104	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027485-003ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870627

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1430.860	40						1430	0.0671	20	

Sample ID	N027485-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870629

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.056	0.20	1.000	0	106	90	110				

Sample ID	N027485-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870631

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.086	0.20	1.000	0	109	90	110				

Sample ID	N027485-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870632

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.057	0.20	1.000	0	106	90	110				

Sample ID	N027485-016AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870634

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0	106	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027459-018AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870638**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.654	1.0	5.000	0	93.1	90	110				

Sample ID **N027459-019AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870640**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.193	1.0	5.000	0	104	90	110				

Sample ID **N027459-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	17.987	0.40	10.00	7.873	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-66021**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **121008**
Client ID: **PBW**	Batch ID: **66021**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/21/2017**	SeqNo: **2876372**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-66021**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **121008**
Client ID: **LCSW**	Batch ID: **66021**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/21/2017**	SeqNo: **2876373**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.444	1.0	10.00	0	104	85	115				

Sample ID **N027459-001C-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **121008**
Client ID: **ZZZZZZ**	Batch ID: **66021**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/21/2017**	SeqNo: **2876379**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	28.311	1.0	10.00	20.05	82.6	75	125				

Sample ID **N027459-001C-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/12/2017**	RunNo: **121008**
Client ID: **ZZZZZZ**	Batch ID: **66021**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **12/21/2017**	SeqNo: **2876381**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	28.099	1.0	10.00	20.05	80.5	75	125	28.31	0.752	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-060-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:14:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	78	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-002

Client Sample ID: MW-35-135-Q417
Collection Date: 12/8/2017 8:28:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214A**	QC Batch: **R120816**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	49	1.2	5.0		mg/L	1	12/14/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-003

Client Sample ID: MW-23-060-Q417
Collection Date: 12/8/2017 10:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	16	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-004

Client Sample ID: MW-23-080-Q417
Collection Date: 12/8/2017 10:12:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	44	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-005

Client Sample ID: MW-50-095-Q417
Collection Date: 12/8/2017 9:24:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	53	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-006

Client Sample ID: MW-50-200-Q417
Collection Date: 12/8/2017 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	33	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-19-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:58:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	95	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-008

Client Sample ID: MW-25-Q417
Collection Date: 12/8/2017 10:42:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	130	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-009

Client Sample ID: MW-919-Q417
Collection Date: 12/8/2017 9:26:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	36	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-03D-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:21:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	36	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-03M-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 8:41:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	48	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-03S-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 10:13:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	73	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-013

Client Sample ID: MW-37D-Q417
Collection Date: 12/8/2017 9:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	32	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-014

Client Sample ID: MW-37S-Q417
Collection Date: 12/8/2017 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	47	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-13-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 11:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	79	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-016

Client Sample ID: MW-20-100-Q417
Collection Date: 12/8/2017 8:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	120	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 8:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	92	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PGE-07BR-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 10:57:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	ND	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-019

Client Sample ID: MW-24BR-Q417
Collection Date: 12/8/2017 11:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	42	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R120816**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **LCSW**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	98.394	5.0	100.0	0	98.4	85	115				

Sample ID **MB-R120816**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **PBW**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N027430-002CDDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **ZZZZZZ**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865286**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	38.153	5.0						38.15	0	30	

Sample ID **N027431-002CMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **ZZZZZZ**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865300**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	196.787	5.0	100.0	99.40	97.4	75	125				

Sample ID **N027431-002CMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120816**
Client ID: **ZZZZZZ**	Batch ID: **R120816**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2865301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	196.787	5.0	100.0	99.40	97.4	75	125	196.8	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID	LCS-R120856	SampType:	LCS	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120856		
Client ID:	LCSW	Batch ID:	R120856	TestNo:	SM 2320 B			Analysis Date:	12/14/2017	SeqNo:	2868272		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Alkalinity, Total (As CaCO3)	101.464	5.0	100.0	0	101	85	115						

Sample ID	MB-R120856	SampType:	MBLK	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120856		
Client ID:	PBW	Batch ID:	R120856	TestNo:	SM 2320 B			Analysis Date:	12/14/2017	SeqNo:	2868273		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Alkalinity, Total (As CaCO3)	ND	5.0											

Sample ID	N027459-003CDUP	SampType:	DUP	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120856		
Client ID:	ZZZZZZ	Batch ID:	R120856	TestNo:	SM 2320 B			Analysis Date:	12/14/2017	SeqNo:	2868275		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Alkalinity, Total (As CaCO3)	16.736	5.0						15.69	6.45	30			

Sample ID	N027459-017EMS	SampType:	MS	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120856		
Client ID:	ZZZZZZ	Batch ID:	R120856	TestNo:	SM 2320 B			Analysis Date:	12/14/2017	SeqNo:	2868290		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Alkalinity, Total (As CaCO3)	188.285	5.0	100.0	92.05	96.2	75	125						

Sample ID	N027459-017EMSD	SampType:	MSD	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120856		
Client ID:	ZZZZZZ	Batch ID:	R120856	TestNo:	SM 2320 B			Analysis Date:	12/14/2017	SeqNo:	2868291		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Alkalinity, Total (As CaCO3)	190.377	5.0	100.0	92.05	98.3	75	125	188.3	1.10	20			

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-001

Client Sample ID: MW-35-060-Q417
Collection Date: 12/8/2017 9:14:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/19/2017 01:05 PM
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Chloride	2200	4.6	250		mg/L	500	12/15/2017 03:55 PM
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Sulfate	330	1.1	25		mg/L	50	12/15/2017 04:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-002

Client Sample ID: MW-35-135-Q417
Collection Date: 12/8/2017 8:28:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/19/2017 01:20 PM
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Chloride	3300	9.1	500		mg/L	1000	12/15/2017 07:29 PM
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Sulfate	760	2.3	50		mg/L	100	12/15/2017 07:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-003

Client Sample ID: MW-23-060-Q417
Collection Date: 12/8/2017 10:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**				PrepDate			Analyst: **RAB**
Bromide	ND	0.20	5.0		mg/L	10	12/19/2017 01:35 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Chloride	5600	18	1000		mg/L	2000	12/15/2017 08:00 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Sulfate	660	2.3	50		mg/L	100	12/15/2017 08:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-004

Client Sample ID: MW-23-080-Q417
Collection Date: 12/8/2017 10:12:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**				PrepDate			Analyst: **RAB**
Bromide	ND	0.20	5.0		mg/L	10	12/19/2017 01:50 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Chloride	5600	18	1000		mg/L	2000	12/15/2017 08:31 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Sulfate	970	2.3	50		mg/L	100	12/15/2017 08:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-005

Client Sample ID: MW-50-095-Q417
Collection Date: 12/8/2017 9:24:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/19/2017 02:06 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Chloride	1700	4.6	250		mg/L	500	12/15/2017 05:27 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Sulfate	290	1.1	25		mg/L	50	12/15/2017 05:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-006

Client Sample ID: MW-50-200-Q417
Collection Date: 12/8/2017 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/19/2017 02:21 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Chloride	6800	18	1000		mg/L	2000	12/15/2017 09:01 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Sulfate	890	2.3	50		mg/L	100	12/15/2017 09:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-007

Client Sample ID: MW-19-Q417
Collection Date: 12/8/2017 9:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**			PrepDate				Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/19/2017 02:36 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Chloride	530	1.8	100		mg/L	200	12/15/2017 10:02 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Sulfate	170	0.46	10		mg/L	20	12/15/2017 10:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-008

Client Sample ID: MW-25-Q417
Collection Date: 12/8/2017 10:42:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/19/2017 02:52 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Chloride	420	0.91	50		mg/L	100	12/15/2017 10:33 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Sulfate	200	0.46	10		mg/L	20	12/15/2017 10:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-009

Client Sample ID: MW-919-Q417
Collection Date: 12/8/2017 9:26:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/19/2017 04:39 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Chloride	2900	9.1	500		mg/L	1000	12/15/2017 11:04 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Sulfate	410	1.1	25		mg/L	50	12/15/2017 11:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-010

Client Sample ID: OW-03D-Q417
Collection Date: 12/8/2017 9:21:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/19/2017 04:54 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Chloride	2900	9.1	500		mg/L	1000	12/15/2017 11:34 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Sulfate	410	1.1	25		mg/L	50	12/15/2017 11:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-011

Client Sample ID: OW-03M-Q417
Collection Date: 12/8/2017 8:41:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**			PrepDate				Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/19/2017 05:09 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Chloride	2000	4.6	250		mg/L	500	12/16/2017 12:05 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Sulfate	330	1.1	25		mg/L	50	12/16/2017 12:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-012

Client Sample ID: OW-03S-Q417
Collection Date: 12/8/2017 10:13:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**			PrepDate				Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/19/2017 05:25 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Chloride	360	0.91	50		mg/L	100	12/16/2017 01:06 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Sulfate	81	0.46	10		mg/L	20	12/16/2017 01:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-013

Client Sample ID: MW-37D-Q417
Collection Date: 12/8/2017 9:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/19/2017 05:40 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Chloride	4800	18	1000		mg/L	2000	12/16/2017 01:37 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**			PrepDate				Analyst: **RAB**
Sulfate	660	2.3	50		mg/L	100	12/16/2017 01:52 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-014

Client Sample ID: MW-37S-Q417
Collection Date: 12/8/2017 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/19/2017 05:55 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Chloride	2100	4.6	250		mg/L	500	12/16/2017 02:07 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Sulfate	310	1.1	25		mg/L	50	12/16/2017 02:22 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-015

Client Sample ID: MW-13-Q417
Collection Date: 12/8/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**				PrepDate			Analyst: **RAB**
Bromide	ND	0.039	1.0		mg/L	2	12/19/2017 06:41 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Chloride	680	1.8	100		mg/L	200	12/16/2017 02:38 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Sulfate	150	0.46	10		mg/L	20	12/16/2017 02:53 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-016

Client Sample ID: MW-20-100-Q417
Collection Date: 12/8/2017 8:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**				PrepDate			Analyst: **RAB**
Bromide	0.57	0.020	0.50		mg/L	1	12/19/2017 06:56 PM
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Chloride	480	1.8	100		mg/L	200	12/16/2017 03:08 AM
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Sulfate	240	1.1	25		mg/L	50	12/16/2017 03:24 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-017

Client Sample ID: MW-905-Q417
Collection Date: 12/8/2017 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**				PrepDate			Analyst: **RAB**
Bromide	0.58	0.020	0.50		mg/L	1	12/19/2017 07:12 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218B** QC Batch: **R120938**				PrepDate			Analyst: **RAB**
Chloride	490	0.91	50		mg/L	100	12/19/2017 04:39 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Sulfate	270	1.1	25		mg/L	50	12/16/2017 04:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-018

Client Sample ID: PGE-07BR-Q417
Collection Date: 12/8/2017 10:57:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**				PrepDate			Analyst: **RAB**
Bromide	ND	0.20	5.0		mg/L	10	12/19/2017 07:27 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218B** QC Batch: **R120938**				PrepDate			Analyst: **RAB**
Chloride	7500	18	1000		mg/L	2000	12/19/2017 04:55 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Sulfate	470	2.3	50		mg/L	100	12/16/2017 04:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-019

Client Sample ID: MW-24BR-Q417
Collection Date: 12/8/2017 11:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219A** QC Batch: **R120969**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/19/2017 07:42 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218B** QC Batch: **R120938**				PrepDate			Analyst: **RAB**
Chloride	4800	9.1	500		mg/L	1000	12/19/2017 05:10 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171215A** QC Batch: **R120893**				PrepDate			Analyst: **RAB**
Sulfate	460	2.3	50		mg/L	100	12/16/2017 05:26 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	MB-R120969_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120969
Client ID:	PBW	Batch ID:	R120969	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874376

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	LCS-R120969_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120969
Client ID:	LCSW	Batch ID:	R120969	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874377

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.228	0.50	1.250	0	98.3	90	110				

Sample ID	N027459-001EMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120969
Client ID:	ZZZZZZ	Batch ID:	R120969	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874388

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	6.242	2.5	6.250	0.1315	97.8	80	120				

Sample ID	N027459-001EMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120969
Client ID:	ZZZZZZ	Batch ID:	R120969	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874389

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	6.665	2.5	6.250	0.1315	105	80	120	6.242	6.55	20	

Sample ID	N027459-008EMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120969
Client ID:	ZZZZZZ	Batch ID:	R120969	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874390

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	7.078	2.5	6.250	0.2905	109	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	N027459-004CDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120969
Client ID:	ZZZZZZ	Batch ID:	R120969	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874391

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.893	5.0						1.104	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R120893_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120893
Client ID:	PBW	Batch ID:	R120893	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2871029

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R120893_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120893
Client ID:	LCSW	Batch ID:	R120893	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2871030

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.019	0.50	2.000	0	101	90	110				

Sample ID	N027459-001EMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120893
Client ID:	ZZZZZZ	Batch ID:	R120893	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2871034

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3236.100	250	1000	2203	103	80	120				

Sample ID	N027459-001EMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120893
Client ID:	ZZZZZZ	Batch ID:	R120893	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2871035

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3244.350	250	1000	2203	104	80	120	3236	0.255	20	

Sample ID	N027459-005CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120893
Client ID:	ZZZZZZ	Batch ID:	R120893	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2871037

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2794.550	250	1000	1713	108	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N027459-005CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120893
Client ID:	ZZZZZZ	Batch ID:	R120893	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2871040

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1722.450	250						1713	0.573	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	LCS-R120938_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120938
Client ID:	LCSW	Batch ID:	R120938	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2872691

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.984	0.50	2.000	0	99.2	90	110				

Sample ID	MB-R120938_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120938
Client ID:	PBW	Batch ID:	R120938	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2872692

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	N027459-019CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120938
Client ID:	ZZZZZZ	Batch ID:	R120938	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2872696

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	4750.300	500						4767	0.347	20	

Sample ID	N027459-019CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120938
Client ID:	ZZZZZZ	Batch ID:	R120938	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2872697

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	6823.900	500	2000	4767	103	80	120				

Sample ID	N027459-019CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120938
Client ID:	ZZZZZZ	Batch ID:	R120938	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2872698

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	6865.300	500	2000	4767	105	80	120	6824	0.605	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R120893_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120893
Client ID:	PBW	Batch ID:	R120893	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2871074

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R120893_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120893
Client ID:	LCSW	Batch ID:	R120893	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2871075

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.805	0.50	4.000	0	95.1	90	110				

Sample ID	N027459-001EMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120893
Client ID:	ZZZZZZ	Batch ID:	R120893	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2871079

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	520.875	25	200.0	327.0	96.9	80	120				

Sample ID	N027459-001EMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120893
Client ID:	ZZZZZZ	Batch ID:	R120893	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2871080

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	525.775	25	200.0	327.0	99.4	80	120	520.9	0.936	20	

Sample ID	N027459-005CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120893
Client ID:	ZZZZZZ	Batch ID:	R120893	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2871082

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	479.935	25	200.0	286.0	97.0	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N027459-005CDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120893
Client ID:	ZZZZZZ	Batch ID:	R120893	TestNo:	EPA 300.0			Analysis Date:	12/15/2017	SeqNo:	2871085

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	285.905	25						286.0	0.0367	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-001

Client Sample ID: MW-35-060-Q417
Collection Date: 12/8/2017 9:14:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	2.3	0.11	0.25		mg/L	5	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-002

Client Sample ID: MW-35-135-Q417
Collection Date: 12/8/2017 8:28:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	2.7	0.11	0.25		mg/L	5	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-008

Client Sample ID: MW-25-Q417
Collection Date: 12/8/2017 10:42:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	12	0.22	0.50		mg/L	10	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-37D-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.33	0.022	0.050		mg/L	1	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-100-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 8:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	8.3	0.22	0.50		mg/L	10	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-017

Client Sample ID: MW-905-Q417
Collection Date: 12/8/2017 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	8.4	0.22	0.50		mg/L	10	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24BR-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 11:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R121034**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:			RunNo: **121034**			
Client ID: **PBW**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**			SeqNo: **2877768**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R121034**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:			RunNo: **121034**			
Client ID: **LCSW**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**			SeqNo: **2877769**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.496	0.050	0.5000	0	99.3	85	115				

Sample ID **N027431-005DDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:			RunNo: **121034**			
Client ID: **ZZZZZZ**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**			SeqNo: **2877771**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.148	0.50						9.004	1.59	20	

Sample ID **N027431-006DMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:			RunNo: **121034**			
Client ID: **ZZZZZZ**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**			SeqNo: **2877773**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	25.092	1.0	10.00	15.04	100	75	125				

Sample ID **N027431-006DMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:			RunNo: **121034**			
Client ID: **ZZZZZZ**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**			SeqNo: **2877774**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	24.784	1.0	10.00	15.04	97.4	75	125	25.09	1.24	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-001

Client Sample ID: MW-35-060-Q417
Collection Date: 12/8/2017 9:14:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	740	38	100		ug/L	1	12/19/2017 01:46 PM
Calcium	240000	28	500		ug/L	1	12/19/2017 01:46 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 01:46 PM
Magnesium	28000	4.4	100		ug/L	1	12/19/2017 01:46 PM
Sodium	1200000	2600	50000		ug/L	100	12/21/2017 09:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-002

Client Sample ID: MW-35-135-Q417
Collection Date: 12/8/2017 8:28:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	780	38	100		ug/L	1	12/19/2017 02:30 PM
Calcium	270000	28	500		ug/L	1	12/19/2017 02:30 PM
Iron	62	1.8	20		ug/L	1	12/19/2017 02:30 PM
Magnesium	29000	4.4	100		ug/L	1	12/19/2017 02:30 PM
Sodium	2100000	2600	50000		ug/L	100	12/21/2017 09:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-003

Client Sample ID: MW-23-060-Q417
Collection Date: 12/8/2017 10:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	650	38	100		ug/L	1	12/19/2017 02:37 PM
Calcium	860000	140	2500		ug/L	5	12/19/2017 09:05 PM
Iron	25	1.8	20		ug/L	1	12/19/2017 02:37 PM
Magnesium	3200	4.4	100		ug/L	1	12/19/2017 02:37 PM
Sodium	3100000	2600	50000		ug/L	100	12/21/2017 10:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-004

Client Sample ID: MW-23-080-Q417
Collection Date: 12/8/2017 10:12:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	770	38	100		ug/L	1	12/19/2017 02:44 PM
Calcium	740000	140	2500		ug/L	5	12/19/2017 09:12 PM
Iron	33	1.8	20		ug/L	1	12/19/2017 02:44 PM
Magnesium	370	4.4	100		ug/L	1	12/19/2017 02:44 PM
Sodium	3200000	2600	50000		ug/L	100	12/21/2017 10:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-005

Client Sample ID: MW-50-095-Q417
Collection Date: 12/8/2017 9:24:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	790	38	100		ug/L	1	12/19/2017 02:51 PM
Calcium	120000	28	500		ug/L	1	12/19/2017 02:51 PM
Iron	36	1.8	20		ug/L	1	12/19/2017 02:51 PM
Magnesium	12000	4.4	100		ug/L	1	12/19/2017 02:51 PM
Sodium	990000	2600	50000		ug/L	100	12/21/2017 10:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-006

Client Sample ID: MW-50-200-Q417
Collection Date: 12/8/2017 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1800	38	100		ug/L	1	12/19/2017 02:58 PM
Calcium	500000	140	2500		ug/L	5	12/19/2017 09:19 PM
Iron	110	1.8	20		ug/L	1	12/19/2017 02:58 PM
Magnesium	26000	4.4	100		ug/L	1	12/19/2017 02:58 PM
Sodium	4200000	6600	120000		ug/L	250	12/22/2017 09:53 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-007

Client Sample ID: MW-19-Q417
Collection Date: 12/8/2017 9:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	390	38	100		ug/L	1	12/19/2017 03:05 PM
Calcium	110000	28	500		ug/L	1	12/19/2017 03:05 PM
Iron	40	1.8	20		ug/L	1	12/19/2017 03:05 PM
Magnesium	17000	4.4	100		ug/L	1	12/19/2017 03:05 PM
Sodium	300000	260	5000		ug/L	10	12/21/2017 10:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-008

Client Sample ID: MW-25-Q417
Collection Date: 12/8/2017 10:42:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	370	38	100		ug/L	1	12/19/2017 03:12 PM
Calcium	120000	28	500		ug/L	1	12/19/2017 03:12 PM
Iron	64	1.8	20		ug/L	1	12/19/2017 03:12 PM
Magnesium	24000	4.4	100		ug/L	1	12/19/2017 03:12 PM
Potassium	8800	38	500		ug/L	1	12/21/2017 10:41 PM
Sodium	240000	260	5000		ug/L	10	12/21/2017 10:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-009

Client Sample ID: MW-919-Q417
Collection Date: 12/8/2017 9:26:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1300	38	100		ug/L	1	12/19/2017 03:20 PM
Calcium	170000	28	500		ug/L	1	12/19/2017 03:20 PM
Iron	43	1.8	20		ug/L	1	12/19/2017 03:20 PM
Magnesium	13000	4.4	100		ug/L	1	12/19/2017 03:20 PM
Sodium	1800000	2600	50000		ug/L	100	12/21/2017 10:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-010

Client Sample ID: OW-03D-Q417
Collection Date: 12/8/2017 9:21:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1300	38	100		ug/L	1	12/19/2017 03:26 PM
Calcium	180000	28	500		ug/L	1	12/19/2017 03:26 PM
Iron	60	1.8	20		ug/L	1	12/19/2017 03:26 PM
Magnesium	13000	4.4	100		ug/L	1	12/19/2017 03:26 PM
Sodium	1800000	2600	50000		ug/L	100	12/21/2017 11:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-011

Client Sample ID: OW-03M-Q417
Collection Date: 12/8/2017 8:41:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1500	38	100		ug/L	1	12/19/2017 03:33 PM
Calcium	100000	28	500		ug/L	1	12/19/2017 03:33 PM
Iron	54	1.8	20		ug/L	1	12/19/2017 03:33 PM
Magnesium	10000	4.4	100		ug/L	1	12/19/2017 03:33 PM
Sodium	1300000	2600	50000		ug/L	100	12/22/2017 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-012

Client Sample ID: OW-03S-Q417
Collection Date: 12/8/2017 10:13:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	200	38	100		ug/L	1	12/19/2017 04:03 PM
Calcium	71000	28	500		ug/L	1	12/19/2017 04:03 PM
Iron	49	1.8	20		ug/L	1	12/19/2017 04:03 PM
Magnesium	11000	4.4	100		ug/L	1	12/19/2017 04:03 PM
Sodium	190000	260	5000		ug/L	10	12/22/2017 09:56 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-013

Client Sample ID: MW-37D-Q417
Collection Date: 12/8/2017 9:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	1700	38	100		ug/L	1	12/19/2017 04:08 PM
Calcium	350000	28	500		ug/L	1	12/19/2017 04:08 PM
Iron	45	1.8	20		ug/L	1	12/19/2017 04:08 PM
Magnesium	17000	4.4	100		ug/L	1	12/19/2017 04:08 PM
Sodium	2700000	2600	50000		ug/L	100	12/21/2017 11:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-014

Client Sample ID: MW-37S-Q417
Collection Date: 12/8/2017 10:15:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_171219B** QC Batch: **65994** PrepDate **12/11/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	800	38	100		ug/L	1	12/19/2017 04:15 PM
Calcium	200000	28	500		ug/L	1	12/19/2017 04:15 PM
Iron	35	1.8	20		ug/L	1	12/19/2017 04:15 PM
Magnesium	24000	4.4	100		ug/L	1	12/19/2017 04:15 PM
Sodium	1100000	2600	50000		ug/L	100	12/21/2017 11:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-015

Client Sample ID: MW-13-Q417
Collection Date: 12/8/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	410	38	100		ug/L	1	12/19/2017 04:22 PM
Calcium	120000	28	500		ug/L	1	12/19/2017 04:22 PM
Iron	4000	1.8	20		ug/L	1	12/19/2017 04:22 PM
Magnesium	18000	4.4	100		ug/L	1	12/19/2017 04:22 PM
Sodium	350000	660	12000		ug/L	25	12/21/2017 11:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-016

Client Sample ID: MW-20-100-Q417
Collection Date: 12/8/2017 8:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	880	38	100		ug/L	1	12/19/2017 04:29 PM
Calcium	110000	28	500		ug/L	1	12/19/2017 04:29 PM
Iron	67	1.8	20		ug/L	1	12/19/2017 04:29 PM
Magnesium	18000	4.4	100		ug/L	1	12/19/2017 04:29 PM
Potassium	6900	38	500		ug/L	1	12/21/2017 11:41 PM
Sodium	310000	260	5000		ug/L	10	12/21/2017 11:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-017

Client Sample ID: MW-905-Q417
Collection Date: 12/8/2017 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	900	38	100		ug/L	1	12/19/2017 04:36 PM
Calcium	110000	28	500		ug/L	1	12/19/2017 04:36 PM
Iron	390	1.8	20		ug/L	1	12/19/2017 04:36 PM
Magnesium	18000	4.4	100		ug/L	1	12/19/2017 04:36 PM
Potassium	7000	38	500		ug/L	1	12/21/2017 11:50 PM
Sodium	320000	260	5000		ug/L	10	12/21/2017 11:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-018

Client Sample ID: PGE-07BR-Q417
Collection Date: 12/8/2017 10:57:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	2200	38	100		ug/L	1	12/19/2017 04:43 PM
Calcium	540000	140	2500		ug/L	5	12/19/2017 09:24 PM
Iron	42000	1.8	20		ug/L	1	12/19/2017 04:43 PM
Magnesium	11000	4.4	100		ug/L	1	12/19/2017 04:43 PM
Sodium	4500000	6600	120000		ug/L	250	12/22/2017 10:03 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *03-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-019

Client Sample ID: MW-24BR-Q417
Collection Date: 12/8/2017 11:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **65994**			PrepDate	**12/11/2017**		Analyst: **CEI**
Boron	2200	38	100		ug/L	1	12/19/2017 04:50 PM
Calcium	110000	28	500		ug/L	1	12/19/2017 04:50 PM
Iron	280	1.8	20		ug/L	1	12/19/2017 04:50 PM
Magnesium	2800	4.4	100		ug/L	1	12/19/2017 04:50 PM
Sodium	2900000	2600	50000		ug/L	100	12/22/2017 06:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-65994** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/11/2017** RunNo: **120943**
Client ID: **PBW** Batch ID: **65994** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2017** SeqNo: **2872888**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-65994** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/11/2017** RunNo: **120943**
Client ID: **LCSW** Batch ID: **65994** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2017** SeqNo: **2872889**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5010.250	100	5000	0	100	85	115				
Calcium	10259.712	500	10000	0	103	85	115				
Iron	110.364	20	100.0	0	110	85	115				
Magnesium	9996.420	100	10000	0	100	85	115				

Sample ID **N027459-001C-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/11/2017** RunNo: **120943**
Client ID: **ZZZZZZ** Batch ID: **65994** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2017** SeqNo: **2872893**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5645.864	100	5000	737.0	98.2	75	125				
Calcium	259439.787	500	10000	242300	171	75	125				S
Iron	116.966	20	100.0	14.16	103	75	125				
Magnesium	37817.823	100	10000	27940	98.8	75	125				

Sample ID **N027459-001C-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/11/2017** RunNo: **120943**
Client ID: **ZZZZZZ** Batch ID: **65994** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2017** SeqNo: **2872894**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5662.698	100	5000	737.0	98.5	75	125	5646	0.298	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027459-001C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	120943		
Client ID:	ZZZZZZ	Batch ID:	65994	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2872894		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	258895.119	500	10000	242300	166	75	125	259400	0.210	20	S
Iron	116.787	20	100.0	14.16	103	75	125	117.0	0.153	20	
Magnesium	37824.026	100	10000	27940	98.9	75	125	37820	0.0164	20	

Sample ID	MB-65994	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	121017		
Client ID:	PBW	Batch ID:	65994	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876743		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	ND	500									
Sodium	ND	500									

Sample ID	LCS2-65994	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	121017		
Client ID:	LCSW	Batch ID:	65994	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876744		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	19533.174	500	20000	0	97.7	85	115				
Sodium	20908.752	500	20000	0	105	85	115				

Sample ID	N027459-002C-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	121017		
Client ID:	ZZZZZZ	Batch ID:	65994	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876756		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2195480.512	50000	20000	2076000	597	75	125				S

Sample ID	N027459-002C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	121017		
Client ID:	ZZZZZZ	Batch ID:	65994	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876757		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2204072.046	50000	20000	2076000	640	75	125	2195000	0.391	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027459-002C-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	121017
Client ID:	ZZZZZZ	Batch ID:	65994	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876760

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	36761.165	2500	20000	14260	112	75	125				

Sample ID	N027459-002C-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/11/2017	RunNo:	121017
Client ID:	ZZZZZZ	Batch ID:	65994	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876761

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	36683.164	2500	20000	14260	112	75	125	36760	0.212	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-001

Client Sample ID: MW-35-060-Q417
Collection Date: 12/8/2017 9:14:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_171220B** QC Batch: **66021** PrepDate **12/12/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.031	0.50		µg/L	1	12/21/2017 01:36 AM
Arsenic	0.99	0.025	0.10		µg/L	1	12/21/2017 01:36 AM
Barium	70	0.070	1.0		µg/L	1	12/21/2017 01:36 AM
Beryllium	ND	0.22	2.5		µg/L	5	12/21/2017 01:42 AM
Cadmium	ND	0.047	0.50		µg/L	1	12/21/2017 01:36 AM
Cobalt	ND	0.026	0.50		µg/L	1	12/21/2017 01:36 AM
Copper	ND	0.26	1.0		µg/L	1	12/22/2017 05:51 PM
Lead	ND	0.18	5.0		µg/L	5	12/21/2017 01:42 AM
Manganese	ND	0.056	0.50		µg/L	1	12/21/2017 01:36 AM
Molybdenum	8.9	0.19	2.5		µg/L	5	12/21/2017 01:42 AM
Nickel	ND	0.040	1.0		µg/L	1	12/21/2017 01:36 AM
Selenium	1.1	0.028	0.50		µg/L	1	1/2/2018 04:37 PM
Silver	ND	0.30	2.5		µg/L	5	12/21/2017 01:42 AM
Thallium	ND	0.15	2.5		µg/L	5	12/21/2017 01:42 AM
Vanadium	2.7	0.021	1.0		µg/L	1	12/21/2017 01:36 AM
Zinc	ND	0.27	10		µg/L	1	12/22/2017 05:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-002

Client Sample ID: MW-35-135-Q417
Collection Date: 12/8/2017 8:28:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_171220B** QC Batch: **66021** PrepDate **12/12/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.031	0.50		µg/L	1	12/21/2017 02:38 AM
Arsenic	0.84	0.025	0.10		µg/L	1	12/21/2017 02:38 AM
Barium	35	0.070	1.0		µg/L	1	12/21/2017 02:38 AM
Beryllium	ND	0.043	0.50		µg/L	1	12/21/2017 02:38 AM
Cadmium	ND	0.047	0.50		µg/L	1	12/21/2017 02:38 AM
Cobalt	ND	0.026	0.50		µg/L	1	12/21/2017 02:38 AM
Copper	ND	0.26	1.0		µg/L	1	12/22/2017 06:34 PM
Lead	ND	0.18	5.0		µg/L	5	12/21/2017 02:44 AM
Manganese	4.9	0.056	0.50		µg/L	1	12/21/2017 02:38 AM
Molybdenum	24	0.039	0.50		µg/L	1	12/21/2017 02:38 AM
Nickel	ND	0.040	1.0		µg/L	1	12/21/2017 02:38 AM
Selenium	1.1	0.028	0.50		µg/L	1	1/2/2018 04:43 PM
Silver	ND	0.059	0.50		µg/L	1	12/21/2017 02:38 AM
Thallium	ND	0.15	2.5		µg/L	5	12/21/2017 02:44 AM
Vanadium	1.6	0.021	1.0		µg/L	1	12/21/2017 02:38 AM
Zinc	ND	0.27	10		µg/L	1	12/22/2017 06:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-003

Client Sample ID: MW-23-060-Q417
Collection Date: 12/8/2017 10:48:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Arsenic	4.0	0.025	0.10		µg/L	1	12/21/2017 02:49 AM
Manganese	3.5	0.056	0.50		µg/L	1	1/2/2018 04:48 PM
Molybdenum	23	0.039	0.50		µg/L	1	12/21/2017 02:49 AM
Selenium	4.8	0.028	0.50		µg/L	1	1/2/2018 04:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-004

Client Sample ID: MW-23-080-Q417
Collection Date: 12/8/2017 10:12:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Arsenic	4.9	0.025	0.10		µg/L	1	12/21/2017 03:00 AM
Manganese	4.2	0.056	0.50		µg/L	1	12/21/2017 03:00 AM
Molybdenum	40	0.19	2.5		µg/L	5	12/21/2017 03:06 AM
Selenium	5.1	0.14	2.5		µg/L	5	1/2/2018 07:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-005

Client Sample ID: MW-50-095-Q417
Collection Date: 12/8/2017 9:24:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	1.1	0.056	0.50		µg/L	1	12/21/2017 03:12 AM
Molybdenum	17	0.039	0.50		µg/L	1	12/21/2017 03:12 AM
Selenium	0.82	0.028	0.50		µg/L	1	1/2/2018 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-006

Client Sample ID: MW-50-200-Q417
Collection Date: 12/8/2017 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	4.6	0.056	0.50		µg/L	1	12/21/2017 03:23 AM
Molybdenum	42	0.19	2.5		µg/L	5	12/21/2017 03:56 AM
Selenium	2.6	0.14	2.5		µg/L	5	1/2/2018 06:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-007

Client Sample ID: MW-19-Q417
Collection Date: 12/8/2017 9:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	ND	0.056	0.50		µg/L	1	12/21/2017 04:02 AM
Molybdenum	10	0.039	0.50		µg/L	1	12/21/2017 04:02 AM
Selenium	3.6	0.028	0.50		µg/L	1	1/2/2018 05:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-008

Client Sample ID: MW-25-Q417
Collection Date: 12/8/2017 10:42:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180102A**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Arsenic	1.2	0.025	0.10		µg/L	1	1/2/2018 05:19 PM
Manganese	ND	0.056	0.50		µg/L	1	12/21/2017 04:13 AM
Molybdenum	4.7	0.039	0.50		µg/L	1	12/21/2017 04:13 AM
Selenium	7.6	0.028	0.50		µg/L	1	1/2/2018 05:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-009

Client Sample ID: MW-919-Q417
Collection Date: 12/8/2017 9:26:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	1.9	0.056	0.50		µg/L	1	12/21/2017 04:24 AM
Molybdenum	26	0.19	2.5		µg/L	5	12/21/2017 04:30 AM
Selenium	ND	0.14	2.5		µg/L	5	1/2/2018 05:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-010

Client Sample ID: OW-03D-Q417
Collection Date: 12/8/2017 9:21:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	2.0	0.056	0.50		µg/L	1	12/21/2017 04:36 AM
Molybdenum	25	0.19	2.5		µg/L	5	12/21/2017 04:41 AM
Selenium	ND	0.14	2.5		µg/L	5	1/2/2018 05:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-011

Client Sample ID: OW-03M-Q417
Collection Date: 12/8/2017 8:41:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	2.0	0.056	0.50		µg/L	1	12/21/2017 04:47 AM
Molybdenum	16	0.19	2.5		µg/L	5	12/21/2017 05:03 AM
Selenium	ND	0.14	2.5		µg/L	5	1/2/2018 05:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-012

Client Sample ID: OW-03S-Q417
Collection Date: 12/8/2017 10:13:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	ND	0.056	0.50		µg/L	1	12/21/2017 05:09 AM
Molybdenum	6.1	0.039	0.50		µg/L	1	12/21/2017 05:09 AM
Selenium	5.3	0.028	0.50		µg/L	1	1/2/2018 05:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-013

Client Sample ID: MW-37D-Q417
Collection Date: 12/8/2017 9:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	5.9	0.056	0.50		µg/L	1	12/21/2017 05:20 AM
Molybdenum	53	0.19	2.5		µg/L	5	12/21/2017 05:26 AM
Selenium	ND	0.14	2.5		µg/L	5	1/2/2018 05:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-014

Client Sample ID: MW-37S-Q417
Collection Date: 12/8/2017 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Arsenic	1.8	0.025	0.10		µg/L	1	12/21/2017 05:32 AM
Manganese	ND	0.056	0.50		µg/L	1	12/21/2017 05:32 AM
Molybdenum	15	0.19	2.5		µg/L	5	12/21/2017 05:38 AM
Selenium	ND	0.14	2.5		µg/L	5	1/2/2018 06:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-015

Client Sample ID: MW-13-Q417
Collection Date: 12/8/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	12/21/2017 05:44 AM
Manganese	160	0.056	0.50		µg/L	1	12/21/2017 05:44 AM
Molybdenum	14	0.039	0.50		µg/L	1	12/21/2017 05:44 AM
Selenium	3.1	0.028	0.50		µg/L	1	1/2/2018 06:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-016

Client Sample ID: MW-20-100-Q417
Collection Date: 12/8/2017 8:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	ND	0.056	0.50		µg/L	1	12/21/2017 05:49 AM
Molybdenum	4.7	0.039	0.50		µg/L	1	12/21/2017 05:49 AM
Selenium	5.3	0.028	0.50		µg/L	1	1/2/2018 06:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-017

Client Sample ID: MW-905-Q417
Collection Date: 12/8/2017 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	ND	0.056	0.50		µg/L	1	12/21/2017 06:14 AM
Molybdenum	4.8	0.039	0.50		µg/L	1	12/21/2017 06:14 AM
Selenium	5.0	0.14	2.5		µg/L	5	1/2/2018 07:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-018

Client Sample ID: PGE-07BR-Q417
Collection Date: 12/8/2017 10:57:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Manganese	3800	1.4	12		µg/L	25	12/21/2017 06:53 AM
Molybdenum	ND	0.19	2.5		µg/L	5	12/21/2017 06:30 AM
Selenium	ND	0.14	2.5		µg/L	5	1/2/2018 06:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027459
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027459-019

Client Sample ID: MW-24BR-Q417
Collection Date: 12/8/2017 11:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_171220B**	QC Batch: **66021**			PrepDate	**12/12/2017**		Analyst: **CEI**
Arsenic	0.37	0.025	0.10		µg/L	1	12/21/2017 06:36 AM
Manganese	140	0.056	0.50		µg/L	1	12/21/2017 06:36 AM
Molybdenum	58	0.19	2.5		µg/L	5	12/21/2017 06:41 AM
Selenium	ND	0.14	2.5		µg/L	5	1/2/2018 06:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66021** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/12/2017** RunNo: **121008**
Client ID: **PBW** Batch ID: **66021** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/21/2017** SeqNo: **2876444**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	0.105	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	0.085	0.50									
Lead	ND	1.0									
Manganese	0.072	0.50									
Molybdenum	ND	0.50									
Nickel	ND	1.0									
Silver	ND	0.50									
Thallium	0.092	0.50									
Vanadium	ND	1.0									

Sample ID **LCS-66021** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **12/12/2017** RunNo: **121008**
Client ID: **LCSW** Batch ID: **66021** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **12/21/2017** SeqNo: **2876445**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.548	0.50	10.00	0	95.5	85	115				
Arsenic	9.896	0.10	10.00	0	99.0	85	115				
Barium	10.416	1.0	10.00	0	104	85	115				
Beryllium	9.481	0.50	10.00	0	94.8	85	115				
Cadmium	10.158	0.50	10.00	0	102	85	115				
Cobalt	9.982	0.50	10.00	0	99.8	85	115				
Lead	9.735	1.0	10.00	0	97.3	85	115				
Manganese	98.538	0.50	100.0	0	98.5	85	115				
Molybdenum	9.623	0.50	10.00	0	96.2	85	115				
Nickel	10.779	1.0	10.00	0	108	85	115				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	LCS-66021	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121008
Client ID:	LCSW	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876445

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	9.626	0.50	10.00	0	96.3	85	115				
Thallium	10.591	0.50	10.00	0	106	85	115				
Vanadium	10.753	1.0	10.00	0	108	85	115				

Sample ID	N027459-001C-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121008
Client ID:	ZZZZZZ	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876451

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.631	0.50	10.00	0.07316	95.6	75	125				
Arsenic	10.609	0.10	10.00	0.9945	96.1	75	125				
Barium	75.895	1.0	10.00	70.12	57.7	75	125				S
Cadmium	8.858	0.50	10.00	0	88.6	75	125				
Cobalt	8.550	0.50	10.00	0	85.5	75	125				
Manganese	90.680	0.50	100.0	0	90.7	75	125				
Nickel	9.057	1.0	10.00	0	90.6	75	125				
Vanadium	12.878	1.0	10.00	2.691	102	75	125				

Sample ID	N027459-001C-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121008
Client ID:	ZZZZZZ	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876452

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	10.437	2.5	10.00	0	104	75	125				
Lead	9.982	5.0	10.00	0	99.8	75	125				
Molybdenum	19.691	2.5	10.00	8.946	107	75	125				
Silver	10.663	2.5	10.00	0	107	75	125				
Thallium	9.843	2.5	10.00	0	98.4	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027459-001C-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121008
Client ID:	ZZZZZZ	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876453

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.603	0.50	10.00	0.07316	95.3	75	125	9.631	0.296	20	
Arsenic	10.586	0.10	10.00	0.9945	95.9	75	125	10.61	0.221	20	
Barium	76.891	1.0	10.00	70.12	67.7	75	125	75.89	1.30	20	S
Cadmium	8.843	0.50	10.00	0	88.4	75	125	8.858	0.173	20	
Cobalt	8.441	0.50	10.00	0	84.4	75	125	8.550	1.28	20	
Manganese	90.165	0.50	100.0	0	90.2	75	125	90.68	0.569	20	
Nickel	8.797	1.0	10.00	0	88.0	75	125	9.057	2.91	20	
Vanadium	12.767	1.0	10.00	2.691	101	75	125	12.88	0.861	20	

Sample ID	N027459-001C-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121008
Client ID:	ZZZZZZ	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876456

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	10.003	2.5	10.00	0	100	75	125	10.39	3.77	20	
Lead	9.977	5.0	10.00	0	99.8	75	125	10.21	2.32	20	
Molybdenum	19.504	2.5	10.00	8.946	106	75	125	20.55	5.24	20	
Silver	10.413	2.5	10.00	0	104	75	125	9.779	6.29	20	
Thallium	9.400	2.5	10.00	0	94.0	75	125	9.715	3.30	20	

Sample ID	MB-66021	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121154
Client ID:	PBW	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2881328

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	1.0									
Zinc	ND	10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	LCS-66021	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121154
Client ID:	LCSW	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2881329

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	10.698	1.0	10.00	0	107	85	115				
Zinc	96.775	10	100.0	0	96.8	85	115				

Sample ID	N027459-001C-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121154
Client ID:	ZZZZZZ	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2881335

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	4.579	1.0	10.00	0	45.8	75	125				S
Zinc	95.517	10	100.0	0	95.5	75	125				

Sample ID	N027459-001C-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121154
Client ID:	ZZZZZZ	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2881336

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	4.688	1.0	10.00	0	46.9	75	125	4.579	2.36	20	S
Zinc	95.759	10	100.0	0	95.8	75	125	95.52	0.253	20	

Sample ID	MB-66021	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121160
Client ID:	PBW	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2881588

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	LCS-66021	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121160
Client ID:	LCSW	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2881589

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.567	0.50	10.00	0	106	85	115				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027459-001C-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121160
Client ID:	ZZZZZZ	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2881593

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.865	0.50	10.00	1.106	87.6	75	125				

Sample ID	N027459-001C-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/12/2017	RunNo:	121160
Client ID:	ZZZZZZ	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2881596

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.114	0.50	10.00	1.106	90.1	75	125	9.865	2.49	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-060-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 9:14:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **NV00922-AA1_171211D**	QC Batch: **65990**			PrepDate	**12/11/2017**		Analyst: **MG**
Mercury	ND	0.087	0.20		µg/L	1	12/11/2017 04:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-135-Q417
Lab Order:	N027459	**Collection Date:**	12/8/2017 8:28:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027459-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **NV00922-AA1_171211D**	QC Batch: **65990**			PrepDate	**12/11/2017**		Analyst: **MG**
Mercury	ND	0.087	0.20		µg/L	1	12/11/2017 04:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID	MB-65990	SampType:	MBLK	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/11/2017	RunNo:	120738
Client ID:	PBW	Batch ID:	65990	TestNo:	EPA 7470A			Analysis Date:	12/11/2017	SeqNo:	2863464

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID	LCS-65990	SampType:	LCS	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/11/2017	RunNo:	120738
Client ID:	LCSW	Batch ID:	65990	TestNo:	EPA 7470A			Analysis Date:	12/11/2017	SeqNo:	2863465

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.934	0.20	5.000	0	98.7	85	115				

Sample ID	N027437-002BMS	SampType:	MS	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/11/2017	RunNo:	120738
Client ID:	ZZZZZZ	Batch ID:	65990	TestNo:	EPA 7470A			Analysis Date:	12/11/2017	SeqNo:	2863466

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.165	0.20	5.000	0.1394	101	75	125				

Sample ID	N027437-002BMSD	SampType:	MSD	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/11/2017	RunNo:	120738
Client ID:	ZZZZZZ	Batch ID:	65990	TestNo:	EPA 7470A			Analysis Date:	12/11/2017	SeqNo:	2863467

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.162	0.20	5.000	0.1394	100	75	125	5.165	0.0674	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Page 1 of 3

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Global ID: Specify State:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	
Submitted By: Gantt Jeffers	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	
Title: Geologist II			
Signature: Date: 12/8/2017	Sampled By: Gantt Jeffers		
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*		
Project Name: PG&E Topock - GMP	Signature: Date: 12/8/2017		
Project Number: RC000753.801B			

Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface

Sample Receipt Condition

	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact	✓	
4. Seal Present	✓	
5. IR number	2	
6. Method of Cooling: Ice		

Sample Temp: 3.1°C/4.0°C/2.8°C

Courier:

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM; 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3; 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4; 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0); 1 liter poly	Specific Conductance (EPA 120.1); 1 liter poly	Total Dissolved Solids (SM2540C); 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B); 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027459-01	MW-35-060-Q417	12/8/2017	9:14		X		X				X	X				X	X	X	X	X	E	5	P	BNS	
2	-02	MW-35-135-Q417	12/8/2017	8:28		X		X				X	X				X	X	X	X	X	E	5	P	BNS	
3	-03	MW-23-060-Q417	12/8/2017	10:48		X			X		X							X	X	X	X	E	3	P	BN	
4	-04	MW-23-080-Q417	12/8/2017	10:12		X			X		X							X	X	X	X	E	3	P	BN	
5	-05	MW-50-095-Q417	12/8/2017	9:24		X					X						X	X	X	X	X	E	3	P	BN	
6	-06	MW-50-200-Q417	12/8/2017	8:45		X					X						X	X	X	X	X	E	3	P	BN	
7	-07	MW-19-Q417	12/8/2017	9:58		X					X						X	X	X	X	X	E	3	P	BN	
8	-08	MW-25-Q417	12/8/2017	10:42		X		X	X	X	X							X	X	X	X	E	5	P	BNS	
9	-09	MW-919-Q417	12/8/2017	9:26		X					X						X	X	X	X	X	E	3	P	BN	
10	-10	OW-03D-Q417	12/8/2017	9:21		X					X						X	X	X	X	X	E	3	P	BN	

Relinquished by (Signature and Printed Name): G. Jeffers Date/Time: 12.8.17 1651

Relinquished by (Signature and Printed Name): Date/Time: 12/8/17 @ 1151

Relinquished by (Signature and Printed Name): Date/Time: 12/8/17 @ 1430

Relinquished by (Signature and Printed Name): Joanna Reyes Date/Time: 12/8/17 14:30

Relinquished by (Signature and Printed Name): Date/Time:

Relinquished by (Signature and Printed Name): Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B = (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	
Title: Geologist II	Phone: 916-786-3302 Fax:		
Signature: Date: 12/8/2017	Sampled By: Gantt Jeffers		

I hereby authorize ASSET Labs to perform the tests indicated below.

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Project Name: PG&E Topock - GMP

Signature: Date: 12/8/2017

Project Number: RC000753.801B

Matrix: Ground x; Potable; NPDES; Surface; Sediment; Soil; Other Solid

Sample Receipt Condition

	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact	✓	
4. Seal Present		✓
5. IR number	2	

6. Method of Cooling: Ice

Sample Temp: 3.1°c / 4.0°c / 2.8°c

Courier:

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM; 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3; 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4; 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0); 1 liter poly	Specific Conductance (EPA 120.1); 1 liter poly	Total Dissolved Solids (SM2540C); 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B); 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027459-11	OW-03M-Q417	12/8/2017	8:41		X					X					X			X	X	X	X	E	3	P	BN	
2	-12	OW-03S-Q417	12/8/2017	10:13		X					X					X			X	X	X	X	E	3	P	BN	
3	-13	MW-37D-Q417	12/8/2017	9:25		X					X					X		X	X	X	X	X	E	4	P	BNS	
4	-14	MW-37S-Q417	12/8/2017	10:15		X			X		X								X	X	X	X	E	3	P	BN	
5	-15	MW-13-Q417	12/8/2017	11:15		X			X		X								X	X	X	X	E	3	P	BN	
6	-16	MW-20-100-Q417	12/8/2017	8:15		X		X		X	X					X		X	X	X	X	X	E	5	P	BNS	
7	-17	MW-905-Q417	12/8/2017	8:25		X		X		X	X					X		X	X	X	X	X	E	5	P	BNS	
8	-18	PGE-07BR-Q417	12/8/2017	10:57		X					X					X			X	X	X	X	E	3	P	BN	
9	-19	MW-24BR-Q417	12/8/2017	11:25		X			X		X							X	X	X	X	X	E	4	P	BNS	
10	-20	MW-725-Q417	12/8/2017	11:30		X																	E	1	P	B	

Relinquished by (Signature and Printed Name): Gantt Jeffers Date/Time: 12.8.17 1151

Relinquished by (Signature and Printed Name): Date/Time: 12/8/17 @ 1151

Relinquished by (Signature and Printed Name): Date/Time: 12/8/17 @ 1430

Relinquished by (Signature and Printed Name): Joanna Reliquez Date/Time: 12/8/17 14:30

Relinquished by (Signature and Printed Name): Date/Time:

Relinquished by (Signature and Printed Name): Date/Time:

Turn Around Time (TAT)

- A = < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B = (NH4)2SO4/NH4OH		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/8/2017	Workorder:	N027459
Rep sample Temp (Deg C):	3.1/4.0/2.8	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: N/A Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 12/19/2017 Reviewed By: 12/21/2017

ASSET Laboratories

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-001A	MW-35-060-Q417	12/8/2017 9:14:00 AM	12/22/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-001B			12/22/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027459-001C			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017			DISSOLVED MERCURY PREP	☐	☐	☐	WW
			12/22/2017		EPA 7470A	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N027459-001D			12/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027459-001E			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-002A	MW-35-135-Q417	12/8/2017 8:28:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-002B			12/22/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027459-002C			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-002C	MW-35-135-Q417	12/8/2017 8:28:00 AM	12/22/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017			DISSOLVED MERCURY PREP	☐	☐	☐	WW
			12/22/2017		EPA 7470A	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N027459-002D			12/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027459-002E			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-003A	MW-23-060-Q417	12/8/2017 10:48:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-003B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-003C	MW-23-060-Q417	12/8/2017 10:48:00 AM	12/22/2017	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-004A	MW-23-080-Q417	12/8/2017 10:12:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-004B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-004C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-005A	MW-50-095-Q417	12/8/2017 9:24:00 AM	12/22/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-005B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-005C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-006A	MW-50-200-Q417	12/8/2017 8:45:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-006B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-006C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-006C	MW-50-200-Q417	12/8/2017 8:45:00 AM	12/22/2017	Groundwater		Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-007A	MW-19-Q417	12/8/2017 9:58:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-007B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-007C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-008A	MW-25-Q417	12/8/2017 10:42:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-008B			12/22/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-008C	MW-25-Q417	12/8/2017 10:42:00 AM	12/22/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-008D			12/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027459-008E			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-009A	MW-919-Q417	12/8/2017 9:26:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-009B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-009C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-009C	MW-919-Q417	12/8/2017 9:26:00 AM	12/22/2017	Groundwater		Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-010A	OW-03D-Q417	12/8/2017 9:21:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-010B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-010C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-011A	OW-03M-Q417	12/8/2017 8:41:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-011B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-011B	OW-03M-Q417	12/8/2017 8:41:00 AM	12/22/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-011C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-012A	OW-03S-Q417	12/8/2017 10:13:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-012B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-012C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-012C	OW-03S-Q417	12/8/2017 10:13:00 AM	12/22/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-013A	MW-37D-Q417	12/8/2017 9:25:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-013B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-013C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-013D			12/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027459-014A	MW-37S-Q417	12/8/2017 10:15:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-014B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-014B	MW-37S-Q417	12/8/2017 10:15:00 AM	12/22/2017	Groundwater	EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-014C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-015A	MW-13-Q417	12/8/2017 11:15:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-015B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-015C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-015C	MW-13-Q417	12/8/2017 11:15:00 AM	12/22/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-016A	MW-20-100-Q417	12/8/2017 8:15:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-016B			12/22/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027459-016C			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-016D			12/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027459-016E			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-017A	MW-905-Q417	12/8/2017 8:25:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-017B			12/22/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027459-017C			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-017C	MW-905-Q417	12/8/2017 8:25:00 AM	12/22/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-017D			12/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027459-017E			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-018A	PGE-07BR-Q417	12/8/2017 10:57:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-018B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-018C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-018C	PGE-07BR-Q417	12/8/2017 10:57:00 AM	12/22/2017	Groundwater	SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N027459-019A	MW-24BR-Q417	12/8/2017 11:25:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-019B			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027459-019C			12/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/22/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N027459-019D			12/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027459-020A	MW-725-Q417	12/8/2017 11:30:00 AM	12/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027459-021A	FOLDER	12/22/2017	12/22/2017		EDD	RWQCB	☐	☐	☐	LAB
			12/22/2017		Folder	Folder	☐	☐	☐	LAB

WORK ORDER Summary

11-Dec-17

WorkOrder: N027459

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027459-021A	FOLDER	12/22/2017	12/22/2017		Folder	Folder	☐	☐	☐	LAB

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (760) 781 3338
FAX: (805) 544-8226
Acct #:

Field Sampler: Gantt Jeffers

11-Dec-17

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				OXY_DEUT		
N027459-001B / MW-35-060-Q417	Groundwater	12/8/2017 9:14:00 AM	8OZP	1		
N027459-002B / MW-35-135-Q417	Groundwater	12/8/2017 8:28:00 AM	8OZP	1		
N027459-008B / MW-25-Q417	Groundwater	12/8/2017 10:42:00 AM	8OZP	1		
N027459-016B / MW-20-100-Q417	Groundwater	12/8/2017 8:15:00 AM	8OZP	1		
N027459-017B / MW-905-Q417	Groundwater	12/8/2017 8:25:00 AM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N27459A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Oxygen and Deuterium Stable Isotopes SFIRM. EDD Requirement Labspec7 edata.

Fedex #: 770961567484

		Date/Time			Date/Time
Relinquished by:		12/11/2017 16:00		**Received by:**	
Relinquished by:				**Received by:**	

List of Analysts

ASSET Laboratories Work Order: N027459

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6010B_Dissolved, EPA 6020_Dissolved
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	EPA 120.1, SM 2540C, SM 2320 B
Mark Gesmundo	EPA 7470A_Dissolved

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120750/R120751 **Analyst:** LSR

ASSET #: N027459 **Date Analyzed:** 12/8/2017

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 12/22/2017

2nd Level Reviewer: 01/03/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 12/5/17 1700

Analyst: LSR

CONT'D

Standard	Std ID	Reading	Comments
9.43 uS/cm	CNW-1710KA	9.41 @ 21.1°C	% Rec: (90-110%)
1410	1708226	1421 @ 21.3°C	
9986	1710183	10070 @ 21.4°C	
99672	1710226E	99730 @ 21.4°C	

	Sample ID	Matrix	Reading	Comments
1	NO27430-020C	H2O	4780 @ 20.9°C	
2	NO27431-001C		2030 @ 20.7°C	
3	2C		7430 @ 20.9°C	
4	3C		13350 @ 21.1°C	
5	4C		13300 @ 21.1°C	
6	5C		1658 @ 20.8°C	
7	6C		7120 @ 20.9°C	
8	NO27459-001E		5280 @ 20.8°C	
9	2E		8080 @ 20.0°C	
10	3C		11690 @ 19.8°C	
Dup	3C DUP		11670 @ 19.8°C	Accept: 10% water, 20% soil
40	Std Chk:			% Rec: (90-110%)

Date: CONT'D

Analyst:

Silvia Ramit 12/21/2017

RB 01/03/2018

Standard	Std ID	Reading	Comments
1413 uS/cm	CNW-1706156	1473 @ 20.6°C	% Rec: (90-110%)
10000	170822F	10190 @ 20.9°C	
99672	170831B	97900 @ 21.1°C	

	Sample ID	Matrix	Reading	Comments
1	NO27459-004C	H2O	11950 @ 20.2°C	
2	5C		4460 @ 20.1°C	
3	6C		14570 @ 20.1°C	1413 CNW 1706156
4	6C DUP		14560 @ 20.0°C	= 1464 @ 21.1°C
5	7C		1788 @ 20.2°C	10000 CNW 170822F
6	8E		1647 @ 20.1°C	= 10250 @ 21.6°C
7	9C		7140 @ 20.2°C	99672 CNW 170831B
8	10C		7330 @ 20.2°C	= 98500 @ 21.6°C
9	11C		5200 @ 20.6°C	
10	12C		1269 @ 20.7°C	
Dup	13C		10580 @ 20.4°C	Accept: 10% water, 20% soil
50	Std Chk:			% Rec: (90-110%)

ASSET LABORATORIES
erving Clients with Passion and Professionalism
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert

Conductivity Logbook

Date: 12/8/17 1700

Analyst: LSR (CONT'D)

Standard	Std ID	Reading	Comments
9.43 µS/cm	CINV - 171018A	1.42 @ 21.1°C	% Rec: (90-110%)
1410	170887C	1424 @ 21.3°C	
9986	171018B	10070 @ 21.4°C	
99672	170887F	99300 @ 21.4°C	

	Sample ID	Matrix	Reading	Comments
1	N0274J9-014C	H2O	5270 @ 20.8°C	
2	15C		2080 @ 20.4°C	
3	16E		1834 @ 20.1°C	1413 CINV 170615G
4	17E		1832 @ 19.8°C	= 1475 @ 21.2
5	18C		13670 @ 20.2°C	10000 CINV 170887F
6	18C DUP		13620 @ 20.0°C	= 10220 @ 21.4°C
7	19C		10620 @ 20.4°C	99672 CINV 170831B
8				= 98900 @ 21.5°C
9				
10				
Dup				Accept: 10% water, 20% soil
56	Std Chk:			% Rec: (90-110%)

Date: 12/12/17 1730

Analyst: LSR

Julia Ramit 12/22/2017

RB 01/03/2018

Standard	Std ID	Reading	Comments
9.43 µS/cm	CINV - 171018A	9.58 @ 21.9°C	% Rec: (90-110%)
1410	170887C	1423 @ 21.7°C	
9986	171018B	10220 @ 21.6°C	10220
99842	171218	101300 @ 21.6°C	

	Sample ID	Matrix	Reading	Comments
1	N0274B5-001D	H2O	3480 @ 20.7°C	
2	2D		12540 @ 20.3°C	
3	3D		11970 @ 20.2°C	1413 CINV 170615G
4	4D		12460 @ 20.2°C	= 1466 @ 21.1°C
5	5D		17560 @ 20.2°C	10000 CINV 170822F
6	5D DUP		17590 @ 19.9°C	= 10480 @ 21.1°C
7	6D		16390 @ 20.2°C	99672 CINV 170831B
8	7D		16350 @ 20.2°C	= 103900 @ 21.0°C
9	8D		2410 @ 20.0°C	
10	9D		7150 @ 20.0°C	
Dup	10D		7930 @ 20.0°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

ASSET LABORATORIES
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ELAP Cert 2921
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: ~~60055/60056~~ 66055, 66056 /66074 **Analyst:** LSR

ASSET #: N027459 **Date Analyzed:** 12/13/2017, 12/14/17

Method: EPA 160.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 12/21/2017

2nd Level Reviewer: RLB 01/03/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N027459-001E,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(53.7721 - 53.6972)*1000000}{20}$$

= 3745 mg/L

Reporting result in two significant figures,

TDS = 3700 mg/L

Julia Ramit 12/21/2017

RB 01/03/2018

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/13/2017 1:09:28**
Prep End Date:

Reviewed/ Date: RB 01/03/2018

Initials/ Date: Lilia Ramit 12/21/2017

Prep Batch **66055** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH (cond)	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66055	Water	lwsil 77211C	100	☐	0	0	100	1.000		
MB-66055	Water		100	☐	0	0	100	1.000		
N027430-015C	Groundwater	13810	100 /10	☐	0	0	100	1.000		
N027430-016C	Groundwater	13970	100 /10	☐	0	0	100	1.000		
N027430-017C	Groundwater	16670	100 /10	☐	0	0	100	1.000		
N027430-018C	Groundwater	24700	100 /5	☐	0	0	100	1.000		
N027430-018C-DU	Groundwater	1	100 /5	☐	0	0	100	1.000		
N027430-020C	Groundwater	4780	100 /30	☐	0	0	100	1.000		
N027459-001E	Groundwater	5280	100 /20	☐	0	0	100	1.000		
N027459-002E	Groundwater	8080	100 /20	☐	0	0	100	1.000		
N027459-003C	Groundwater	11690	100 /10	☐	0	0	100	1.000		
N027459-004C	Groundwater	11950	100 /10	☐	0	0	100	1.000		
N027459-005C	Groundwater	4460	100 /30	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

96616

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/13/2017 1:09:28**
Prep End Date: **12/14/2017 11:00:0**

Reviewed/ Date: RB 01/03/2018
Initials/ Date: Julia Ramit 12/21/2017

Prep Batch **66055** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66055	Water		100	☐	0	0	100	1.000		
MB-66055	Water		100	☐	0	0	100	1.000		
N027430-015C	Groundwater		10	☐	0	0	100	10.000		
N027430-016C	Groundwater		10	☐	0	0	100	10.000		
N027430-017C	Groundwater		10	☐	0	0	100	10.000		
N027430-018C	Groundwater		5	☐	0	0	100	20.000		
N027430-018C-DU	Groundwater		5	☐	0	0	100	20.000		
N027430-020C	Groundwater		30	☐	0	0	100	3.333		
N027459-001E	Groundwater		20	☐	0	0	100	5.000		
N027459-002E	Groundwater		20	☐	0	0	100	5.000		
N027459-003C	Groundwater		10	☐	0	0	100	10.000		
N027459-004C	Groundwater		10	☐	0	0	100	10.000		
N027459-005C	Groundwater		30	☐	0	0	100	3.333		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9666	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171211C	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/13/2017 1:09:31**
Prep End Date:

Reviewed/ Date: RB 01/03/2018
Initials/ Date: Lilia Ramit 12/21/2017

Prep Batch **66056** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH (Low)	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66056	Water	IWSF171211C	100	☐	0	0	100	1.000		
MB-66056	Water		100	☐	0	0	100	1.000		
N027459-006C	Groundwater	1457	100 /10	☐	0	0	100	1.000		
N027459-006C-DU	Groundwater	1	100 /10	☐	0	0	100	1.000		
N027459-007C	Groundwater	1782	100 /75	☐	0	0	100	1.000		
N027459-008E	Groundwater	1647	100 /75	☐	0	0	100	1.000		
N027459-009C	Groundwater	7140	100 /20	☐	0	0	100	1.000		
N027459-010C	Groundwater	7220	100 /20	☐	0	0	100	1.000		
N027459-011C	Groundwater	5200	100 /20	☐	0	0	100	1.000		
N027459-012C	Groundwater	1269	100	☐	0	0	100	1.000		
N027459-013C	Groundwater	16580	100 /10	☐	0	0	100	1.000		
N027459-014C	Groundwater	5270	100 /20	☐	0	0	100	1.000		
N027459-015C	Groundwater	2080	100 /60	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9666

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/13/2017 1:09:31**
Prep End Date: **12/14/2017 11:00:0**

Reviewed/ Date: RLB 01/03/2018

Initials/ Date: Lilia Ramit 12/21/2017

Prep Batch **66056** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66056	Water		100	☐	0	0	100	1.000		
MB-66056	Water		100	☐	0	0	100	1.000		
N027459-006C	Groundwater		10	☐	0	0	100	10.000		
N027459-006C-DU	Groundwater		10	☐	0	0	100	10.000		
N027459-007C	Groundwater		75	☐	0	0	100	1.333		
N027459-008E	Groundwater		75	☐	0	0	100	1.333		
N027459-009C	Groundwater		20	☐	0	0	100	5.000		
N027459-010C	Groundwater		20	☐	0	0	100	5.000		
N027459-011C	Groundwater		20	☐	0	0	100	5.000		
N027459-012C	Groundwater		100	☐	0	0	100	1.000		
N027459-013C	Groundwater		10	☐	0	0	100	10.000		
N027459-014C	Groundwater		20	☐	0	0	100	5.000		
N027459-015C	Groundwater		60	☐	0	0	100	1.667		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9666	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171211C	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/14/2017 1:07:13**
Prep End Date:

Reviewed/ Date: RB 01/03/2018
Initials/ Date: Lilia Ramit 12/21/2017

Prep Batch **66074** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH (Lot# 171711C)	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66074	Water		100	☐	0	0	100	1.000		
MB-66074	Water		100	☐	0	0	100	1.000		
N027431-001C 0.0175	Groundwater	2030	100 / 60	☐	0	0	100	1.000		
N027431-002C	Groundwater	7430	100 / 20	☐	0	0	100	1.000		
N027431-003C	Groundwater	13350	100 / 10	☐	0	0	100	1.000		
N027431-004C	Groundwater	13300	100 / 10	☐	0	0	100	1.000		
N027431-005C	Groundwater	1658	100 / 75	☐	0	0	100	1.000		
N027431-006C	Groundwater	7120	100 / 20	☐	0	0	100	1.000		
N027459-016E	Groundwater	1834	100 / 75	☐	0	0	100	1.000		
N027459-017E	Groundwater	1832	100 / 75	☐	0	0	100	1.000		
N027459-018C	Groundwater	13670	100 / 10	☐	0	0	100	1.000		
N027459-018C-DU	Groundwater	1	100 / 10	☐	0	0	100	1.000		
N027459-019C	Groundwater	10620	100 / 10	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9464

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/14/2017 1:07:13**
Prep End Date: **12/15/2017 11:15:0**

Reviewed/ Date: RLB 01/03/2018
Initials/ Date: Lilia Ramit 12/21/2017

Prep Batch **66074** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66074	Water		100	☐	0	0	100	1.000		
MB-66074	Water		100	☐	0	0	100	1.000		
N027431-001C	Groundwater		60	☐	0	0	100	1.667		
0.0175										
N027431-002C	Groundwater		20	☐	0	0	100	5.000		
N027431-003C	Groundwater		10	☐	0	0	100	10.000		
N027431-004C	Groundwater		10	☐	0	0	100	10.000		
N027431-005C	Groundwater		75	☐	0	0	100	1.333		
N027431-006C	Groundwater		20	☐	0	0	100	5.000		
N027459-016E	Groundwater		75	☐	0	0	100	1.333		
N027459-017E	Groundwater		75	☐	0	0	100	1.333		
N027459-018C	Groundwater		10	☐	0	0	100	10.000		
N027459-018C-DU	Groundwater		10	☐	0	0	100	10.000		
N027459-019C	Groundwater		10	☐	0	0	100	10.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9666	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171211C	1000 ppm NaCl	LCS	100

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/13/17 1309 CC	MB 66055	100	70.0663 70.0661	70.0662 70.0663	
EE	LCS 66055	100	68.2178 68.2175	68.3125 68.3128	
IK	NO27430-015C	10	62.4357 62.4353	62.5478 62.5482	
IS	16C	10	61.5250 61.5249	61.6290 61.6294	
A	17C	10	59.1298 59.1297	59.2537 59.2541	
16	18C	5	49.3552 49.3549	49.4636 49.4640	
C	18C DUP	5	50.3707 50.3706	50.4846 50.4844	
12	20C	30	53.6901 53.6905	53.7897 53.7901	
8	NO27459-001E	20	53.6969 53.6972	53.7717 53.7721	
CB	2E	20	53.5406 53.5406	53.6652 53.6655	

ASSET Laboratories

Logbook#8

Julia Ramit 12/21/2017

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/13/17 IF	NO 1712459-003C	10	60.6241 60.6238	60.7199 60.7203	
T	4C	10	46.0447 46.0443	46.1439 46.1442	
31	5C	30	63.3092 63.3089	63.4000 63.4004	
Julia Ramit	12/21/2017				

ASSET Laboratories

Logbook#8

RB 01/03/2018

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
12/14/2017									
MB-66055	100	70.0661	70.0663	2	1	2			MBLK
LCS-66055	100	68.2175	68.3128	953	1	953			LCS
N027430-015C	10	62.4353	62.5482	1129	10	11290	13810	0.818	SAMP
N027430-016C	10	61.5249	61.6294	1045	10	10450	13970	0.748	SAMP
N027430-017C	10	59.1297	59.2541	1244	10	12440	16670	0.746	SAMP
N027430-018C	5	49.3549	49.464	1091	20	21820	24700	0.883	SAMP
N027430-018CDUP	5	50.3706	50.4844	1138	20	22760	24700	0.921	DUP
N027430-020C	30	53.6905	53.7901	996	3.33333333	3320	4780	0.695	SAMP
N027459-001E	20	53.6972	53.7721	749	5	3745	5280	0.709	SAMP
N027459-002E	20	53.5406	53.6655	1249	5	6245	8080	0.773	SAMP
N027459-003C	10	60.6238	60.7203	965	10	9650	11690	0.825	SAMP
N027459-004C	10	46.0443	46.1442	999	10	9990	11950	0.836	SAMP
N027459-005C	30	63.3089	63.4004	915	3.33333333	3050	4460	0.684	SAMP

Divia Ramit 12/21/2017

RLB 01/03/2018

SOLIDS RAW DATA

TEST : TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/13/17 1309 KK	MB 66056	100	70.7409 70.7460	70.7461 70.7503	
LL	LCS 66056	100	68.9915 68.9911	68.0886 69.0890	
XX	NO27459-006C	10	49.6409 49.6405	49.7599 49.7603	
15	6C DUP	10	48.8871 48.8868	49.0119 49.0115	
LL	7C	75	76.1863 76.1859	76.2765 76.2768	
LL	8E	75	74.5188 74.5184	74.6043 74.6047	
FF	9C	20	68.2189 DUP 68.2108	68.3144 68.3148	
—	10C	20	60.5865 60.5870	60.6919 60.6923	
RR	11C	20	62.3296 62.3297	62.4004 62.4008	
LS	12C	100	76.5614 76.5611	76.6419 76.6428	

ASSET Laboratories

Logbook#8

Julia Ramit 12/21/2017

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt (g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt (g)	Comments
12/13/17 M	N027459-013C	10	49.0616 49.0616	49.1426 49.1429	
B	14C	20	54.4475 54.4479	54.5230 54.5235	
IX	15C	60	76.5985 76.5986	76.6813 76.6817	
Julia Ramit	12/21/2017				
RLB	01/03/2018				

Closing wt : 49.9997 12/13/17 @ 1107

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CALIFORNIA | P:562.219.7435 F:562.219.7436
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ELAP Cert 2921
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
- A = weight in grams of dish + residue after drying
- B = weight of dish in grams
- PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
12/14/2017									
MB-66056	100	70.74	70.7403	3	1	3			MBLK
LCS-66056	100	68.9911	69.089	979	1	979			LCS
N027459-006C	10	49.6405	49.7603	1198	10	11980	14570	0.822	SAMP
N027459-006CDUP	10	48.8868	49.0115	1247	10	12470	14570	0.856	DUP
N027459-007C	75	76.1859	76.2768	909	1.33333333	1212	1788	0.678	SAMP
N027459-008E	75	74.5184	74.6047	863	1.33333333	1150.66667	1647	0.699	SAMP
N027459-009C	20	68.2108	68.3148	1040	5	5200	7140	0.728	SAMP
N027459-010C	20	60.587	60.6923	1053	5	5265	7220	0.729	SAMP
N027459-011C	20	62.3297	62.4008	711	5	3555	5200	0.684	SAMP
N027459-012C	100	76.5611	76.6422	811	1	811	1269	0.639	SAMP
N027459-013C	10	49.0616	49.1429	813	10	8130	10580	0.768	SAMP
N027459-014C	20	54.4479	54.5235	756	5	3780	5270	0.717	SAMP
N027459-015C	60	76.5986	76.6817	831	1.66666667	1385	2080	0.666	SAMP

Silvia Ramit 12/21/2017

RB 01/03/2018

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/14/17 1317 LY	MB 66074	100	76.1837 76.1836	76.1834 76.1835	
LS	LCS 66074	100	76.5601 76.5599	76.6535 76.6537	
KL	N027431-001C	60	70.7384 70.7382	70.8182 70.8179	
9	2C	20	61.1397 61.1397	61.2460 61.2458	
IK	3C	10	62.4281 62.4278	62.5203 62.5204	
I5	4C	10	61.5226 61.5228	61.6252 61.6252	
IX	5C	75	76.5960 76.5957	76.6804 76.6805	
IW	6C	20	64.0197 64.0197	64.1291 64.1289	
L1	N027457-016E	75	74.5200 74.5196	74.6178 74.6177	
BB	17E	75	68.4625 68.4626	68.5615 68.5613	

ASSET Laboratories Logbook#8

Julia Ramit 12/21/2017

01/03/2018

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/14/17 IF	ND74594-018C	10	60.6234 60.6232	60.7283 12/15 60.7279	
A	18C DUP	10	59.1271 59.1268	59.2363 59.2360	
S	19C	10	45.7298 45.7298	45.8035 45.8032	
Silvia Ramit	12/21/2017				

RB 01/03/2018

ASSET LABORATORIES
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89
ELAP Cert 2676 | NV Cert NV00977

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
12/15/2017									
MB-66074	100	76.1836	76.1835	-1	1	-1			MBLK
LCS-66074	100	76.5599	76.6537	938	1	938			LCS
N027431-001C	60	70.7382	70.8179	797	1.66666667	1328.33333	2030	0.654	SAMP
N027431-002C	20	61.1397	61.2458	1061	5	5305	7430	0.714	SAMP
N027431-003C	10	62.4278	62.5204	926	10	9260	13350	0.694	SAMP
N027431-004C	10	61.5228	61.6252	1024	10	10240	13300	0.770	SAMP
N027431-005C	75	76.5957	76.6805	848	1.33333333	1130.66667	1658	0.682	SAMP
N027431-006C	20	64.0197	64.1289	1092	5	5460	7120	0.767	SAMP
N027459-016E	75	74.5196	74.6177	981	1.33333333	1308	1834	0.713	SAMP
N027459-017E	75	68.4626	68.5613	987	1.33333333	1316	1832	0.718	SAMP
N027459-018C	10	60.6232	60.7279	1047	10	10470	13670	0.766	SAMP
N027459-018CDUP	10	59.1268	59.236	1092	10	10920	13670	0.799	DUP
N027459-019C	10	45.7298	45.8032	734	10	7340	10620	0.691	SAMP

Julia Ramit 12/21/2017

RLB 01/03/2018

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120870
ASSET #: N027459

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 12/14/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?		X			X	
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?	X					
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments: **Dilution was necessary for N027459-004A and -013A due to matrix interference.**

N027429-001A (218.6) = <0.20 ug/L ; N027429-001B (6020) = 2.7 ug/L N027429-002A (218.6) = <0.078 ug/L ; N027429-002B (6020) = 8.7 ug/L
MS protocol performed. Recovery within criteria.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 12/19/2017

2nd Level Reviewer RLB 01/03/2018 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120903
ASSET #: N027459

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 12/15/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments: **Dilution was necessary for N027459-018A and -019A due to matrix interference.**

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 12/19/2017

2nd Level Reviewer RLB 01/03/2018 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N027459-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 4.2236 * 5$$

$$Cr^{+6}, \mu g/L = 21.12$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 21}$$

rba 12/19/2017

RLB 01/03/2018

ANALYSIS RUN LOG

INJECTION LOG: 171128A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/28/17 10:57 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/28/17 11:08 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/28/17 11:17 AM	Reported
13	MB-R120468	MBLK	1	Hexavalent Chromium	11/28/17 11:27 AM	Reported
14	LCS-R120468	LCS	1	Hexavalent Chromium	11/28/17 11:36 AM	Reported
15	N027215-001A	SAMP	1	Hexavalent Chromium	11/28/17 11:47 AM	Reported
16	N027215-002A	SAMP	1	Hexavalent Chromium	11/28/17 11:59 AM	Reported
17	N027215-003A	SAMP	1	Hexavalent Chromium	11/28/17 12:08 PM	Reported
18	N027215-004A	SAMP	1	Hexavalent Chromium	11/28/17 12:18 PM	Reported
19	N027215-005A	SAMP	1	Hexavalent Chromium	11/28/17 12:27 PM	Reported
20	N027215-002ADUP	DUP	1	Hexavalent Chromium	11/28/17 12:37 PM	Reported
21	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 12:46 PM	Not Reported
22	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 12:56 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	11/28/17 1:05 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/28/17 1:14 PM	Reported
25	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:04 PM	Not Reported
26	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:16 PM	Not Reported
27	N027215-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:29 PM	Reported
28	N027215-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:41 PM	Reported
29	CCV-2	CCV	1	Hexavalent Chromium	11/28/17 2:50 PM	Reported
30	CCB-2	CCB	1	Hexavalent Chromium	11/28/17 3:00 PM	Reported



Injection Log Summary

Sequence Details

Name:	**IC-07_171128A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**28/Nov/17 15:47:35**
No. of Injections:	**33**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		11/28/2017 10:57	Finished	ICV @5ppb, IWST-171002A
11	PQL@0.2ppb,CCV2,1	12	1000	Unknown		11/28/2017 11:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		11/28/2017 11:17	Finished	ICB R171114C
13	MB-H2O,MBLK,1	14	1000	Unknown		11/28/2017 11:27	Finished	MB R171114C
14	LCS-H2O,LCS,1	15	1000	Unknown		11/28/2017 11:36	Finished	LCS, IWST-171002B
15	N027215-001A,SAMP	17	1000	Unknown		11/28/2017 11:47	Finished	SAMP,10mL
16	N027215-002A,SAMP	18	1000	Unknown		11/28/2017 11:59	Finished	SAMP,10mL
17	N027215-003A,SAMP	19	1000	Unknown		11/28/2017 12:08	Finished	SAMP,10mL
18	N027215-004A,SAMP	20	1000	Unknown		11/28/2017 12:18	Finished	SAMP,10mL
19	N027215-005A,SAMP	21	1000	Unknown		11/28/2017 12:27	Finished	SAMP,10mL
20	N027215-002ADUP,D	22	1000	Unknown		11/28/2017 12:37	Finished	DUP,10mL
21	N027157-001AMS,MS	23	1000	Unknown		11/28/2017 12:46	Finished	MS (5ppb), IWST-171002B,10
22	N027157-001AMSD,M	24	1000	Unknown		11/28/2017 12:56	Finished	MSD (5ppb), IWST-171002B,1(
23	CCV-1,CCV1,1,	25	1000	Unknown		11/28/2017 13:05	Finished	CCV @10ppb, IWST-171002A
24	CCB-1,CCB,1,	26	1000	Unknown		11/28/2017 13:14	Finished	CCB R171031A
25	N027157-001AMS,MS	28	1000	Unknown		11/28/2017 14:04	Finished	MS (5ppb), IWST-171002B,10
26	N027157-001AMSD,M	29	1000	Unknown		11/28/2017 14:16	Finished	MSD (5ppb), IWST-171002B,1(
27	N027215-001AMS,MS	31	1000	Unknown		11/28/2017 14:29	Finished	MS (5ppb), IWST-171002B,10
28	N027215-001AMSD,M	32	1000	Unknown		11/28/2017 14:41	Finished	MSD (5ppb), IWST-171002B,1(
29	CCV-2,CCV,1,	33	1000	Unknown		11/28/2017 14:50	Finished	CCV @5ppb, IWST-171002A
30	CCB-2,CCB,1,	34	1000	Unknown		11/28/2017 15:00	Finished	CCB R171031A
31	SHUTDOWN	35	1000	Unknown		11/28/2017 15:09	Finished	
32	Eluent: R171128A	36	1000	Unknown		n.a.	Finished	Eluent
33	PCR: R171128B	37	1000	Unknown		n.a.	Finished	Post-Column Reagent

rba 11/29/2017

INJECTION LOG: 171214A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/14/17 8:50 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/14/17 9:01 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/14/17 9:10 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/14/17 9:20 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/14/17 9:29 AM	Reported
15	MB-R120870	MBLK	1	Hexavalent Chromium	12/14/17 9:39 AM	Reported
16	LCS-R120870	LCS	1	Hexavalent Chromium	12/14/17 9:48 AM	Reported
17	N027542-001B	SAMP	100	Hexavalent Chromium	12/14/17 10:06 AM	Reported
18	N027542-001BREP	DUP	100	Hexavalent Chromium	12/14/17 10:18 AM	Reported
19	N027542-001BMS	MS	100	Hexavalent Chromium	12/14/17 10:40 AM	Not Reported
20	N027459-001A	SAMP	5	Hexavalent Chromium	12/14/17 10:51 AM	Reported
21	N027459-001AMS	MS	5	Hexavalent Chromium	12/14/17 11:00 AM	Reported
22	N027459-002A	SAMP	5	Hexavalent Chromium	12/14/17 11:10 AM	Reported
23	N027459-002AMS	MS	5	Hexavalent Chromium	12/14/17 11:19 AM	Reported
24	N027544-001A	SAMP	1	Hexavalent Chromium	12/14/17 11:34 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/14/17 11:45 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/14/17 11:55 AM	Reported
27	N027542-001B	SAMP	625	Hexavalent Chromium	12/14/17 12:04 PM	Not Reported
28	N027542-001BMS	MS	625	Hexavalent Chromium	12/14/17 12:14 PM	Not Reported
29	N027459-003A	SAMP	5	Hexavalent Chromium	12/14/17 12:23 PM	Reported
30	N027459-003AMS	MS	5	Hexavalent Chromium	12/14/17 12:33 PM	Reported
31	N027459-004A	SAMP	5	Hexavalent Chromium	12/14/17 12:42 PM	Reported
32	N027459-004AMS	MS	5	Hexavalent Chromium	12/14/17 12:52 PM	Reported
33	N027459-005A	SAMP	5	Hexavalent Chromium	12/14/17 1:01 PM	Reported
34	N027459-005AMS	MS	5	Hexavalent Chromium	12/14/17 1:11 PM	Reported
35	N027542-001BMS	MS	625	Hexavalent Chromium	12/14/17 1:20 PM	Not Reported
36	N027544-001A	SAMP	20	Hexavalent Chromium	12/14/17 1:30 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/14/17 1:39 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/14/17 1:48 PM	Reported
39	N027544-001ADUP	DUP	20	Hexavalent Chromium	12/14/17 1:58 PM	Reported
40	N027542-001B	SAMP	3125	Hexavalent Chromium	12/14/17 2:10 PM	Not Reported
41	N027542-001BMS	MS	3125	Hexavalent Chromium	12/14/17 2:21 PM	Not Reported
42	N027459-006A	SAMP	1000	Hexavalent Chromium	12/14/17 2:31 PM	Reported

INJECTION LOG: 171214A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027459-006AMS	MS	1000	Hexavalent Chromium	12/14/17 2:40 PM	Reported
44	N027459-007A	SAMP	50	Hexavalent Chromium	12/14/17 2:50 PM	Reported
45	N027459-007AMS	MS	50	Hexavalent Chromium	12/14/17 2:59 PM	Reported
46	N027459-007AMSD	MSD	50	Hexavalent Chromium	12/14/17 3:09 PM	Reported
47	N027459-008A	SAMP	20	Hexavalent Chromium	12/14/17 3:18 PM	Reported
48	N027459-008AMS	MS	20	Hexavalent Chromium	12/14/17 3:27 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/14/17 3:37 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/14/17 3:46 PM	Reported
51	N027542-001BREP	DUP	3125	Hexavalent Chromium	12/14/17 3:56 PM	Not Reported
52	N027459-013A	SAMP	5	Hexavalent Chromium	12/14/17 4:05 PM	Reported
53	N027459-013AMS	MS	5	Hexavalent Chromium	12/14/17 4:15 PM	Reported
54	N027459-010A	SAMP	2	Hexavalent Chromium	12/14/17 4:24 PM	Reported
55	N027459-010AMS	MS	2	Hexavalent Chromium	12/14/17 4:34 PM	Reported
56	N027459-011A	SAMP	2	Hexavalent Chromium	12/14/17 4:43 PM	Reported
57	N027459-011AMS	MS	2	Hexavalent Chromium	12/14/17 4:53 PM	Reported
58	N027459-012A	SAMP	5	Hexavalent Chromium	12/14/17 5:02 PM	Reported
59	N027459-012AMS	MS	5	Hexavalent Chromium	12/14/17 5:12 PM	Reported
60	CCV-5	CCV	1	Hexavalent Chromium	12/14/17 5:21 PM	Reported
61	CCB-5	CCB	1	Hexavalent Chromium	12/14/17 5:30 PM	Reported
62	N027459-009A	SAMP	5	Hexavalent Chromium	12/14/17 5:40 PM	Not Reported
63	N027459-009AMS	MS	5	Hexavalent Chromium	12/14/17 5:49 PM	Not Reported
64	N027459-014A	SAMP	5	Hexavalent Chromium	12/14/17 5:59 PM	Reported
65	N027459-014AMS	MS	5	Hexavalent Chromium	12/14/17 6:08 PM	Reported
66	N027459-015A	SAMP	1	Hexavalent Chromium	12/14/17 6:18 PM	Not Reported
67	N027459-015AMS	MS	1	Hexavalent Chromium	12/14/17 6:27 PM	Not Reported
68	N027459-016A	SAMP	200	Hexavalent Chromium	12/14/17 6:37 PM	Reported
69	N027459-016AMS	MS	200	Hexavalent Chromium	12/14/17 6:46 PM	Reported
70	N027459-017A	SAMP	200	Hexavalent Chromium	12/14/17 6:56 PM	Reported
71	N027459-017AMS	MS	200	Hexavalent Chromium	12/14/17 7:05 PM	Reported
72	CCV-6	CCV1	1	Hexavalent Chromium	12/14/17 7:15 PM	Reported
73	CCB-6	CCB	1	Hexavalent Chromium	12/14/17 7:24 PM	Reported
74	N027459-020A	SAMP	1	Hexavalent Chromium	12/14/17 7:34 PM	Reported
75	N027459-020AMS	MS	1	Hexavalent Chromium	12/14/17 7:43 PM	Reported
76	N027459-004A	SAMP	1	Hexavalent Chromium	12/14/17 7:52 PM	Not Reported
77	N027459-004AMS	MS	1	Hexavalent Chromium	12/14/17 8:02 PM	Not Reported
78	N027459-009A	SAMP	1	Hexavalent Chromium	12/14/17 8:11 PM	Not Reported
79	N027459-009AMS	MS	1	Hexavalent Chromium	12/14/17 8:21 PM	Not Reported
80	N027459-013A	SAMP	1	Hexavalent Chromium	12/14/17 8:30 PM	Not Reported
81	N027459-013AMS	MS	1	Hexavalent Chromium	12/14/17 8:40 PM	Not Reported
82	N027459-015A	SAMP	2	Hexavalent Chromium	12/14/17 8:49 PM	Reported
83	N027459-015AMS	MS	2	Hexavalent Chromium	12/14/17 8:59 PM	Reported
84	CCV-7	CCV	1	Hexavalent Chromium	12/14/17 9:08 PM	Reported

INJECTION LOG: 171214A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCB-7	CCB	1	Hexavalent Chromium	12/14/17 9:18 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171214A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**14/Dec/17 21:48:41**
No. of Injections:	**88**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/14/2017 08:50	Finished	BLANK
11	BLANK	2	1000	Unknown		12/14/2017 09:01	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/14/2017 09:10	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/14/2017 09:20	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/14/2017 09:29	Finished	CCB R171129A
15	MB-H2O,MBLK,1	6	1000	Unknown		12/14/2017 09:39	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/14/2017 09:48	Finished	LCS, IWST-171002B
17	N027542-001B,SAMF	9	1000	Unknown		12/14/2017 10:06	Finished	SAMP,0.1>10mL
18	N027542-001BREP,D	10	1000	Unknown		12/14/2017 10:18	Finished	REP,0.1>10mL
19	N027542-001BMS,MS	1	1000	Unknown		12/14/2017 10:40	Finished	MS (1ppb), IWST-171002B,0.1
20	N027459-001A,SAMF	2	1000	Unknown		12/14/2017 10:51	Finished	SAMP,2>10mL
21	N027459-001AMS,MS	3	1000	Unknown		12/14/2017 11:00	Finished	MS (5ppb), IWST-171002B,2>1
22	N027459-002A,SAMF	4	1000	Unknown		12/14/2017 11:10	Finished	SAMP,2>10mL
23	N027459-002AMS,MS	5	1000	Unknown		12/14/2017 11:19	Finished	MS (5ppb), IWST-171002B,2>1
24	N027544-001A,SAMF	7	1000	Unknown		12/14/2017 11:34	Finished	SAMP,10mL
25	CCV-2,CCV1,1,	8	1000	Unknown		12/14/2017 11:45	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	9	1000	Unknown		12/14/2017 11:55	Finished	CCB R171129A
27	N027542-001B,SAMF	10	1000	Unknown		12/14/2017 12:04	Finished	SAMP,0.016>10mL
28	N027542-001BMS,MS	11	1000	Unknown		12/14/2017 12:14	Finished	MS (1ppb), IWST-171002B,0.0
29	N027459-003A,SAMF	12	1000	Unknown		12/14/2017 12:23	Finished	SAMP,2>10mL
30	N027459-003AMS,MS	13	1000	Unknown		12/14/2017 12:33	Finished	MS (5ppb), IWST-171002B,2>1
31	N027459-004A,SAMF	14	1000	Unknown		12/14/2017 12:42	Finished	SAMP,2>10mL
32	N027459-004AMS,MS	15	1000	Unknown		12/14/2017 12:52	Finished	MS (1ppb), IWST-171002B,2>1
33	N027459-005A,SAMF	16	1000	Unknown		12/14/2017 13:01	Finished	SAMP,2>10mL
34	N027459-005AMS,MS	17	1000	Unknown		12/14/2017 13:11	Finished	MS (1ppb), IWST-171002B,2>1
35	N027542-001BMS,MS	18	1000	Unknown		12/14/2017 13:20	Finished	MS (1ppb), IWST-171002B,0.0
36	N027544-001A,SAMF	19	1000	Unknown		12/14/2017 13:30	Finished	SAMP,0.5>10mL
37	CCV-3,CCV,1,	20	1000	Unknown		12/14/2017 13:39	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	21	1000	Unknown		12/14/2017 13:48	Finished	CCB R171129A
39	N027544-001ADUP,D	22	1000	Unknown		12/14/2017 13:58	Finished	DUP,0.5>10mL
40	N027542-001B,SAMF	1	1000	Unknown		12/14/2017 14:10	Finished	SAMP,0.0032>10mL
41	N027542-001BMS,MS	2	1000	Unknown		12/14/2017 14:21	Finished	MS (1ppb), IWST-171002B,0.0
42	N027459-006A,SAMF	3	1000	Unknown		12/14/2017 14:31	Finished	SAMP,0.01>10mL
43	N027459-006AMS,MS	4	1000	Unknown		12/14/2017 14:40	Finished	MS (5ppb), IWST-171002B,0.0
44	N027459-007A,SAMF	5	1000	Unknown		12/14/2017 14:50	Finished	SAMP,0.2>10mL
45	N027459-007AMS,MS	6	1000	Unknown		12/14/2017 14:59	Finished	MS (5ppb), IWST-171002B,0.2
46	N027459-007AMSD,M	7	1000	Unknown		12/14/2017 15:09	Finished	MSD (5ppb), IWST-171002B,0.
47	N027459-008A,SAMF	8	1000	Unknown		12/14/2017 15:18	Finished	SAMP,0.5>10mL
48	N027459-008AMS,MS	9	1000	Unknown		12/14/2017 15:27	Finished	MS (5ppb), IWST-171002B,0.5
49	CCV-4,CCV1,1,	10	1000	Unknown		12/14/2017 15:37	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	11	1000	Unknown		12/14/2017 15:46	Finished	CCB R171129A
51	N027542-001BREP,D	12	1000	Unknown		12/14/2017 15:56	Finished	REP,0.0032>10mL
52	N027459-013A,SAMF	13	1000	Unknown		12/14/2017 16:05	Finished	SAMP,0.2>10mL
53	N027459-013AMS,MS	14	1000	Unknown		12/14/2017 16:15	Finished	MS (1ppb), IWST-171002B,0.2
54	N027459-010A,SAMF	15	1000	Unknown		12/14/2017 16:24	Finished	SAMP,5>10mL
55	N027459-010AMS,MS	16	1000	Unknown		12/14/2017 16:34	Finished	MS (5ppb), IWST-171002B,5>1
56	N027459-011A,SAMF	17	1000	Unknown		12/14/2017 16:43	Finished	SAMP,5>10mL
57	N027459-011AMS,MS	18	1000	Unknown		12/14/2017 16:53	Finished	MS (5ppb), IWST-171002B,5>1
58	N027459-012A,SAMF	19	1000	Unknown		12/14/2017 17:02	Finished	SAMP,2>10mL
59	N027459-012AMS,MS	20	1000	Unknown		12/14/2017 17:12	Finished	MS (5ppb), IWST-171002B,2>1
60	CCV-5,CCV,1,	21	1000	Unknown		12/14/2017 17:21	Finished	CCV @5ppb, IWST-171002A

61	CCB-5,CCB,1,	22	1000	Unknown		12/14/2017 17:30	Finished	CCB R171129A
62	N027459-009A,SAMF	23	1000	Unknown		12/14/2017 17:40	Finished	SAMP,0.2>10mL
63	N027459-009AMS,MS	24	1000	Unknown		12/14/2017 17:49	Finished	MS (1ppb), IWST-171002B,0.2
64	N027459-014A,SAMF	25	1000	Unknown		12/14/2017 17:59	Finished	SAMP,2>10mL
65	N027459-014AMS,MS	26	1000	Unknown		12/14/2017 18:08	Finished	MS (1ppb), IWST-171002B,2>1
66	N027459-015A,SAMF	27	1000	Unknown		12/14/2017 18:18	Finished	SAMP,10mL
67	N027459-015AMS,MS	28	1000	Unknown		12/14/2017 18:27	Finished	MS (1ppb), IWST-171002B,10
68	N027459-016A,SAMF	29	1000	Unknown		12/14/2017 18:37	Finished	SAMP,0.05>10mL
69	N027459-016AMS,MS	30	1000	Unknown		12/14/2017 18:46	Finished	MS (5ppb), IWST-171002B,0.0
70	N027459-017A,SAMF	31	1000	Unknown		12/14/2017 18:56	Finished	SAMP,0.05>10mL
71	N027459-017AMS,MS	32	1000	Unknown		12/14/2017 19:05	Finished	MS (5ppb), IWST-171002B,0.0
72	CCV-6,CCV1,1,	33	1000	Unknown		12/14/2017 19:15	Finished	CCV @10ppb, IWST-171002A
73	CCB-6,CCB,1,	34	1000	Unknown		12/14/2017 19:24	Finished	CCB R171129A
74	N027459-020A,SAMF	35	1000	Unknown		12/14/2017 19:34	Finished	SAMP,10mL
75	N027459-020AMS,MS	36	1000	Unknown		12/14/2017 19:43	Finished	MS (1ppb), IWST-171002B,10
76	N027459-004A,SAMF	37	1000	Unknown		12/14/2017 19:52	Finished	SAMP,10mL
77	N027459-004AMS,MS	38	1000	Unknown		12/14/2017 20:02	Finished	MS (1ppb), IWST-171002B,10
78	N027459-009A,SAMF	39	1000	Unknown		12/14/2017 20:11	Finished	SAMP,10mL
79	N027459-009AMS,MS	40	1000	Unknown		12/14/2017 20:21	Finished	MS (1ppb), IWST-171002B,10
80	N027459-013A,SAMF	41	1000	Unknown		12/14/2017 20:30	Finished	SAMP,10mL
81	N027459-013AMS,MS	42	1000	Unknown		12/14/2017 20:40	Finished	MS (1ppb), IWST-171002B,10
82	N027459-015A,SAMF	43	1000	Unknown		12/14/2017 20:49	Finished	SAMP,5>10mL
83	N027459-015AMS,MS	44	1000	Unknown		12/14/2017 20:59	Finished	MS (5ppb), IWST-171002B,5>1
84	CCV-7,CCV,1,	45	1000	Unknown		12/14/2017 21:08	Finished	CCV @5ppb, IWST-171002A
85	CCB-7,CCB,1,	46	1000	Unknown		12/14/2017 21:18	Finished	CCB R171114C
86	SHUTDOWN	47	1000	Unknown		12/14/2017 21:27	Finished	
87	Eluent: R171214A	48	1000	Unknown		n.a.	Finished	Eluent
88	PCR: R171214B	49	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 171215A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/15/17 8:31 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/15/17 8:42 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/15/17 8:51 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/15/17 9:01 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/15/17 9:10 AM	Reported
15	MB-R120903	MBLK	1	Hexavalent Chromium	12/15/17 9:20 AM	Reported
16	LCS-R120903	LCS	1	Hexavalent Chromium	12/15/17 9:29 AM	Reported
17	N027485-002A	SAMP	200	Hexavalent Chromium	12/15/17 9:39 AM	Reported
18	N027485-003A	SAMP	200	Hexavalent Chromium	12/15/17 9:48 AM	Reported
19	N027485-005A	SAMP	1	Hexavalent Chromium	12/15/17 9:57 AM	Not Reported
20	N027485-006A	SAMP	1	Hexavalent Chromium	12/15/17 10:07 AM	Not Reported
21	N027485-007A	SAMP	1	Hexavalent Chromium	12/15/17 10:16 AM	Not Reported
22	N027485-001A	SAMP	20	Hexavalent Chromium	12/15/17 10:26 AM	Reported
23	N027485-001AMS	MS	20	Hexavalent Chromium	12/15/17 10:35 AM	Reported
24	N027485-001AMSD	MSD	20	Hexavalent Chromium	12/15/17 10:45 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/15/17 10:54 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/15/17 11:04 AM	Reported
27	N027485-002AMS	MS	200	Hexavalent Chromium	12/15/17 11:13 AM	Reported
28	N027485-003AMS	MS	200	Hexavalent Chromium	12/15/17 11:23 AM	Reported
29	N027485-004A	SAMP	1000	Hexavalent Chromium	12/15/17 11:32 AM	Reported
30	N027485-004AMS	MS	1000	Hexavalent Chromium	12/15/17 11:42 AM	Reported
31	N027485-005A	SAMP	5	Hexavalent Chromium	12/15/17 11:51 AM	Reported
32	N027485-005AMS	MS	5	Hexavalent Chromium	12/15/17 12:00 PM	Reported
33	N027485-006A	SAMP	5	Hexavalent Chromium	12/15/17 12:10 PM	Reported
34	N027485-006AMS	MS	5	Hexavalent Chromium	12/15/17 12:19 PM	Reported
35	N027485-007A	SAMP	5	Hexavalent Chromium	12/15/17 12:29 PM	Reported
36	N027485-007AMS	MS	5	Hexavalent Chromium	12/15/17 12:38 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/15/17 12:48 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/15/17 12:57 PM	Reported
39	N027485-008A	SAMP	100	Hexavalent Chromium	12/15/17 1:07 PM	Reported
40	N027485-008AMS	MS	100	Hexavalent Chromium	12/15/17 1:16 PM	Reported
41	N027485-009A	SAMP	500	Hexavalent Chromium	12/15/17 1:26 PM	Reported
42	N027485-009AMS	MS	500	Hexavalent Chromium	12/15/17 1:35 PM	Reported

INJECTION LOG: 171215A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027485-010A	SAMP	5	Hexavalent Chromium	12/15/17 1:45 PM	Reported
44	N027485-010AMS	MS	5	Hexavalent Chromium	12/15/17 1:54 PM	Reported
45	N027485-011A	SAMP	500	Hexavalent Chromium	12/15/17 2:03 PM	Reported
46	N027485-011AMS	MS	500	Hexavalent Chromium	12/15/17 2:13 PM	Reported
47	N027485-012A	SAMP	500	Hexavalent Chromium	12/15/17 2:22 PM	Reported
48	N027485-012AMS	MS	500	Hexavalent Chromium	12/15/17 2:32 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/15/17 2:41 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/15/17 2:51 PM	Reported
51	N027485-003ADUP	DUP	200	Hexavalent Chromium	12/15/17 3:06 PM	Reported
52	N027485-013A	SAMP	1	Hexavalent Chromium	12/15/17 3:18 PM	Reported
53	N027485-013AMS	MS	1	Hexavalent Chromium	12/15/17 3:27 PM	Reported
54	N027485-014A	SAMP	1	Hexavalent Chromium	12/15/17 3:36 PM	Reported
55	N027485-014AMS	MS	1	Hexavalent Chromium	12/15/17 3:46 PM	Reported
56	N027485-015A	SAMP	1	Hexavalent Chromium	12/15/17 3:55 PM	Not Reported
57	N027485-015AMS	MS	1	Hexavalent Chromium	12/15/17 4:05 PM	Reported
58	N027485-016A	SAMP	1	Hexavalent Chromium	12/15/17 4:14 PM	Reported
59	N027485-016AMS	MS	1	Hexavalent Chromium	12/15/17 4:24 PM	Reported
60	N027459-009A	SAMP	1	Hexavalent Chromium	12/15/17 4:33 PM	Not Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/15/17 4:43 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/15/17 4:52 PM	Reported
63	N027459-009AMS	MS	1	Hexavalent Chromium	12/15/17 5:02 PM	Not Reported
64	N027459-018A	SAMP	5	Hexavalent Chromium	12/15/17 5:11 PM	Reported
65	N027459-018AMS	MS	5	Hexavalent Chromium	12/15/17 5:21 PM	Reported
66	N027459-019A	SAMP	5	Hexavalent Chromium	12/15/17 5:30 PM	Reported
67	N027459-019AMS	MS	5	Hexavalent Chromium	12/15/17 5:39 PM	Reported
68	N027485-005AMS	MS	1	Hexavalent Chromium	12/15/17 5:49 PM	Not Reported
69	N027485-006AMS	MS	1	Hexavalent Chromium	12/15/17 5:58 PM	Not Reported
70	N027485-007AMS	MS	1	Hexavalent Chromium	12/15/17 6:08 PM	Not Reported
71	N027459-019A	SAMP	1	Hexavalent Chromium	12/15/17 6:17 PM	Not Reported
72	N027459-019AMS	MS	1	Hexavalent Chromium	12/15/17 6:27 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	12/15/17 6:36 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	12/15/17 6:46 PM	Reported
75	N027459-018A	SAMP	1	Hexavalent Chromium	12/15/17 6:55 PM	Not Reported
76	N027459-018AMS	MS	1	Hexavalent Chromium	12/15/17 7:05 PM	Not Reported
77	N027404-005A	SAMP	5	Hexavalent Chromium	12/15/17 7:14 PM	Not Reported
78	N027404-005AMS	MS	5	Hexavalent Chromium	12/15/17 7:24 PM	Not Reported
79	N027404-009A	SAMP	5	Hexavalent Chromium	12/15/17 7:33 PM	Not Reported
80	N027404-009AMS	MS	5	Hexavalent Chromium	12/15/17 7:42 PM	Not Reported
81	N027459-009A	SAMP	2	Hexavalent Chromium	12/15/17 7:52 PM	Reported
82	N027459-009AMS	MS	2	Hexavalent Chromium	12/15/17 8:01 PM	Reported
83	N027485-015A	SAMP	1	Hexavalent Chromium	12/15/17 8:11 PM	Reported
84	CCV-7	CCV	1	Hexavalent Chromium	12/15/17 8:20 PM	Reported

INJECTION LOG: 171215A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCB-7	CCB	1	Hexavalent Chromium	12/15/17 8:30 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171215A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**15/Dec/17 21:00:35**
No. of Injections:	**88**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/15/2017 08:31	Finished	BLANK
11	BLANK	2	1000	Unknown		12/15/2017 08:42	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/15/2017 08:51	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/15/2017 09:01	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/15/2017 09:10	Finished	CCB R171129A
15	MB-H2O,MBLK,1	6	1000	Unknown		12/15/2017 09:20	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/15/2017 09:29	Finished	LCS, IWST-171002B
17	N027485-002A,SAMP	8	1000	Unknown		12/15/2017 09:39	Finished	SAMP,0.05>10mL
18	N027485-003A,SAMP	9	1000	Unknown		12/15/2017 09:48	Finished	SAMP,0.05>10mL
19	N027485-005A,SAMP	10	1000	Unknown		12/15/2017 09:57	Finished	SAMP,10mL
20	N027485-006A,SAMP	11	1000	Unknown		12/15/2017 10:07	Finished	SAMP,10mL
21	N027485-007A,SAMP	12	1000	Unknown		12/15/2017 10:16	Finished	SAMP,10mL
22	N027485-001A,SAMP	13	1000	Unknown		12/15/2017 10:26	Finished	SAMP,0.5>10mL
23	N027485-001AMS,MS	14	1000	Unknown		12/15/2017 10:35	Finished	MS (5ppb), IWST-171002B,0.5
24	N027485-001AMSD,M	15	1000	Unknown		12/15/2017 10:45	Finished	MSD (5ppb), IWST-171002B,0.
25	CCV-2,CCV1,1,	16	1000	Unknown		12/15/2017 10:54	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	17	1000	Unknown		12/15/2017 11:04	Finished	CCB R171129A
27	N027485-002AMS,MS	18	1000	Unknown		12/15/2017 11:13	Finished	MS (5ppb), IWST-171002B,0.0
28	N027485-003AMS,MS	19	1000	Unknown		12/15/2017 11:23	Finished	MS (5ppb), IWST-171002B,0.0
29	N027485-004A,SAMP	20	1000	Unknown		12/15/2017 11:32	Finished	SAMP,0.01>10mL
30	N027485-004AMS,MS	21	1000	Unknown		12/15/2017 11:42	Finished	MS (5ppb), IWST-171002B,0.0
31	N027485-005A,SAMP	22	1000	Unknown		12/15/2017 11:51	Finished	SAMP,2>10mL
32	N027485-005AMS,MS	23	1000	Unknown		12/15/2017 12:00	Finished	MS (1ppb), IWST-171002B,2>1
33	N027485-006A,SAMP	24	1000	Unknown		12/15/2017 12:10	Finished	SAMP,2>10mL
34	N027485-006AMS,MS	25	1000	Unknown		12/15/2017 12:19	Finished	MS (1ppb), IWST-171002B,2>1
35	N027485-007A,SAMP	26	1000	Unknown		12/15/2017 12:29	Finished	SAMP,2>10mL
36	N027485-007AMS,MS	27	1000	Unknown		12/15/2017 12:38	Finished	MS (1ppb), IWST-171002B,2>1
37	CCV-3,CCV,1,	28	1000	Unknown		12/15/2017 12:48	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	29	1000	Unknown		12/15/2017 12:57	Finished	CCB R171129A
39	N027485-008A,SAMP	30	1000	Unknown		12/15/2017 13:07	Finished	SAMP,0.1>10mL
40	N027485-008AMS,MS	31	1000	Unknown		12/15/2017 13:16	Finished	MS (5ppb), IWST-171002B,0.1
41	N027485-009A,SAMP	32	1000	Unknown		12/15/2017 13:26	Finished	SAMP,0.02>10mL
42	N027485-009AMS,MS	33	1000	Unknown		12/15/2017 13:35	Finished	MS (5ppb), IWST-171002B,0.0
43	N027485-010A,SAMP	34	1000	Unknown		12/15/2017 13:45	Finished	SAMP,2>10mL
44	N027485-010AMS,MS	35	1000	Unknown		12/15/2017 13:54	Finished	MS (5ppb), IWST-171002B,2>1
45	N027485-011A,SAMP	36	1000	Unknown		12/15/2017 14:03	Finished	SAMP,0.02>10mL
46	N027485-011AMS,MS	37	1000	Unknown		12/15/2017 14:13	Finished	MS (5ppb), IWST-171002B,0.0
47	N027485-012A,SAMP	38	1000	Unknown		12/15/2017 14:22	Finished	SAMP,0.02>10mL
48	N027485-012AMS,MS	39	1000	Unknown		12/15/2017 14:32	Finished	MS (5ppb), IWST-171002B,0.0
49	CCV-4,CCV1,1,	40	1000	Unknown		12/15/2017 14:41	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	41	1000	Unknown		12/15/2017 14:51	Finished	CCB R171129A
51	N027485-003ADUP,D	1	1000	Unknown		12/15/2017 15:06	Finished	DUP,0.05>10mL
52	N027485-013A,SAMP	2	1000	Unknown		12/15/2017 15:18	Finished	SAMP,10mL
53	N027485-013AMS,MS	3	1000	Unknown		12/15/2017 15:27	Finished	MS (1ppb), IWST-171002B,10
54	N027485-014A,SAMP	4	1000	Unknown		12/15/2017 15:36	Finished	SAMP,10mL
55	N027485-014AMS,MS	5	1000	Unknown		12/15/2017 15:46	Finished	MS (1ppb), IWST-171002B,10
56	N027485-015A,SAMP	6	1000	Unknown		12/15/2017 15:55	Finished	SAMP,10mL
57	N027485-015AMS,MS	7	1000	Unknown		12/15/2017 16:05	Finished	MS (1ppb), IWST-171002B,10
58	N027485-016A,SAMP	8	1000	Unknown		12/15/2017 16:14	Finished	SAMP,10mL
59	N027485-016AMS,MS	9	1000	Unknown		12/15/2017 16:24	Finished	MS (1ppb), IWST-171002B,10
60	N027459-009A,SAMP	10	1000	Unknown		12/15/2017 16:33	Finished	SAMP,10mL

61	CCV-5,CCV,1,	11	1000	Unknown		12/15/2017 16:43	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	12	1000	Unknown		12/15/2017 16:52	Finished	CCB R171129A
63	N027459-009AMS,MS	13	1000	Unknown		12/15/2017 17:02	Finished	MS (5ppb), IWST-171002B,10
64	N027459-018A,SAMP	14	1000	Unknown		12/15/2017 17:11	Finished	SAMP,2>10mL
65	N027459-018AMS,MS	15	1000	Unknown		12/15/2017 17:21	Finished	MS (1ppb), IWST-171002B,2>1
66	N027459-019A,SAMP	16	1000	Unknown		12/15/2017 17:30	Finished	SAMP,2>10mL
67	N027459-019AMS,MS	17	1000	Unknown		12/15/2017 17:39	Finished	MS (1ppb), IWST-171002B,2>1
68	N027485-005AMS,MS	18	1000	Unknown		12/15/2017 17:49	Finished	MS (1ppb), IWST-171002B,10
69	N027485-006AMS,MS	19	1000	Unknown		12/15/2017 17:58	Finished	MS (1ppb), IWST-171002B,10
70	N027485-007AMS,MS	20	1000	Unknown		12/15/2017 18:08	Finished	MS (1ppb), IWST-171002B,10
71	N027459-019A,SAMP	21	1000	Unknown		12/15/2017 18:17	Finished	SAMP,10mL
72	N027459-019AMS,MS	22	1000	Unknown		12/15/2017 18:27	Finished	MS (1ppb), IWST-171002B,10
73	CCV-6,CCV1,1,	23	1000	Unknown		12/15/2017 18:36	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	24	1000	Unknown		12/15/2017 18:46	Finished	CCB R171129A
75	N027459-018A,SAMP	25	1000	Unknown		12/15/2017 18:55	Finished	SAMP,10mL
76	N027459-018AMS,MS	26	1000	Unknown		12/15/2017 19:05	Finished	MS (1ppb), IWST-171002B,10
77	N027404-005A,SAMP	27	1000	Unknown		12/15/2017 19:14	Finished	SAMP,2>10mL
78	N027404-005AMS,MS	28	1000	Unknown		12/15/2017 19:24	Finished	MS (1ppb), IWST-171002B,2>1
79	N027404-009A,SAMP	29	1000	Unknown		12/15/2017 19:33	Finished	SAMP,2>10mL
80	N027404-009AMS,MS	30	1000	Unknown		12/15/2017 19:42	Finished	MS (1ppb), IWST-171002B,2>1
81	N027459-009A,SAMP	31	1000	Unknown		12/15/2017 19:52	Finished	SAMP,5>10mL
82	N027459-009AMS,MS	32	1000	Unknown		12/15/2017 20:01	Finished	MS (5ppb), IWST-171002B,5>1
83	N027485-015A,SAMP	33	1000	Unknown		12/15/2017 20:11	Finished	SAMP,10mL
84	CCV-7,CCV,1,	34	1000	Unknown		12/15/2017 20:20	Finished	CCV @5ppb, IWST-171002A
85	CCB-7,CCB,1,	35	1000	Unknown		12/15/2017 20:30	Finished	CCB R171129A
86	SHUTDOWN	36	1000	Unknown		12/15/2017 20:39	Finished	
87	Eluent: R171214A	37	1000	Unknown		n.a.	Finished	Eluent
88	PCR: R171214B	38	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 12/12/17
Time Prepared: 1645A
Prepared By: NDA

Reagent ID:
Sulfuric Acid: 9665
Diphenylcarbazide: CINV-170620A
NH4OH + NH4SO4 eluent: B17 1212B
NH4OH + NH4SO4 buffer: B171129A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N027508-1A	7.31		<250 ml	~250 ml		
2)	2A	7.28					
3)	3A	7.16					
4)	4A	7.05					
5)	5A	7.32					
6)	6A	7.47					
7)	7A	7.51					
8)	8A	7.11					
9)	9A	7.08					
10)	10A	7.09					
11)	11A	7.15					
12)	12A	7.18					
13)	13A	7.12					
14)	14A	7.38					
15)	15A	7.42					

Sample Preparation

Date Prepared: 12/13/17
Time Prepared: 1310H
Prepared By: ML

Reagent ID:
Sulfuric Acid: ~~9465~~ 9665
Diphenylcarbazide: CINV-170620A
NH4OH + NH4SO4 eluent: ~~B17 1212B~~ nba K171214A
NH4OH + NH4SO4 buffer: B171129A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N027459-1A	9.38	—	250 ml	250 ml		B171129A
2)	2A	9.46	—				
3)	3A	9.54	—				
4)	4A	9.59	—				
5)	5A	9.45	—				
6)	6A	9.44	—				
7)	7A	9.36	—				
8)	8A	9.27	9.35			1 drop	
9)	9A	9.34	—				
10)	10A	9.43	—				
11)	11A	9.40	—				
12)	12A	9.40	—				
13)	13A	9.43	—				
14)	14A	9.40	—				
15)	15A	9.33	—				
	16A	9.27	9.34			1 drop	

Logbook No. 13

nba 12/19/2017

01/03/2018

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 12/13/17
Time Prepared: 1310H
Prepared By: MC

Slope: 97.8%
pH 4: 4.00 at 25.0C
7: 7.02 at 25.0C
10: 10.02 at 25.0C
LCS: 6.98

Reagent ID:
Sulfuric Acid: ~~7465~~ 9665
Diphenylcarbazide: CINV-170620A
NH4OH + NH4SO4 eluent: ~~R1712135~~ M71214A
NH4OH + NH4SO4 buffer: M71129A

GN NaOH: M70509A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	ND27451-17A	9.24	9.35	250 mL	250 mL	2 drops	M71129A
2)	18A	9.32	—				
3)	19A	9.45	—				
4)	20A	9.52	—				
5)	ND27518-1D	9.18	9.34			3 drops	
6)	ND27485-1A	9.34	—				
7)	2A	9.41	—				
8)	3A	9.45	—				
9)	4A	9.35	—				
10)	5A	9.52	—				
11)	6A	9.59	—				
12)	7A	9.61	—				
13)	8A	9.36	—				
14)	9A	9.41	—				
15) MC	10A	9.32 10	—				
	11A	9.25	9.30			1 drop	

Sample Preparation

Date Prepared: 12/13/17
Time Prepared: 1310H
Prepared By: MC

Reagent ID:
Sulfuric Acid: ~~7465~~ 9665
Diphenylcarbazide: CINV-170620A
NH4OH + NH4SO4 eluent: R1712213 → M71214A
NH4OH + NH4SO4 buffer: R171129A

GN NaOH: M70509A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	ND27485-12A	9.17	9.36	250 mL	250 mL	3 drops	R171129A
2)	13A	9.49	—				
3)	14A	9.45	—				
4)	15A	9.45	—				
5)	16A	9.41	—				
6)	ND27523-1A	9.55	—				
7)	2A	9.47	—				
8)	2A	9.46	—				1/2
9)	3A	9.51	—				2/2
10)	3A	9.51	—				1/2
11)	4A	9.42	—				2/2
12)	5A	9.46	—				
13)	6A	9.48	—				
14)	7A	9.50	—				
15)	8A	9.20	9.34			3 drops ← 3 drops	
	9A	8.90	9.34			6 drops ← 6 drops	MC

Logbook No. 13

jba 12/19/2017
RQ 01/03/2018

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 11/28/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0529	0.2484	1.2584	2.5328	3.7596	5.0155	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-171002A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 01/03/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ICV**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2868931**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.092	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2868932**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.185	0.20	0.2000	0	92.6	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **CCV**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.140	0.20	5.000	0	103	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.195	0.20	0.2000	0	97.4	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.128	0.20	10.00	0	101	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **CCV**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.119	0.20	5.000	0	102	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.263	0.20	10.00	0	103	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **CCV**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868980**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.085	0.20	5.000	0	102	95	105				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ZZZZZZ**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868992**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.305	0.20	10.00	0	103	95	105				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **CCV**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868998**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.103	0.20	5.000	0	102	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ICV**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2870588**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.092	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2870589**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.185	0.20	0.2000	0	92.6	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **CCV**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870591**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.104	0.20	5.000	0	102	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870592**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.192	0.20	0.2000	0	96.2	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870601**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.229	0.20	10.00	0	102	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **CCV**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870613**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.061	0.20	5.000	0	101	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.232	0.20	10.00	0	102	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **CCV**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870635**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.049	0.20	5.000	0	101	95	105				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870641**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.275	0.20	10.00	0	103	95	105				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **CCV**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.099	0.20	5.000	0	102	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **ICB**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2868933**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **CCB**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868936**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **CCB**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **CCB**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **CCB**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **CCB**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **CCB**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868993**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120870**
Client ID: **CCB**	Batch ID: **R120870**	TestNo: **EPA 218.6**		Analysis Date: **12/14/2017**	SeqNo: **2868999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ICB**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2870590**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **CCB**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870593**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **CCB**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **CCB**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870614**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **CCB**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870626**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **CCB**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870636**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **CCB**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870642**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **CCB**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/14/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.156	
CCV-2	4.156	
CCV-3	4.156	
CCV-4	4.156	
CCV-5	4.156	
CCV-6	4.156	
CCV-7	4.156	
Average	4.156	
Actual RT Window	4.076 - 4.236	
Applied RT Window	3.956 - 4.356	
MB-R120870	N.A.	N.A.
LCS-R120870	4.156	PASS
N027542-001B	N.A.	N.A.
N027542-001BREP	N.A.	N.A.
N027542-001BMS	N.A.	N.A.
N027459-001A	4.140	PASS
N027459-001AMS	4.140	PASS
N027459-002A	4.123	PASS
N027459-002AMS	4.131	PASS
N027544-001A	4.131	PASS
N027542-001B	N.A.	N.A.
N027542-001BMS	4.148	PASS
N027459-003A	4.106	PASS
N027459-003AMS	4.098	PASS
N027459-004A	4.106	PASS
N027459-004AMS	4.106	PASS
N027459-005A	4.140	PASS
N027459-005AMS	4.140	PASS
N027542-001BMS	4.156	PASS
N027544-001A	4.156	PASS
N027544-001ADUP	4.156	PASS
N027542-001B	N.A.	N.A.

RLB 01/03/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/14/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.156	
CCV-2	4.156	
CCV-3	4.156	
CCV-4	4.156	
CCV-5	4.156	
CCV-6	4.156	
CCV-7	4.156	
Average	4.156	
Actual RT Window	4.076 - 4.236	
Applied RT Window	3.956 - 4.356	
N027542-001BMS	4.156	PASS
N027459-006A	4.156	PASS
N027459-006AMS	4.156	PASS
N027459-007A	4.156	PASS
N027459-007AMS	4.165	PASS
N027459-007AMSD	4.156	PASS
N027459-008A	4.156	PASS
N027459-008AMS	4.156	PASS
N027542-001BREP	N.A.	N.A.
N027459-013A	4.115	PASS
N027459-013AMS	4.115	PASS
N027459-010A	4.081	PASS
N027459-010AMS	4.081	PASS
N027459-011A	4.106	PASS
N027459-011AMS	4.106	PASS
N027459-012A	4.156	PASS
N027459-012AMS	4.148	PASS
N027459-009A	4.140	PASS
N027459-009AMS	4.131	PASS
N027459-014A	4.140	PASS
N027459-014AMS	4.140	PASS
N027459-015A	4.131	PASS

RJB 01/03/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/14/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.156	
CCV-2	4.156	
CCV-3	4.156	
CCV-4	4.156	
CCV-5	4.156	
CCV-6	4.156	
CCV-7	4.156	
Average	4.156	
Actual RT Window	4.076 - 4.236	
Applied RT Window	3.956 - 4.356	
N027459-015AMS	4.131	PASS
N027459-016A	4.156	PASS
N027459-016AMS	4.156	PASS
N027459-017A	4.156	PASS
N027459-017AMS	4.156	PASS
N027459-020A	4.156	PASS
N027459-020AMS	4.156	PASS
N027459-004A	N.A.	N.A.
N027459-004AMS	N.A.	N.A.
N027459-009A	3.990	PASS
N027459-009AMS	3.981	PASS
N027459-013A	3.815	FAIL
N027459-013AMS	3.806	FAIL
N027459-015A	4.140	PASS
N027459-015AMS	4.140	PASS

RLB 01/03/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/15/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.165	
CCV-7	4.165	
Average	4.165	
Actual RT Window	4.085 - 4.245	
Applied RT Window	3.965 - 4.365	
MB-R120903	N.A.	N.A.
LCS-R120903	4.165	PASS
N027485-002A	4.156	PASS
N027485-003A	4.156	PASS
N027485-005A	N.A.	N.A.
N027485-006A	N.A.	N.A.
N027485-007A	N.A.	N.A.
N027485-001A	4.165	PASS
N027485-001AMS	4.156	PASS
N027485-001AMSD	4.156	PASS
N027485-002AMS	4.165	PASS
N027485-003AMS	4.156	PASS
N027485-004A	4.165	PASS
N027485-004AMS	4.156	PASS
N027485-005A	4.098	PASS
N027485-005AMS	4.106	PASS
N027485-006A	4.098	PASS
N027485-006AMS	4.098	PASS
N027485-007A	4.106	PASS
N027485-007AMS	4.106	PASS
N027485-008A	4.156	PASS
N027485-008AMS	4.165	PASS

RJB 01/03/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/15/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.165	
CCV-7	4.165	
Average	4.165	
Actual RT Window	4.085 - 4.245	
Applied RT Window	3.965 - 4.365	
N027485-009A	4.156	PASS
N027485-009AMS	4.156	PASS
N027485-010A	4.140	PASS
N027485-010AMS	4.140	PASS
N027485-011A	4.156	PASS
N027485-011AMS	4.156	PASS
N027485-012A	4.156	PASS
N027485-012AMS	4.156	PASS
N027485-003ADUP	4.156	PASS
N027485-013A	N.A.	N.A.
N027485-013AMS	4.156	PASS
N027485-014A	N.A.	N.A.
N027485-014AMS	4.156	PASS
N027485-015A	N.A.	N.A.
N027485-015AMS	4.165	PASS
N027485-016A	N.A.	N.A.
N027485-016AMS	4.156	PASS
N027459-009A	3.990	PASS
N027459-009AMS	3.990	PASS
N027459-018A	N.A.	N.A.
N027459-018AMS	4.106	PASS
N027459-019A	N.A.	N.A.



01/03/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/15/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.165	
CCV-7	4.165	
Average	4.165	
Actual RT Window	4.085 - 4.245	
Applied RT Window	3.965 - 4.365	
N027459-019AMS	4.123	PASS
N027485-005AMS	N.A.	N.A.
N027485-006AMS	N.A.	N.A.
N027485-007AMS	N.A.	N.A.
N027459-019A	N.A.	N.A.
N027459-019AMS	3.823	FAIL
N027459-018A	N.A.	N.A.
N027459-018AMS	N.A.	N.A.
N027404-005A	4.115	PASS
N027404-005AMS	4.123	PASS
N027404-009A	4.131	PASS
N027404-009AMS	4.131	PASS
N027459-009A	4.090	PASS
N027459-009AMS	4.090	PASS
N027485-015A	N.A.	N.A.

RLB 01/03/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 Unit: ug/L
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

MDL/LOD & PQL Verification 2017

Method Name: **Hexavalent Chromium by IC**
Method Number: EPA Method 218.6
Analysis Date(s): 5/31/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: µg/L

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.103

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.194	**97**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 171128A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/28/17 10:57 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/28/17 11:08 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/28/17 11:17 AM	Reported
13	MB-R120468	MBLK	1	Hexavalent Chromium	11/28/17 11:27 AM	Reported
14	LCS-R120468	LCS	1	Hexavalent Chromium	11/28/17 11:36 AM	Reported
15	N027215-001A	SAMP	1	Hexavalent Chromium	11/28/17 11:47 AM	Reported
16	N027215-002A	SAMP	1	Hexavalent Chromium	11/28/17 11:59 AM	Reported
17	N027215-003A	SAMP	1	Hexavalent Chromium	11/28/17 12:08 PM	Reported
18	N027215-004A	SAMP	1	Hexavalent Chromium	11/28/17 12:18 PM	Reported
19	N027215-005A	SAMP	1	Hexavalent Chromium	11/28/17 12:27 PM	Reported
20	N027215-002ADUP	DUP	1	Hexavalent Chromium	11/28/17 12:37 PM	Reported
21	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 12:46 PM	Not Reported
22	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 12:56 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	11/28/17 1:05 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/28/17 1:14 PM	Reported
25	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:04 PM	Not Reported
26	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:16 PM	Not Reported
27	N027215-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:29 PM	Reported
28	N027215-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:41 PM	Reported
29	CCV-2	CCV	1	Hexavalent Chromium	11/28/17 2:50 PM	Reported
30	CCB-2	CCB	1	Hexavalent Chromium	11/28/17 3:00 PM	Reported

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Injection Log Summary

Sequence Details

Name:	**IC-07_171128A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**28/Nov/17 15:47:35**
No. of Injections:	**33**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		11/28/2017 10:57	Finished	ICV @5ppb, IWST-171002A
11	PQL@0.2ppb,CCV2,	12	1000	Unknown		11/28/2017 11:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		11/28/2017 11:17	Finished	ICB R171114C
13	MB-H2O,MBLK,1	14	1000	Unknown		11/28/2017 11:27	Finished	MB R171114C
14	LCS-H2O,LCS,1	15	1000	Unknown		11/28/2017 11:36	Finished	LCS, IWST-171002B
15	N027215-001A,SAMF	17	1000	Unknown		11/28/2017 11:47	Finished	SAMP,10mL
16	N027215-002A,SAMF	18	1000	Unknown		11/28/2017 11:59	Finished	SAMP,10mL
17	N027215-003A,SAMF	19	1000	Unknown		11/28/2017 12:08	Finished	SAMP,10mL
18	N027215-004A,SAMF	20	1000	Unknown		11/28/2017 12:18	Finished	SAMP,10mL
19	N027215-005A,SAMF	21	1000	Unknown		11/28/2017 12:27	Finished	SAMP,10mL
20	N027215-002ADUP,D	22	1000	Unknown		11/28/2017 12:37	Finished	DUP,10mL
21	N027157-001AMS,MS	23	1000	Unknown		11/28/2017 12:46	Finished	MS (5ppb), IWST-171002B,10
22	N027157-001AMSD,M	24	1000	Unknown		11/28/2017 12:56	Finished	MSD (5ppb), IWST-171002B,1
23	CCV-1,CCV1,1,	25	1000	Unknown		11/28/2017 13:05	Finished	CCV @10ppb, IWST-171002A
24	CCB-1,CCB,1,	26	1000	Unknown		11/28/2017 13:14	Finished	CCB R171031A
25	N027157-001AMS,MS	28	1000	Unknown		11/28/2017 14:04	Finished	MS (5ppb), IWST-171002B,10
26	N027157-001AMSD,M	29	1000	Unknown		11/28/2017 14:16	Finished	MSD (5ppb), IWST-171002B,1
27	N027215-001AMS,MS	31	1000	Unknown		11/28/2017 14:29	Finished	MS (5ppb), IWST-171002B,10
28	N027215-001AMSD,M	32	1000	Unknown		11/28/2017 14:41	Finished	MSD (5ppb), IWST-171002B,1
29	CCV-2,CCV,1,	33	1000	Unknown		11/28/2017 14:50	Finished	CCV @5ppb, IWST-171002A
30	CCB-2,CCB,1,	34	1000	Unknown		11/28/2017 15:00	Finished	CCB R171031A
31	SHUTDOWN	35	1000	Unknown		11/28/2017 15:09	Finished	
32	Eluent: R171128A	36	1000	Unknown		n.a.	Finished	Eluent
33	PCR: R171128B	37	1000	Unknown		n.a.	Finished	Post-Column Reagent

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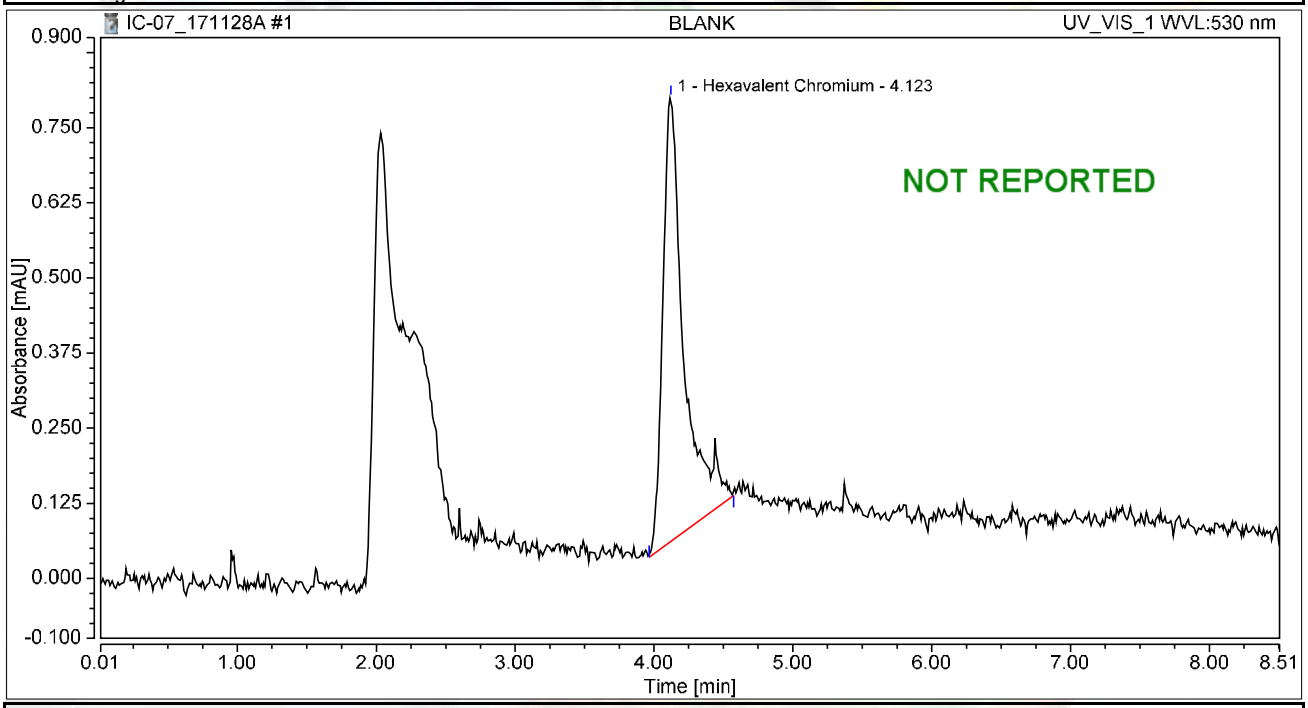
Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

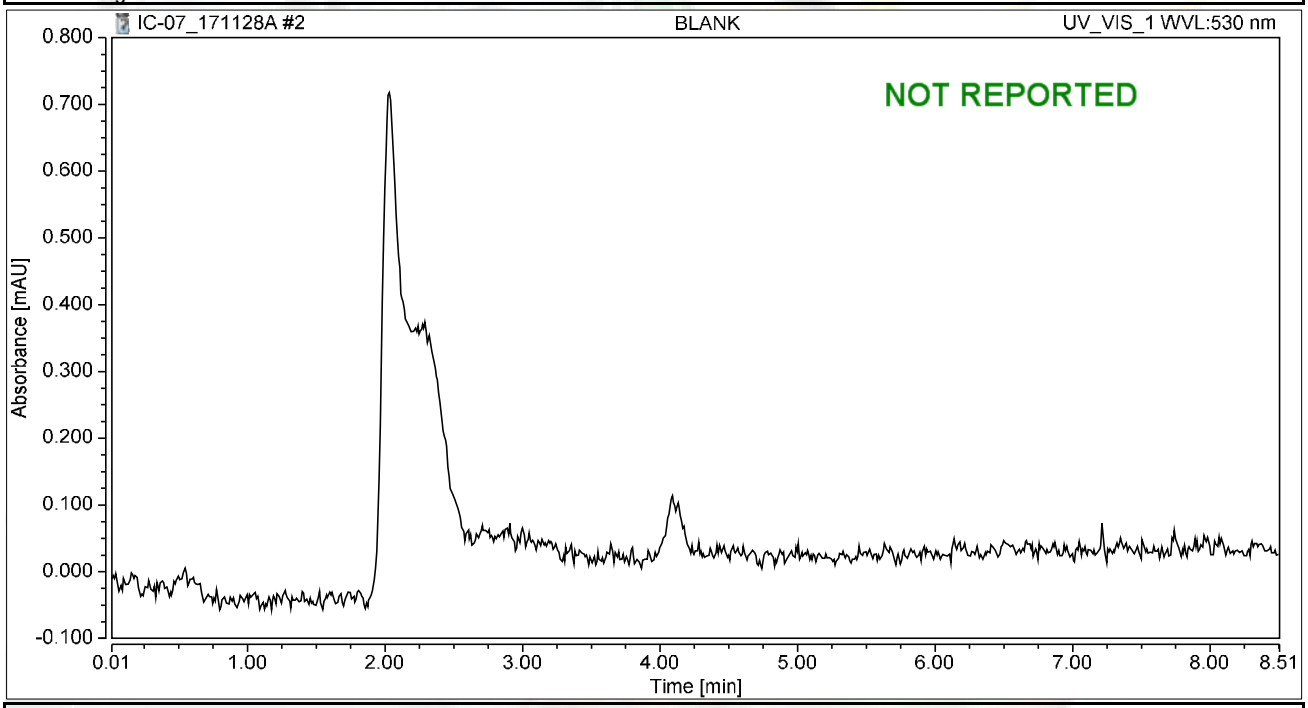
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.130	0.738	100.00	100.00	0.5193
Total:			**0.130**	**0.738**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

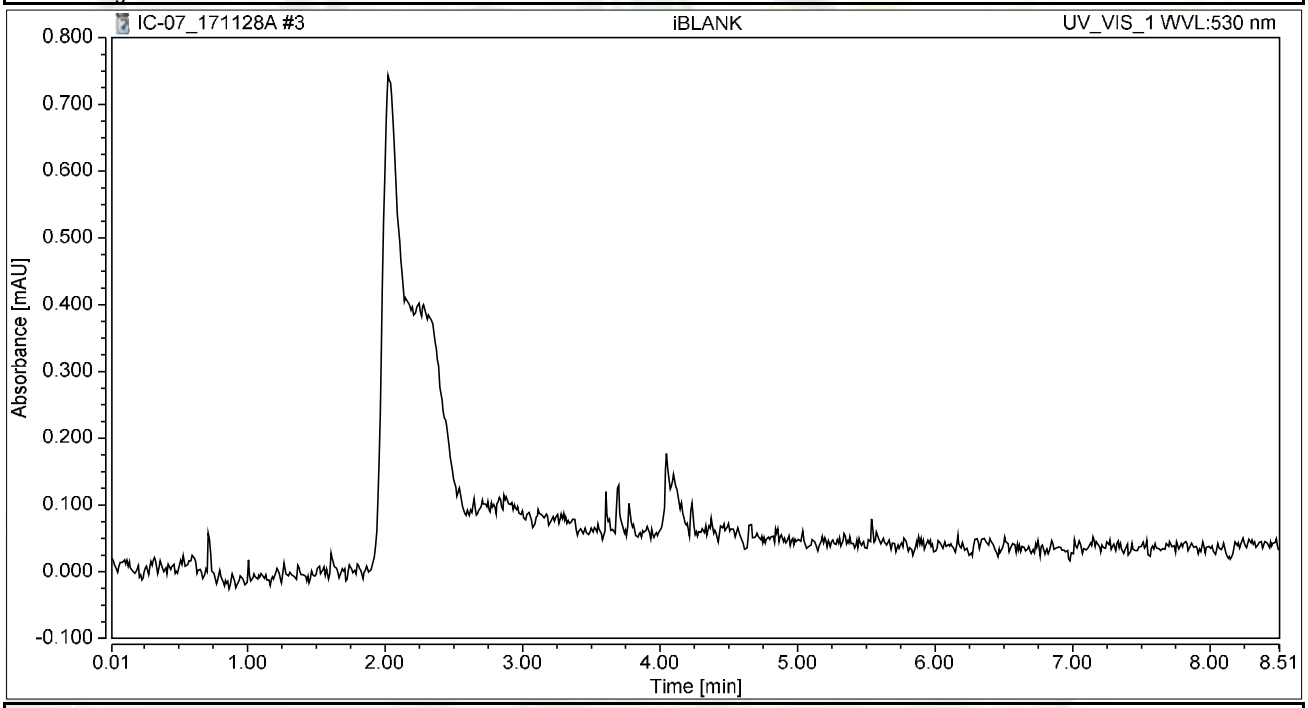
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

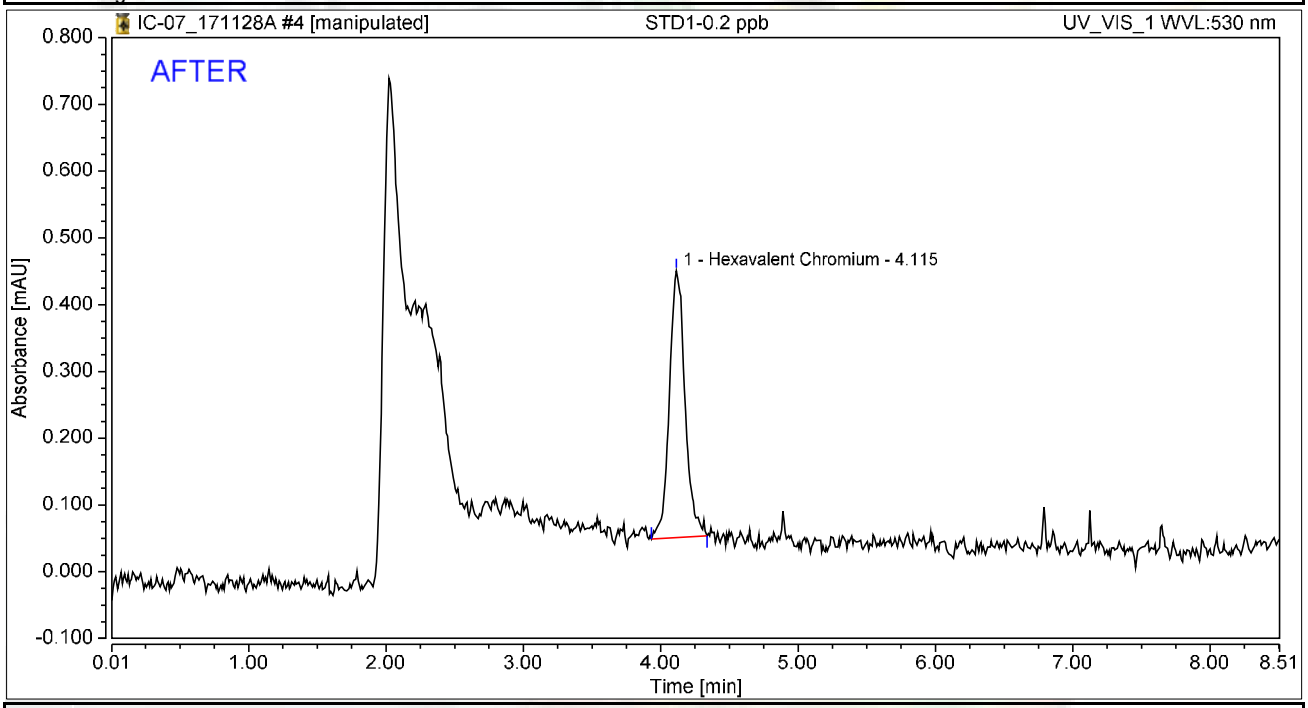
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.053	0.400	100.00	100.00	0.2108
Total:			**0.053**	**0.400**	**100.00**	**100.00**	

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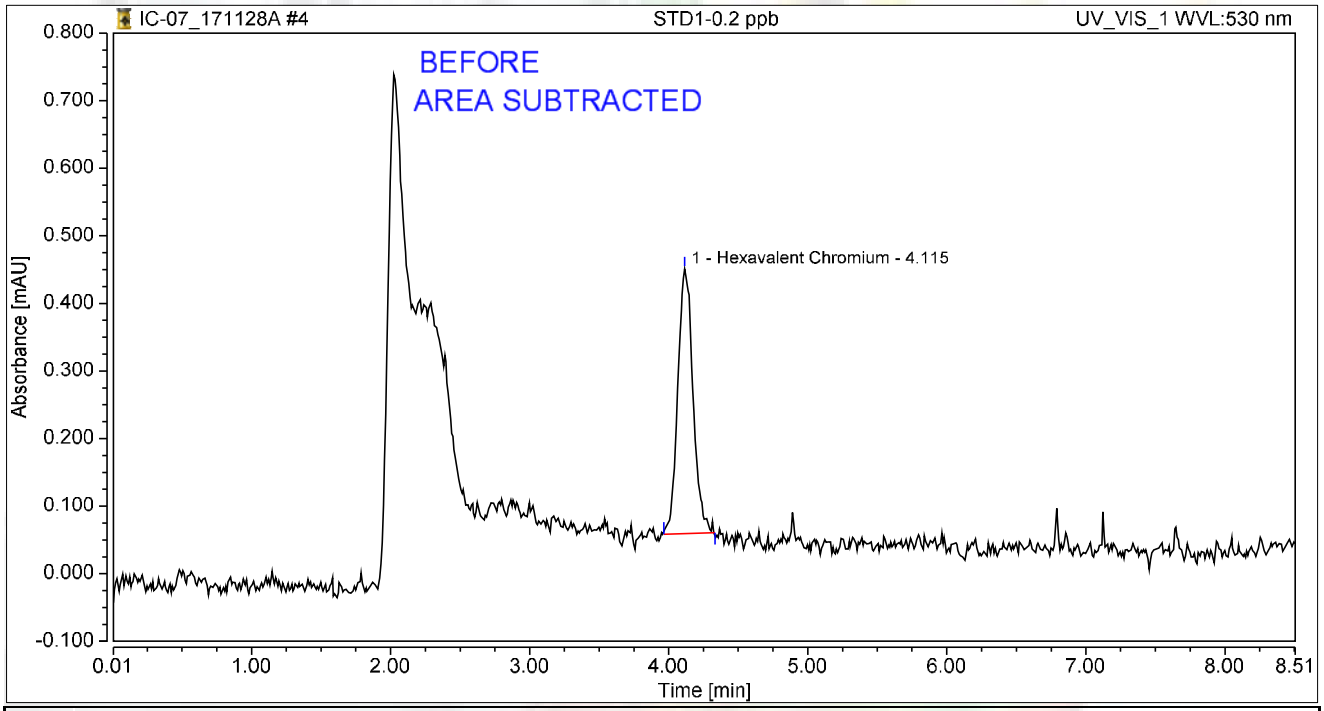
Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.050	0.391	100.00	100.00	0.1957
Total:			**0.050**	**0.391**	**100.00**	**100.00**	

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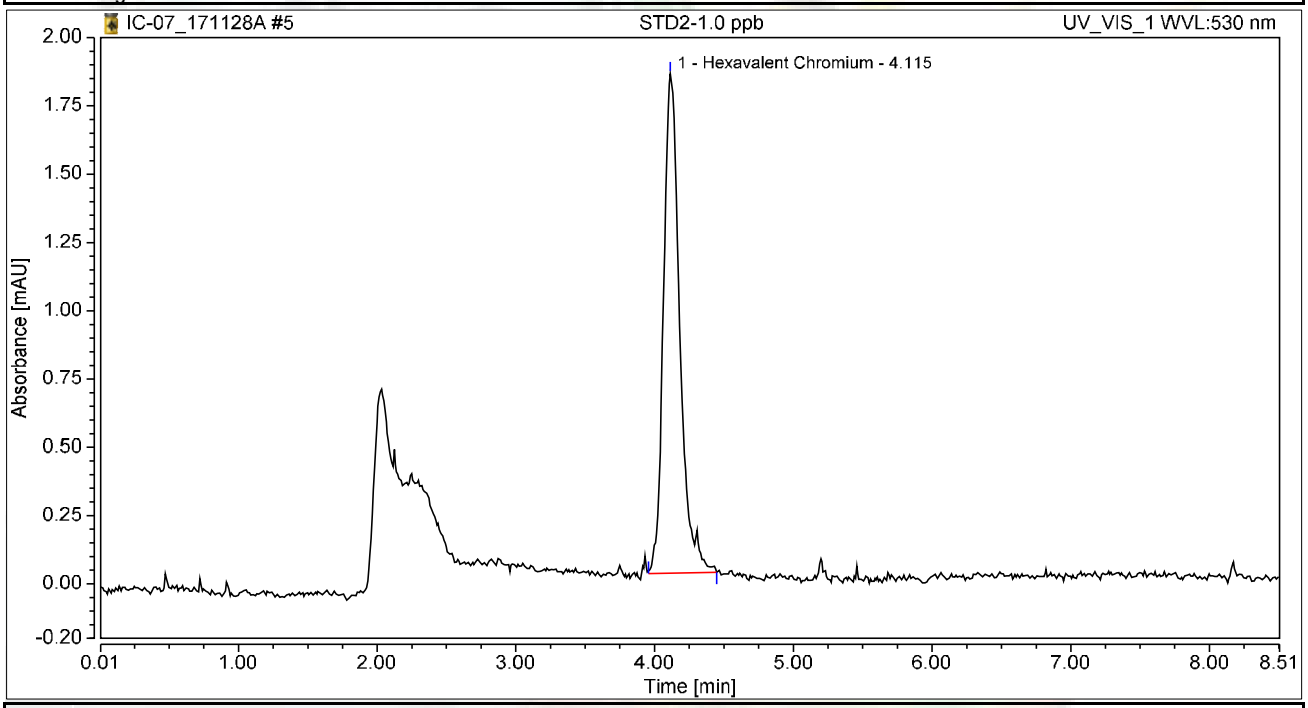
Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

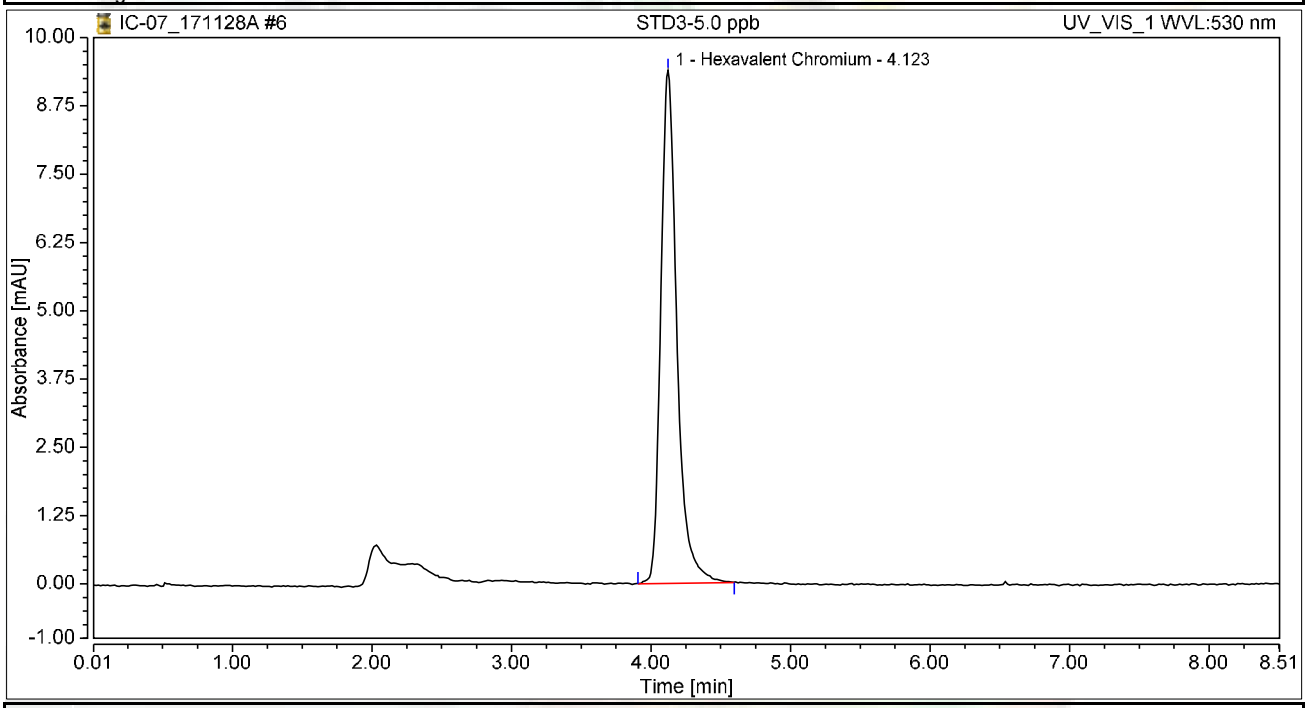
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.248	1.827	100.00	100.00	0.9892
Total:			**0.248**	**1.827**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

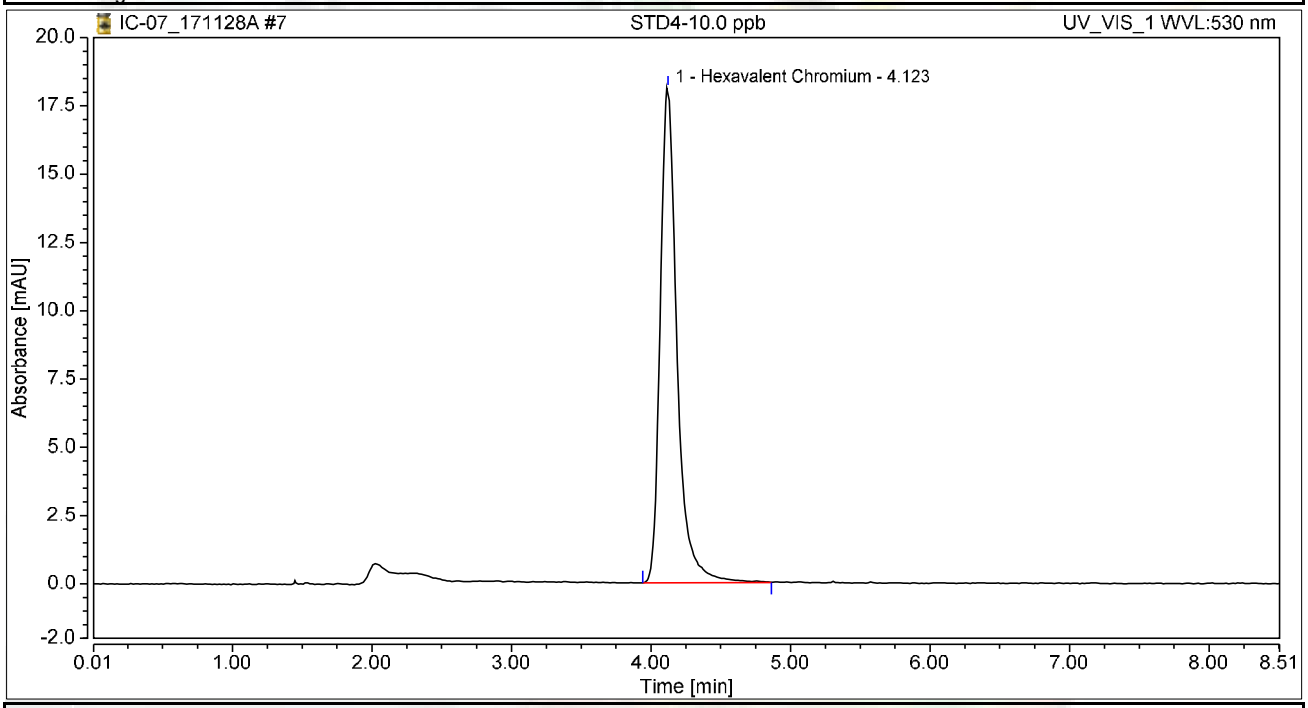
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.258	9.388	100.00	100.00	5.0118
Total:			**1.258**	**9.388**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

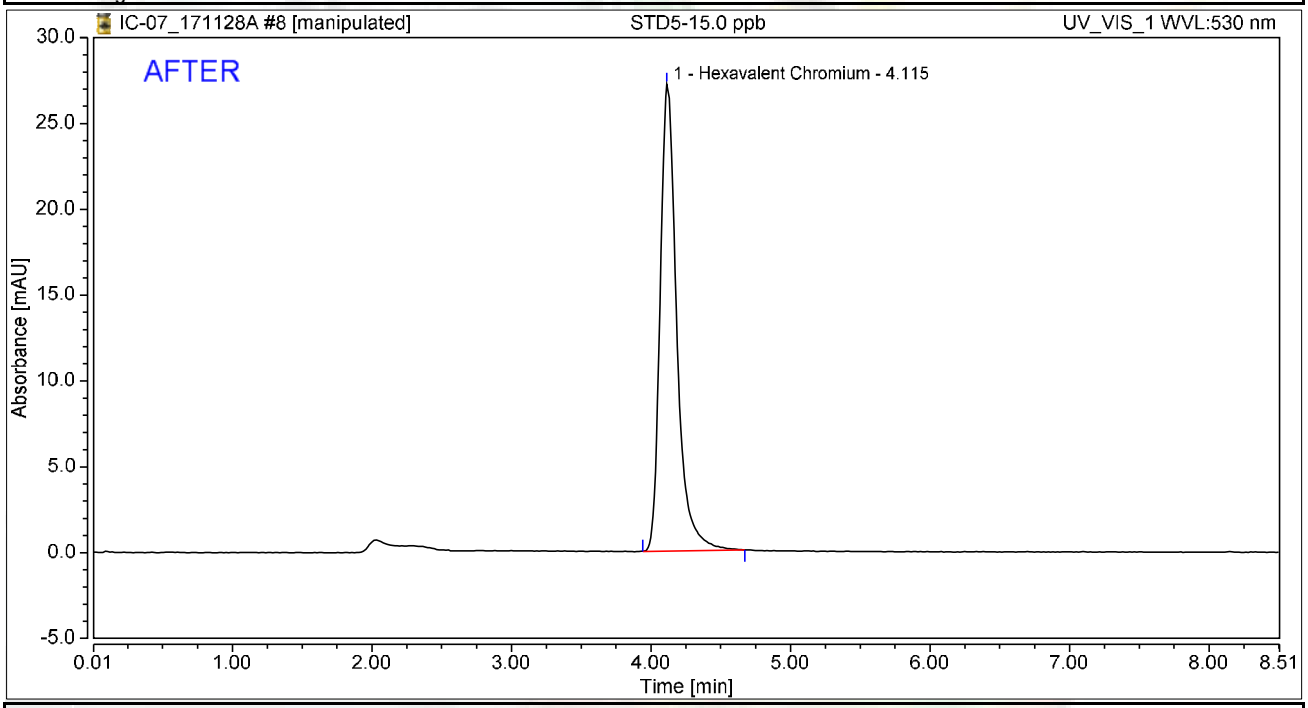
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	2.533	18.115	100.00	100.00	10.0869
Total:			**2.533**	**18.115**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	3.760	27.183	100.00	100.00	14.9728
Total:			**3.760**	**27.183**	**100.00**	**100.00**	

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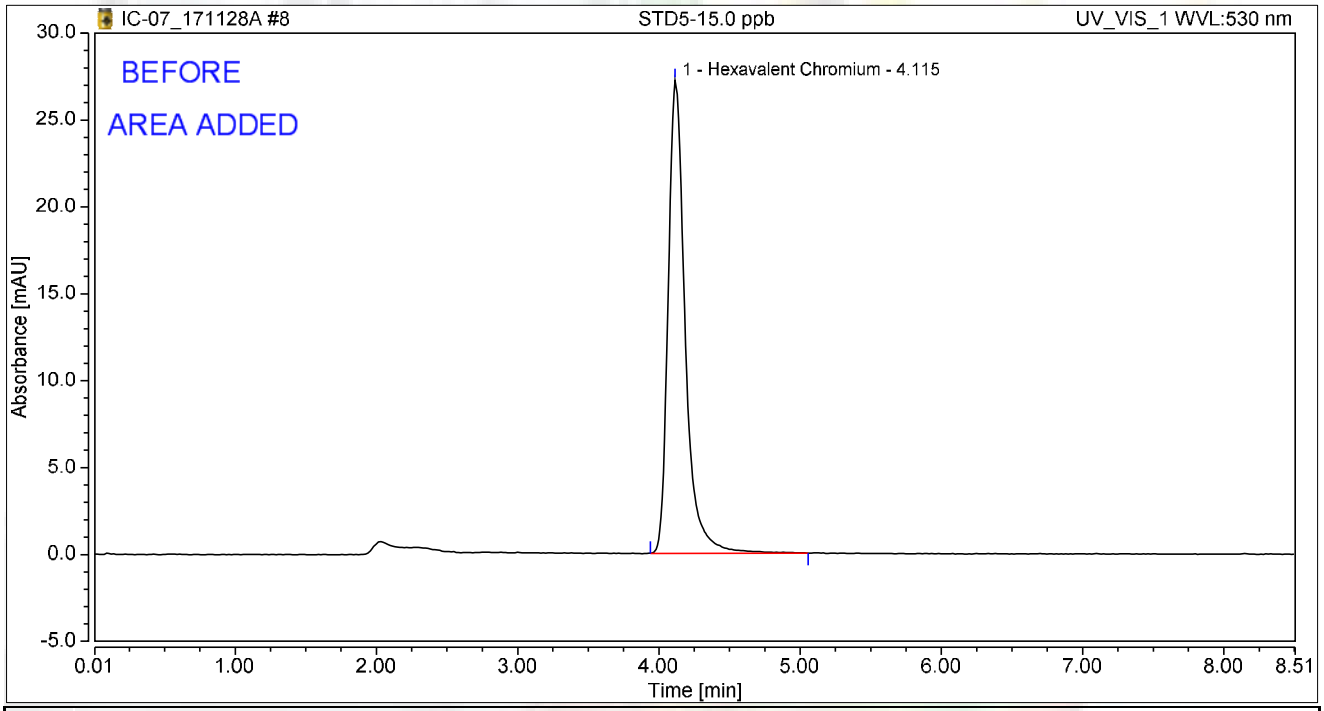
Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	3.807	27.204	100.00	100.00	14.9839
Total:			**3.807**	**27.204**	**100.00**	**100.00**	

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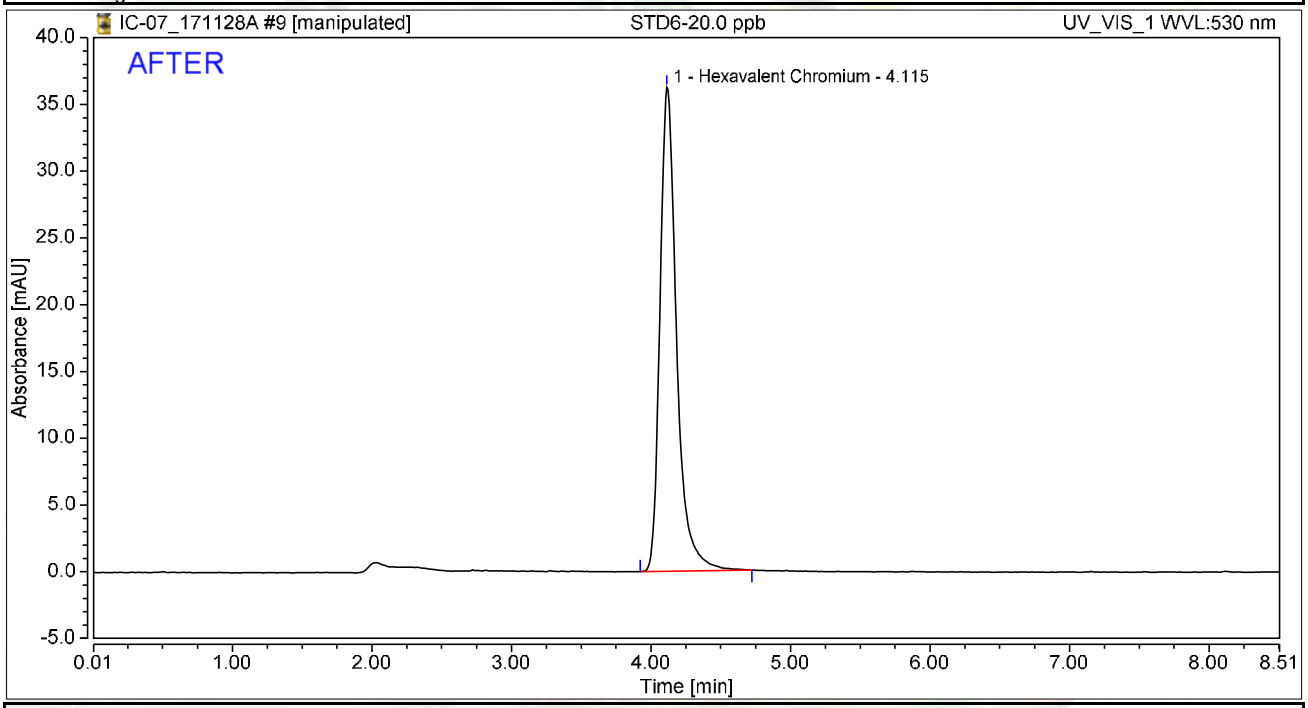
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	5.015	36.251	100.00	100.00	19.9744
Total:			**5.015**	**36.251**	**100.00**	**100.00**	

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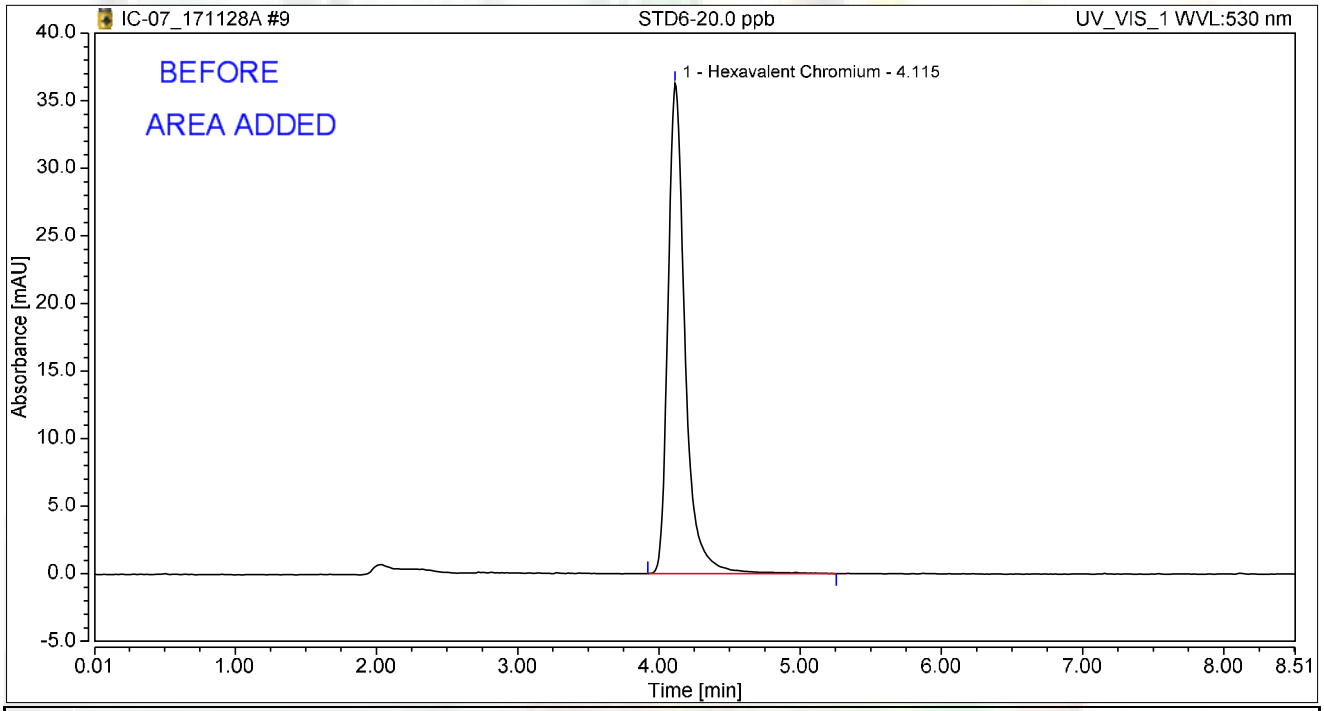
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	5.092	36.279	100.00	100.00	20.0407
Total:			**5.092**	**36.279**	**100.00**	**100.00**	

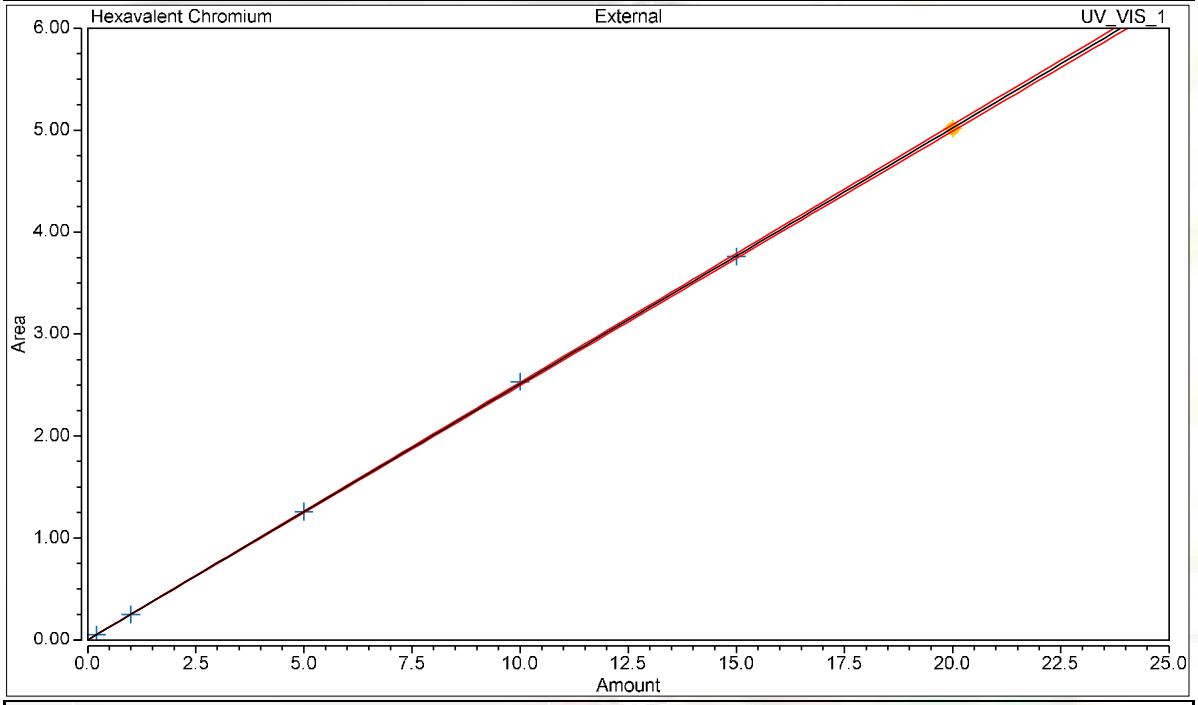
rba 11/29/2017

RB 12/11/2017

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2511
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99997

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

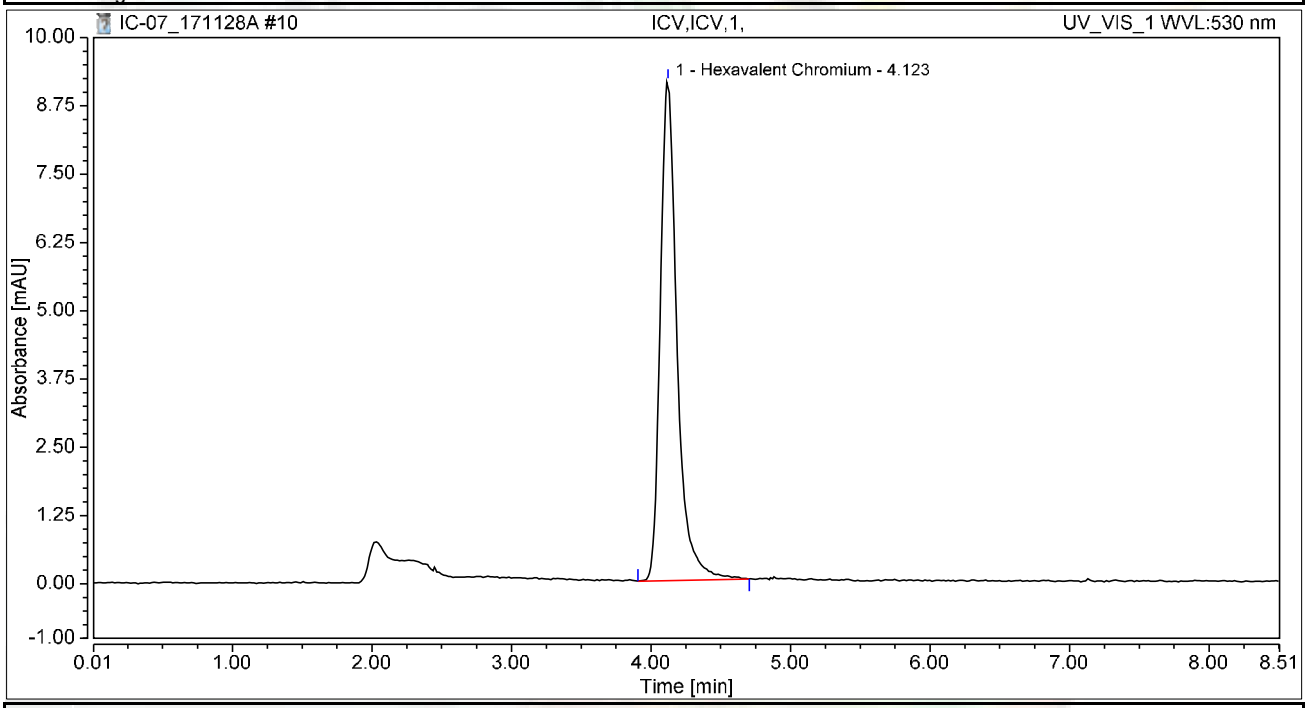
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0529	0.053	0.400
5	STD2-1.0 ppb	02	1.0000	0.2484	0.248	1.827
6	STD3-5.0 ppb	03	5.0000	1.2584	1.258	9.388
7	STD4-10.0 ppb	04	10.0000	2.5328	2.533	18.115
8	STD5-15.0 ppb	05	15.0000	3.7596	3.760	27.183
9	STD6-20.0 ppb	06	20.0000	5.0155	5.015	36.251

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

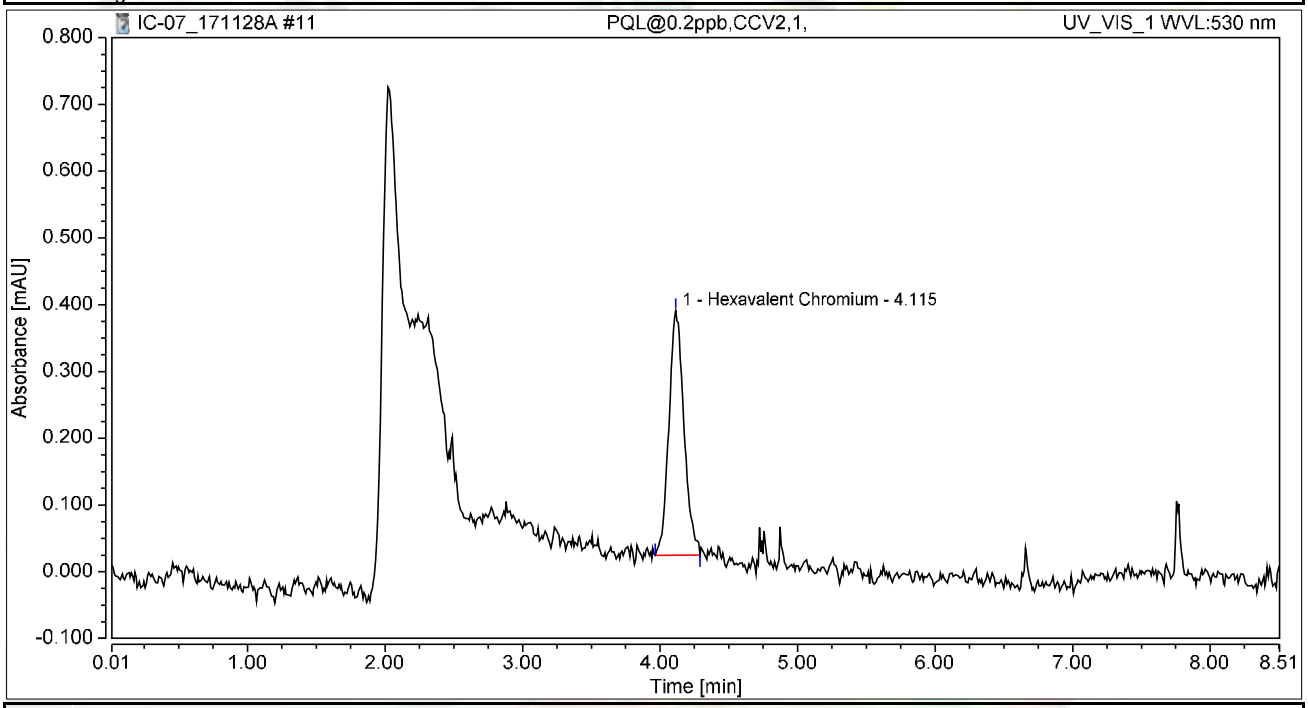
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.279	9.143	100.00	100.00	5.0922
Total:			**1.279**	**9.143**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

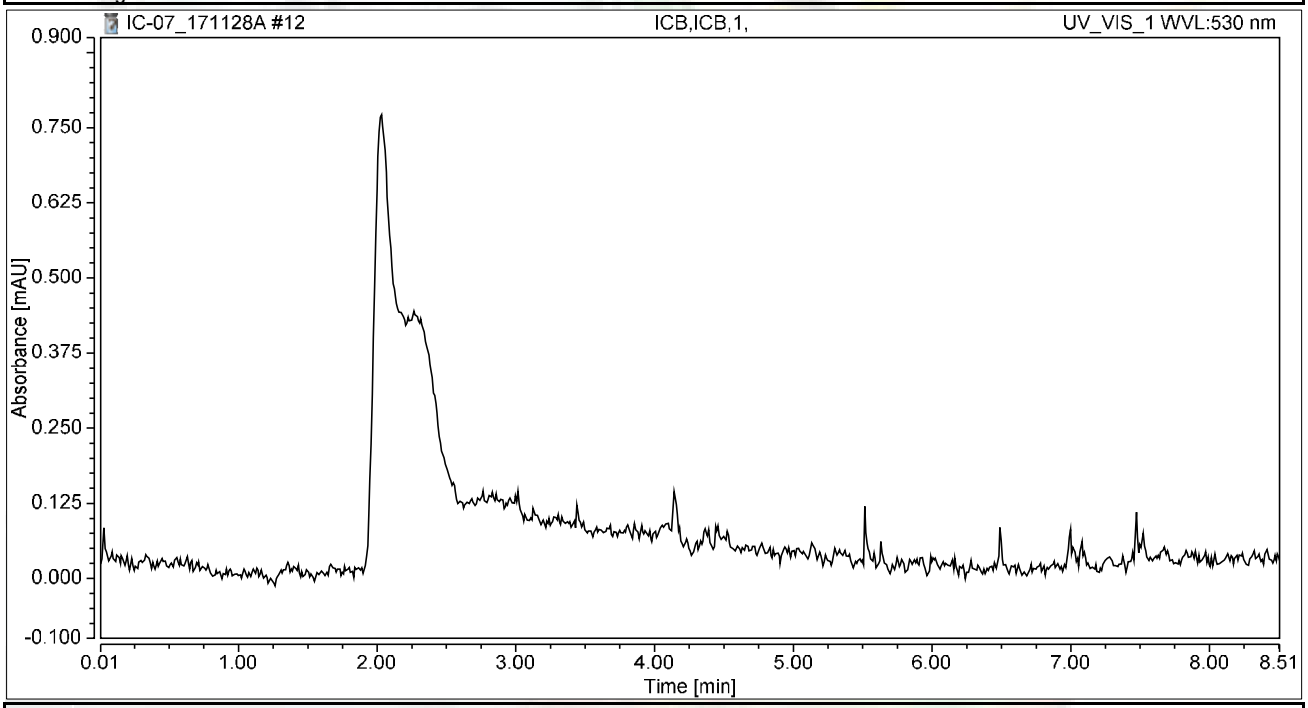
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.046	0.367	100.00	100.00	0.1851
Total:			**0.046**	**0.367**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 171214A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/14/17 8:50 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/14/17 9:01 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/14/17 9:10 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/14/17 9:20 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/14/17 9:29 AM	Reported
15	MB-R120870	MBLK	1	Hexavalent Chromium	12/14/17 9:39 AM	Reported
16	LCS-R120870	LCS	1	Hexavalent Chromium	12/14/17 9:48 AM	Reported
17	N027542-001B	SAMP	100	Hexavalent Chromium	12/14/17 10:06 AM	Reported
18	N027542-001BREP	DUP	100	Hexavalent Chromium	12/14/17 10:18 AM	Reported
19	N027542-001BMS	MS	100	Hexavalent Chromium	12/14/17 10:40 AM	Not Reported
20	N027459-001A	SAMP	5	Hexavalent Chromium	12/14/17 10:51 AM	Reported
21	N027459-001AMS	MS	5	Hexavalent Chromium	12/14/17 11:00 AM	Reported
22	N027459-002A	SAMP	5	Hexavalent Chromium	12/14/17 11:10 AM	Reported
23	N027459-002AMS	MS	5	Hexavalent Chromium	12/14/17 11:19 AM	Reported
24	N027544-001A	SAMP	1	Hexavalent Chromium	12/14/17 11:34 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/14/17 11:45 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/14/17 11:55 AM	Reported
27	N027542-001B	SAMP	625	Hexavalent Chromium	12/14/17 12:04 PM	Not Reported
28	N027542-001BMS	MS	625	Hexavalent Chromium	12/14/17 12:14 PM	Not Reported
29	N027459-003A	SAMP	5	Hexavalent Chromium	12/14/17 12:23 PM	Reported
30	N027459-003AMS	MS	5	Hexavalent Chromium	12/14/17 12:33 PM	Reported
31	N027459-004A	SAMP	5	Hexavalent Chromium	12/14/17 12:42 PM	Reported
32	N027459-004AMS	MS	5	Hexavalent Chromium	12/14/17 12:52 PM	Reported
33	N027459-005A	SAMP	5	Hexavalent Chromium	12/14/17 1:01 PM	Reported
34	N027459-005AMS	MS	5	Hexavalent Chromium	12/14/17 1:11 PM	Reported
35	N027542-001BMS	MS	625	Hexavalent Chromium	12/14/17 1:20 PM	Not Reported
36	N027544-001A	SAMP	20	Hexavalent Chromium	12/14/17 1:30 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/14/17 1:39 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/14/17 1:48 PM	Reported
39	N027544-001ADUP	DUP	20	Hexavalent Chromium	12/14/17 1:58 PM	Reported
40	N027542-001B	SAMP	3125	Hexavalent Chromium	12/14/17 2:10 PM	Not Reported
41	N027542-001BMS	MS	3125	Hexavalent Chromium	12/14/17 2:21 PM	Not Reported
42	N027459-006A	SAMP	1000	Hexavalent Chromium	12/14/17 2:31 PM	Reported

INJECTION LOG: 171214A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027459-006AMS	MS	1000	Hexavalent Chromium	12/14/17 2:40 PM	Reported
44	N027459-007A	SAMP	50	Hexavalent Chromium	12/14/17 2:50 PM	Reported
45	N027459-007AMS	MS	50	Hexavalent Chromium	12/14/17 2:59 PM	Reported
46	N027459-007AMSD	MSD	50	Hexavalent Chromium	12/14/17 3:09 PM	Reported
47	N027459-008A	SAMP	20	Hexavalent Chromium	12/14/17 3:18 PM	Reported
48	N027459-008AMS	MS	20	Hexavalent Chromium	12/14/17 3:27 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/14/17 3:37 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/14/17 3:46 PM	Reported
51	N027542-001BREP	DUP	3125	Hexavalent Chromium	12/14/17 3:56 PM	Not Reported
52	N027459-013A	SAMP	5	Hexavalent Chromium	12/14/17 4:05 PM	Reported
53	N027459-013AMS	MS	5	Hexavalent Chromium	12/14/17 4:15 PM	Reported
54	N027459-010A	SAMP	2	Hexavalent Chromium	12/14/17 4:24 PM	Reported
55	N027459-010AMS	MS	2	Hexavalent Chromium	12/14/17 4:34 PM	Reported
56	N027459-011A	SAMP	2	Hexavalent Chromium	12/14/17 4:43 PM	Reported
57	N027459-011AMS	MS	2	Hexavalent Chromium	12/14/17 4:53 PM	Reported
58	N027459-012A	SAMP	5	Hexavalent Chromium	12/14/17 5:02 PM	Reported
59	N027459-012AMS	MS	5	Hexavalent Chromium	12/14/17 5:12 PM	Reported
60	CCV-5	CCV	1	Hexavalent Chromium	12/14/17 5:21 PM	Reported
61	CCB-5	CCB	1	Hexavalent Chromium	12/14/17 5:30 PM	Reported
62	N027459-009A	SAMP	5	Hexavalent Chromium	12/14/17 5:40 PM	Not Reported
63	N027459-009AMS	MS	5	Hexavalent Chromium	12/14/17 5:49 PM	Not Reported
64	N027459-014A	SAMP	5	Hexavalent Chromium	12/14/17 5:59 PM	Reported
65	N027459-014AMS	MS	5	Hexavalent Chromium	12/14/17 6:08 PM	Reported
66	N027459-015A	SAMP	1	Hexavalent Chromium	12/14/17 6:18 PM	Not Reported
67	N027459-015AMS	MS	1	Hexavalent Chromium	12/14/17 6:27 PM	Not Reported
68	N027459-016A	SAMP	200	Hexavalent Chromium	12/14/17 6:37 PM	Reported
69	N027459-016AMS	MS	200	Hexavalent Chromium	12/14/17 6:46 PM	Reported
70	N027459-017A	SAMP	200	Hexavalent Chromium	12/14/17 6:56 PM	Reported
71	N027459-017AMS	MS	200	Hexavalent Chromium	12/14/17 7:05 PM	Reported
72	CCV-6	CCV1	1	Hexavalent Chromium	12/14/17 7:15 PM	Reported
73	CCB-6	CCB	1	Hexavalent Chromium	12/14/17 7:24 PM	Reported
74	N027459-020A	SAMP	1	Hexavalent Chromium	12/14/17 7:34 PM	Reported
75	N027459-020AMS	MS	1	Hexavalent Chromium	12/14/17 7:43 PM	Reported
76	N027459-004A	SAMP	1	Hexavalent Chromium	12/14/17 7:52 PM	Not Reported
77	N027459-004AMS	MS	1	Hexavalent Chromium	12/14/17 8:02 PM	Not Reported
78	N027459-009A	SAMP	1	Hexavalent Chromium	12/14/17 8:11 PM	Not Reported
79	N027459-009AMS	MS	1	Hexavalent Chromium	12/14/17 8:21 PM	Not Reported
80	N027459-013A	SAMP	1	Hexavalent Chromium	12/14/17 8:30 PM	Not Reported
81	N027459-013AMS	MS	1	Hexavalent Chromium	12/14/17 8:40 PM	Not Reported
82	N027459-015A	SAMP	2	Hexavalent Chromium	12/14/17 8:49 PM	Reported
83	N027459-015AMS	MS	2	Hexavalent Chromium	12/14/17 8:59 PM	Reported
84	CCV-7	CCV	1	Hexavalent Chromium	12/14/17 9:08 PM	Reported

INJECTION LOG: 171214A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCB-7	CCB	1	Hexavalent Chromium	12/14/17 9:18 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171214A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**14/Dec/17 21:48:41**
No. of Injections:	**88**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/14/2017 08:50	Finished	BLANK
11	BLANK	2	1000	Unknown		12/14/2017 09:01	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/14/2017 09:10	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/14/2017 09:20	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/14/2017 09:29	Finished	CCB R171129A
15	MB-H2O,MBLK,1	6	1000	Unknown		12/14/2017 09:39	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/14/2017 09:48	Finished	LCS, IWST-171002B
17	N027542-001B,SAMF	9	1000	Unknown		12/14/2017 10:06	Finished	SAMP,0.1>10mL
18	N027542-001BREP,D	10	1000	Unknown		12/14/2017 10:18	Finished	REP,0.1>10mL
19	N027542-001BMS,MS	1	1000	Unknown		12/14/2017 10:40	Finished	MS (1ppb), IWST-171002B,0.1
20	N027459-001A,SAMF	2	1000	Unknown		12/14/2017 10:51	Finished	SAMP,2>10mL
21	N027459-001AMS,MS	3	1000	Unknown		12/14/2017 11:00	Finished	MS (5ppb), IWST-171002B,2>1
22	N027459-002A,SAMF	4	1000	Unknown		12/14/2017 11:10	Finished	SAMP,2>10mL
23	N027459-002AMS,MS	5	1000	Unknown		12/14/2017 11:19	Finished	MS (5ppb), IWST-171002B,2>1
24	N027544-001A,SAMF	7	1000	Unknown		12/14/2017 11:34	Finished	SAMP,10mL
25	CCV-2,CCV1,1,	8	1000	Unknown		12/14/2017 11:45	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	9	1000	Unknown		12/14/2017 11:55	Finished	CCB R171129A
27	N027542-001B,SAMF	10	1000	Unknown		12/14/2017 12:04	Finished	SAMP,0.016>10mL
28	N027542-001BMS,MS	11	1000	Unknown		12/14/2017 12:14	Finished	MS (1ppb), IWST-171002B,0.0
29	N027459-003A,SAMF	12	1000	Unknown		12/14/2017 12:23	Finished	SAMP,2>10mL
30	N027459-003AMS,MS	13	1000	Unknown		12/14/2017 12:33	Finished	MS (5ppb), IWST-171002B,2>1
31	N027459-004A,SAMF	14	1000	Unknown		12/14/2017 12:42	Finished	SAMP,2>10mL
32	N027459-004AMS,MS	15	1000	Unknown		12/14/2017 12:52	Finished	MS (1ppb), IWST-171002B,2>1
33	N027459-005A,SAMF	16	1000	Unknown		12/14/2017 13:01	Finished	SAMP,2>10mL
34	N027459-005AMS,MS	17	1000	Unknown		12/14/2017 13:11	Finished	MS (1ppb), IWST-171002B,2>1
35	N027542-001BMS,MS	18	1000	Unknown		12/14/2017 13:20	Finished	MS (1ppb), IWST-171002B,0.0
36	N027544-001A,SAMF	19	1000	Unknown		12/14/2017 13:30	Finished	SAMP,0.5>10mL
37	CCV-3,CCV,1,	20	1000	Unknown		12/14/2017 13:39	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	21	1000	Unknown		12/14/2017 13:48	Finished	CCB R171129A
39	N027544-001ADUP,D	22	1000	Unknown		12/14/2017 13:58	Finished	DUP,0.5>10mL
40	N027542-001B,SAMF	1	1000	Unknown		12/14/2017 14:10	Finished	SAMP,0.0032>10mL
41	N027542-001BMS,MS	2	1000	Unknown		12/14/2017 14:21	Finished	MS (1ppb), IWST-171002B,0.0
42	N027459-006A,SAMF	3	1000	Unknown		12/14/2017 14:31	Finished	SAMP,0.01>10mL
43	N027459-006AMS,MS	4	1000	Unknown		12/14/2017 14:40	Finished	MS (5ppb), IWST-171002B,0.0
44	N027459-007A,SAMF	5	1000	Unknown		12/14/2017 14:50	Finished	SAMP,0.2>10mL
45	N027459-007AMS,MS	6	1000	Unknown		12/14/2017 14:59	Finished	MS (5ppb), IWST-171002B,0.2
46	N027459-007AMSD,M	7	1000	Unknown		12/14/2017 15:09	Finished	MSD (5ppb), IWST-171002B,0.
47	N027459-008A,SAMF	8	1000	Unknown		12/14/2017 15:18	Finished	SAMP,0.5>10mL
48	N027459-008AMS,MS	9	1000	Unknown		12/14/2017 15:27	Finished	MS (5ppb), IWST-171002B,0.5
49	CCV-4,CCV1,1,	10	1000	Unknown		12/14/2017 15:37	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	11	1000	Unknown		12/14/2017 15:46	Finished	CCB R171129A
51	N027542-001BREP,D	12	1000	Unknown		12/14/2017 15:56	Finished	REP,0.0032>10mL
52	N027459-013A,SAMF	13	1000	Unknown		12/14/2017 16:05	Finished	SAMP,0.2>10mL
53	N027459-013AMS,MS	14	1000	Unknown		12/14/2017 16:15	Finished	MS (1ppb), IWST-171002B,0.2
54	N027459-010A,SAMF	15	1000	Unknown		12/14/2017 16:24	Finished	SAMP,5>10mL
55	N027459-010AMS,MS	16	1000	Unknown		12/14/2017 16:34	Finished	MS (5ppb), IWST-171002B,5>1
56	N027459-011A,SAMF	17	1000	Unknown		12/14/2017 16:43	Finished	SAMP,5>10mL
57	N027459-011AMS,MS	18	1000	Unknown		12/14/2017 16:53	Finished	MS (5ppb), IWST-171002B,5>1
58	N027459-012A,SAMF	19	1000	Unknown		12/14/2017 17:02	Finished	SAMP,2>10mL
59	N027459-012AMS,MS	20	1000	Unknown		12/14/2017 17:12	Finished	MS (5ppb), IWST-171002B,2>1
60	CCV-5,CCV,1,	21	1000	Unknown		12/14/2017 17:21	Finished	CCV @5ppb, IWST-171002A

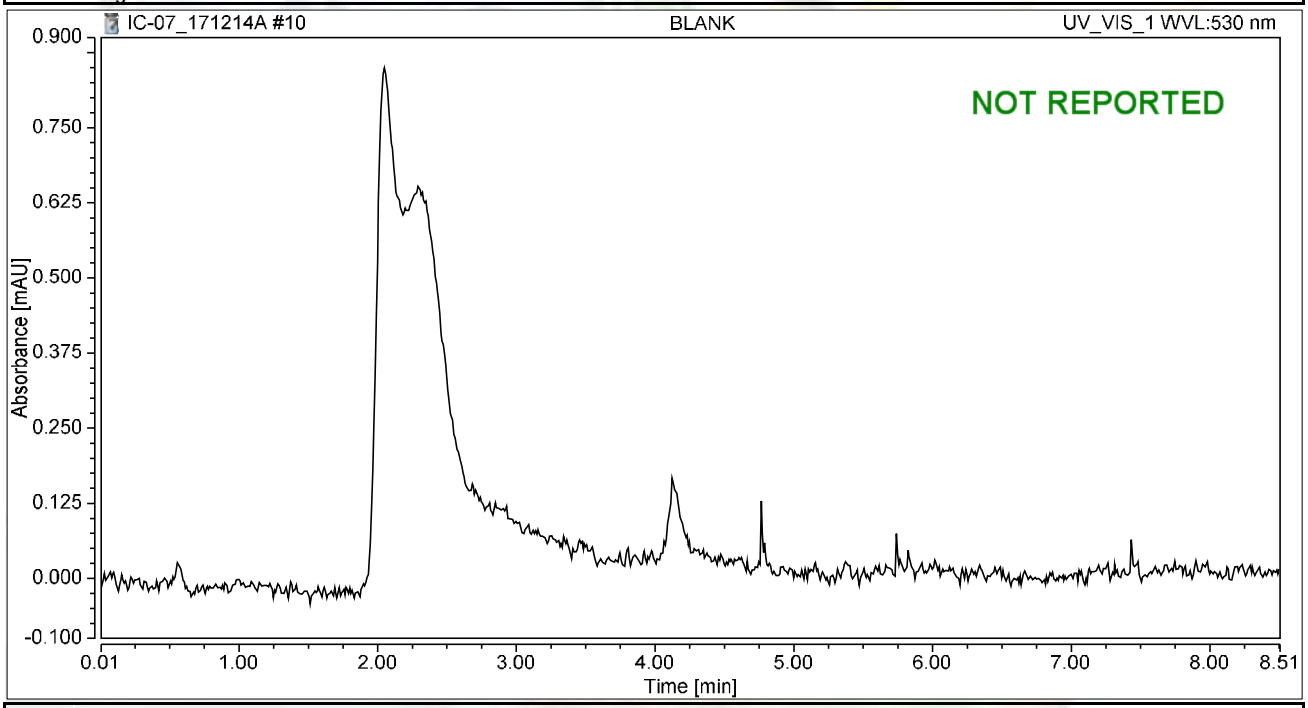
61	CCB-5,CCB,1,	22	1000	Unknown		12/14/2017 17:30	Finished	CCB R171129A
62	N027459-009A,SAMF	23	1000	Unknown		12/14/2017 17:40	Finished	SAMP,0.2>10mL
63	N027459-009AMS,MS	24	1000	Unknown		12/14/2017 17:49	Finished	MS (1ppb), IWST-171002B,0.2
64	N027459-014A,SAMF	25	1000	Unknown		12/14/2017 17:59	Finished	SAMP,2>10mL
65	N027459-014AMS,MS	26	1000	Unknown		12/14/2017 18:08	Finished	MS (1ppb), IWST-171002B,2>1
66	N027459-015A,SAMF	27	1000	Unknown		12/14/2017 18:18	Finished	SAMP,10mL
67	N027459-015AMS,MS	28	1000	Unknown		12/14/2017 18:27	Finished	MS (1ppb), IWST-171002B,10
68	N027459-016A,SAMF	29	1000	Unknown		12/14/2017 18:37	Finished	SAMP,0.05>10mL
69	N027459-016AMS,MS	30	1000	Unknown		12/14/2017 18:46	Finished	MS (5ppb), IWST-171002B,0.0
70	N027459-017A,SAMF	31	1000	Unknown		12/14/2017 18:56	Finished	SAMP,0.05>10mL
71	N027459-017AMS,MS	32	1000	Unknown		12/14/2017 19:05	Finished	MS (5ppb), IWST-171002B,0.0
72	CCV-6,CCV1,1,	33	1000	Unknown		12/14/2017 19:15	Finished	CCV @10ppb, IWST-171002A
73	CCB-6,CCB,1,	34	1000	Unknown		12/14/2017 19:24	Finished	CCB R171129A
74	N027459-020A,SAMF	35	1000	Unknown		12/14/2017 19:34	Finished	SAMP,10mL
75	N027459-020AMS,MS	36	1000	Unknown		12/14/2017 19:43	Finished	MS (1ppb), IWST-171002B,10
76	N027459-004A,SAMF	37	1000	Unknown		12/14/2017 19:52	Finished	SAMP,10mL
77	N027459-004AMS,MS	38	1000	Unknown		12/14/2017 20:02	Finished	MS (1ppb), IWST-171002B,10
78	N027459-009A,SAMF	39	1000	Unknown		12/14/2017 20:11	Finished	SAMP,10mL
79	N027459-009AMS,MS	40	1000	Unknown		12/14/2017 20:21	Finished	MS (1ppb), IWST-171002B,10
80	N027459-013A,SAMF	41	1000	Unknown		12/14/2017 20:30	Finished	SAMP,10mL
81	N027459-013AMS,MS	42	1000	Unknown		12/14/2017 20:40	Finished	MS (1ppb), IWST-171002B,10
82	N027459-015A,SAMF	43	1000	Unknown		12/14/2017 20:49	Finished	SAMP,5>10mL
83	N027459-015AMS,MS	44	1000	Unknown		12/14/2017 20:59	Finished	MS (5ppb), IWST-171002B,5>1
84	CCV-7,CCV,1,	45	1000	Unknown		12/14/2017 21:08	Finished	CCV @5ppb, IWST-171002A
85	CCB-7,CCB,1,	46	1000	Unknown		12/14/2017 21:18	Finished	CCB R171114C
86	SHUTDOWN	47	1000	Unknown		12/14/2017 21:27	Finished	
87	Eluent: R171214A	48	1000	Unknown		n.a.	Finished	Eluent
88	PCR: R171214B	49	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 08:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

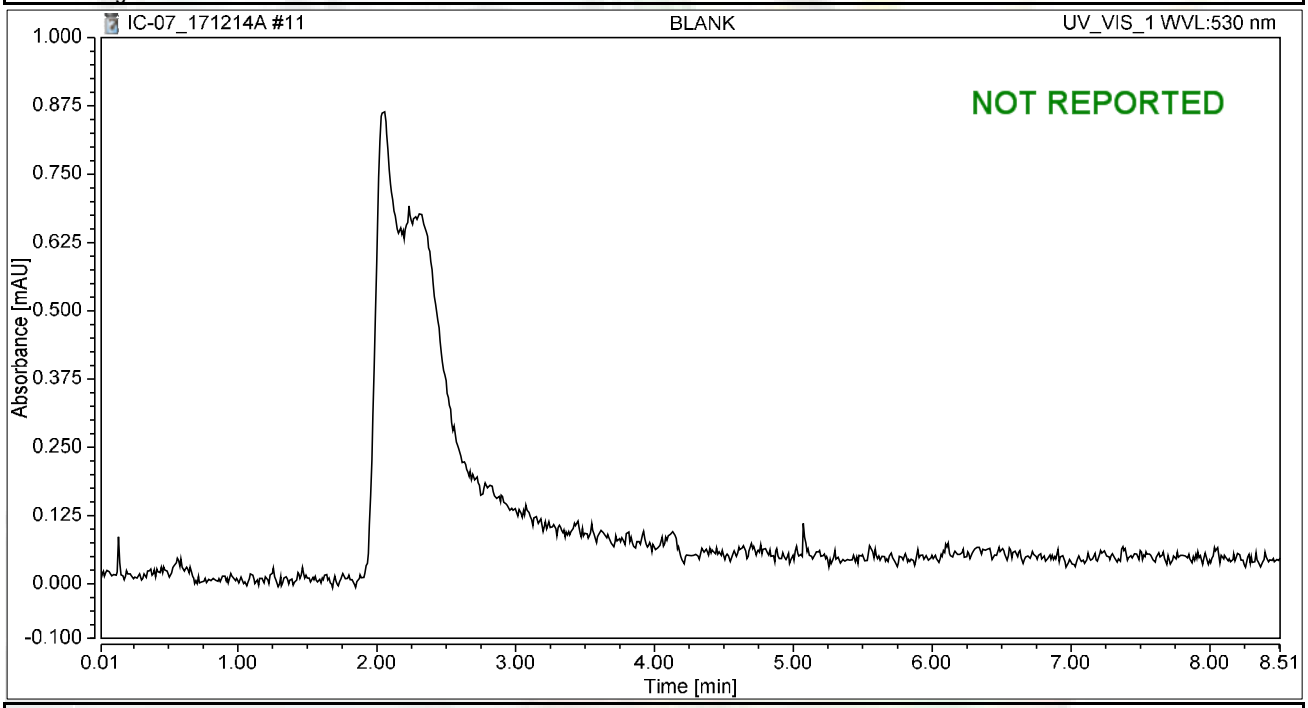
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 09:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

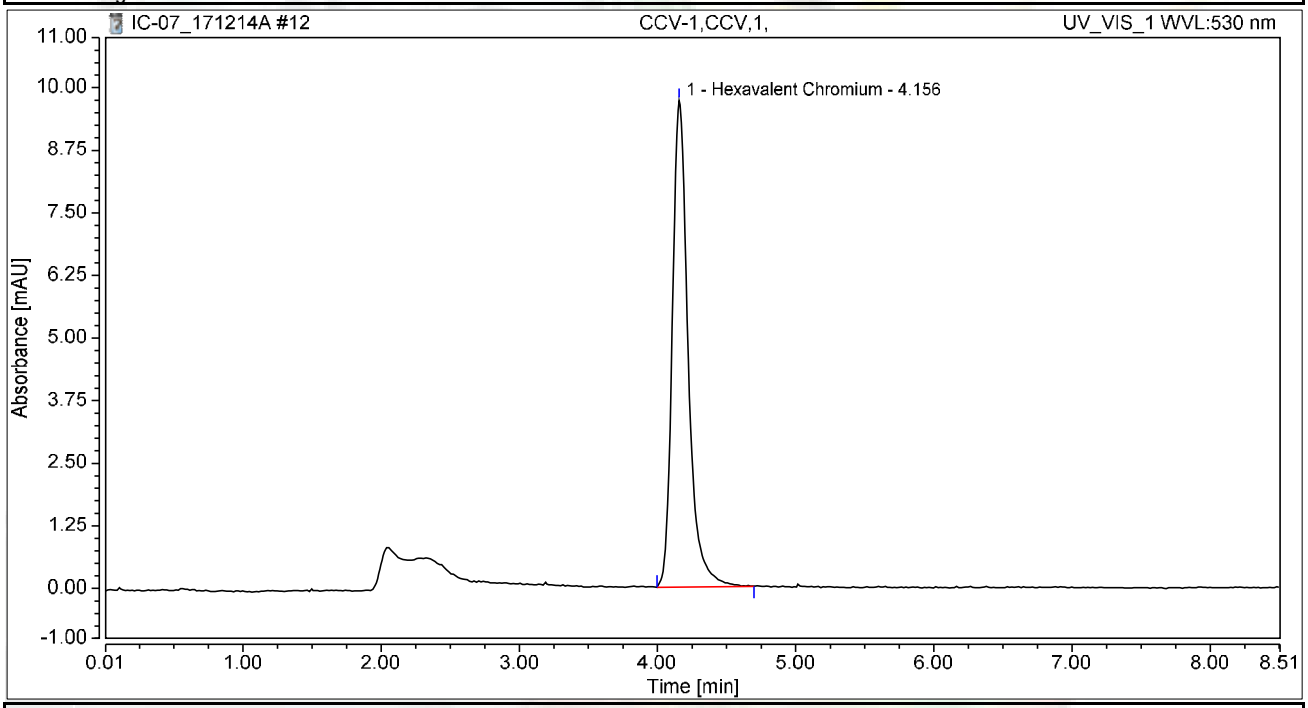
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 09:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

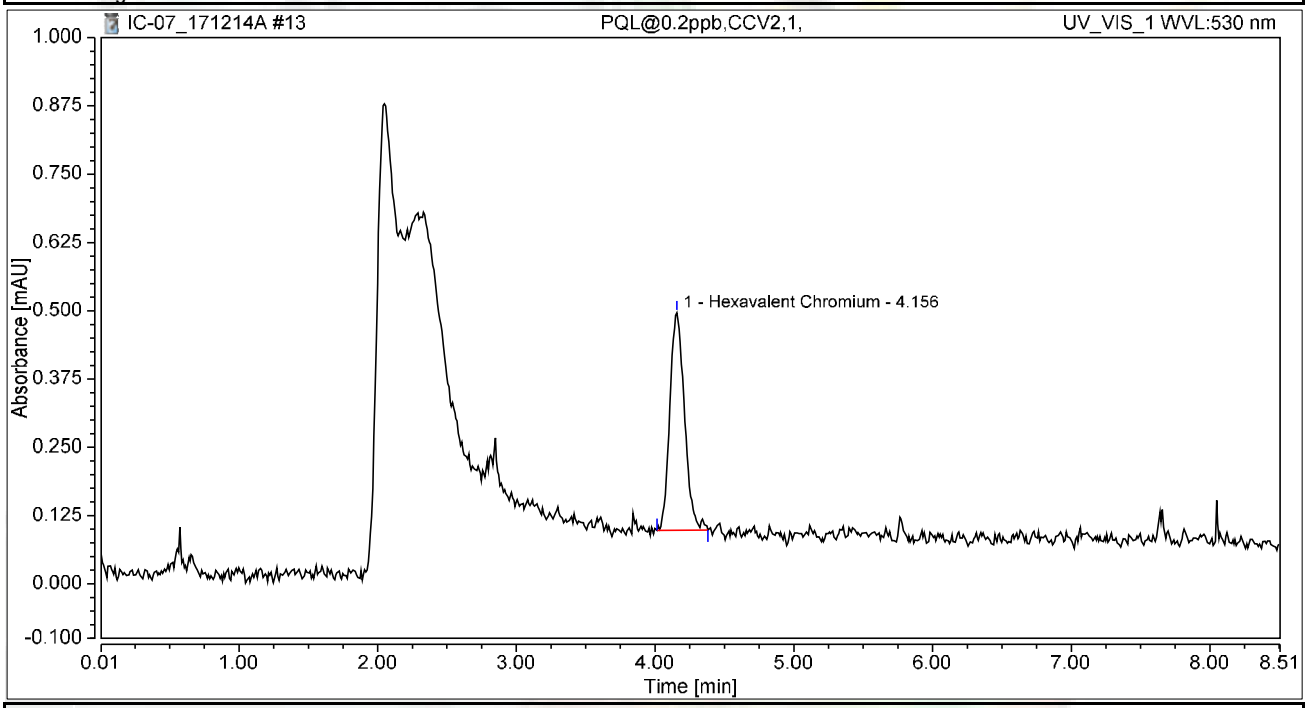
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.291	9.718	100.00	100.00	5.1396
Total:			**1.291**	**9.718**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 09:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

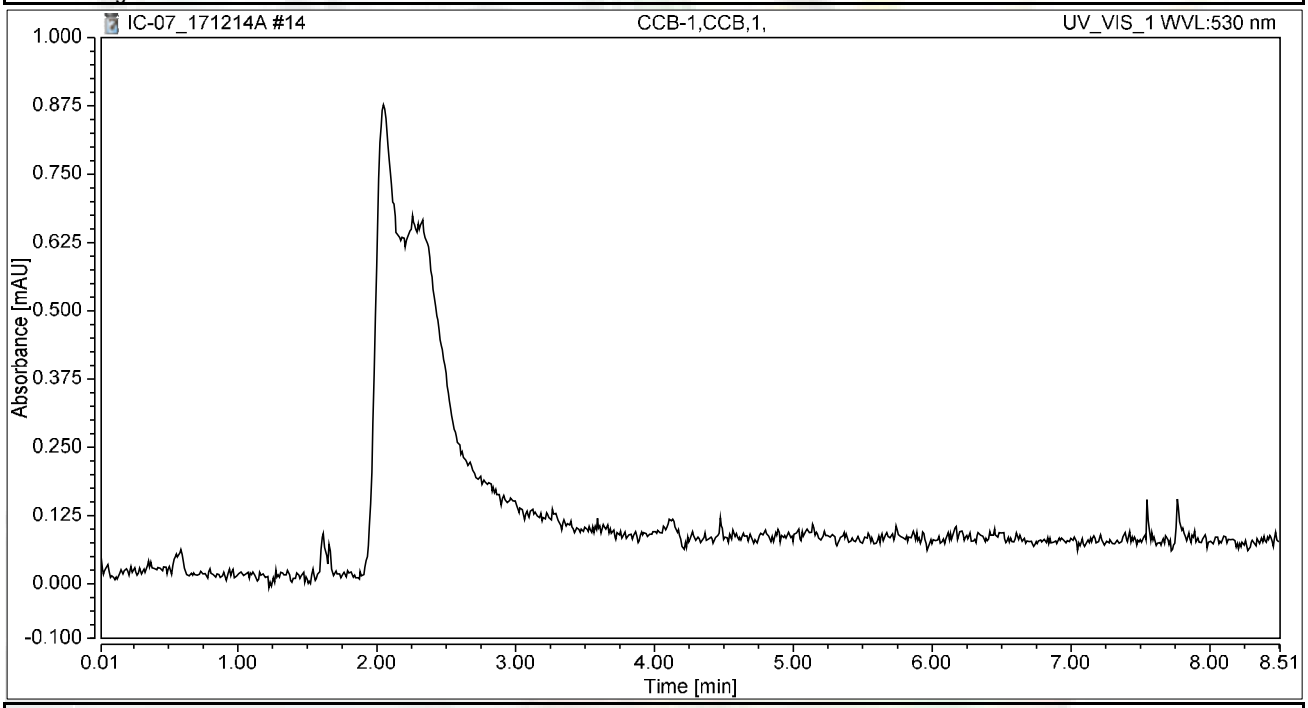
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.049	0.398	100.00	100.00	0.1947
Total:			**0.049**	**0.398**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 09:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

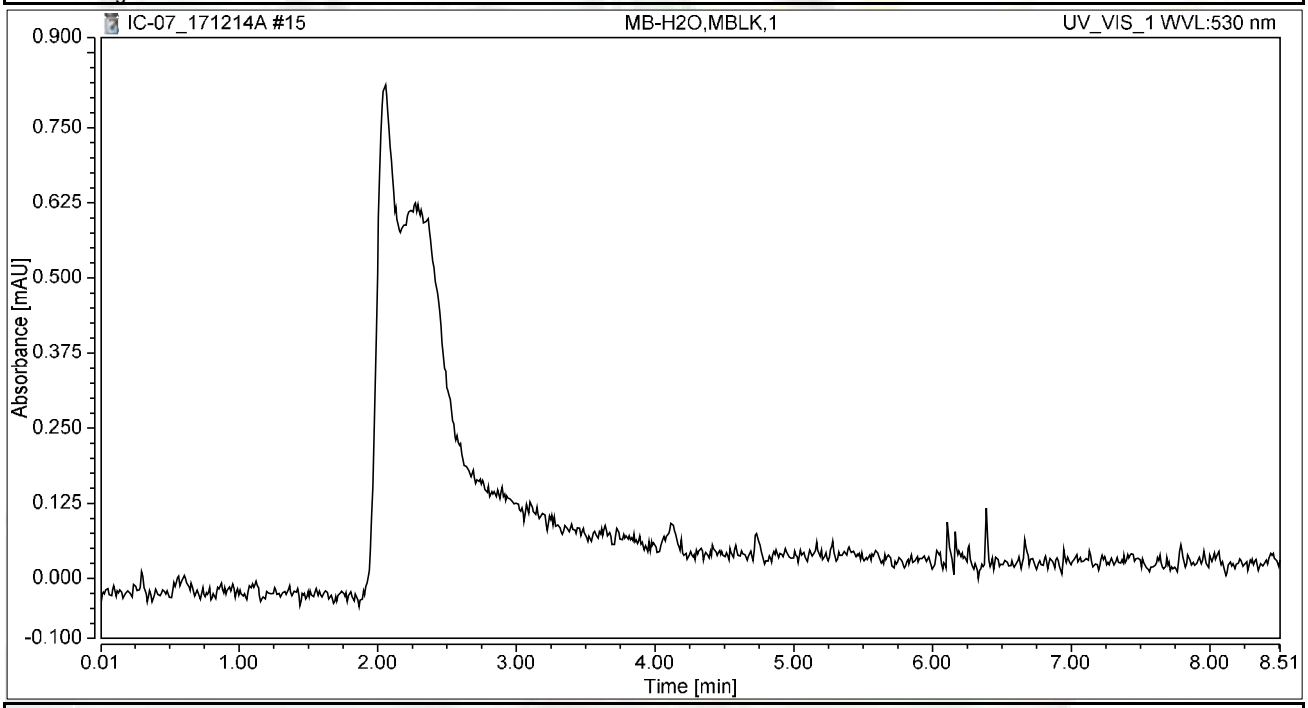
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 09:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

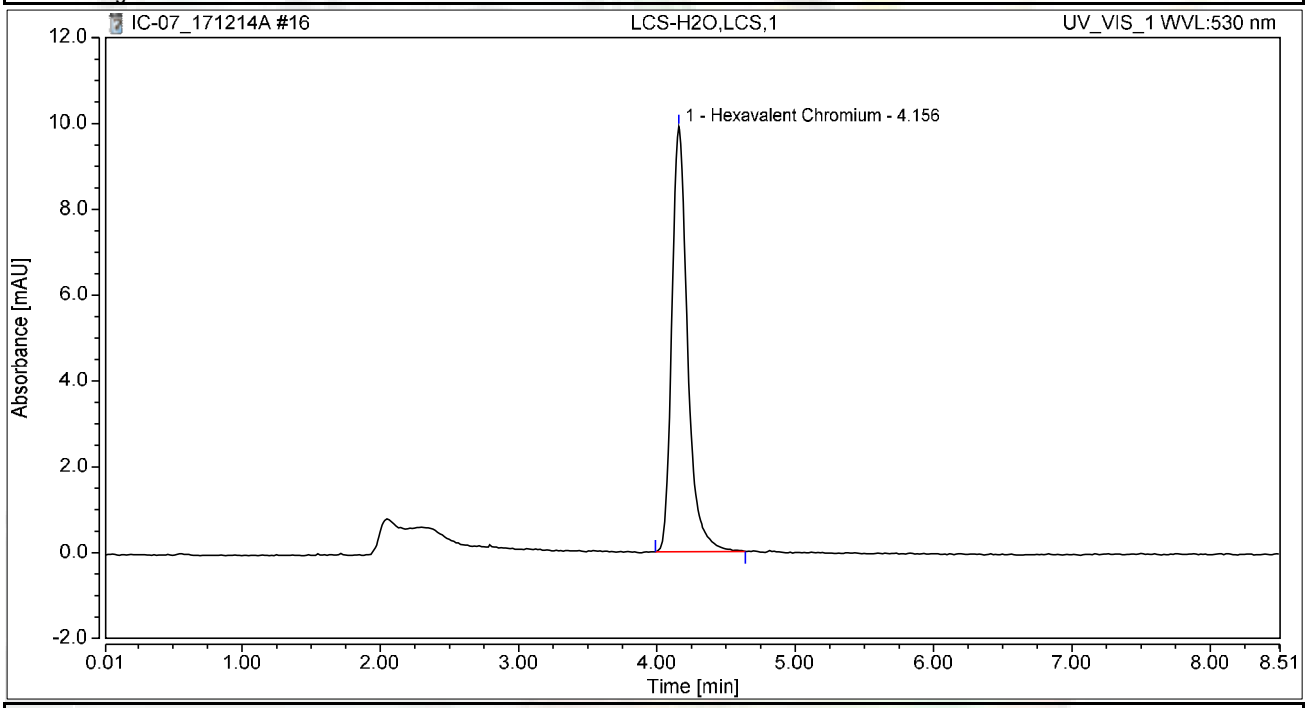
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 09:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

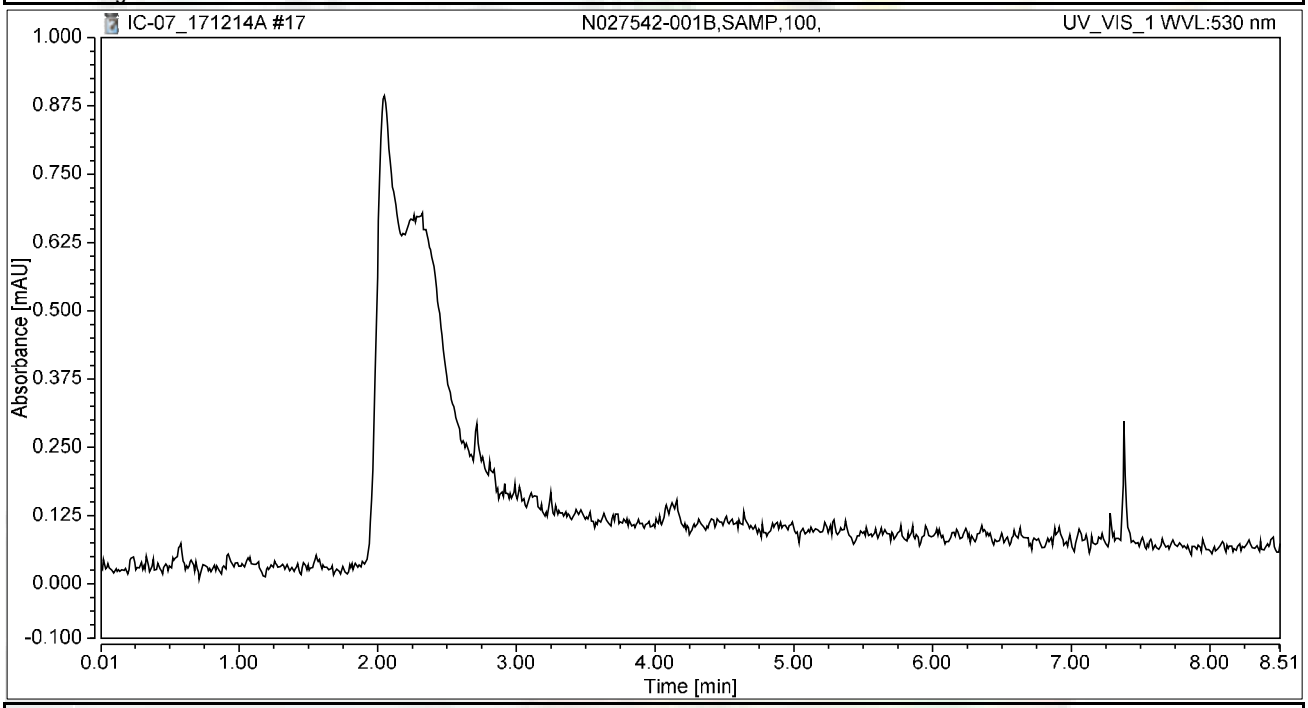
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.309	9.910	100.00	100.00	5.2138
Total:			**1.309**	**9.910**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027542-001B,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 10:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

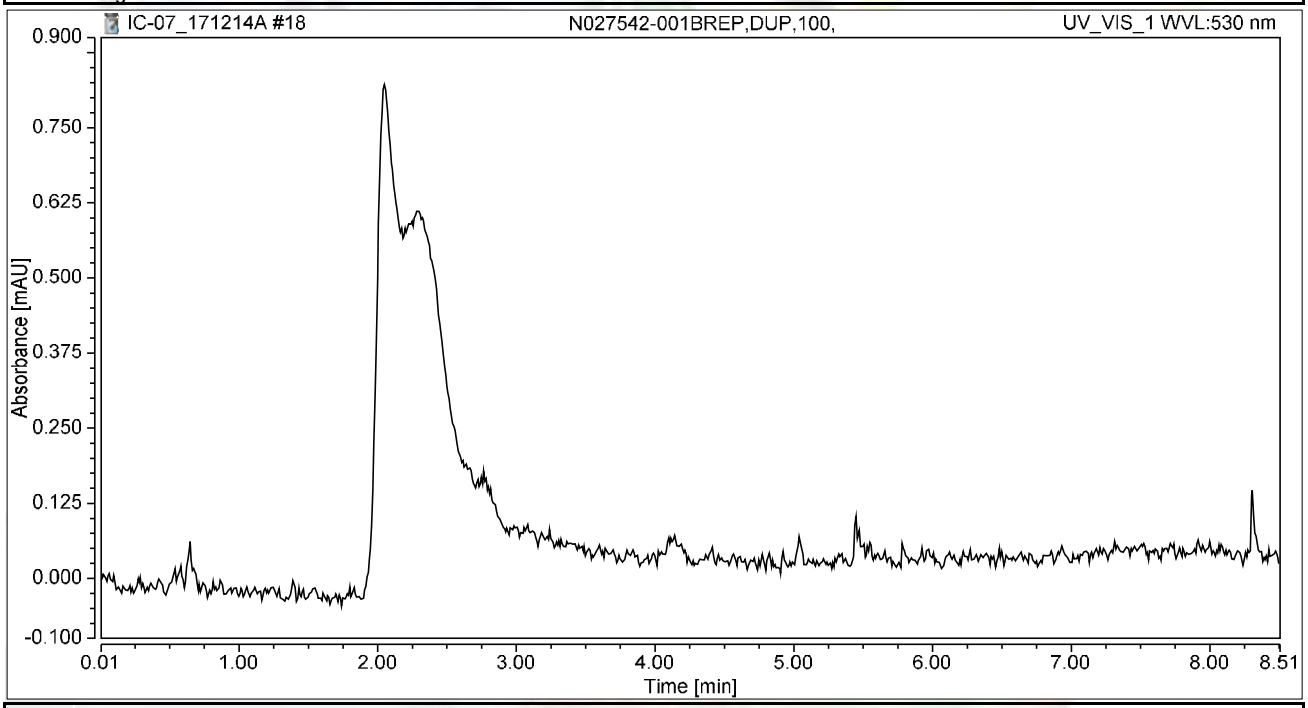
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027542-001BREP,DUP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

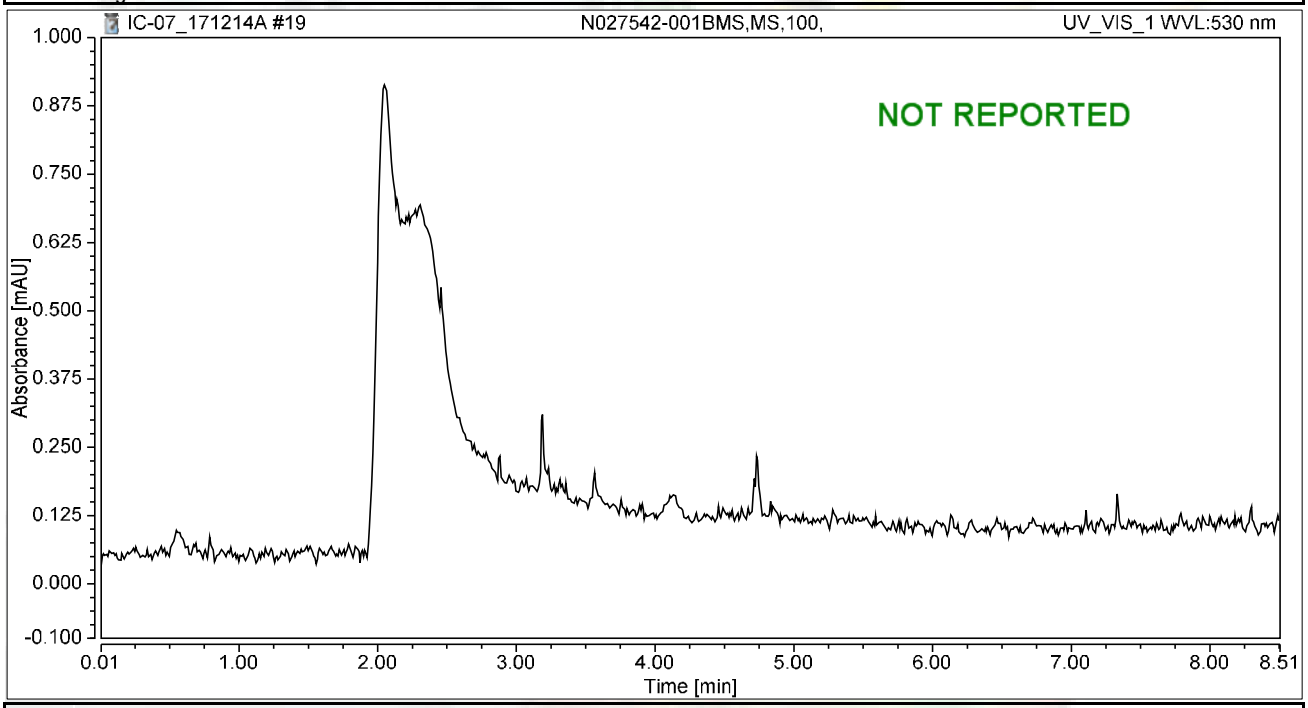
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027542-001BMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 10:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

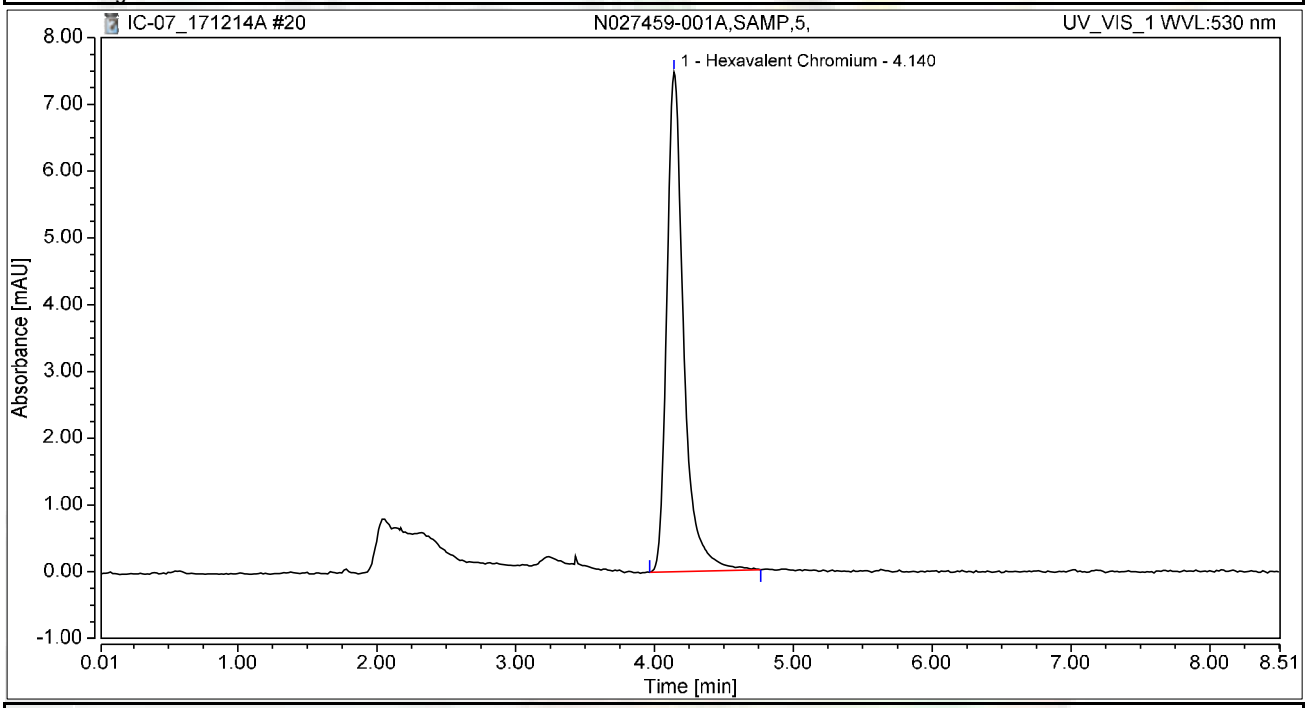
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-001A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 10:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

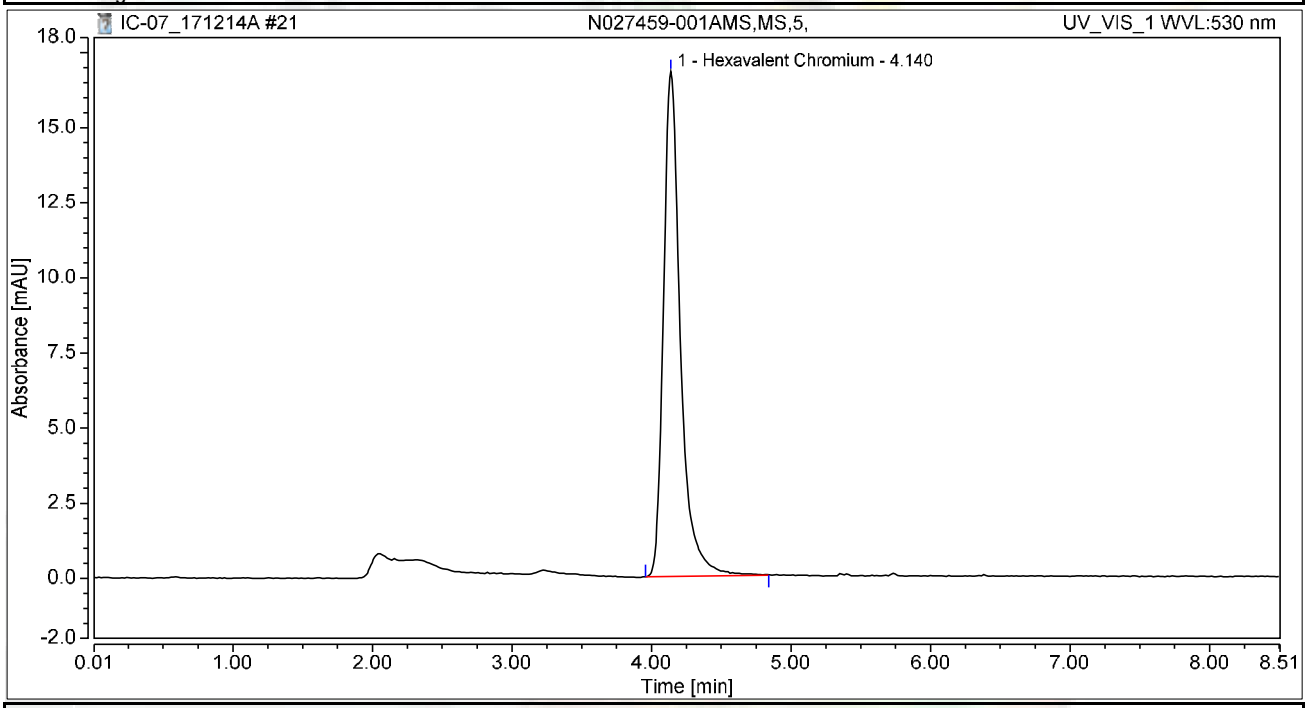
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.061	7.484	100.00	100.00	4.2236
Total:			**1.061**	**7.484**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-001AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 11:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

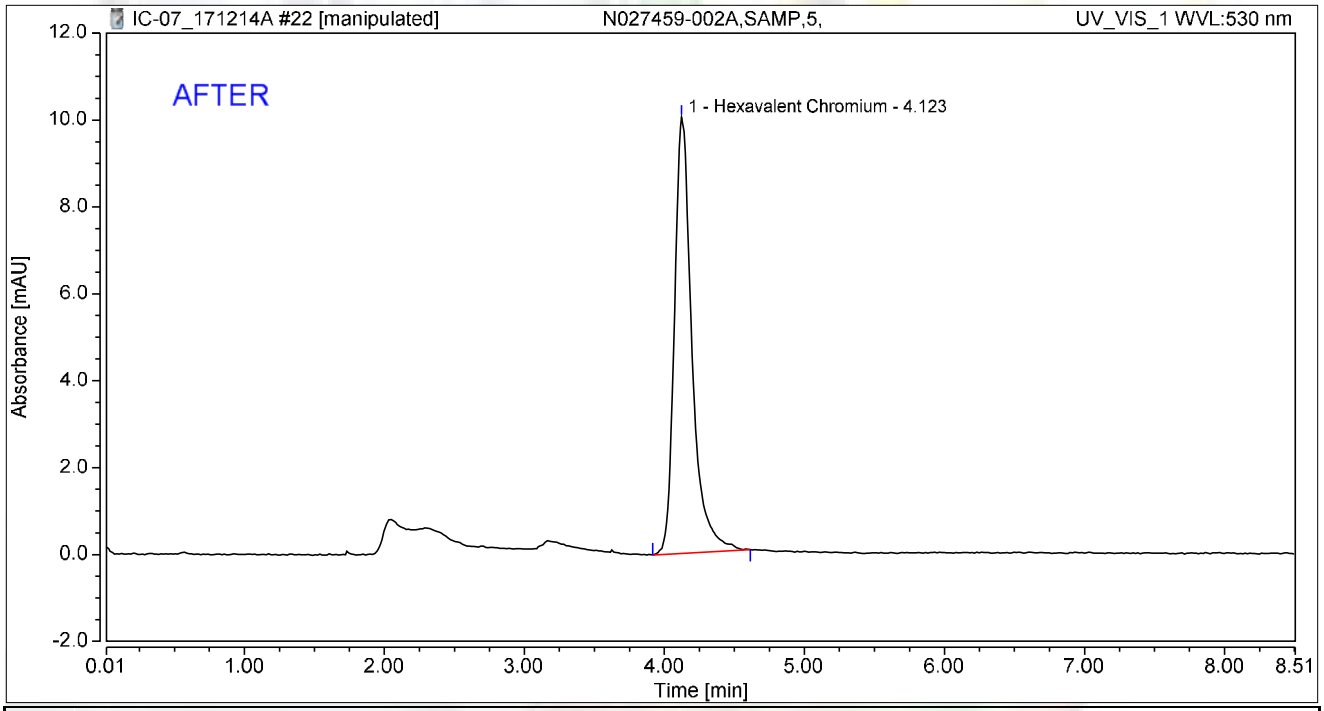
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.369	16.808	100.00	100.00	9.4360
Total:			**2.369**	**16.808**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-002A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.461	10.031	100.00	100.00	5.8184
Total:			**1.461**	**10.031**	**100.00**	**100.00**	

rba 12/19/2017

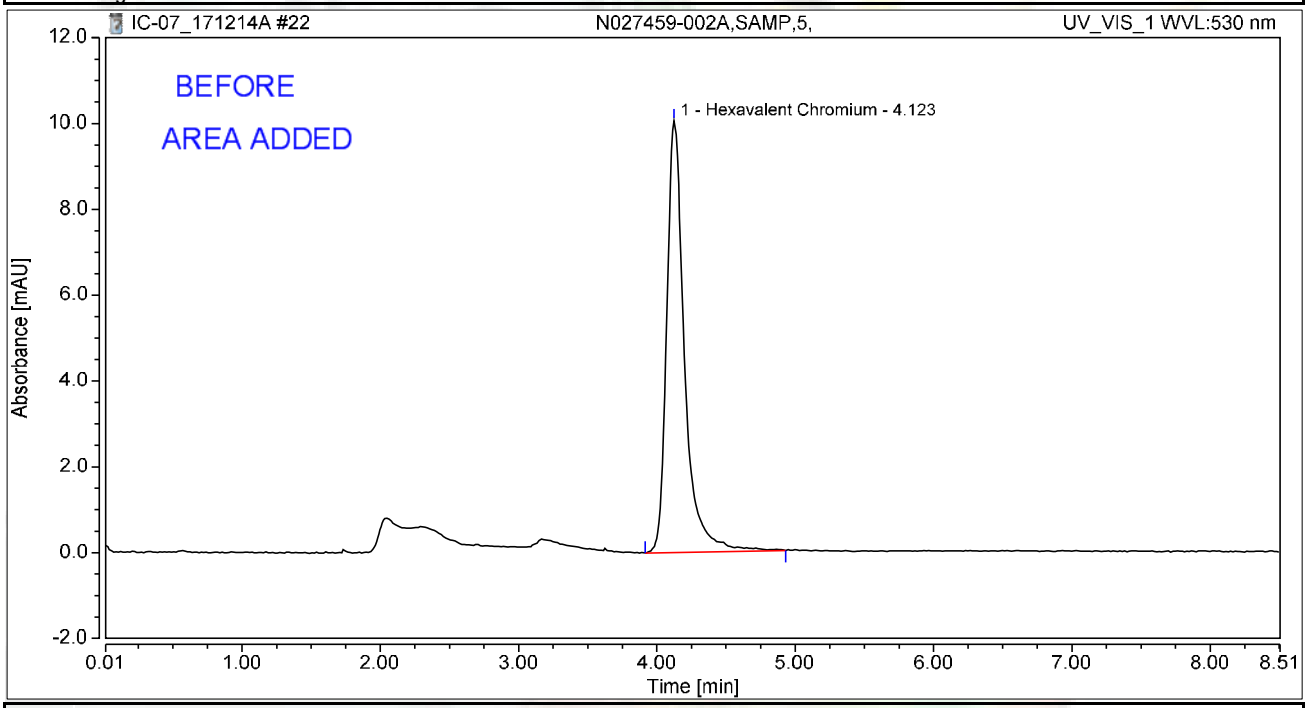
01/03/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027459-002A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.503	10.055	100.00	100.00	5.9842
Total:			**1.503**	**10.055**	**100.00**	**100.00**	

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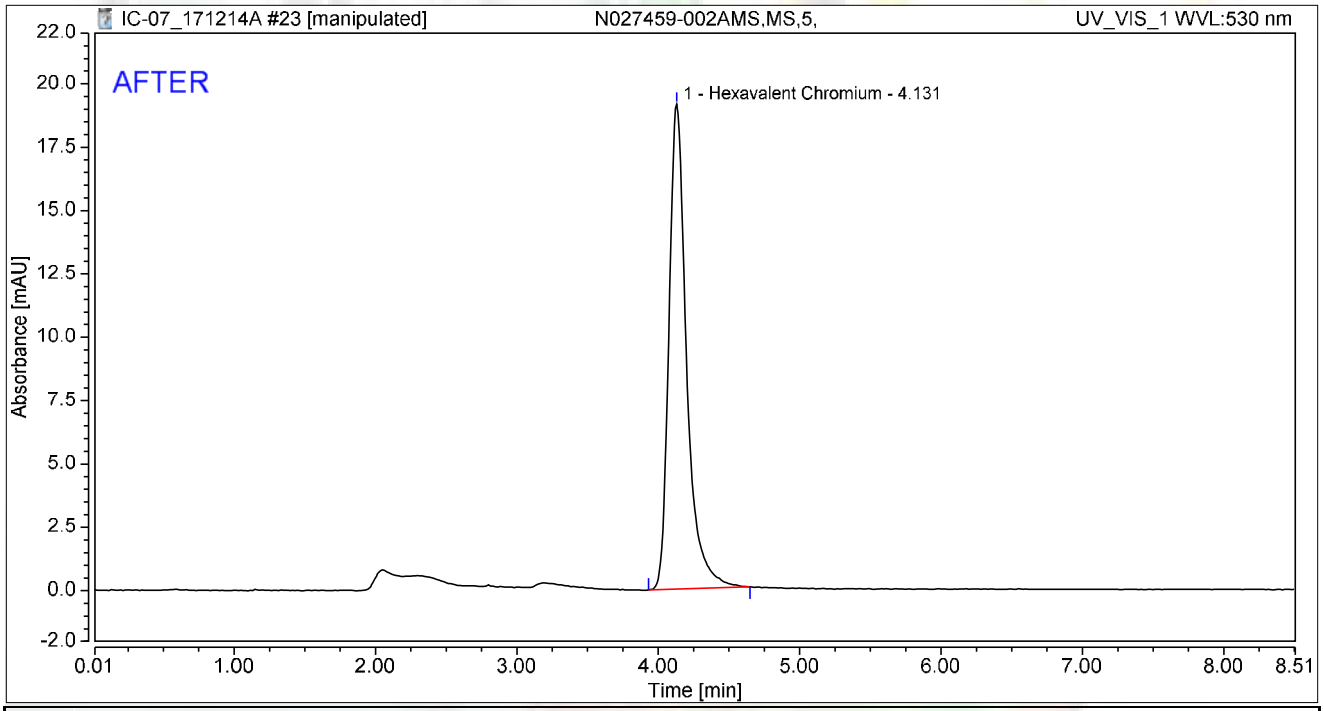
Chromatogram and Results

Injection Details

Injection Name:	**N027459-002AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 11:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.767	19.128	100.00	100.00	11.0177
Total:			**2.767**	**19.128**	**100.00**	**100.00**	

rba 12/19/2017

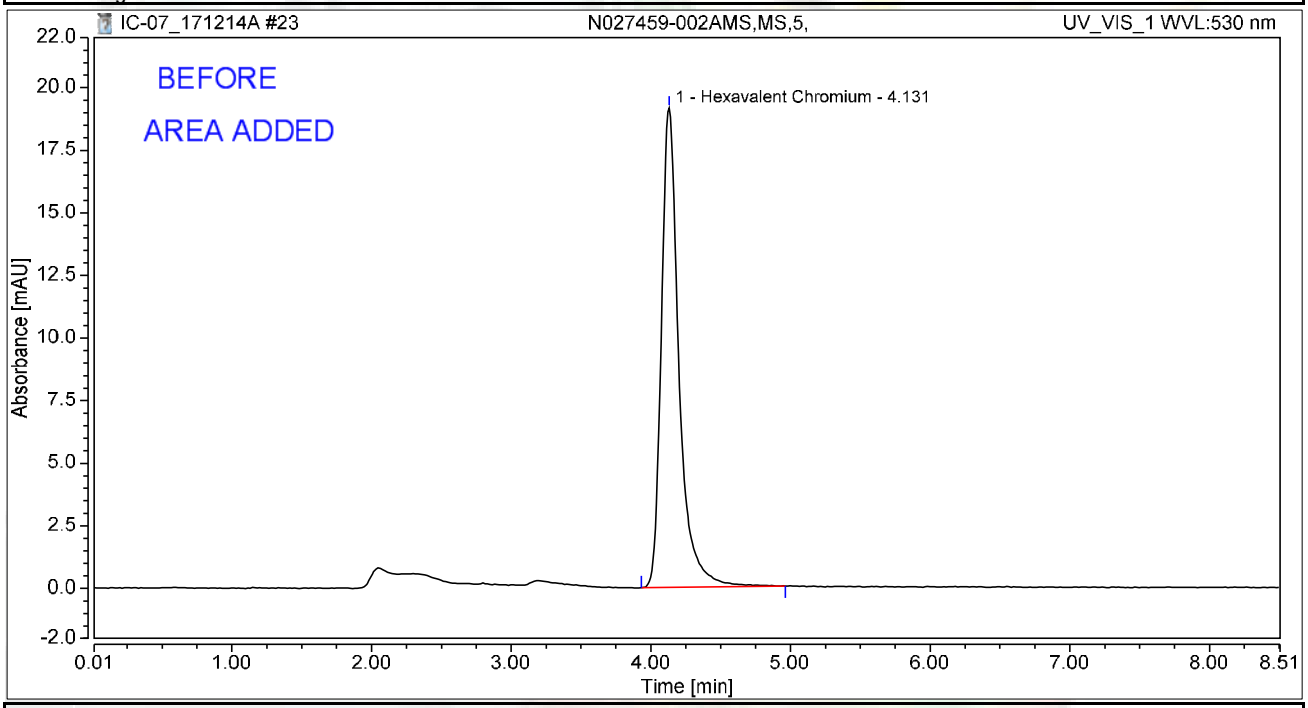
RB 01/03/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027459-002AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 11:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.805	19.150	100.00	100.00	11.1726
Total:			**2.805**	**19.150**	**100.00**	**100.00**	

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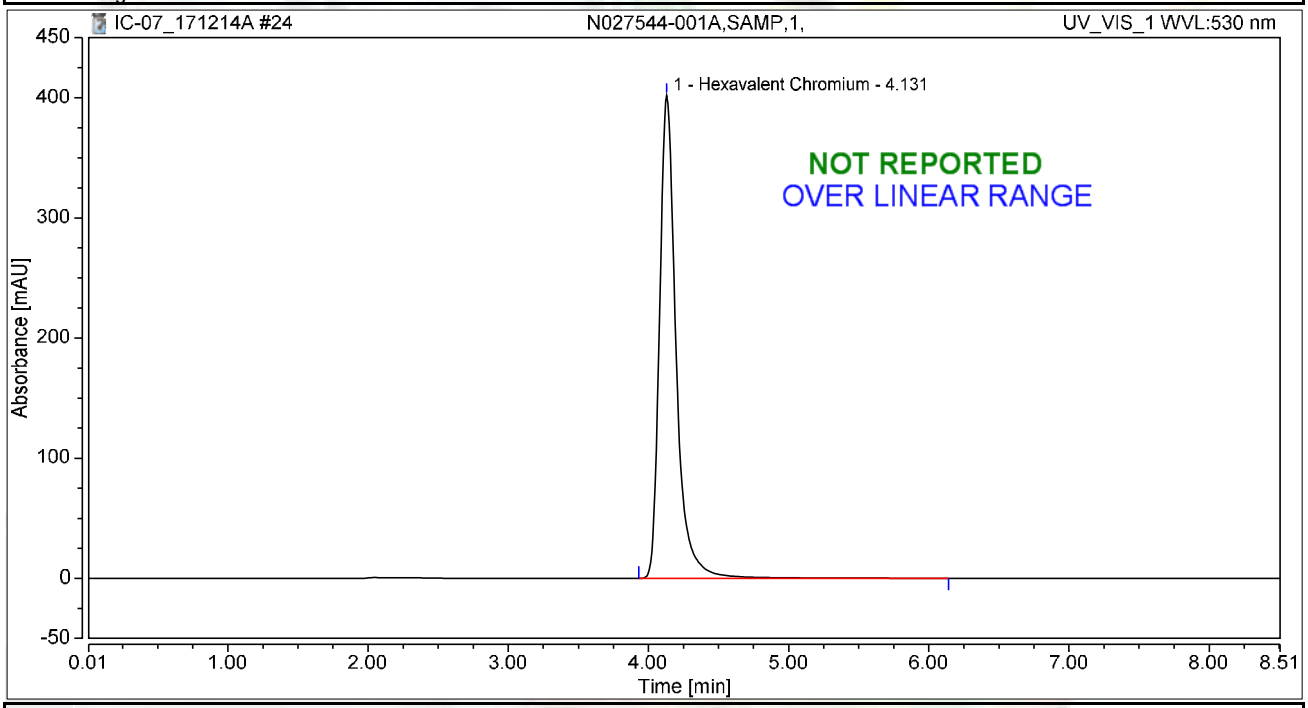
Chromatogram and Results

Injection Details

Injection Name:	**N027544-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 11:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

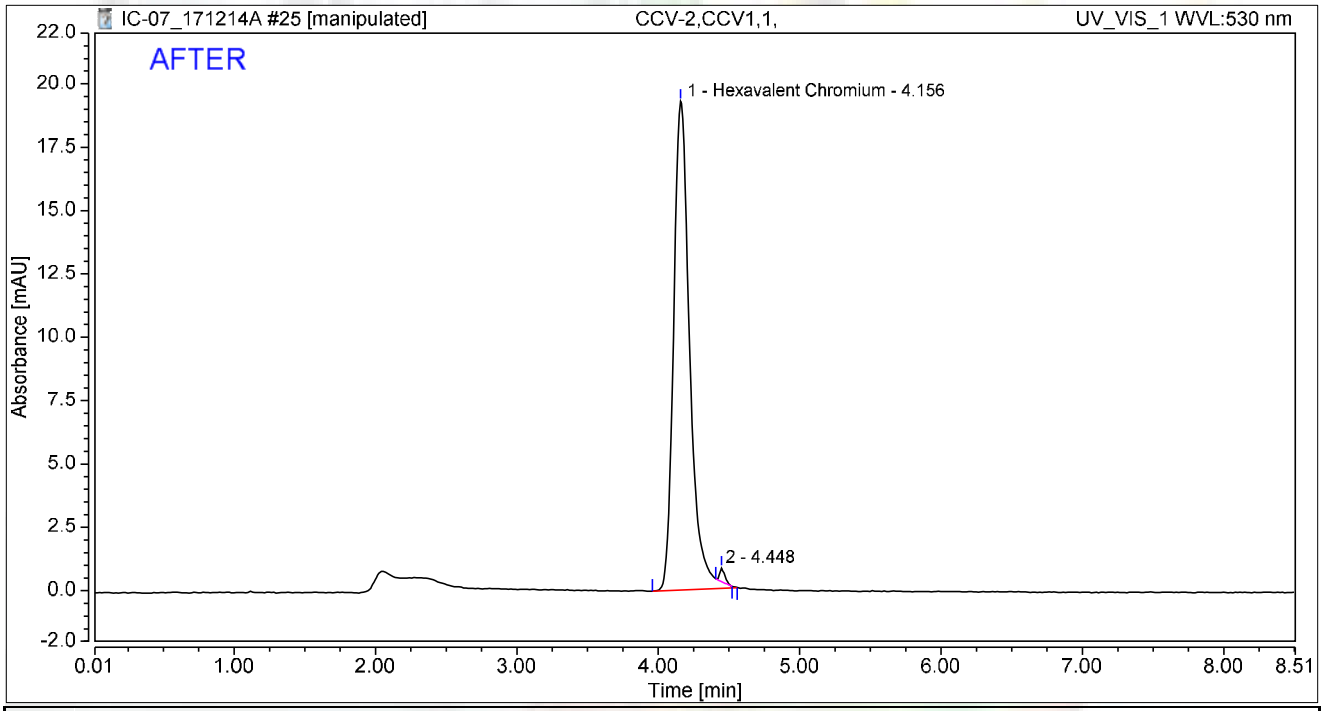
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	55.191	401.881	100.00	100.00	219.8022
Total:			**55.191**	**401.881**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.543	19.278	99.17	97.31	10.1276
2		4.448	0.021	0.533	0.83	2.69	n.a.
Total:			**2.564**	**19.811**	**100.00**	**100.00**	

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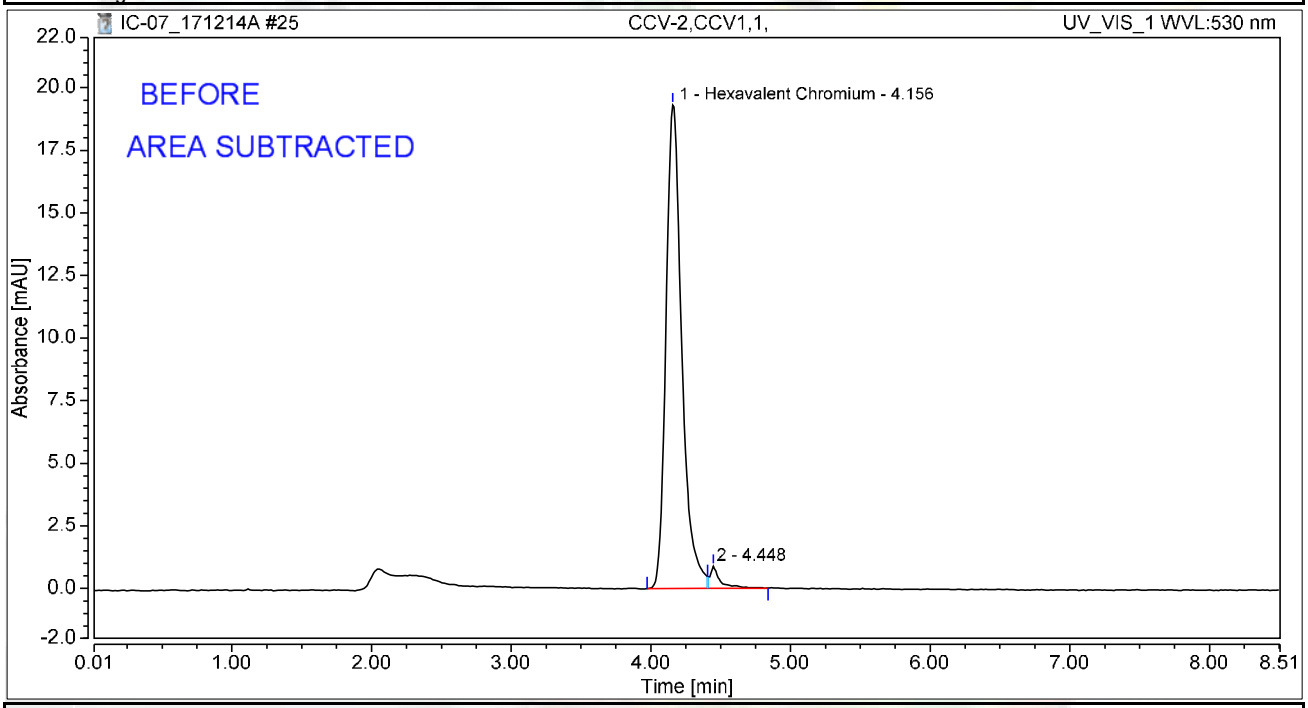
Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.536	19.315	97.00	95.58	10.0988
2		4.448	0.078	0.893	3.00	4.42	n.a.
Total:			**2.614**	**20.208**	**100.00**	**100.00**	

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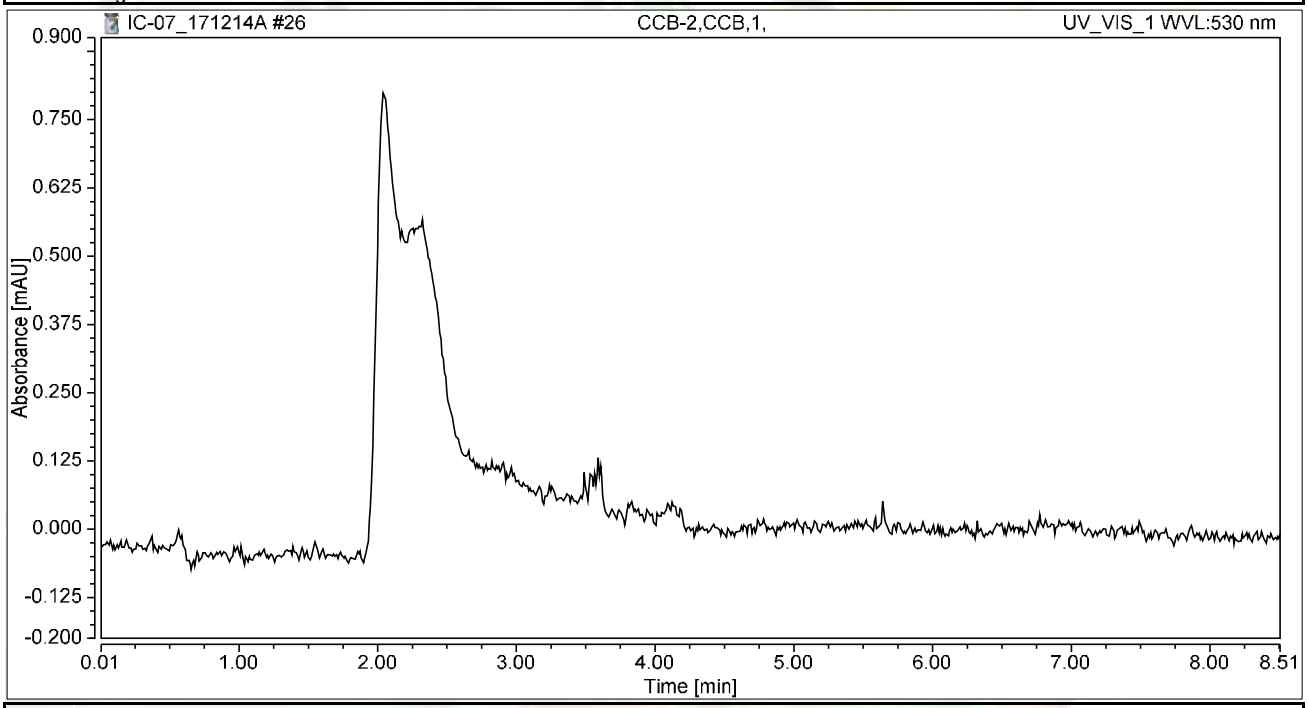
Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 11:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

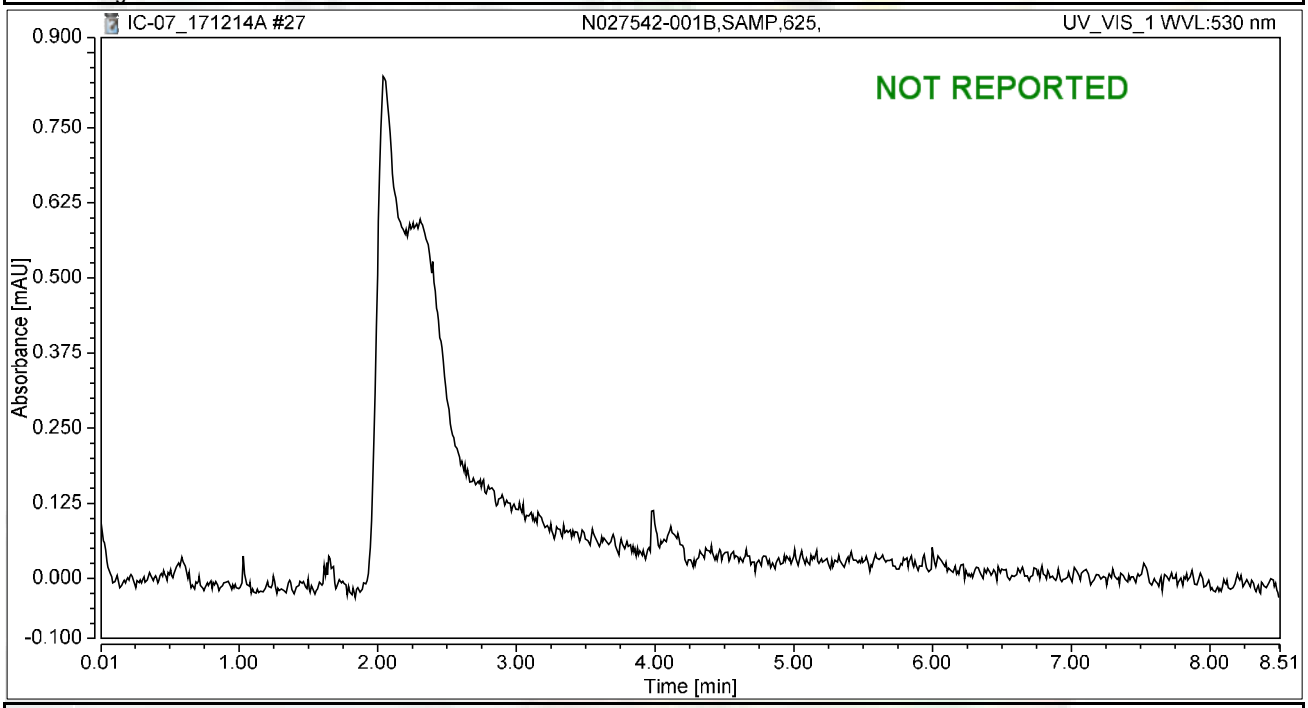
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027542-001B,SAMP,625,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 12:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

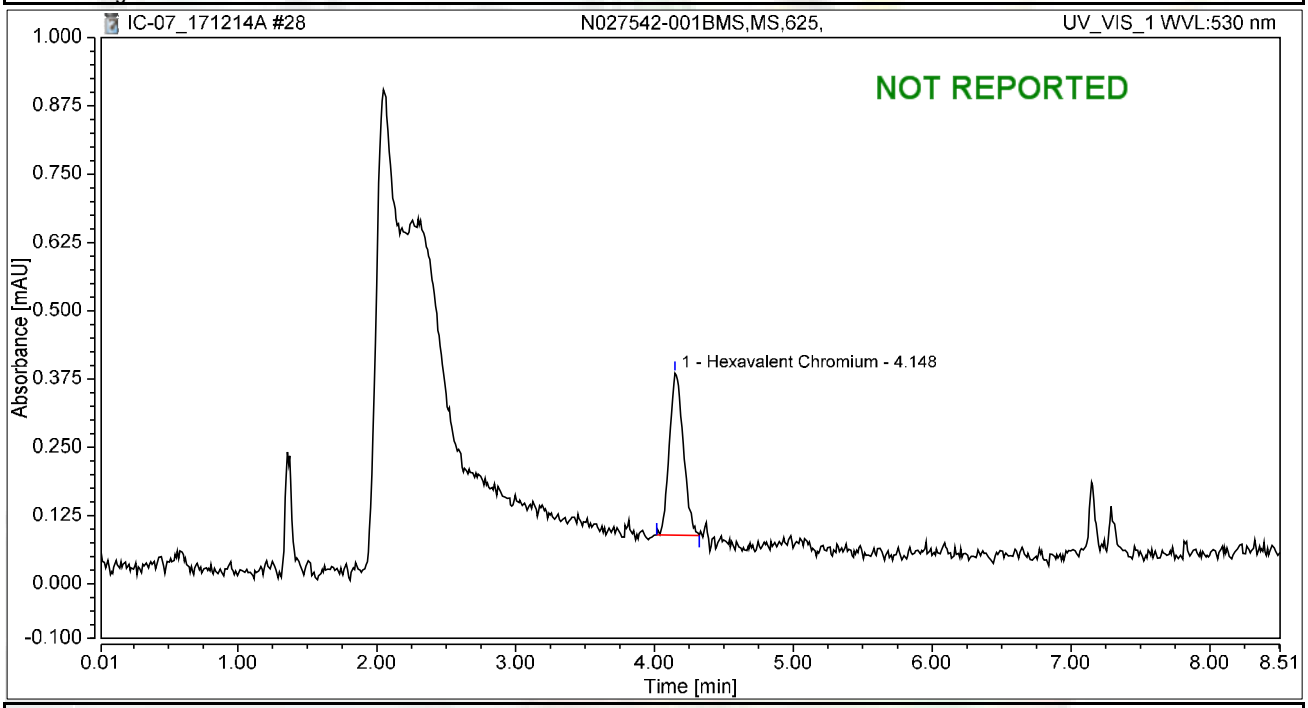
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027542-001BMS,MS,625,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 12:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

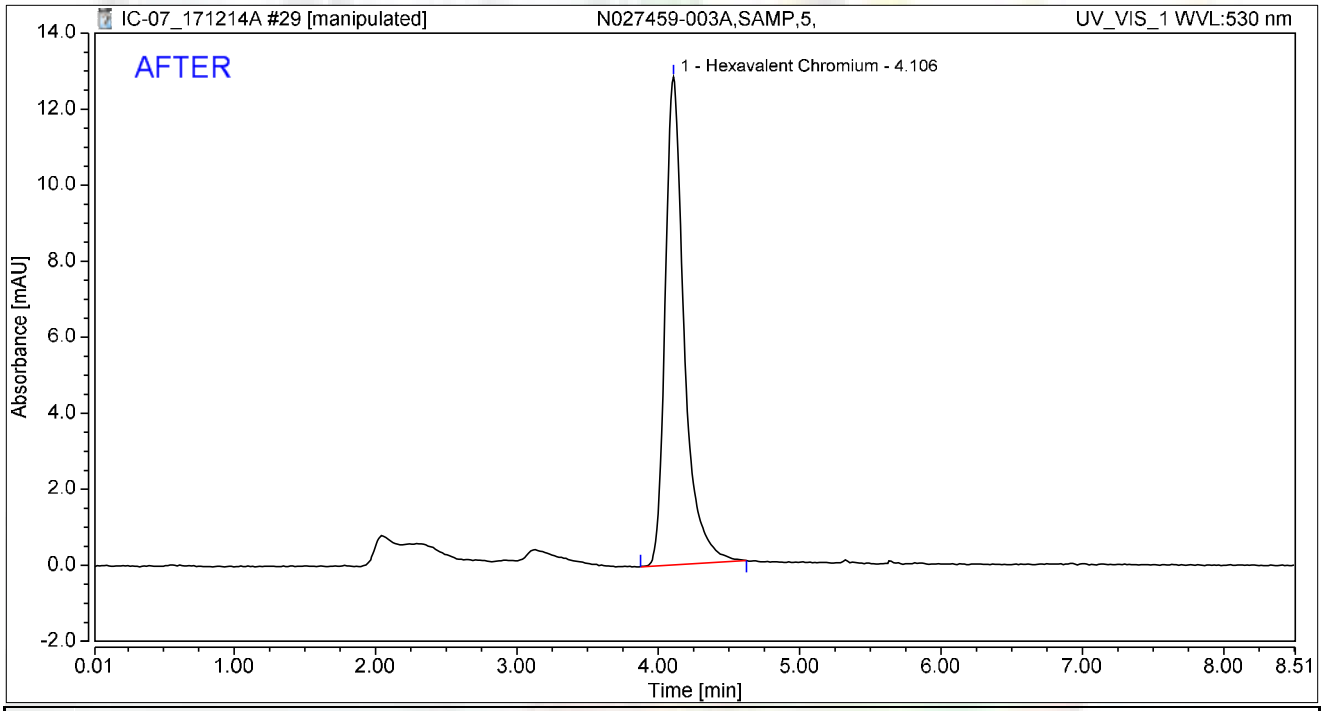
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.035	0.296	100.00	100.00	0.1379
Total:			**0.035**	**0.296**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-003A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 12:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	2.005	12.833	100.00	100.00	7.9851
Total:			**2.005**	**12.833**	**100.00**	**100.00**	

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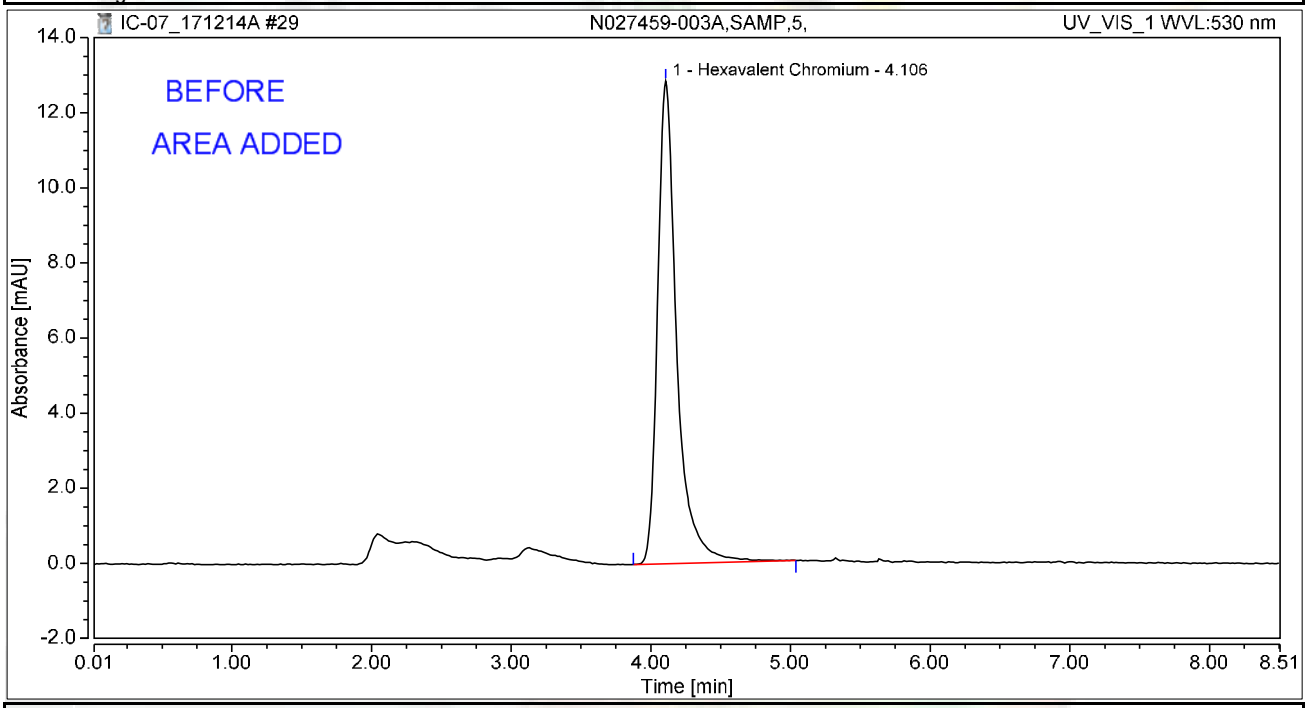
Chromatogram and Results

Injection Details

Injection Name:	**N027459-003A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 12:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	2.055	12.862	100.00	100.00	8.1848
Total:			**2.055**	**12.862**	**100.00**	**100.00**	

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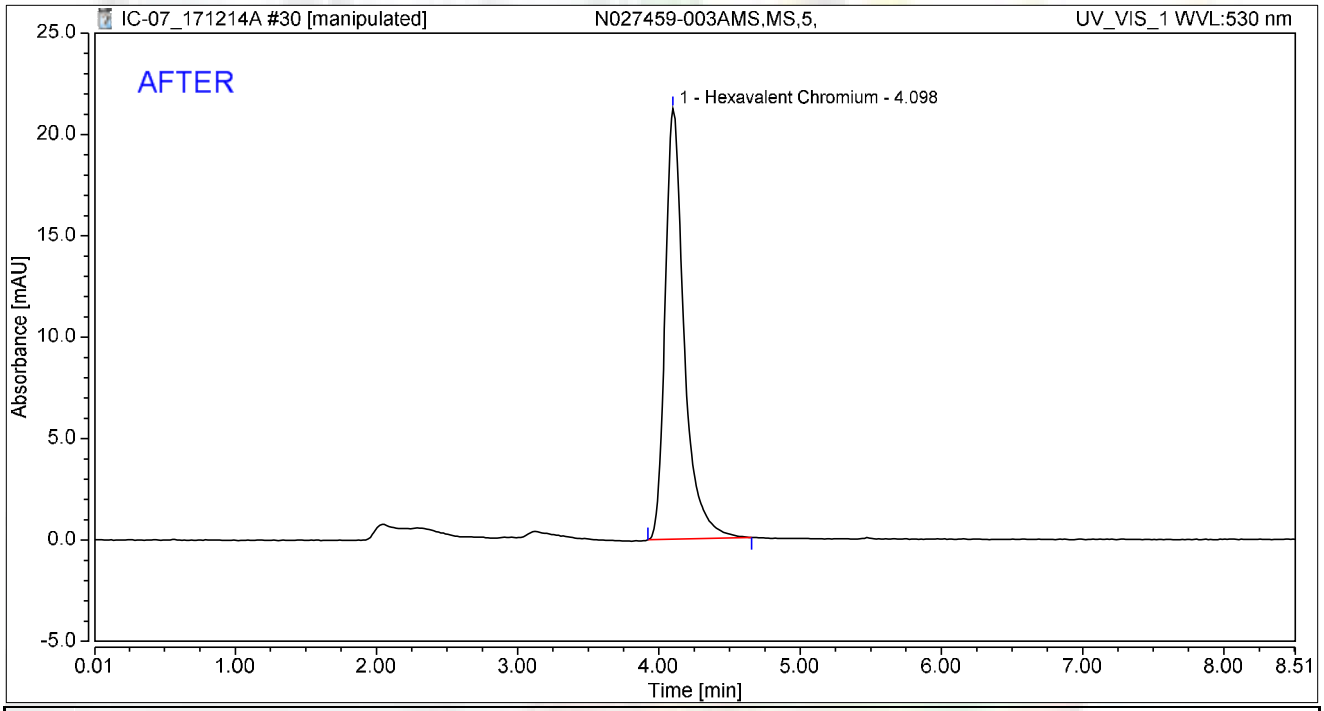
Chromatogram and Results

Injection Details

Injection Name:	**N027459-003AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 12:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	3.315	21.238	100.00	100.00	13.2004
Total:			**3.315**	**21.238**	**100.00**	**100.00**	

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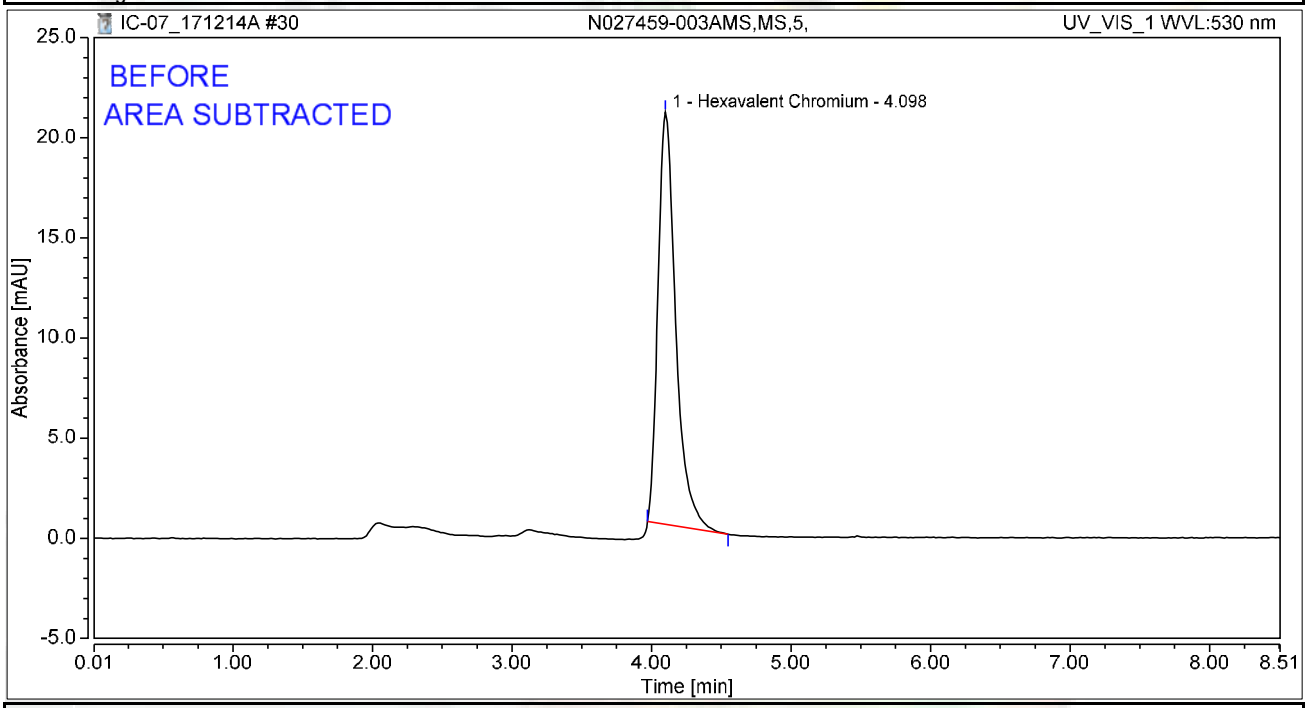
Chromatogram and Results

Injection Details

Injection Name:	**N027459-003AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 12:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	3.031	20.568	100.00	100.00	12.0712
Total:			**3.031**	**20.568**	**100.00**	**100.00**	

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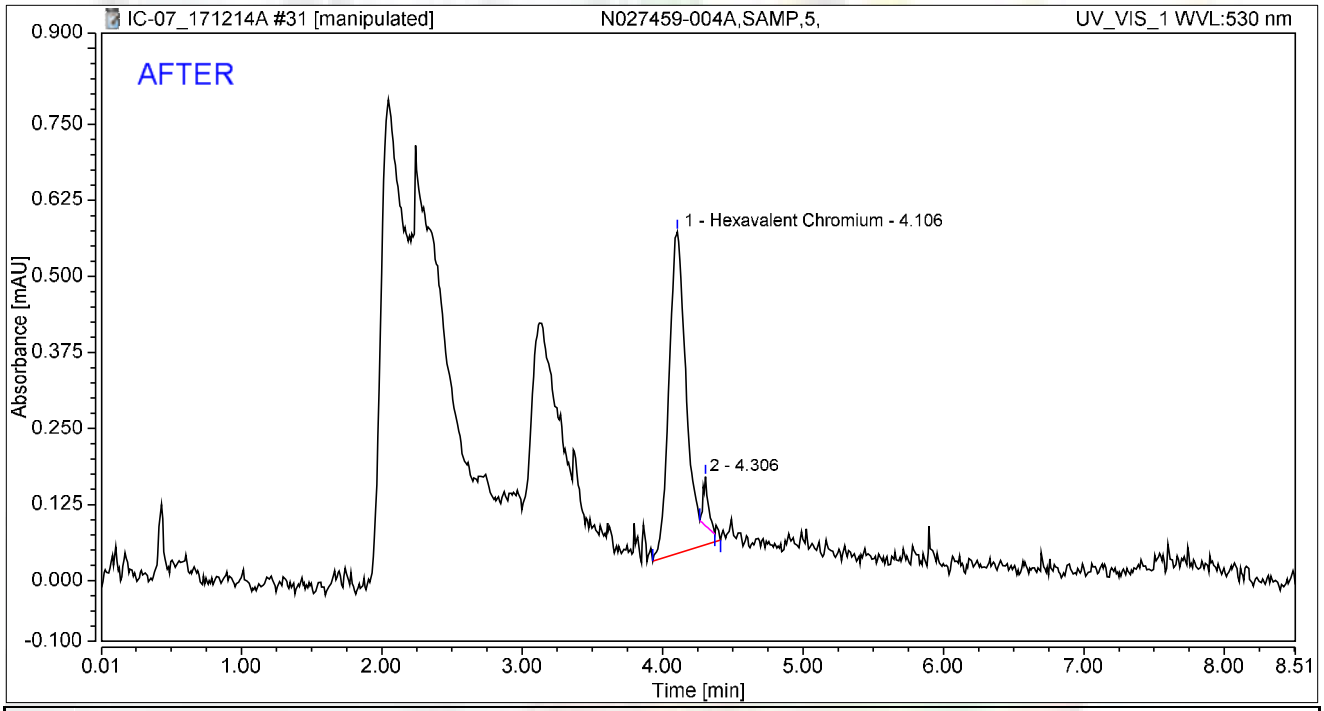
Chromatogram and Results

Injection Details

Injection Name:	**N027459-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 12:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.078	0.529	95.72	86.77	0.3092
2		4.306	0.003	0.081	4.28	13.23	n.a.
Total:			**0.081**	**0.609**	**100.00**	**100.00**	

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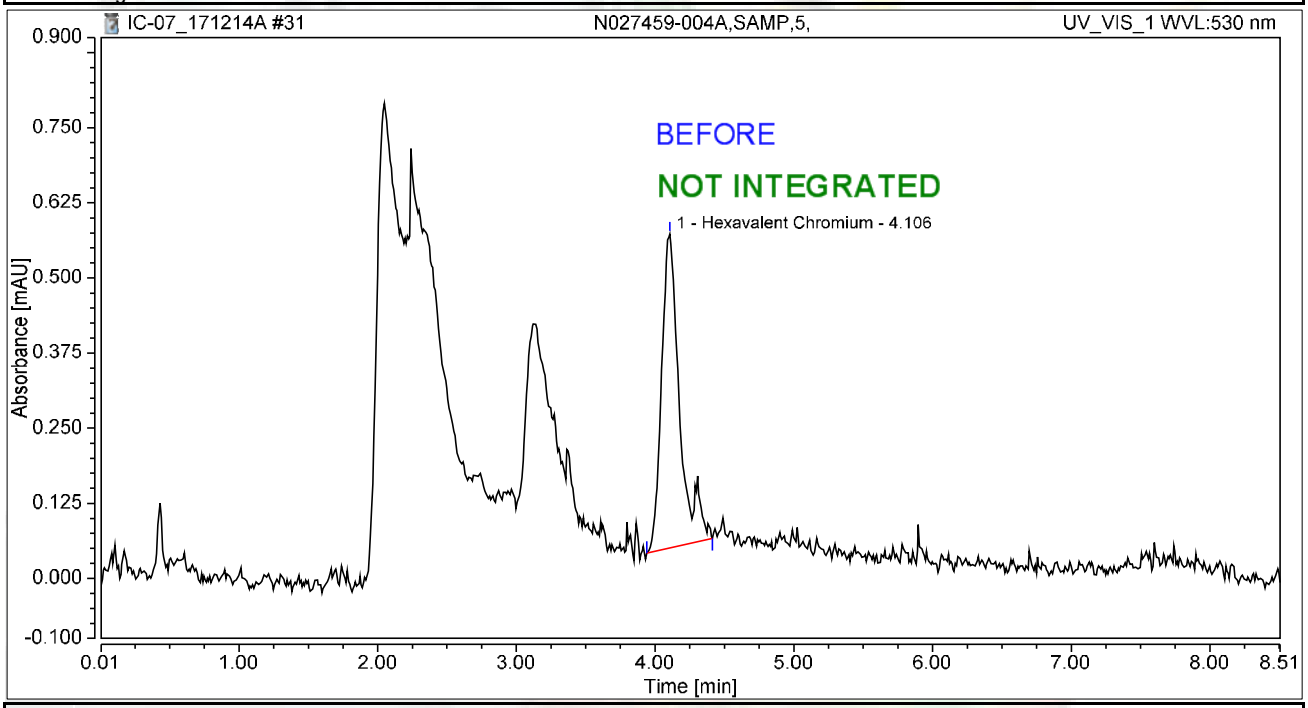
Chromatogram and Results

Injection Details

Injection Name:	**N027459-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 12:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.079	0.523	100.00	100.00	0.3141
Total:			**0.079**	**0.523**	**100.00**	**100.00**	

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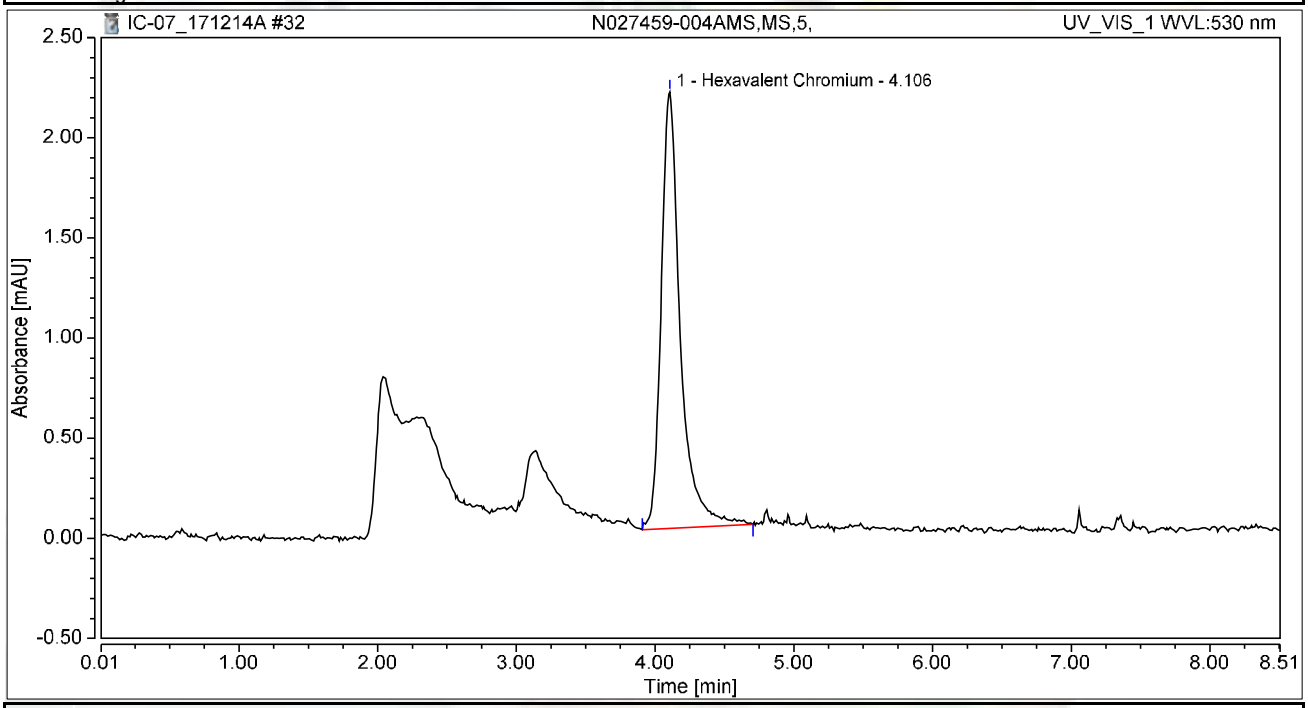
Chromatogram and Results

Injection Details

Injection Name:	**N027459-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 12:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

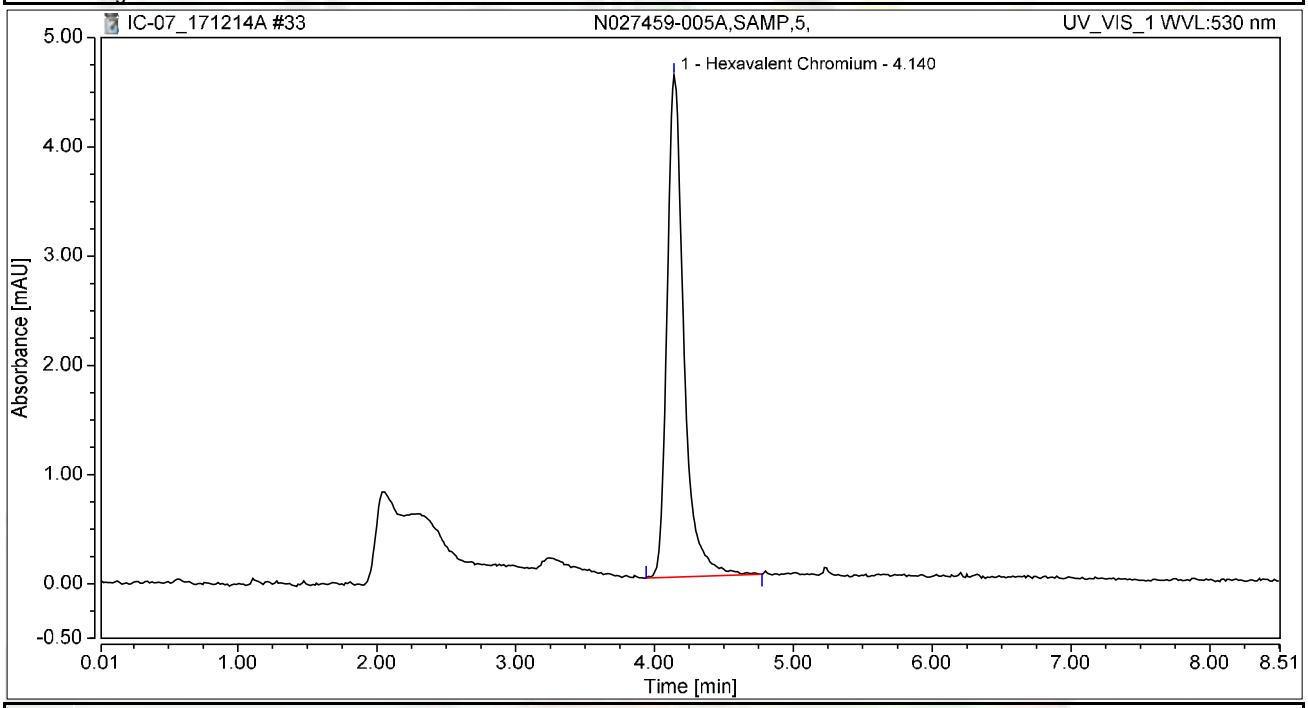
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.349	2.181	100.00	100.00	1.3919
Total:			**0.349**	**2.181**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-005A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 13:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

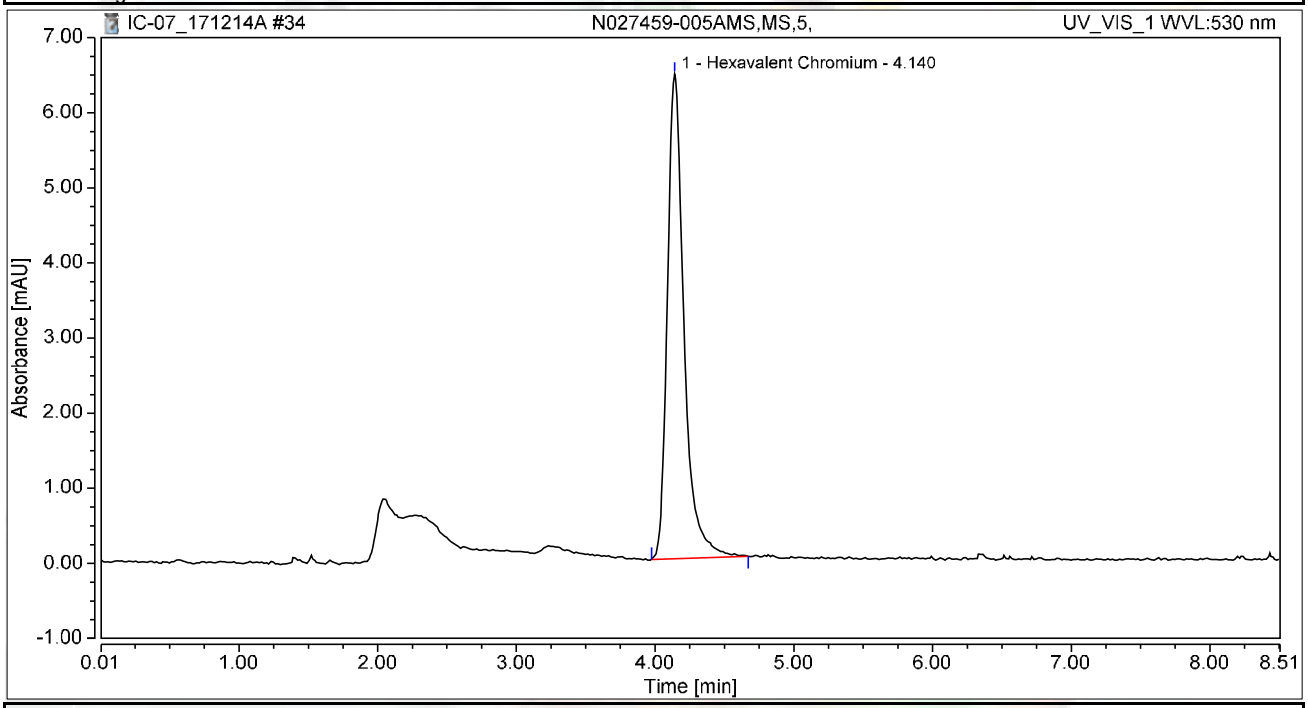
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.646	4.594	100.00	100.00	2.5722
Total:			**0.646**	**4.594**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 13:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

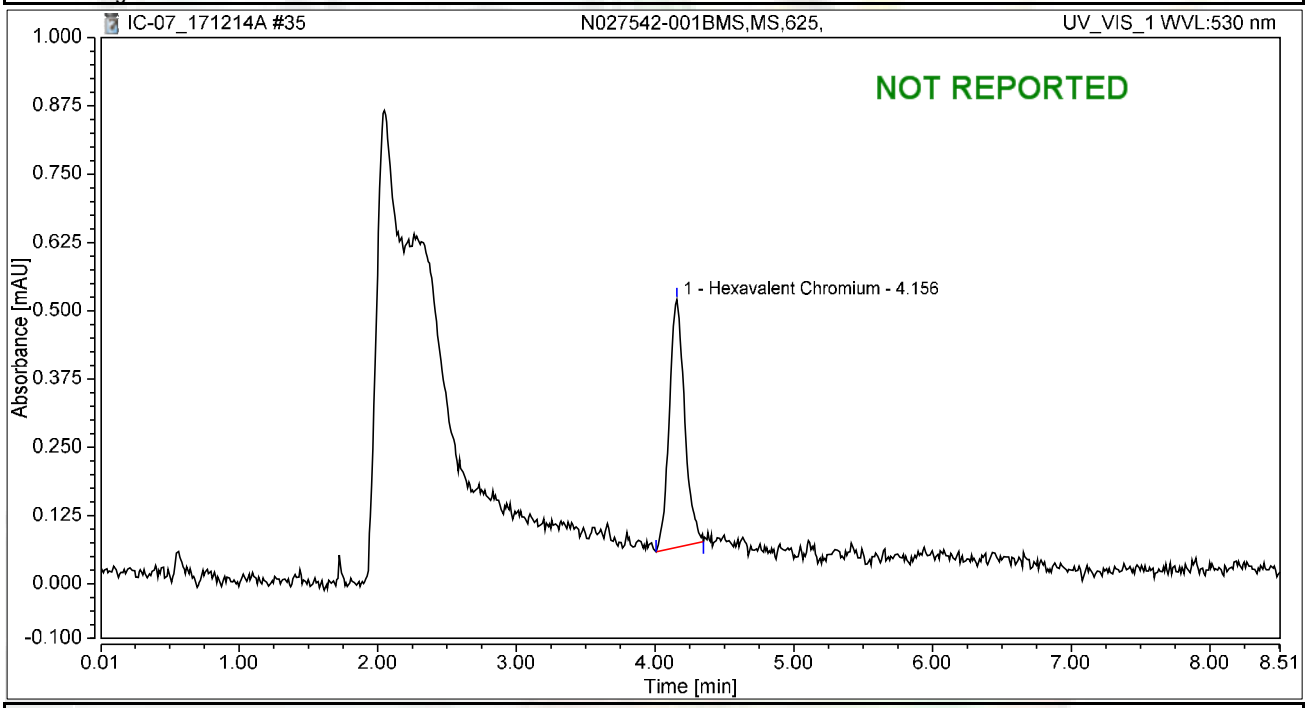
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.897	6.451	100.00	100.00	3.5726
Total:			**0.897**	**6.451**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027542-001BMS,MS,625,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 13:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

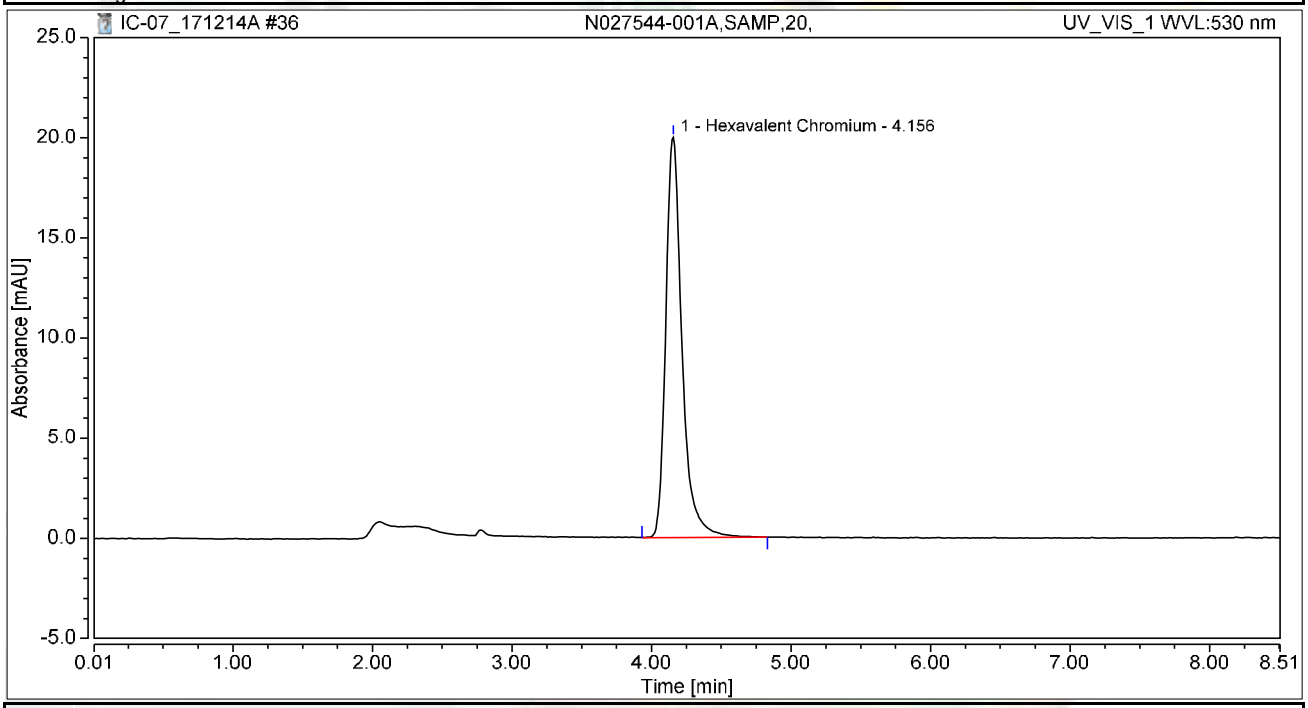
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.058	0.454	100.00	100.00	0.2325
Total:			**0.058**	**0.454**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027544-001A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 13:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

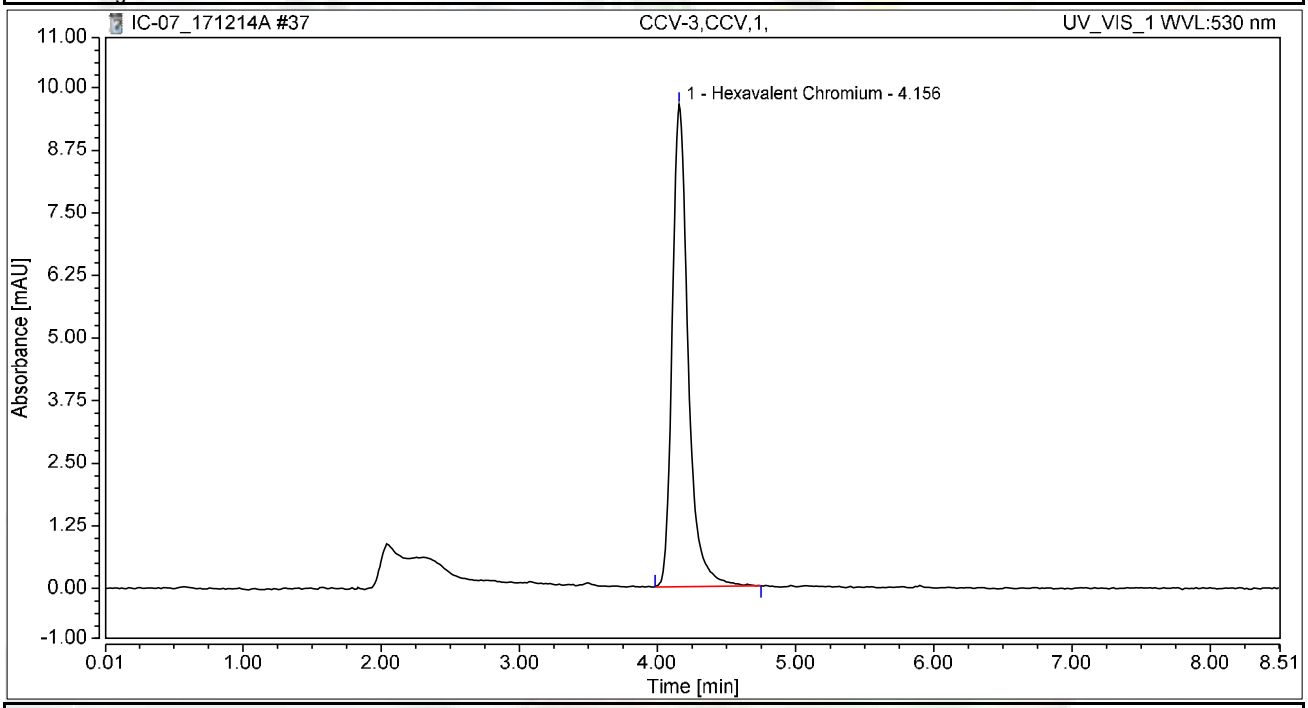
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.700	19.999	100.00	100.00	10.7539
Total:			**2.700**	**19.999**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 13:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

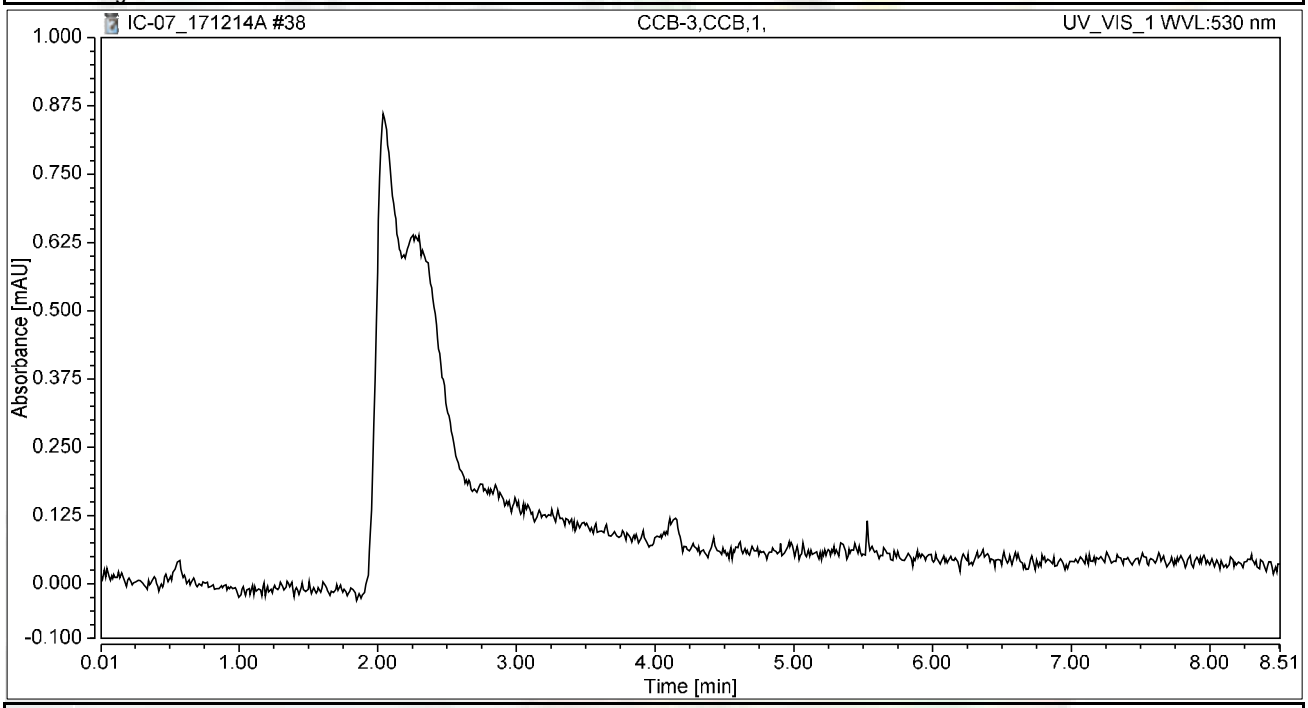
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.285	9.632	100.00	100.00	5.1185
Total:			**1.285**	**9.632**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 13:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

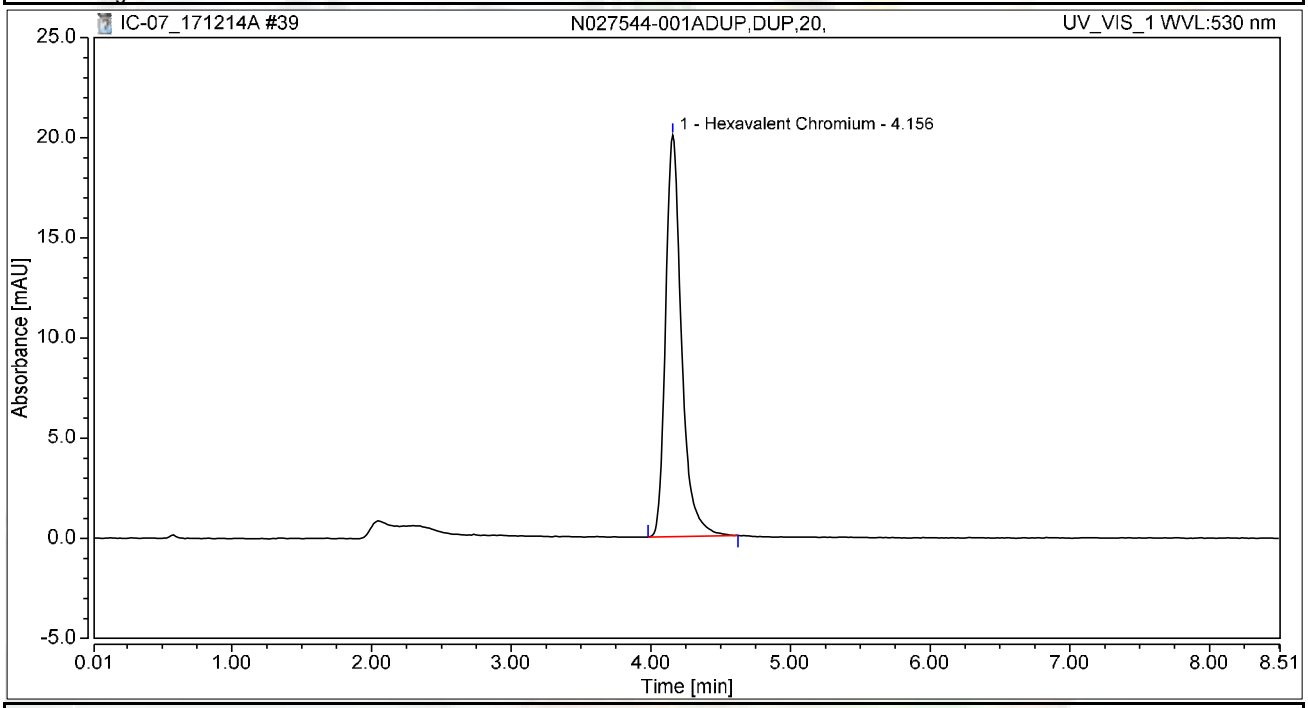
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027544-001ADUP,DUP,20,**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 13:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

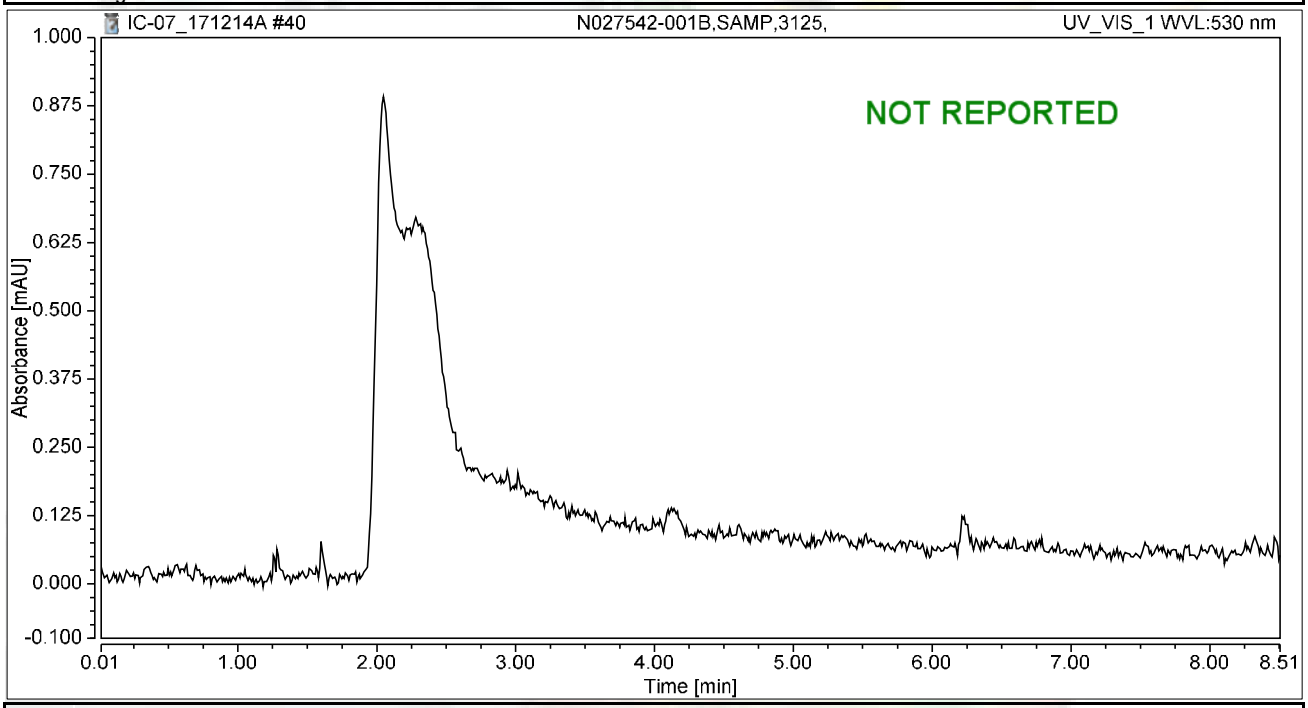
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.657	20.043	100.00	100.00	10.5811
Total:			**2.657**	**20.043**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027542-001B,SAMP,3125,**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 14:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

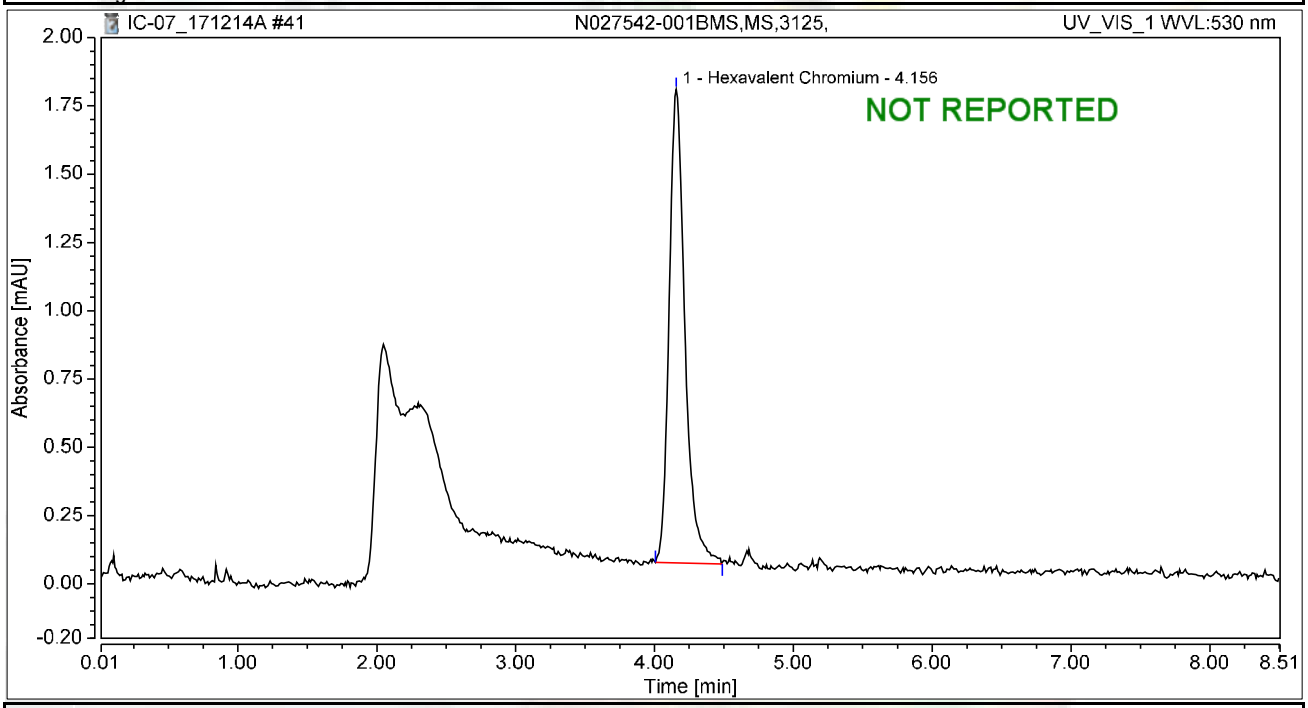
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027542-001BMS,MS,3125,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 14:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

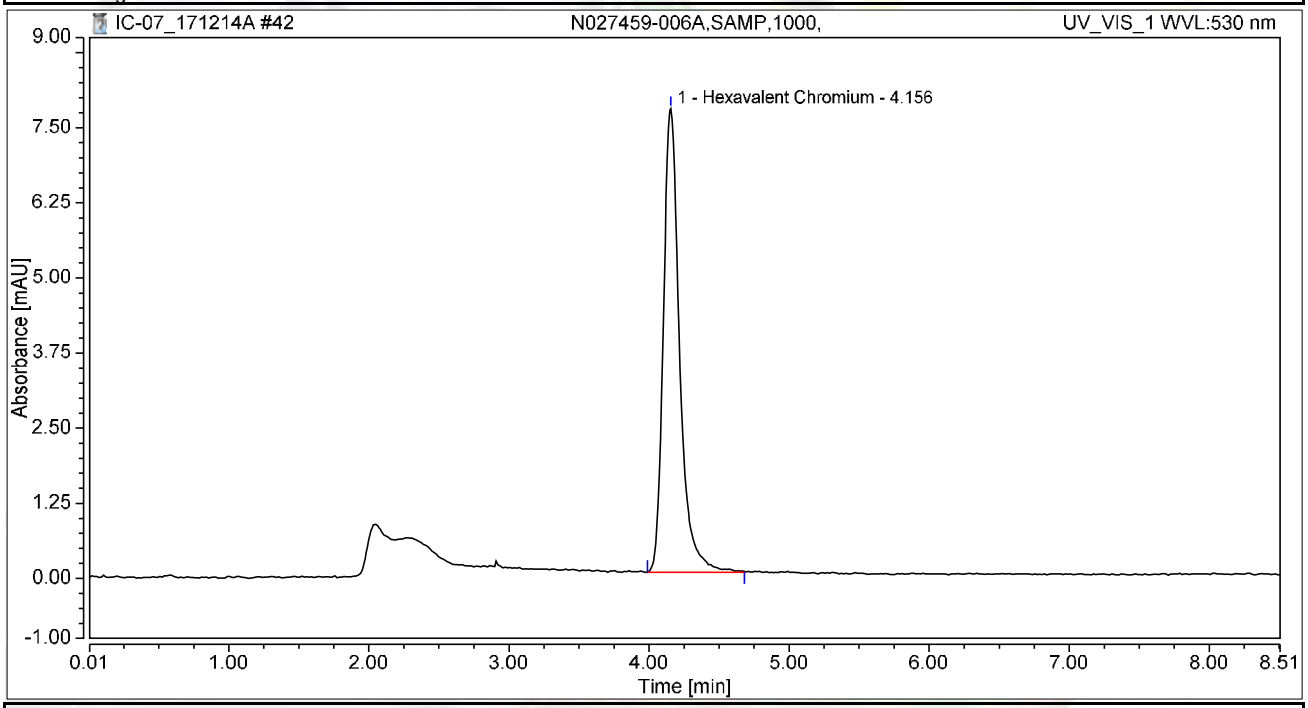
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.229	1.734	100.00	100.00	0.9116
Total:			**0.229**	**1.734**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-006A,SAMP,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 14:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

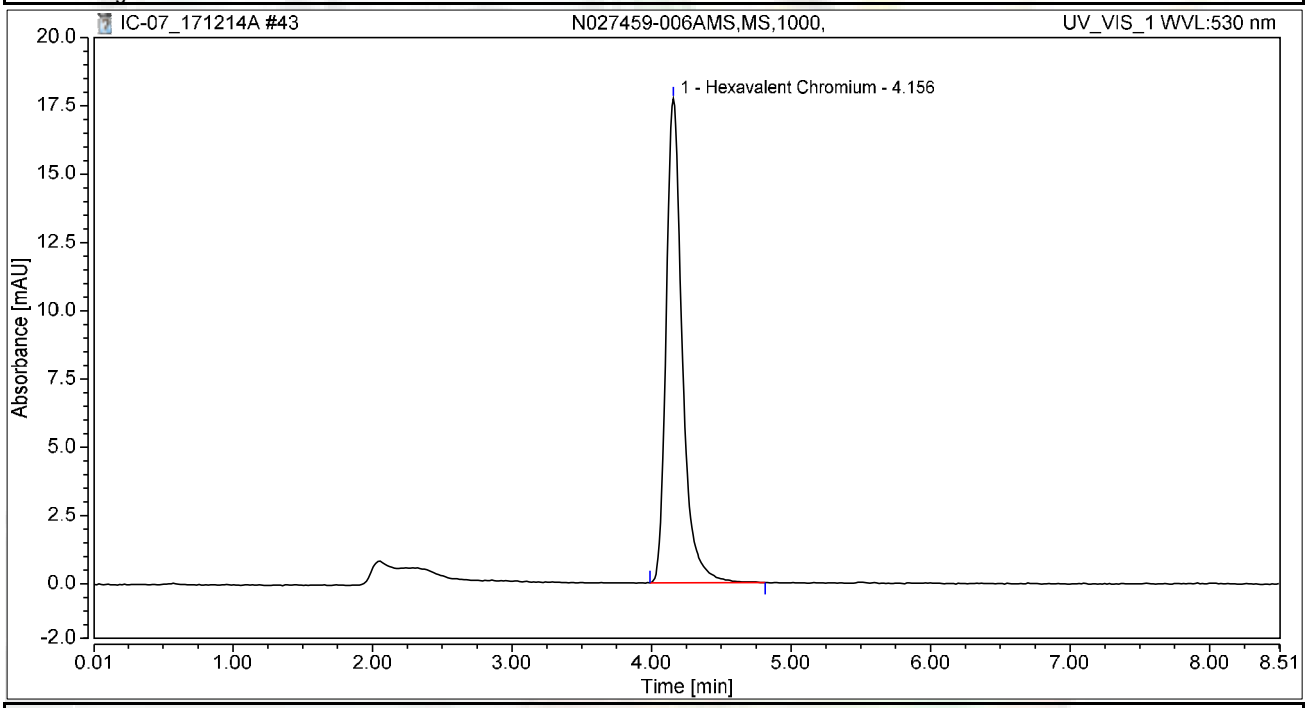
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.037	7.715	100.00	100.00	4.1280
Total:			**1.037**	**7.715**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-006AMS,MS,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 14:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

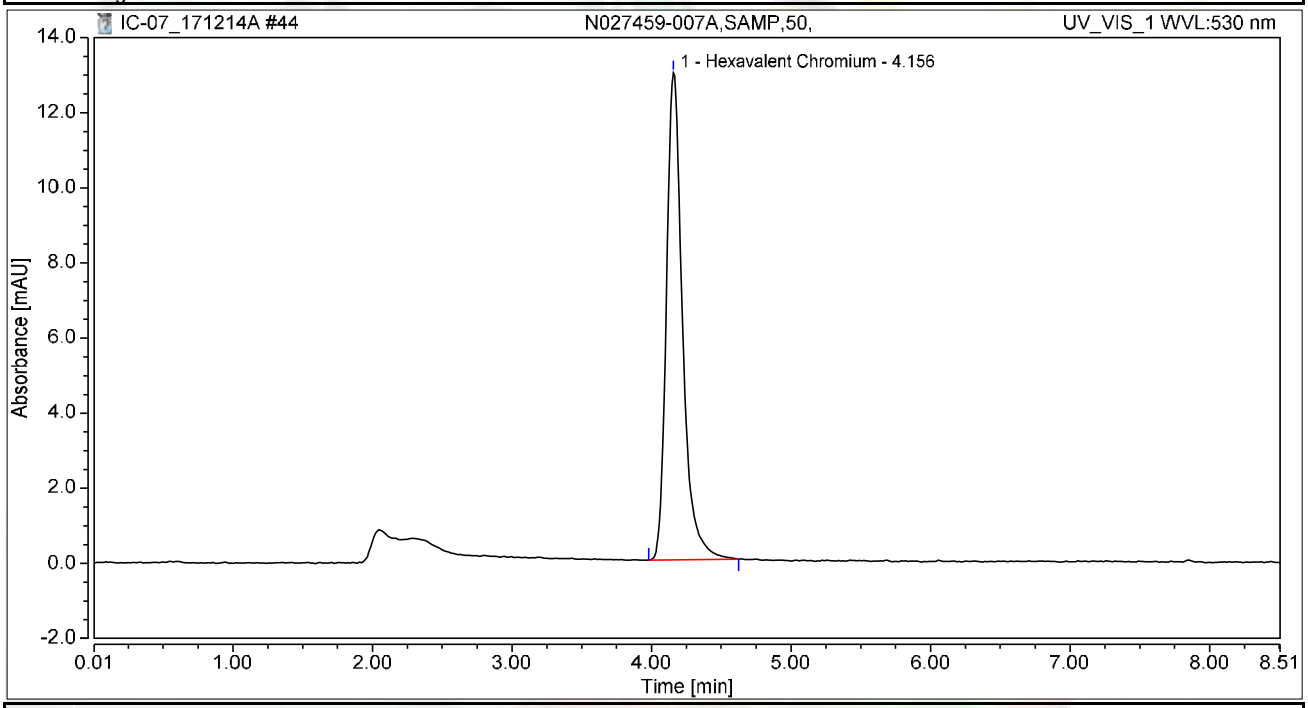
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.372	17.726	100.00	100.00	9.4473
Total:			**2.372**	**17.726**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-007A,SAMP,50,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 14:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

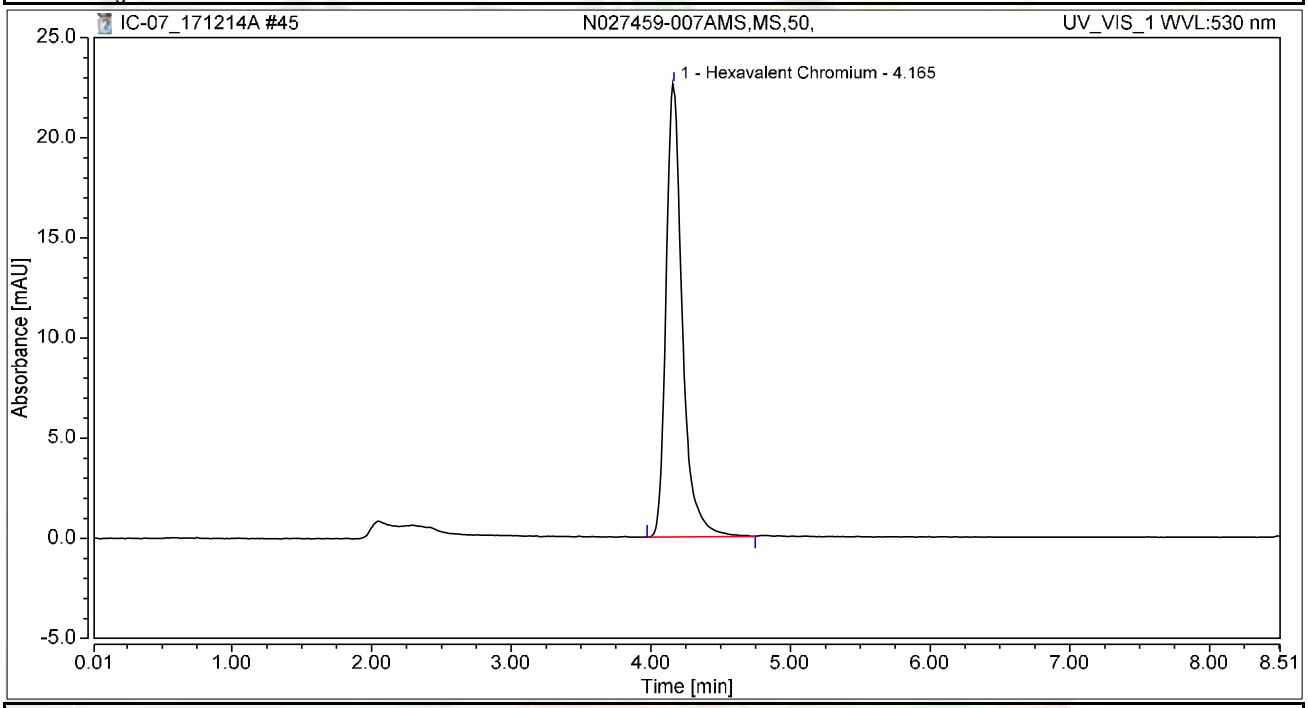
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.732	12.968	100.00	100.00	6.8971
Total:			**1.732**	**12.968**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-007AMS,MS,50,**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 14:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

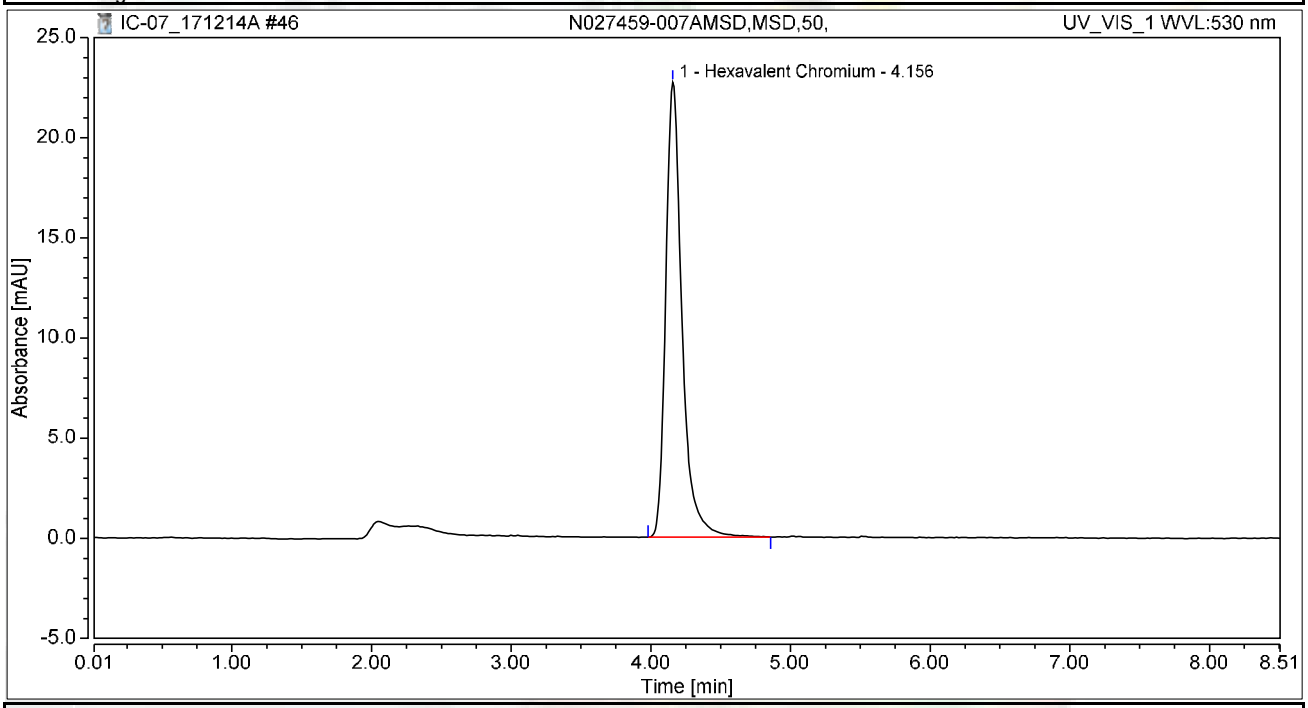
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	3.055	22.610	100.00	100.00	12.1686
Total:			**3.055**	**22.610**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-007AMSD,MSD,50,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 15:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

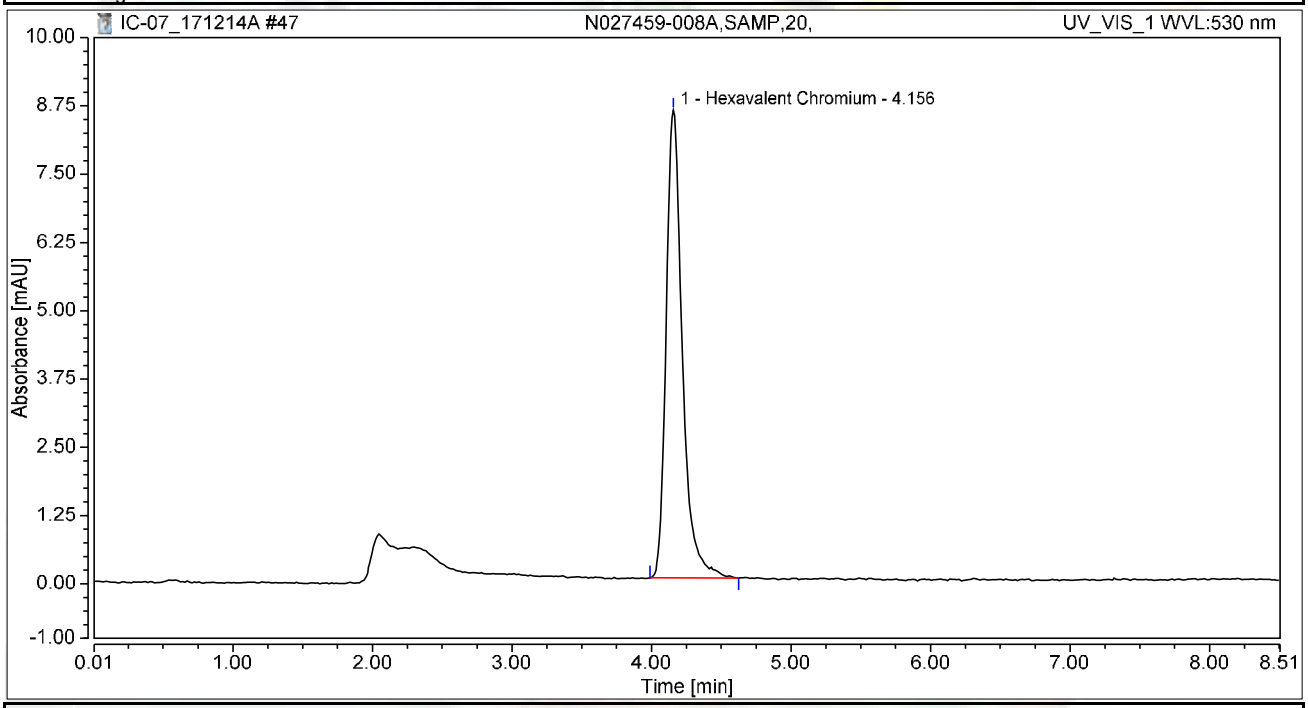
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	3.067	22.708	100.00	100.00	12.2135
Total:			**3.067**	**22.708**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-008A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 15:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

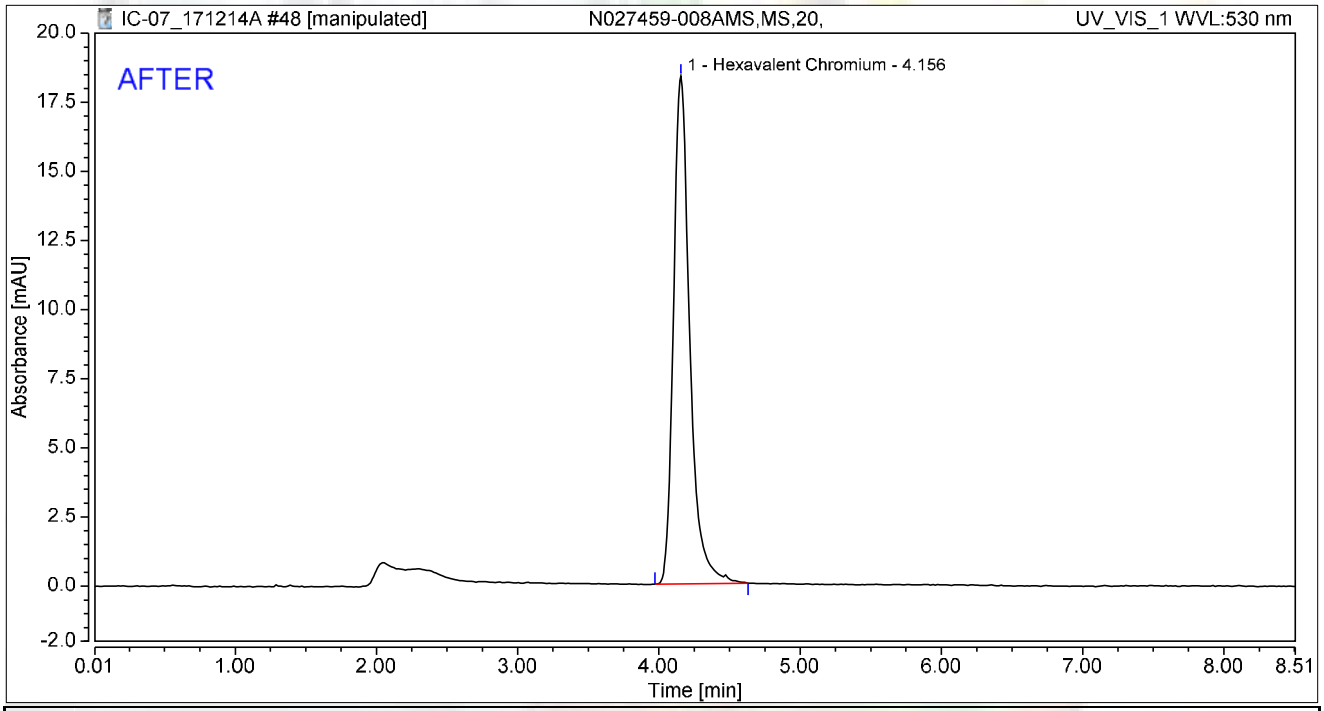
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.147	8.564	100.00	100.00	4.5661
Total:			**1.147**	**8.564**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-008AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 15:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.467	18.372	100.00	100.00	9.8242
Total:			**2.467**	**18.372**	**100.00**	**100.00**	

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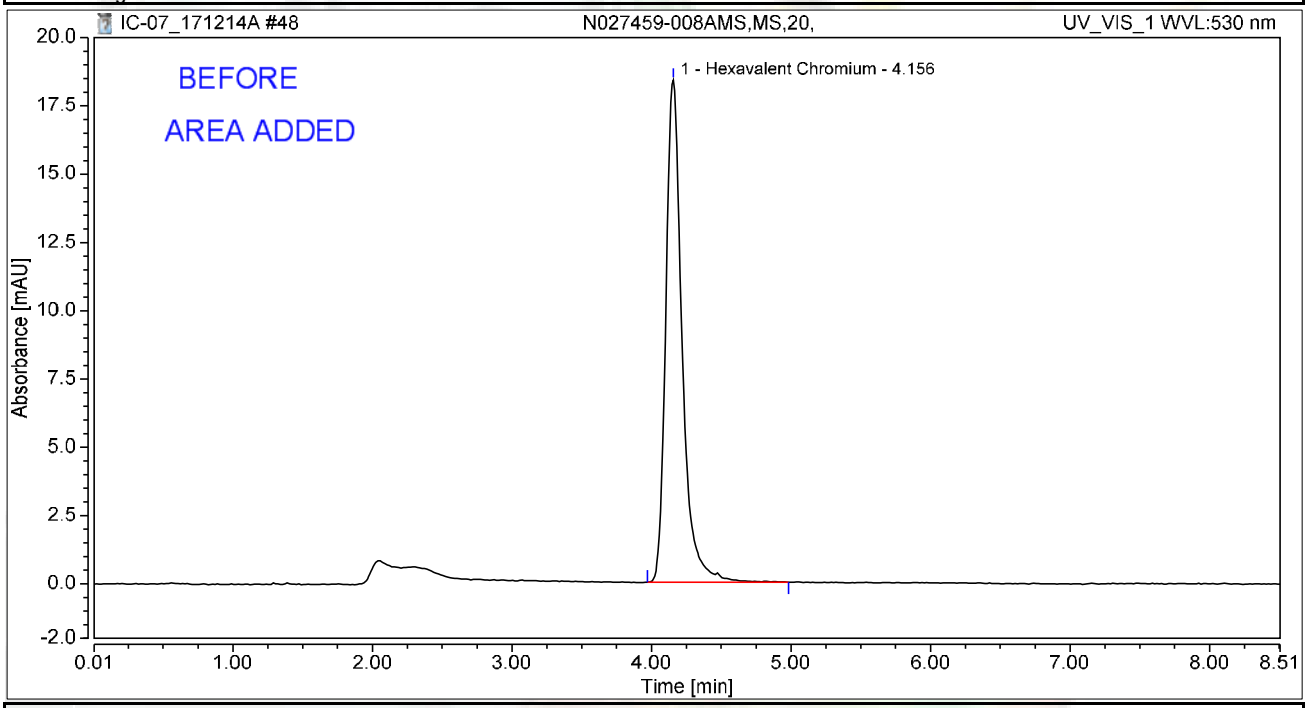
Chromatogram and Results

Injection Details

Injection Name:	**N027459-008AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 15:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.491	18.385	100.00	100.00	9.9218
Total:			**2.491**	**18.385**	**100.00**	**100.00**	

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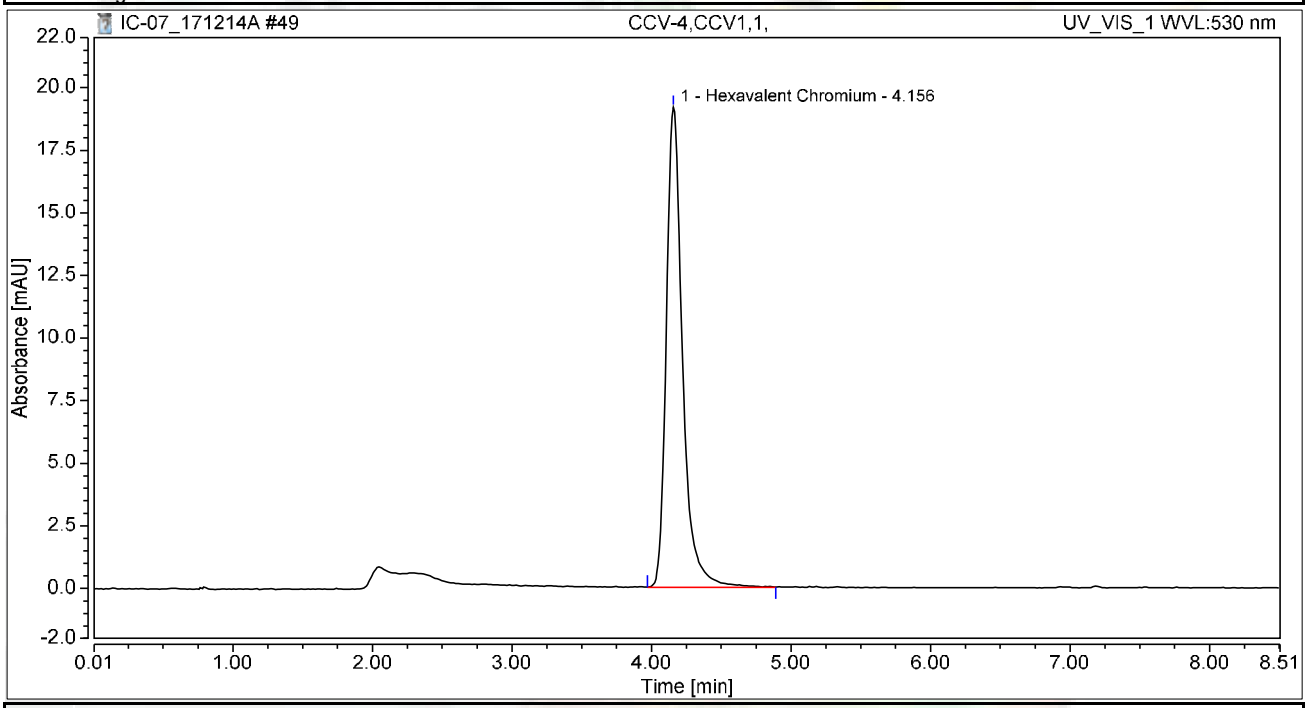
Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 15:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

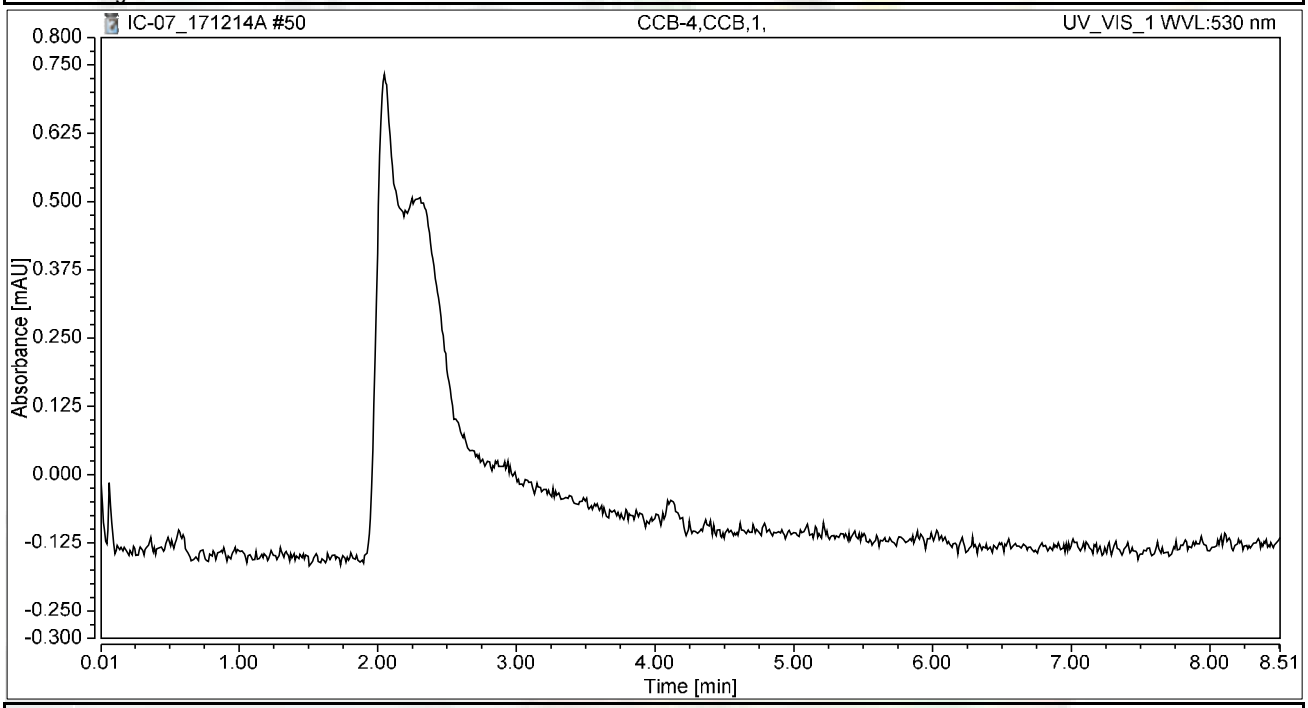
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.577	19.168	100.00	100.00	10.2629
Total:			**2.577**	**19.168**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 15:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

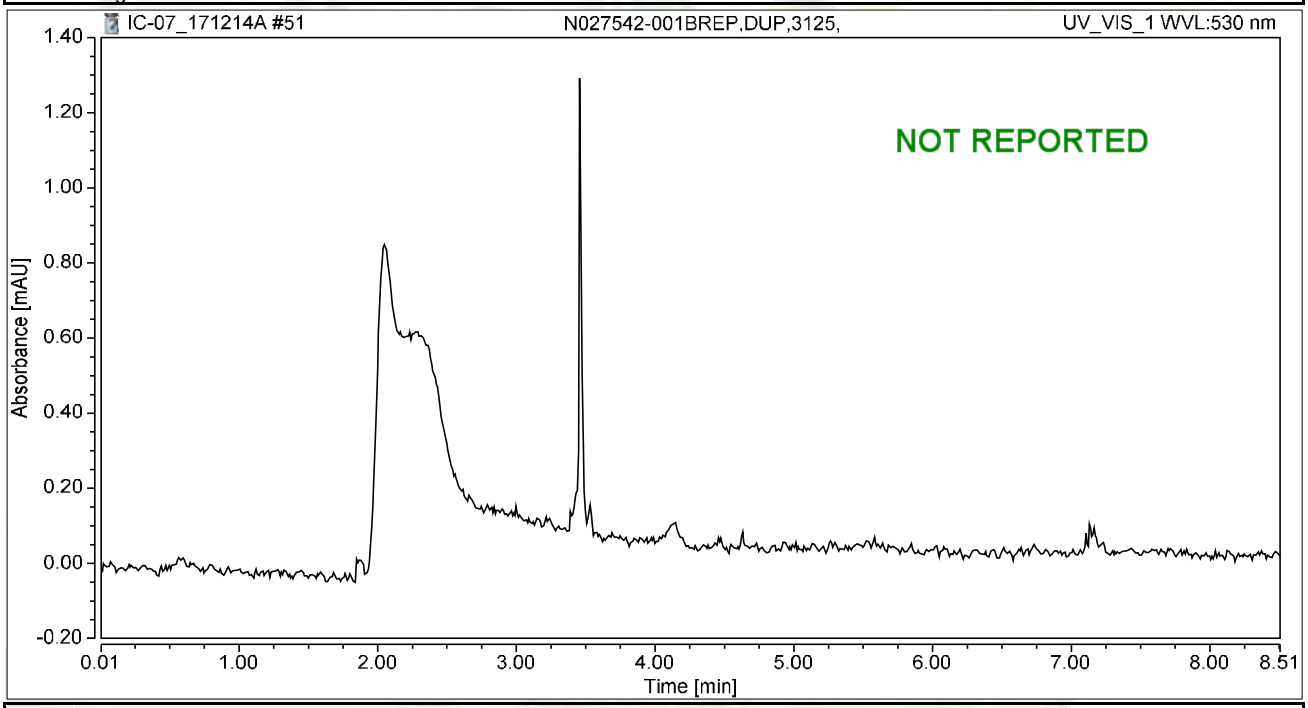
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027542-001BREP,DUP,3125,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 15:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

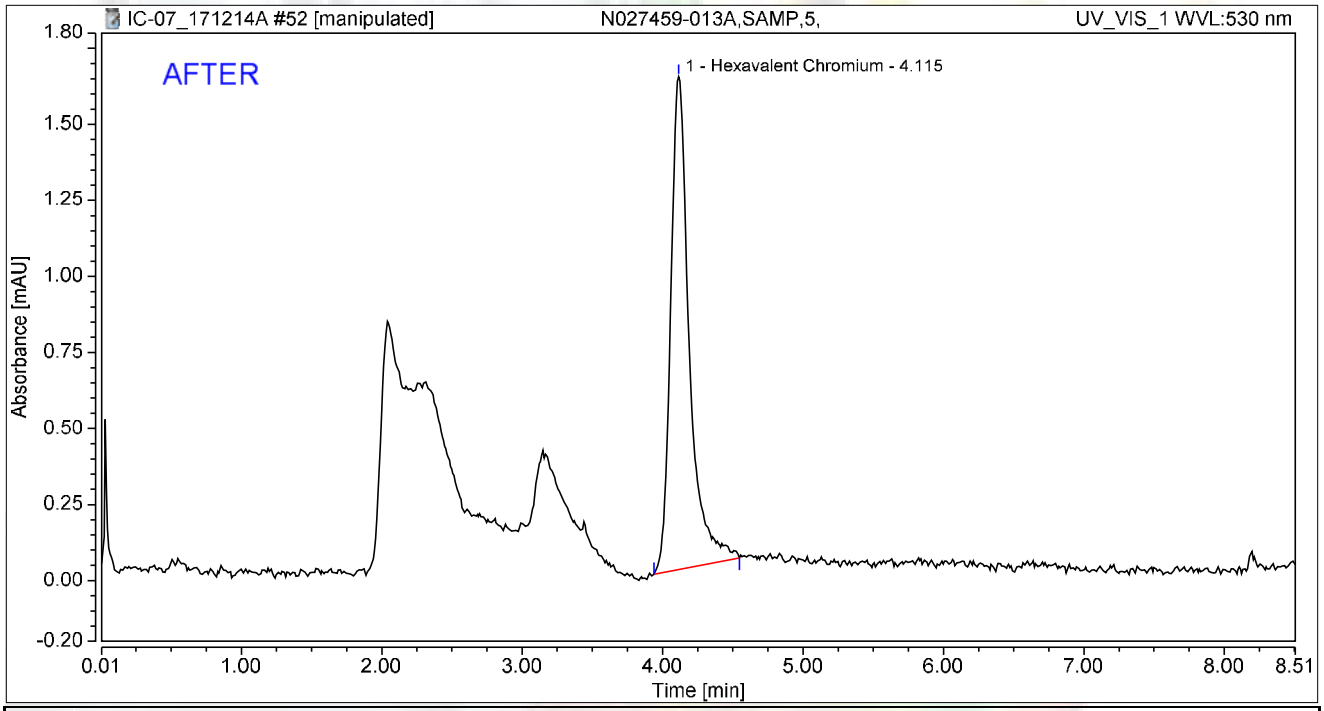
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-013A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 16:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.250	1.621	100.00	100.00	0.9940
Total:			**0.250**	**1.621**	**100.00**	**100.00**	

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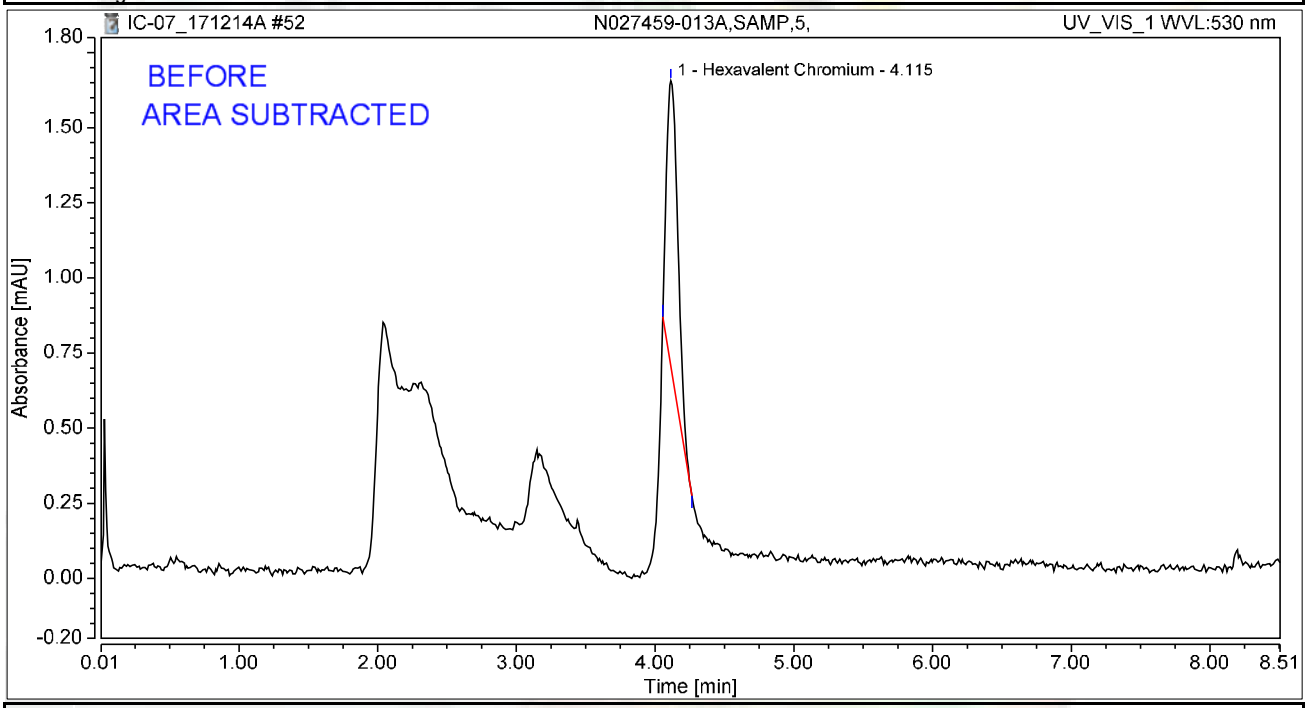
Chromatogram and Results

Injection Details

Injection Name:	**N027459-013A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 16:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.091	0.953	100.00	100.00	0.3640
Total:			**0.091**	**0.953**	**100.00**	**100.00**	

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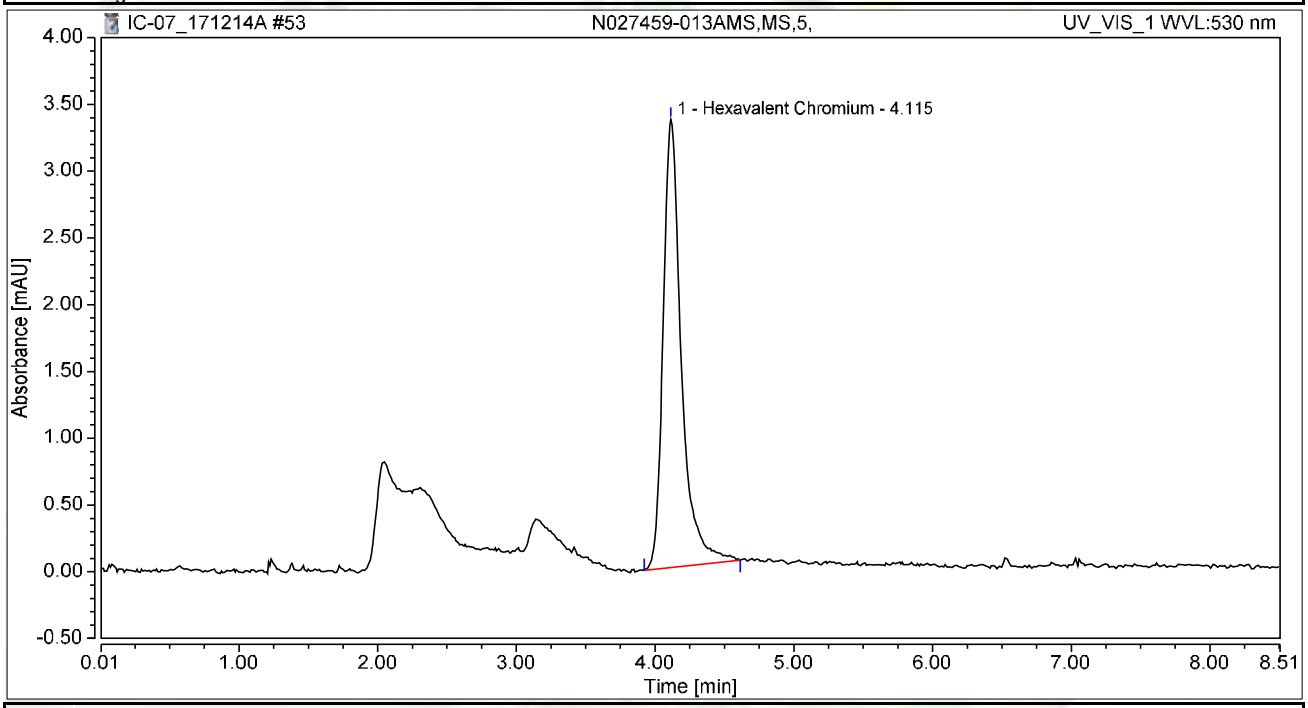
Chromatogram and Results

Injection Details

Injection Name:	**N027459-013AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 16:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

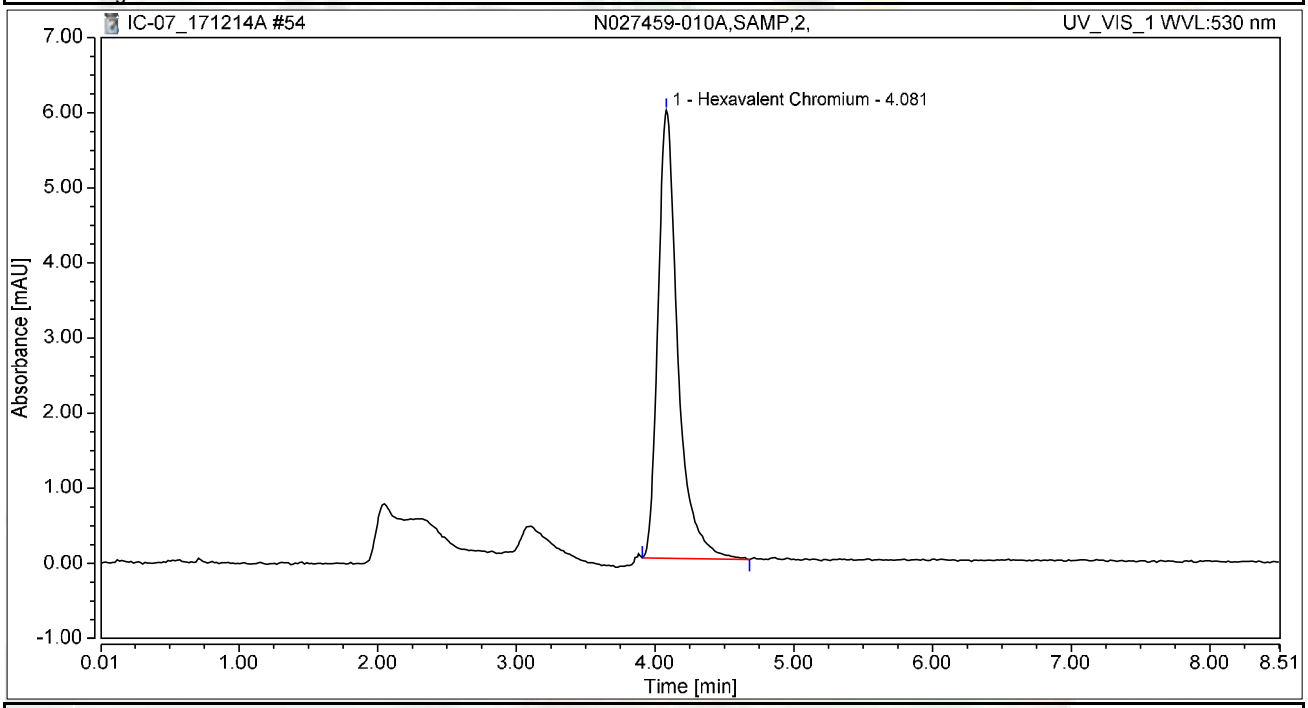
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.512	3.358	100.00	100.00	2.0409
Total:			**0.512**	**3.358**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-010A,SAMP,2,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 16:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

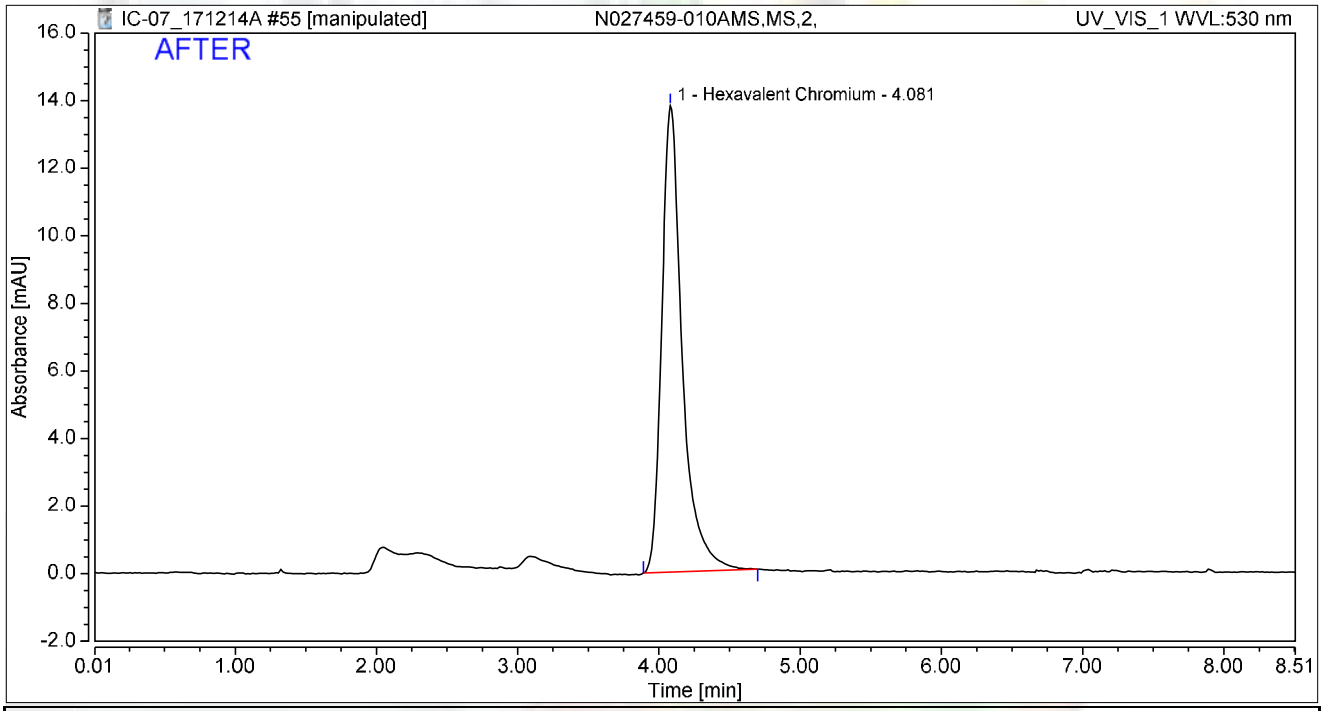
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.989	5.965	100.00	100.00	3.9386
Total:			**0.989**	**5.965**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-010AMS,MS,2,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 16:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	2.324	13.802	100.00	100.00	9.2553
Total:			**2.324**	**13.802**	**100.00**	**100.00**	

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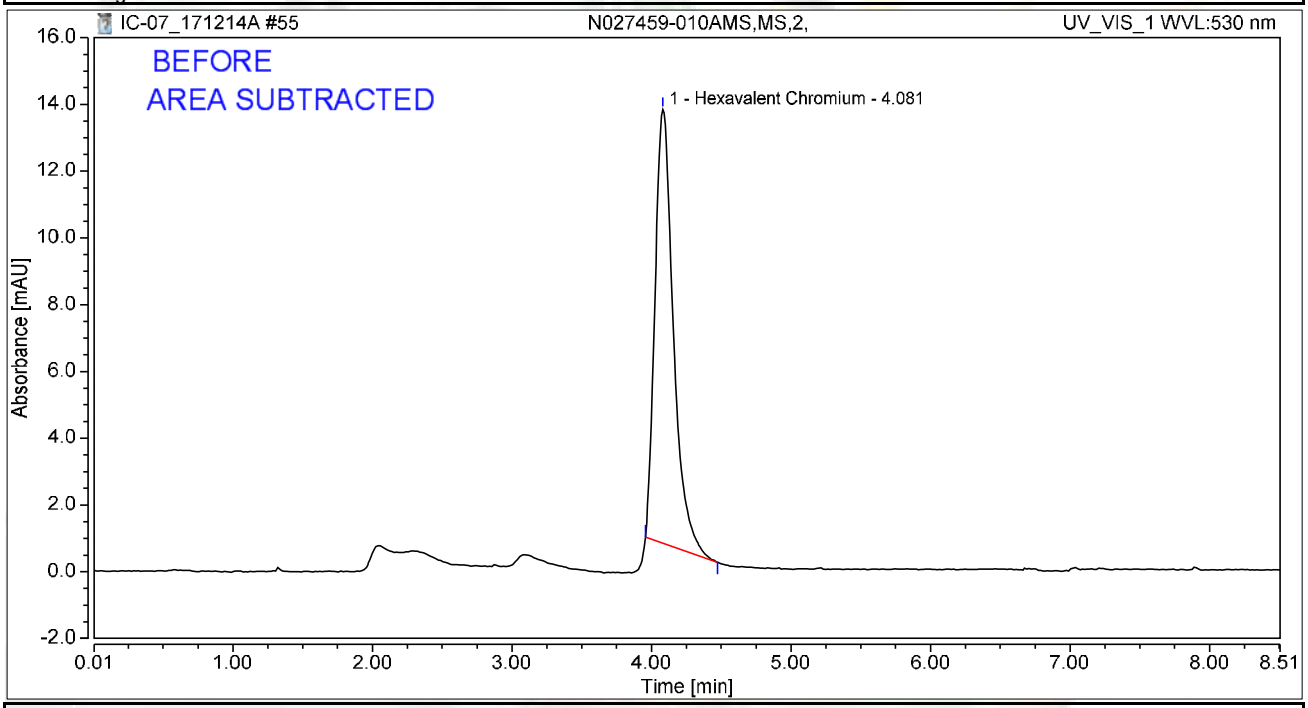
Chromatogram and Results

Injection Details

Injection Name:	**N027459-010AMS,MS,2,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 16:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	1.984	12.990	100.00	100.00	7.9005
Total:			**1.984**	**12.990**	**100.00**	**100.00**	

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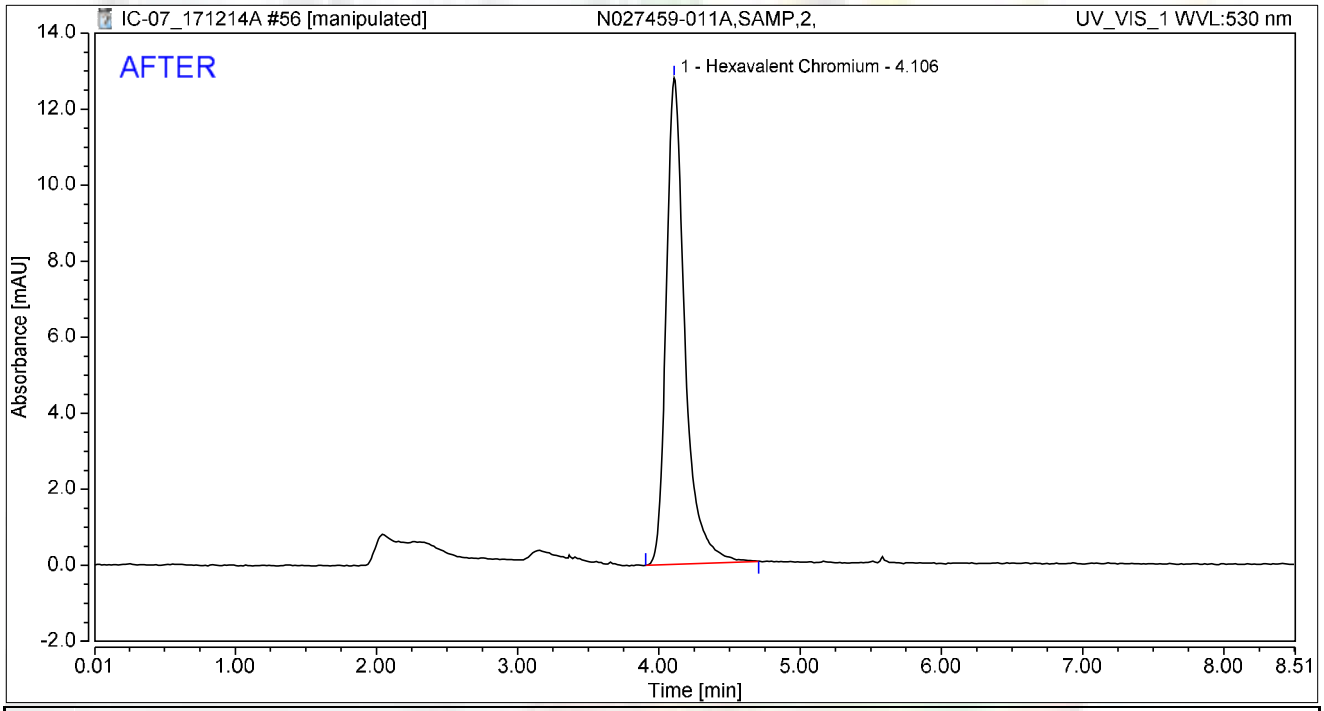
Chromatogram and Results

Injection Details

Injection Name:	**N027459-011A,SAMP,2,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 16:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	1.971	12.792	100.00	100.00	7.8505
Total:			**1.971**	**12.792**	**100.00**	**100.00**	

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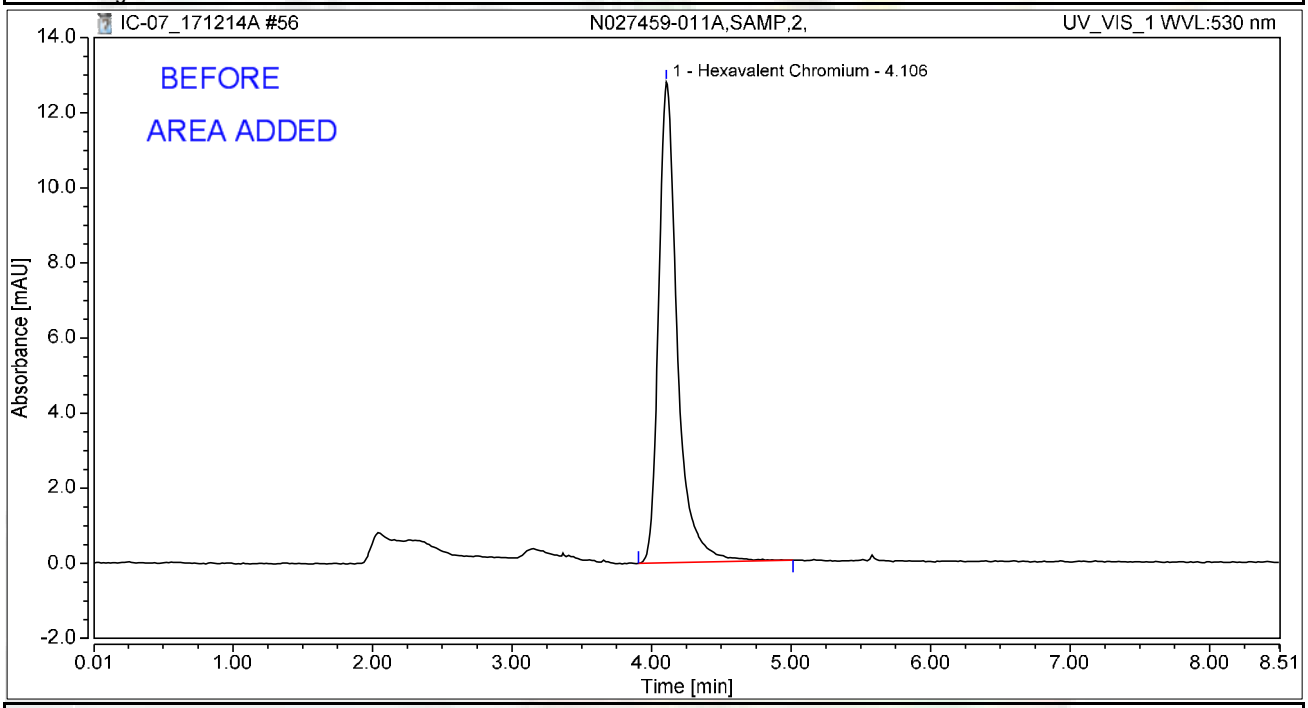
Chromatogram and Results

Injection Details

Injection Name:	**N027459-011A,SAMP,2,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 16:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	1.996	12.802	100.00	100.00	7.9479
Total:			**1.996**	**12.802**	**100.00**	**100.00**	

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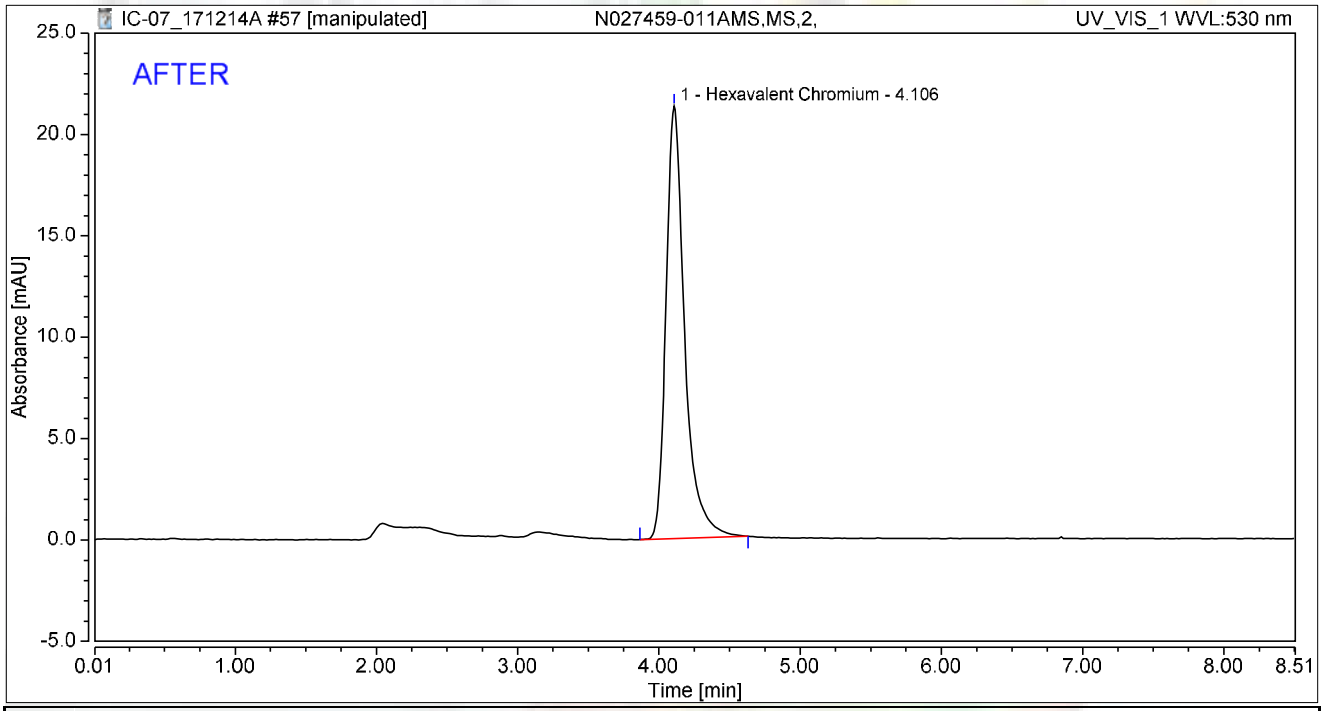
Chromatogram and Results

Injection Details

Injection Name:	**N027459-011AMS,MS,2,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 16:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	3.270	21.334	100.00	100.00	13.0237
Total:			**3.270**	**21.334**	**100.00**	**100.00**	

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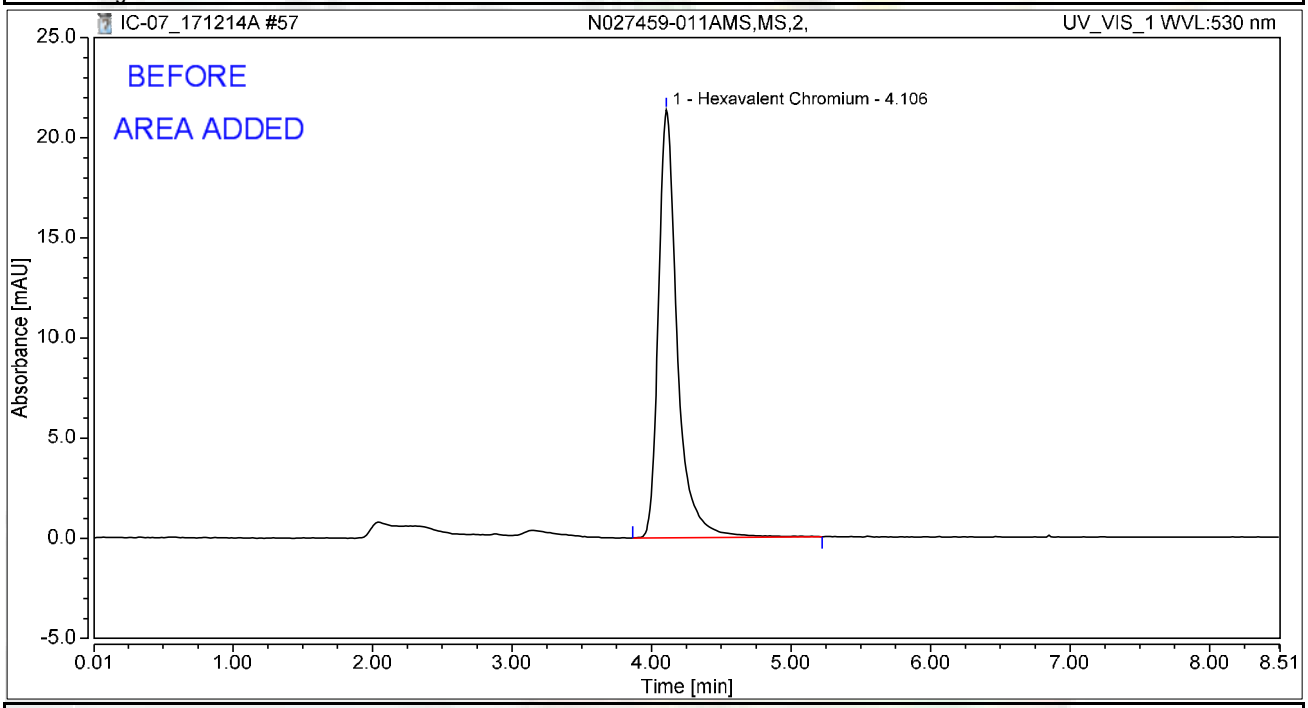
Chromatogram and Results

Injection Details

Injection Name:	**N027459-011AMS,MS,2,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 16:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	3.352	21.376	100.00	100.00	13.3500
Total:			**3.352**	**21.376**	**100.00**	**100.00**	

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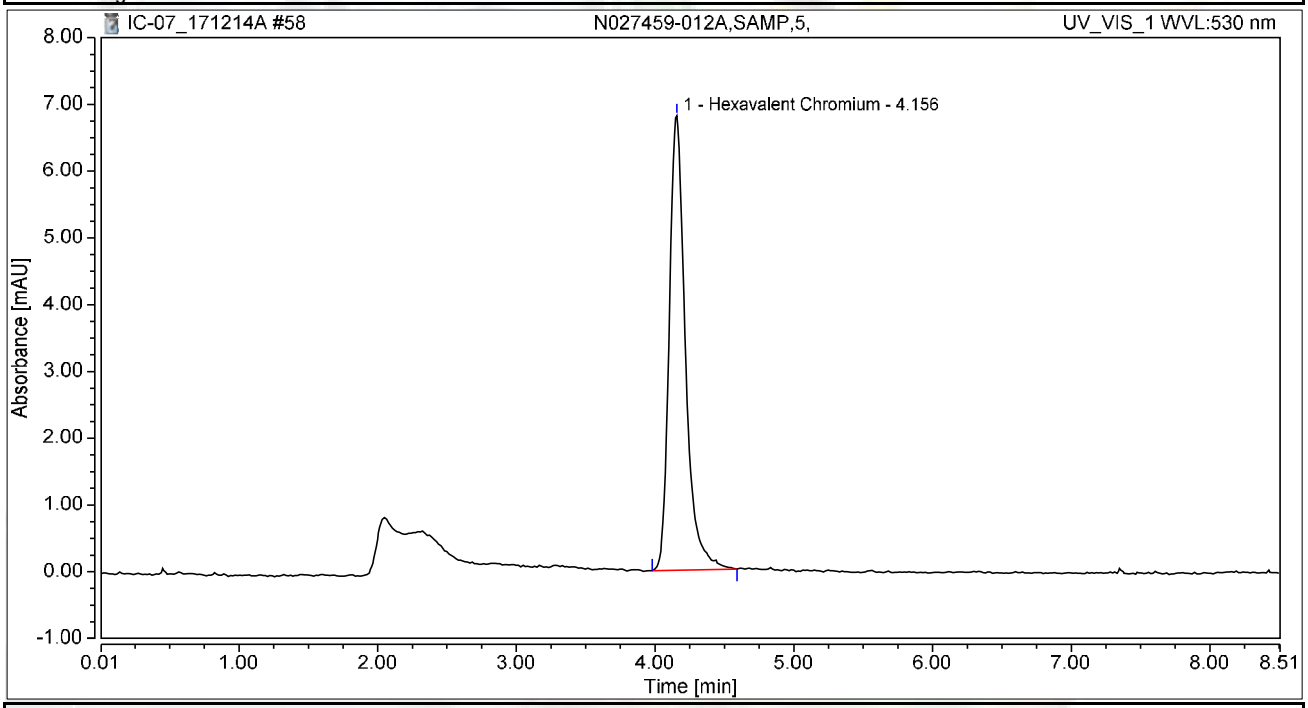
Chromatogram and Results

Injection Details

Injection Name:	**N027459-012A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 17:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

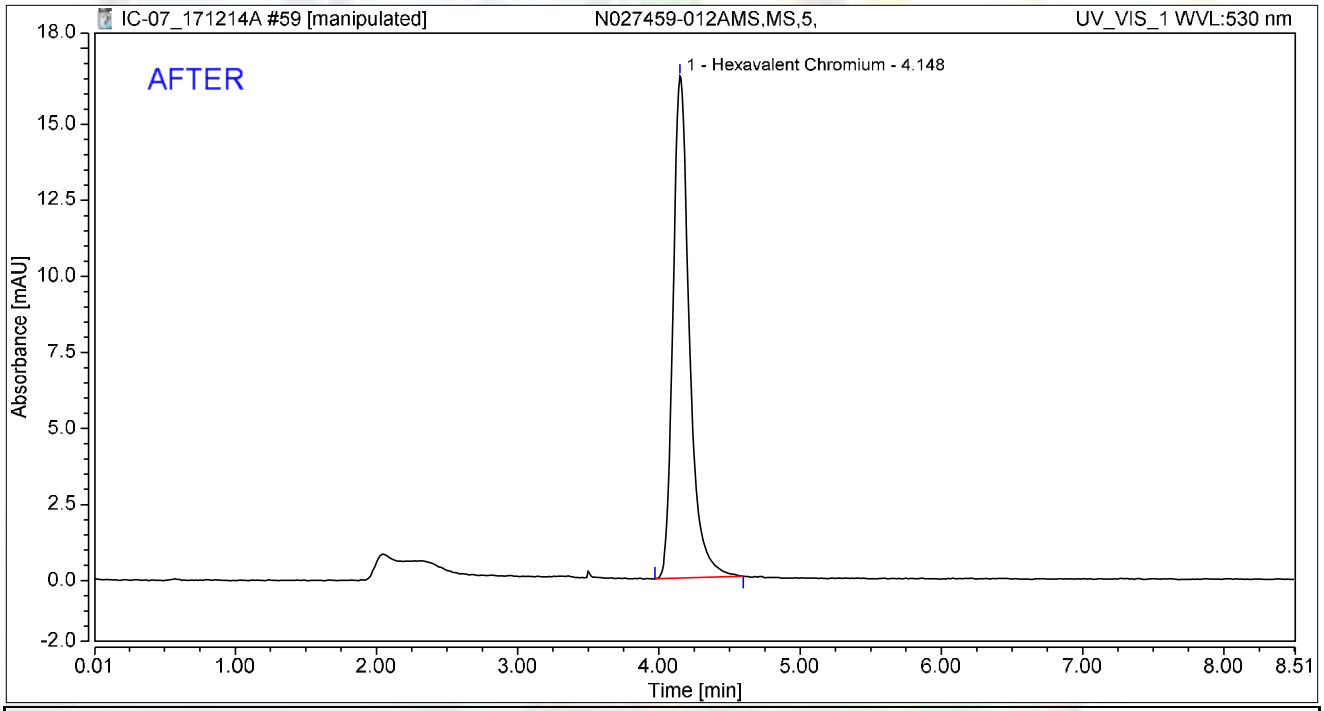
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.921	6.811	100.00	100.00	3.6689
Total:			**0.921**	**6.811**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-012AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 17:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.228	16.505	100.00	100.00	8.8714
Total:			**2.228**	**16.505**	**100.00**	**100.00**	

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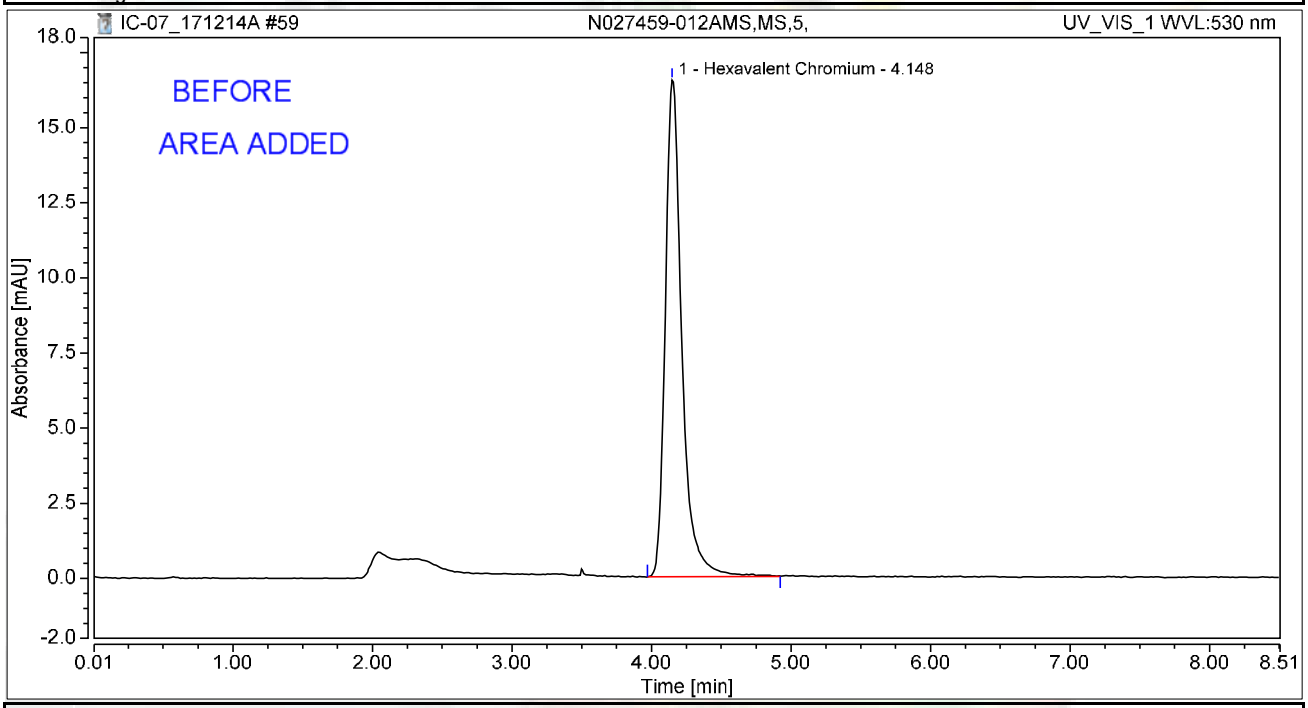
Chromatogram and Results

Injection Details

Injection Name:	**N027459-012AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 17:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.265	16.526	100.00	100.00	9.0188
Total:			**2.265**	**16.526**	**100.00**	**100.00**	

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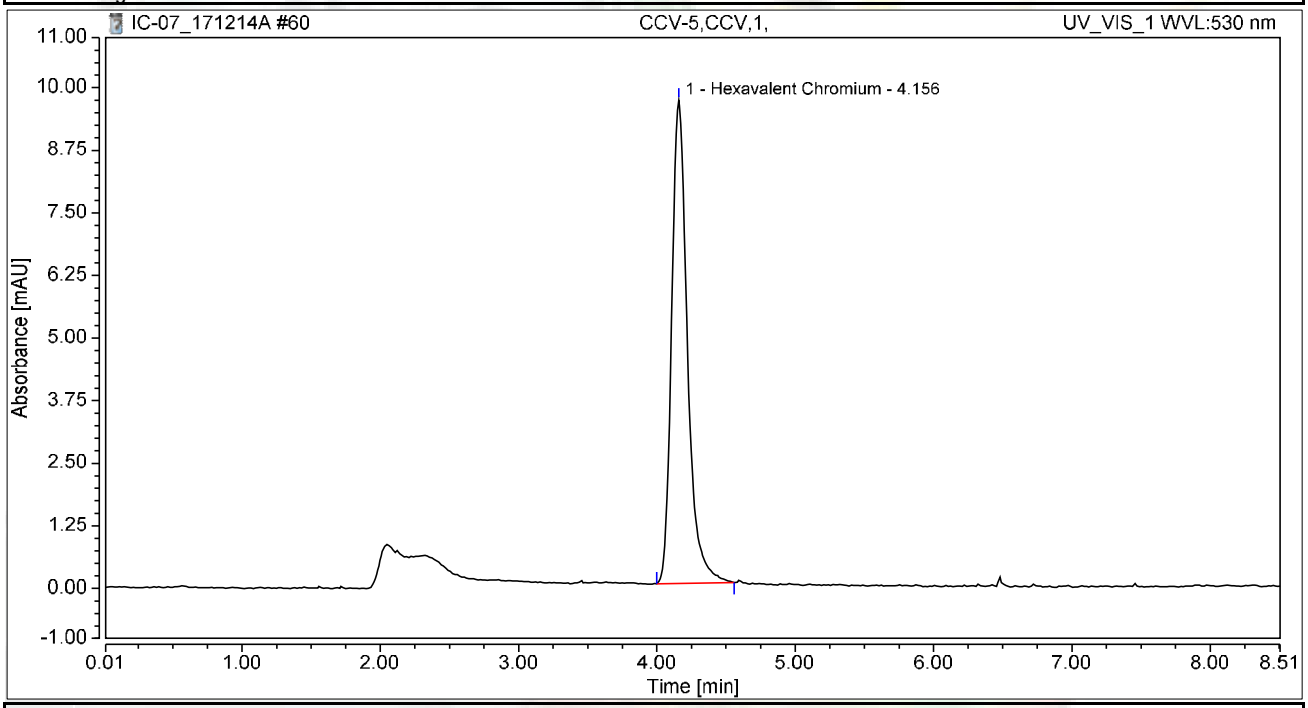
Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 17:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

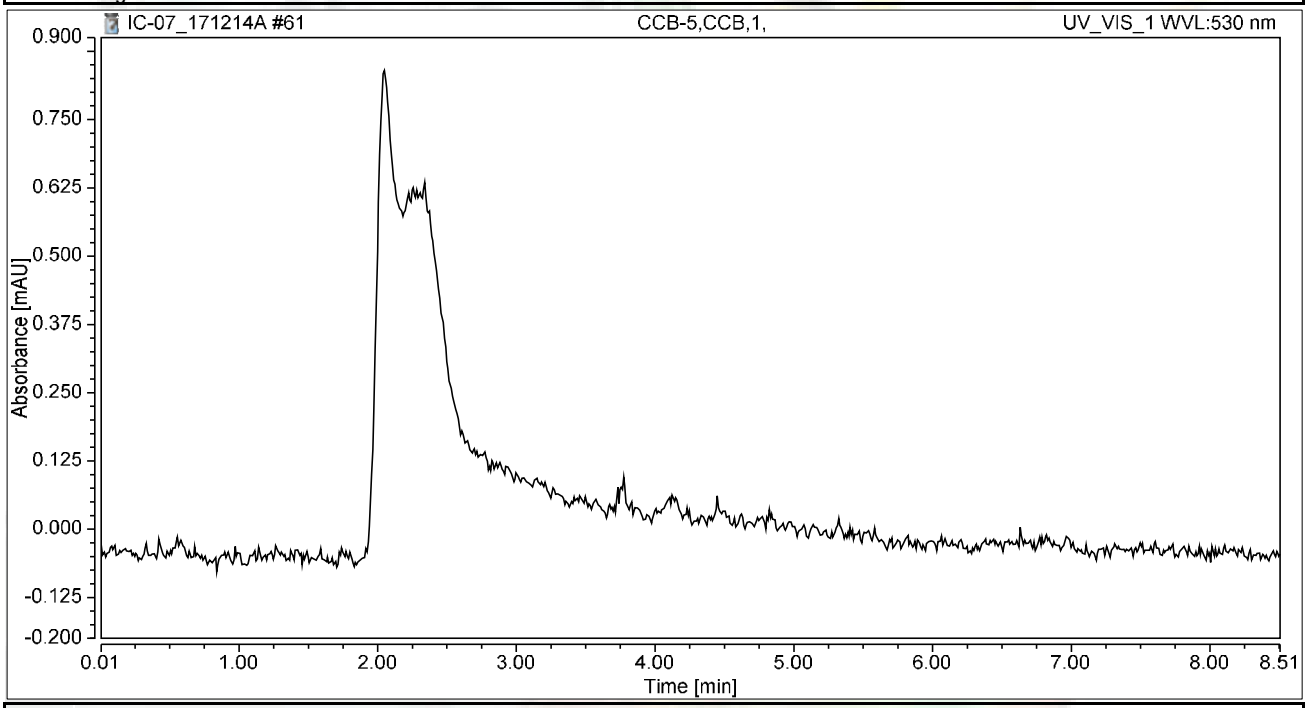
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.277	9.652	100.00	100.00	5.0849
Total:			**1.277**	**9.652**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 17:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

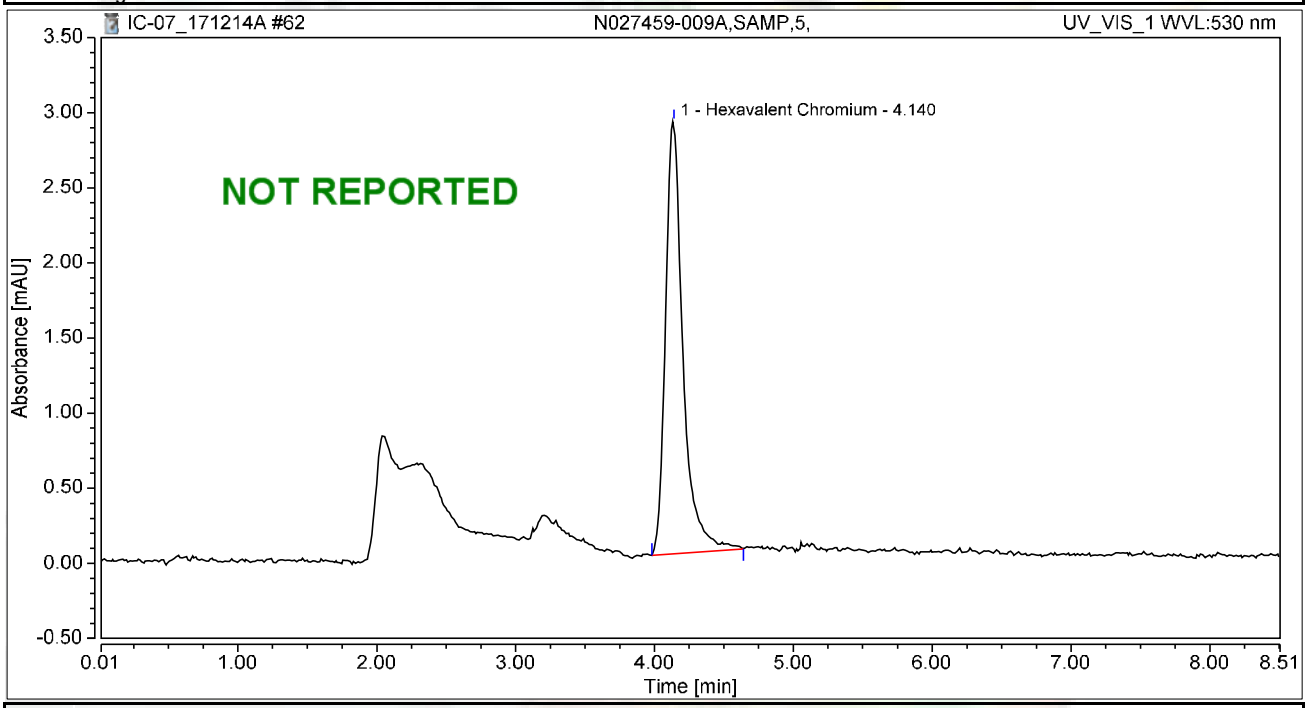
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-009A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 17:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

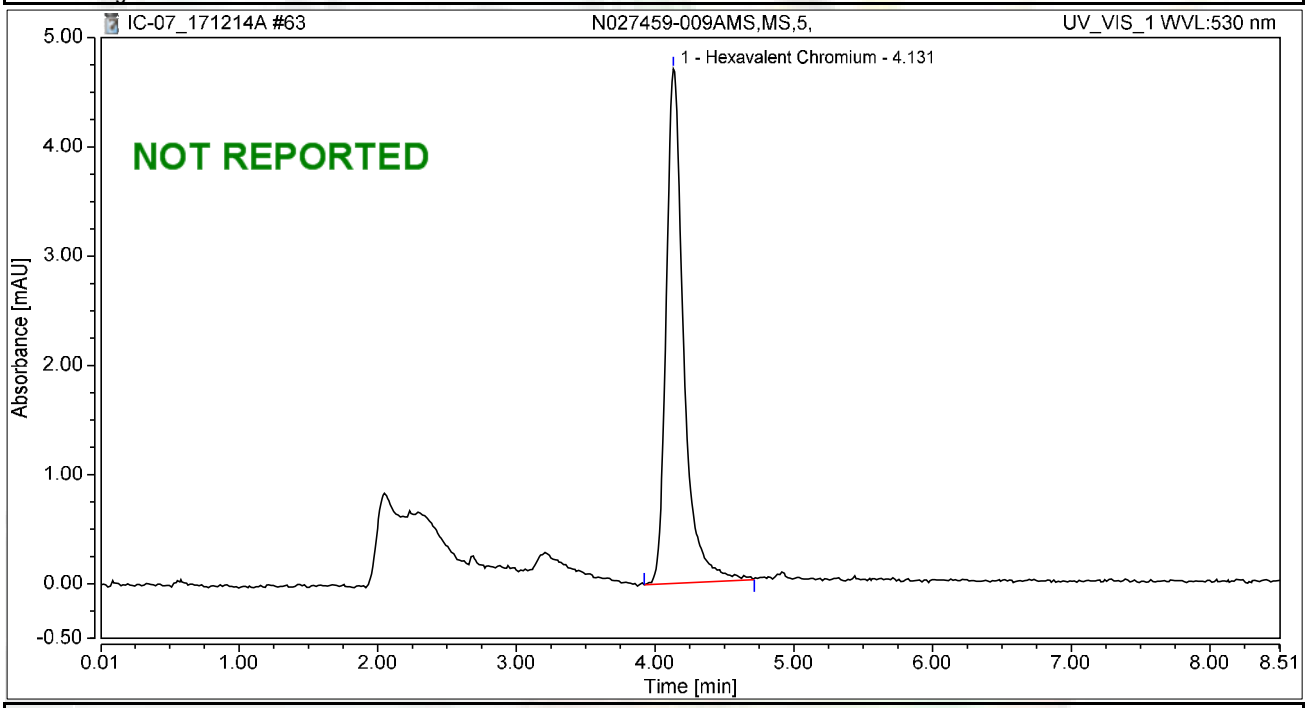
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.421	2.878	100.00	100.00	1.6762
Total:			**0.421**	**2.878**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-009AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 17:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

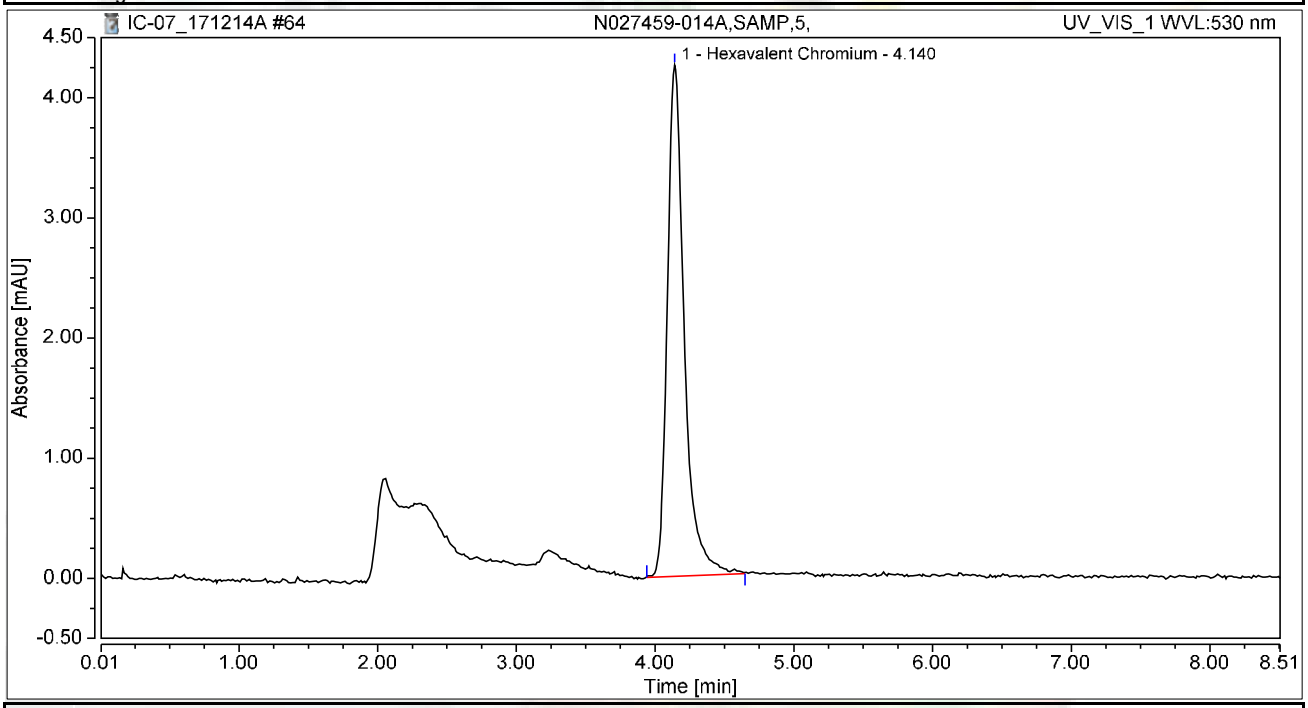
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.690	4.711	100.00	100.00	2.7494
Total:			**0.690**	**4.711**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-014A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 17:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

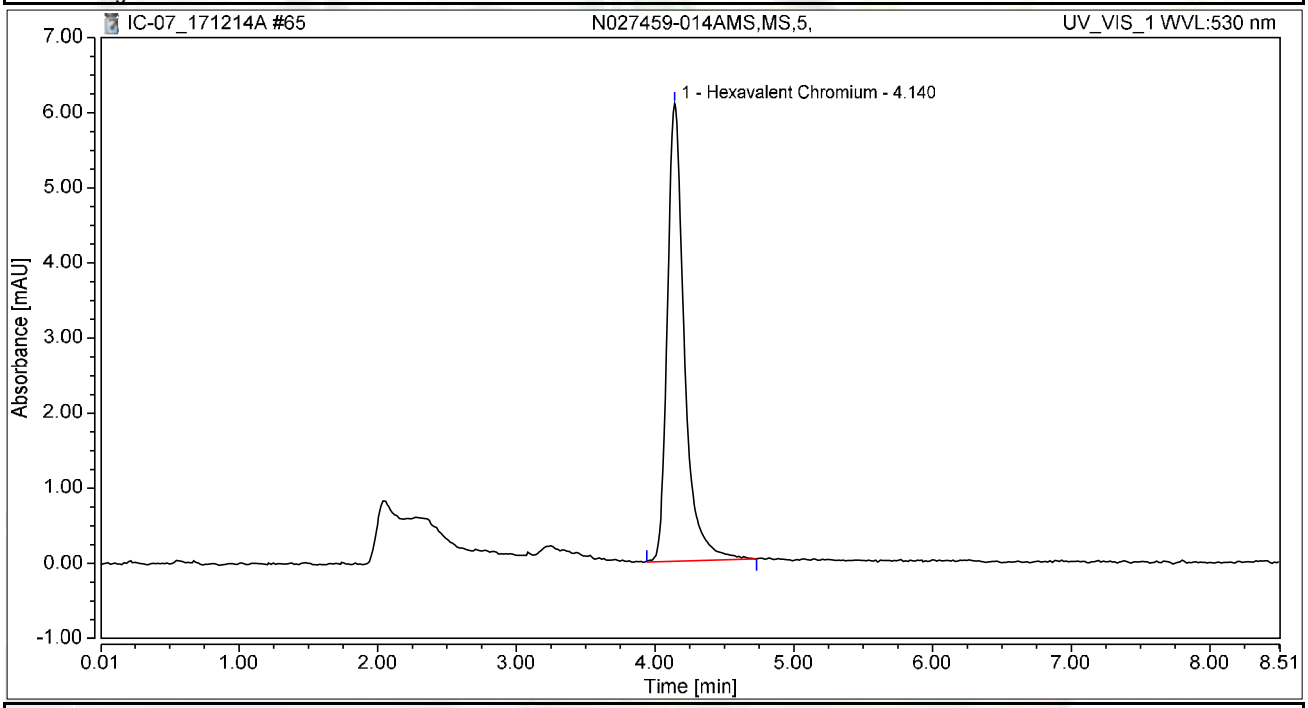
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.604	4.251	100.00	100.00	2.4051
Total:			**0.604**	**4.251**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-014AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 18:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

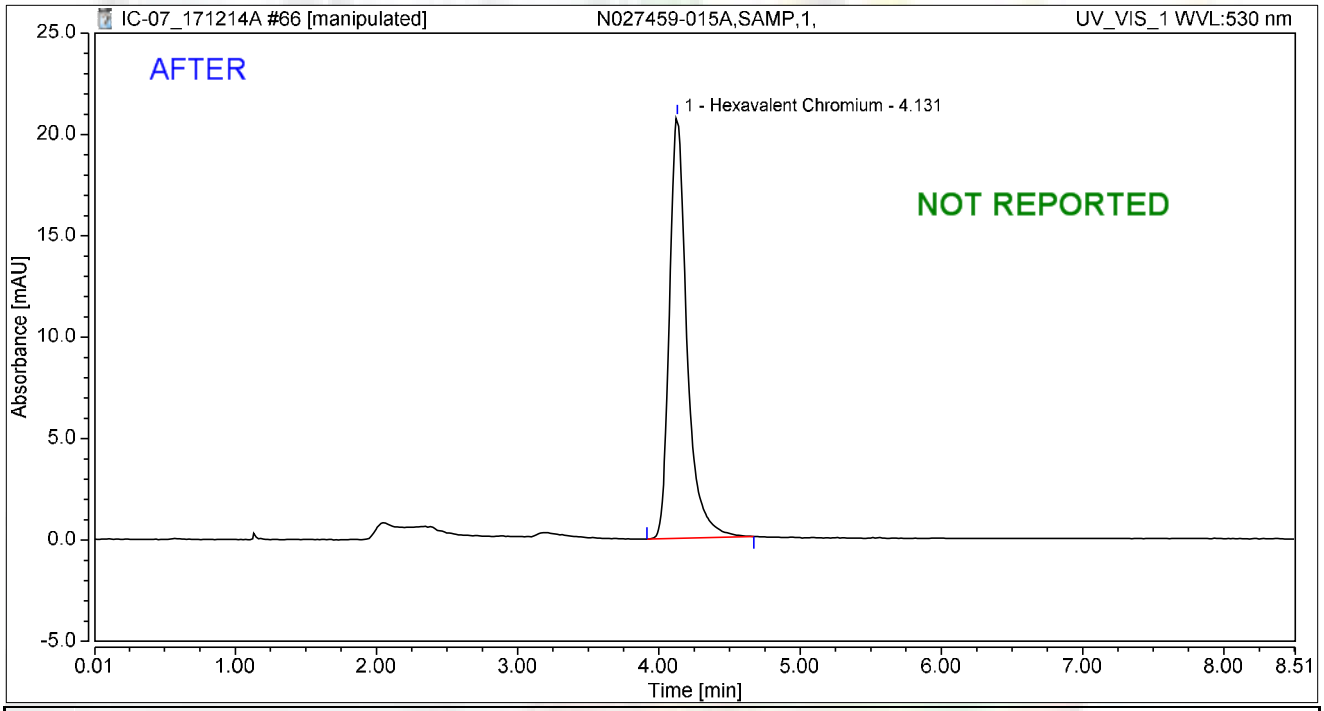
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.869	6.094	100.00	100.00	3.4620
Total:			**0.869**	**6.094**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 18:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	3.006	20.789	100.00	100.00	11.9728
Total:			**3.006**	**20.789**	**100.00**	**100.00**	

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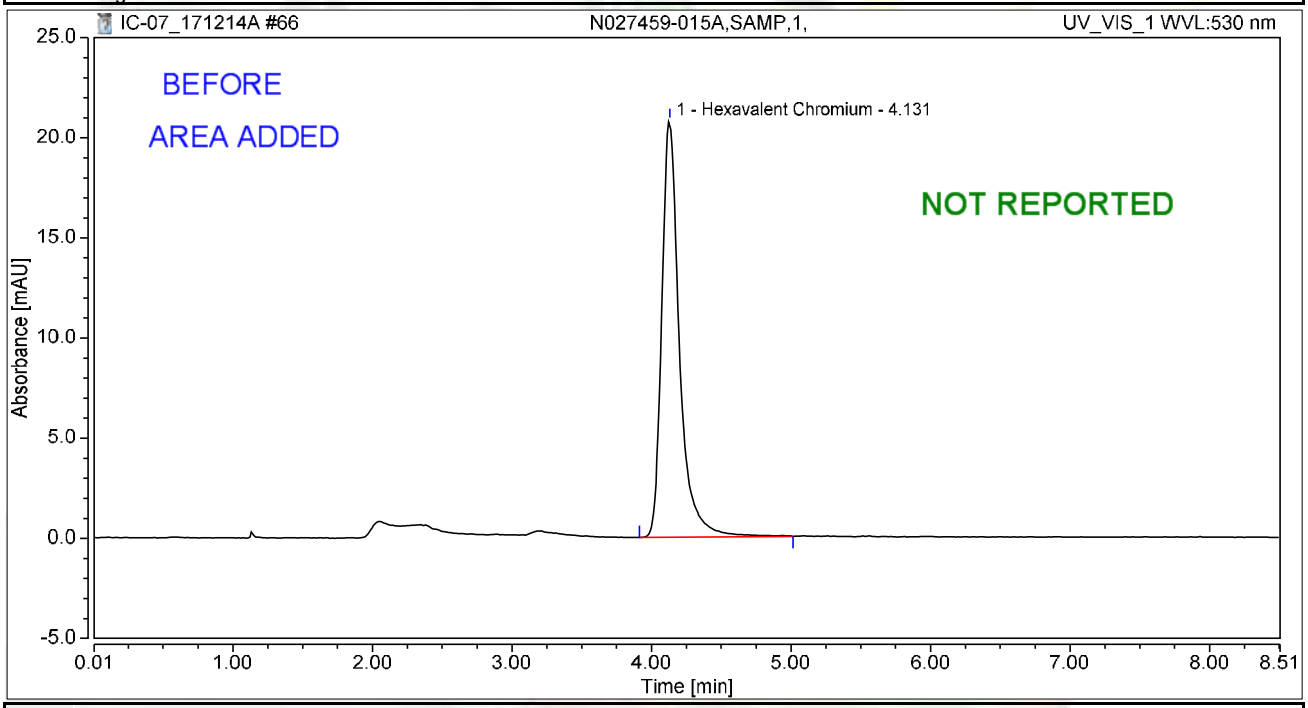
Chromatogram and Results

Injection Details

Injection Name:	**N027459-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 18:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	3.058	20.815	100.00	100.00	12.1798
Total:			**3.058**	**20.815**	**100.00**	**100.00**	

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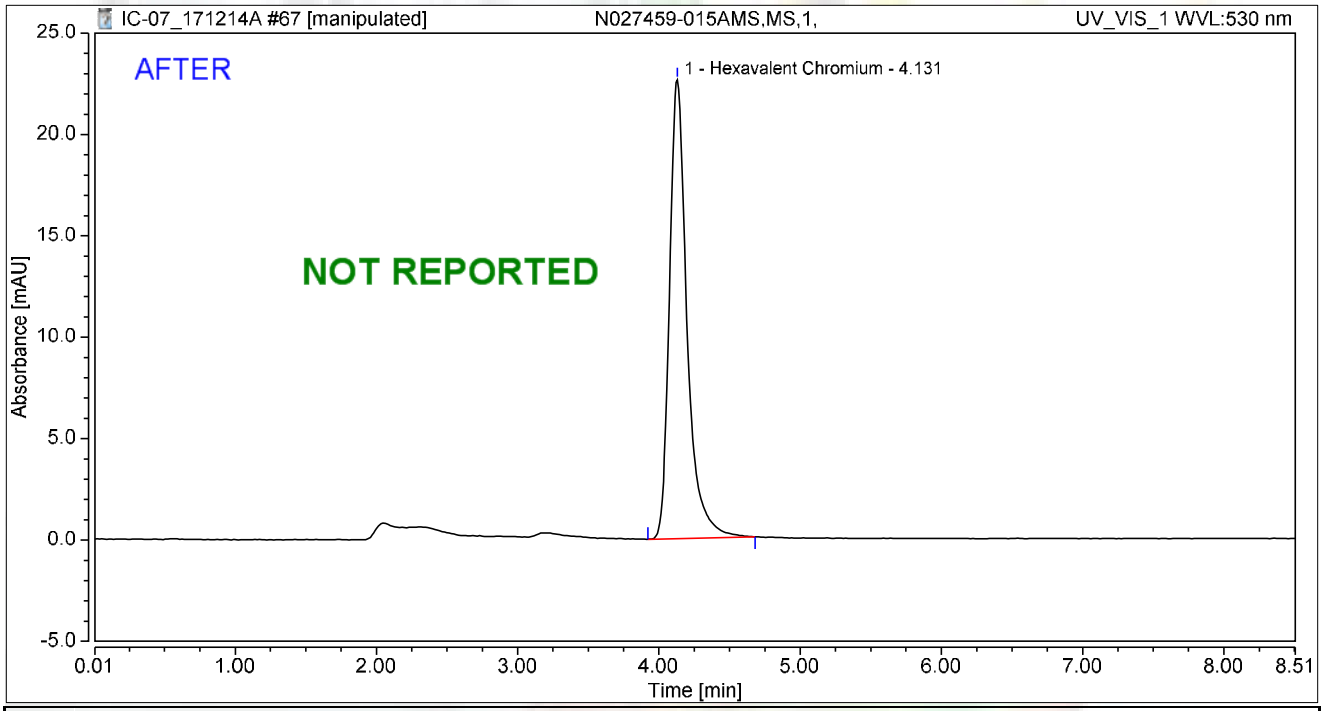
Chromatogram and Results

Injection Details

Injection Name:	**N027459-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 18:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	3.262	22.625	100.00	100.00	12.9892
Total:			**3.262**	**22.625**	**100.00**	**100.00**	

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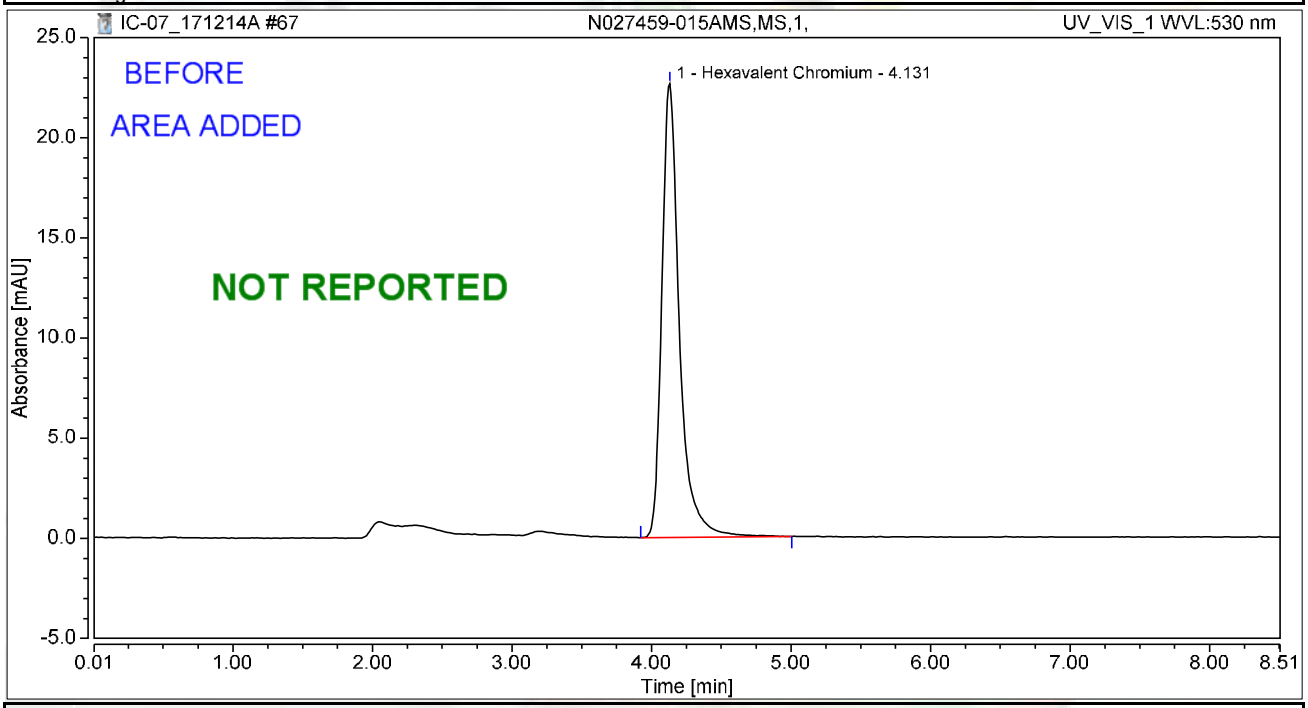
Chromatogram and Results

Injection Details

Injection Name:	**N027459-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 18:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	3.311	22.650	100.00	100.00	13.1843
Total:			**3.311**	**22.650**	**100.00**	**100.00**	

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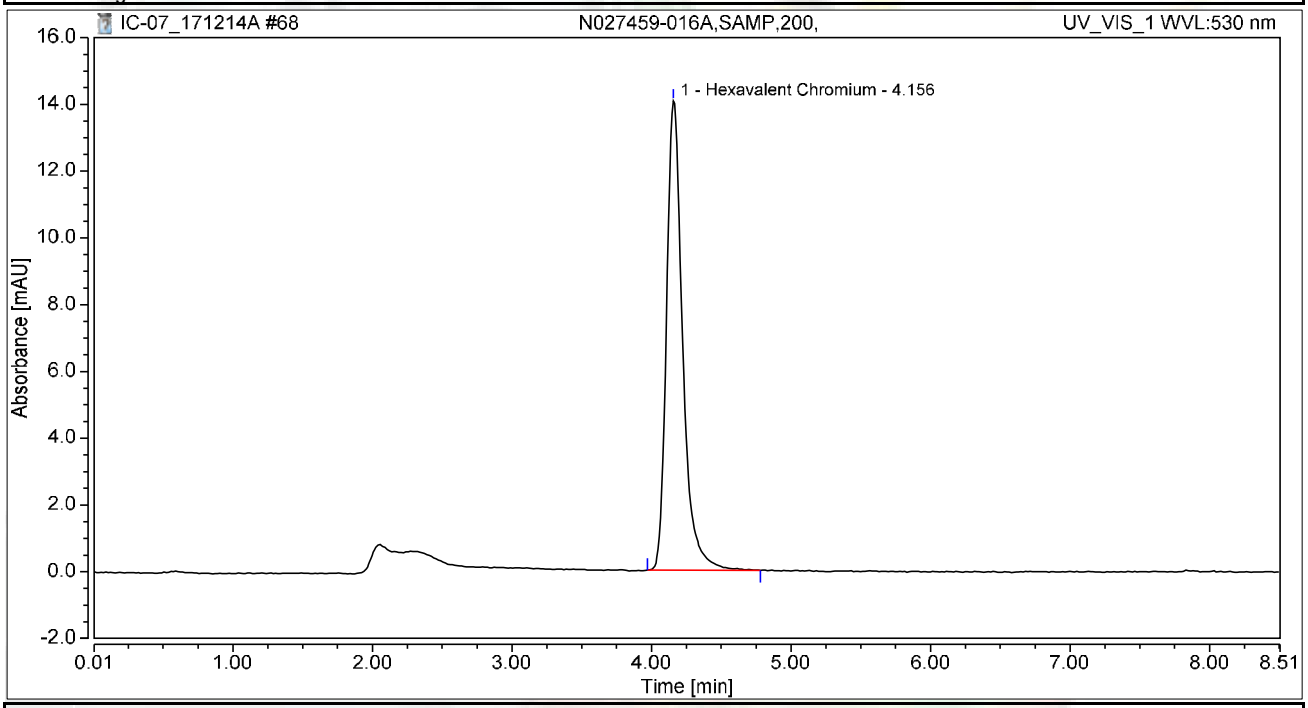
Chromatogram and Results

Injection Details

Injection Name:	**N027459-016A,SAMP,200,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 18:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

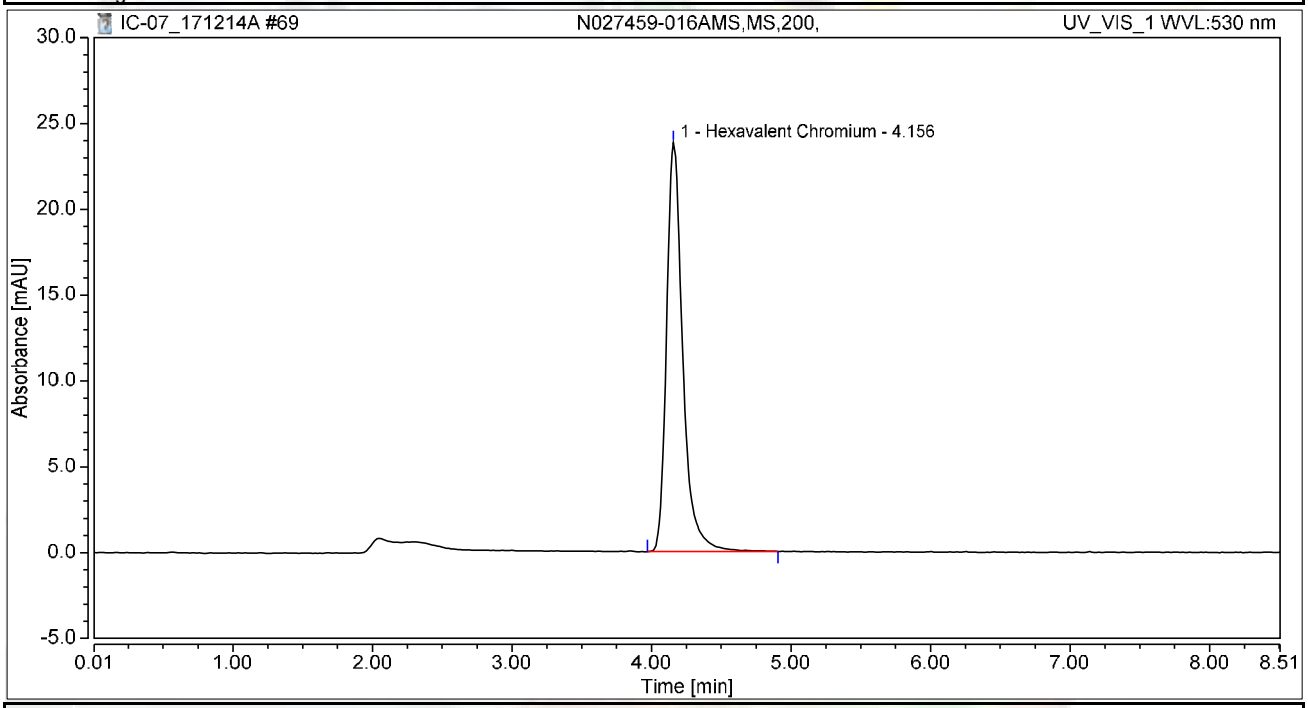
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.887	14.056	100.00	100.00	7.5141
Total:			**1.887**	**14.056**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-016AMS,MS,200,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 18:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

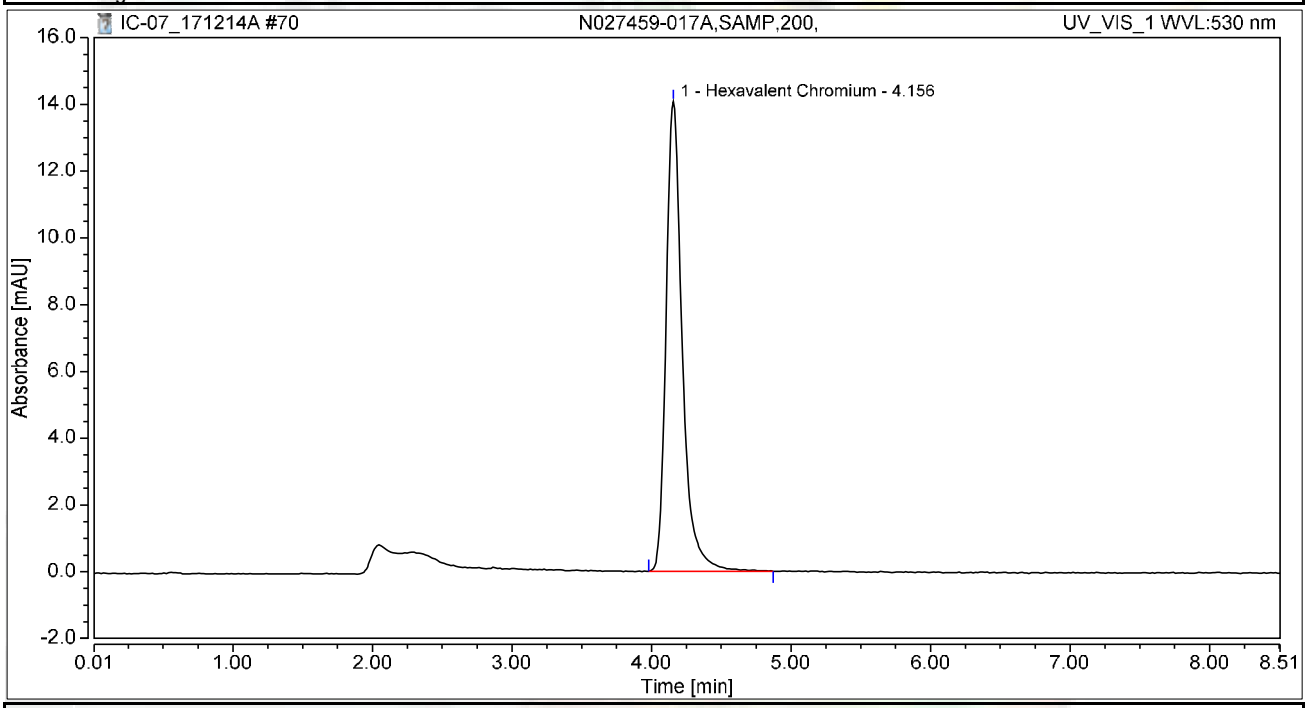
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	3.210	23.820	100.00	100.00	12.7832
Total:			**3.210**	**23.820**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-017A,SAMP,200,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 18:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

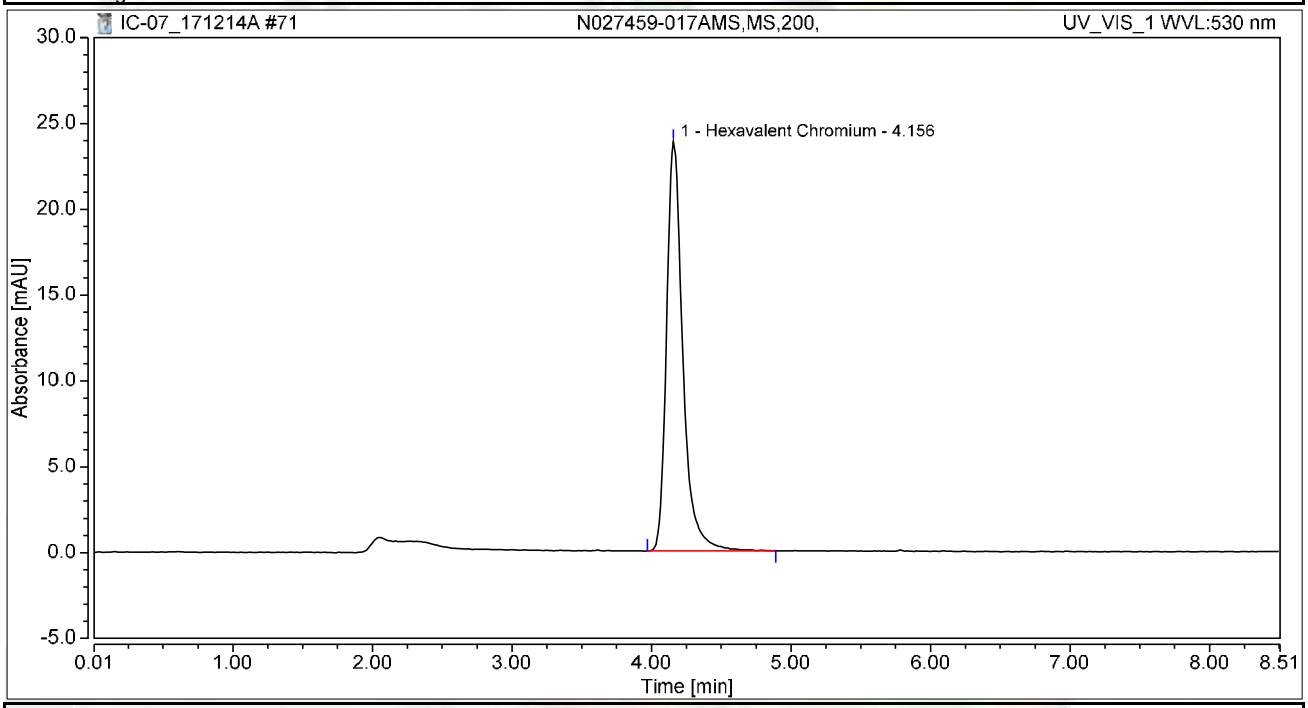
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.892	14.066	100.00	100.00	7.5338
Total:			**1.892**	**14.066**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-017AMS,MS,200,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 19:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

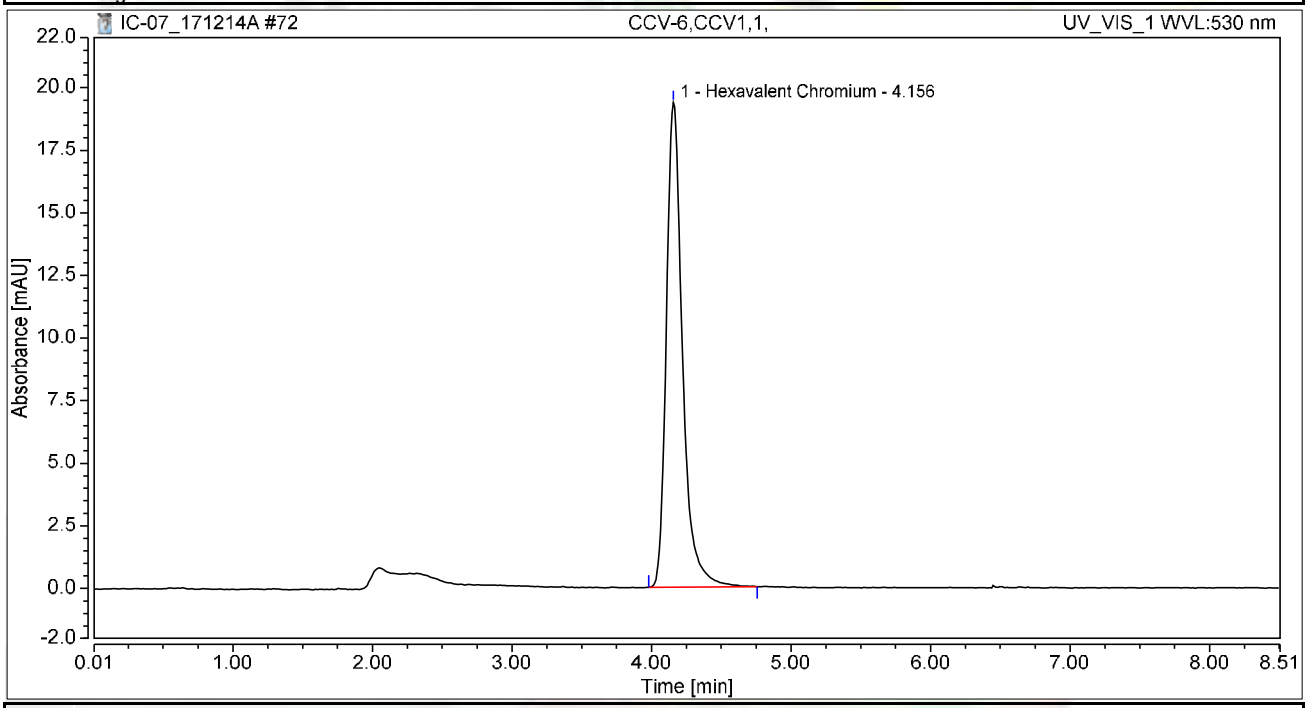
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	3.226	23.851	100.00	100.00	12.8481
Total:			**3.226**	**23.851**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 19:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

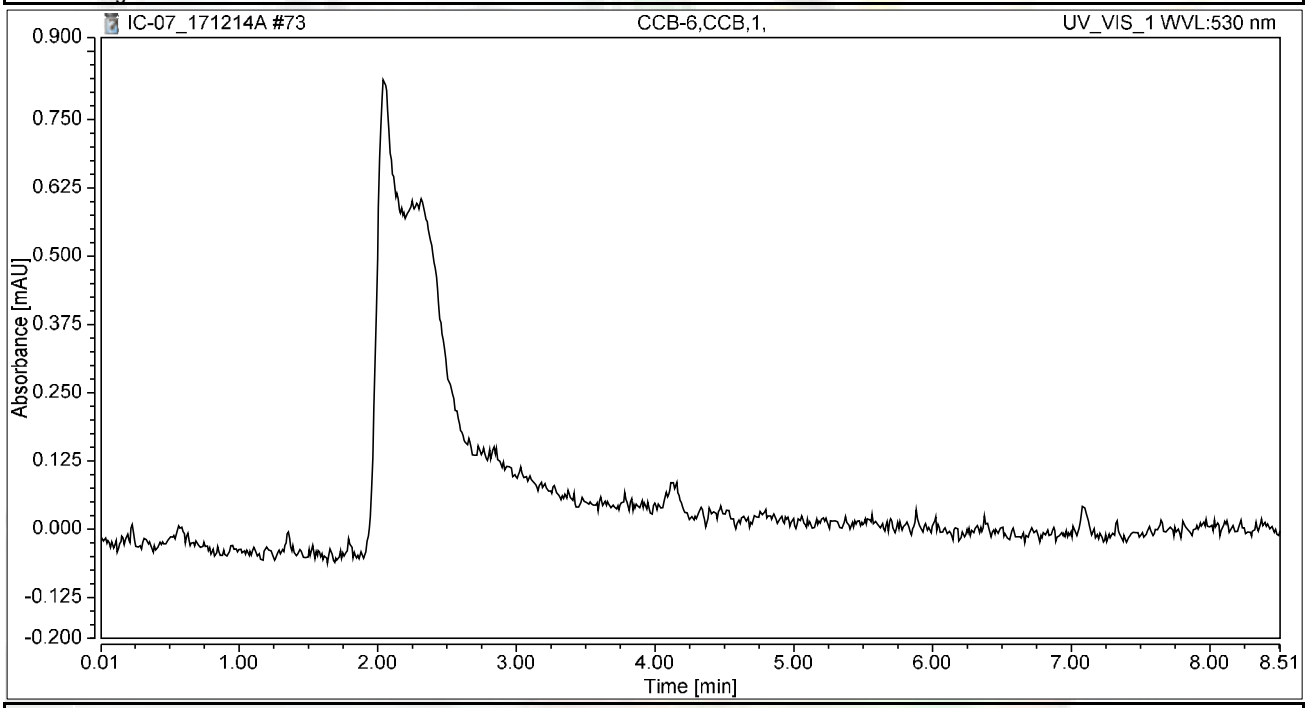
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.587	19.350	100.00	100.00	10.3046
Total:			**2.587**	**19.350**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 19:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

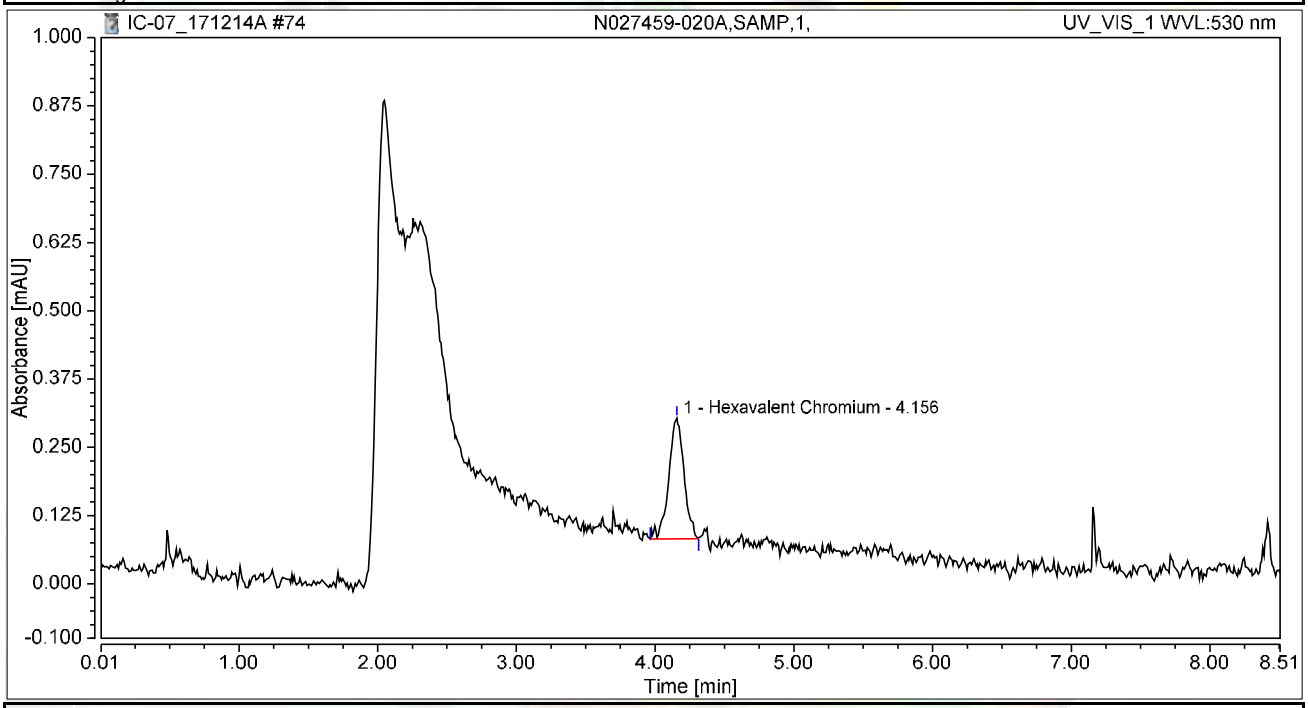
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-020A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 19:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

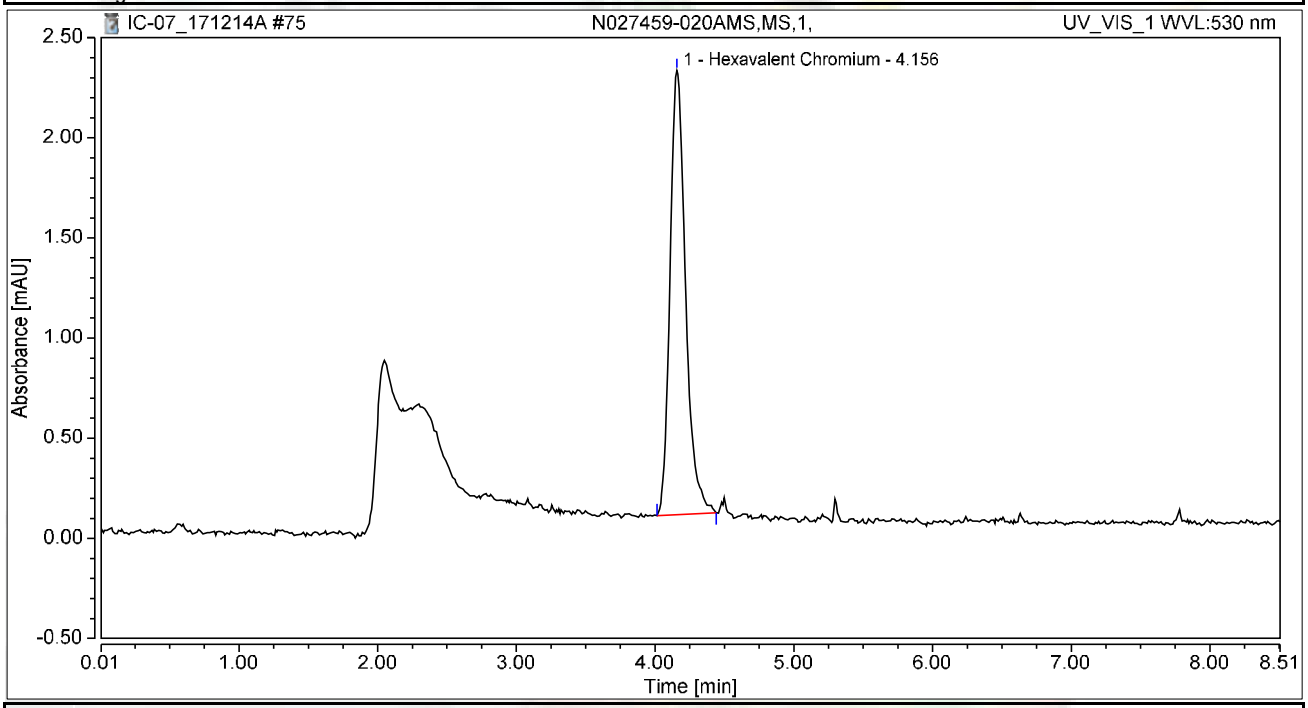
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.028	0.221	100.00	100.00	0.1126
Total:			**0.028**	**0.221**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-020AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 19:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

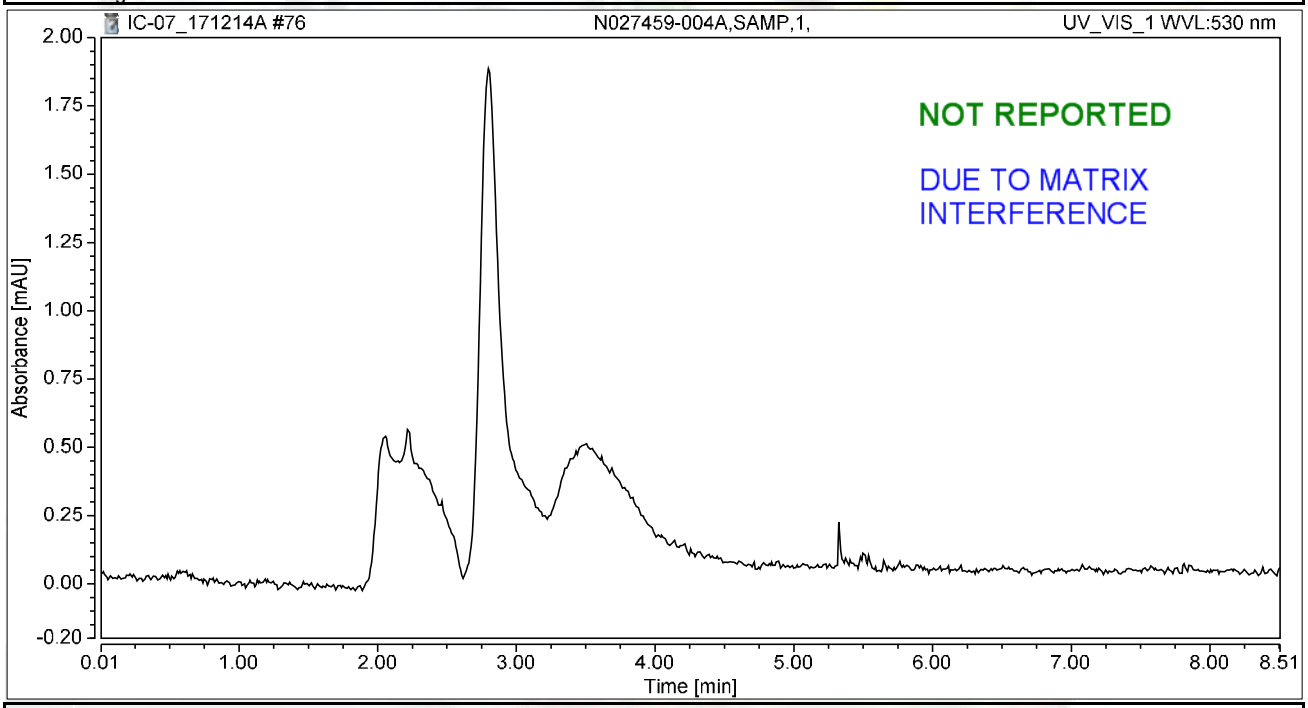
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.288	2.218	100.00	100.00	1.1476
Total:			**0.288**	**2.218**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 19:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

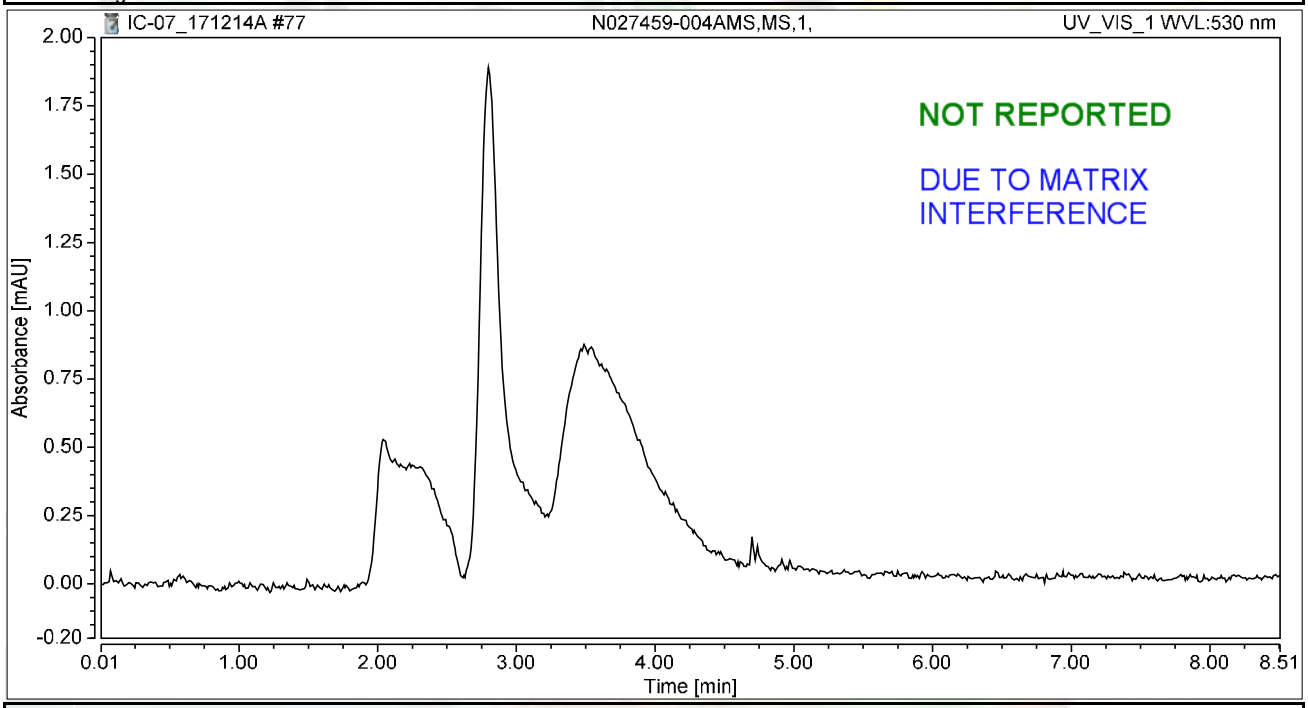
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 20:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

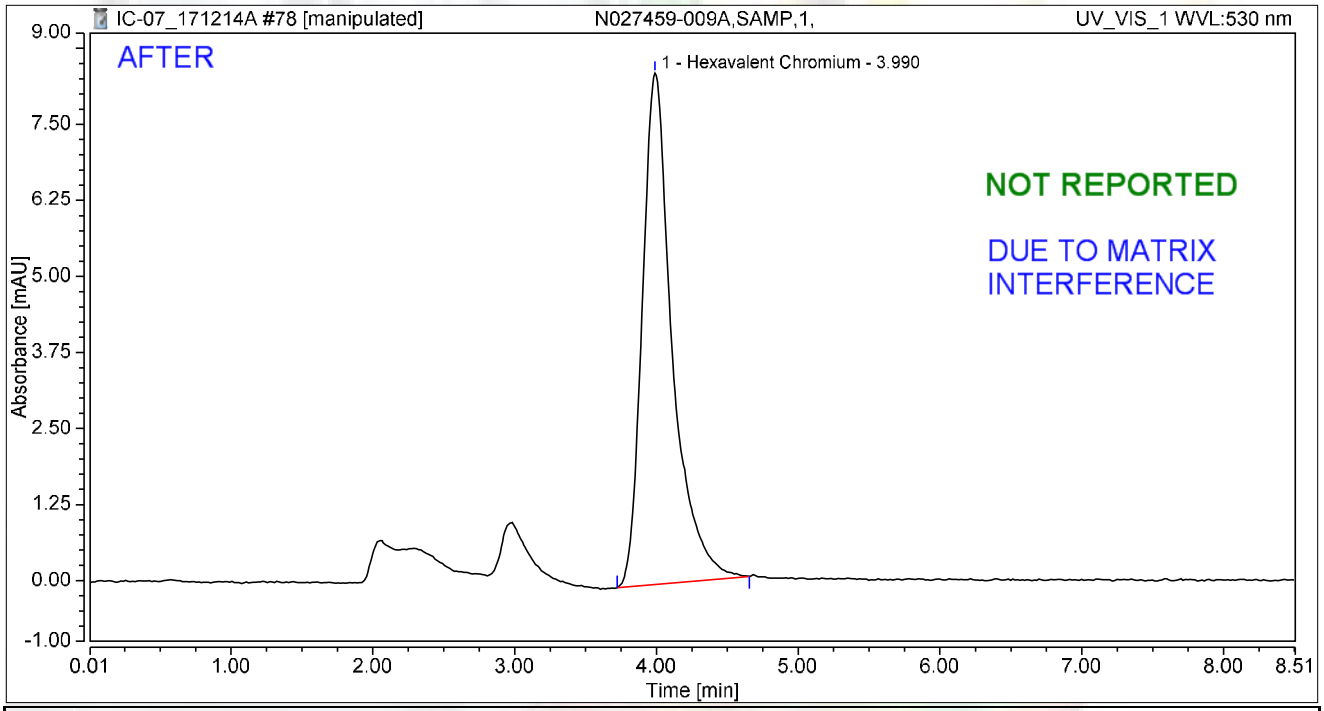
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 20:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.990	2.056	8.404	100.00	100.00	8.1898
Total:			**2.056**	**8.404**	**100.00**	**100.00**	

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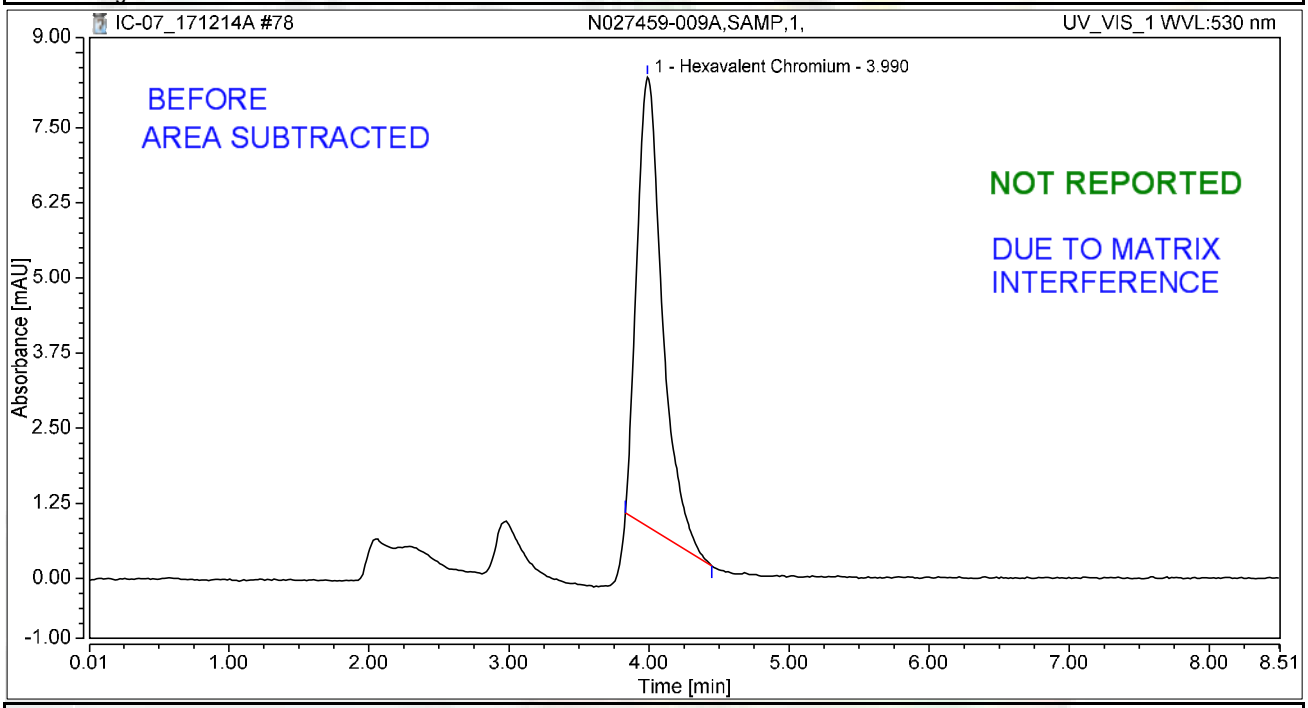
Chromatogram and Results

Injection Details

Injection Name:	**N027459-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 20:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.990	1.582	7.474	100.00	100.00	6.3020
Total:			**1.582**	**7.474**	**100.00**	**100.00**	

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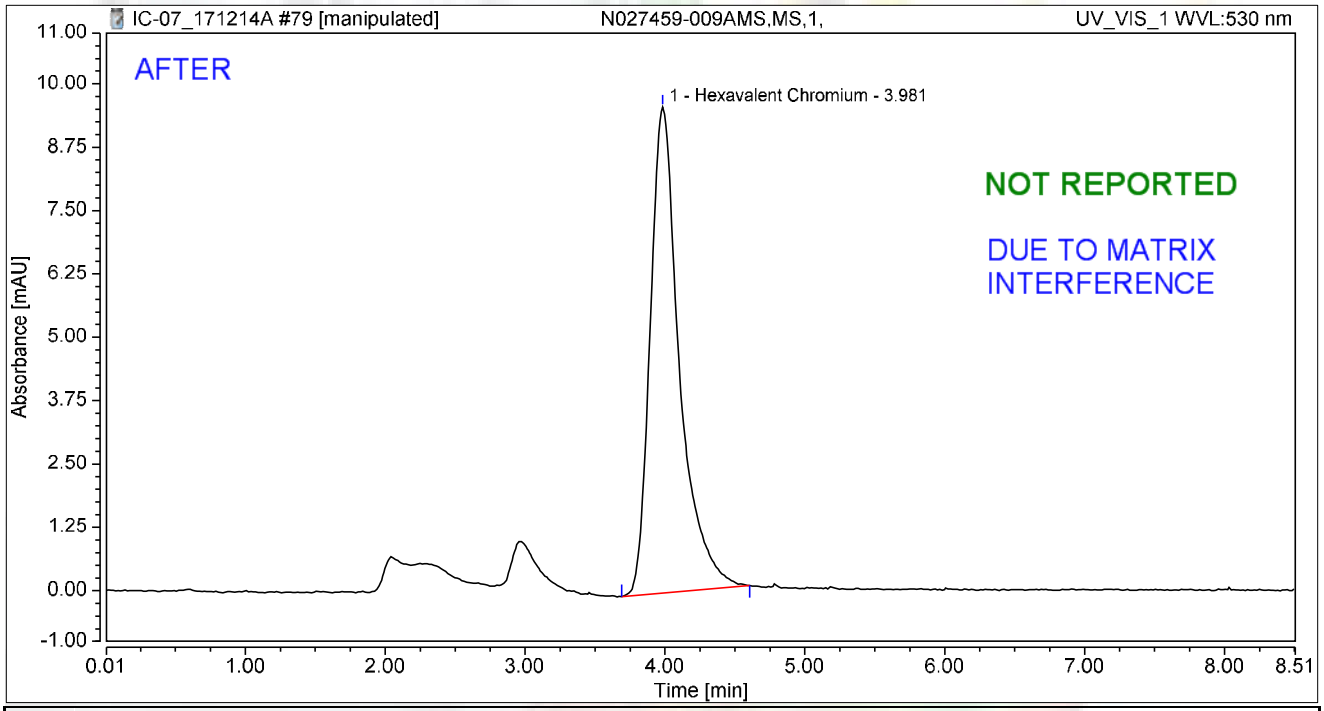
Chromatogram and Results

Injection Details

Injection Name:	**N027459-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 20:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.981	2.325	9.588	100.00	100.00	9.2585
Total:			**2.325**	**9.588**	**100.00**	**100.00**	

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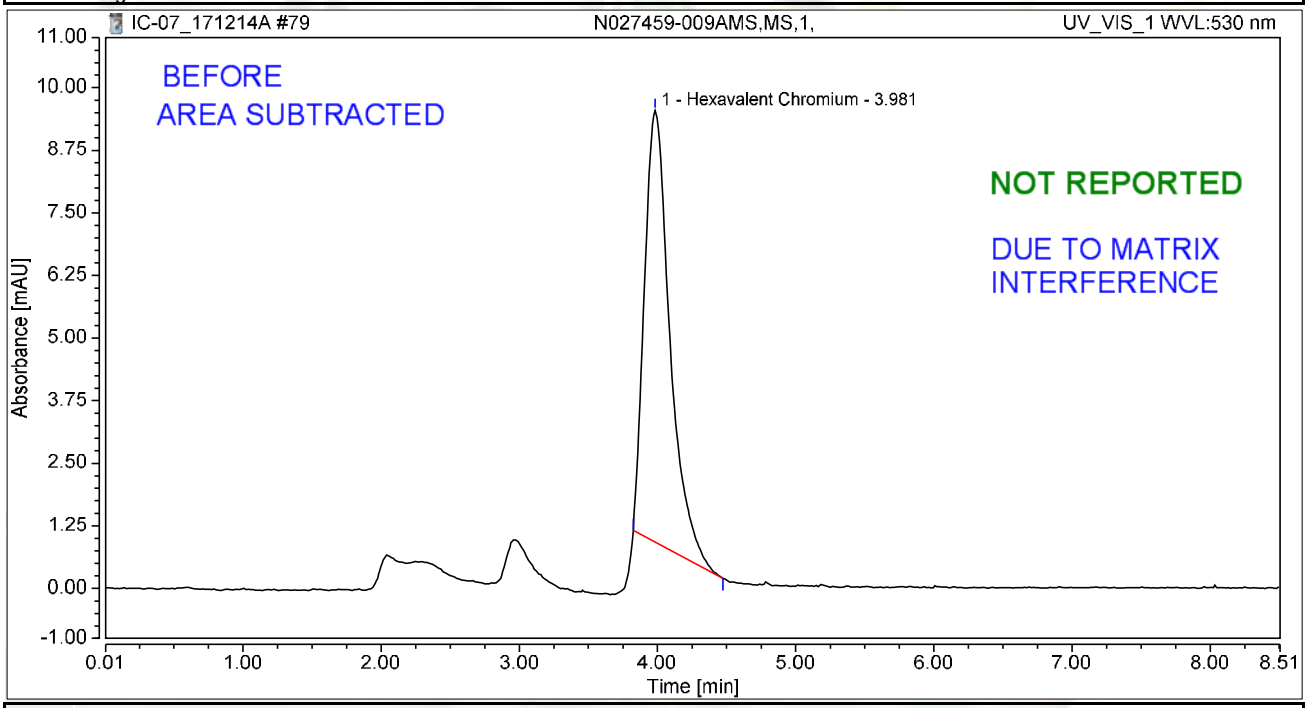
Chromatogram and Results

Injection Details

Injection Name:	**N027459-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 20:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.981	1.834	8.614	100.00	100.00	7.3043
Total:			**1.834**	**8.614**	**100.00**	**100.00**	

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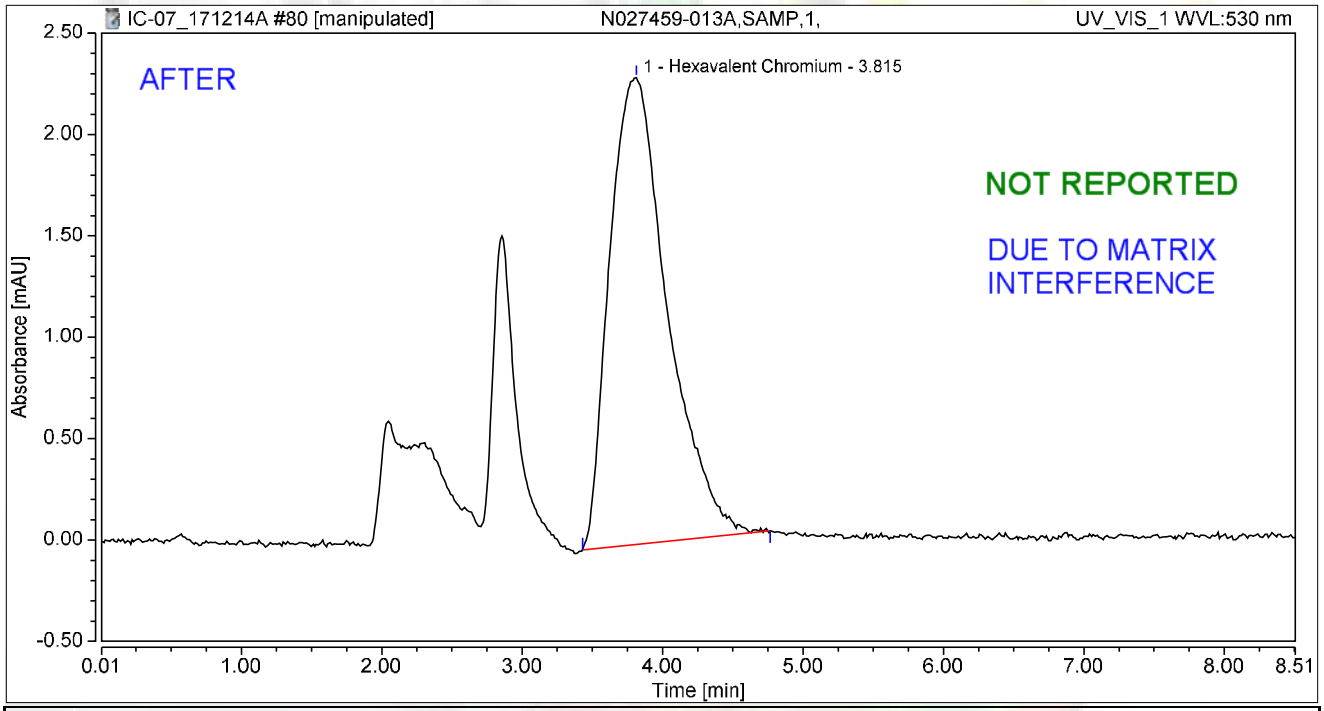
Chromatogram and Results

Injection Details

Injection Name:	**N027459-013A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 20:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.815	1.101	2.301	100.00	100.00	4.3830
Total:			**1.101**	**2.301**	**100.00**	**100.00**	

rba 12/19/2017

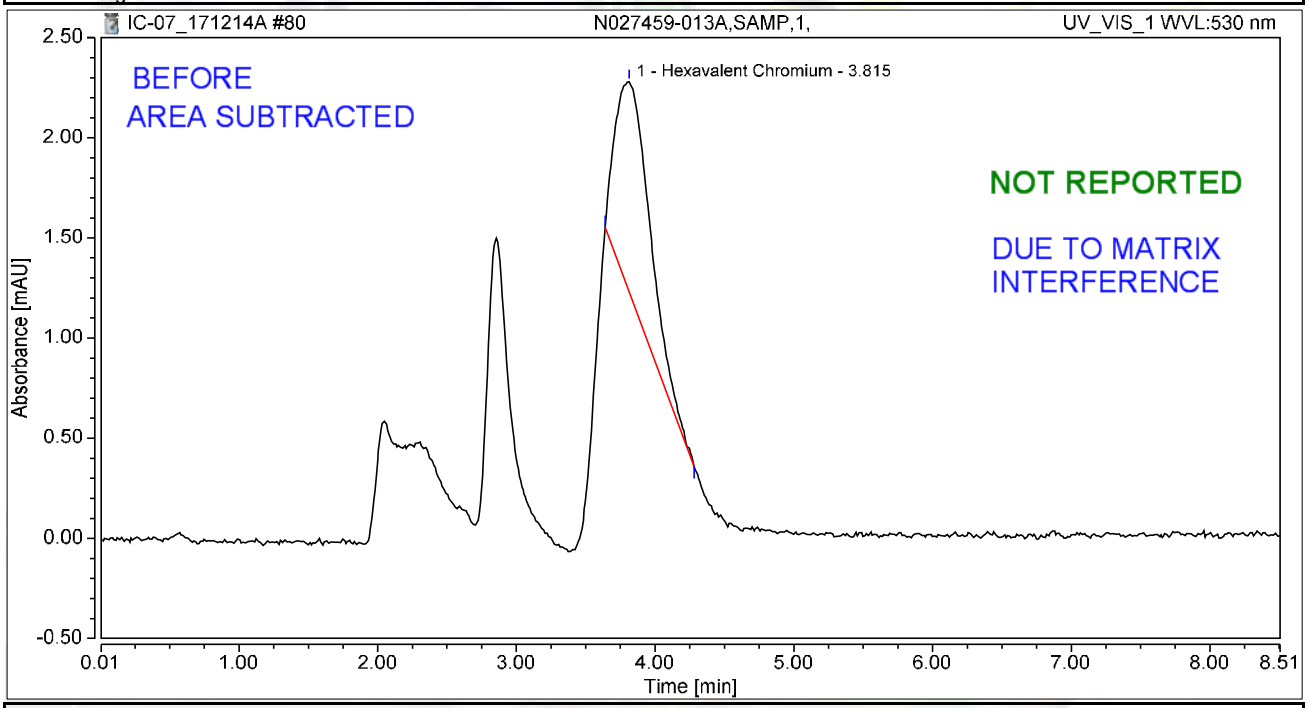
01/03/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027459-013A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 20:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.815	0.305	1.053	100.00	100.00	1.2163
Total:			**0.305**	**1.053**	**100.00**	**100.00**	

rba 12/19/2017

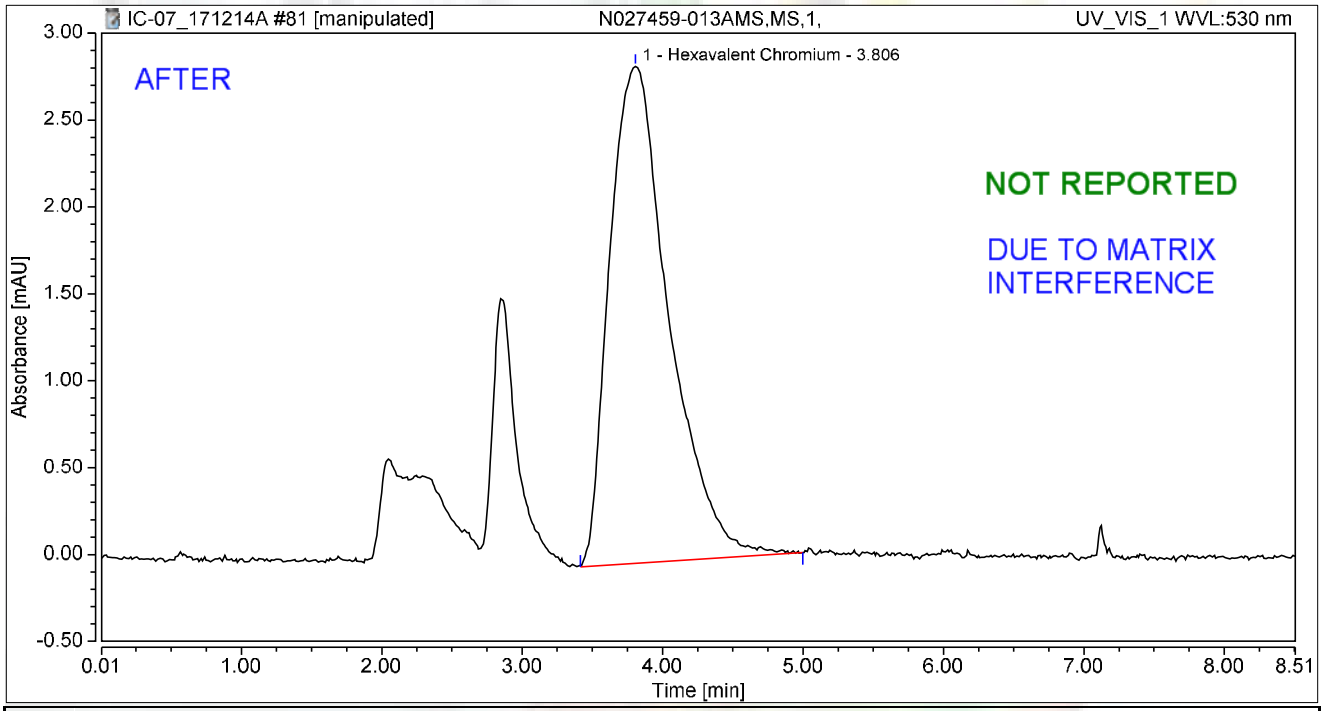
RB 01/03/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027459-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 20:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.806	1.402	2.860	100.00	100.00	5.5835
Total:			**1.402**	**2.860**	**100.00**	**100.00**	

rba 12/19/2017

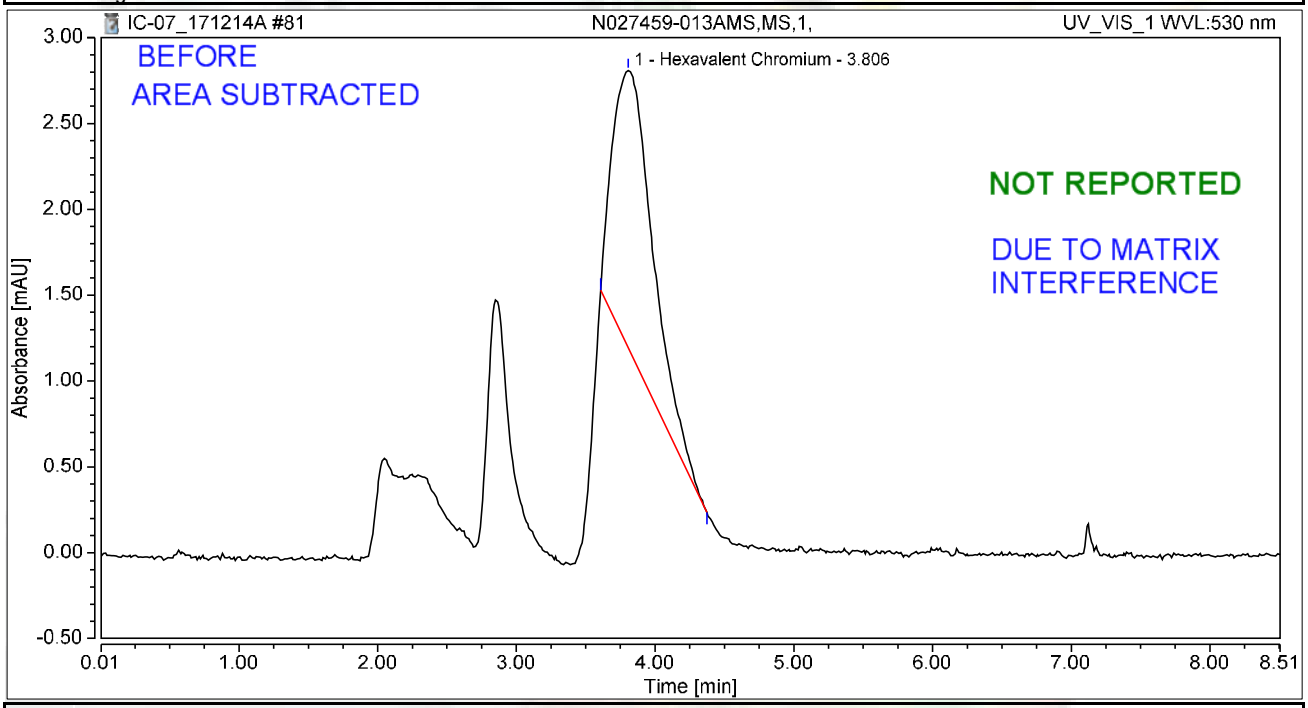
RB 01/03/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027459-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 20:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.806	0.549	1.617	100.00	100.00	2.1883
Total:			**0.549**	**1.617**	**100.00**	**100.00**	

rba 12/19/2017

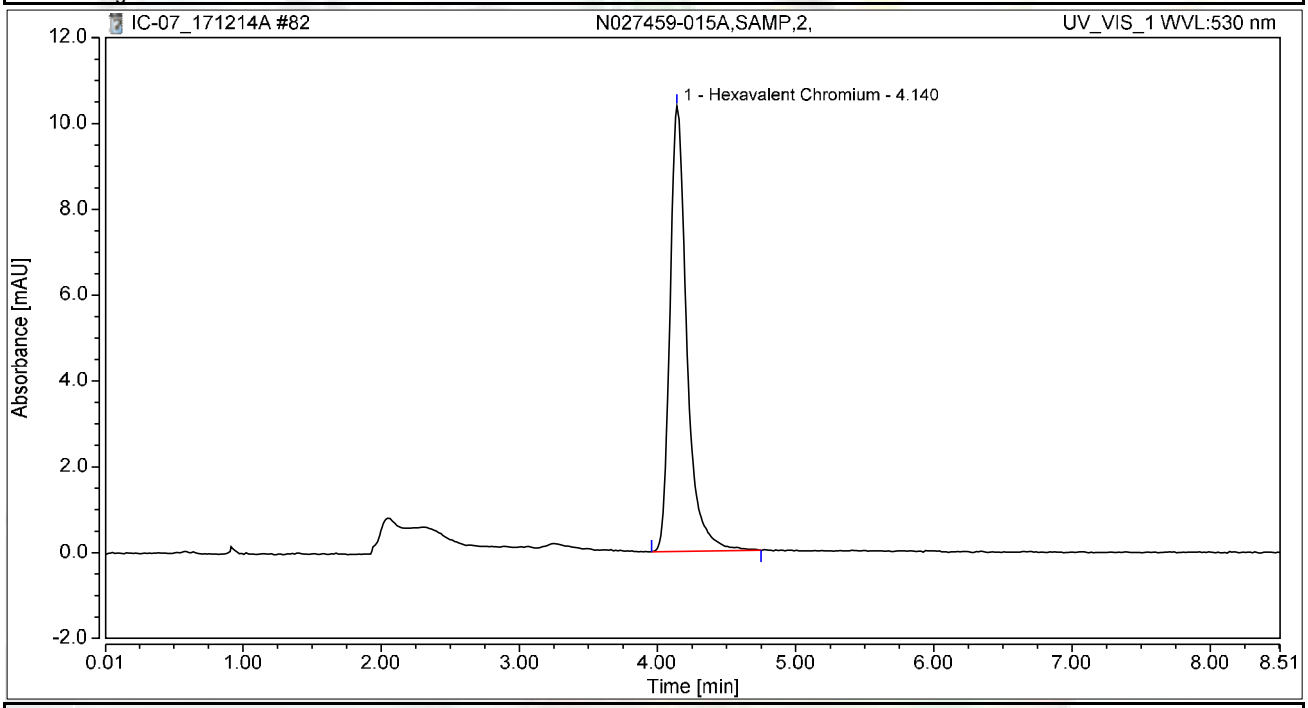
RLB 01/03/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027459-015A,SAMP,2,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 20:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

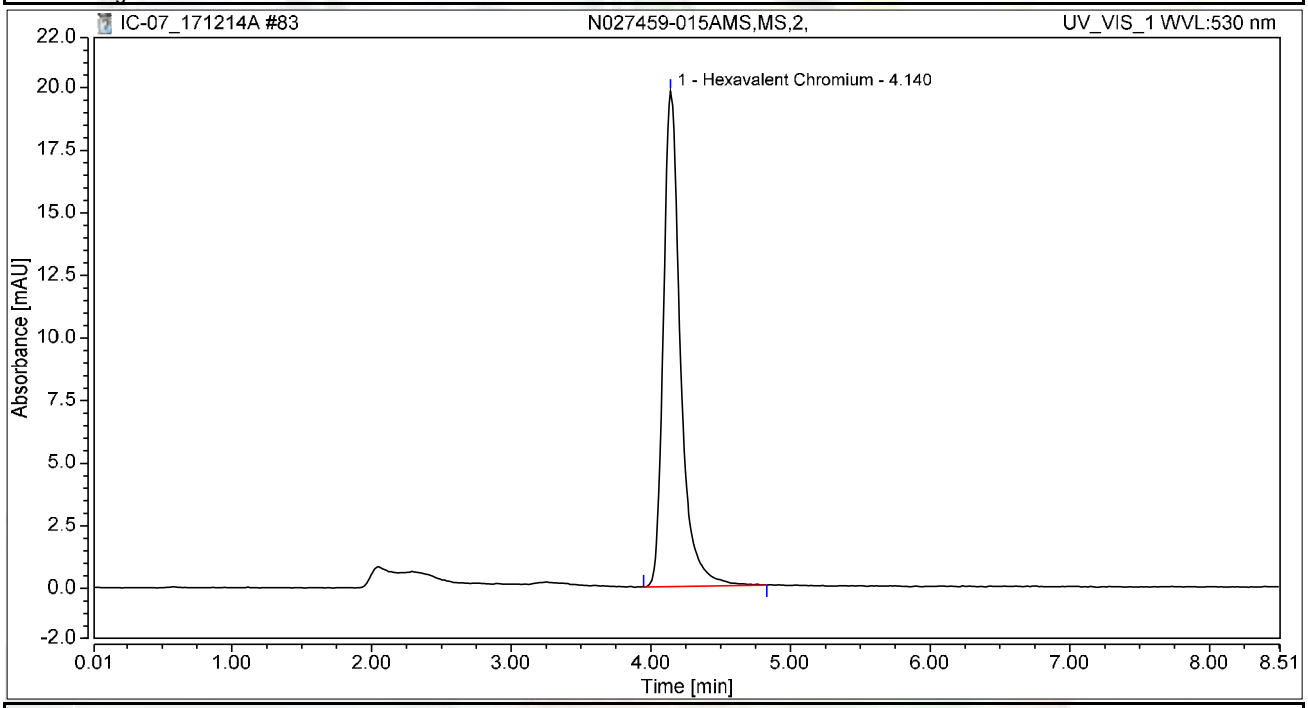
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.476	10.378	100.00	100.00	5.8791
Total:			**1.476**	**10.378**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-015AMS,MS,2,**	*Run Time (min):*	**8.49**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 20:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

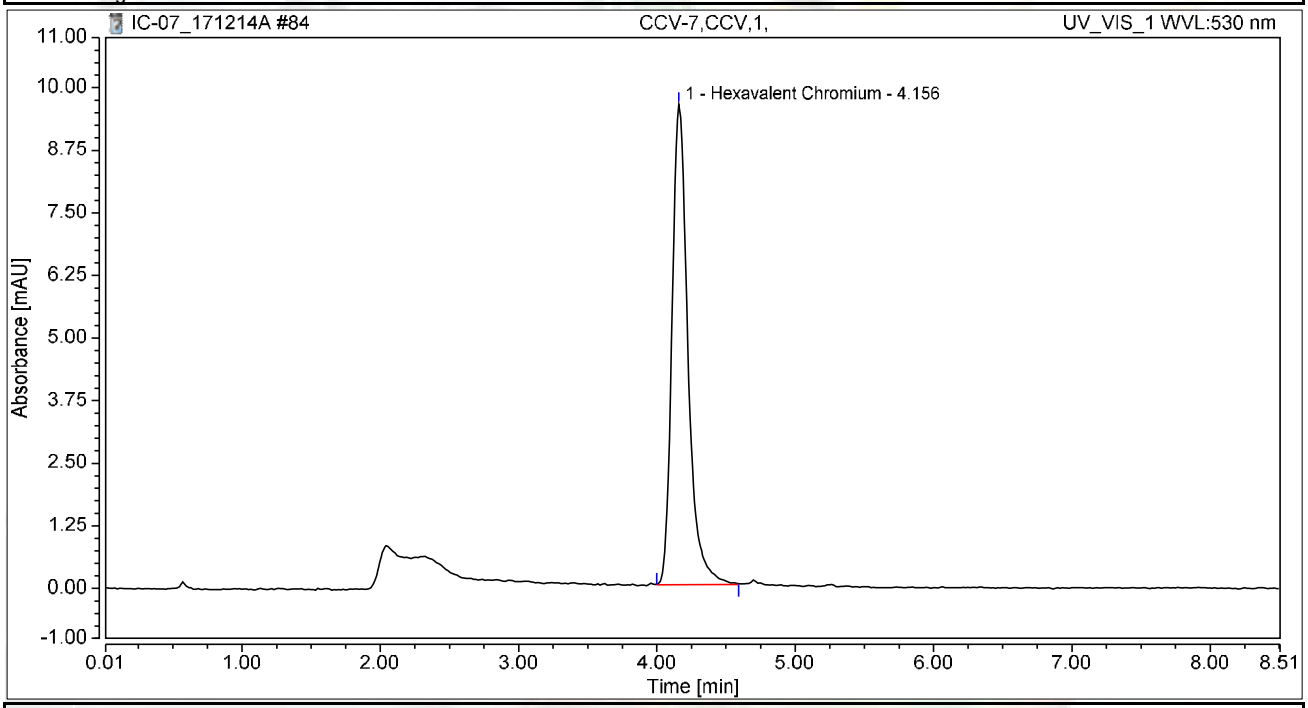
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.812	19.790	100.00	100.00	11.1979
Total:			**2.812**	**19.790**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 21:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

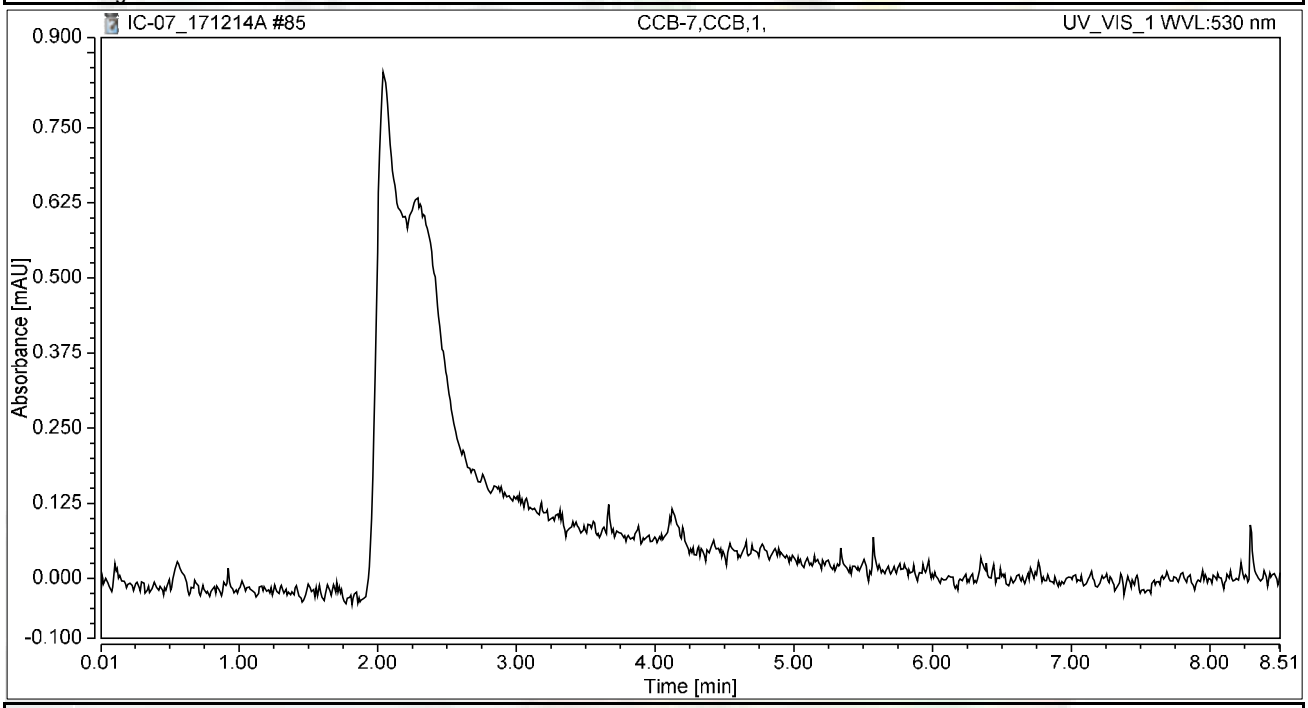
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.281	9.590	100.00	100.00	5.1033
Total:			**1.281**	**9.590**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Dec/17 21:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 171215A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/15/17 8:31 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/15/17 8:42 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/15/17 8:51 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/15/17 9:01 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/15/17 9:10 AM	Reported
15	MB-R120903	MBLK	1	Hexavalent Chromium	12/15/17 9:20 AM	Reported
16	LCS-R120903	LCS	1	Hexavalent Chromium	12/15/17 9:29 AM	Reported
17	N027485-002A	SAMP	200	Hexavalent Chromium	12/15/17 9:39 AM	Reported
18	N027485-003A	SAMP	200	Hexavalent Chromium	12/15/17 9:48 AM	Reported
19	N027485-005A	SAMP	1	Hexavalent Chromium	12/15/17 9:57 AM	Not Reported
20	N027485-006A	SAMP	1	Hexavalent Chromium	12/15/17 10:07 AM	Not Reported
21	N027485-007A	SAMP	1	Hexavalent Chromium	12/15/17 10:16 AM	Not Reported
22	N027485-001A	SAMP	20	Hexavalent Chromium	12/15/17 10:26 AM	Reported
23	N027485-001AMS	MS	20	Hexavalent Chromium	12/15/17 10:35 AM	Reported
24	N027485-001AMSD	MSD	20	Hexavalent Chromium	12/15/17 10:45 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/15/17 10:54 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/15/17 11:04 AM	Reported
27	N027485-002AMS	MS	200	Hexavalent Chromium	12/15/17 11:13 AM	Reported
28	N027485-003AMS	MS	200	Hexavalent Chromium	12/15/17 11:23 AM	Reported
29	N027485-004A	SAMP	1000	Hexavalent Chromium	12/15/17 11:32 AM	Reported
30	N027485-004AMS	MS	1000	Hexavalent Chromium	12/15/17 11:42 AM	Reported
31	N027485-005A	SAMP	5	Hexavalent Chromium	12/15/17 11:51 AM	Reported
32	N027485-005AMS	MS	5	Hexavalent Chromium	12/15/17 12:00 PM	Reported
33	N027485-006A	SAMP	5	Hexavalent Chromium	12/15/17 12:10 PM	Reported
34	N027485-006AMS	MS	5	Hexavalent Chromium	12/15/17 12:19 PM	Reported
35	N027485-007A	SAMP	5	Hexavalent Chromium	12/15/17 12:29 PM	Reported
36	N027485-007AMS	MS	5	Hexavalent Chromium	12/15/17 12:38 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/15/17 12:48 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/15/17 12:57 PM	Reported
39	N027485-008A	SAMP	100	Hexavalent Chromium	12/15/17 1:07 PM	Reported
40	N027485-008AMS	MS	100	Hexavalent Chromium	12/15/17 1:16 PM	Reported
41	N027485-009A	SAMP	500	Hexavalent Chromium	12/15/17 1:26 PM	Reported
42	N027485-009AMS	MS	500	Hexavalent Chromium	12/15/17 1:35 PM	Reported

INJECTION LOG: 171215A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027485-010A	SAMP	5	Hexavalent Chromium	12/15/17 1:45 PM	Reported
44	N027485-010AMS	MS	5	Hexavalent Chromium	12/15/17 1:54 PM	Reported
45	N027485-011A	SAMP	500	Hexavalent Chromium	12/15/17 2:03 PM	Reported
46	N027485-011AMS	MS	500	Hexavalent Chromium	12/15/17 2:13 PM	Reported
47	N027485-012A	SAMP	500	Hexavalent Chromium	12/15/17 2:22 PM	Reported
48	N027485-012AMS	MS	500	Hexavalent Chromium	12/15/17 2:32 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/15/17 2:41 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/15/17 2:51 PM	Reported
51	N027485-003ADUP	DUP	200	Hexavalent Chromium	12/15/17 3:06 PM	Reported
52	N027485-013A	SAMP	1	Hexavalent Chromium	12/15/17 3:18 PM	Reported
53	N027485-013AMS	MS	1	Hexavalent Chromium	12/15/17 3:27 PM	Reported
54	N027485-014A	SAMP	1	Hexavalent Chromium	12/15/17 3:36 PM	Reported
55	N027485-014AMS	MS	1	Hexavalent Chromium	12/15/17 3:46 PM	Reported
56	N027485-015A	SAMP	1	Hexavalent Chromium	12/15/17 3:55 PM	Not Reported
57	N027485-015AMS	MS	1	Hexavalent Chromium	12/15/17 4:05 PM	Reported
58	N027485-016A	SAMP	1	Hexavalent Chromium	12/15/17 4:14 PM	Reported
59	N027485-016AMS	MS	1	Hexavalent Chromium	12/15/17 4:24 PM	Reported
60	N027459-009A	SAMP	1	Hexavalent Chromium	12/15/17 4:33 PM	Not Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/15/17 4:43 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/15/17 4:52 PM	Reported
63	N027459-009AMS	MS	1	Hexavalent Chromium	12/15/17 5:02 PM	Not Reported
64	N027459-018A	SAMP	5	Hexavalent Chromium	12/15/17 5:11 PM	Reported
65	N027459-018AMS	MS	5	Hexavalent Chromium	12/15/17 5:21 PM	Reported
66	N027459-019A	SAMP	5	Hexavalent Chromium	12/15/17 5:30 PM	Reported
67	N027459-019AMS	MS	5	Hexavalent Chromium	12/15/17 5:39 PM	Reported
68	N027485-005AMS	MS	1	Hexavalent Chromium	12/15/17 5:49 PM	Not Reported
69	N027485-006AMS	MS	1	Hexavalent Chromium	12/15/17 5:58 PM	Not Reported
70	N027485-007AMS	MS	1	Hexavalent Chromium	12/15/17 6:08 PM	Not Reported
71	N027459-019A	SAMP	1	Hexavalent Chromium	12/15/17 6:17 PM	Not Reported
72	N027459-019AMS	MS	1	Hexavalent Chromium	12/15/17 6:27 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	12/15/17 6:36 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	12/15/17 6:46 PM	Reported
75	N027459-018A	SAMP	1	Hexavalent Chromium	12/15/17 6:55 PM	Not Reported
76	N027459-018AMS	MS	1	Hexavalent Chromium	12/15/17 7:05 PM	Not Reported
77	N027404-005A	SAMP	5	Hexavalent Chromium	12/15/17 7:14 PM	Not Reported
78	N027404-005AMS	MS	5	Hexavalent Chromium	12/15/17 7:24 PM	Not Reported
79	N027404-009A	SAMP	5	Hexavalent Chromium	12/15/17 7:33 PM	Not Reported
80	N027404-009AMS	MS	5	Hexavalent Chromium	12/15/17 7:42 PM	Not Reported
81	N027459-009A	SAMP	2	Hexavalent Chromium	12/15/17 7:52 PM	Reported
82	N027459-009AMS	MS	2	Hexavalent Chromium	12/15/17 8:01 PM	Reported
83	N027485-015A	SAMP	1	Hexavalent Chromium	12/15/17 8:11 PM	Reported
84	CCV-7	CCV	1	Hexavalent Chromium	12/15/17 8:20 PM	Reported

INJECTION LOG: 171215A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCB-7	CCB	1	Hexavalent Chromium	12/15/17 8:30 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171215A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**15/Dec/17 21:00:35**
No. of Injections:	**88**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/15/2017 08:31	Finished	BLANK
11	BLANK	2	1000	Unknown		12/15/2017 08:42	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/15/2017 08:51	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/15/2017 09:01	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/15/2017 09:10	Finished	CCB R171129A
15	MB-H2O,MBLK,1	6	1000	Unknown		12/15/2017 09:20	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/15/2017 09:29	Finished	LCS, IWST-171002B
17	N027485-002A,SAMF	8	1000	Unknown		12/15/2017 09:39	Finished	SAMP,0.05>10mL
18	N027485-003A,SAMF	9	1000	Unknown		12/15/2017 09:48	Finished	SAMP,0.05>10mL
19	N027485-005A,SAMF	10	1000	Unknown		12/15/2017 09:57	Finished	SAMP,10mL
20	N027485-006A,SAMF	11	1000	Unknown		12/15/2017 10:07	Finished	SAMP,10mL
21	N027485-007A,SAMF	12	1000	Unknown		12/15/2017 10:16	Finished	SAMP,10mL
22	N027485-001A,SAMF	13	1000	Unknown		12/15/2017 10:26	Finished	SAMP,0.5>10mL
23	N027485-001AMS,MS	14	1000	Unknown		12/15/2017 10:35	Finished	MS (5ppb), IWST-171002B,0.5
24	N027485-001AMSD,M	15	1000	Unknown		12/15/2017 10:45	Finished	MSD (5ppb), IWST-171002B,0.
25	CCV-2,CCV1,1,	16	1000	Unknown		12/15/2017 10:54	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	17	1000	Unknown		12/15/2017 11:04	Finished	CCB R171129A
27	N027485-002AMS,MS	18	1000	Unknown		12/15/2017 11:13	Finished	MS (5ppb), IWST-171002B,0.0
28	N027485-003AMS,MS	19	1000	Unknown		12/15/2017 11:23	Finished	MS (5ppb), IWST-171002B,0.0
29	N027485-004A,SAMF	20	1000	Unknown		12/15/2017 11:32	Finished	SAMP,0.01>10mL
30	N027485-004AMS,MS	21	1000	Unknown		12/15/2017 11:42	Finished	MS (5ppb), IWST-171002B,0.0
31	N027485-005A,SAMF	22	1000	Unknown		12/15/2017 11:51	Finished	SAMP,2>10mL
32	N027485-005AMS,MS	23	1000	Unknown		12/15/2017 12:00	Finished	MS (1ppb), IWST-171002B,2>1
33	N027485-006A,SAMF	24	1000	Unknown		12/15/2017 12:10	Finished	SAMP,2>10mL
34	N027485-006AMS,MS	25	1000	Unknown		12/15/2017 12:19	Finished	MS (1ppb), IWST-171002B,2>1
35	N027485-007A,SAMF	26	1000	Unknown		12/15/2017 12:29	Finished	SAMP,2>10mL
36	N027485-007AMS,MS	27	1000	Unknown		12/15/2017 12:38	Finished	MS (1ppb), IWST-171002B,2>1
37	CCV-3,CCV,1,	28	1000	Unknown		12/15/2017 12:48	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	29	1000	Unknown		12/15/2017 12:57	Finished	CCB R171129A
39	N027485-008A,SAMF	30	1000	Unknown		12/15/2017 13:07	Finished	SAMP,0.1>10mL
40	N027485-008AMS,MS	31	1000	Unknown		12/15/2017 13:16	Finished	MS (5ppb), IWST-171002B,0.1
41	N027485-009A,SAMF	32	1000	Unknown		12/15/2017 13:26	Finished	SAMP,0.02>10mL
42	N027485-009AMS,MS	33	1000	Unknown		12/15/2017 13:35	Finished	MS (5ppb), IWST-171002B,0.0
43	N027485-010A,SAMF	34	1000	Unknown		12/15/2017 13:45	Finished	SAMP,2>10mL
44	N027485-010AMS,MS	35	1000	Unknown		12/15/2017 13:54	Finished	MS (5ppb), IWST-171002B,2>1
45	N027485-011A,SAMF	36	1000	Unknown		12/15/2017 14:03	Finished	SAMP,0.02>10mL
46	N027485-011AMS,MS	37	1000	Unknown		12/15/2017 14:13	Finished	MS (5ppb), IWST-171002B,0.0
47	N027485-012A,SAMF	38	1000	Unknown		12/15/2017 14:22	Finished	SAMP,0.02>10mL
48	N027485-012AMS,MS	39	1000	Unknown		12/15/2017 14:32	Finished	MS (5ppb), IWST-171002B,0.0
49	CCV-4,CCV1,1,	40	1000	Unknown		12/15/2017 14:41	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	41	1000	Unknown		12/15/2017 14:51	Finished	CCB R171129A
51	N027485-003ADUP,D	1	1000	Unknown		12/15/2017 15:06	Finished	DUP,0.05>10mL
52	N027485-013A,SAMF	2	1000	Unknown		12/15/2017 15:18	Finished	SAMP,10mL
53	N027485-013AMS,MS	3	1000	Unknown		12/15/2017 15:27	Finished	MS (1ppb), IWST-171002B,10
54	N027485-014A,SAMF	4	1000	Unknown		12/15/2017 15:36	Finished	SAMP,10mL
55	N027485-014AMS,MS	5	1000	Unknown		12/15/2017 15:46	Finished	MS (1ppb), IWST-171002B,10
56	N027485-015A,SAMF	6	1000	Unknown		12/15/2017 15:55	Finished	SAMP,10mL
57	N027485-015AMS,MS	7	1000	Unknown		12/15/2017 16:05	Finished	MS (1ppb), IWST-171002B,10
58	N027485-016A,SAMF	8	1000	Unknown		12/15/2017 16:14	Finished	SAMP,10mL
59	N027485-016AMS,MS	9	1000	Unknown		12/15/2017 16:24	Finished	MS (1ppb), IWST-171002B,10
60	N027459-009A,SAMF	10	1000	Unknown		12/15/2017 16:33	Finished	SAMP,10mL

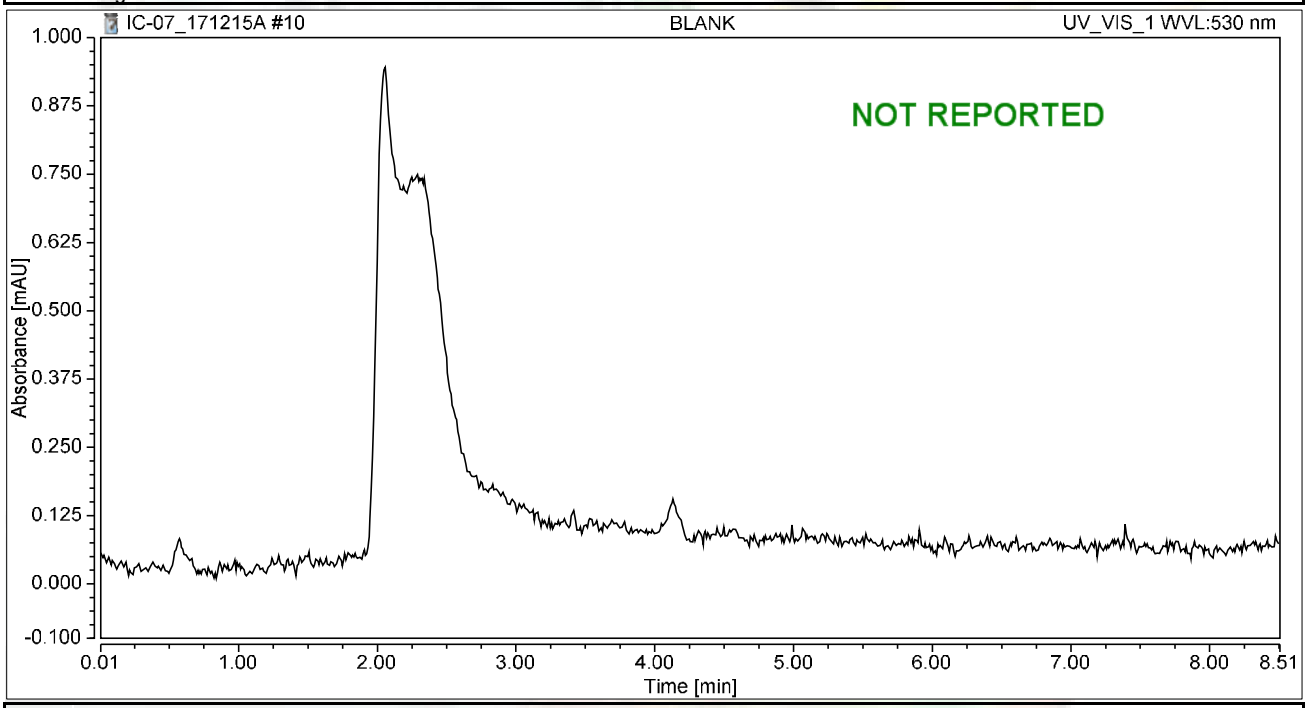
61	CCV-5,CCV,1,	11	1000	Unknown		12/15/2017 16:43	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	12	1000	Unknown		12/15/2017 16:52	Finished	CCB R171129A
63	N027459-009AMS,MS	13	1000	Unknown		12/15/2017 17:02	Finished	MS (5ppb), IWST-171002B,10
64	N027459-018A,SAMP	14	1000	Unknown		12/15/2017 17:11	Finished	SAMP,2>10mL
65	N027459-018AMS,MS	15	1000	Unknown		12/15/2017 17:21	Finished	MS (1ppb), IWST-171002B,2>1
66	N027459-019A,SAMP	16	1000	Unknown		12/15/2017 17:30	Finished	SAMP,2>10mL
67	N027459-019AMS,MS	17	1000	Unknown		12/15/2017 17:39	Finished	MS (1ppb), IWST-171002B,2>1
68	N027485-005AMS,MS	18	1000	Unknown		12/15/2017 17:49	Finished	MS (1ppb), IWST-171002B,10
69	N027485-006AMS,MS	19	1000	Unknown		12/15/2017 17:58	Finished	MS (1ppb), IWST-171002B,10
70	N027485-007AMS,MS	20	1000	Unknown		12/15/2017 18:08	Finished	MS (1ppb), IWST-171002B,10
71	N027459-019A,SAMP	21	1000	Unknown		12/15/2017 18:17	Finished	SAMP,10mL
72	N027459-019AMS,MS	22	1000	Unknown		12/15/2017 18:27	Finished	MS (1ppb), IWST-171002B,10
73	CCV-6,CCV1,1,	23	1000	Unknown		12/15/2017 18:36	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	24	1000	Unknown		12/15/2017 18:46	Finished	CCB R171129A
75	N027459-018A,SAMP	25	1000	Unknown		12/15/2017 18:55	Finished	SAMP,10mL
76	N027459-018AMS,MS	26	1000	Unknown		12/15/2017 19:05	Finished	MS (1ppb), IWST-171002B,10
77	N027404-005A,SAMP	27	1000	Unknown		12/15/2017 19:14	Finished	SAMP,2>10mL
78	N027404-005AMS,MS	28	1000	Unknown		12/15/2017 19:24	Finished	MS (1ppb), IWST-171002B,2>1
79	N027404-009A,SAMP	29	1000	Unknown		12/15/2017 19:33	Finished	SAMP,2>10mL
80	N027404-009AMS,MS	30	1000	Unknown		12/15/2017 19:42	Finished	MS (1ppb), IWST-171002B,2>1
81	N027459-009A,SAMP	31	1000	Unknown		12/15/2017 19:52	Finished	SAMP,5>10mL
82	N027459-009AMS,MS	32	1000	Unknown		12/15/2017 20:01	Finished	MS (5ppb), IWST-171002B,5>1
83	N027485-015A,SAMP	33	1000	Unknown		12/15/2017 20:11	Finished	SAMP,10mL
84	CCV-7,CCV,1,	34	1000	Unknown		12/15/2017 20:20	Finished	CCV @5ppb, IWST-171002A
85	CCB-7,CCB,1,	35	1000	Unknown		12/15/2017 20:30	Finished	CCB R171129A
86	SHUTDOWN	36	1000	Unknown		12/15/2017 20:39	Finished	
87	Eluent: R171214A	37	1000	Unknown		n.a.	Finished	Eluent
88	PCR: R171214B	38	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 08:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

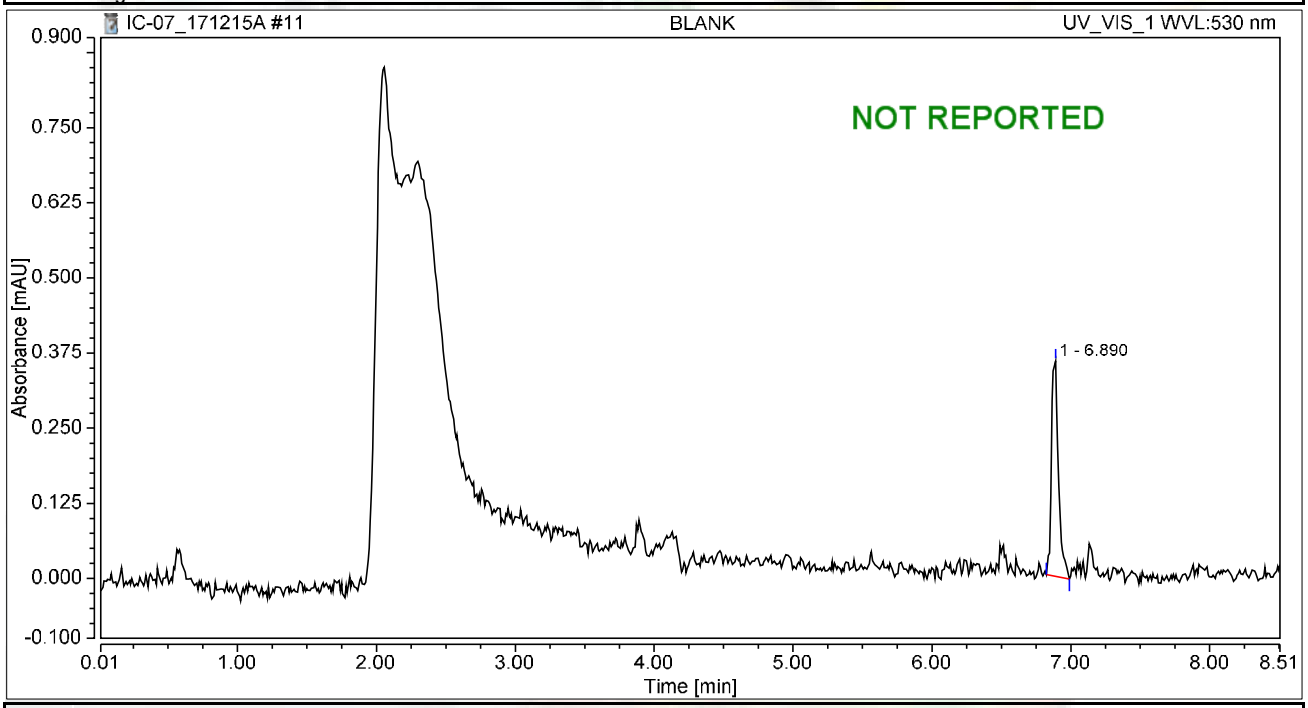
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 08:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

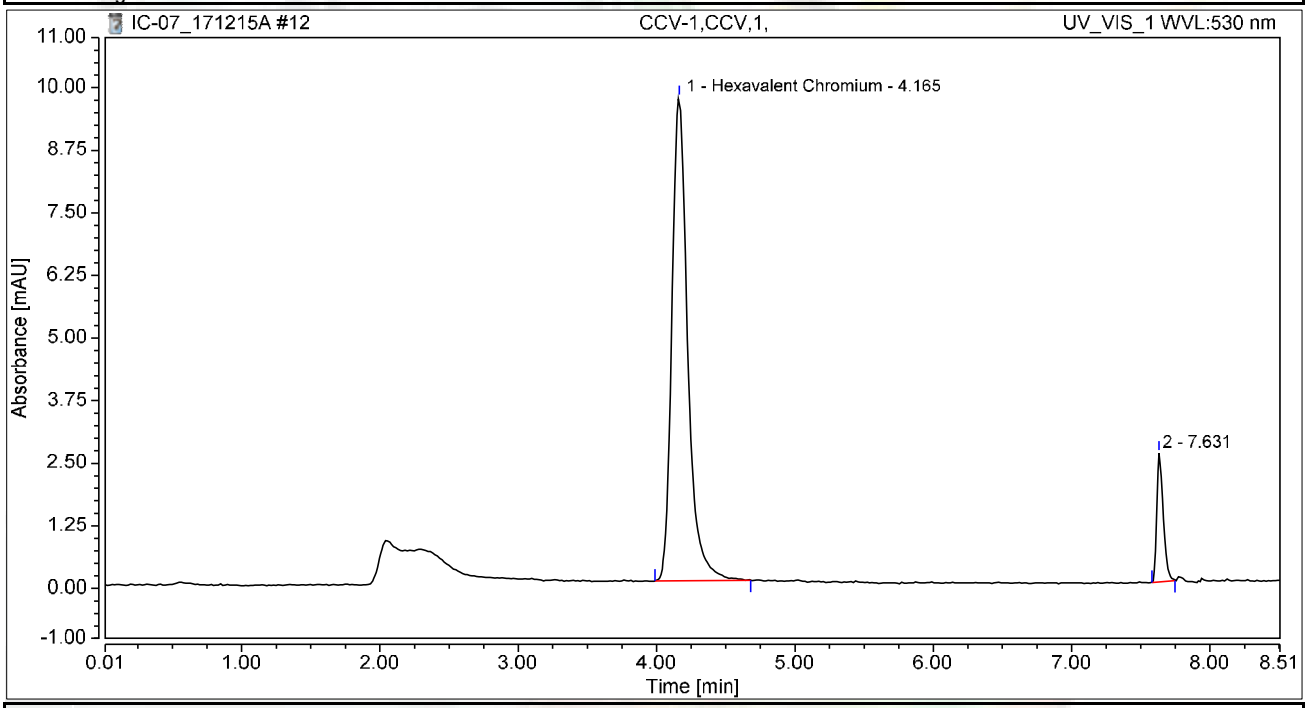
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		6.890	0.021	0.358	100.00	100.00	n.a.
Total:			**0.021**	**0.358**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 08:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

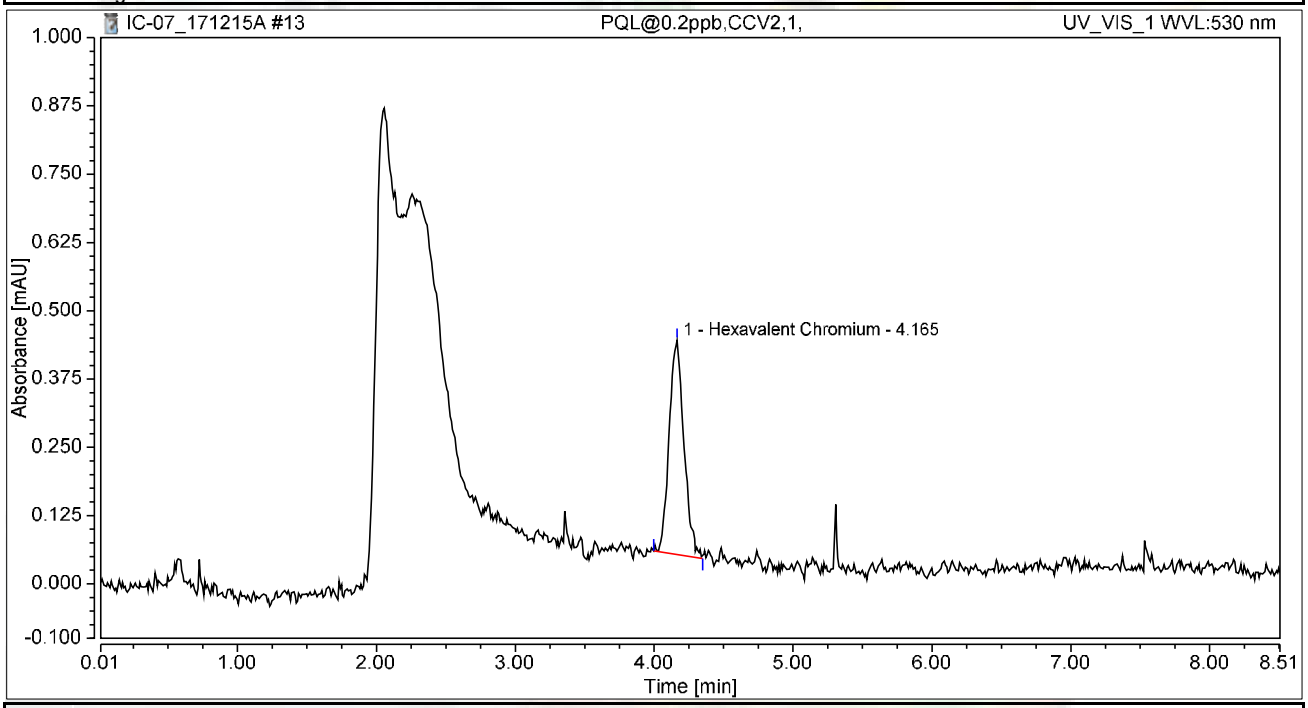
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.281	9.652	90.10	78.99	5.1035
2		7.631	0.141	2.567	9.90	21.01	n.a.
Total:			**1.422**	**12.219**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 09:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

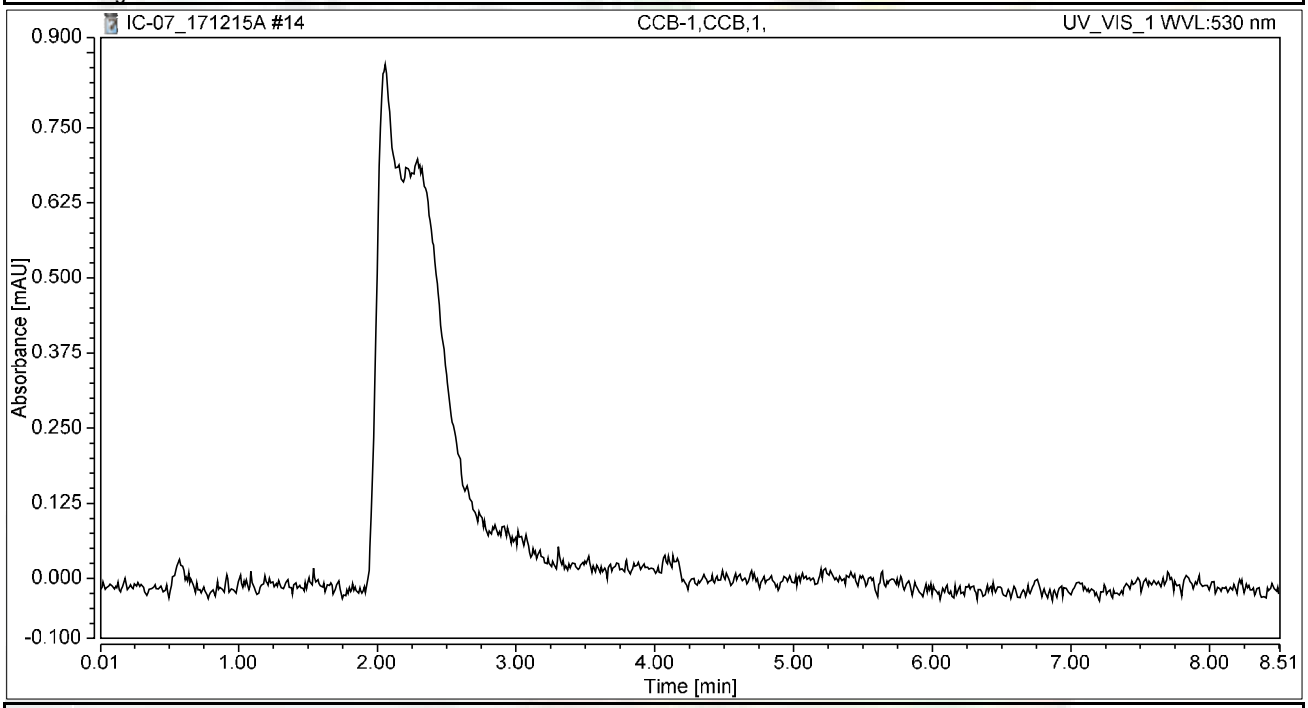
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.048	0.392	100.00	100.00	0.1924
Total:			**0.048**	**0.392**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 09:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

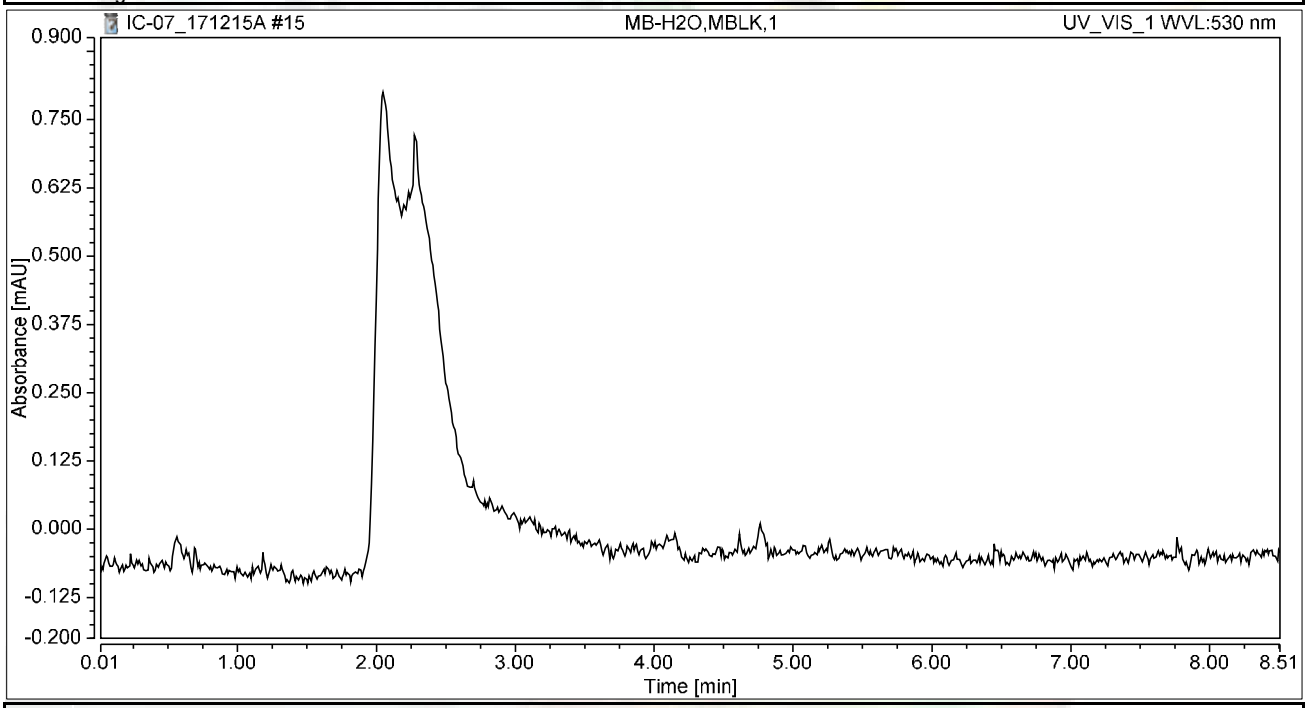
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 09:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

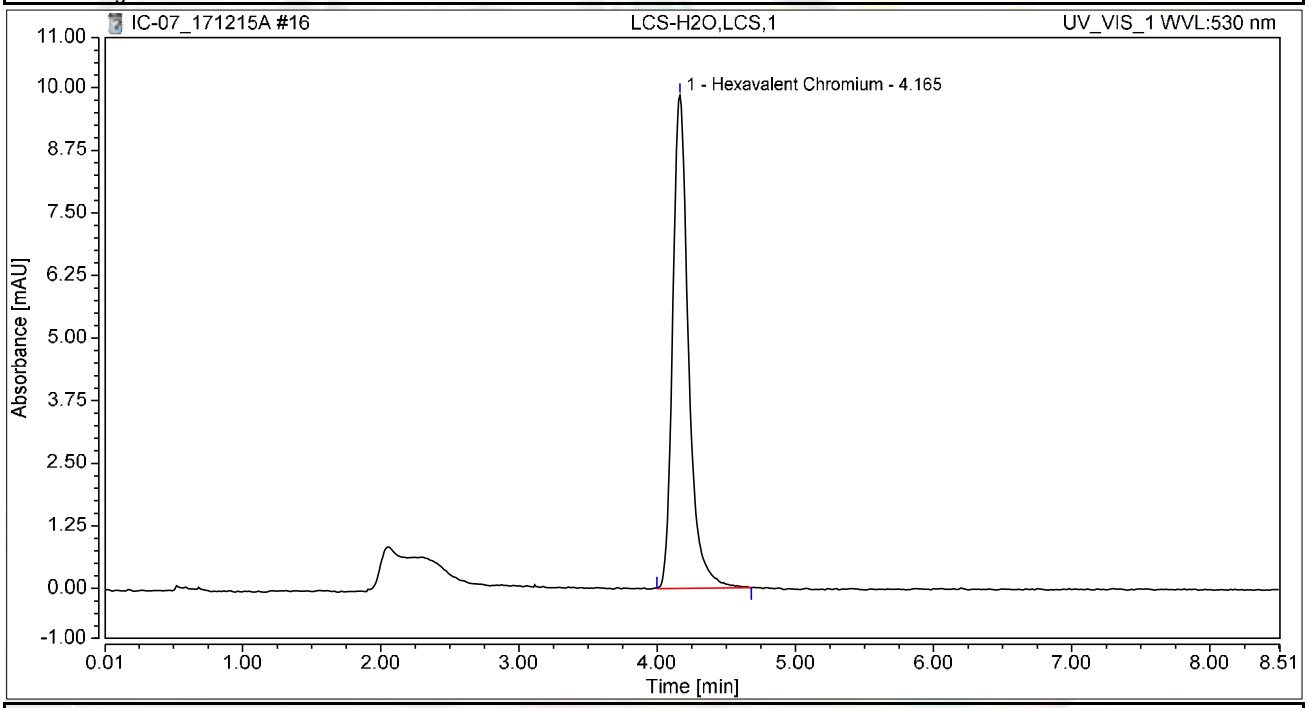
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 09:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

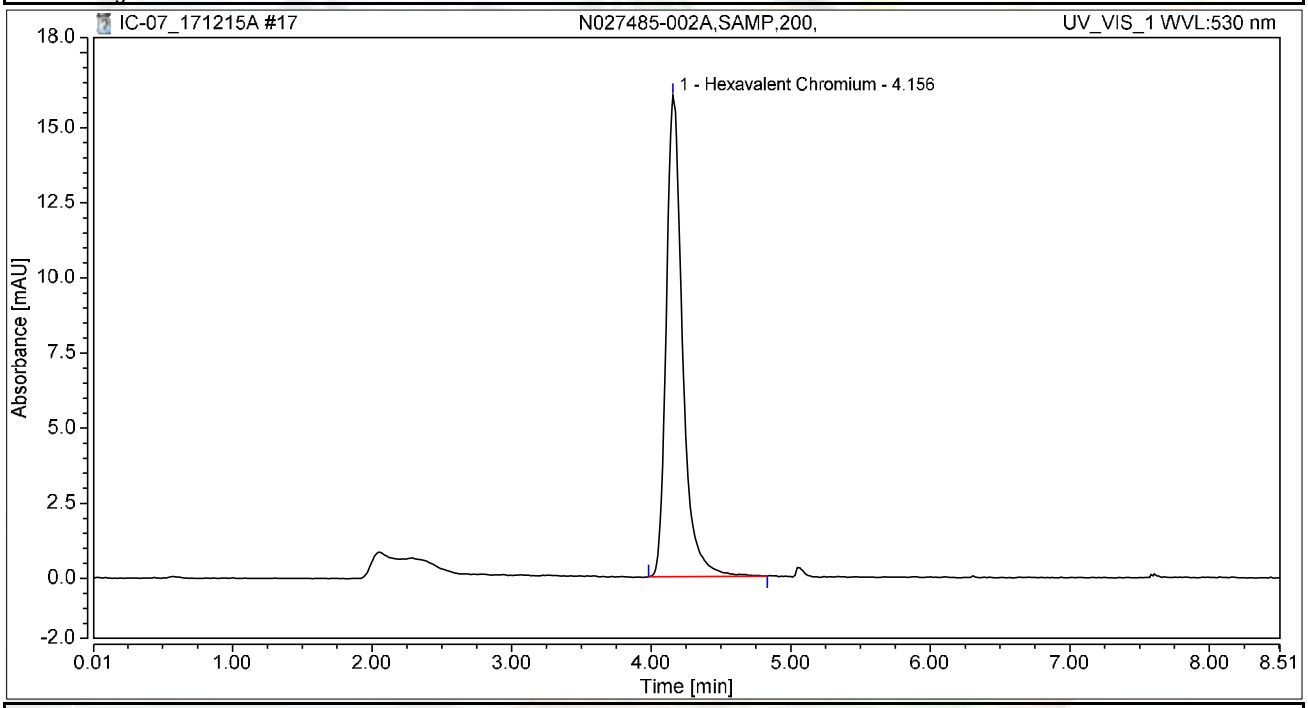
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.313	9.849	100.00	100.00	5.2277
Total:			**1.313**	**9.849**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-002A,SAMP,200,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 09:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

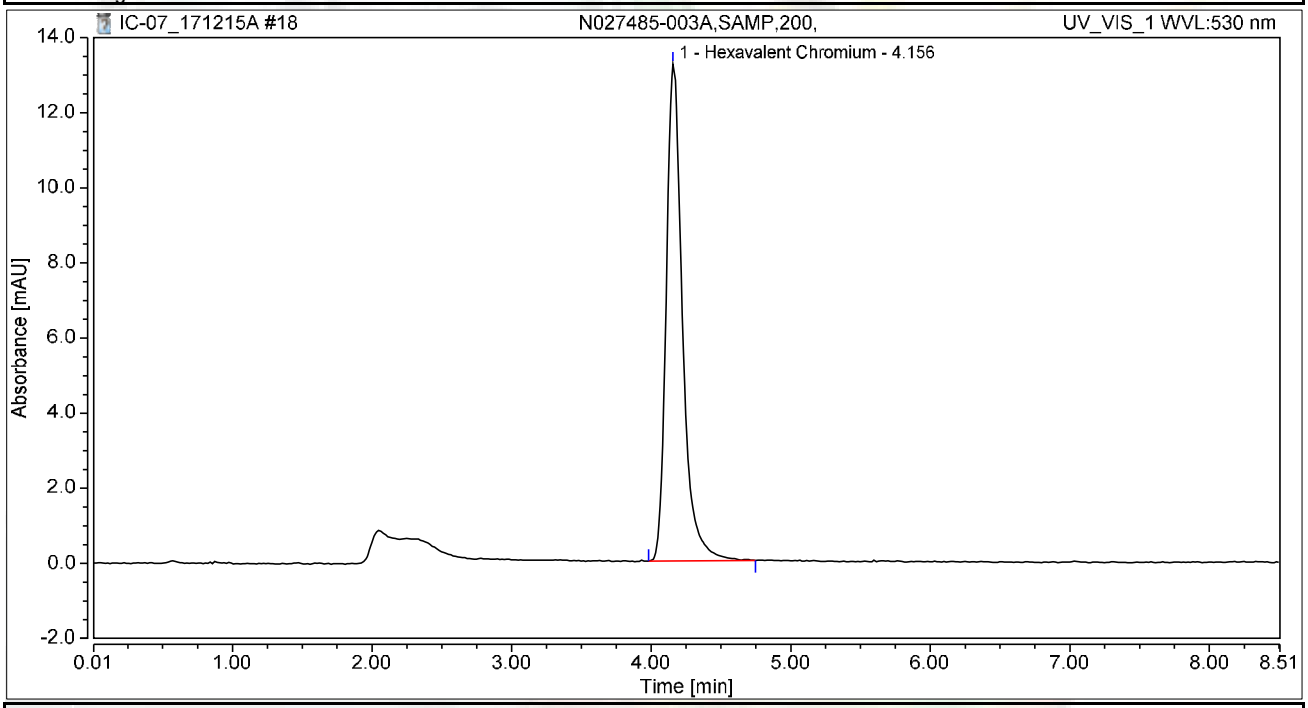
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.172	16.016	100.00	100.00	8.6508
Total:			**2.172**	**16.016**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-003A,SAMP,200,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 09:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

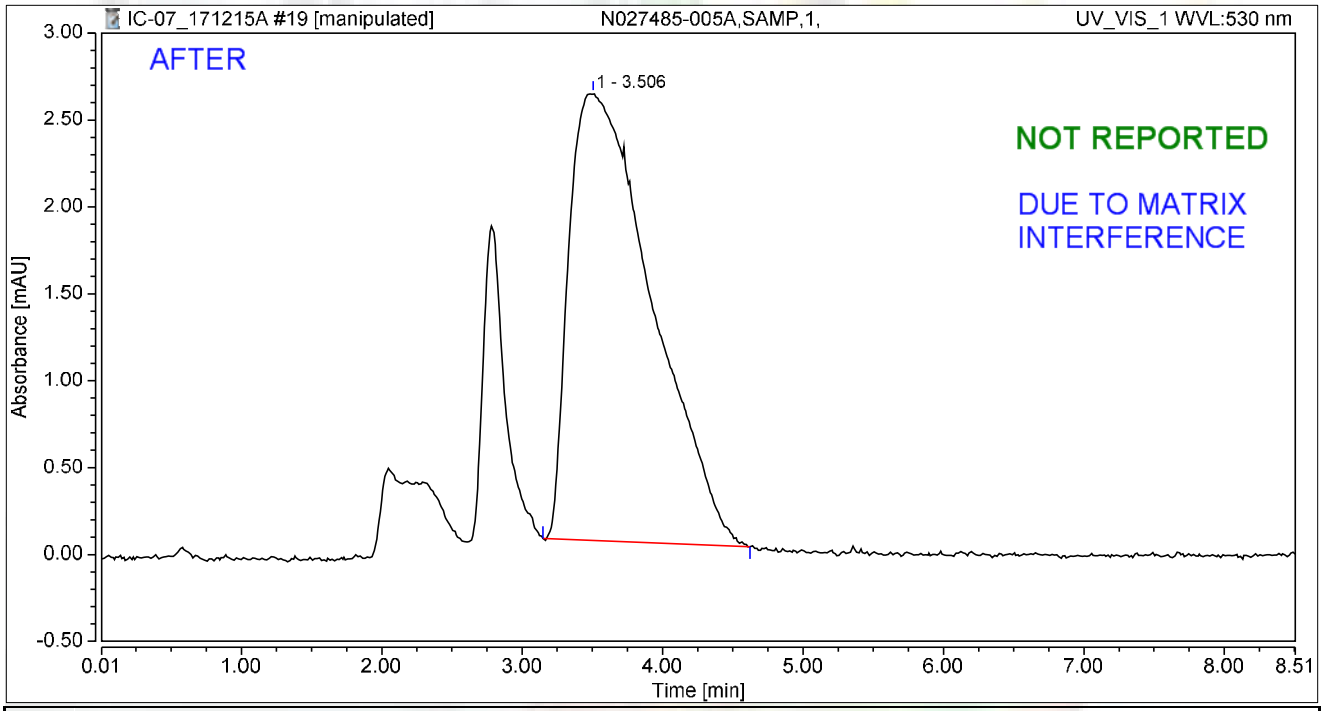
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.795	13.237	100.00	100.00	7.1495
Total:			**1.795**	**13.237**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 09:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.506	1.762	2.574	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**1.762**	**2.574**	**100.00**	**100.00**	

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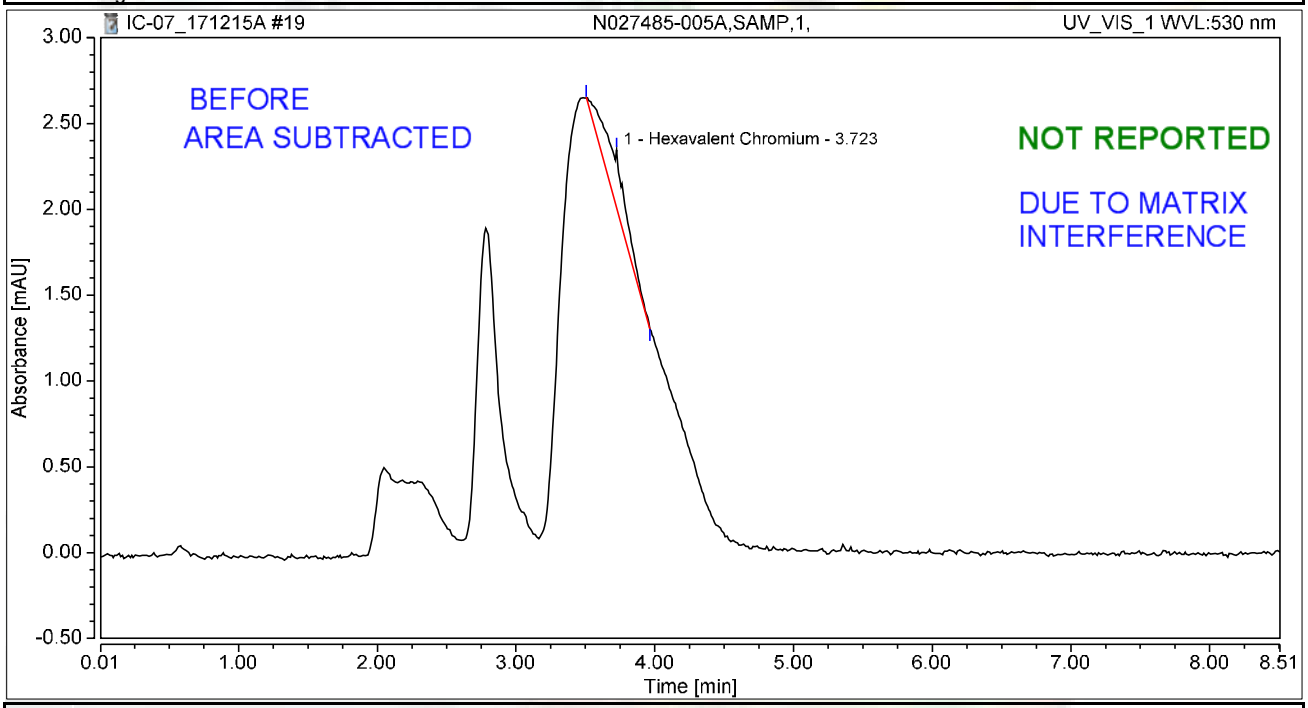
Chromatogram and Results

Injection Details

Injection Name:	**N027485-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 09:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	0.063	0.331	100.00	100.00	0.2517
Total:			**0.063**	**0.331**	**100.00**	**100.00**	

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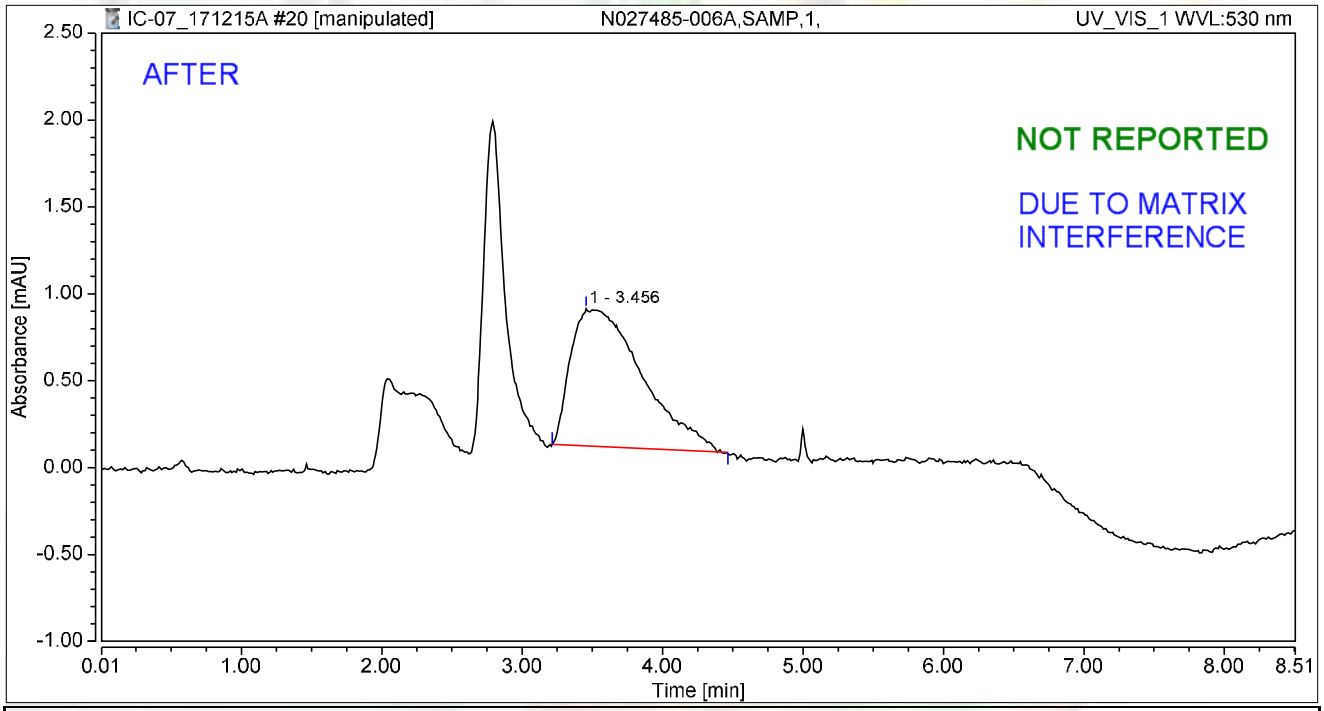
01/03/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027485-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 10:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.456	0.466	0.789	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.466**	**0.789**	**100.00**	**100.00**	

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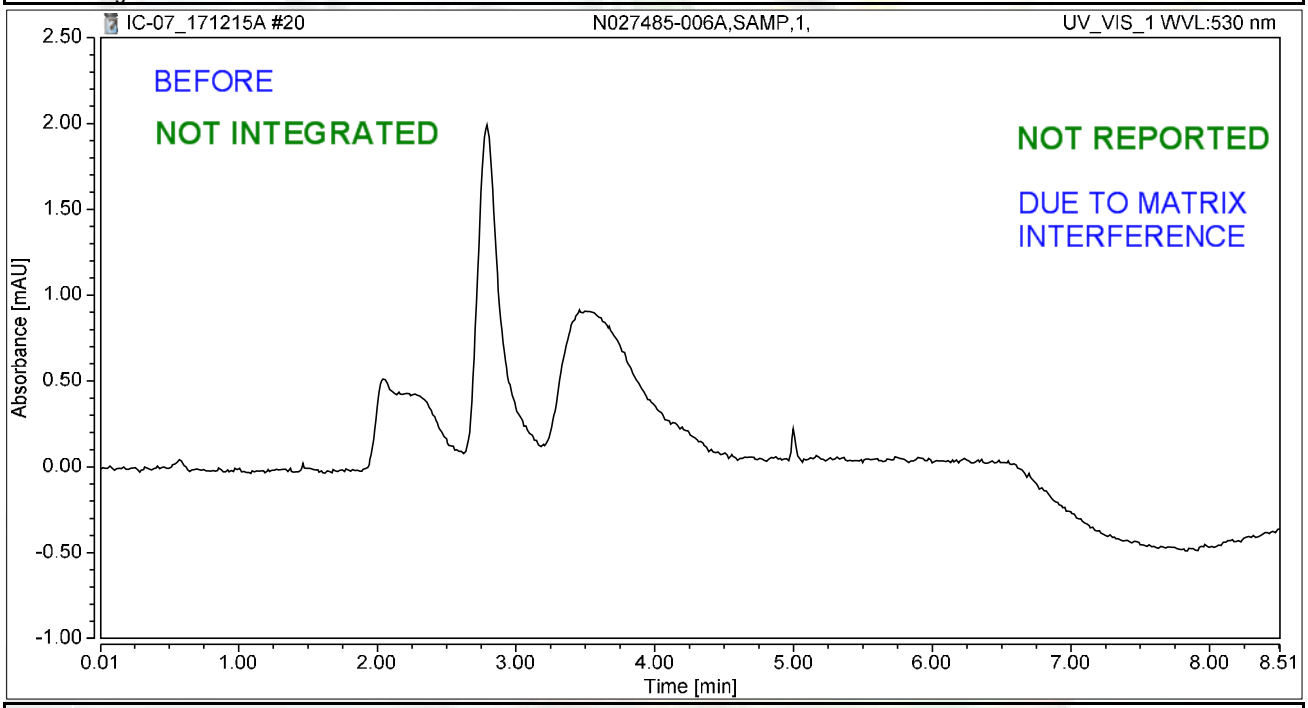
Chromatogram and Results

Injection Details

Injection Name:	**N027485-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 10:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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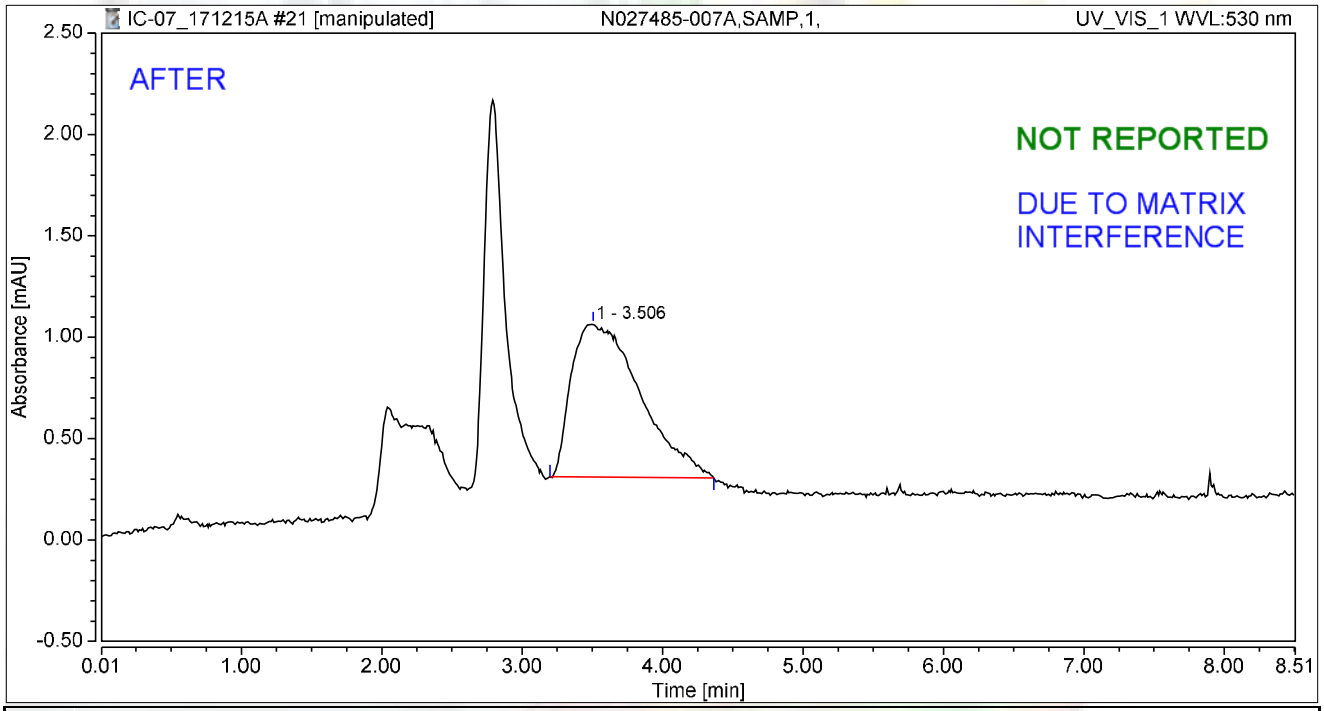
Chromatogram and Results

Injection Details

Injection Name:	**N027485-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 10:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.506	0.431	0.757	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.431**	**0.757**	**100.00**	**100.00**	

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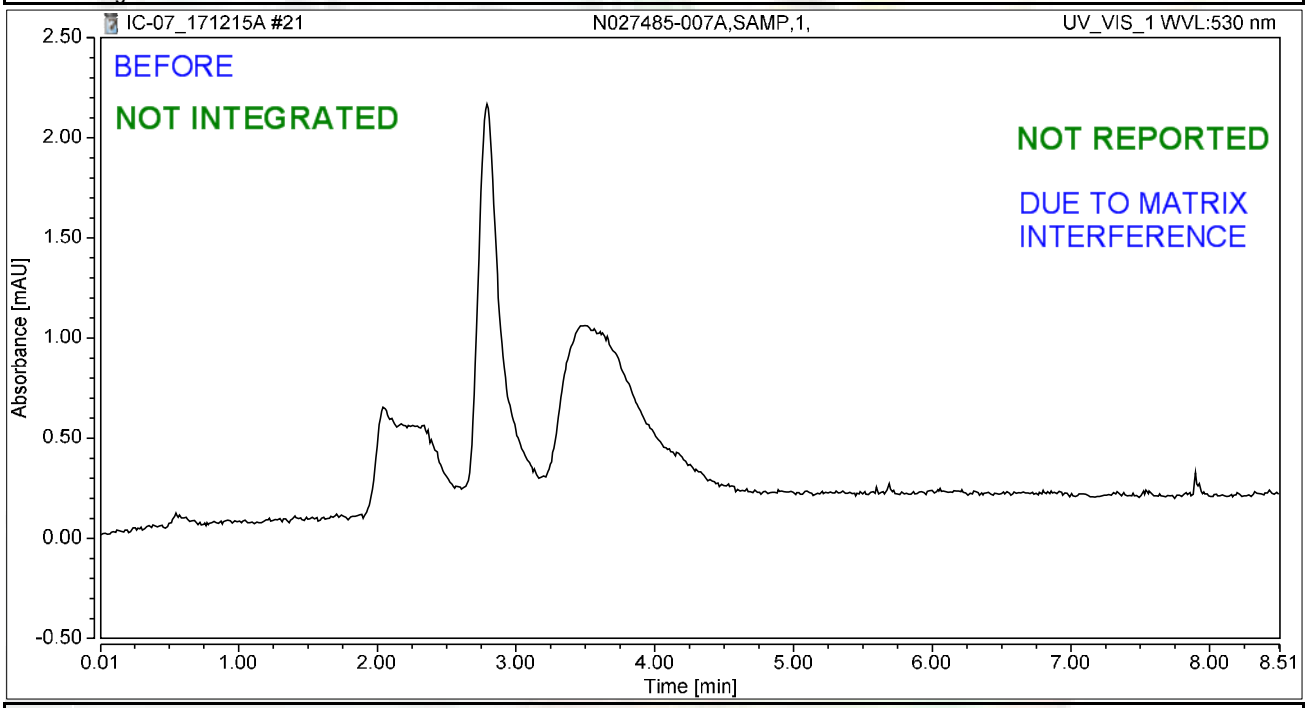
Chromatogram and Results

Injection Details

Injection Name:	**N027485-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 10:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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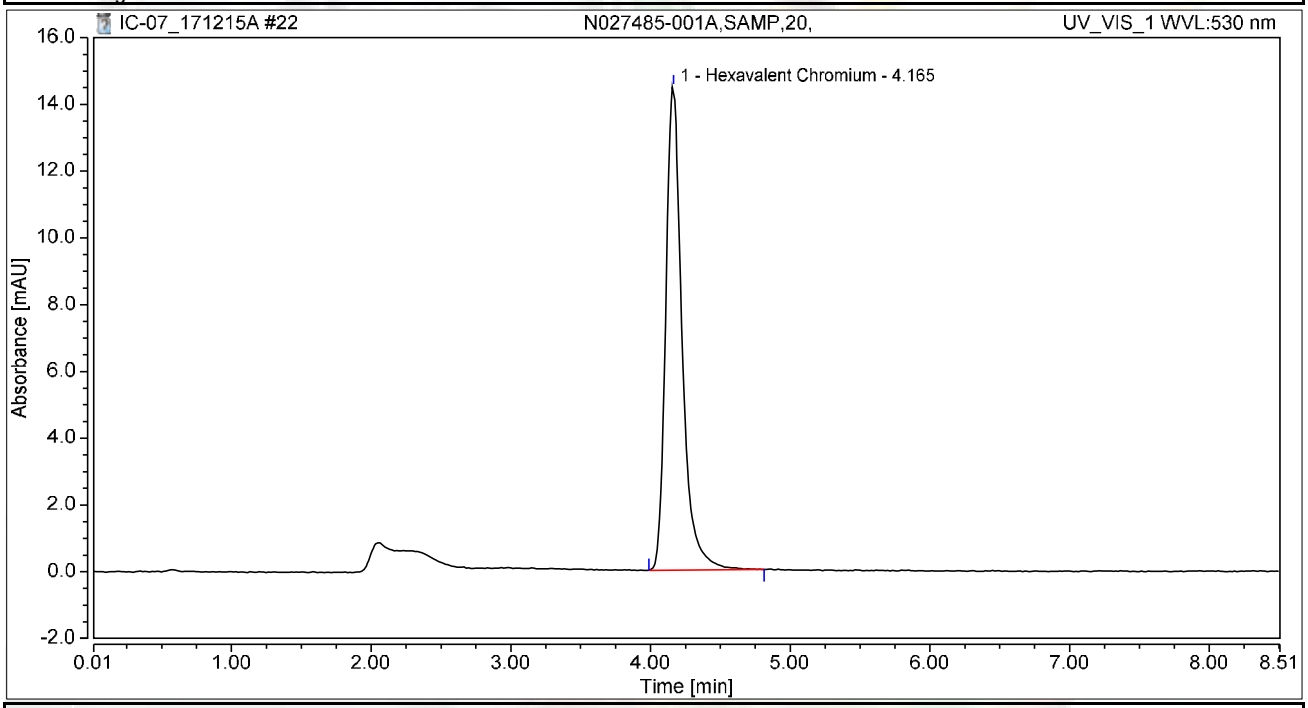
Chromatogram and Results

Injection Details

Injection Name:	**N027485-001A,SAMP,20,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 10:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

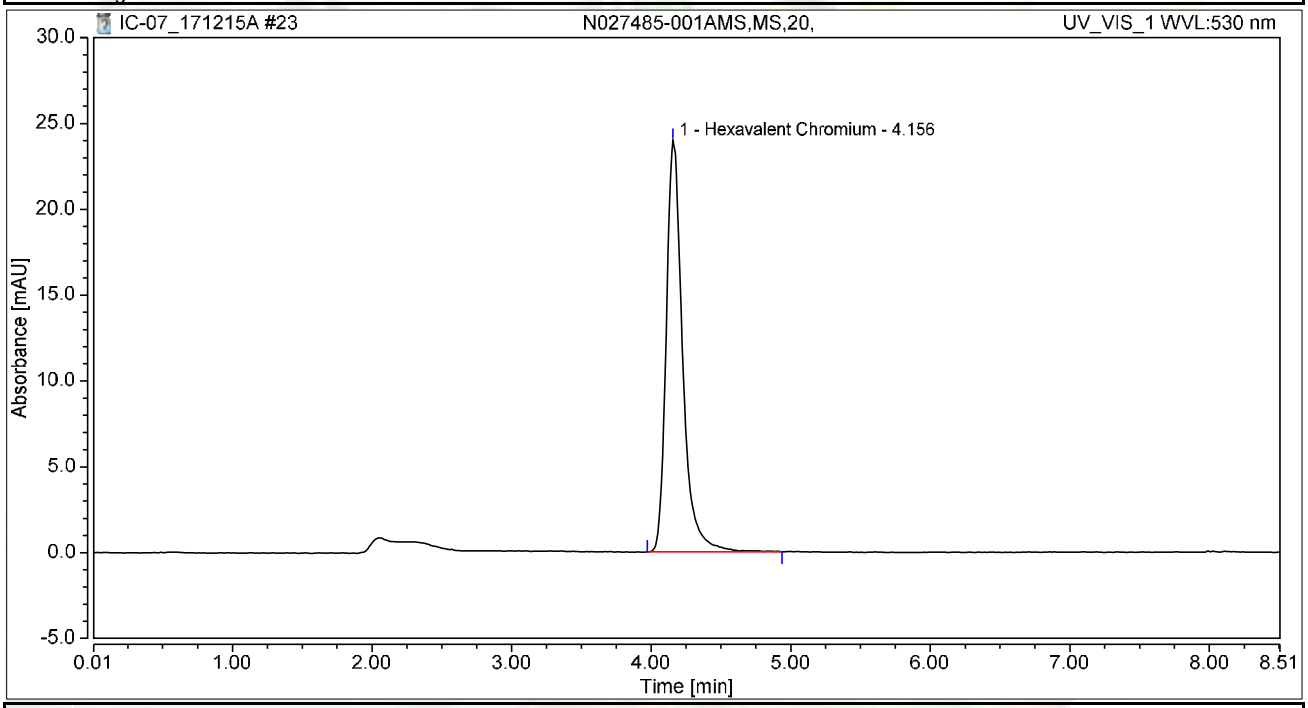
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.965	14.478	100.00	100.00	7.8260
Total:			**1.965**	**14.478**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-001AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 10:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

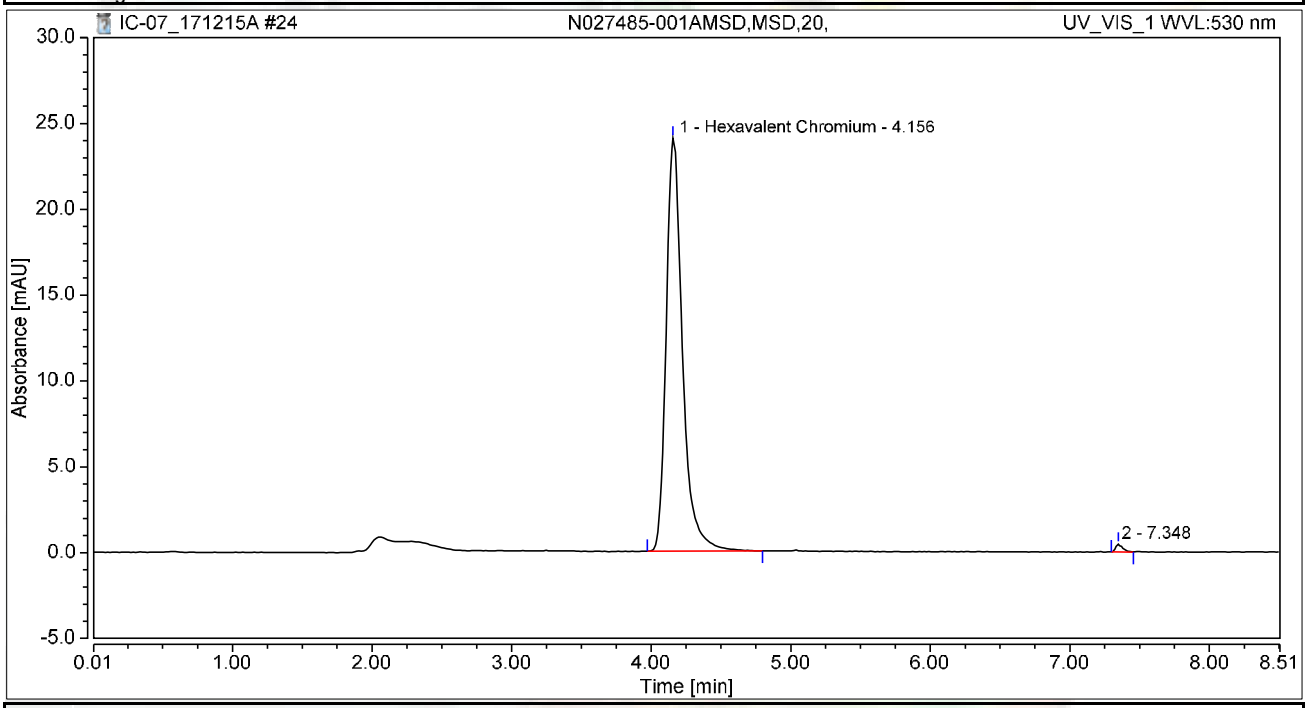
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	3.271	23.978	100.00	100.00	13.0277
Total:			**3.271**	**23.978**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-001AMSD,MSD,20,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 10:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

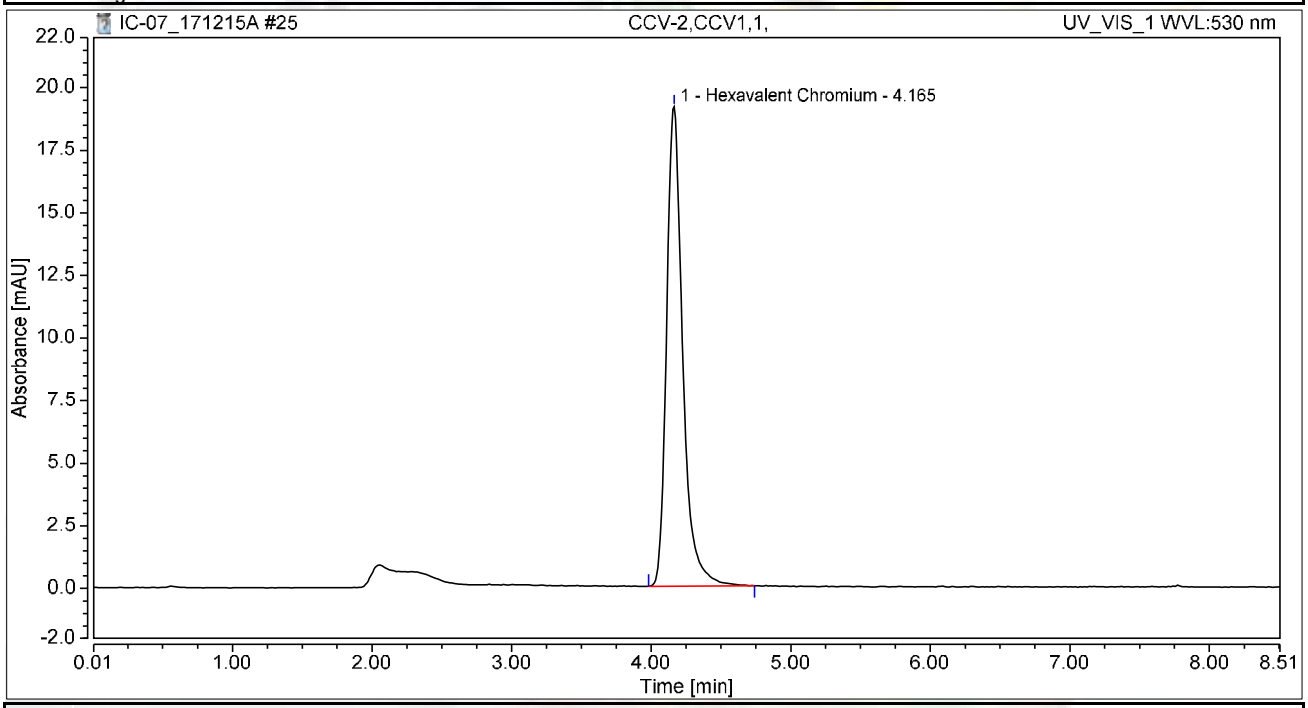
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	3.269	24.064	99.18	98.09	13.0173
2		7.348	0.027	0.468	0.82	1.91	n.a.
Total:			**3.296**	**24.532**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 10:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

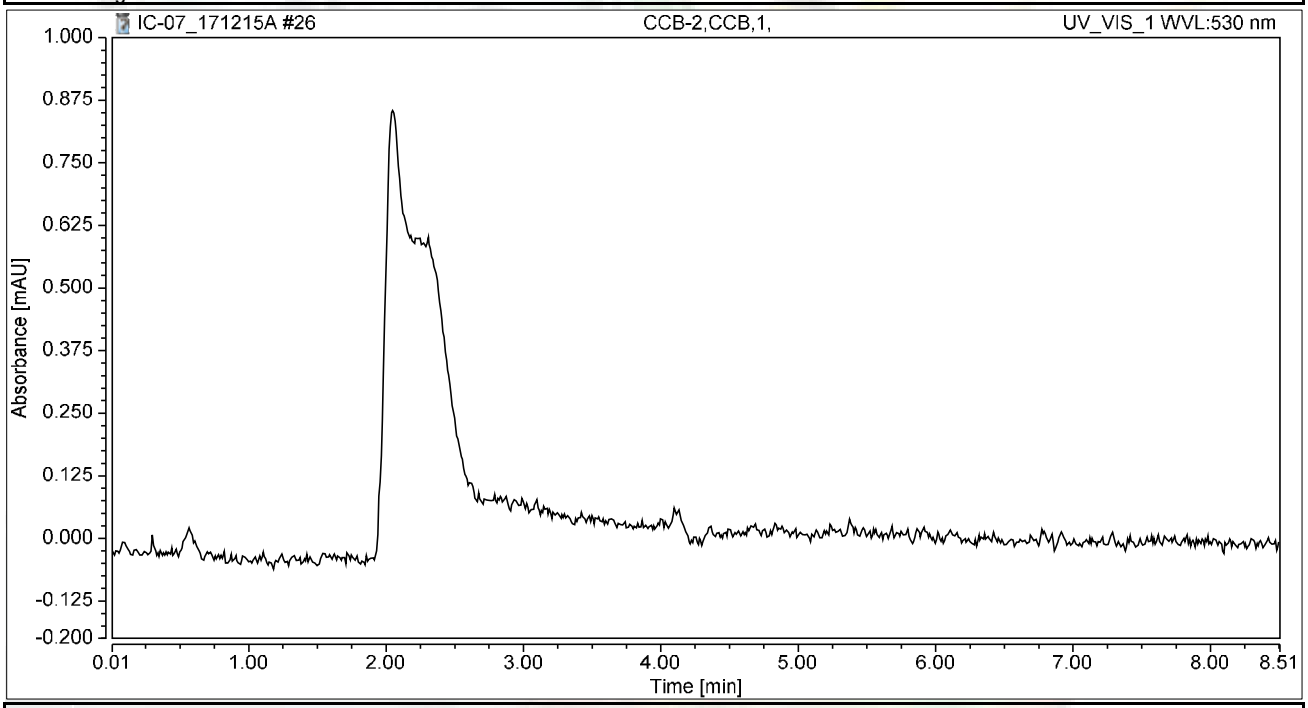
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.568	19.151	100.00	100.00	10.2288
Total:			**2.568**	**19.151**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 11:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

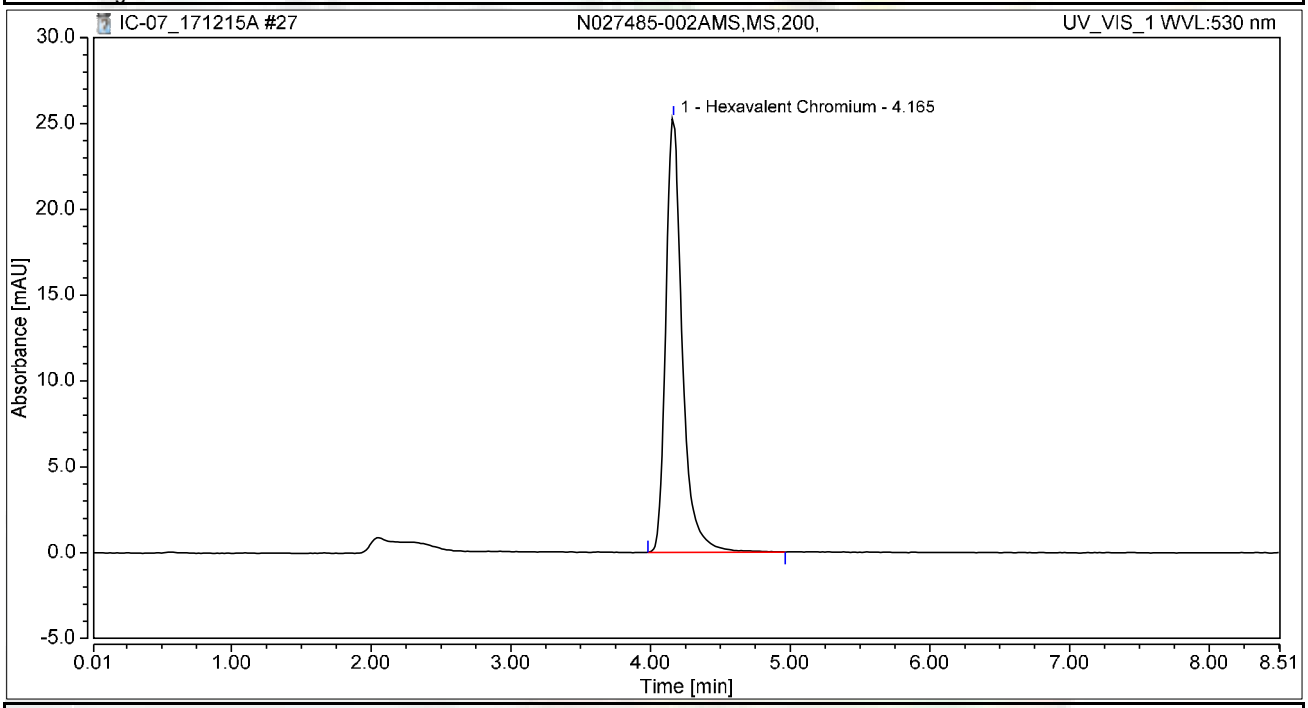
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-002AMS,MS,200,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 11:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

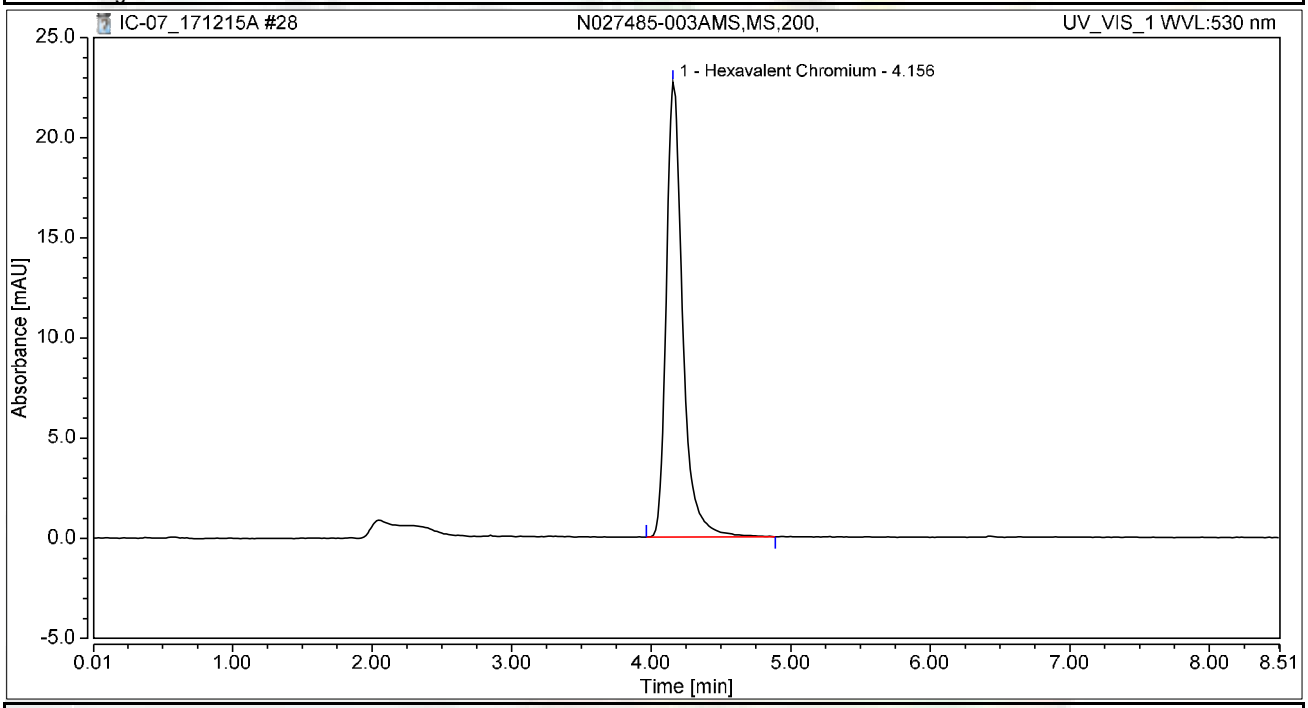
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	3.462	25.302	100.00	100.00	13.7866
Total:			**3.462**	**25.302**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-003AMS,MS,200,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 11:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

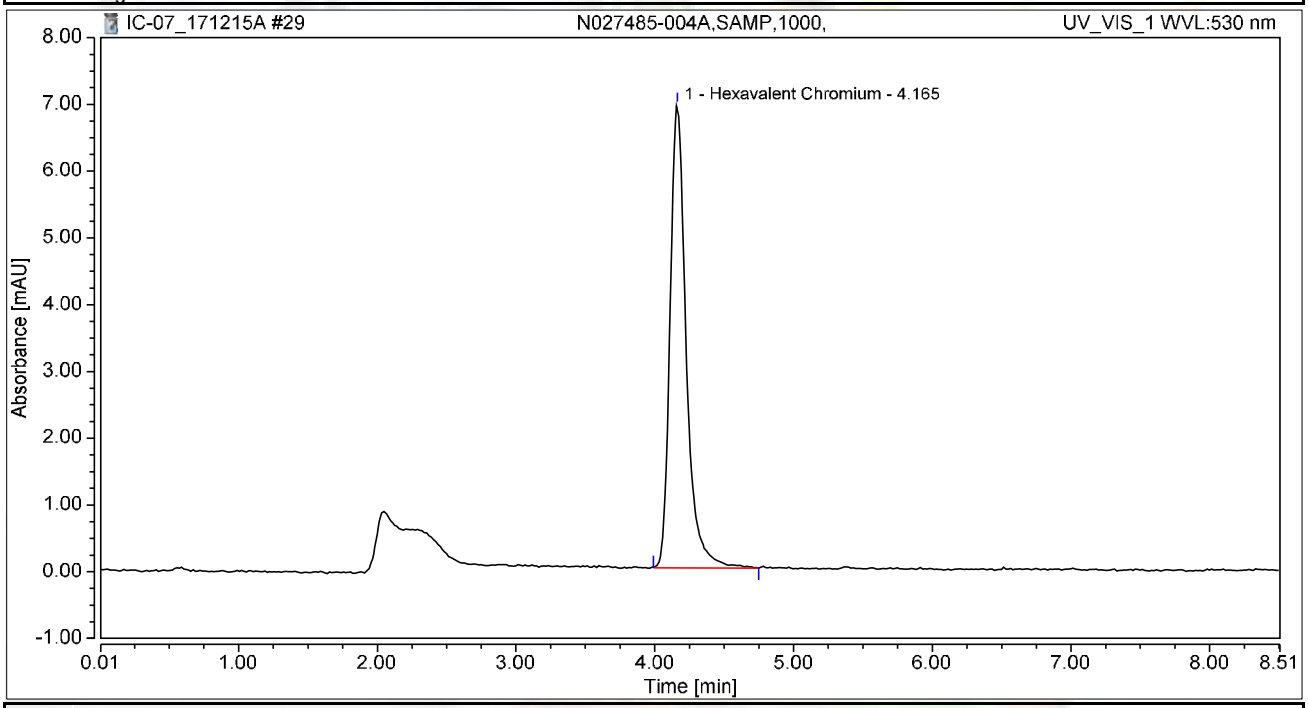
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	3.099	22.708	100.00	100.00	12.3436
Total:			**3.099**	**22.708**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-004A,SAMP,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 11:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

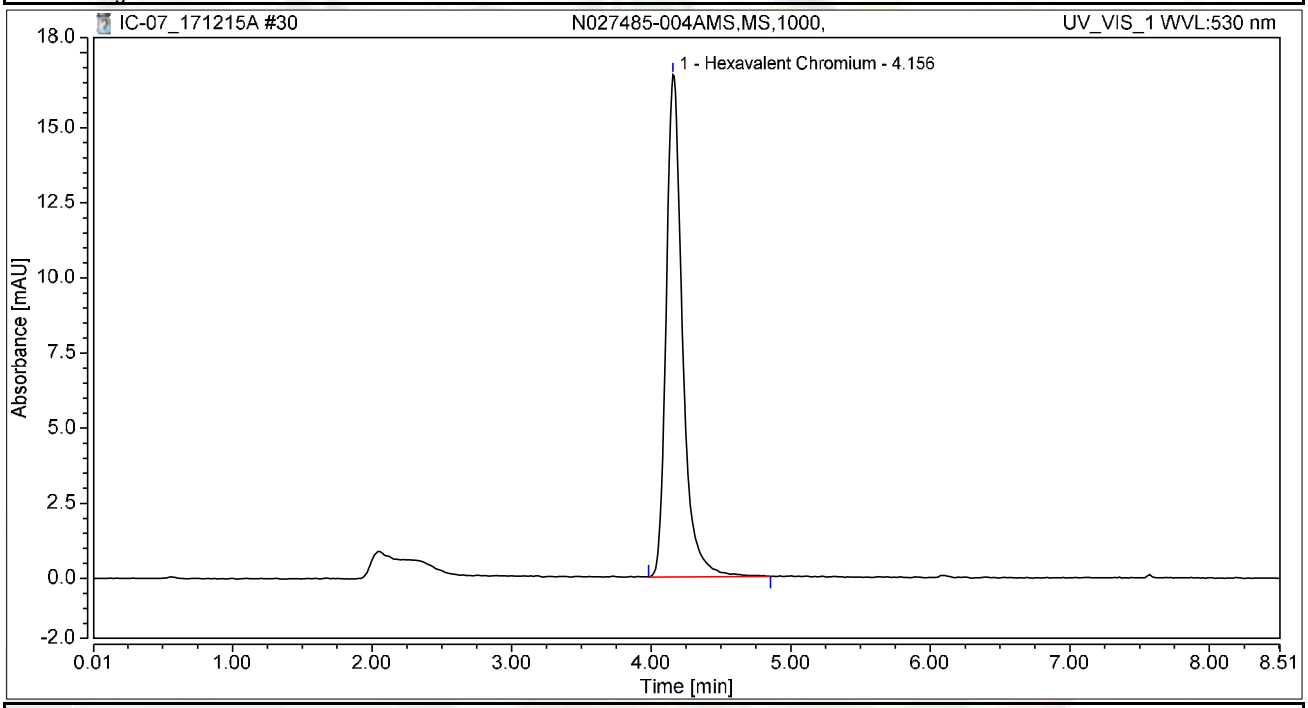
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.936	6.935	100.00	100.00	3.7268
Total:			**0.936**	**6.935**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-004AMS,MS,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 11:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

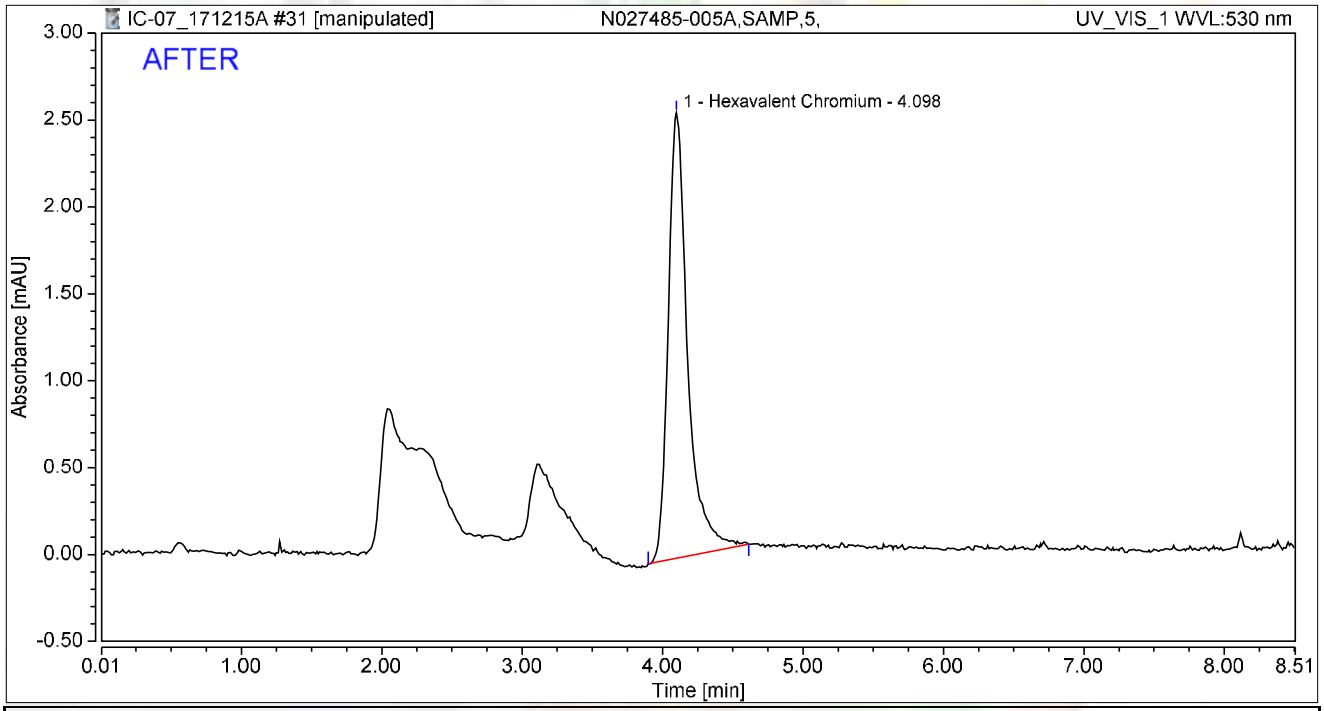
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.269	16.721	100.00	100.00	9.0371
Total:			**2.269**	**16.721**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-005A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 11:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.412	2.563	100.00	100.00	1.6388
Total:			**0.412**	**2.563**	**100.00**	**100.00**	

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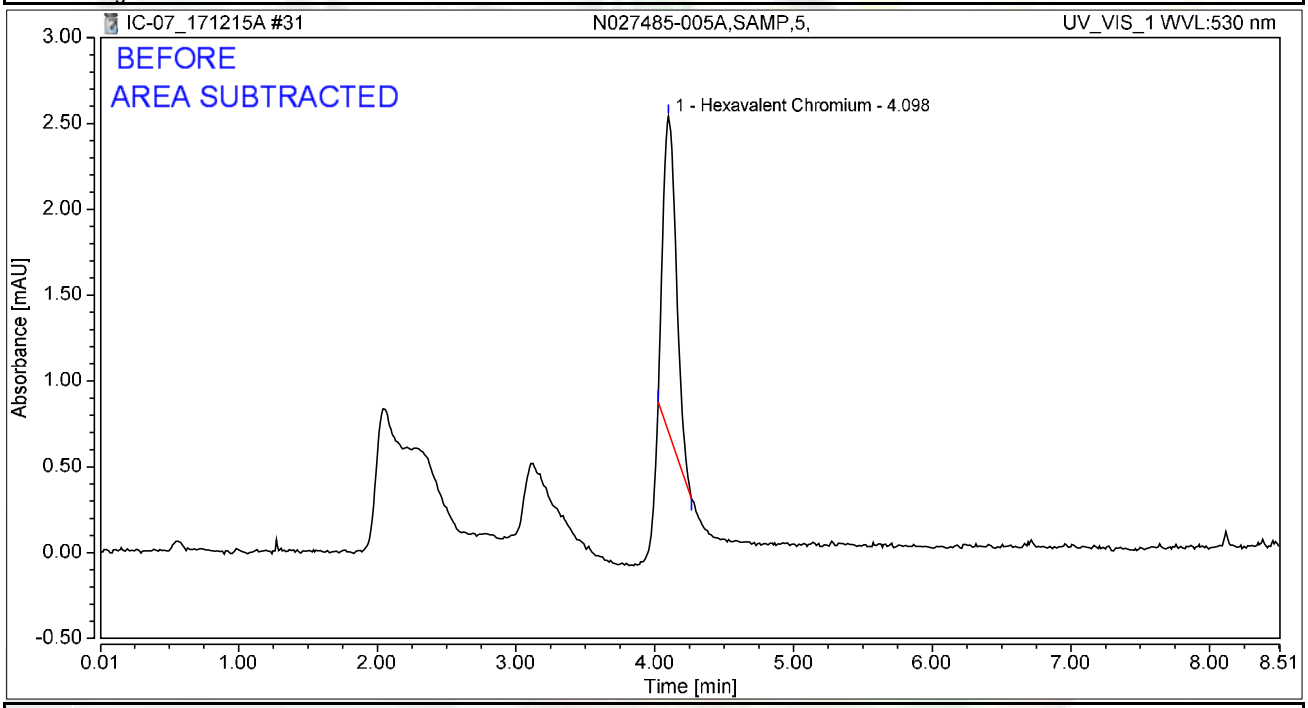
Chromatogram and Results

Injection Details

Injection Name:	**N027485-005A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 11:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.208	1.838	100.00	100.00	0.8289
Total:			**0.208**	**1.838**	**100.00**	**100.00**	

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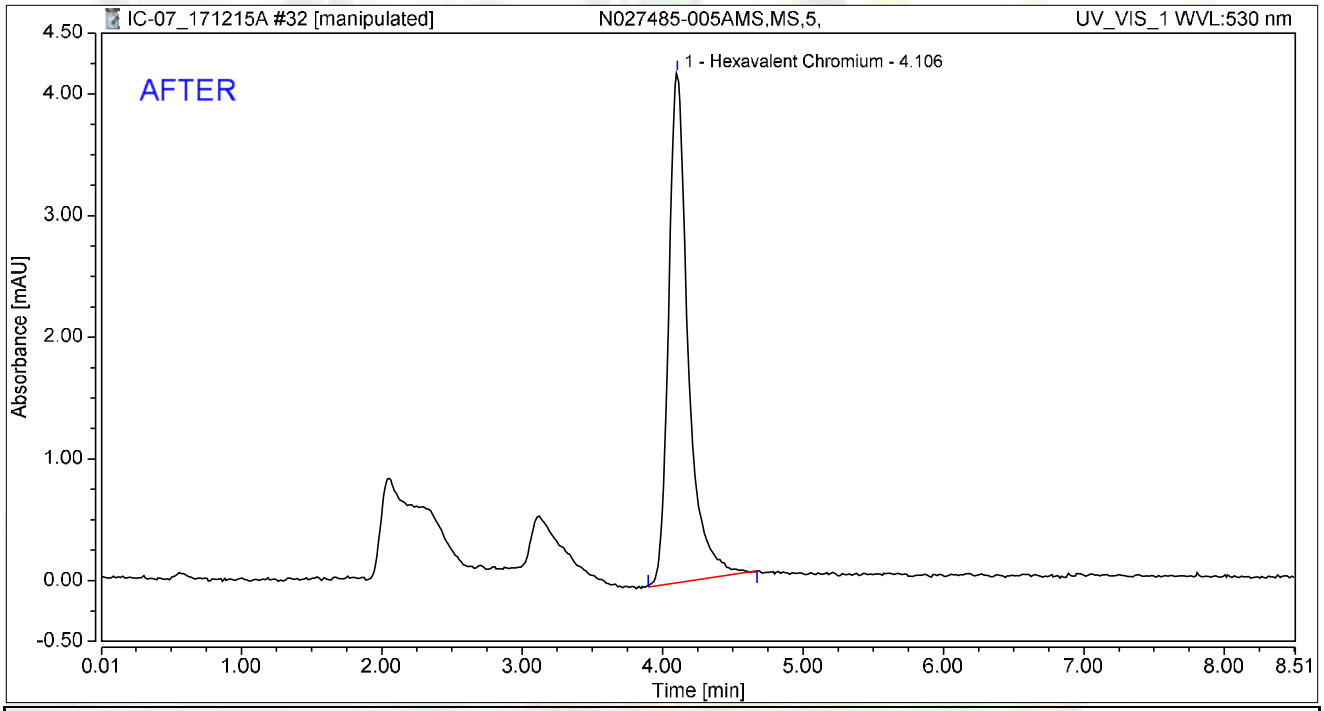
Chromatogram and Results

Injection Details

Injection Name:	**N027485-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 12:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.676	4.190	100.00	100.00	2.6919
Total:			**0.676**	**4.190**	**100.00**	**100.00**	

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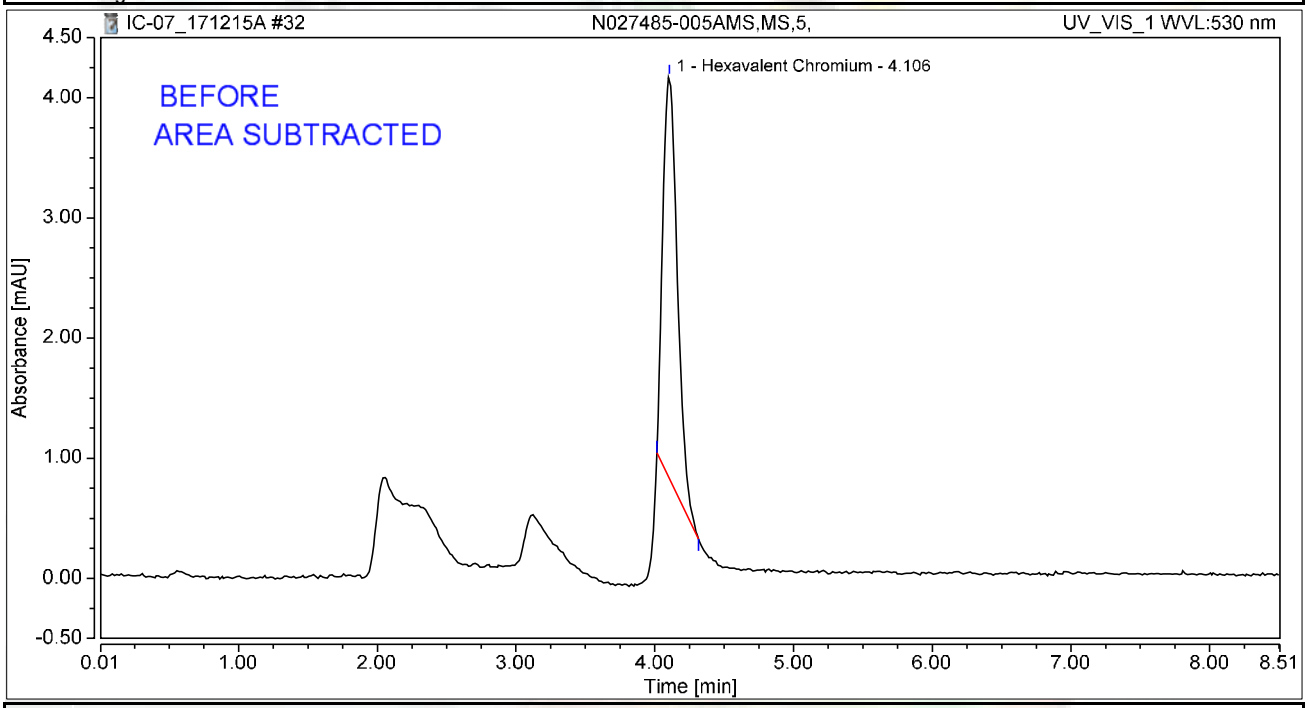
Chromatogram and Results

Injection Details

Injection Name:	**N027485-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 12:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.410	3.346	100.00	100.00	1.6344
Total:			**0.410**	**3.346**	**100.00**	**100.00**	

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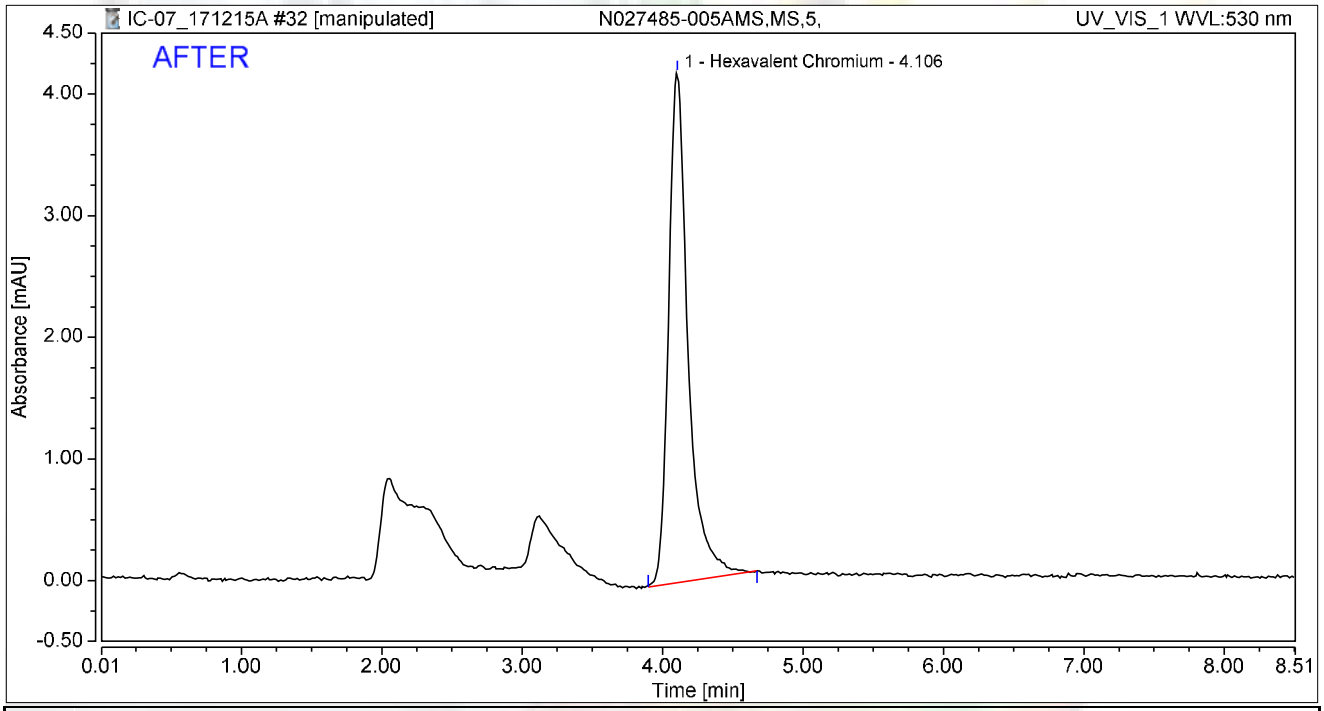
Chromatogram and Results

Injection Details

Injection Name:	**N027485-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 12:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.676	4.190	100.00	100.00	2.6919
Total:			**0.676**	**4.190**	**100.00**	**100.00**	

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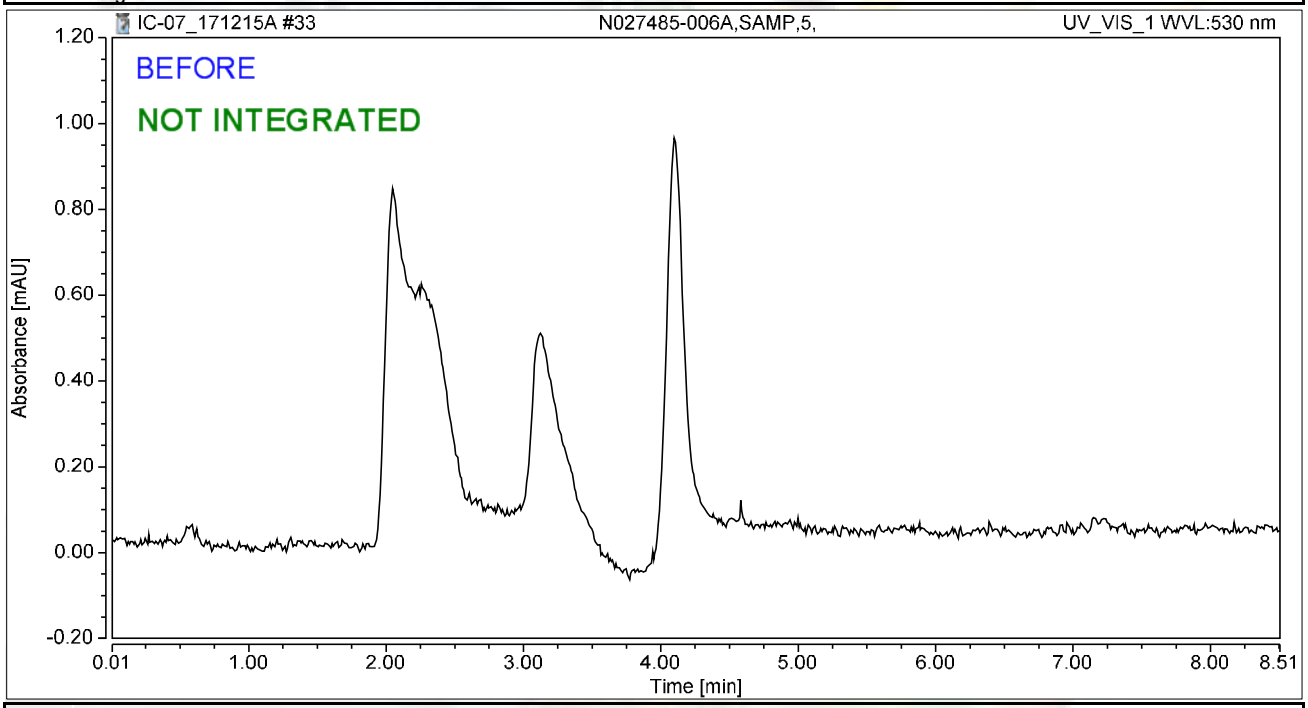
Chromatogram and Results

Injection Details

Injection Name:	**N027485-006A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 12:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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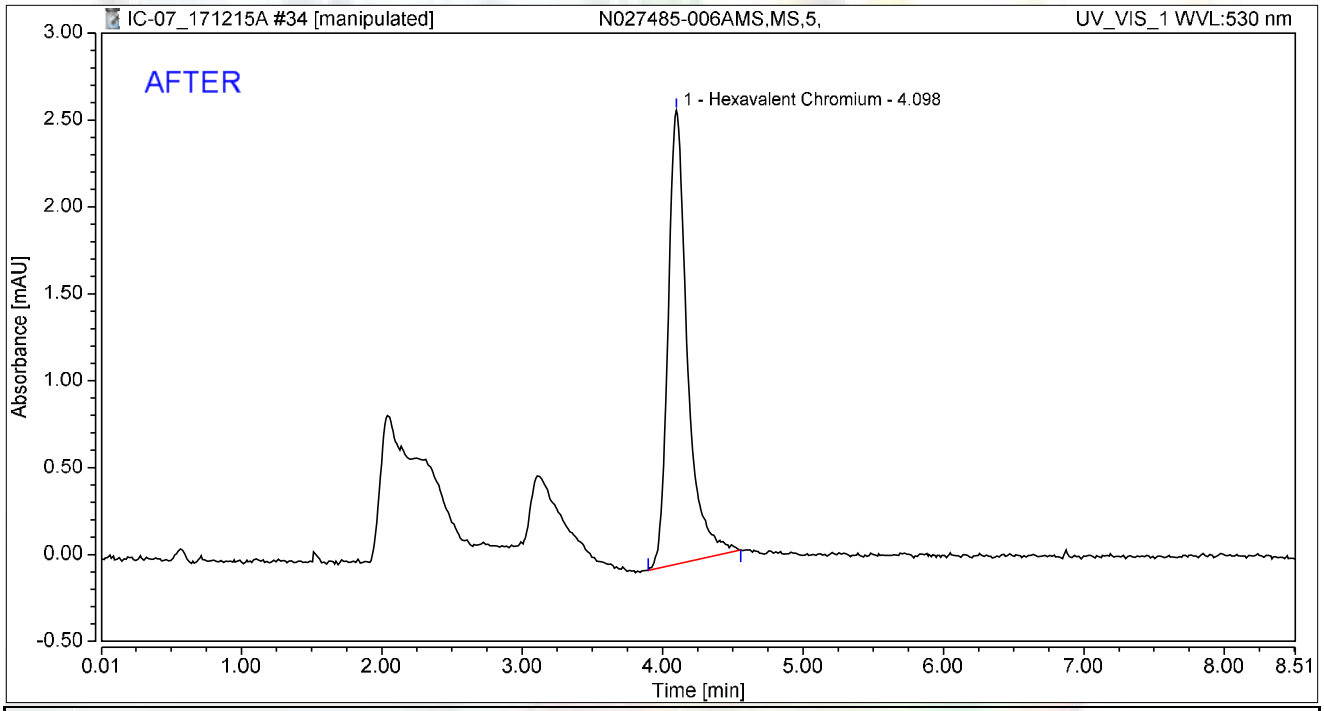
Chromatogram and Results

Injection Details

Injection Name:	**N027485-006AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 12:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.417	2.611	100.00	100.00	1.6618
Total:			**0.417**	**2.611**	**100.00**	**100.00**	

rba 12/22/2017

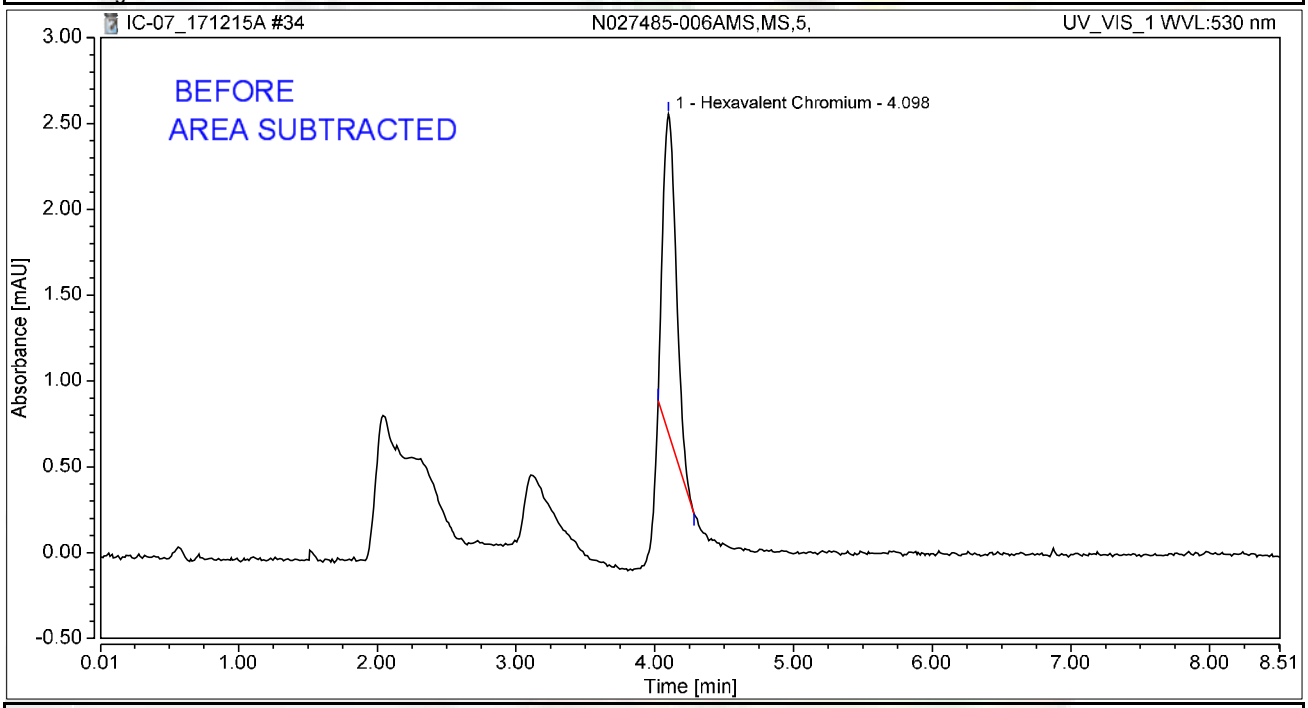
RB 01/03/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027485-006AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 12:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.210	1.859	100.00	100.00	0.8355
Total:			**0.210**	**1.859**	**100.00**	**100.00**	

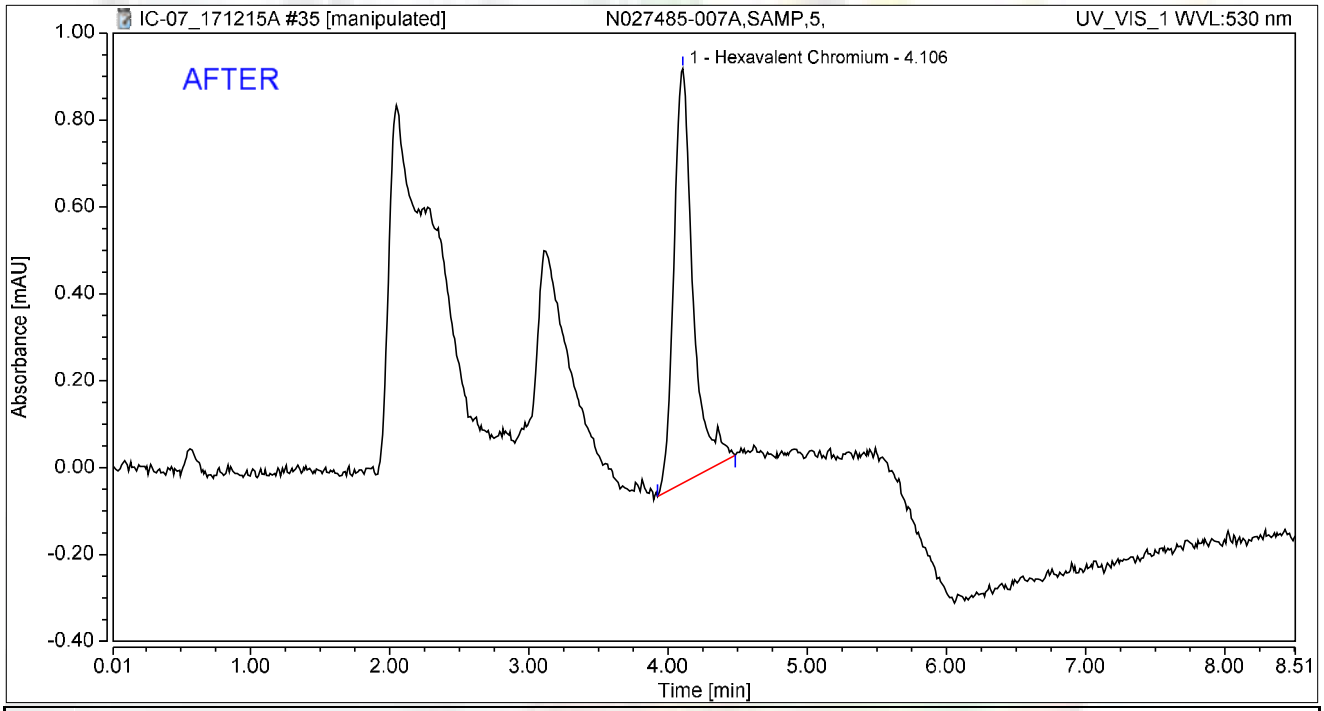
rba 12/22/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027485-007A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 12:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.152	0.954	100.00	100.00	0.6058
Total:			**0.152**	**0.954**	**100.00**	**100.00**	

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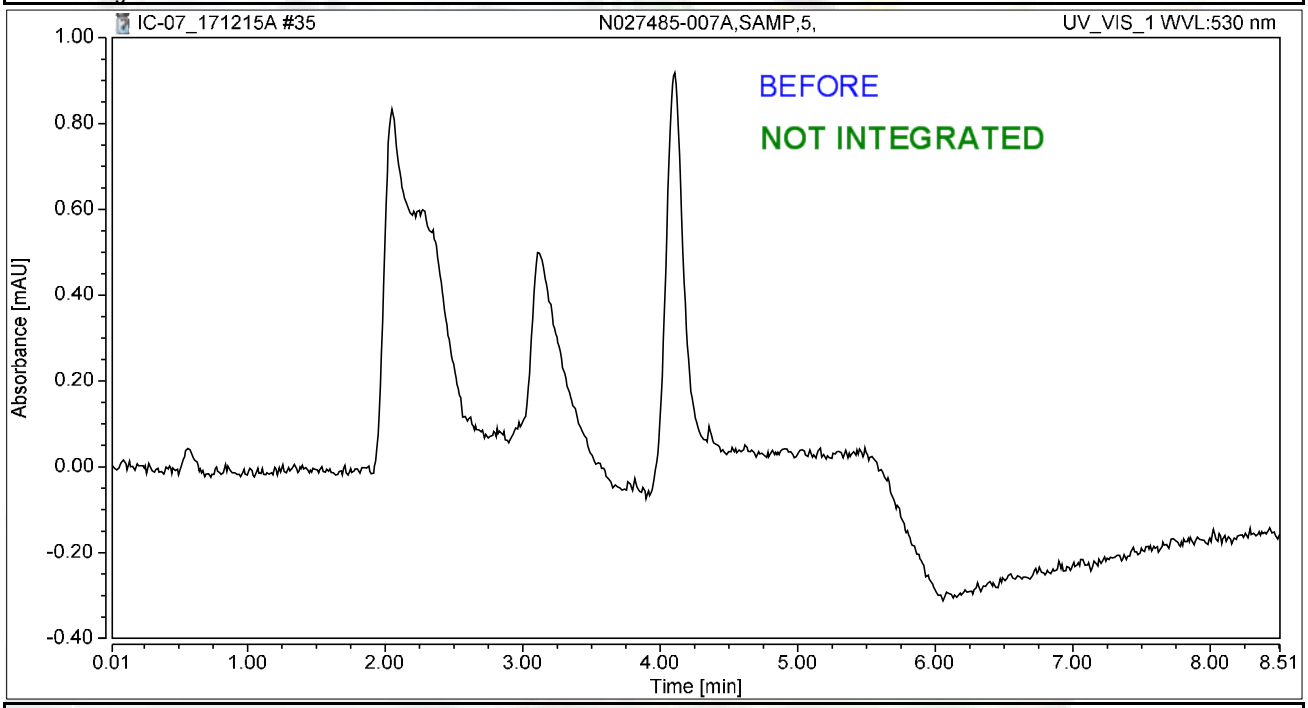
Chromatogram and Results

Injection Details

Injection Name:	**N027485-007A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 12:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

rba 12/22/2017

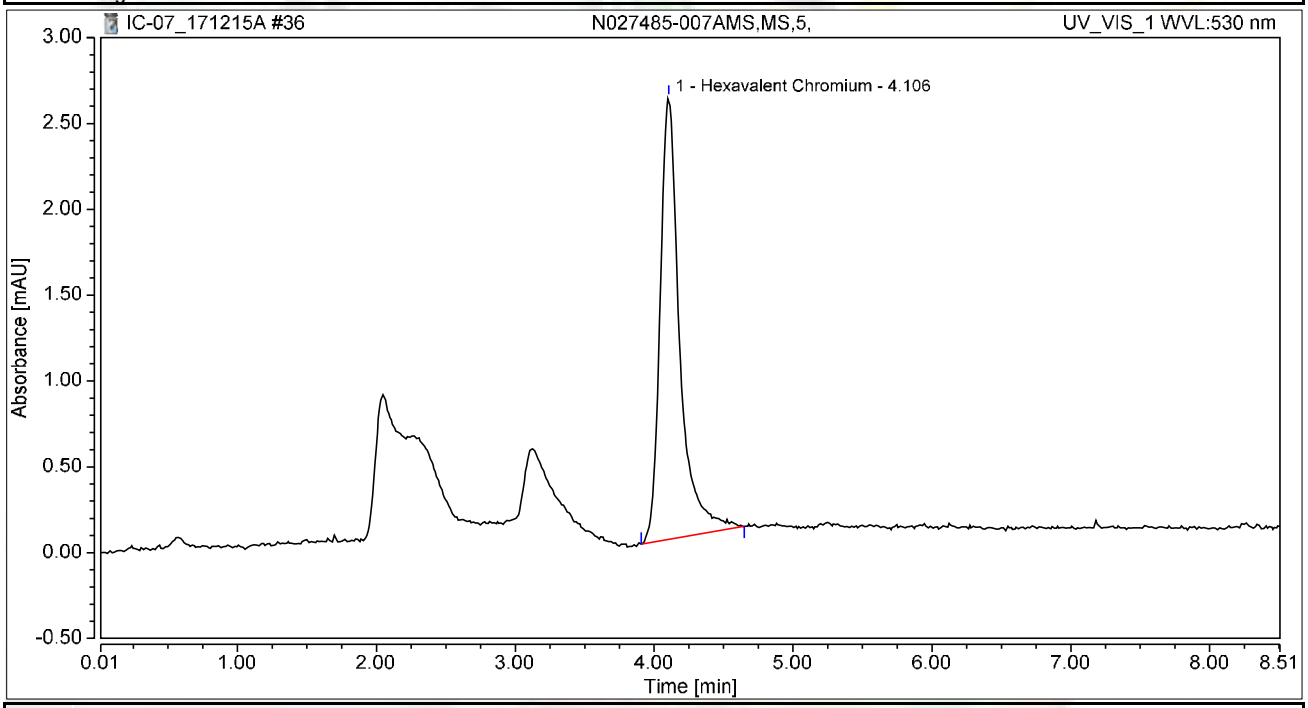
01/03/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027485-007AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 12:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

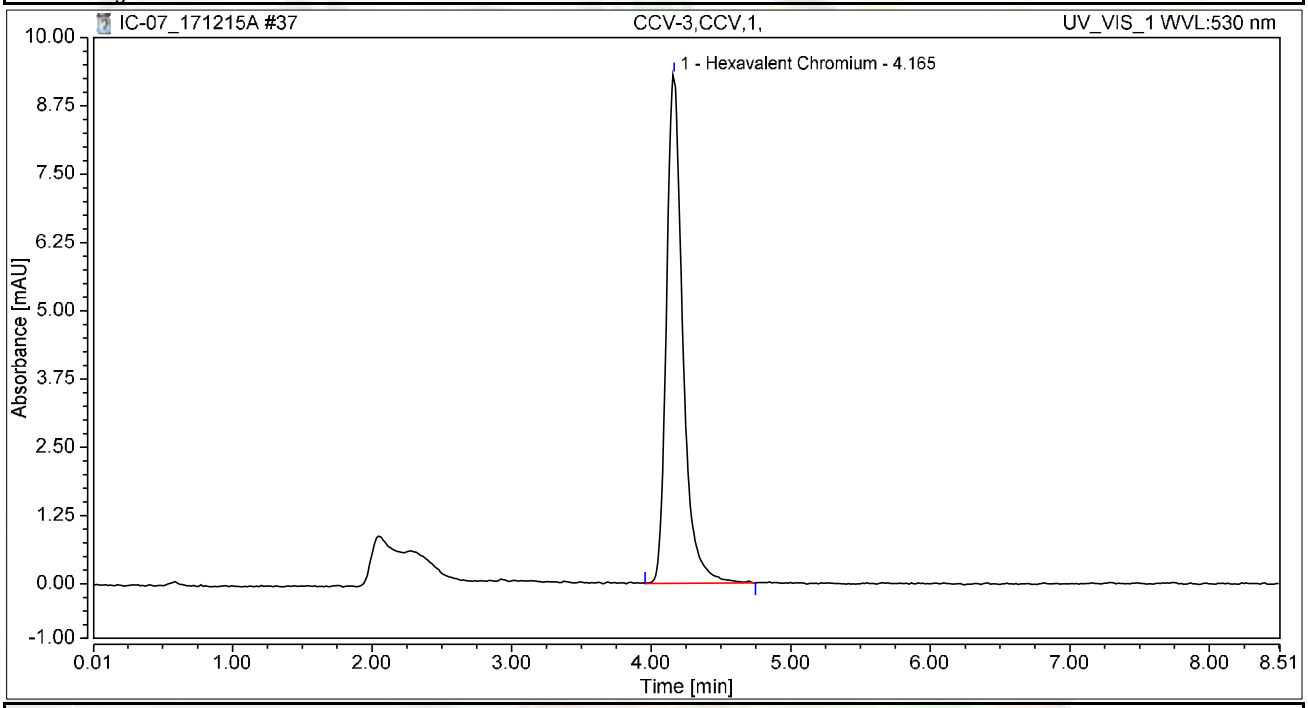
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.422	2.575	100.00	100.00	1.6788
Total:			**0.422**	**2.575**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 12:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

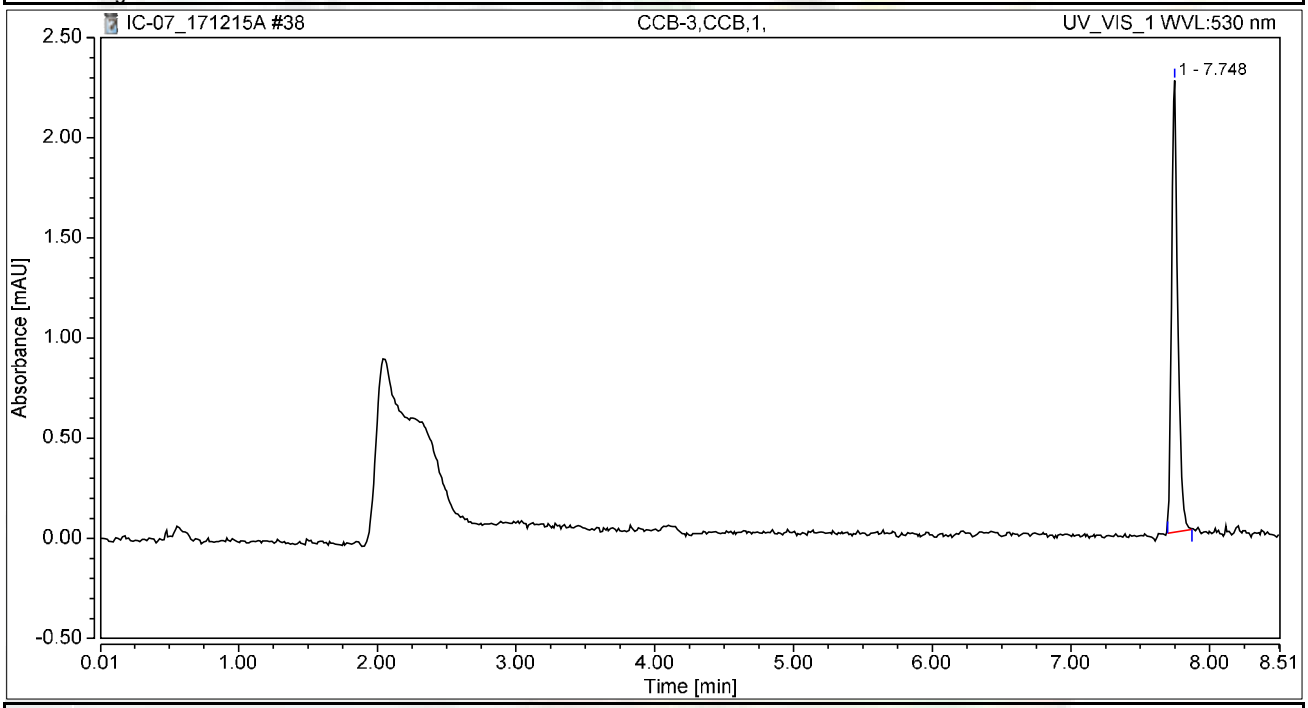
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.271	9.318	100.00	100.00	5.0612
Total:			**1.271**	**9.318**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 12:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

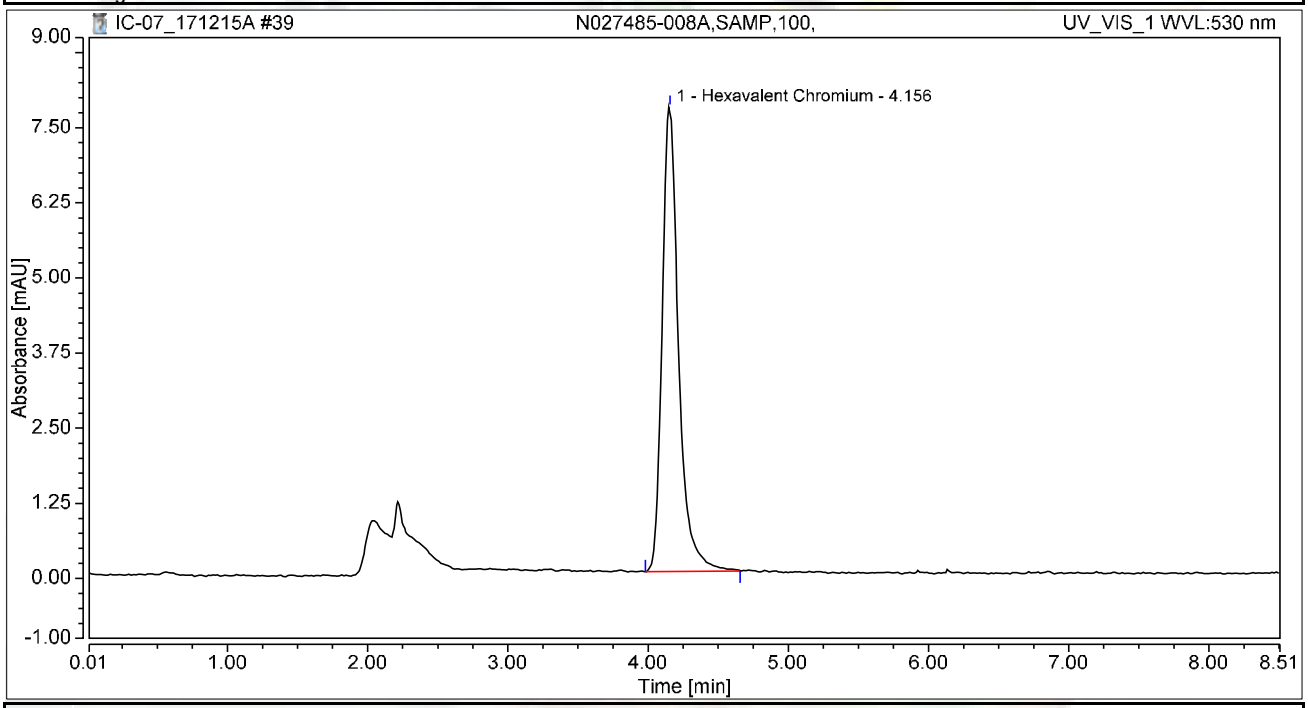
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.748	0.117	2.256	100.00	100.00	n.a.
Total:			**0.117**	**2.256**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-008A,SAMP,100,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

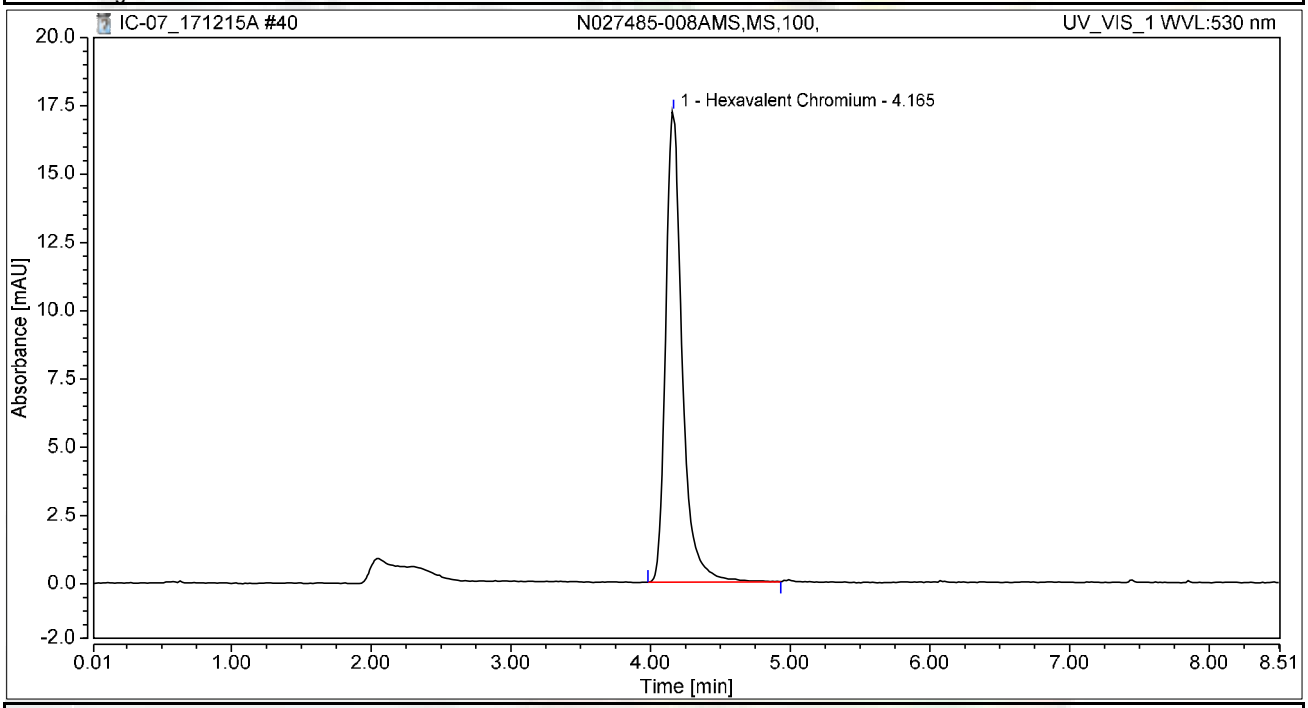
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.052	7.727	100.00	100.00	4.1901
Total:			**1.052**	**7.727**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-008AMS,MS,100,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 13:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

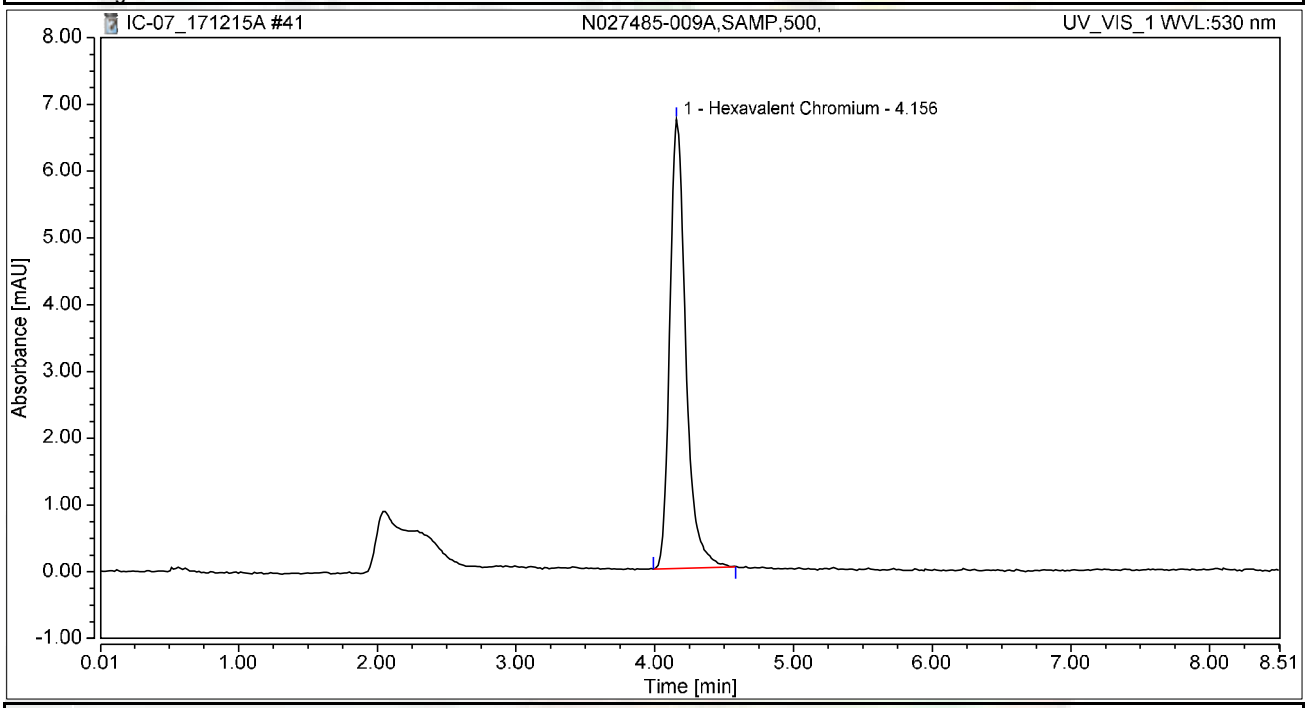
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.358	17.231	100.00	100.00	9.3890
Total:			**2.358**	**17.231**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-009A,SAMP,500,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 13:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

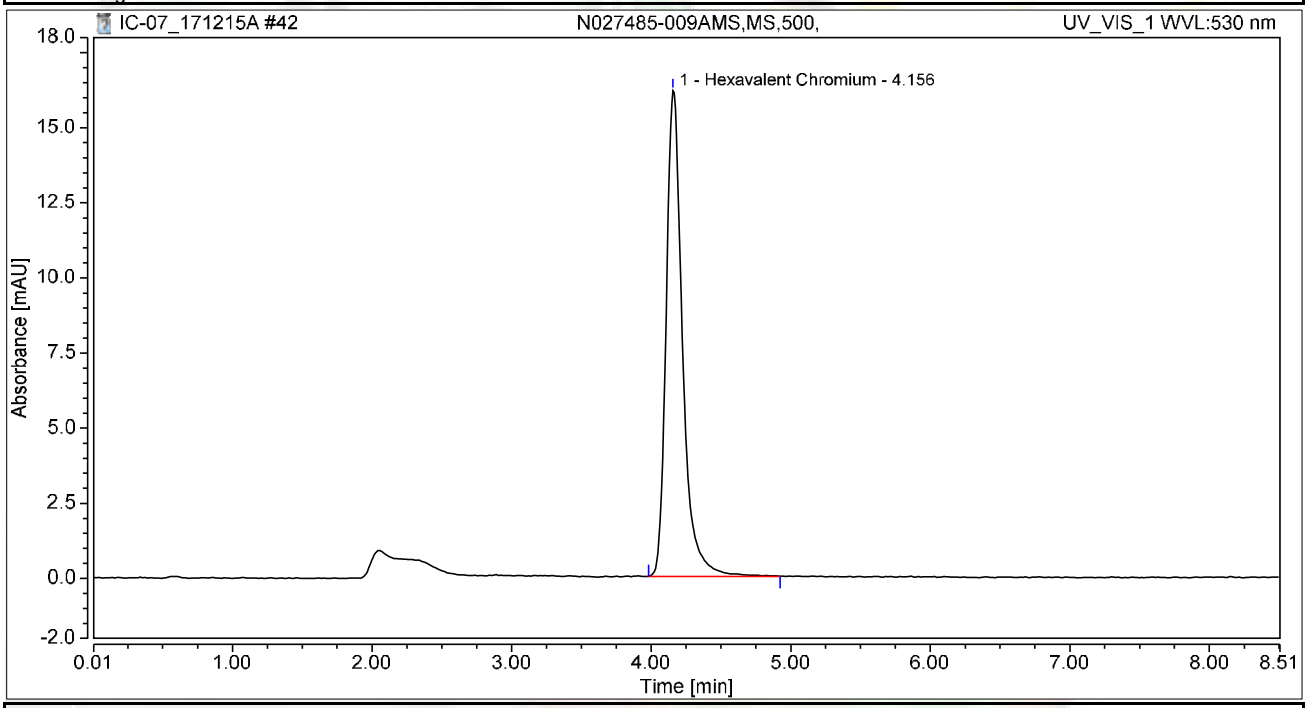
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.902	6.728	100.00	100.00	3.5905
Total:			**0.902**	**6.728**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-009AMS,MS,500,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 13:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

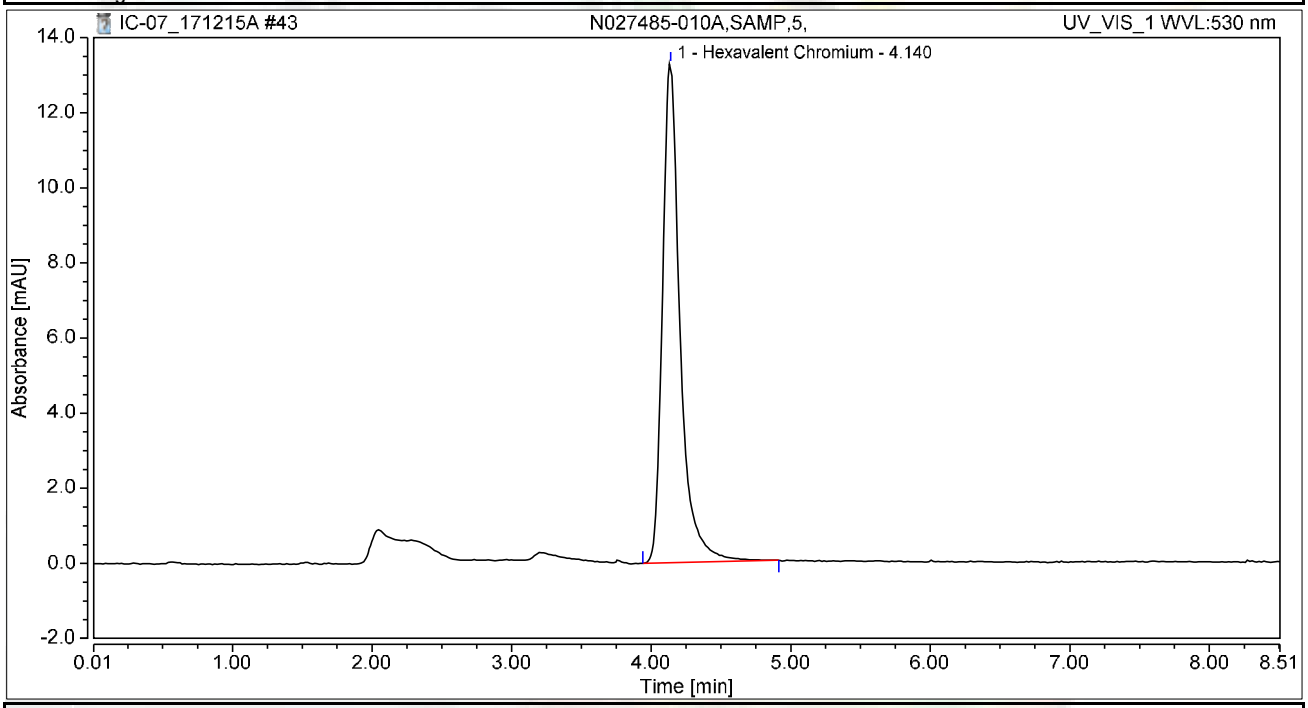
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.206	16.169	100.00	100.00	8.7846
Total:			**2.206**	**16.169**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-010A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 13:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

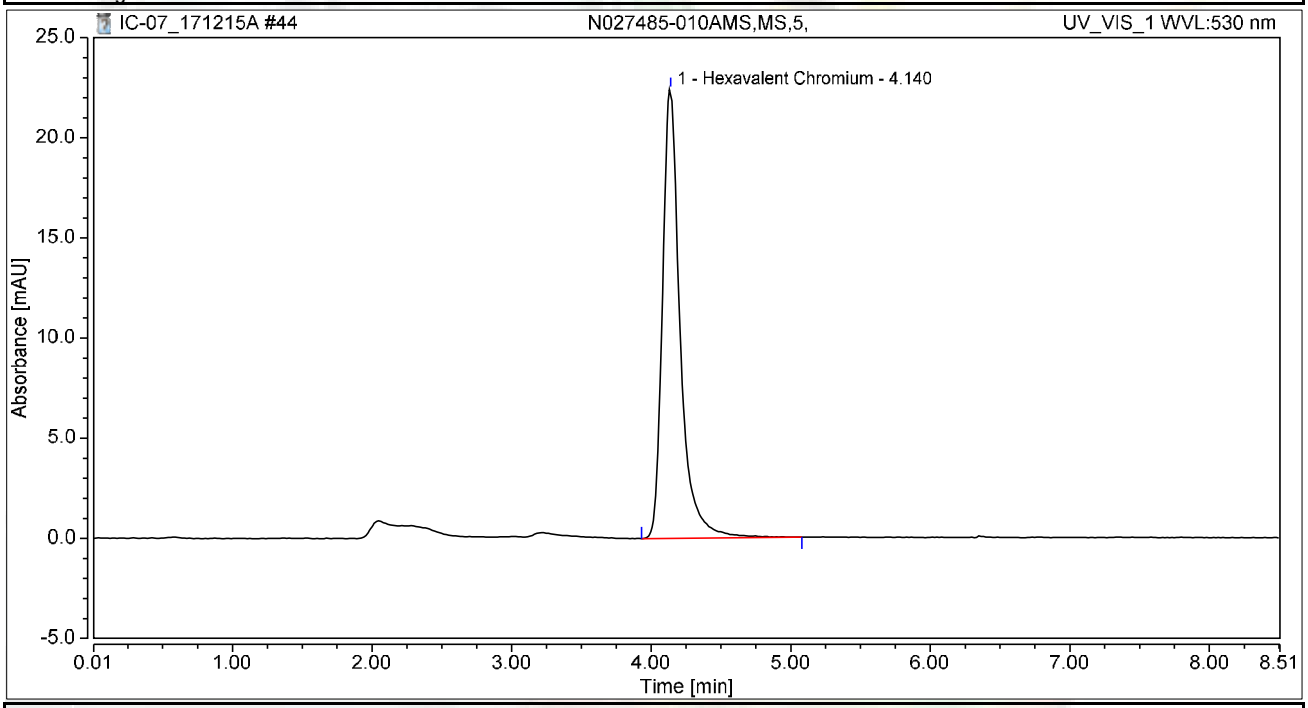
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.951	13.282	100.00	100.00	7.7703
Total:			**1.951**	**13.282**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-010AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 13:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

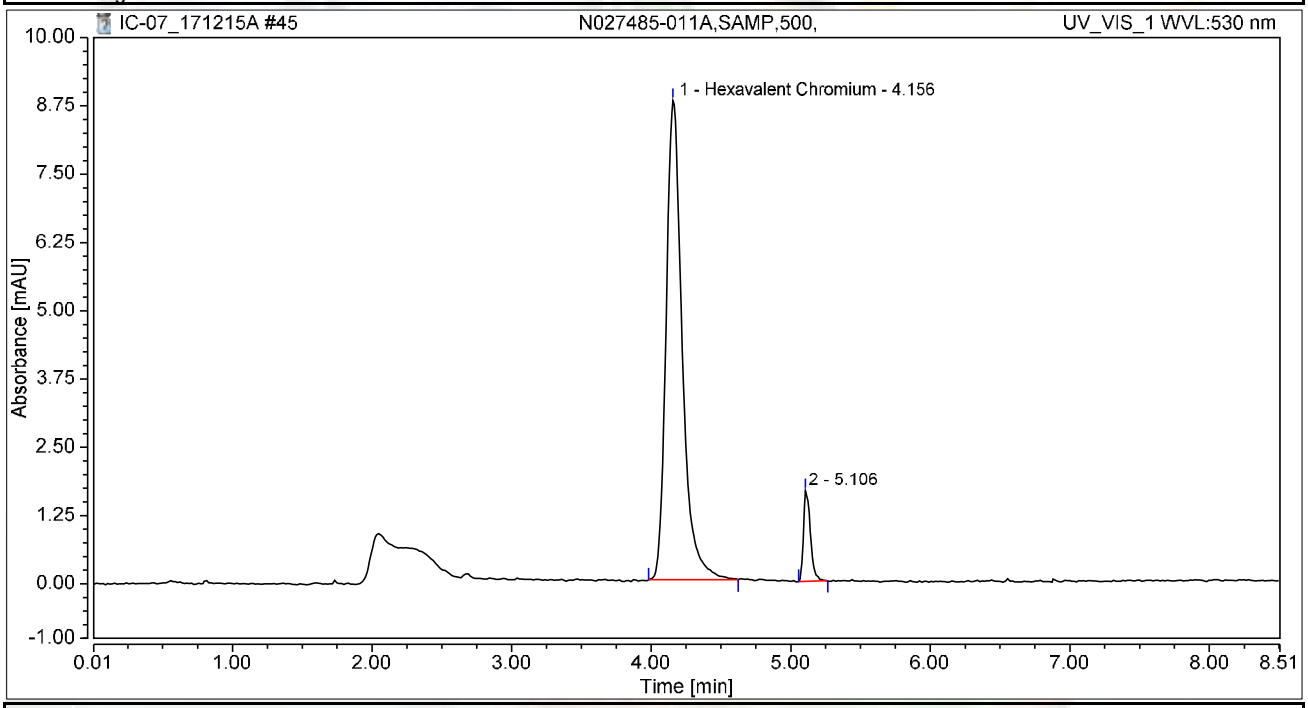
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	3.304	22.412	100.00	100.00	13.1576
Total:			**3.304**	**22.412**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-011A,SAMP,500,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 14:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

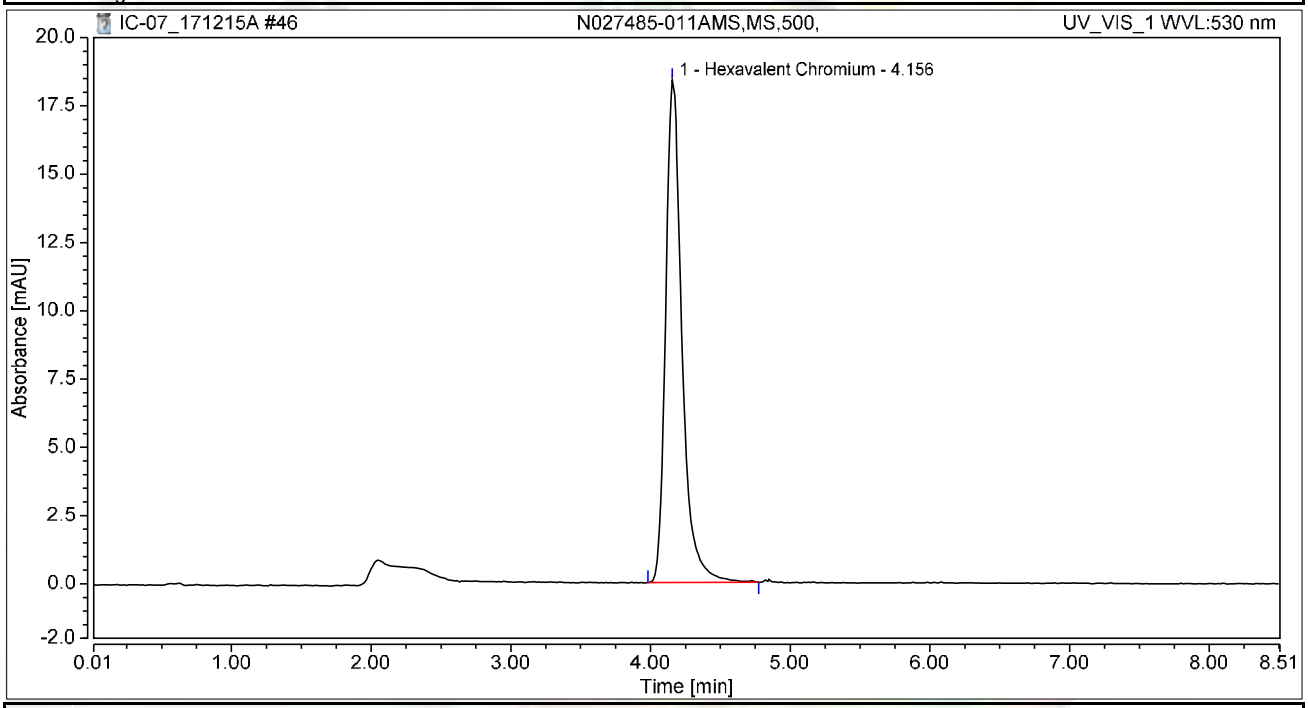
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.176	8.771	92.57	84.09	4.6827
2		5.106	0.094	1.660	7.43	15.91	n.a.
Total:			**1.270**	**10.431**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-011AMS,MS,500,**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 14:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

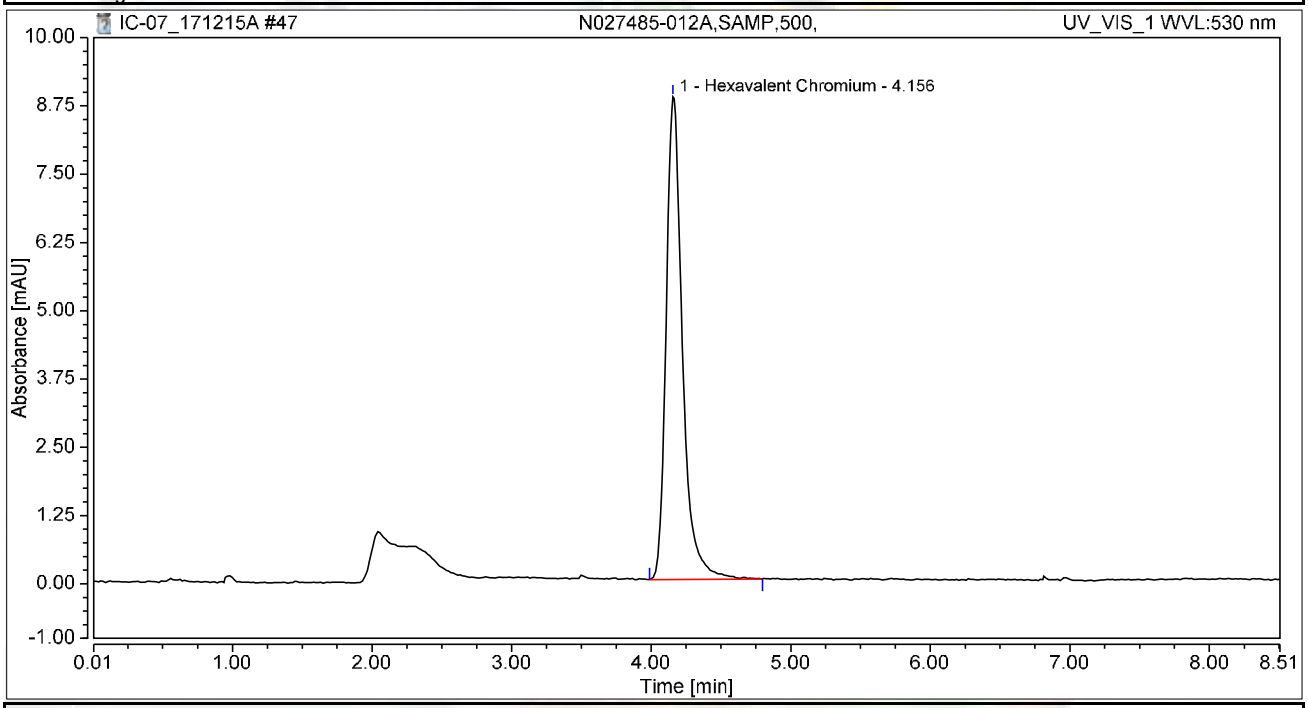
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.487	18.385	100.00	100.00	9.9056
Total:			**2.487**	**18.385**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-012A,SAMP,500,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 14:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

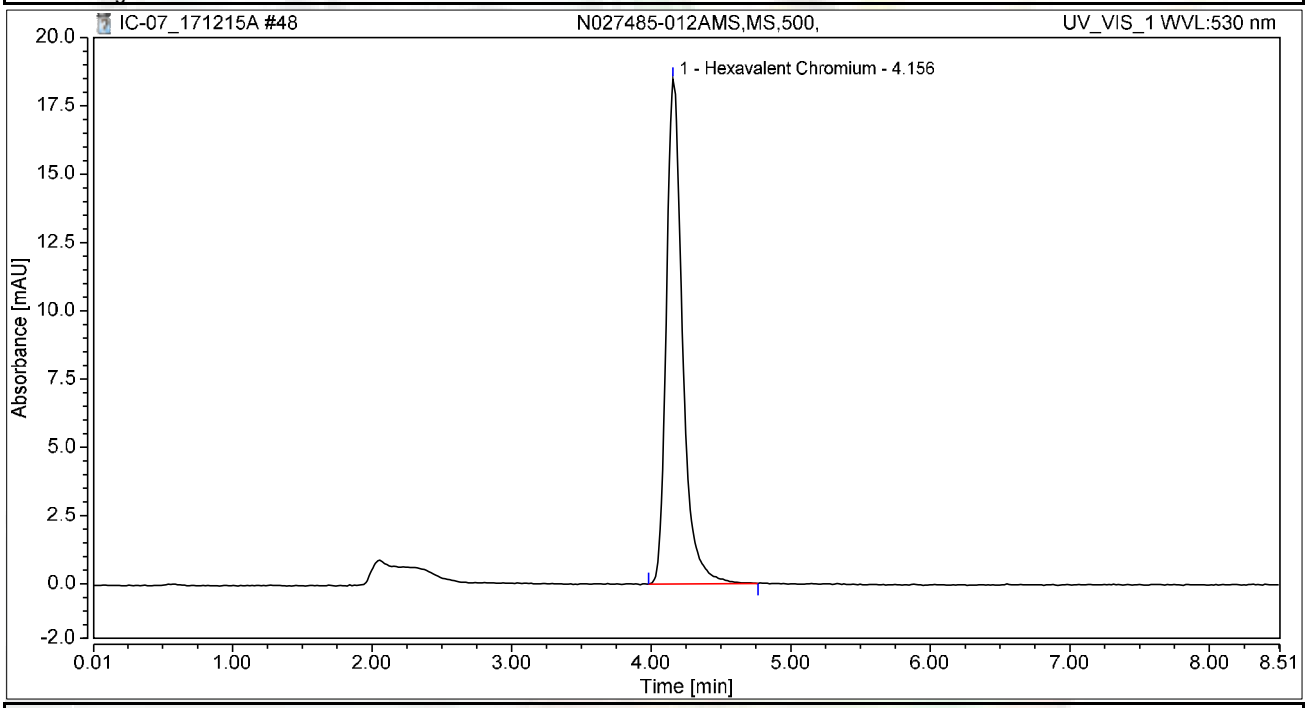
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.199	8.836	100.00	100.00	4.7766
Total:			**1.199**	**8.836**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-012AMS,MS,500,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 14:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

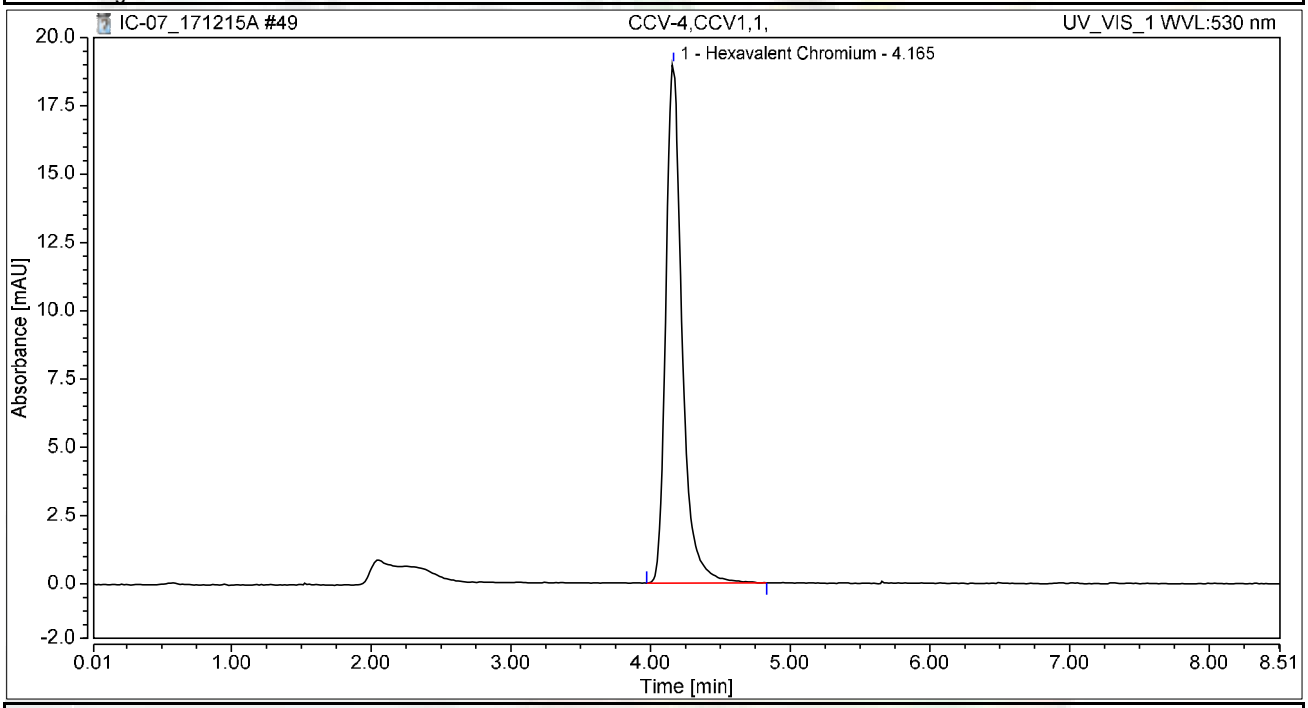
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.503	18.482	100.00	100.00	9.9675
Total:			**2.503**	**18.482**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 14:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

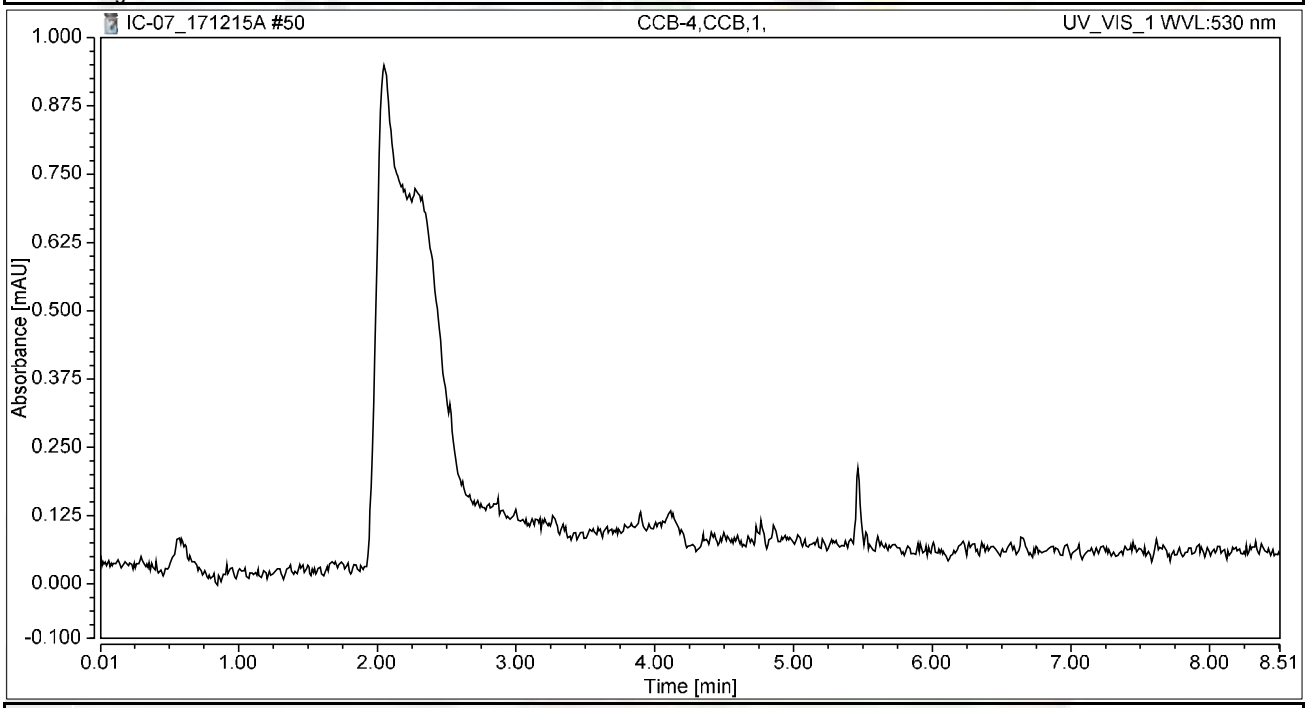
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.569	18.992	100.00	100.00	10.2320
Total:			**2.569**	**18.992**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 14:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

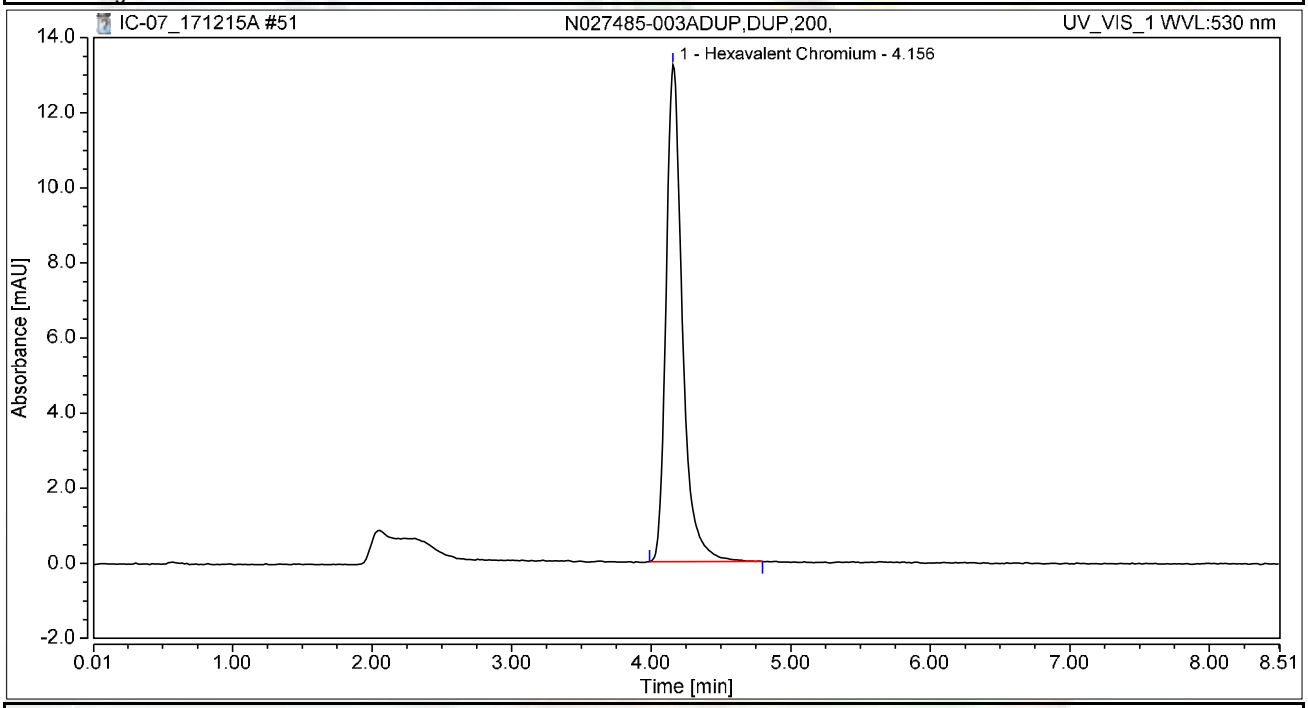
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-003ADUP,DUP,200,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 15:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

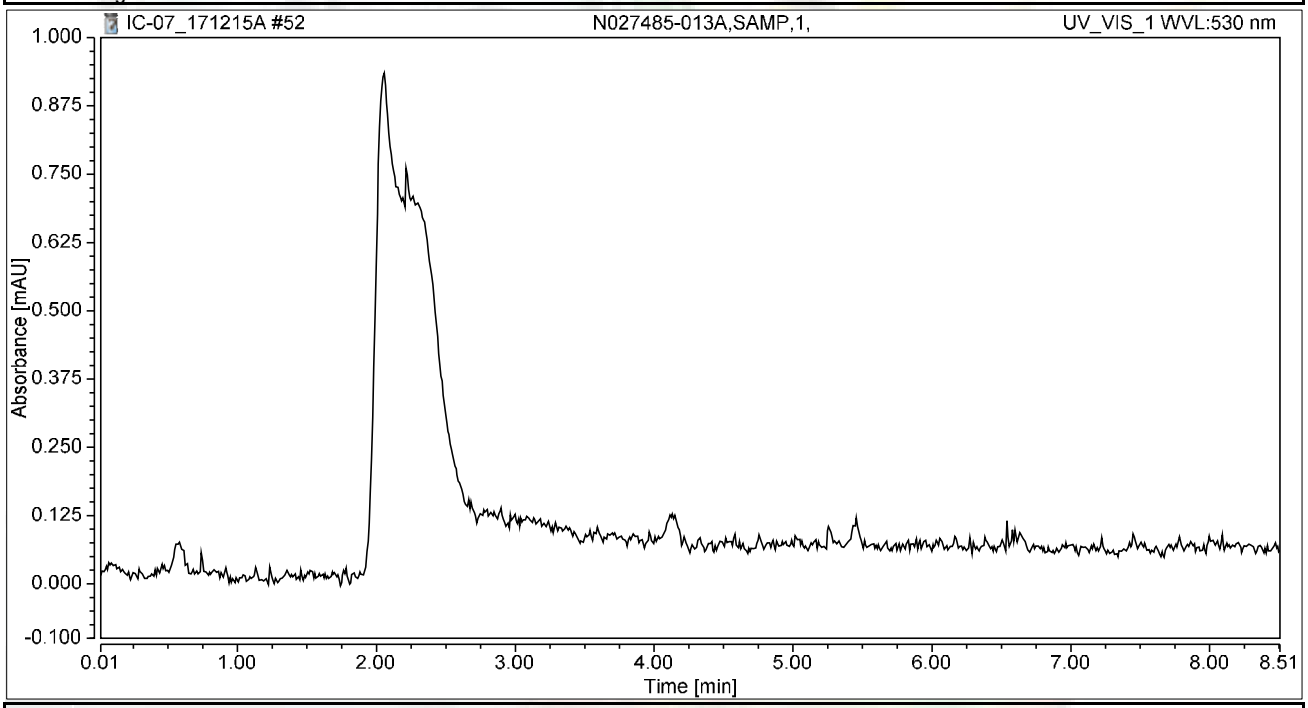
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.796	13.228	100.00	100.00	7.1543
Total:			**1.796**	**13.228**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-013A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 15:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

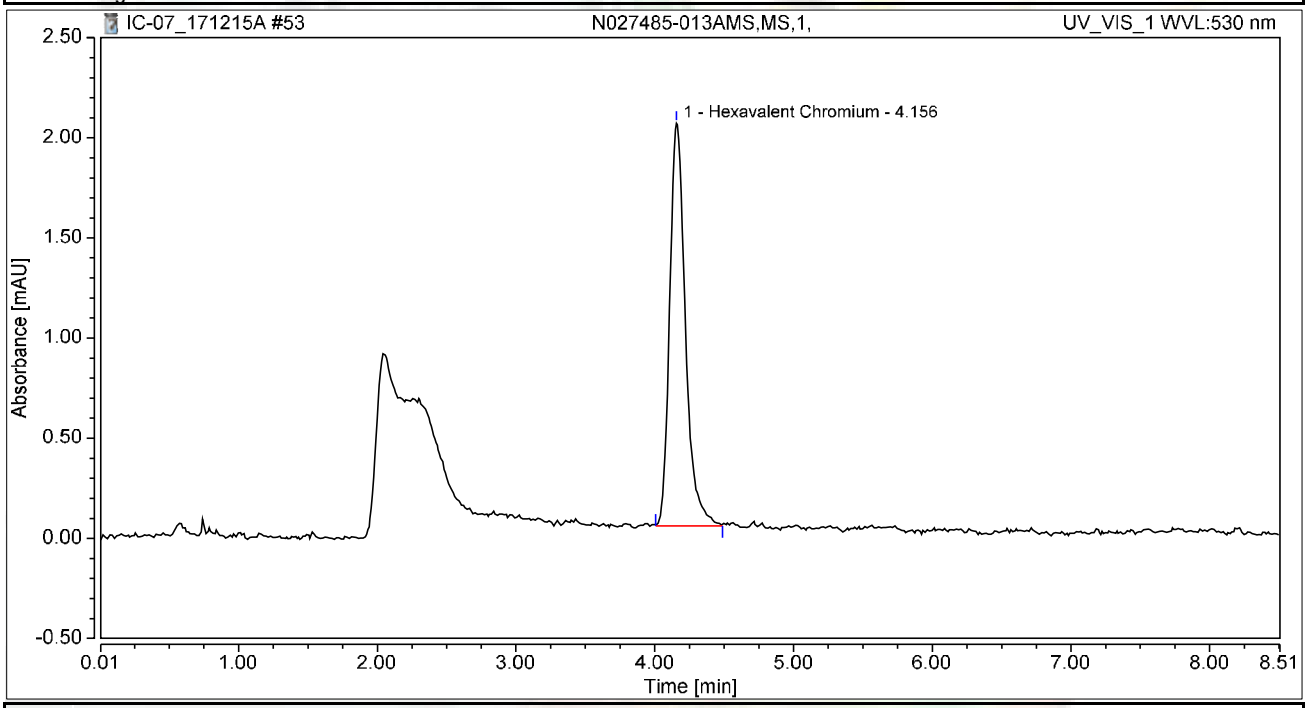
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 15:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

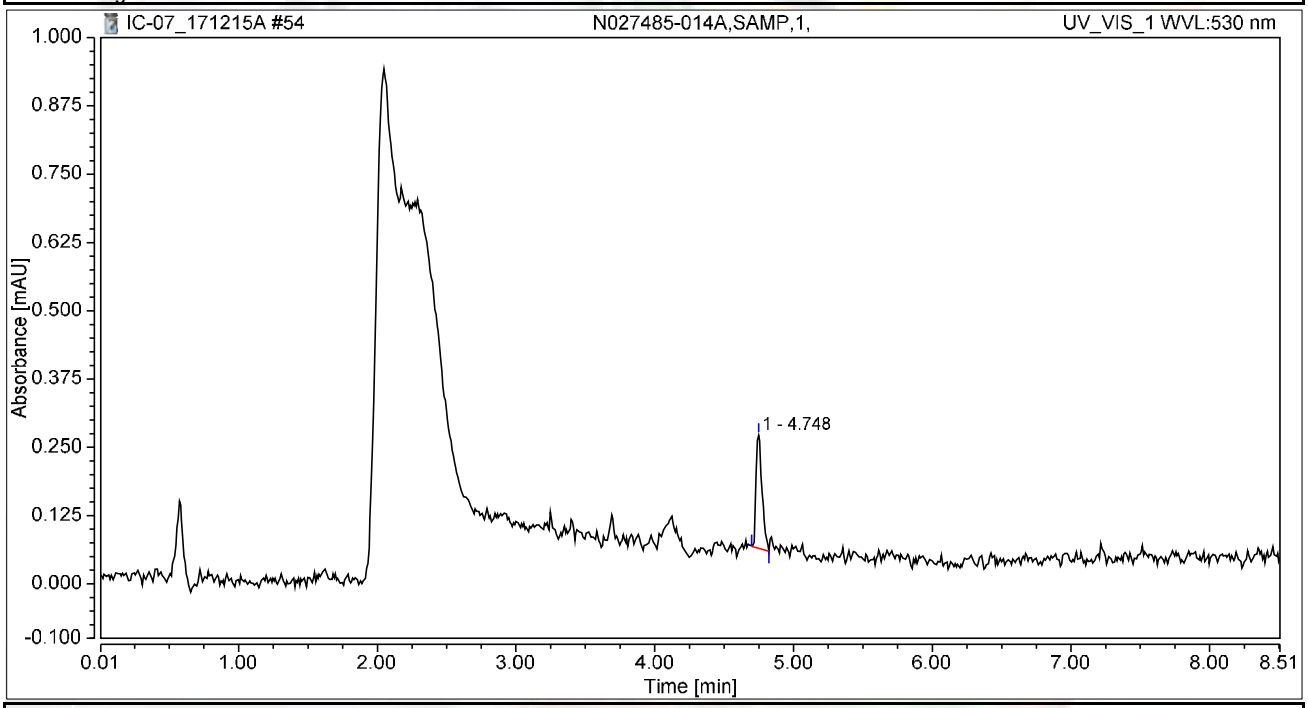
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.265	2.011	100.00	100.00	1.0560
Total:			**0.265**	**2.011**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 15:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

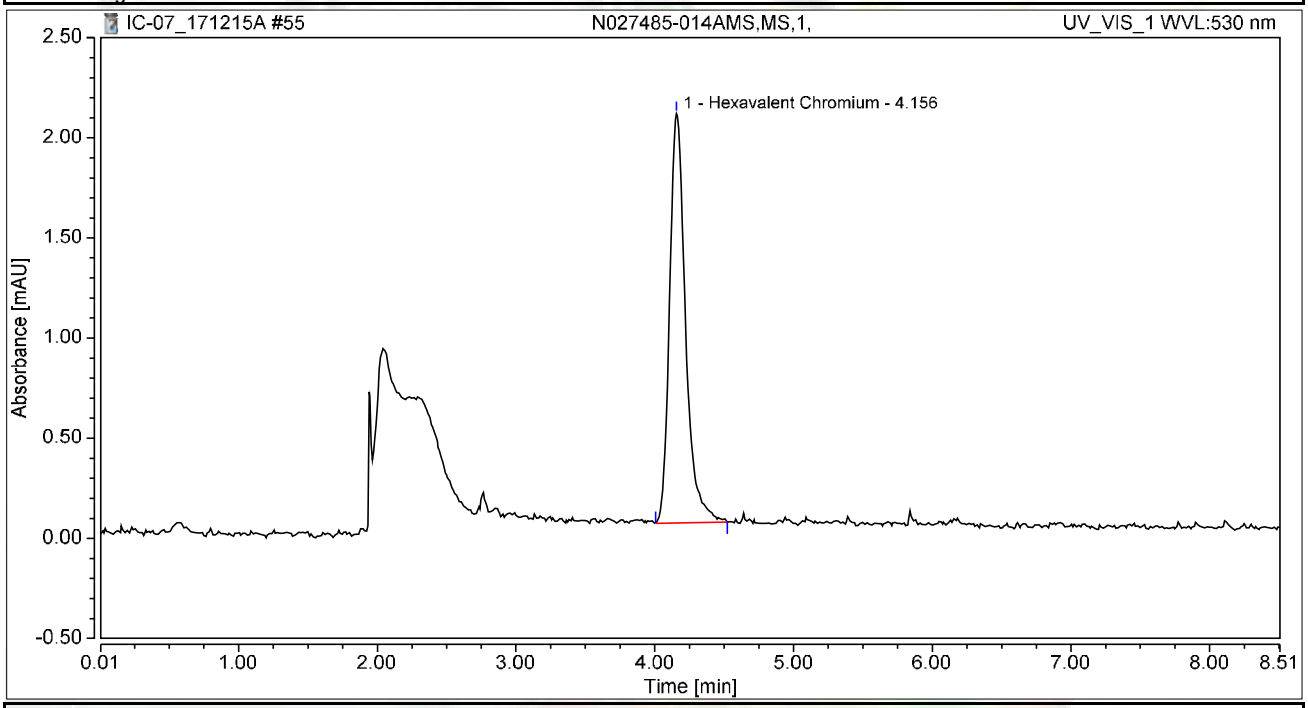
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		4.748	0.010	0.207	100.00	100.00	n.a.
Total:			**0.010**	**0.207**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 15:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

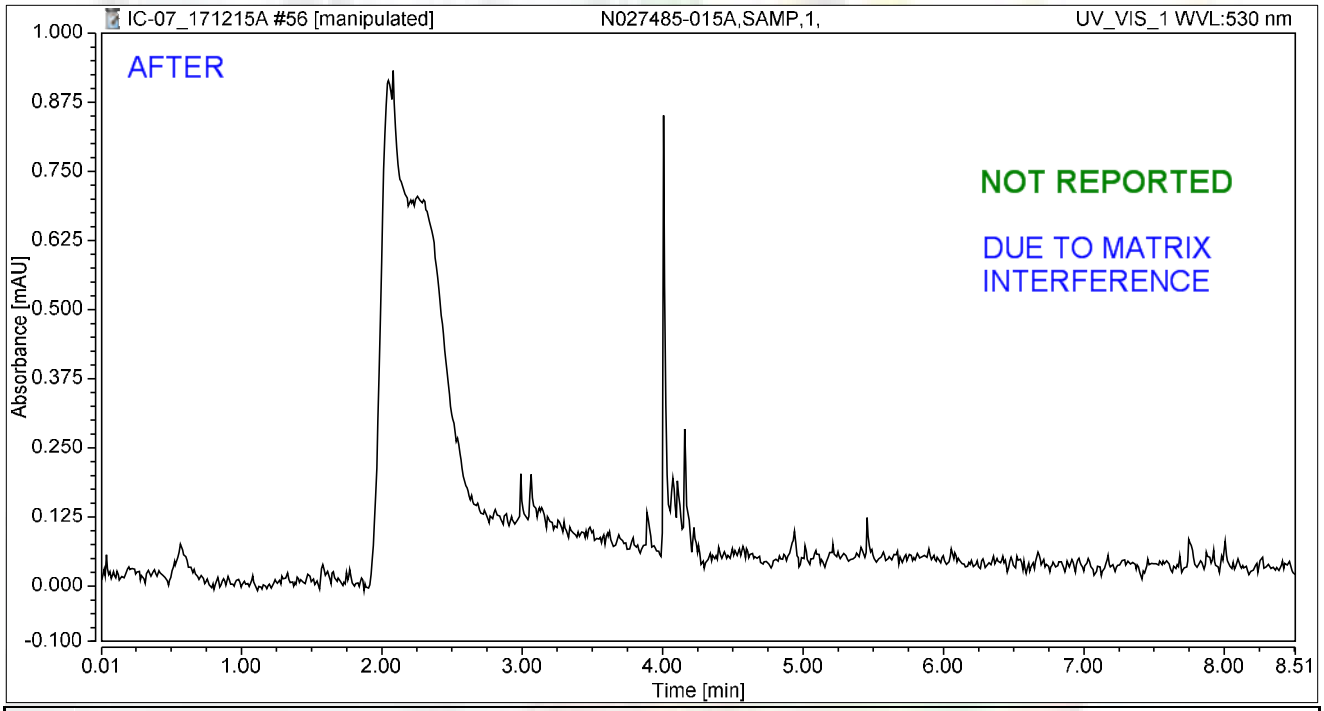
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.273	2.043	100.00	100.00	1.0864
Total:			**0.273**	**2.043**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 15:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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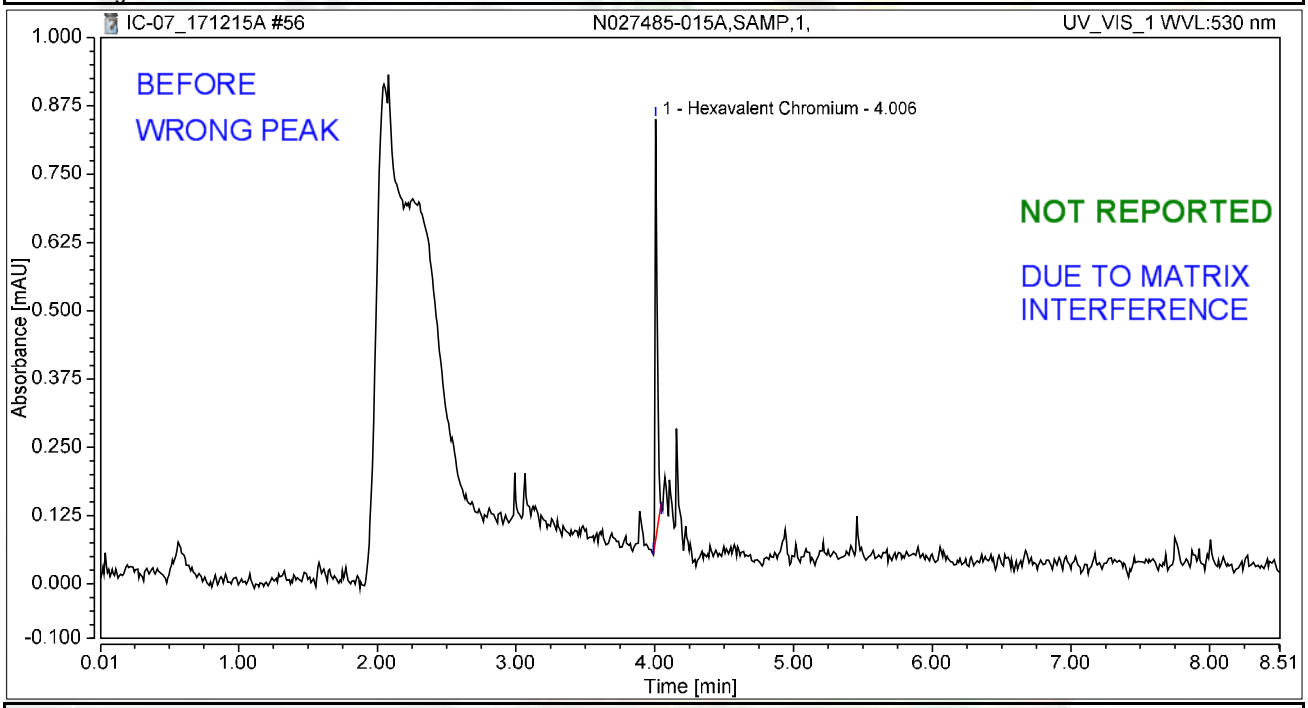
Chromatogram and Results

Injection Details

Injection Name:	**N027485-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 15:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.006	0.013	0.770	100.00	100.00	0.0516
Total:			**0.013**	**0.770**	**100.00**	**100.00**	

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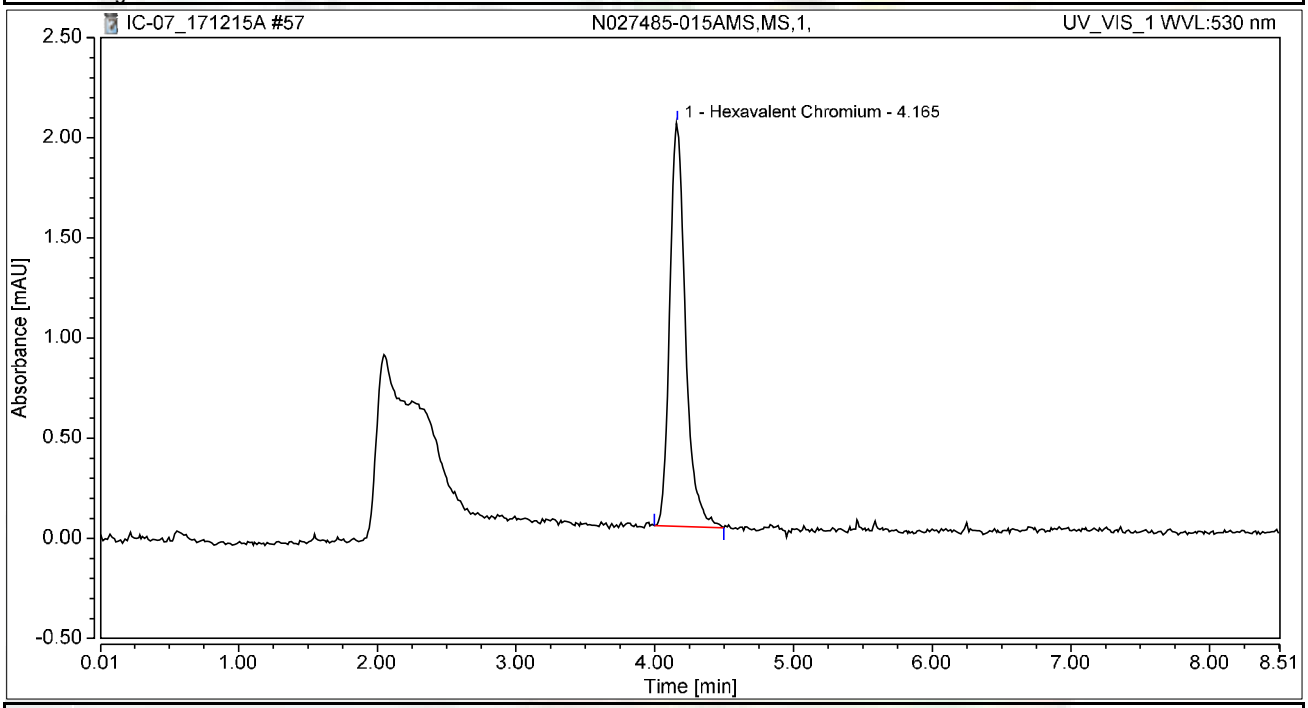
Chromatogram and Results

Injection Details

Injection Name:	**N027485-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 16:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

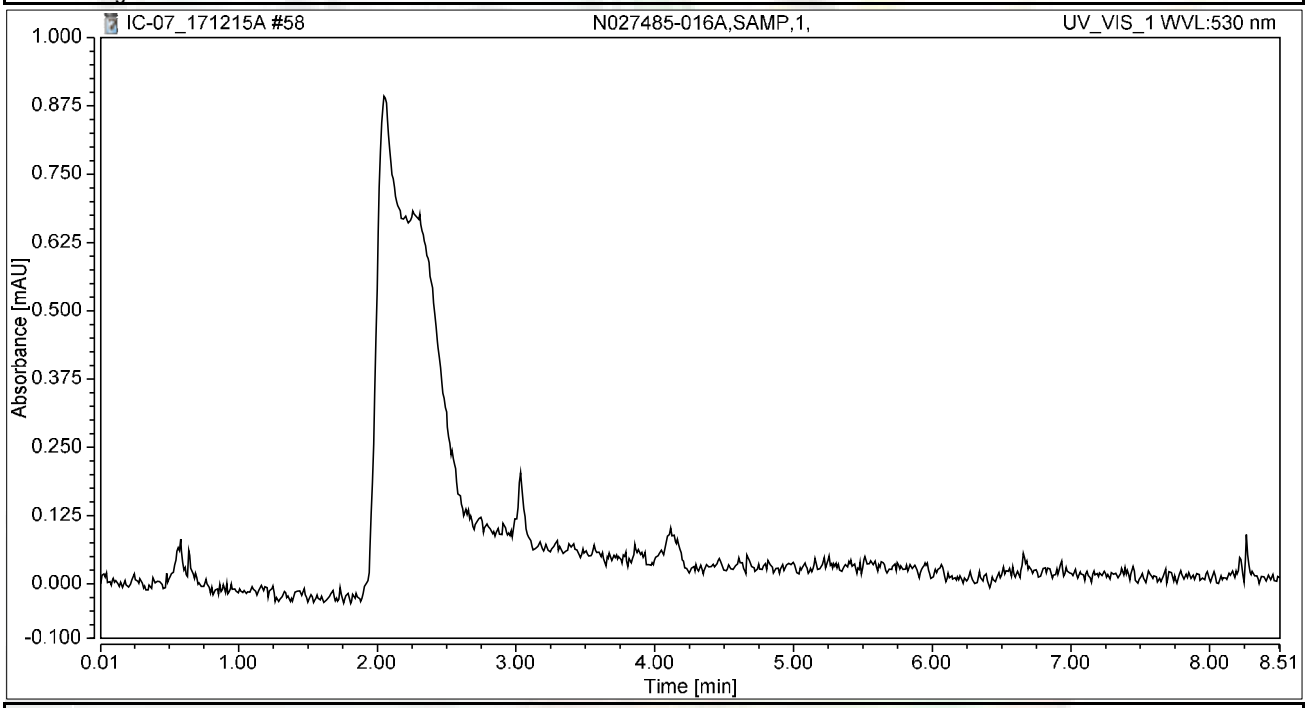
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.265	2.015	100.00	100.00	1.0570
Total:			**0.265**	**2.015**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-016A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 16:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

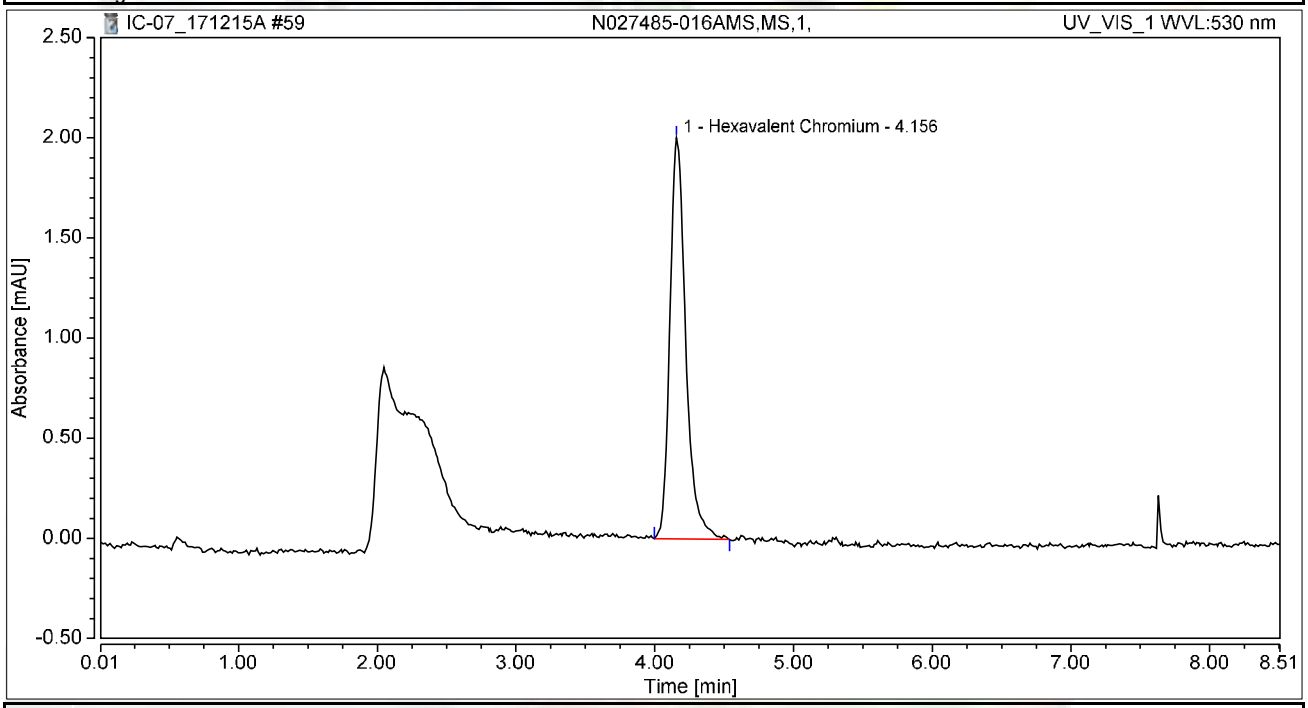
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-016AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 16:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

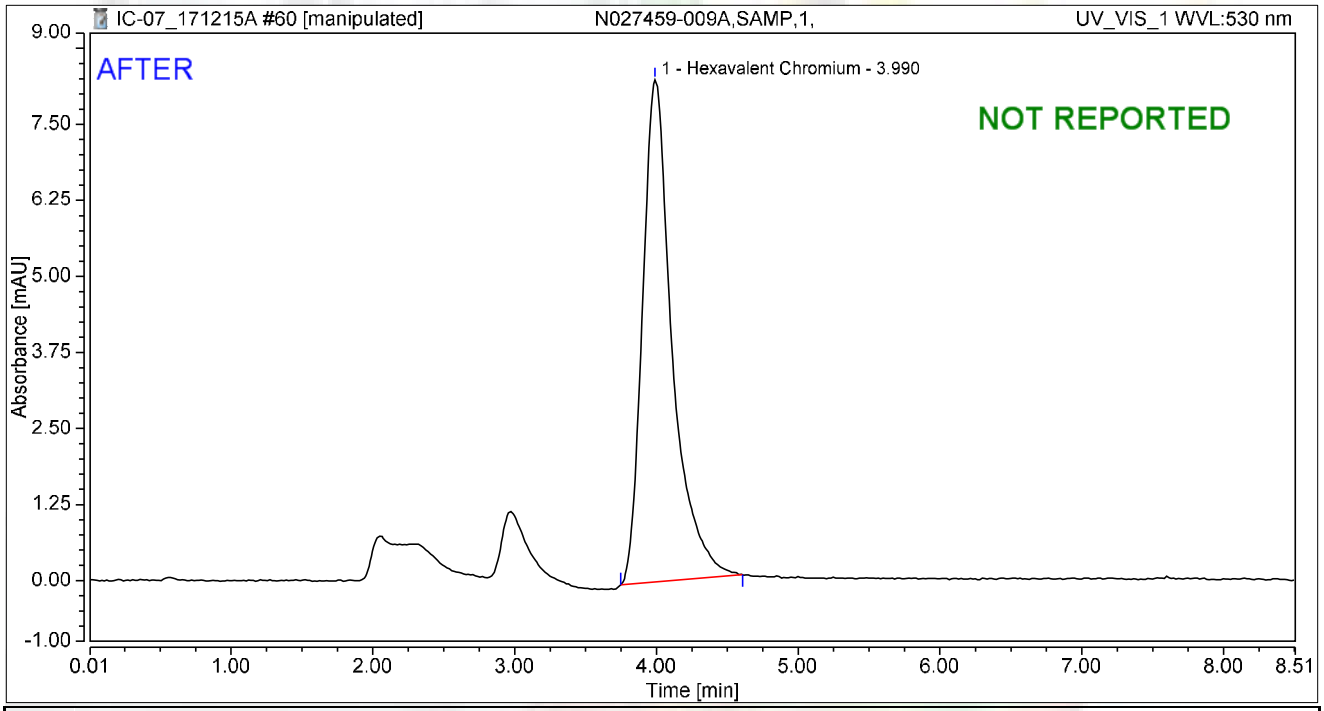
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.267	2.003	100.00	100.00	1.0625
Total:			**0.267**	**2.003**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 16:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.990	2.001	8.257	100.00	100.00	7.9703
Total:			**2.001**	**8.257**	**100.00**	**100.00**	

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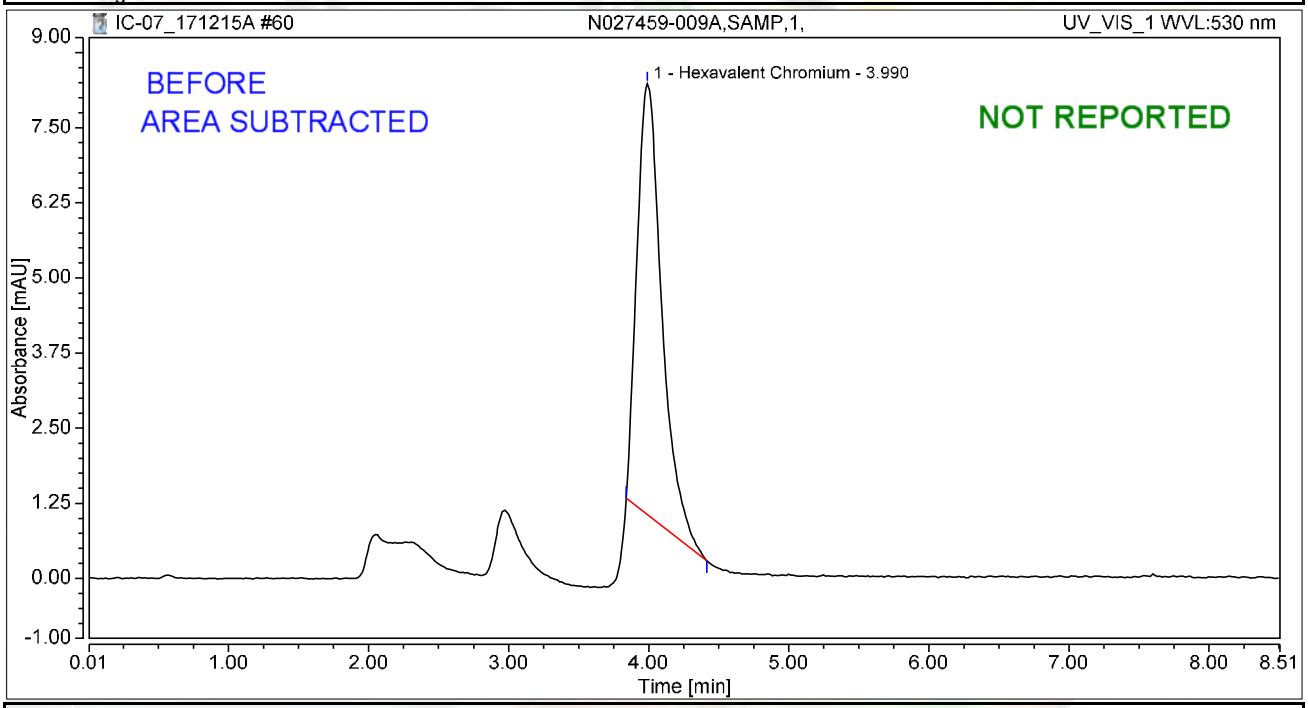
Chromatogram and Results

Injection Details

Injection Name:	**N027459-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 16:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.990	1.476	7.168	100.00	100.00	5.8795
Total:			**1.476**	**7.168**	**100.00**	**100.00**	

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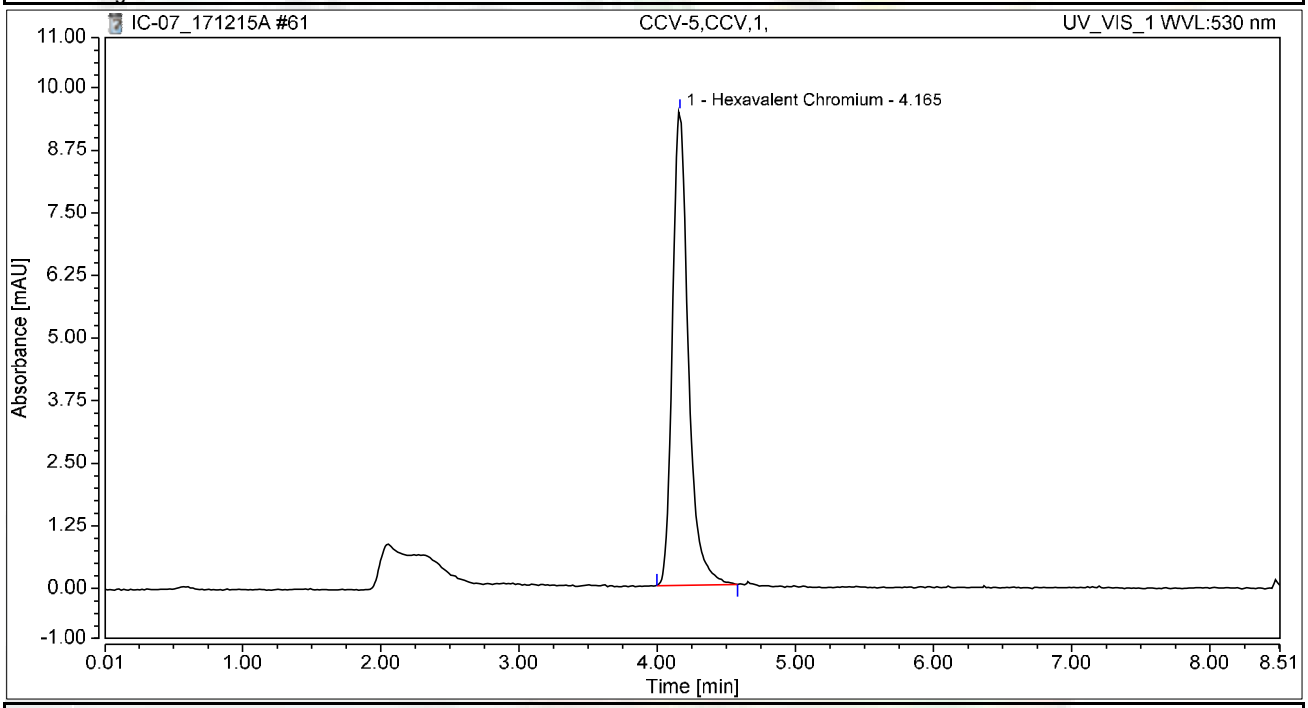
Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 16:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

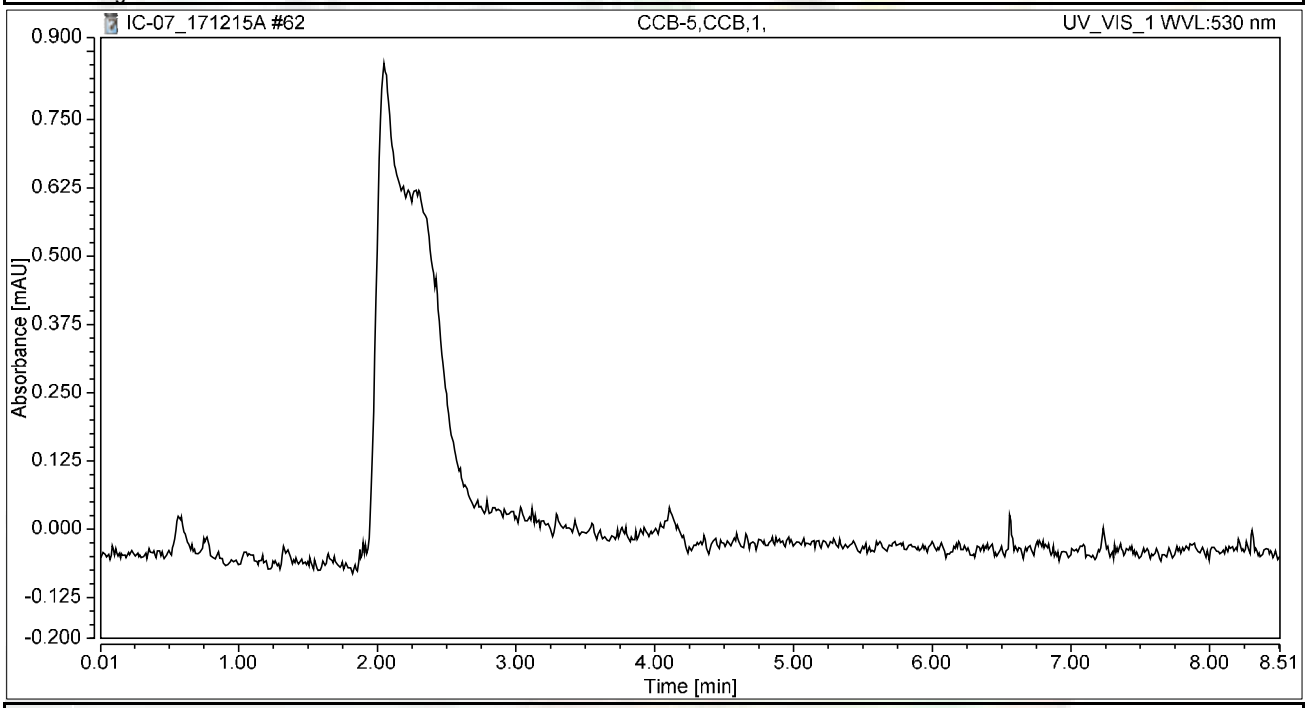
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.268	9.473	100.00	100.00	5.0487
Total:			**1.268**	**9.473**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 16:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

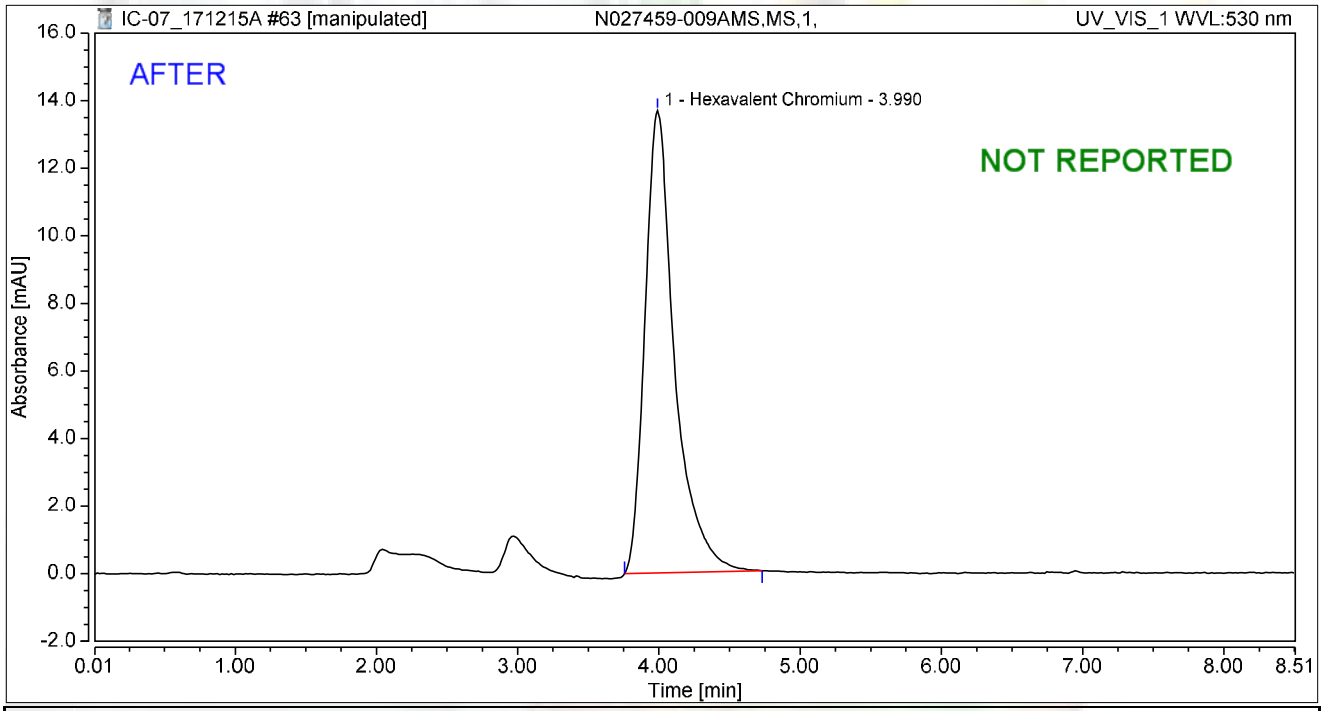
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 17:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.990	3.325	13.681	100.00	100.00	13.2404
Total:			**3.325**	**13.681**	**100.00**	**100.00**	

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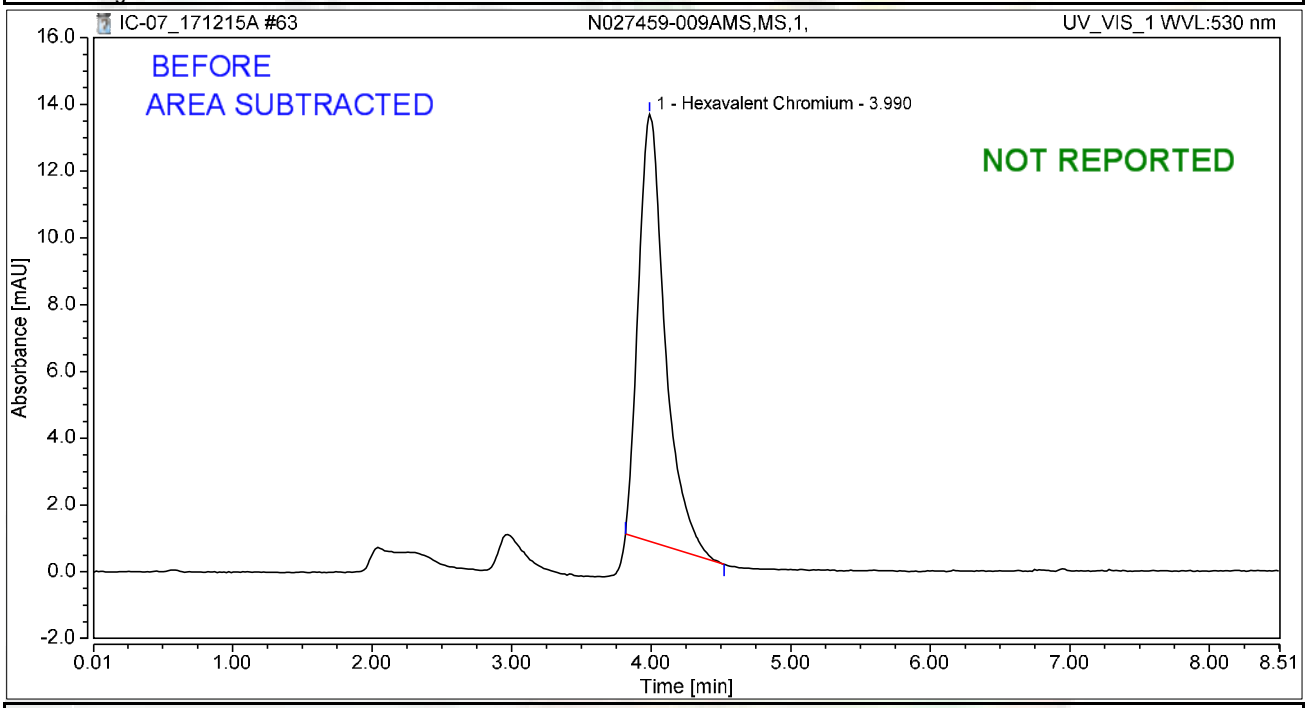
Chromatogram and Results

Injection Details

Injection Name:	**N027459-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 17:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.990	2.837	12.794	100.00	100.00	11.2976
Total:			**2.837**	**12.794**	**100.00**	**100.00**	

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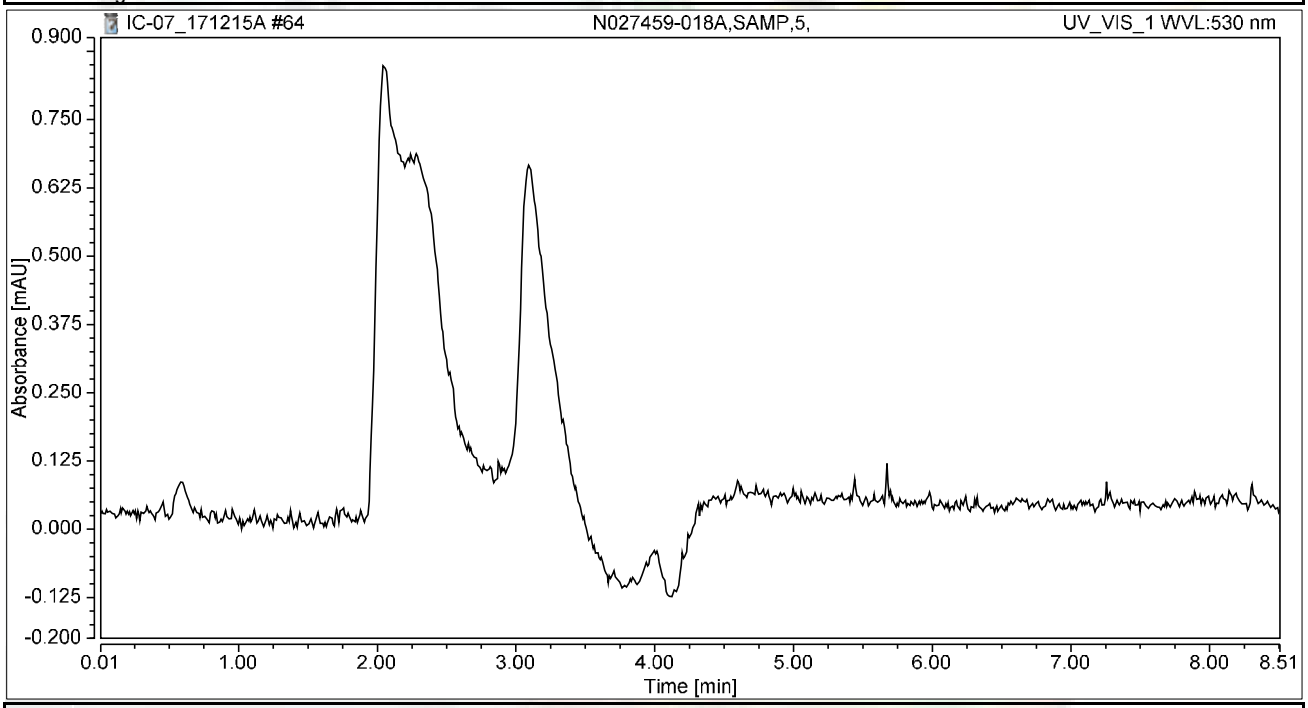
Chromatogram and Results

Injection Details

Injection Name:	**N027459-018A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 17:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

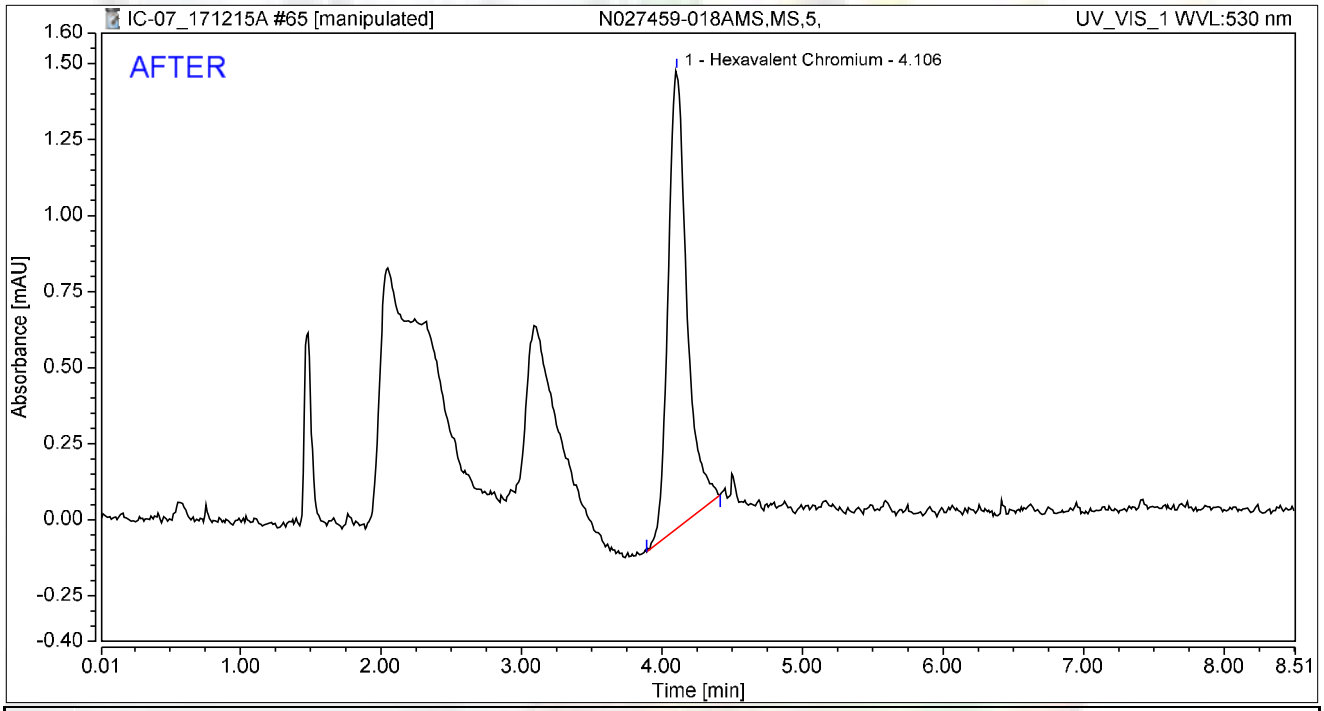
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-018AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 17:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.234	1.505	100.00	100.00	0.9307
Total:			**0.234**	**1.505**	**100.00**	**100.00**	

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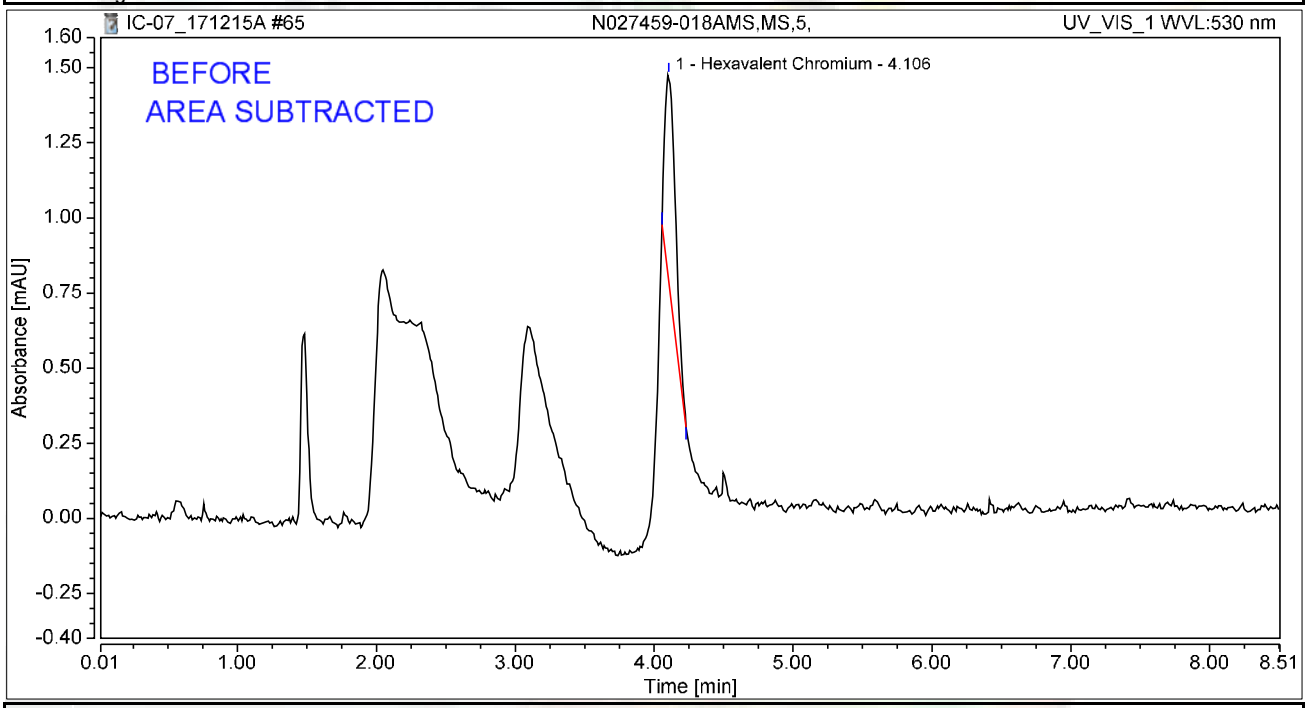
Chromatogram and Results

Injection Details

Injection Name:	**N027459-018AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 17:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.061	0.691	100.00	100.00	0.2437
Total:			**0.061**	**0.691**	**100.00**	**100.00**	

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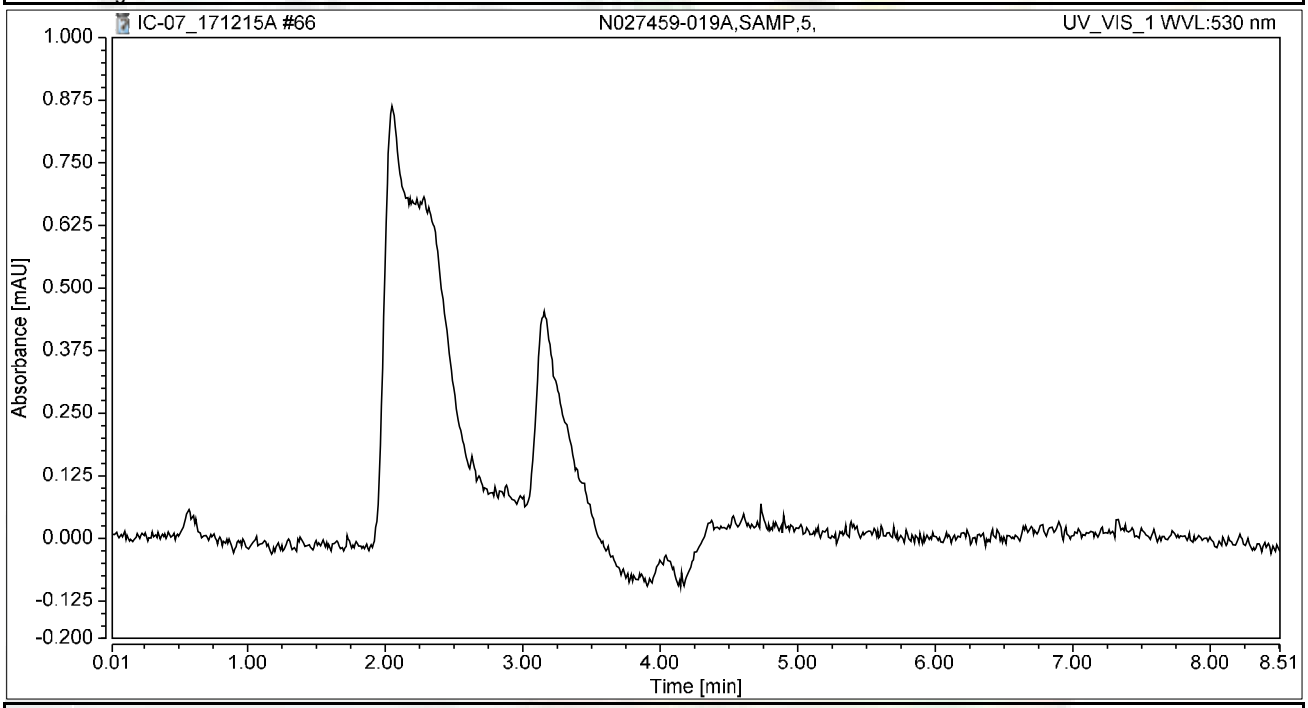
Chromatogram and Results

Injection Details

Injection Name:	**N027459-019A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 17:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

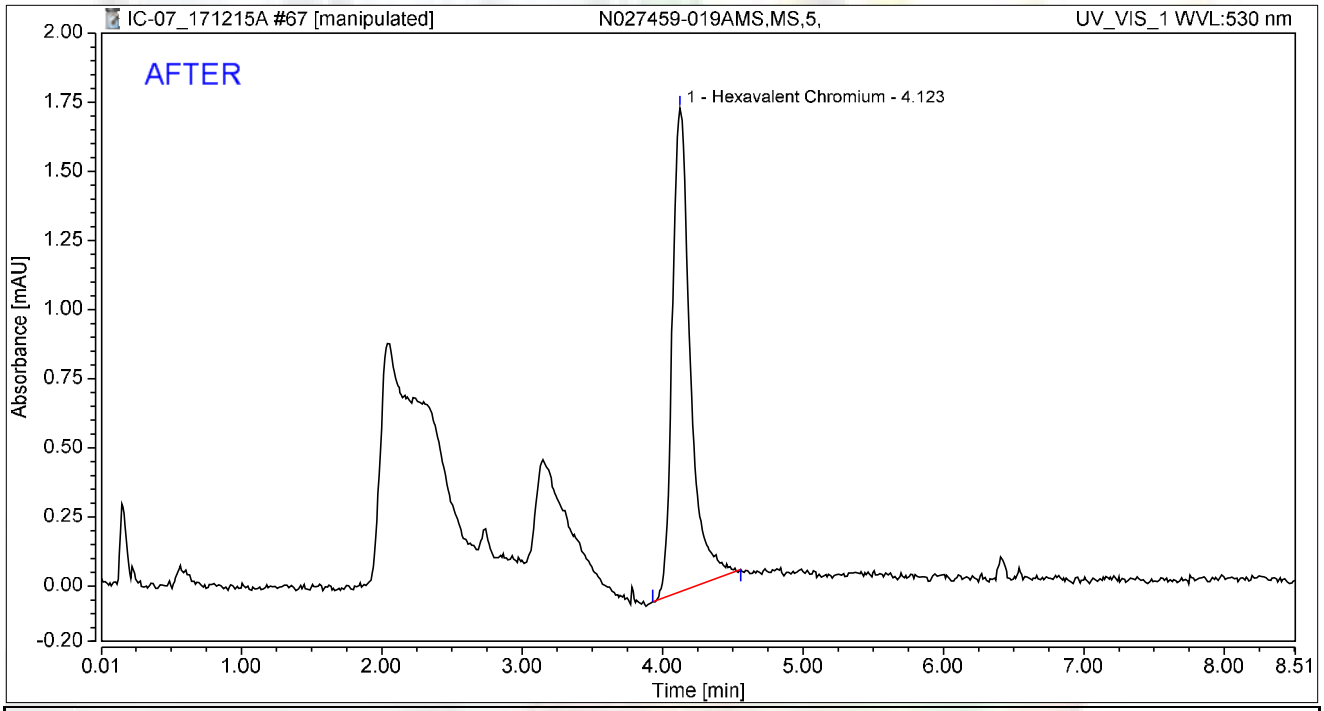
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-019AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 17:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.261	1.750	100.00	100.00	1.0386
Total:			**0.261**	**1.750**	**100.00**	**100.00**	

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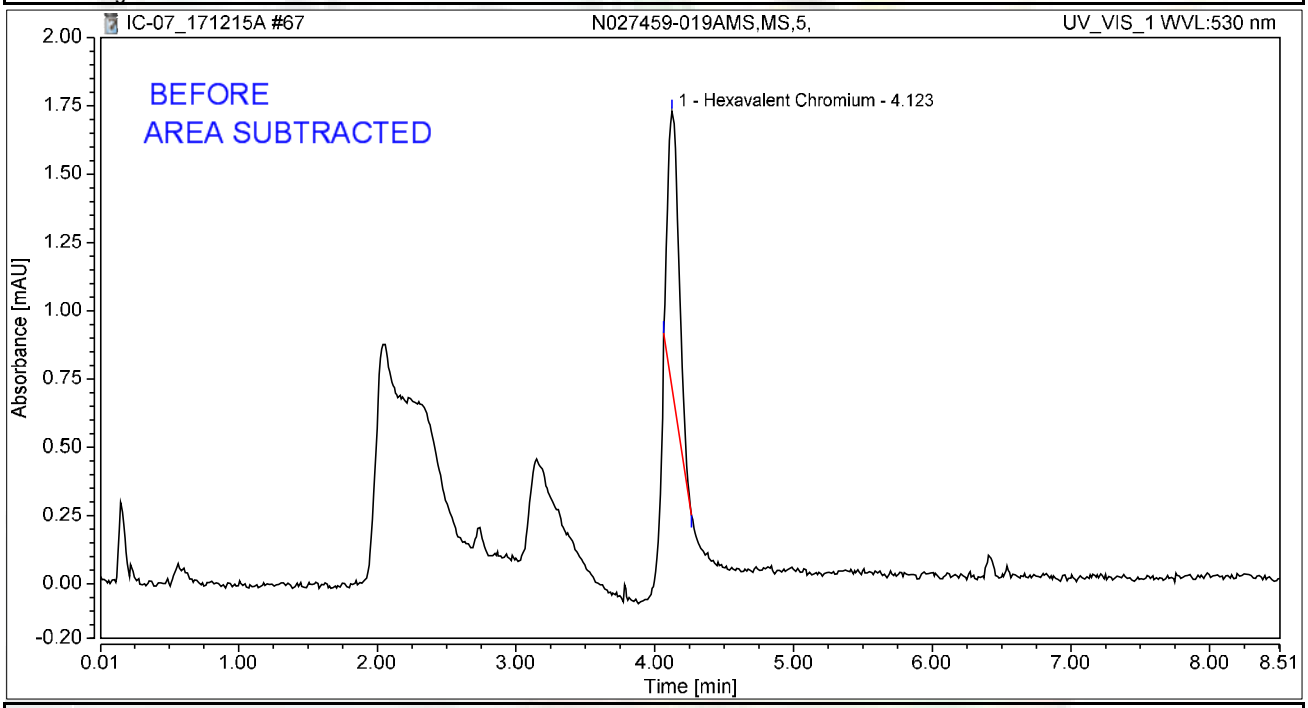
Chromatogram and Results

Injection Details

Injection Name:	**N027459-019AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 17:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.097	1.005	100.00	100.00	0.3878
Total:			**0.097**	**1.005**	**100.00**	**100.00**	

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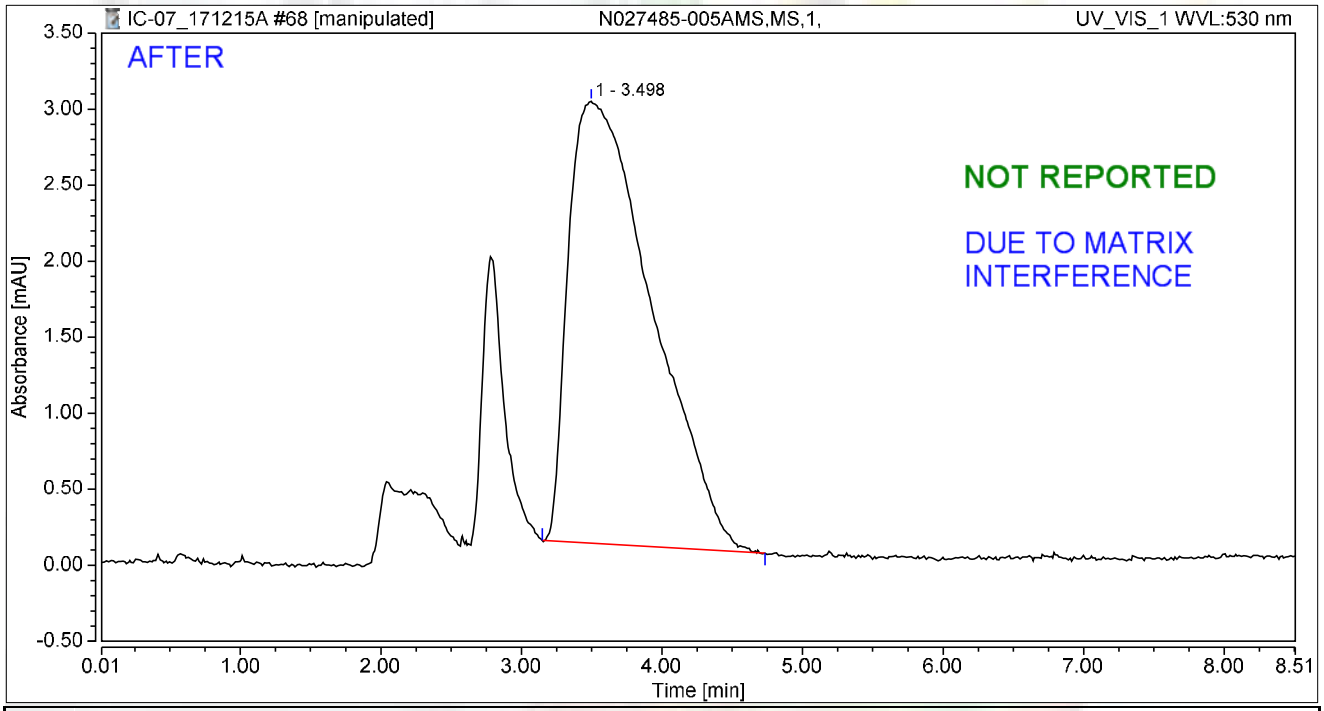
Chromatogram and Results

Injection Details

Injection Name:	**N027485-005AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 17:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.498	2.002	2.906	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**2.002**	**2.906**	**100.00**	**100.00**	

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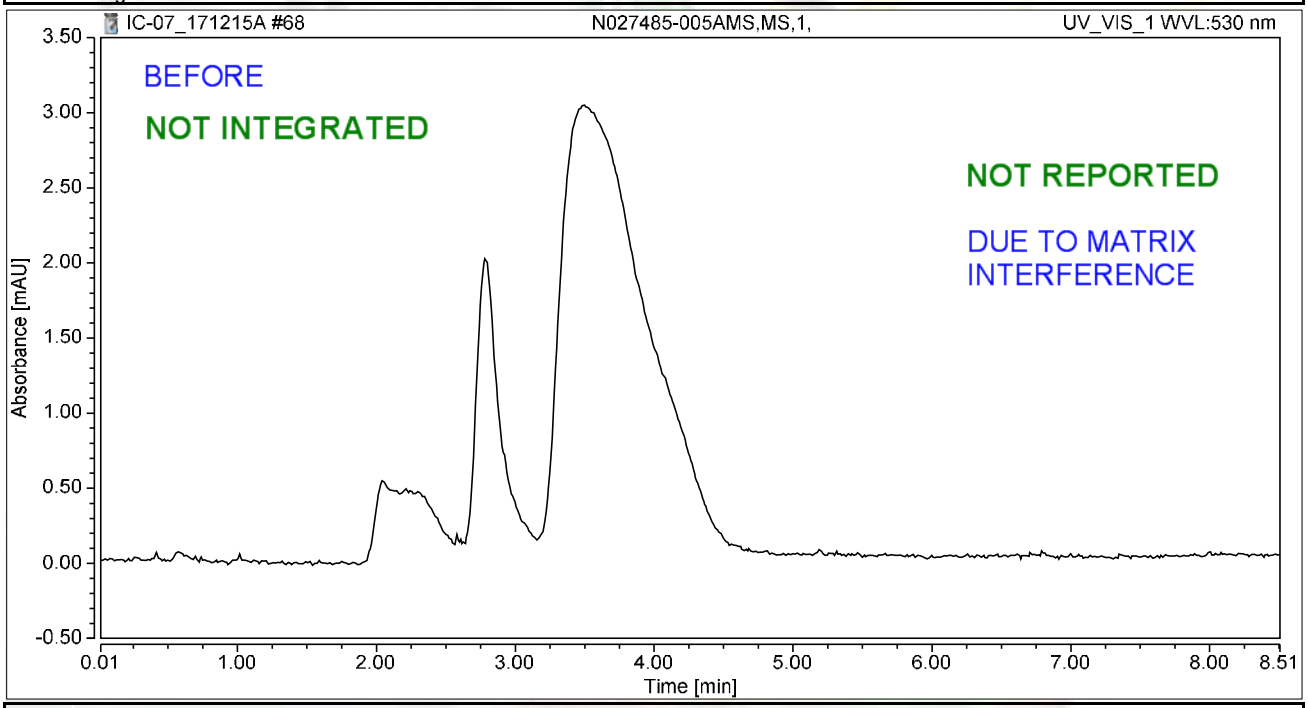
Chromatogram and Results

Injection Details

Injection Name:	**N027485-005AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 17:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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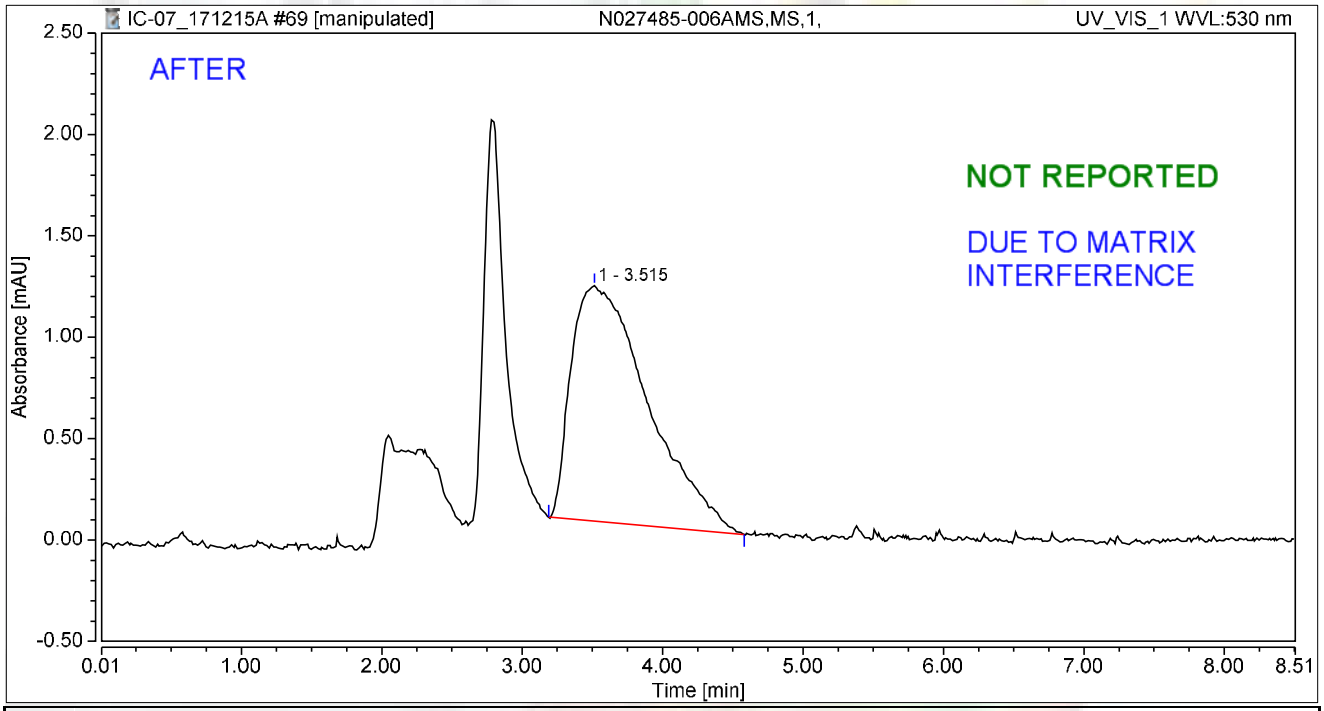
Chromatogram and Results

Injection Details

Injection Name:	**N027485-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 17:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.515	0.738	1.160	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.738**	**1.160**	**100.00**	**100.00**	

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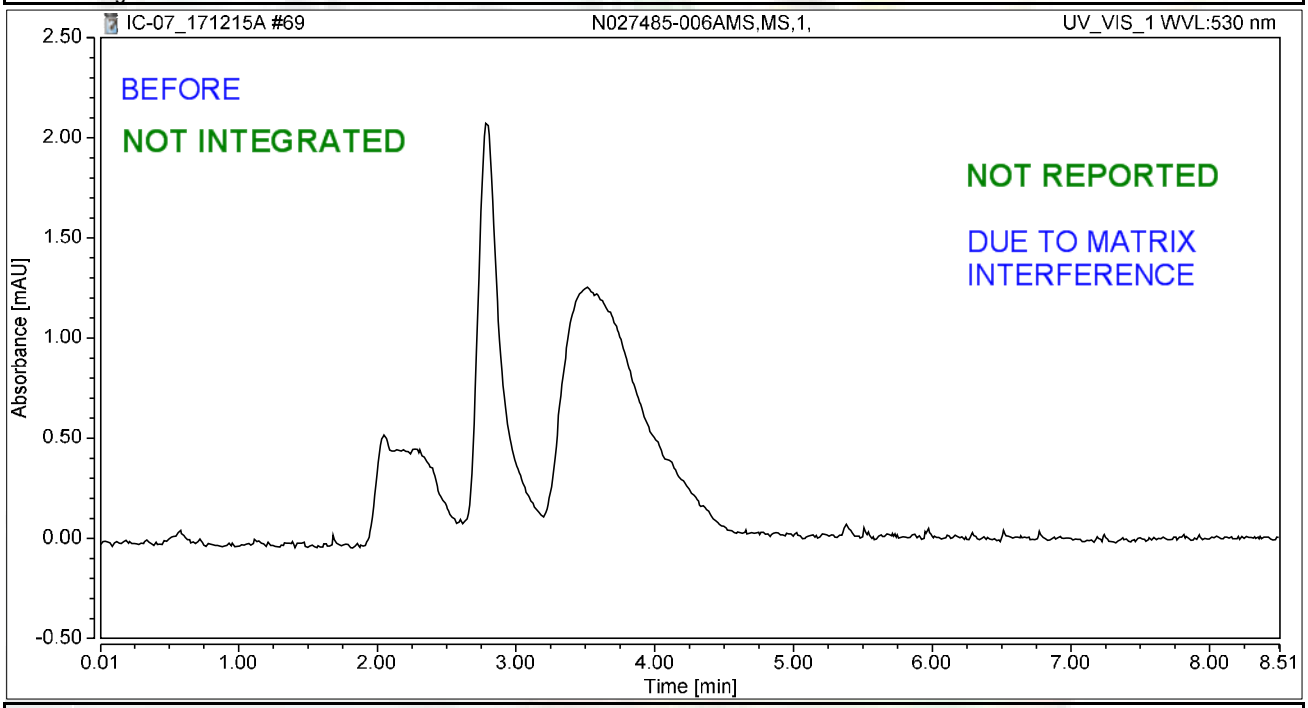
Chromatogram and Results

Injection Details

Injection Name:	**N027485-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 17:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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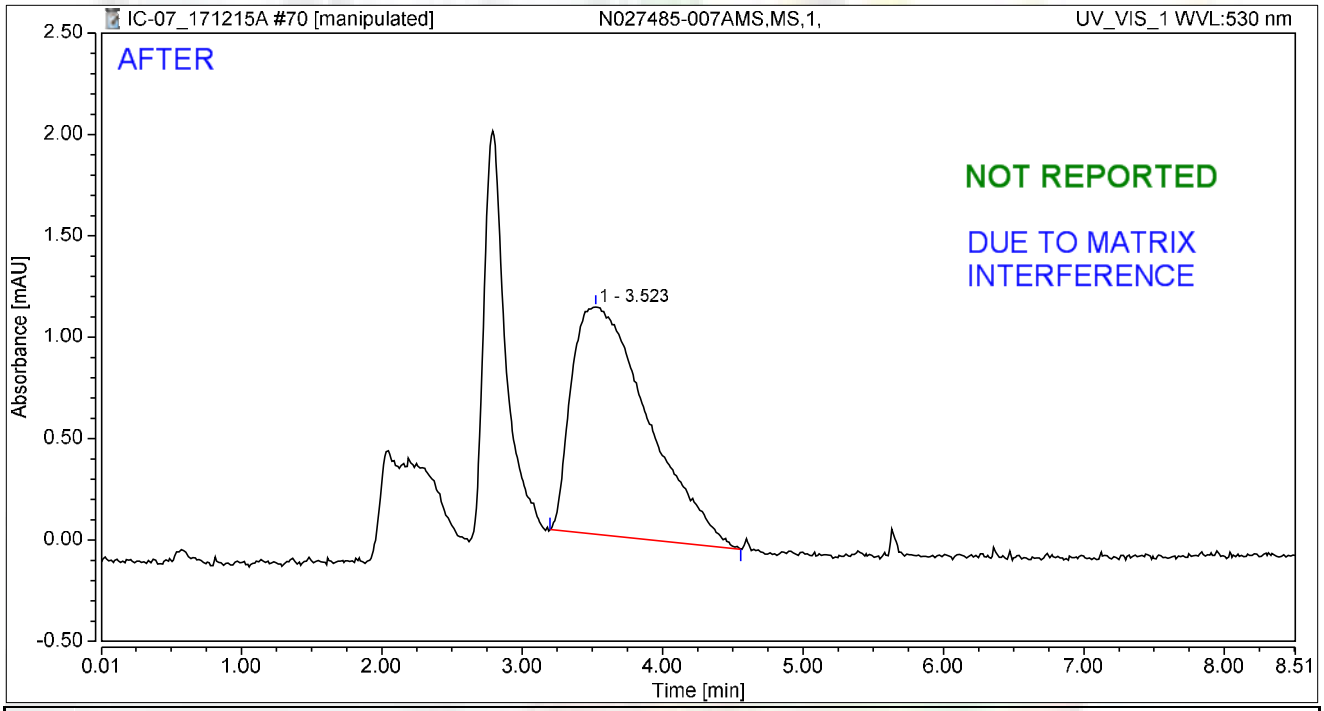
Chromatogram and Results

Injection Details

Injection Name:	**N027485-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 18:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.523	0.713	1.120	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.713**	**1.120**	**100.00**	**100.00**	

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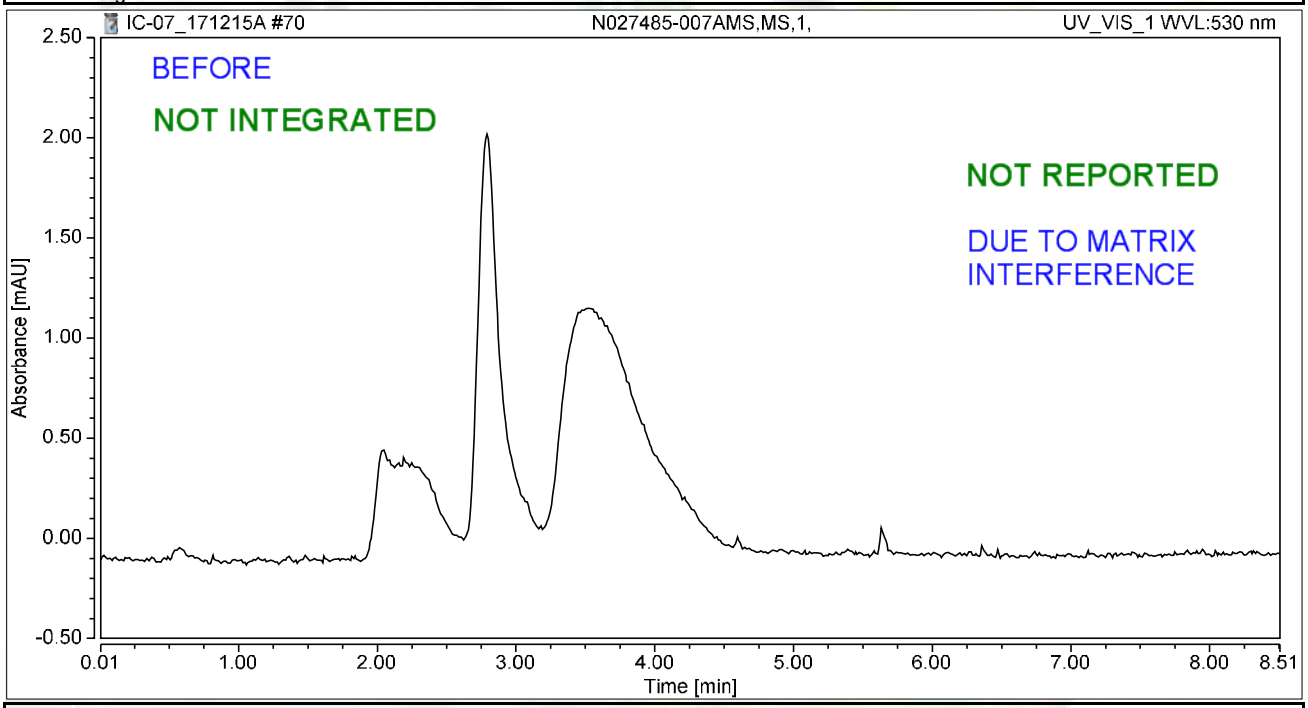
Chromatogram and Results

Injection Details

Injection Name:	**N027485-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 18:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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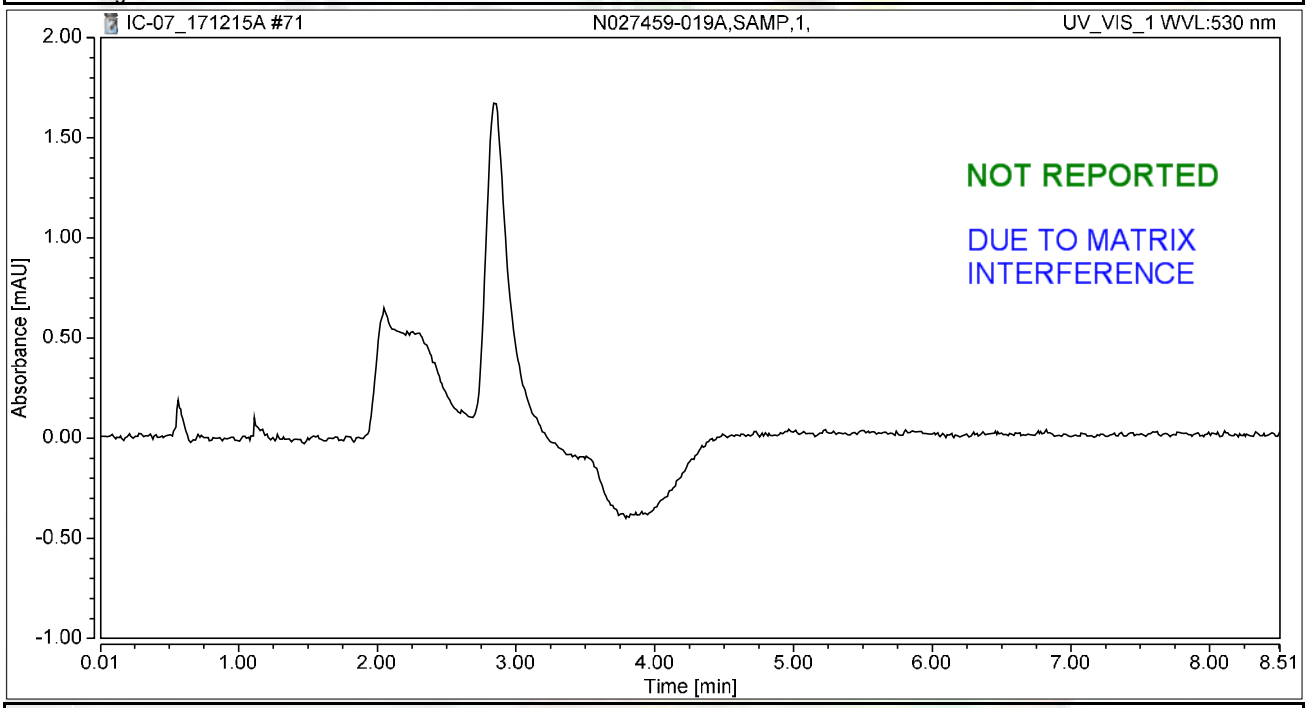
Chromatogram and Results

Injection Details

Injection Name:	**N027459-019A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 18:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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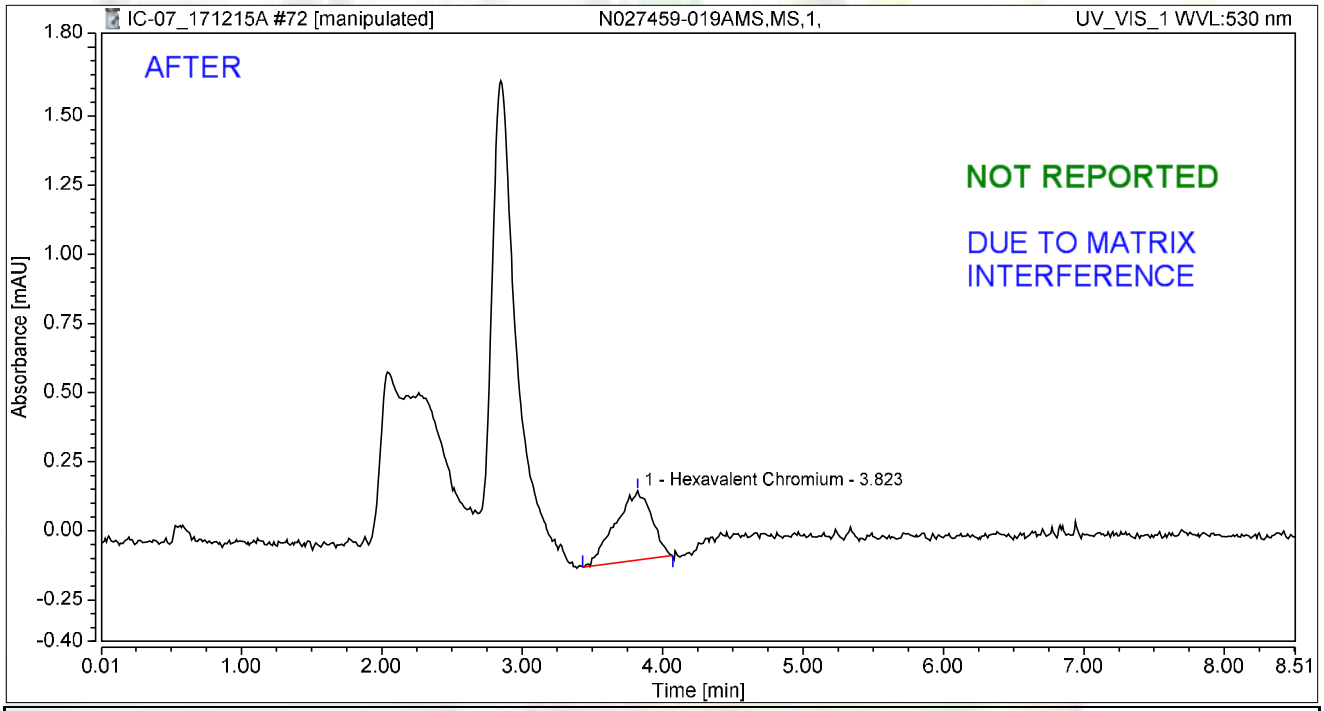
Chromatogram and Results

Injection Details

Injection Name:	**N027459-019AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 18:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.823	0.075	0.250	100.00	100.00	0.2972
Total:			**0.075**	**0.250**	**100.00**	**100.00**	

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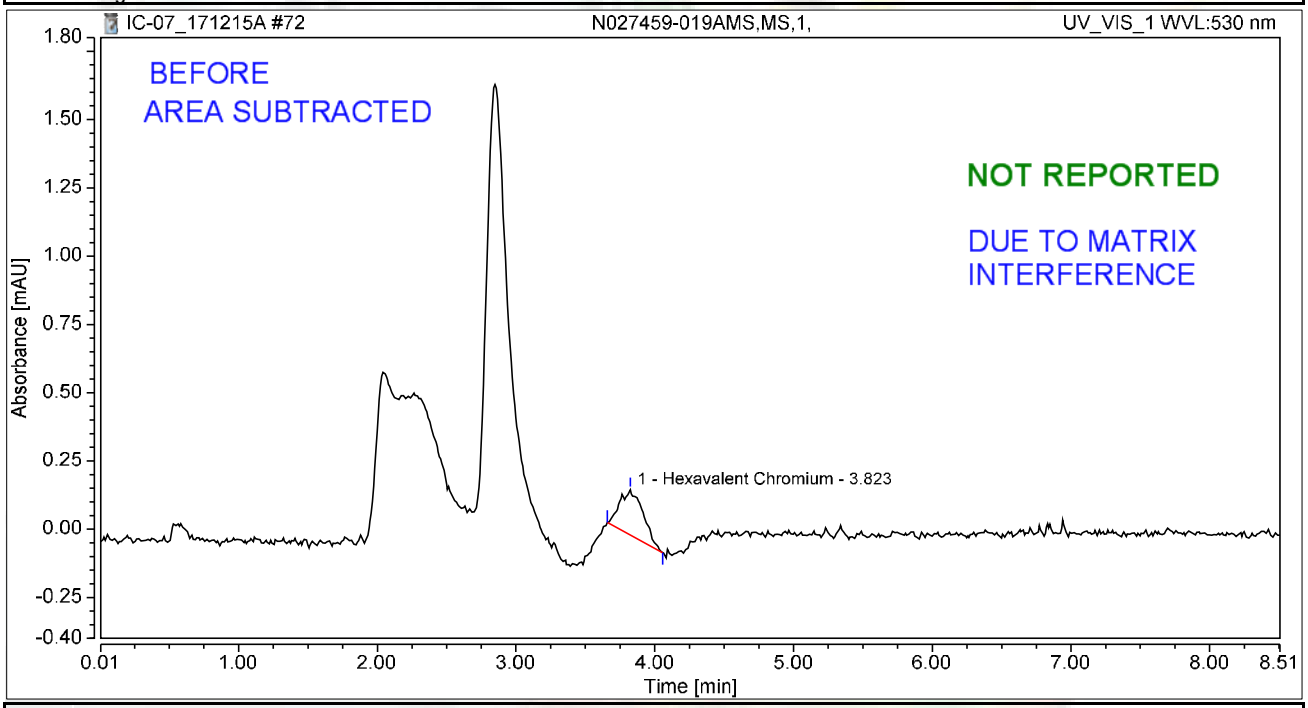
Chromatogram and Results

Injection Details

Injection Name:	**N027459-019AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 18:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.823	0.032	0.165	100.00	100.00	0.1293
Total:			**0.032**	**0.165**	**100.00**	**100.00**	

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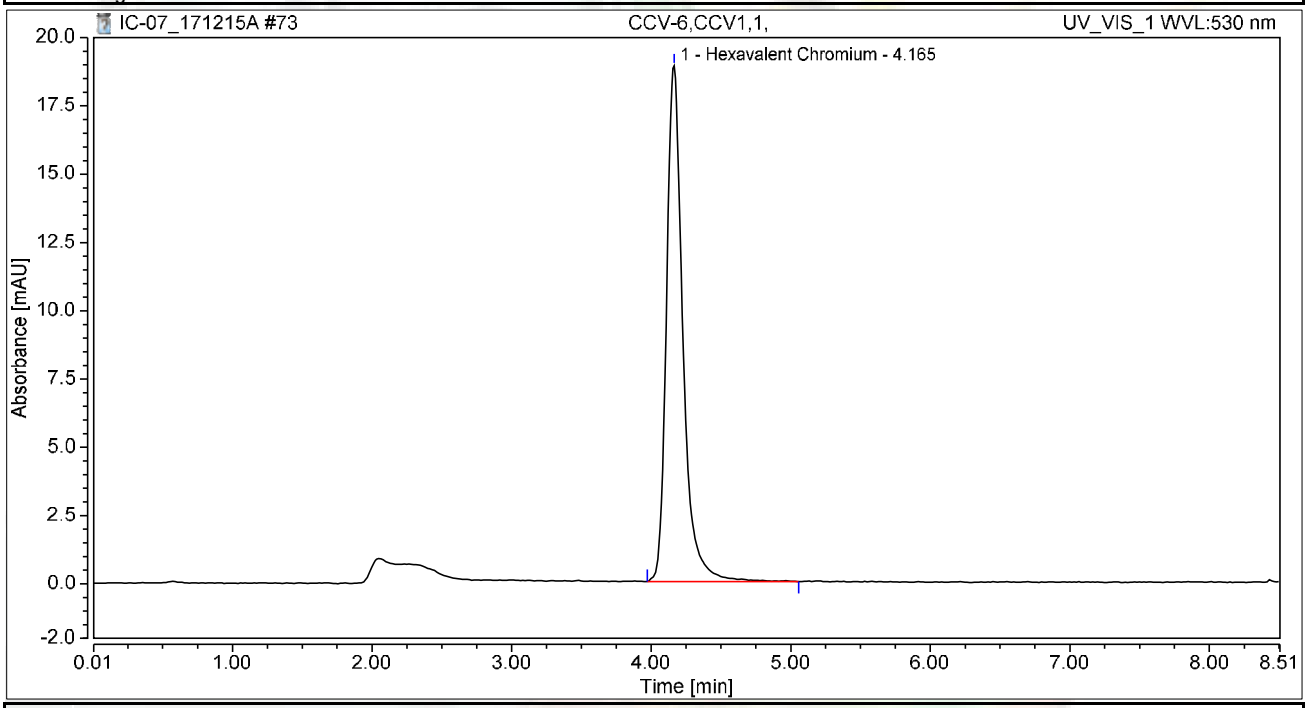
Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 18:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

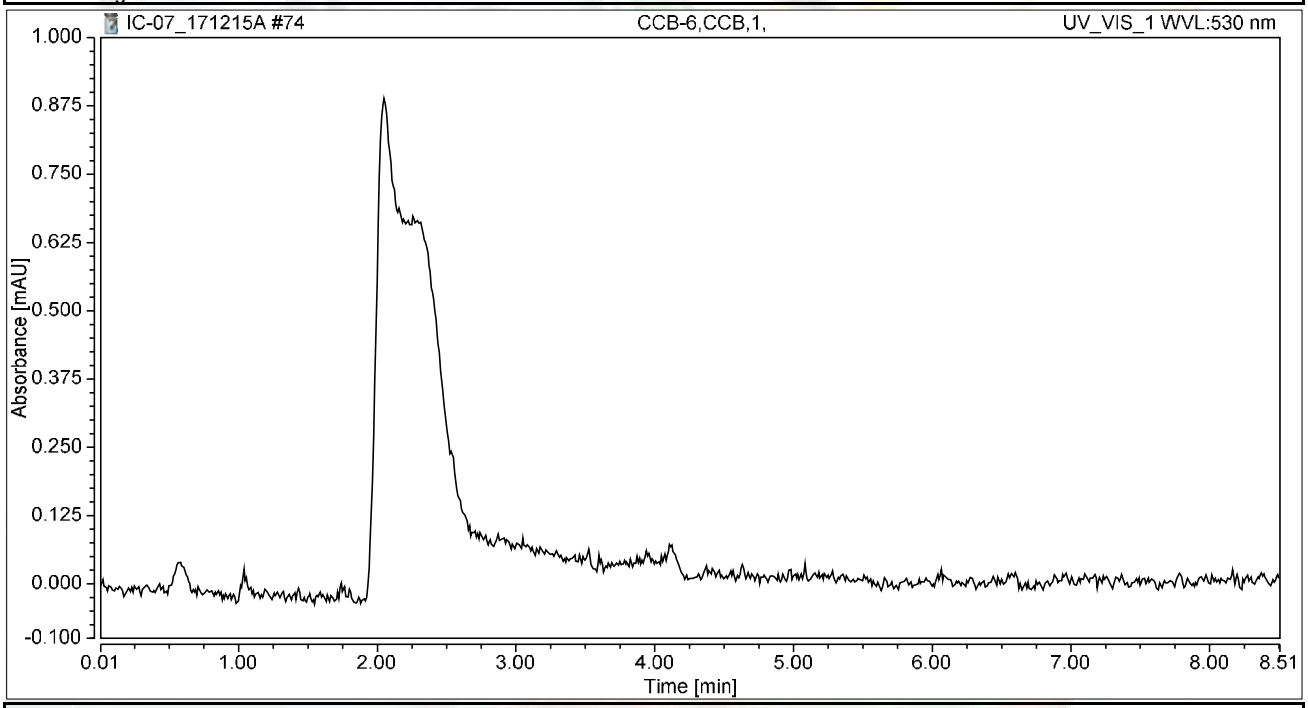
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.580	18.884	100.00	100.00	10.2748
Total:			**2.580**	**18.884**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 18:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

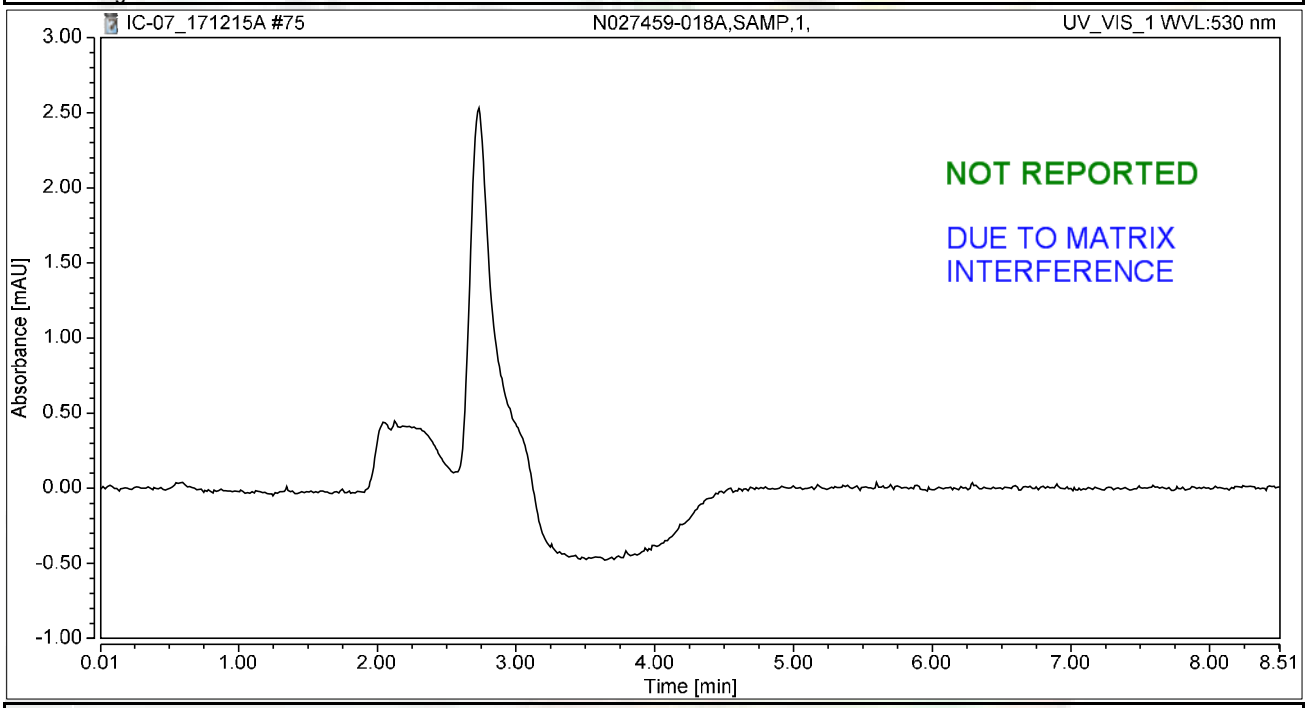
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-018A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 18:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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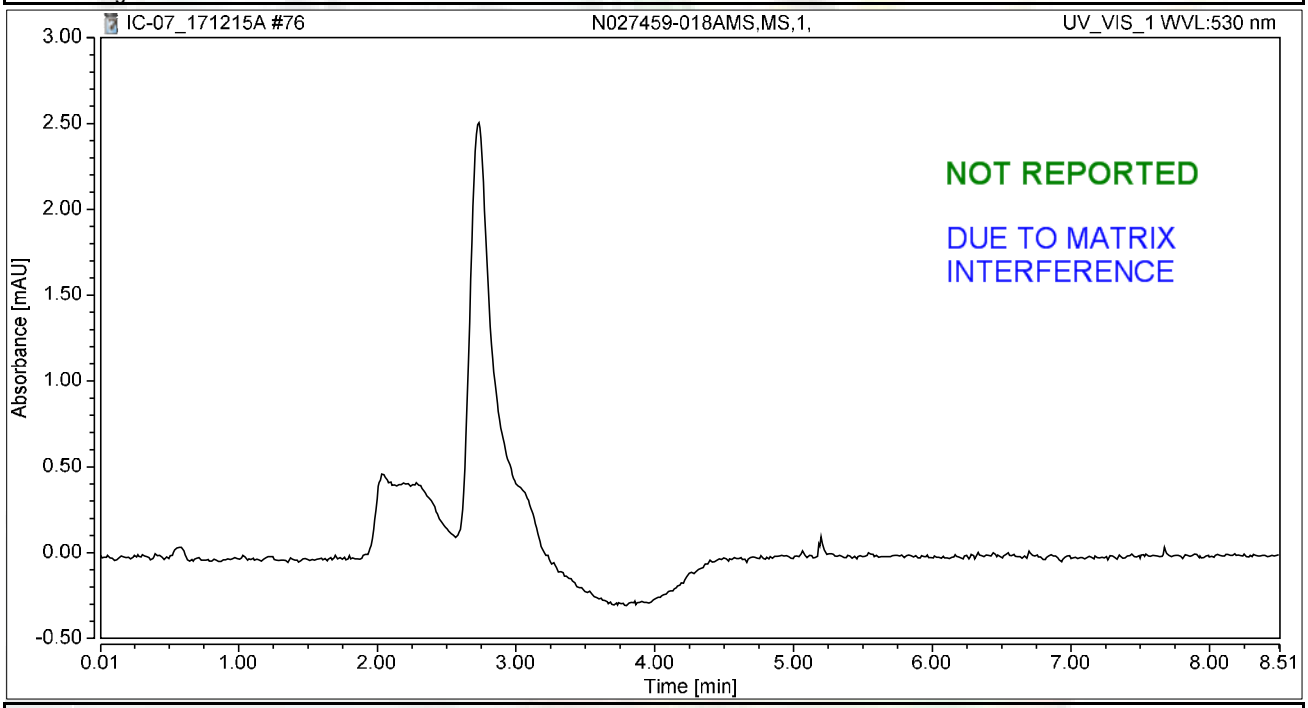
Chromatogram and Results

Injection Details

Injection Name:	**N027459-018AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 19:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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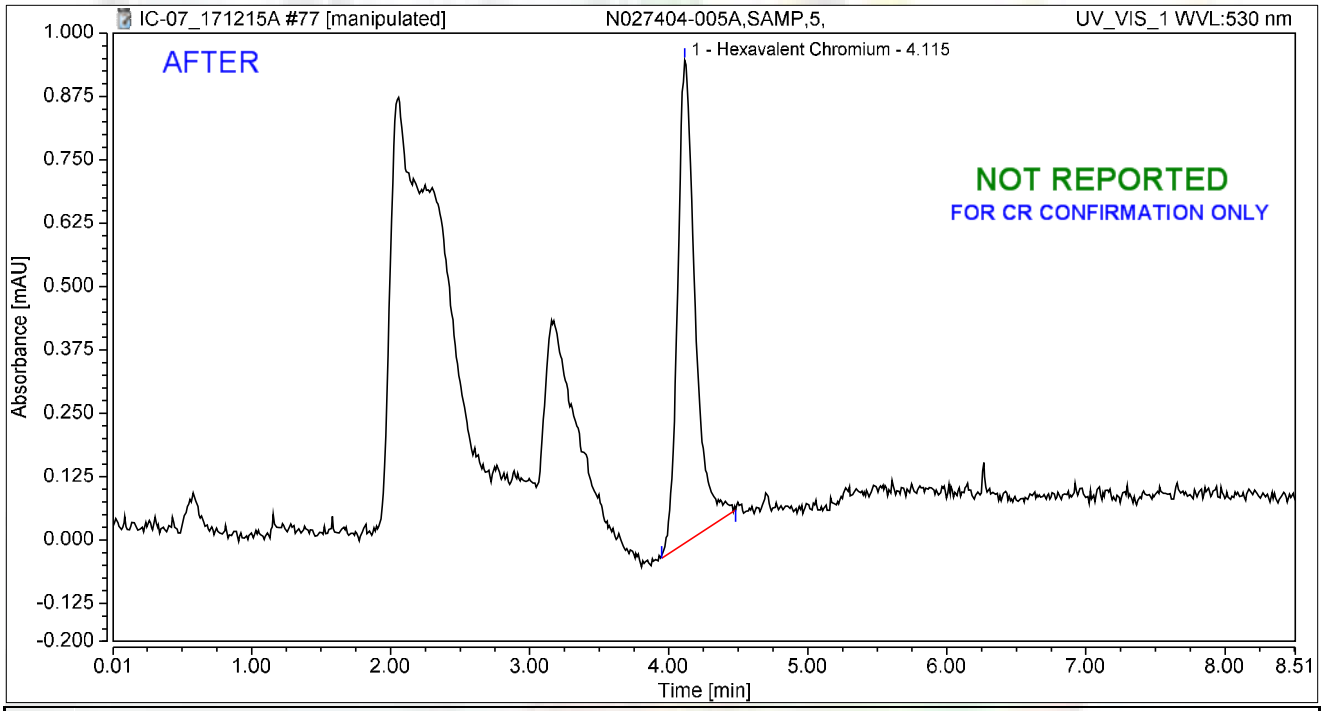
Chromatogram and Results

Injection Details

Injection Name:	**N027404-005A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 19:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.140	0.952	100.00	100.00	0.5558
Total:			**0.140**	**0.952**	**100.00**	**100.00**	

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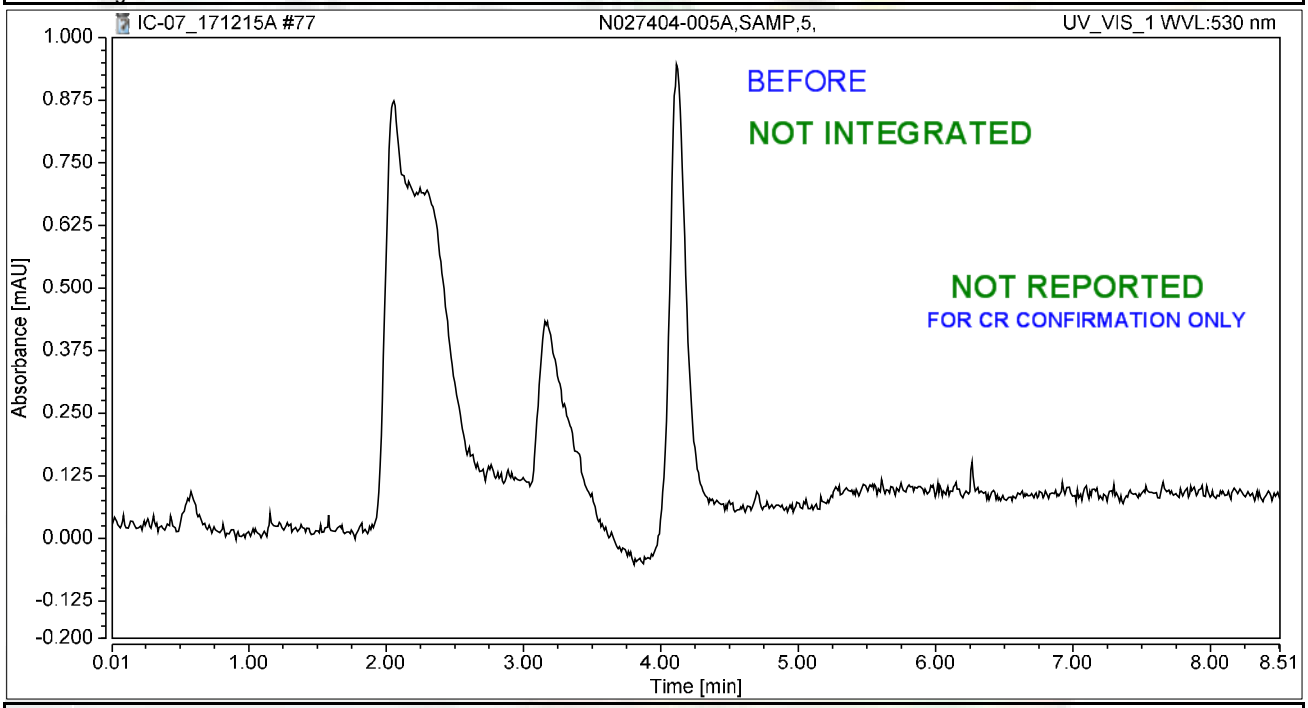
Chromatogram and Results

Injection Details

Injection Name:	**N027404-005A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 19:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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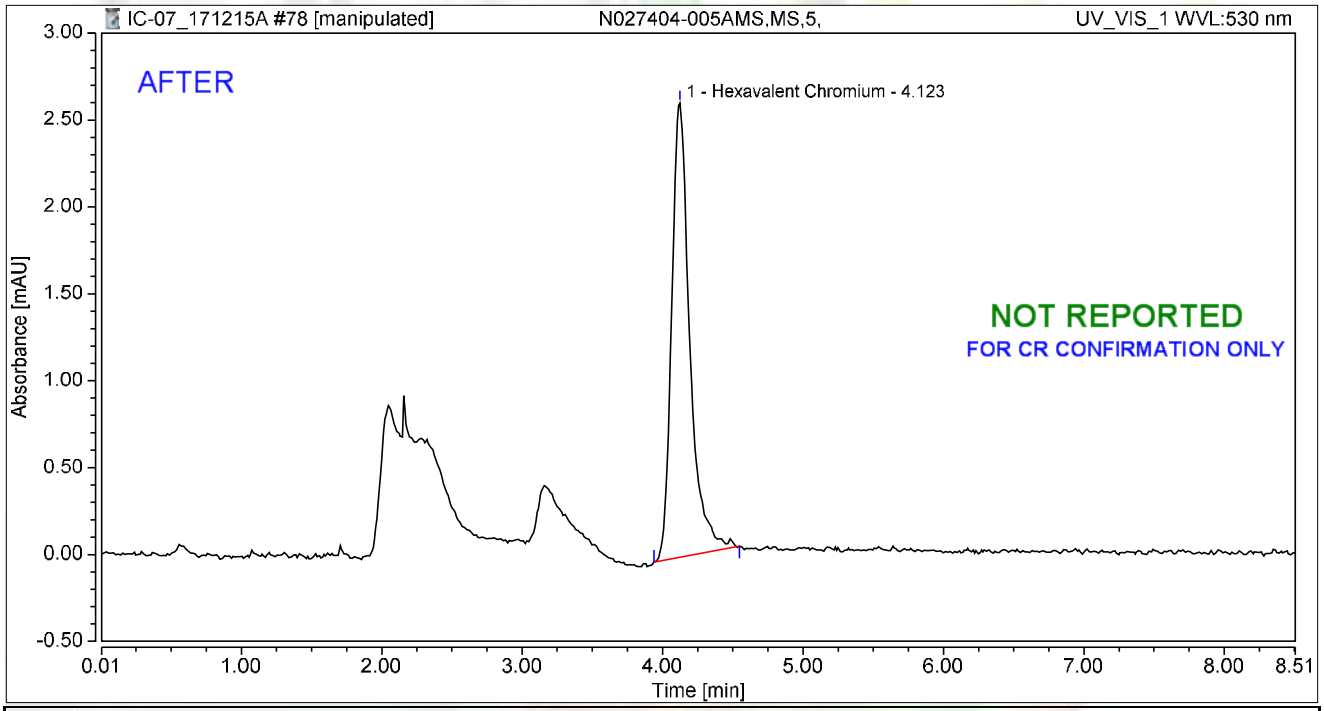
Chromatogram and Results

Injection Details

Injection Name:	**N027404-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 19:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.391	2.614	100.00	100.00	1.5570
Total:			**0.391**	**2.614**	**100.00**	**100.00**	

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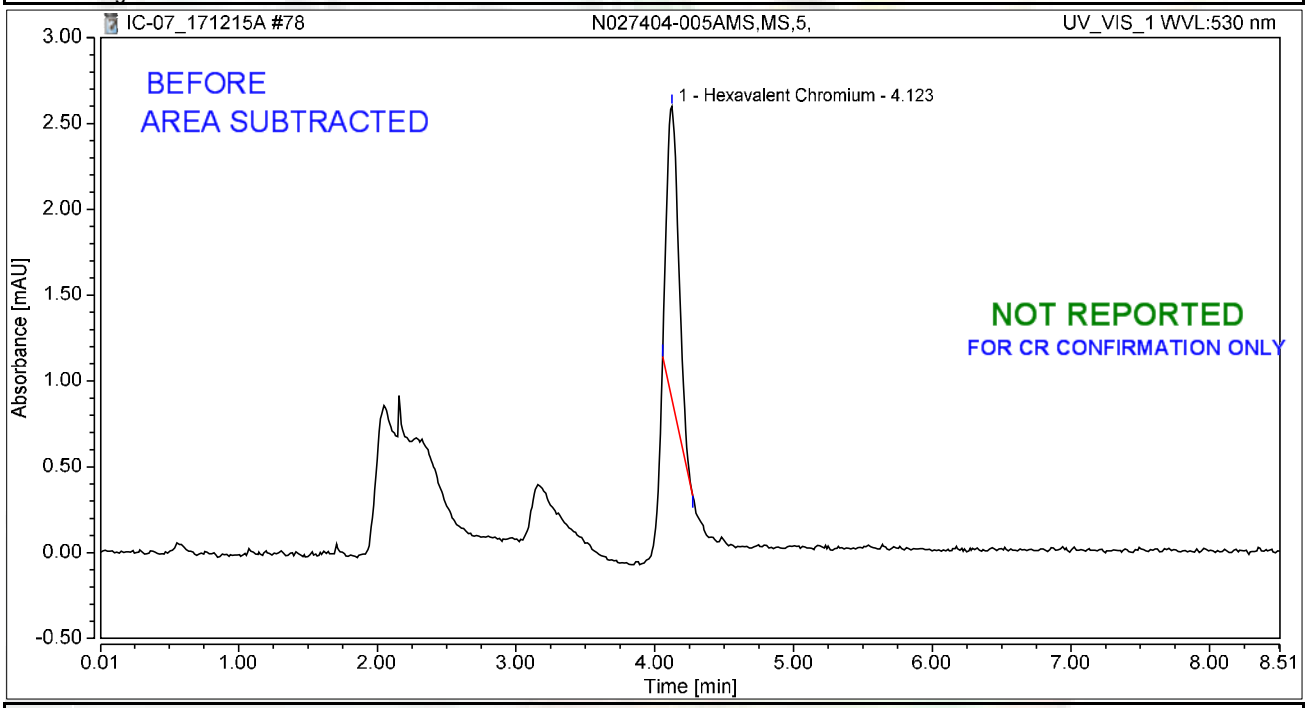
Chromatogram and Results

Injection Details

Injection Name:	**N027404-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 19:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.171	1.704	100.00	100.00	0.6824
Total:			**0.171**	**1.704**	**100.00**	**100.00**	

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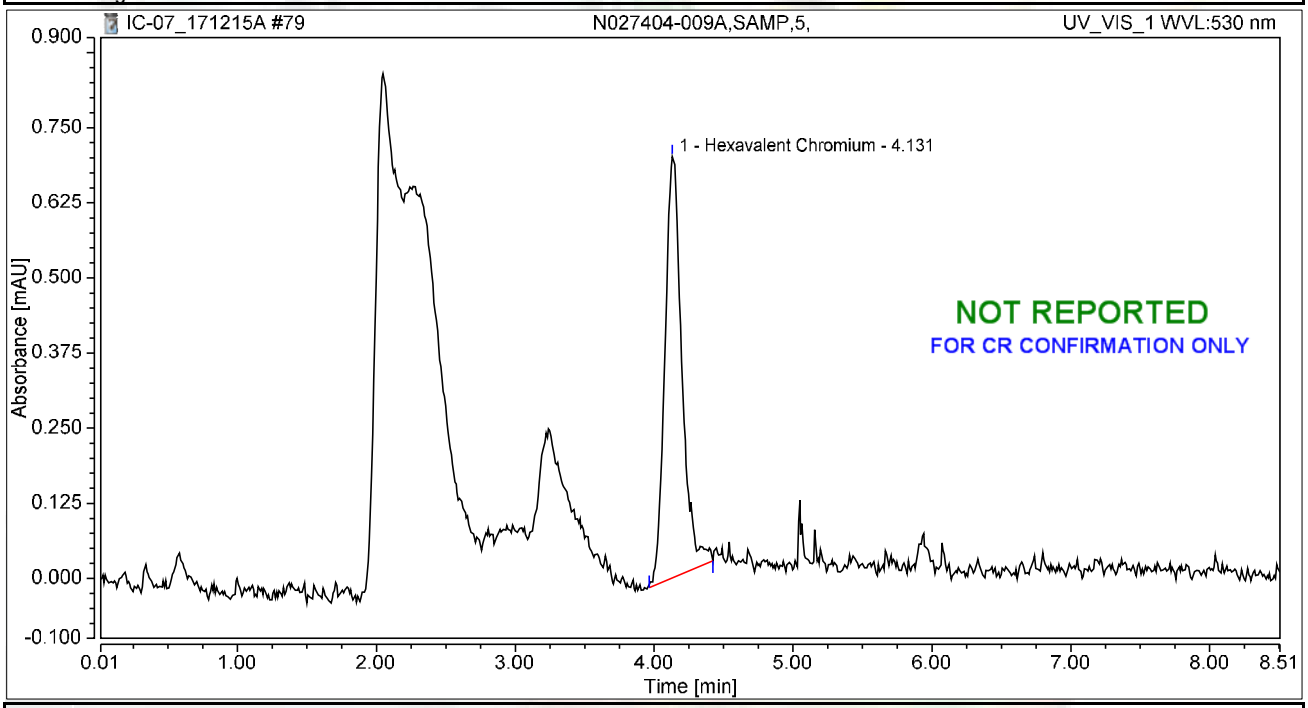
Chromatogram and Results

Injection Details

Injection Name:	**N027404-009A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 19:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.099	0.701	100.00	100.00	0.3954
Total:			**0.099**	**0.701**	**100.00**	**100.00**	

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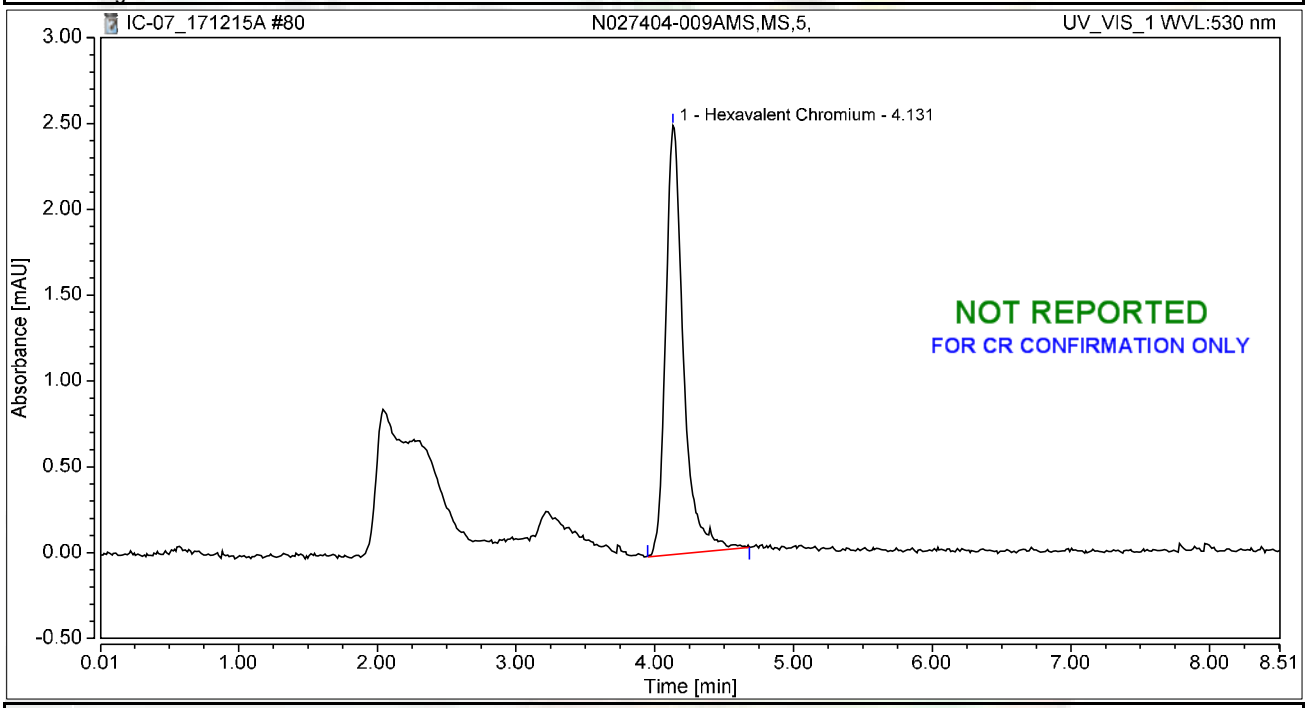
Chromatogram and Results

Injection Details

Injection Name:	**N027404-009AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 19:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.372	2.499	100.00	100.00	1.4826
Total:			**0.372**	**2.499**	**100.00**	**100.00**	

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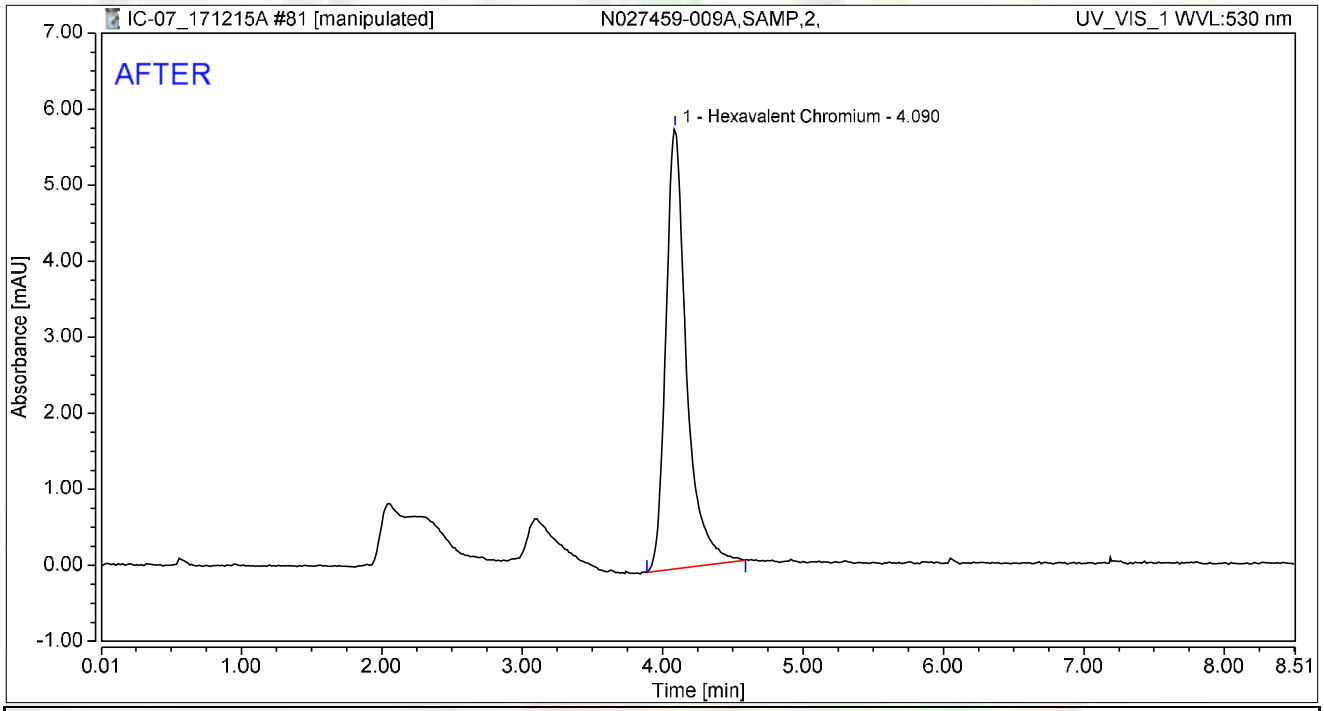
Chromatogram and Results

Injection Details

Injection Name:	**N027459-009A,SAMP,2,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 19:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.988	5.795	100.00	100.00	3.9364
Total:			**0.988**	**5.795**	**100.00**	**100.00**	

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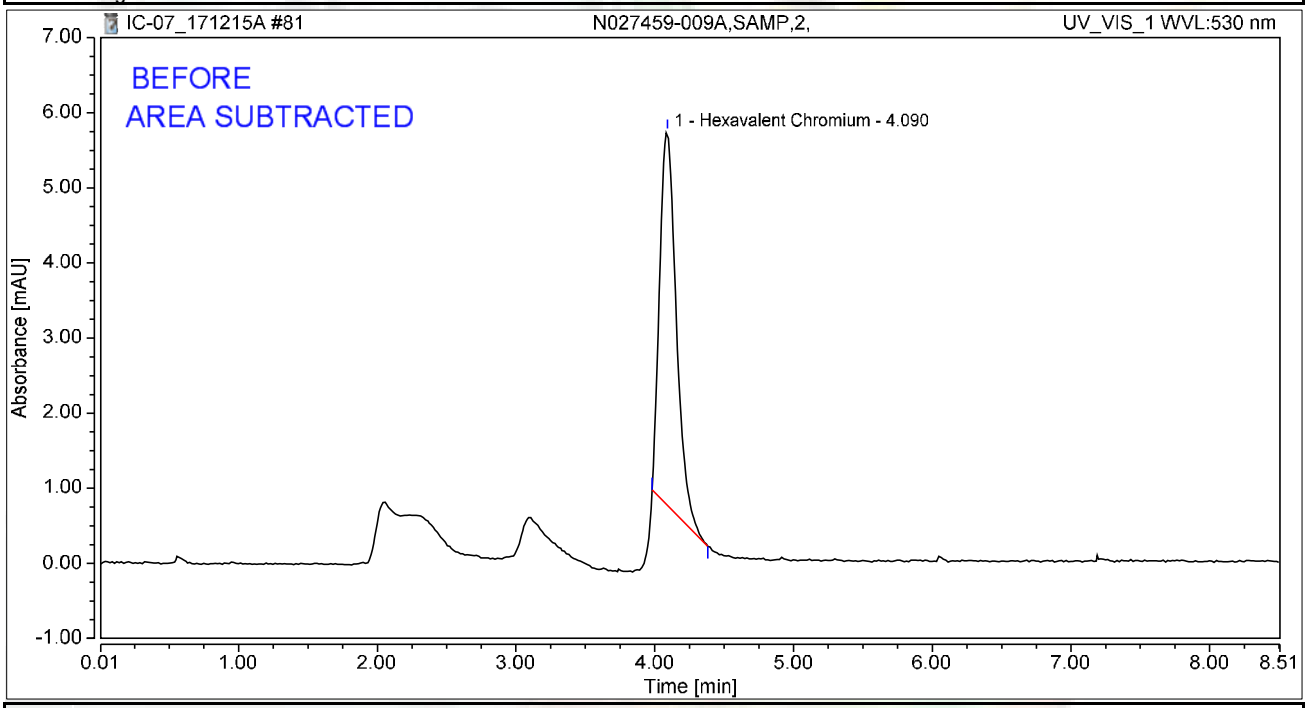
Chromatogram and Results

Injection Details

Injection Name:	**N027459-009A,SAMP,2,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 19:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.694	4.972	100.00	100.00	2.7649
Total:			**0.694**	**4.972**	**100.00**	**100.00**	

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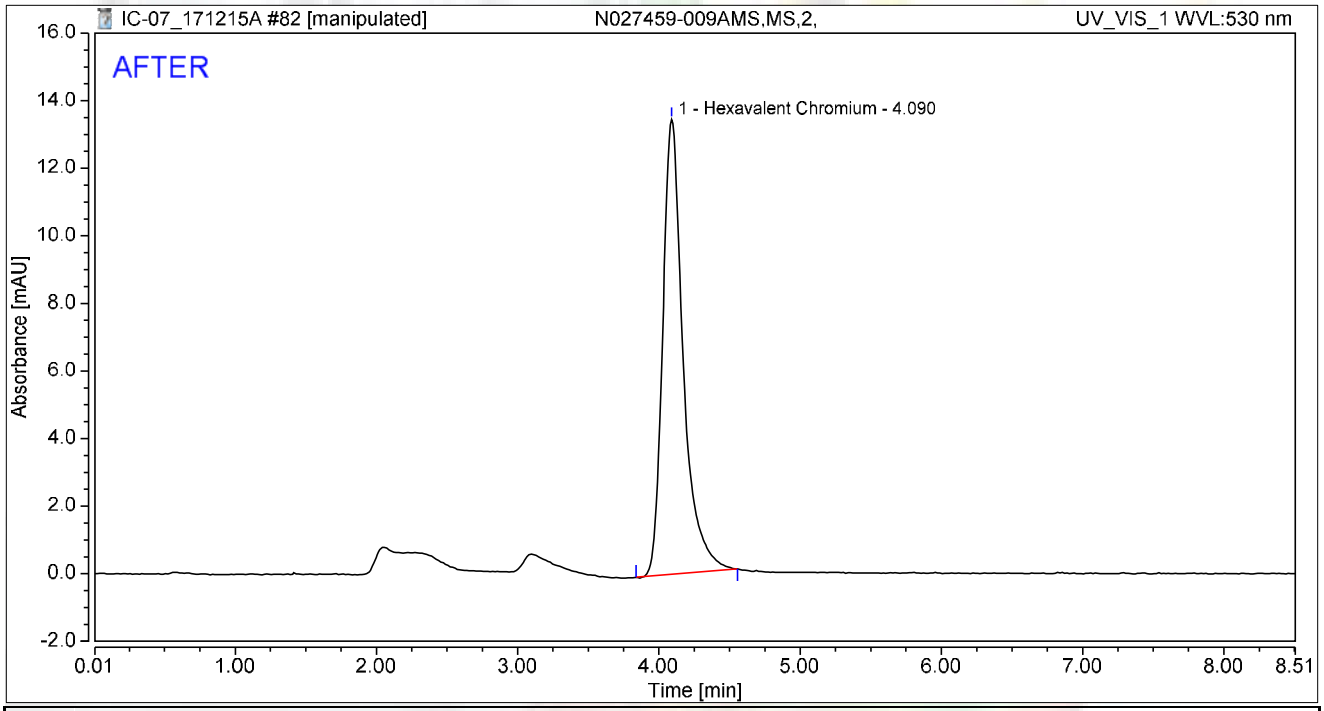
Chromatogram and Results

Injection Details

Injection Name:	**N027459-009AMS,MS,2,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 20:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	2.258	13.454	100.00	100.00	8.9934
Total:			**2.258**	**13.454**	**100.00**	**100.00**	

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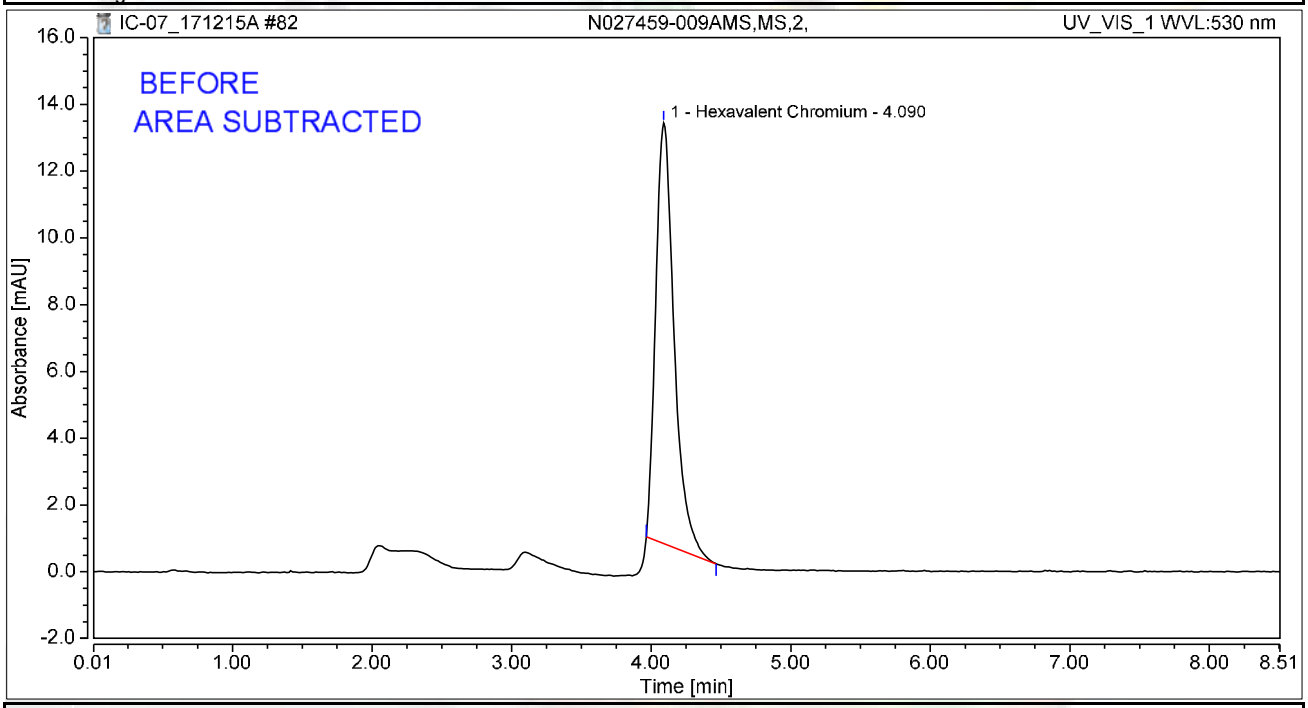
Chromatogram and Results

Injection Details

Injection Name:	**N027459-009AMS,MS,2,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 20:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	1.925	12.592	100.00	100.00	7.6658
Total:			**1.925**	**12.592**	**100.00**	**100.00**	

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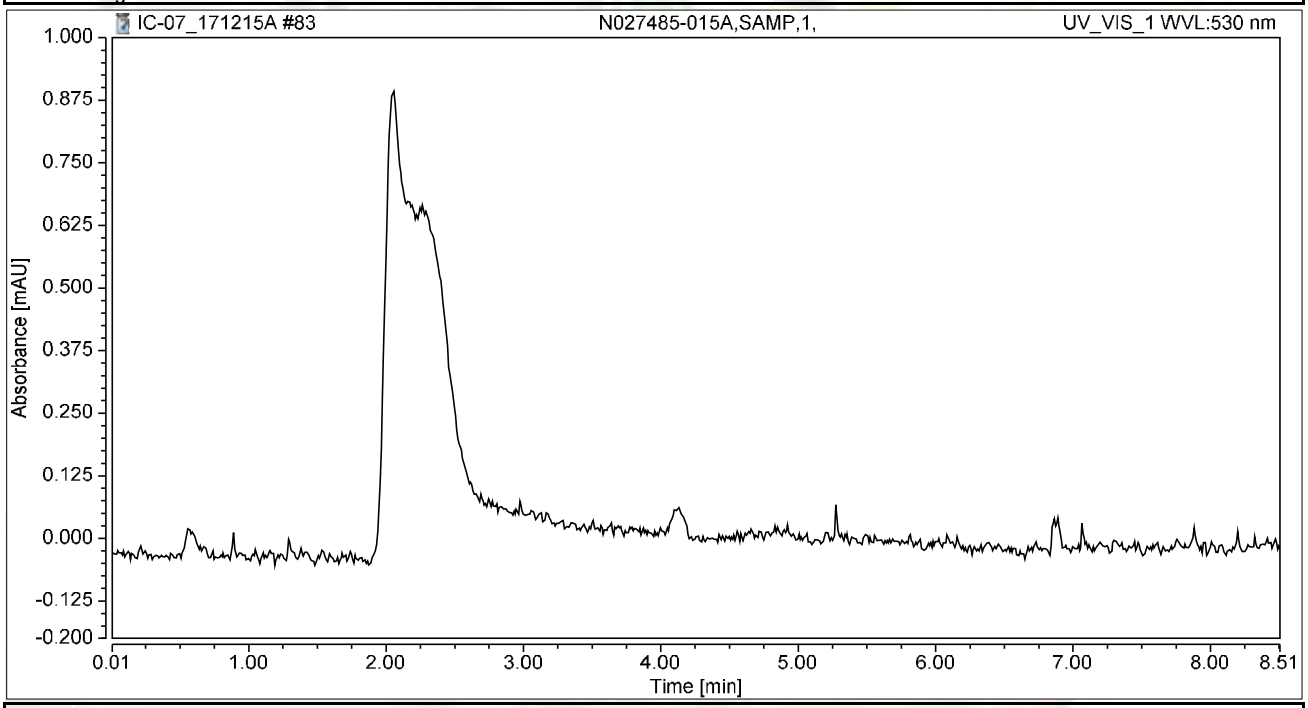
Chromatogram and Results

Injection Details

Injection Name:	**N027485-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 20:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

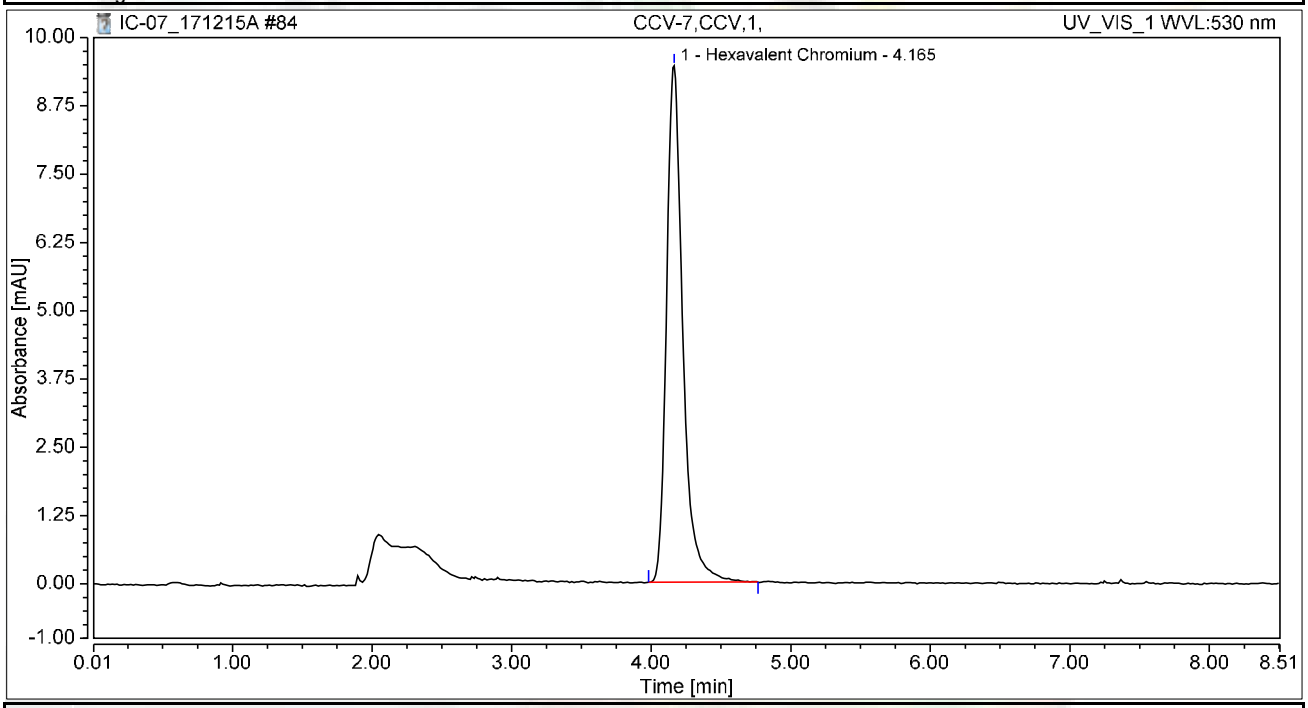
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 20:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

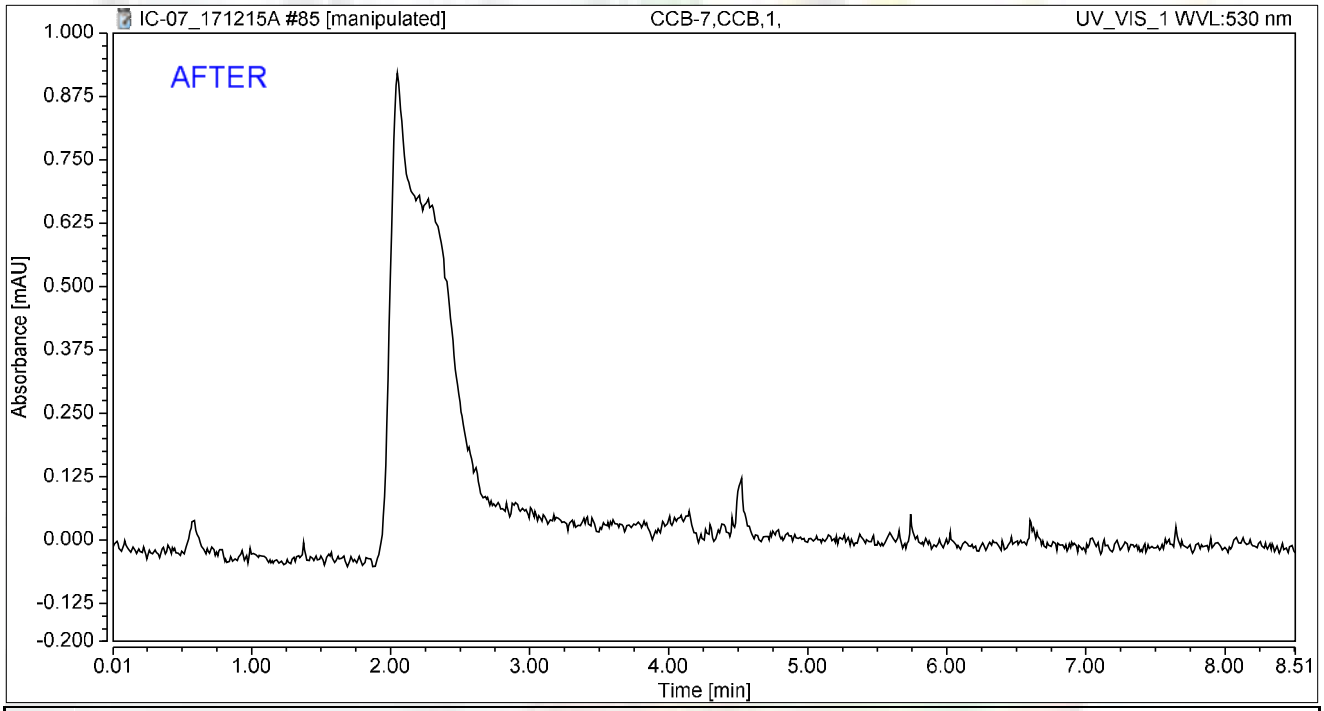
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.280	9.452	100.00	100.00	5.0989
Total:			**1.280**	**9.452**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 20:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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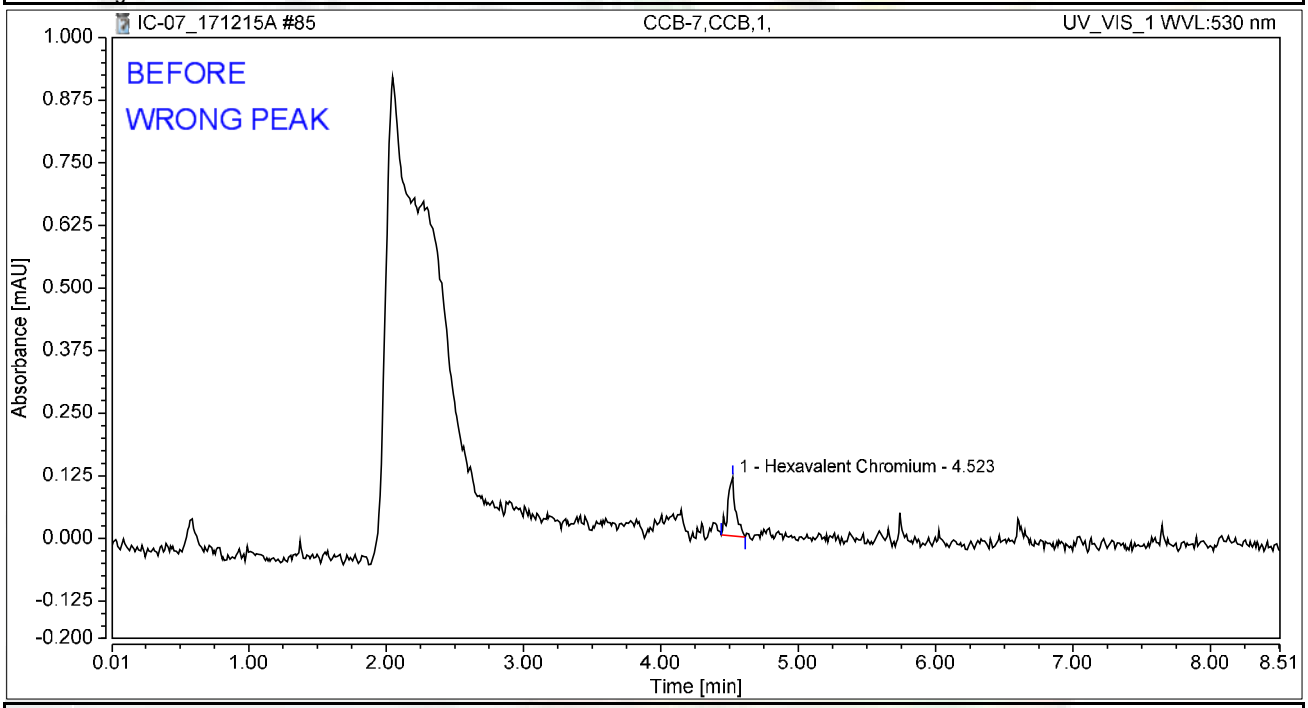
Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 20:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.523	0.008	0.117	100.00	100.00	0.0308
Total:			**0.008**	**0.117**	**100.00**	**100.00**	

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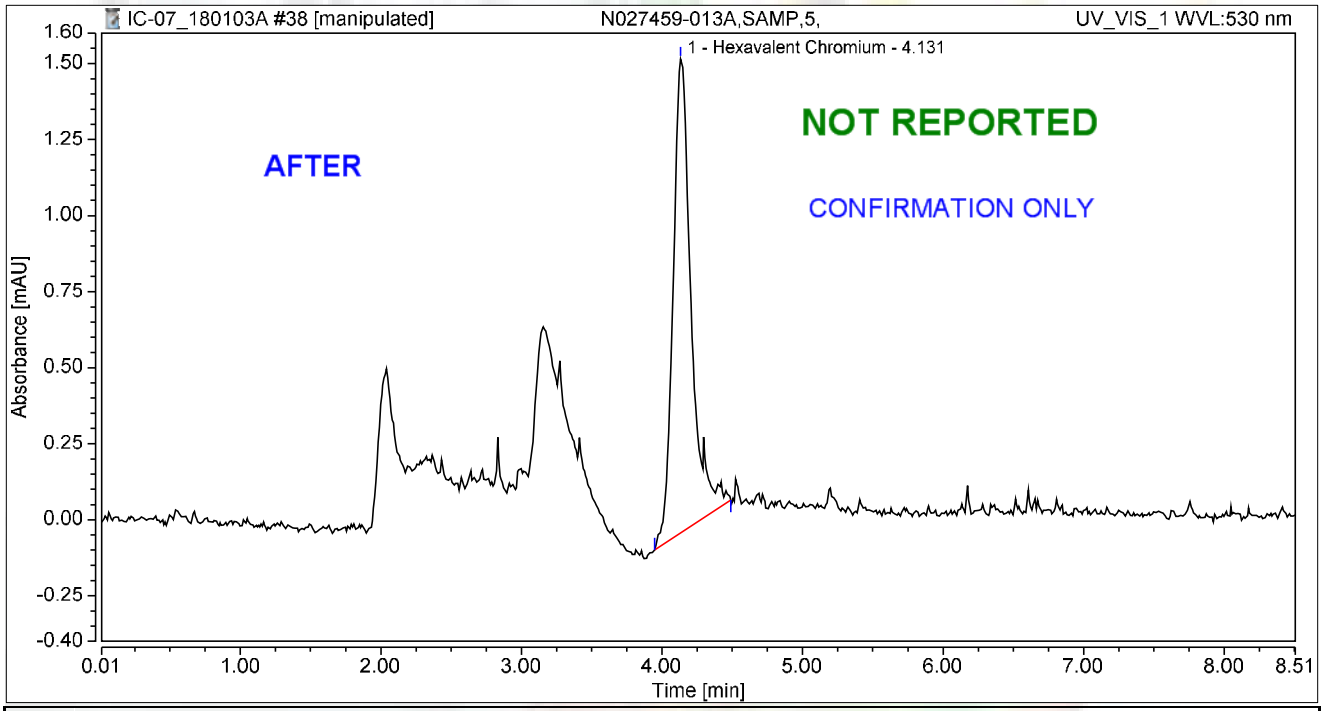
Chromatogram and Results

Injection Details

Injection Name:	**N027459-013A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Jan/18 16:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.233	1.559	100.00	100.00	0.9120
Total:			**0.233**	**1.559**	**100.00**	**100.00**	

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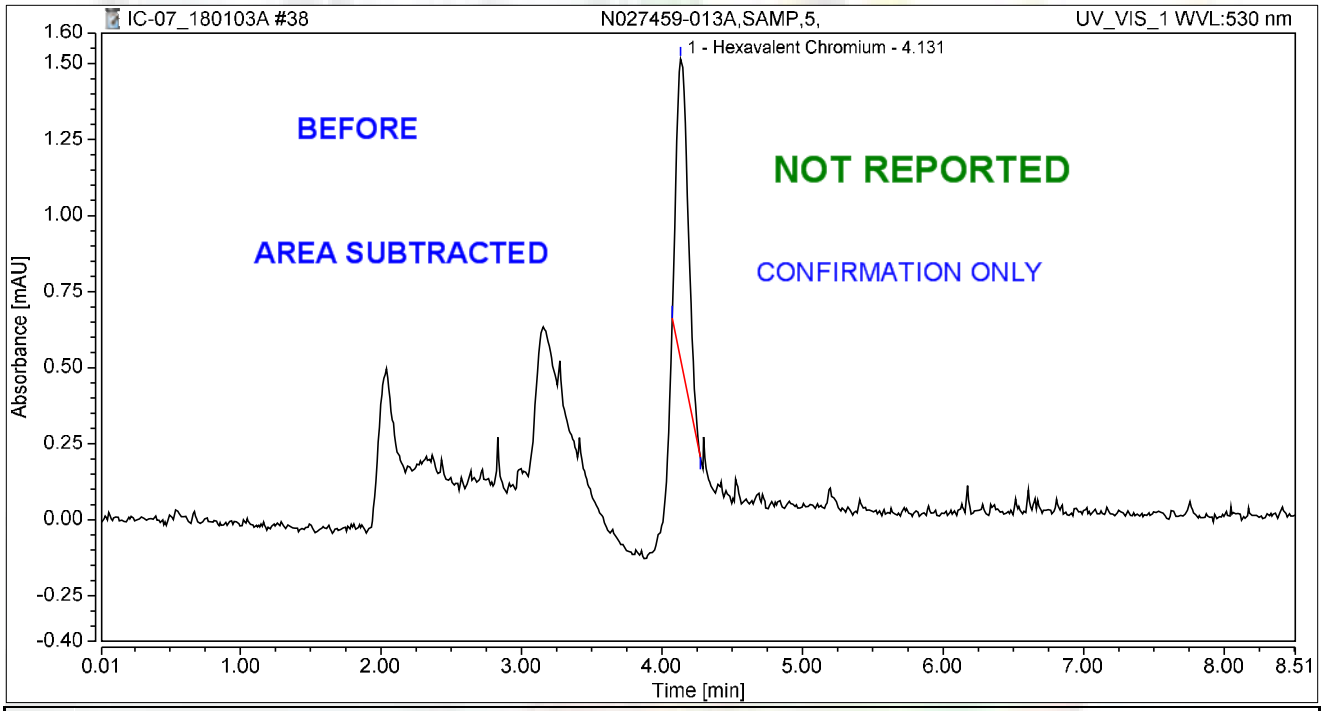
Chromatogram and Results

Injection Details

Injection Name:	**N027459-013A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Jan/18 16:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.097	0.985	100.00	100.00	0.3796
Total:			**0.097**	**0.985**	**100.00**	**100.00**	

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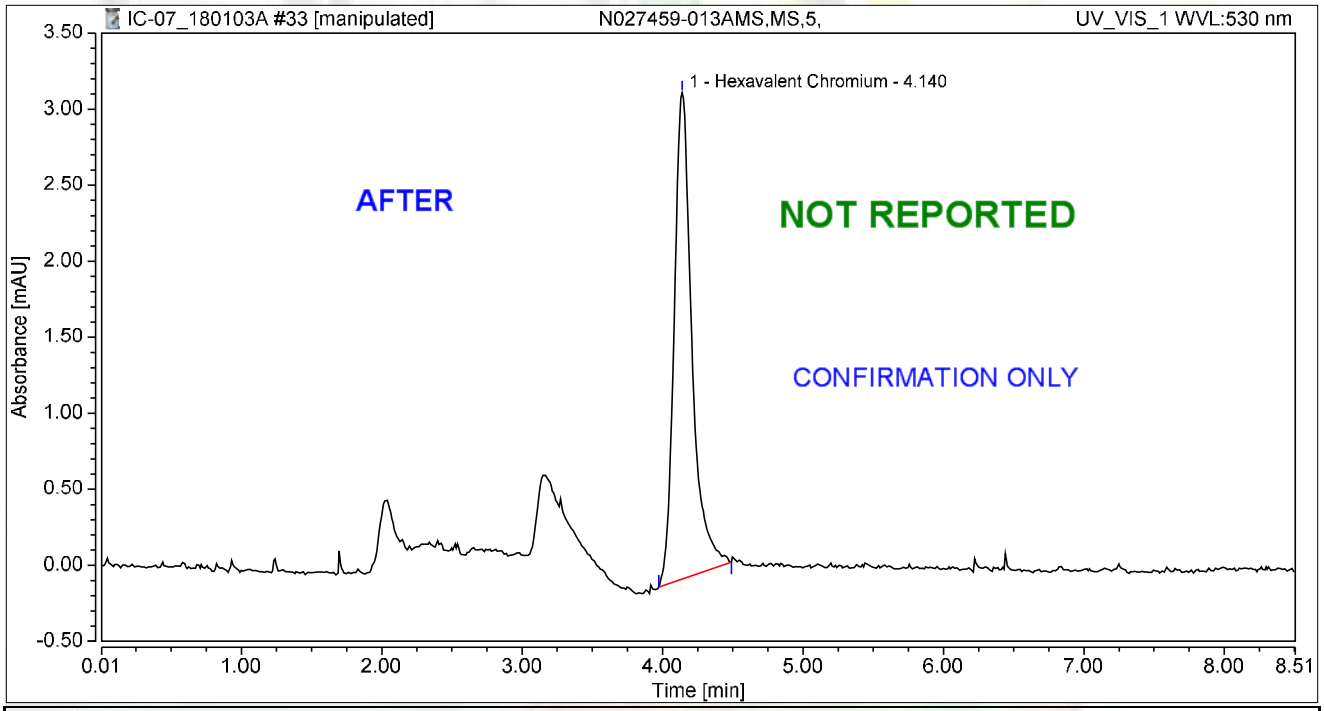
Chromatogram and Results

Injection Details

Injection Name:	**N027459-013AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Jan/18 15:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.470	3.198	100.00	100.00	1.8385
Total:			**0.470**	**3.198**	**100.00**	**100.00**	

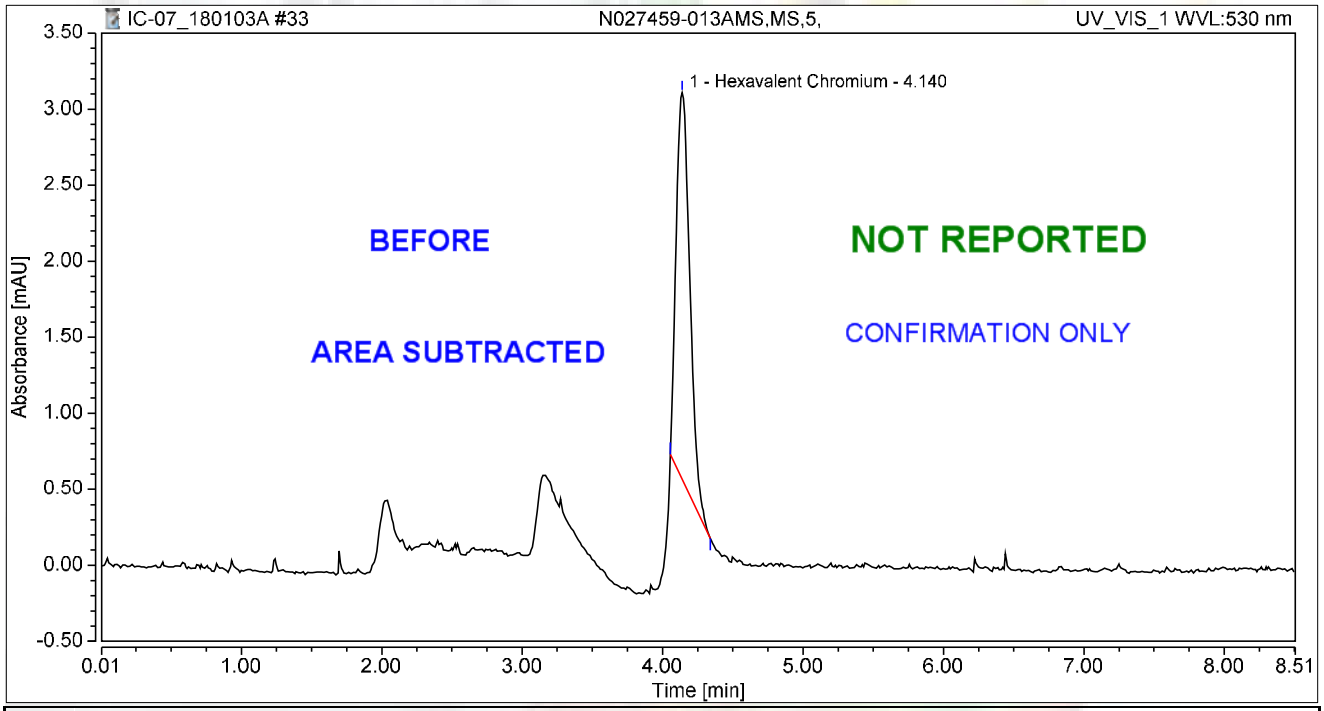
rba 1/3/2017

Chromatogram and Results

Injection Details

Injection Name:	**N027459-013AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Jan/18 15:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.287	2.541	100.00	100.00	1.1207
Total:			**0.287**	**2.541**	**100.00**	**100.00**	

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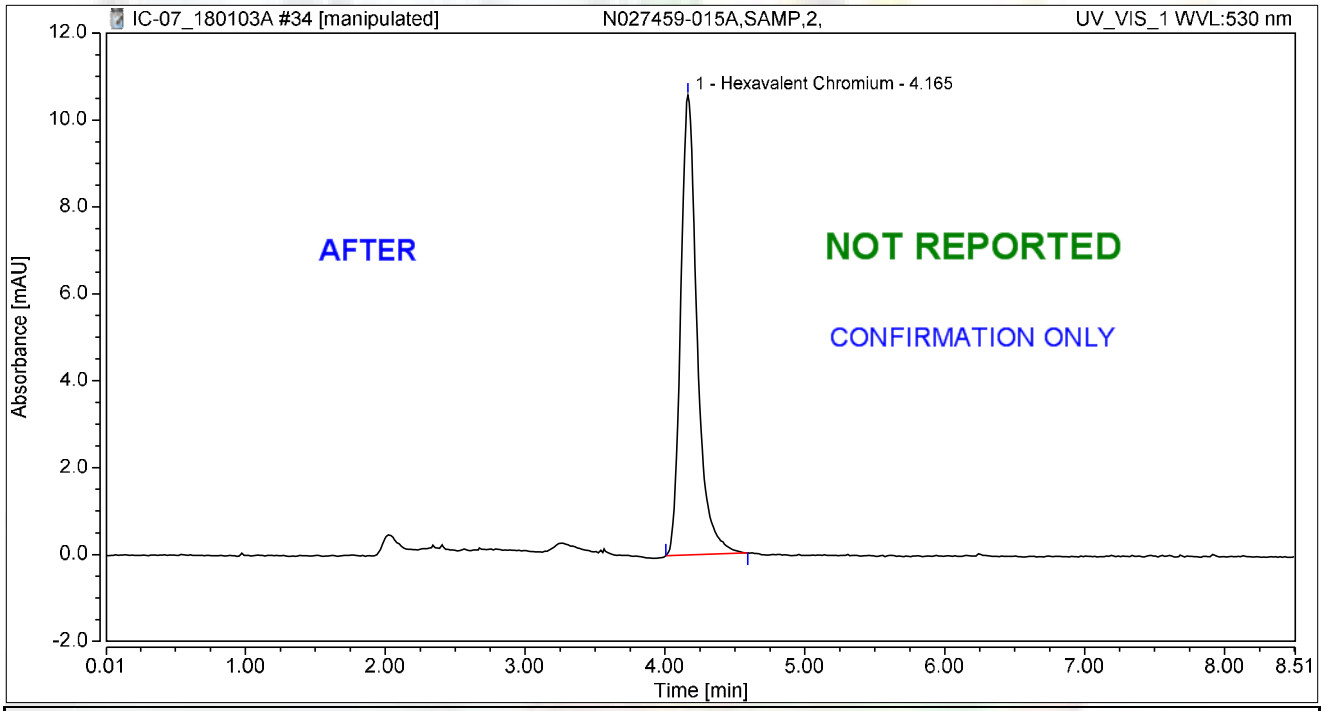
Chromatogram and Results

Injection Details

Injection Name:	**N027459-015A,SAMP,2,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Jan/18 15:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.436	10.582	100.00	100.00	5.6167
Total:			**1.436**	**10.582**	**100.00**	**100.00**	

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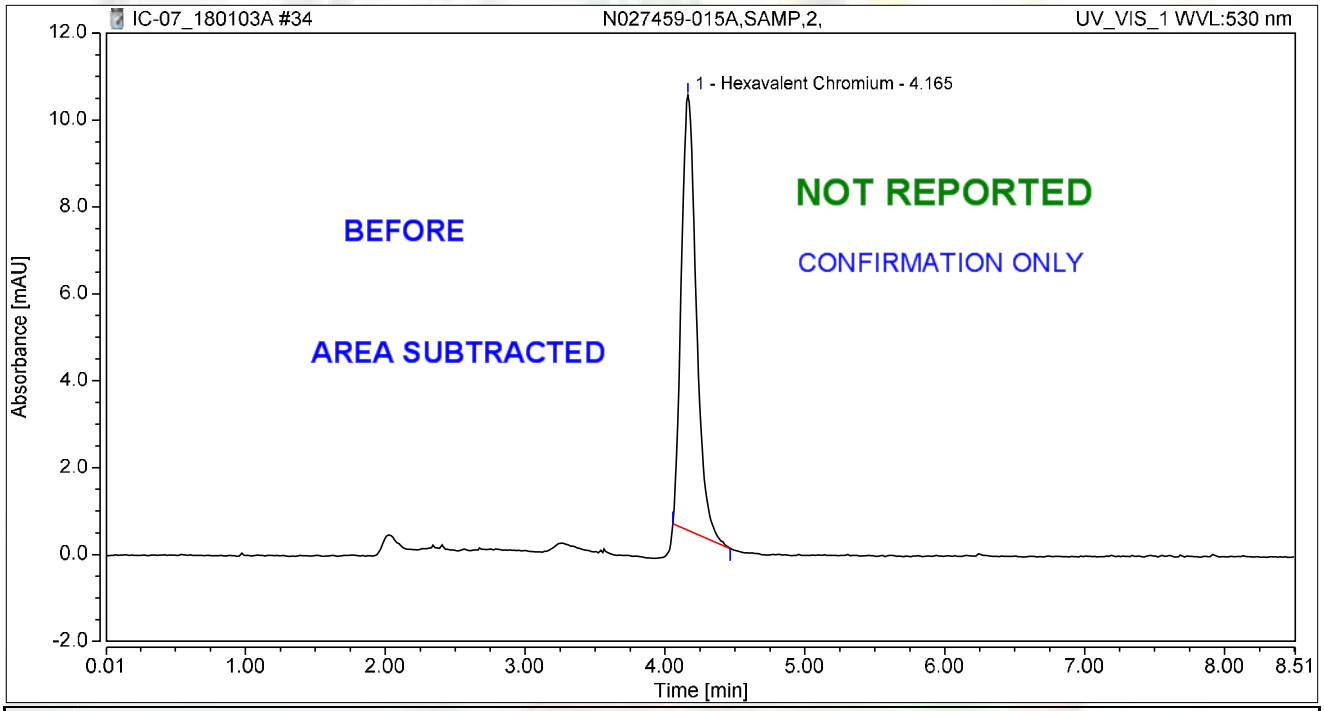
Chromatogram and Results

Injection Details

Injection Name:	**N027459-015A,SAMP,2,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Jan/18 15:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.247	10.012	100.00	100.00	4.8753
Total:			**1.247**	**10.012**	**100.00**	**100.00**	

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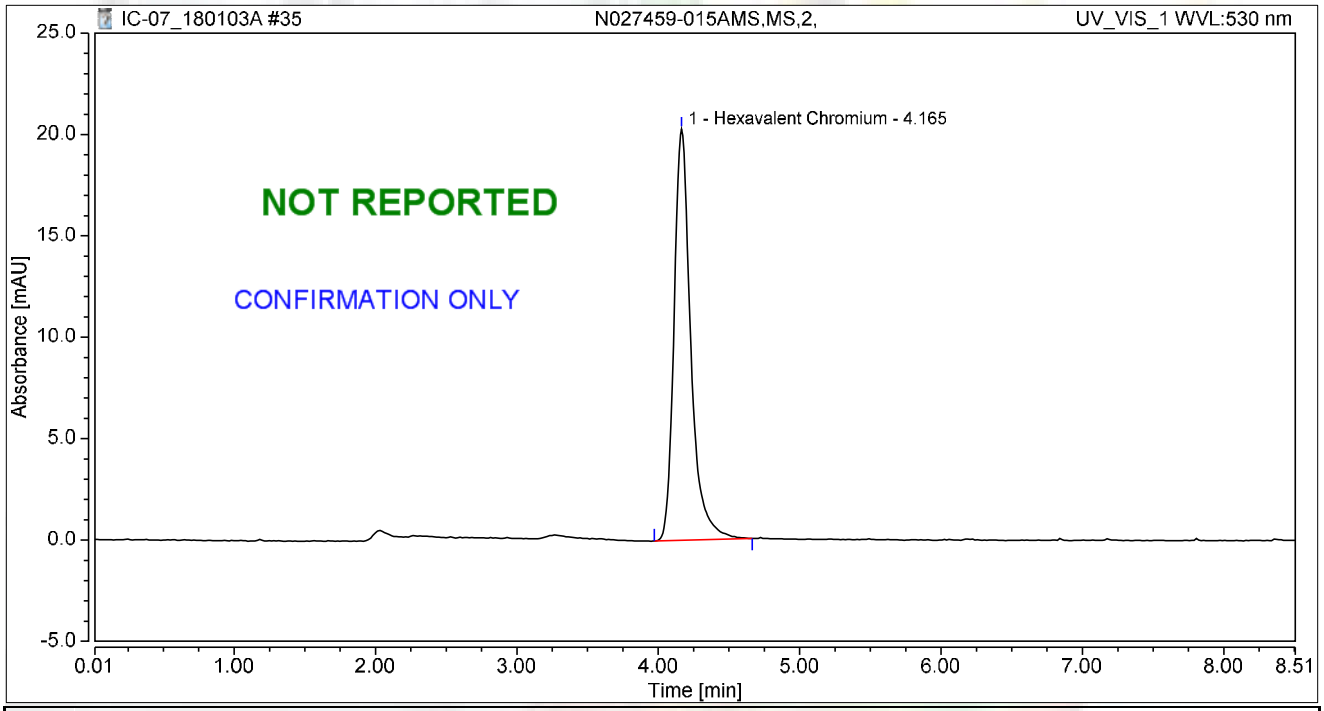
Chromatogram and Results

Injection Details

Injection Name:	**N027459-015AMS,MS,2,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Jan/18 15:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.784	20.274	100.00	100.00	10.8865
Total:			**2.784**	**20.274**	**100.00**	**100.00**	

rba 1/3/2017

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120816/R120856 **Analyst:** LSR

ASSET #: N027459 **Date Analyzed:** 12/14/2017

Method: EPA 2320

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X			X		
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 12/22/2017

2nd Level Reviewer RLB 01/03/2018 Date:

SAMPLE CALCULATION

Sample ID: **N027459-001E @ pH 7.60**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (12.45 mL)

= **0.02008 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (3.90) (0.02008 N) (1) * 1000

= 78.3120 mg**/L**

Reporting results in two significant figures,

= **78 mg/L** as CaCO3

Silvia Ramit 12/22/2017

01/03/2018

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02008 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (3.90 mL) (0.02008) (1) * 1000

= 78.3120 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 78.3120 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **78 mg/L**

Sikha Ramit 12/22/2017

RLB 01/03/2018

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.69	50	0.00	0.050	MBLK
LCS-1	8.77	50	0.10	4.90	LCS
N027430-002C	8.00	50	0.00	1.90	SAMP
N027430-004C	7.77	50	0.00	22.70	SAMP
N027430-006C	7.68	50	0.00	10.60	SAMP
N027430-008C	7.61	50	0.00	13.70	SAMP
N027430-012C	7.96	50	0.00	20.70	SAMP
N027430-013C	7.59	50	0.00	6.20	SAMP
N027430-014C	7.69	50	0.00	2.90	SAMP
N027430-015C	7.58	50	0.00	2.95	SAMP
N027430-016C	8.21	50	0.00	2.20	SAMP
N027430-017C	8.21	50	0.00	2.35	SAMP
N027430-018C	7.75	50	0.00	2.20	SAMP
N027430-020C	7.63	50	0.00	8.20	SAMP
N027431-001C	7.76	50	0.00	4.70	SAMP
N027431-002C	7.61	50	0.00	4.95	SAMP
N027431-003C	7.61	50	0.00	2.90	SAMP
N027431-004C	7.65	50	0.00	3.00	SAMP
N027431-005C	7.96	50	0.00	5.20	SAMP
N027431-006C	7.60	50	0.00	4.90	SAMP
N027459-001E	7.60	50	0.00	3.90	SAMP
N027459-002E	7.72	50	0.00	2.45	SAMP
N027430-002CDDUP	8.00	50	0.00	1.90	DUP
N027431-002CMS	8.23	50	0.00	9.80	MS
N027431-002CMSD	8.24	50	0.00	9.80	MSD

Standardization:

Spike amt:	**5**	ml
Titrant used:	**12.45**	ml
N H2SO4	**0.02008**	Normal
Date Analyzed:	**12/14/17**	
Time:	**8:15 AM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-161205A**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R171211A**	

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RLB 01/03/2018

Date Analyzed:	12/14/17		Reagents:					Standardization:					P = 0
Time Started:	8:15 AM			Sodium Carbonate:		CINV-161205A			Spike amt:	5	mL		P < 1/2 T
Analyzed By:	LSR			Hydrochloric Acid:		0			Titrant used:	12.45	mL		P = 1/2 T
				Sulfuric Acid:		R171211A							P > 1/2 T
									N H2SO4	0.02008	N		P = T

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.69				0.02008	0.00	0.05	0.05	1	0.00	1.00	
LCS-1	50	8.77				0.02008	0.10	4.80	4.90	1	2.01	98.39	
N027430-002C	50	8				0.02008	0.00	1.90	1.90	1	0.00	38.15	
N027430-004C	50	7.77				0.02008	0.00	22.70	22.70	1	0.00	455.82	
N027430-006C	50	7.68				0.02008	0.00	10.60	10.60	1	0.00	212.85	
N027430-008C	50	7.61				0.02008	0.00	13.70	13.70	1	0.00	275.10	
N027430-012C	50	7.96				0.02008	0.00	20.70	20.70	1	0.00	415.66	
N027430-013C	50	7.59				0.02008	0.00	6.20	6.20	1	0.00	124.50	
N027430-014C	50	7.69				0.02008	0.00	2.90	2.90	1	0.00	58.23	
N027430-015C	50	7.58				0.02008	0.00	2.95	2.95	1	0.00	59.24	
N027430-016C	50	8.21				0.02008	0.00	2.20	2.20	1	0.00	44.18	
N027430-017C	50	8.21				0.02008	0.00	2.35	2.35	1	0.00	47.19	
N027430-018C	50	7.75				0.02008	0.00	2.20	2.20	1	0.00	44.18	
N027430-020C	50	7.63				0.02008	0.00	8.20	8.20	1	0.00	164.66	
N027431-001C	50	7.76				0.02008	0.00	4.70	4.70	1	0.00	94.38	
N027431-002C	50	7.61				0.02008	0.00	4.95	4.95	1	0.00	99.40	
N027431-003C	50	7.61				0.02008	0.00	2.90	2.90	1	0.00	58.23	
N027431-004C	50	7.65				0.02008	0.00	3.00	3.00	1	0.00	60.24	
N027431-005C	50	7.96				0.02008	0.00	5.20	5.20	1	0.00	104.42	
N027431-006C	50	7.6				0.02008	0.00	4.90	4.90	1	0.00	98.39	
N027459-001E	50	7.6				0.02008	0.00	3.90	3.90	1	0.00	78.31	
N027459-002E	50	7.72				0.02008	0.00	2.45	2.45	1	0.00	49.20	
N027430-002CDD	50	8				0.02008	0.00	1.90	1.90	1	0.00	38.15	
N027431-002CMS	50	8.23				0.02008	0.00	9.80	9.80	1	0.00	196.79	
N027431-002CMS	50	8.24				0.02008	0.00	9.80	9.80	1	0.00	196.79	

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RB 01/03/2018

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	12/14/17
Time:	8:15 AM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.00	1.00	1.00		P = 0
LCS-1	0.00	4.02	94.38	98.39	98.39		P < 1/2 T
N027430-002C	0.00	0.00	38.15	38.15	38.15		P = 0
N027430-004C	0.00	0.00	455.82	455.82	455.82		P = 0
N027430-006C	0.00	0.00	212.85	212.85	212.85		P = 0
N027430-008C	0.00	0.00	275.10	275.10	275.10		P = 0
N027430-012C	0.00	0.00	415.66	415.66	415.66		P = 0
N027430-013C	0.00	0.00	124.50	124.50	124.50		P = 0
N027430-014C	0.00	0.00	58.23	58.23	58.23		P = 0
N027430-015C	0.00	0.00	59.24	59.24	59.24		P = 0
N027430-016C	0.00	0.00	44.18	44.18	44.18		P = 0
N027430-017C	0.00	0.00	47.19	47.19	47.19		P = 0
N027430-018C	0.00	0.00	44.18	44.18	44.18		P = 0
N027430-020C	0.00	0.00	164.66	164.66	164.66		P = 0
N027431-001C	0.00	0.00	94.38	94.38	94.38		P = 0
N027431-002C	0.00	0.00	99.40	99.40	99.40		P = 0
N027431-003C	0.00	0.00	58.23	58.23	58.23		P = 0
N027431-004C	0.00	0.00	60.24	60.24	60.24		P = 0
N027431-005C	0.00	0.00	104.42	104.42	104.42		P = 0
N027431-006C	0.00	0.00	98.39	98.39	98.39		P = 0
N027459-001E	0.00	0.00	78.31	78.31	78.31		P = 0
N027459-002E	0.00	0.00	49.20	49.20	49.20		P = 0
N027430-002CDDUP	0.00	0.00	38.15	38.15	38.15		P = 0
N027431-002CMS	0.00	0.00	196.79	196.79	196.79		P = 0
N027431-002CMSD	0.00	0.00	196.79	196.79	196.79		P = 0

Lilia Ramit 12/21/2017

RLB 01/03/2018

Alkalinity Preparation and Runlog

Book #6

Matrix: H_2O

Date Extracted: 12/14/17
Time Extracted:
Extracted By: LSN

Date Analyzed: 12/14/17
Time Analyzed: 8:15
Analyzed By: LSN

Reagent Lot # / Reagent ID
Sodium Carbonate: CINV161205A
Hydrochloric Acid: –
Sulfuric Acid: R171211A
Sodium Bicarbonate: CINV150601A

pH meter Calibration:
SLOPE: 98.7%
pH 7 - 7.03 CINV170615F
4 - 4.03 170615E
10 - 10.01 170822D

	Sample ID	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50mL	10.61	NUST171211A	5mL	0.05N	-	-	12.50	50/50	$N\ H_2SO_4 = \frac{(2.65g/L)(5mL)}{(53)(V\ titrant)}$	= 0.020000
	#2	↓	10.58	↓	↓	↓	-	-	12.40	↓		= 0.02016129
1)	MBLK	50mL	5.69	-	-	-	0.02008	0	0.05	50/50		Ave: 0.02008
2)	LCS		8.77	NUST171211B	1mL	0.05N		0.10	4.90			
3)	N027430-2C		8.00					0	1.90			
4)	4C		7.77					0	22.70			
5)	6C		7.68					0	10.60			
6)	8C		7.61					0	13.70			
7)	12C		7.96					0	20.70			
8)	13C		7.59					0	6.20			
9)	14C		7.69					0	2.90			
10)	15C		7.58					0	2.95		$P = \frac{(V\ pH\ 8.3)(N\ H_2SO_4)(50,000)}{V_{sx}}$	
11)	16C		8.21					0	2.20			
12)	17C		8.21					0	2.35			
13)	18C		7.75					0	2.20		$T = \frac{(V\ pH\ 4.5)(N\ H_2SO_4)(50,000)}{V_{sx}}$	
14)	20C		7.63					0	8.20			
15)	N027431-1C		7.76					0	4.70			
16)	2C		7.61					0	4.95			
17)	3C		7.61					0	2.90			
18)	4C		7.65					0	3.00			
19)	5C		7.96					0	5.20			
20)	6C		7.60					0	4.90			
	MS N027459-1E		7.60					0	3.90			
	MSD 2E		7.72					0	2.45			
	LCS N027430-2C DUP		8.00					0	1.90			
	N027431-2C MS		8.23	NUST171211B	1mL	0.05N		0	9.80			
	2C MSD		8.24					0	9.80			

Julia Ramit 12/21/2017

RB 01/03/2018

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.26	50	0.00	0.050	MBLK
LCS-1	8.55	50	0.05	4.85	LCS
N027459-003C	9.47	50	0.35	0.75	SAMP
N027459-004C	10.22	50	1.60	2.10	SAMP
N027459-005C	7.87	50	0.00	2.55	SAMP
N027459-006C	7.68	50	0.00	1.60	SAMP
N027459-007C	7.82	50	0.00	4.55	SAMP
N027459-008E	7.79	50	0.00	6.30	SAMP
N027459-009C	7.53	50	0.00	1.70	SAMP
N027459-010C	7.56	50	0.00	1.70	SAMP
N027459-011C	7.91	50	0.00	2.30	SAMP
N027459-012C	7.85	50	0.00	3.50	SAMP
N027459-013C	7.66	50	0.00	1.55	SAMP
N027459-014C	7.72	50	0.00	2.25	SAMP
N027459-015C	7.78	50	0.00	3.80	SAMP
N027459-016E	7.85	50	0.00	5.70	SAMP
N027459-017E	7.32	50	0.00	4.40	SAMP
N027459-018C	4.75	50	0.00	0.05	SAMP
N027459-019C	8.03	50	0.00	2.00	SAMP
N027485-001D	7.91	50	0.00	4.20	SAMP
N027485-002D	7.52	50	0.00	2.05	SAMP
N027485-003D	7.49	50	0.00	1.90	SAMP
N027459-003CDUP	9.45	50	0.40	0.80	DUP
N027459-017EMS	7.44	50	0.00	9.00	MS
N027459-017EMSD	7.70	50	0.00	9.10	MSD

Standardization:

Spike amt:	**5**	ml
Titrant used:	**11.95**	ml
N H2SO4	**0.02092**	Normal
Date Analyzed:	**12/14/17**	
Time:	**4:15 PM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-161205A**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R171214D**	

Julia Ramit 12/22/2017

RLB 01/03/2018

Date Analyzed:	12/14/17		Reagents:					Standardization:					P = 0
Time Started:	4:15 PM			Sodium Carbonate:		CINV-161205A			Spike amt:	5	mL		P < 1/2 T
Analyzed By:	LSR			Hydrochloric Acid:		0			Titrant used:	11.95	mL		P = 1/2 T
				Sulfuric Acid:		R171214D							P > 1/2 T
									N H2SO4	0.02092	N		P = T

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.26				0.02092	0.00	0.05	0.05	1	0.00	1.05	
LCS-1	50	8.55				0.02092	0.05	4.80	4.85	1	1.05	101.46	
N027459-003C	50	9.47				0.02092	0.35	0.40	0.75	1	7.32	15.69	
N027459-004C	50	10.22				0.02092	1.60	0.50	2.10	1	33.47	43.93	
N027459-005C	50	7.87				0.02092	0.00	2.55	2.55	1	0.00	53.35	
N027459-006C	50	7.68				0.02092	0.00	1.60	1.60	1	0.00	33.47	
N027459-007C	50	7.82				0.02092	0.00	4.55	4.55	1	0.00	95.19	
N027459-008E	50	7.79				0.02092	0.00	6.30	6.30	1	0.00	131.80	
N027459-009C	50	7.53				0.02092	0.00	1.70	1.70	1	0.00	35.56	
N027459-010C	50	7.56				0.02092	0.00	1.70	1.70	1	0.00	35.56	
N027459-011C	50	7.91				0.02092	0.00	2.30	2.30	1	0.00	48.12	
N027459-012C	50	7.85				0.02092	0.00	3.50	3.50	1	0.00	73.22	
N027459-013C	50	7.66				0.02092	0.00	1.55	1.55	1	0.00	32.43	
N027459-014C	50	7.72				0.02092	0.00	2.25	2.25	1	0.00	47.07	
N027459-015C	50	7.78				0.02092	0.00	3.80	3.80	1	0.00	79.50	
N027459-016E	50	7.85				0.02092	0.00	5.70	5.70	1	0.00	119.25	
N027459-017E	50	7.32				0.02092	0.00	4.40	4.40	1	0.00	92.05	
N027459-018C	50	4.75				0.02092	0.00	0.05	0.05	1	0.00	1.05	
N027459-019C	50	8.03				0.02092	0.00	2.00	2.00	1	0.00	41.84	
N027485-001D	50	7.91				0.02092	0.00	4.20	4.20	1	0.00	87.87	
N027485-002D	50	7.52				0.02092	0.00	2.05	2.05	1	0.00	42.89	
N027485-003D	50	7.49				0.02092	0.00	1.90	1.90	1	0.00	39.75	
N027459-003CDU	50	9.45				0.02092	0.40	0.40	0.80	1	8.37	16.74	
N027459-017EMS	50	7.44				0.02092	0.00	9.00	9.00	1	0.00	188.28	
N027459-017EMS	50	7.7				0.02092	0.00	9.10	9.10	1	0.00	190.38	

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RB 01/03/2018

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	12/14/17
Time:	4:15 PM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.05	1.05	1.05		P = 0
LCS-1	0.00	2.09	99.37	101.46	101.46		P < 1/2 T
N027459-003C	0.00	14.64	1.05	15.69	15.69		P < 1/2 T
N027459-004C	23.01	20.92	0.00	43.93	43.93		P > 1/2 T
N027459-005C	0.00	0.00	53.35	53.35	53.35		P = 0
N027459-006C	0.00	0.00	33.47	33.47	33.47		P = 0
N027459-007C	0.00	0.00	95.19	95.19	95.19		P = 0
N027459-008E	0.00	0.00	131.80	131.80	131.80		P = 0
N027459-009C	0.00	0.00	35.56	35.56	35.56		P = 0
N027459-010C	0.00	0.00	35.56	35.56	35.56		P = 0
N027459-011C	0.00	0.00	48.12	48.12	48.12		P = 0
N027459-012C	0.00	0.00	73.22	73.22	73.22		P = 0
N027459-013C	0.00	0.00	32.43	32.43	32.43		P = 0
N027459-014C	0.00	0.00	47.07	47.07	47.07		P = 0
N027459-015C	0.00	0.00	79.50	79.50	79.50		P = 0
N027459-016E	0.00	0.00	119.25	119.25	119.25		P = 0
N027459-017E	0.00	0.00	92.05	92.05	92.05		P = 0
N027459-018C	0.00	0.00	1.05	1.05	1.05		P = 0
N027459-019C	0.00	0.00	41.84	41.84	41.84		P = 0
N027485-001D	0.00	0.00	87.87	87.87	87.87		P = 0
N027485-002D	0.00	0.00	42.89	42.89	42.89		P = 0
N027485-003D	0.00	0.00	39.75	39.75	39.75		P = 0
N027459-003CDUP	0.00	16.74	0.00	16.74	16.74		P = 1/2 T
N027459-017EMS	0.00	0.00	188.28	188.28	188.28		P = 0
N027459-017EMSD	0.00	0.00	190.38	190.38	190.38		P = 0

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RB 01/03/2018

Alkalinity Preparation and Runlog

Book #6

Matrix: Aqu

Date Extracted: 12/14/17
Time Extracted: 1520
Extracted By: LSN

Date Analyzed: 12/14/17
Time Analyzed: 1615
Analyzed By: LSN

Reagent Lot # / Reagent ID
Sodium Carbonate: CONV 1161205A
Hydrochloric Acid:
Sulfuric Acid: R1712140
Sodium Bicarbonate: CONV 150601A

pH meter Calibration:
SLOPE: 98.7%
pH 7 = 7.03 CONV 170615F
4 - 4.03 170615E
N - 10.01 170823B

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50 mL	10.75	1W ST 171211A	5 mL	0.05N	-	-	12.0	50/50	$N_{H_2SO_4} = \frac{(2.65 g/L)(5 mL)}{(5)(V\ titrant)}$	= 0.020833333
	#2		10.62				-		11.90			= 0.021008403
1)	MALK	50 mL	5.26	-		-	0.02092	0	0.050	50/50		Ave: 0.020920868
2)	LCS		8.55	MST 171211B	1 mL	0.05N		0.05	4.85			
3)	NO2 7459-3C		9.47					0.35	0.75			
4)	4C		10.32					1.60	2.10			
5)	5C		7.87					0	2.55			
6)	6C		7.68					0	1.60			
7)	7C		7.82					0	4.55			
8)	8E		7.79					0	6.30			
9)	9C		7.53					0	1.70			
10)	10C		7.56					0	1.70		$P = \frac{(V\ pH\ 8.3)(N\ H_2SO_4)(50,000)}{VSX}$	
11)	11C		7.91					0	2.30			
12)	12C		7.85					0	3.50			
13)	13C		7.66					0	1.55			
14)	14C		7.72					0	2.25		$T = \frac{(V\ pH\ 4.5)(N\ H_2SO_4)(50,000)}{VSX}$	
15)	15C		7.78					0	3.80			
16)	16E		7.85					0	5.70			
17)	17E		7.32					0	4.40			
18)	18C		4.75					0	0.05			
19)	19C		8.03					0	2.00			
20)	NO2 7485-1D		7.91					0	4.20			
MS	2D		7.52					0	2.05			
MSD	3D		7.49					0	1.90			
LCS	NO2 7459-3C DUP		9.45					0	0.80			
	17E MS		7.44	MST 171211B	1 mL	0.05N		0	9.00			
	17E MSD		7.70					0	9.10			

Julia Ramit 12/22/2017

RB 01/03/2018

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120893
ASSET #: N027459

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/15/2017

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/19/2017

2nd Level Reviewer: RB 01/03/2018 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120938
ASSET #: N027459

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/18/2017

Method:

[X] EPA 300.0
[ ] EPA 7199

[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer RBA Date: 1/3/2018

2nd Level Reviewer RB 01/03/2018 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120969
ASSET #: N027459

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/19/2017

Method:

[X] EPA 300.0
[ ] EPA 7199

[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

Several samples were diluted due to precipitate formed when mixed with eluent.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer RBA Date: 1/3/2018

2nd Level Reviewer RB 01/03/2018 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Sulfate concentration, in mg/L, in the orignal sample as follows:

Sulfate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N027459-001E** concentration in mg/L is calculated as follows:

Sulfate, mg/L = 6.5405 * 50

= 327.025

Reporting result in two significant values,

Sulfate, mg/L = 330

RLB 01/03/2018

ANALYSIS RUN LOG

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 25
Created: 11/29/2017 9:35:17 AM by IC-05
Last Update: 11/30/2017 12:33:04 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	ICV,ICV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	ICB,ICB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	N027210-002A,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027232-001A,SAMP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027210-002A,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027210-002ADUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027210-002AMS,MS,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027210-002AMSD,MSD,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027232-001AMS,MS,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027232-001AMSD,MSD,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	N027232-001ADUP,DUP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished



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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 25
Created: 11/29/2017 9:35:17 AM by IC-05
Last Update: 11/30/2017 12:33:04 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	ICV,ICV,1	11/29/2017 12:22:10 PM	ICV
10	ICB,ICB,1	11/29/2017 12:37:28 PM	ICB
11	MB-H2O,MBLK,1	11/29/2017 12:52:47 PM	METHOD BLANK
12	LCS-H2O,LCS,1	11/29/2017 1:08:05 PM	LCS
13	N027210-002A,SAMP,10	11/29/2017 1:23:23 PM	SAMP,1>10mL
14	N027232-001A,SAMP,2	11/29/2017 1:38:41 PM	SAMP,5>10mL
15	N027210-002A,SAMP,50	11/29/2017 2:44:14 PM	SAMP,0.2>10mL
16	N027210-002ADUP,DUP,50	11/29/2017 2:59:31 PM	DUP,0.2>10mL
17	N027210-002AMS,MS,10	11/29/2017 3:14:50 PM	MS,0.2>10mL
18	N027210-002AMSD,MSD,10	11/29/2017 3:30:07 PM	MSD,0.2>10mL
19	N027232-001AMS,MS,2	11/29/2017 3:45:25 PM	MS,5>10mL
20	N027232-001AMSD,MSD,2	11/29/2017 4:00:43 PM	MSD,5>10mL
21	CCV-1,CCV,1	11/29/2017 4:16:01 PM	CCV
22	CCB-1,CCB,1	11/29/2017 4:31:19 PM	CCB
23	N027232-001ADUP,DUP,2	11/29/2017 4:46:38 PM	DUP,5>10mL
24	CCV-2,CCV,1	11/29/2017 5:01:56 PM	CCV
25	CCB-2,CCB,1	11/29/2017 5:17:14 PM	CCB

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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
Created: 12/15/2017 11:28:54 AM by IC-05
#Samples: 89
(Modified, not saved)

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027459-007C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027459-012C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027459-001E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027459-002E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027459-003C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027459-003CMS,MS,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027459-012CMS,MS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	N027459-004C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	N027459-001E,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	N027459-001EMS,MS,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
26	N027459-001EMSD,MSD,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
27	N027459-001E,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
28	N027459-001EMS,MS,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
29	N027459-001EMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
30	N027459-005C,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
31	N027459-005CMS,MS,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
32	N027459-005C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
33	N027459-005CMS,MS,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
34	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
35	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
36	N027459-005CDUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
37	N027459-005CDUP,DUP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
38	N027459-002E,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
39	N027459-002E,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
40	N027459-003C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
41	N027459-003C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished

rba 12/19/2017

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
Created: 12/15/2017 11:28:54 AM by IC-05
#Samples: 89
(Modified, not saved)

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	BLANK,BLANK,1	12/15/2017 11:51:10 AM	BLANK
10	CCV-1,CCV,1	12/15/2017 12:06:28 PM	CCV
11	CCB-1,CCB,1	12/15/2017 12:21:46 PM	CCB
12	MB-H2O,MBLK,1	12/15/2017 12:37:04 PM	METHOD BLANK
13	LCS-H2O,LCS,1	12/15/2017 12:52:22 PM	LCS
14	N027459-007C,SAMP,1	12/15/2017 1:09:46 PM	SAMP,10mL
15	N027459-012C,SAMP,1	12/15/2017 1:25:03 PM	SAMP,10mL
16	N027459-001E,SAMP,5	12/15/2017 1:40:21 PM	SAMP,2>10mL
17	N027459-002E,SAMP,5	12/15/2017 1:55:39 PM	SAMP,2>10mL
18	N027459-003C,SAMP,10	12/15/2017 2:10:57 PM	SAMP,1>10mL
19	N027459-003CMS,MS,10	12/15/2017 2:38:15 PM	MS,1>10mL
20	N027459-012CMS,MS,1	12/15/2017 2:53:33 PM	MS,>10mL
21	N027459-004C,SAMP,10	12/15/2017 3:09:51 PM	SAMP,1>10mL
22	CCV-2,CCV,1	12/15/2017 3:25:10 PM	CCV
23	CCB-2,CCB,1	12/15/2017 3:40:28 PM	CCB
24	N027459-001E,SAMP,500	12/15/2017 3:55:46 PM	SAMP,0.02>10mL
25	N027459-001EMS,MS,500	12/15/2017 4:11:03 PM	SAMP,2>10mL
26	N027459-001EMSD,MSD,500	12/15/2017 4:26:21 PM	SAMP,2>10mL
27	N027459-001E,SAMP,50	12/15/2017 4:41:39 PM	MS,0.1>10mL
28	N027459-001EMS,MS,50	12/15/2017 4:56:57 PM	MSD,0.1>10mL
29	N027459-001EMSD,MSD,50	12/15/2017 5:12:15 PM	SAMP,0.5>10mL
30	N027459-005C,SAMP,500	12/15/2017 5:27:33 PM	MS,0.5>10mL
31	N027459-005CMS,MS,500	12/15/2017 5:42:50 PM	MSD,0.5>10mL
32	N027459-005C,SAMP,50	12/15/2017 5:58:08 PM	SAMP,0.005>10mL
33	N027459-005CMS,MS,50	12/15/2017 6:13:26 PM	SAMP,0.1>10mL
34	CCV-3,CCV,1	12/15/2017 6:28:45 PM	CCV
35	CCB-3,CCB,1	12/15/2017 6:44:03 PM	CCB
36	N027459-005CDUP,DUP,50	12/15/2017 6:59:21 PM	DUP,0.2>10mL
37	N027459-005CDUP,DUP,500	12/15/2017 7:14:39 PM	DUP,0.02>10mL
38	N027459-002E,SAMP,1000	12/15/2017 7:29:56 PM	SAMP,0.01>10mL
39	N027459-002E,SAMP,100	12/15/2017 7:45:14 PM	SAMP,0.1>10mL
40	N027459-003C,SAMP,2000	12/15/2017 8:00:32 PM	SAMP,0.005>10mL
41	N027459-003C,SAMP,100	12/15/2017 8:15:50 PM	SAMP,0.1>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
Created: 12/15/2017 11:28:54 AM by IC-05
#Samples: 89
(Modified, not saved)

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027459-004C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
43	N027459-004C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
44	N027459-006C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
45	N027459-006C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
46	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
47	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
48	N027459-007C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
49	N027459-007C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
50	N027459-008E,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
51	N027459-008E,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
52	N027459-009C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
53	N027459-009C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
54	N027459-010C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
55	N027459-010C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
56	N027459-011C,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
57	N027459-011C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
58	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
59	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
60	N027459-012C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
61	N027459-012C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
62	N027459-013C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
63	N027459-013C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
64	N027459-014C,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
65	N027459-014C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
66	N027459-015C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
67	N027459-015C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
68	N027459-016E,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
69	N027459-016E,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
70	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
71	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
72	N027459-017E,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
73	N027459-017E,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
74	N027459-018C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
75	N027459-018C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
76	N027459-019C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
77	N027459-019C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
78	N027475-001C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
79	N027475-001C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
80	N027475-001C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
81	CCV-7,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
82	CCB-7,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 89
Created: 12/15/2017 11:28:54 AM by IC-05
(Modified, not saved)

No.	Name	Inj. Date/Time	Comment
42	N027459-004C,SAMP,2000	12/15/2017 8:31:08 PM	SAMP,0.005>10mL
43	N027459-004C,SAMP,100	12/15/2017 8:46:26 PM	SAMP,0.1>10mL
44	N027459-006C,SAMP,2000	12/15/2017 9:01:43 PM	SAMP,0.005>10mL
45	N027459-006C,SAMP,100	12/15/2017 9:17:01 PM	SAMP,0.1>10mL
46	CCV-4,CCV,1	12/15/2017 9:32:19 PM	CCV
47	CCB-4,CCB,1	12/15/2017 9:47:37 PM	CCB
48	N027459-007C,SAMP,200	12/15/2017 10:02:56 PM	SAMP,0.05>10mL
49	N027459-007C,SAMP,20	12/15/2017 10:18:13 PM	SAMP,0.5>10mL
50	N027459-008E,SAMP,100	12/15/2017 10:33:31 PM	SAMP,0.1>10mL
51	N027459-008E,SAMP,20	12/15/2017 10:48:49 PM	SAMP,0.5>10mL
52	N027459-009C,SAMP,1000	12/15/2017 11:04:07 PM	SAMP,0.01>10mL
53	N027459-009C,SAMP,50	12/15/2017 11:19:25 PM	SAMP,0.2>10mL
54	N027459-010C,SAMP,1000	12/15/2017 11:34:43 PM	SAMP,0.01>10mL
55	N027459-010C,SAMP,50	12/15/2017 11:50:01 PM	SAMP,0.2>10mL
56	N027459-011C,SAMP,500	12/16/2017 12:05:18 AM	SAMP,0.02>10mL
57	N027459-011C,SAMP,50	12/16/2017 12:20:37 AM	SAMP,0.2>10mL
58	CCV-5,CCV,1	12/16/2017 12:35:55 AM	CCV
59	CCB-5,CCB,1	12/16/2017 12:51:12 AM	CCB
60	N027459-012C,SAMP,100	12/16/2017 1:06:30 AM	SAMP,0.1>10mL
61	N027459-012C,SAMP,20	12/16/2017 1:21:48 AM	SAMP,0.5>10mL
62	N027459-013C,SAMP,2000	12/16/2017 1:37:06 AM	SAMP,0.005>10mL
63	N027459-013C,SAMP,100	12/16/2017 1:52:24 AM	SAMP,0.1>10mL
64	N027459-014C,SAMP,500	12/16/2017 2:07:41 AM	SAMP,0.02>10mL
65	N027459-014C,SAMP,50	12/16/2017 2:22:59 AM	SAMP,0.2>10mL
66	N027459-015C,SAMP,200	12/16/2017 2:38:18 AM	SAMP,0.05>10mL
67	N027459-015C,SAMP,20	12/16/2017 2:53:36 AM	SAMP,0.5>10mL
68	N027459-016E,SAMP,200	12/16/2017 3:08:53 AM	SAMP,0.05>10mL
69	N027459-016E,SAMP,50	12/16/2017 3:24:11 AM	SAMP,0.2>10mL
70	CCV-6,CCV,1	12/16/2017 3:39:29 AM	CCV
71	CCB-6,CCB,1	12/16/2017 3:54:47 AM	CCB
72	N027459-017E,SAMP,200	12/16/2017 4:10:05 AM	SAMP,0.05>10mL
73	N027459-017E,SAMP,50	12/16/2017 4:25:22 AM	SAMP,0.2>10mL
74	N027459-018C,SAMP,2000	12/16/2017 4:40:40 AM	SAMP,0.005>10mL
75	N027459-018C,SAMP,100	12/16/2017 4:55:58 AM	SAMP,0.1>10mL
76	N027459-019C,SAMP,1000	12/16/2017 5:11:16 AM	SAMP,0.01>10mL
77	N027459-019C,SAMP,100	12/16/2017 5:26:34 AM	SAMP,0.1>10mL
78	N027475-001C,SAMP,10	12/16/2017 5:41:52 AM	SAMP,1>10mL
79	N027475-001C,SAMP,20	12/16/2017 5:57:10 AM	SAMP,0.5>10mL
80	N027475-001C,SAMP,50	12/16/2017 6:12:28 AM	SAMP,0.2>10mL
81	CCV-7,CCV,1	12/16/2017 6:27:45 AM	CCV
82	CCB-7,CCB,1	12/16/2017 6:43:03 AM	CCB

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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 89
Created: 12/15/2017 11:28:54 AM by IC-05
(Modified, not saved)

	No.	Name	Type	Inj. Vol.	Program	Method	Status
	83	CCV-7,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
	84	CCB-7,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
	85	N027475-001C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
	86	N027475-001C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
	87	N027475-001C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
CCV-8,CCV,1	88	~~CCV-7,CCV,~~1	Unknown	1000.0	Anions Default	Anions_171129	Finished
CCB-8,CCB,1	89	~~CCB-7,CCB,~~1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
Created: 12/15/2017 11:28:54 AM by IC-05
#Samples: 89
(Modified, not saved)

	No.	Name	Inj. Date/Time	Comment
	83	CCV-7,CCV,1	12/16/2017 9:15:58 AM	CCV
	84	CCB-7,CCB,1	12/16/2017 9:31:17 AM	CCB
	85	N027475-001C,SAMP,10	12/16/2017 9:46:34 AM	SAMP,1>10mL
	86	N027475-001C,SAMP,20	12/16/2017 10:01:52 AM	SAMP,0.5>10mL
	87	N027475-001C,SAMP,50	12/16/2017 10:17:10 AM	SAMP,0.2>10mL
CCV-8,CCV,1	88	~~CCV-7,CCV,1~~	12/16/2017 10:32:28 AM	CCV
CCB-8,CCB,1	89	~~CCB-7,CCB,1~~	12/16/2017 10:47:46 AM	CCB

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/18/2017 9:15:01 AM by IC-05
Last Update: 12/18/2017 5:39:47 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027430-012C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027430-012C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027430-012CDUP,DUP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027430-012CMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027430-012CMSD,MSD,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027412-001B,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	N027413-001B,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	N027414-001B,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
26	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
27	N027416-001B,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
28	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
29	N027417-001B,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
30	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
31	N027414-001B,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
32	N027412-001B,SAMP,10000	Unknown	1000.0	Anions Default	Anions_171129	Finished
33	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
34	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
35	N027485-002D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
36	N027485-003D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
37	N027485-005D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
38	N027485-006D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
39	N027485-007D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
40	N027485-001D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
41	N027485-001DDUP,DUP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/18/2017 9:15:01 AM by IC-05
Last Update: 12/18/2017 5:39:47 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	BLANK,BLANK,1	12/18/2017 9:15:27 AM	BLANK
10	CCV-1,CCV,1	12/18/2017 9:30:45 AM	CCV
11	CCB-1,CCB,1	12/18/2017 9:46:03 AM	CCB
12	MB-H2O,MBLK,1	12/18/2017 10:01:21 AM	METHOD BLANK
13	LCS-H2O,LCS,1	12/18/2017 10:16:39 AM	LCS
14	N027430-012C,SAMP,10	12/18/2017 10:31:57 AM	SAMP,1>10mL
15	N027430-012C,SAMP,20	12/18/2017 10:49:02 AM	SAMP,0.5>10mL
16	N027430-012CDUP,DUP,20	12/18/2017 11:04:21 AM	DUP,0.5>10mL
17	N027430-012CMS,MS,20	12/18/2017 11:19:38 AM	MS,0.5>10mL
18	N027430-012CMSD,MSD,20	12/18/2017 11:34:56 AM	MSD,0.5>10mL
19	N027412-001B,SAMP,200	12/18/2017 11:50:14 AM	SAMP,0.05>10mL
20	BLANK,BLANK,1	12/18/2017 12:05:32 PM	BLANK
21	CCV-2,CCV,1	12/18/2017 12:20:50 PM	CCV
22	CCB-2,CCB,1	12/18/2017 12:36:08 PM	CCB
23	N027413-001B,SAMP,100	12/18/2017 12:51:25 PM	SAMP,0.1>10mL
24	BLANK,BLANK,1	12/18/2017 1:06:43 PM	BLANK
25	N027414-001B,SAMP,100	12/18/2017 1:22:01 PM	SAMP,0.1>10mL
26	BLANK,BLANK,1	12/18/2017 1:37:19 PM	BLANK
27	N027416-001B,SAMP,200	12/18/2017 1:52:37 PM	SAMP,0.05>10mL
28	BLANK,BLANK,1	12/18/2017 2:07:55 PM	BLANK
29	N027417-001B,SAMP,200	12/18/2017 2:23:12 PM	SAMP,0.05>10mL
30	BLANK,BLANK,1	12/18/2017 2:38:30 PM	BLANK
31	N027414-001B,SAMP,5	12/18/2017 2:53:48 PM	SAMP,2>10mL
32	N027412-001B,SAMP,10000	12/18/2017 3:09:06 PM	SAMP,0.001>10mL
33	CCV-3,CCV,1	12/18/2017 3:24:25 PM	CCV
34	CCB-3,CCB,1	12/18/2017 3:39:43 PM	CCB
35	N027485-002D,SAMP,2000	12/18/2017 3:55:01 PM	SAMP,0.005>10mL
36	N027485-003D,SAMP,2000	12/18/2017 4:10:19 PM	SAMP,0.005>10mL
37	N027485-005D,SAMP,2000	12/18/2017 4:25:37 PM	SAMP,0.005>10mL
38	N027485-006D,SAMP,2000	12/18/2017 4:40:54 PM	SAMP,0.005>10mL
39	N027485-007D,SAMP,2000	12/18/2017 4:56:12 PM	SAMP,0.005>10mL
40	N027485-001D,SAMP,200	12/18/2017 5:11:30 PM	SAMP,0.02>10mL
41	N027485-001DDUP,DUP,200	12/18/2017 5:26:48 PM	SAMP,0.001>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/18/2017 9:15:01 AM by IC-05
Last Update: 12/18/2017 5:39:47 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027485-001DMS,MS,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
43	N027485-001DMSD,MSD,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
44	N027485-001D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
45	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
46	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
47	N027485-001DDUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
48	N027485-001DMS,MS,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
49	N027485-001DMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
50	N027485-011E,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
51	N027485-011EMS,MS,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
52	N027485-011E,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
53	N027485-011EMS,MS,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
54	N027485-004D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
55	N027485-004D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
56	N027485-008D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
57	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
58	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
59	N027485-008D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
60	N027485-009D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
61	N027485-009D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
62	N027485-010D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
63	N027485-010D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
64	N027485-012E,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
65	N027485-012E,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
66	N027413-001B,SAMP,10000	Unknown	1000.0	Anions Default	Anions_171129	Finished
67	N027413-001B,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
68	N027416-001B,SAMP,10000	Unknown	1000.0	Anions Default	Anions_171129	Finished
69	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
70	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
71	N027417-001B,SAMP,10000	Unknown	1000.0	Anions Default	Anions_171129	Finished
72	N027485-002D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
73	N027485-003D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
74	N027485-005D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
75	N027485-006D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
76	N027485-007D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
77	N027417-001B,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
78	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
79	N027414-001B,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
80	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
81	CCV-7,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
82	CCB-7,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/18/2017 9:15:01 AM by IC-05
Last Update: 12/18/2017 5:39:47 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027485-001DMS,MS,200	12/18/2017 5:42:06 PM	MS,0.05>10mL
43	N027485-001DMSD,MSD,200	12/18/2017 5:57:23 PM	MSD,0.05>10mL
44	N027485-001D,SAMP,50	12/18/2017 6:12:41 PM	SAMP,0.2>10mL
45	CCV-4,CCV,1	12/18/2017 6:27:59 PM	CCV
46	CCB-4,CCB,1	12/18/2017 6:43:17 PM	CCB
47	N027485-001DDUP,DUP,50	12/18/2017 6:58:35 PM	DUP,0.2>10mL
48	N027485-001DMS,MS,50	12/18/2017 7:13:53 PM	MS,0.2>10mL
49	N027485-001DMSD,MSD,50	12/18/2017 7:29:11 PM	MSD,0.2>10mL
50	N027485-011E,SAMP,200	12/18/2017 7:44:29 PM	SAMP,0.05>10mL
51	N027485-011EMS,MS,200	12/18/2017 7:59:46 PM	SAMP,0.05>10mL
52	N027485-011E,SAMP,100	12/18/2017 8:15:04 PM	SAMP,0.1>10mL
53	N027485-011EMS,MS,100	12/18/2017 8:30:22 PM	MS,0.1>10mL
54	N027485-004D,SAMP,2000	12/18/2017 8:45:40 PM	SAMP,0.005>10mL
55	N027485-004D,SAMP,50	12/18/2017 9:00:58 PM	SAMP,0.2>10mL
56	N027485-008D,SAMP,200	12/18/2017 9:16:16 PM	SAMP,0.05>10mL
57	CCV-5,CCV,1	12/18/2017 9:31:33 PM	CCV
58	CCB-5,CCB,1	12/18/2017 9:46:51 PM	CCB
59	N027485-008D,SAMP,10	12/18/2017 10:02:09 PM	SAMP,1>10mL
60	N027485-009D,SAMP,500	12/18/2017 10:17:27 PM	SAMP,0.02>10mL
61	N027485-009D,SAMP,100	12/18/2017 10:32:45 PM	SAMP,0.1>10mL
62	N027485-010D,SAMP,1000	12/18/2017 10:48:02 PM	SAMP,0.01>10mL
63	N027485-010D,SAMP,100	12/18/2017 11:03:20 PM	SAMP,0.1>10mL
64	N027485-012E,SAMP,200	12/18/2017 11:18:38 PM	SAMP,0.05>10mL
65	N027485-012E,SAMP,100	12/18/2017 11:33:56 PM	SAMP,0.1>10mL
66	N027413-001B,SAMP,10000	12/18/2017 11:49:14 PM	SAMP,0.001>10mL
67	N027413-001B,SAMP,500	12/19/2017 12:04:31 AM	SAMP,0.05>10mL
68	N027416-001B,SAMP,10000	12/19/2017 12:19:49 AM	SAMP,0.001>10mL
69	CCV-6,CCV,1	12/19/2017 12:35:07 AM	CCV
70	CCB-6,CCB,1	12/19/2017 12:50:25 AM	CCB
71	N027417-001B,SAMP,10000	12/19/2017 1:05:43 AM	SAMP,0.001>10mL
72	N027485-002D,SAMP,100	12/19/2017 1:21:01 AM	SAMP,0.1>10mL
73	N027485-003D,SAMP,100	12/19/2017 1:36:19 AM	SAMP,0.1>10mL
74	N027485-005D,SAMP,100	12/19/2017 1:51:37 AM	SAMP,0.1>10mL
75	N027485-006D,SAMP,100	12/19/2017 2:06:54 AM	SAMP,0.1>10mL
76	N027485-007D,SAMP,100	12/19/2017 2:22:12 AM	SAMP,0.1>10mL
77	N027417-001B,SAMP,500	12/19/2017 2:37:30 AM	SAMP,0.02>10mL
78	BLANK,BLANK,1	12/19/2017 2:52:48 AM	BLANK
79	N027414-001B,SAMP,10	12/19/2017 3:08:06 AM	SAMP,1>10mL
80	BLANK,BLANK,1	12/19/2017 3:23:24 AM	BLANK
81	CCV-7,CCV,1	12/19/2017 3:38:41 AM	CCV
82	CCB-7,CCB,1	12/19/2017 3:53:59 AM	CCB

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/18/2017 9:15:01 AM by IC-05
Last Update: 12/18/2017 5:39:47 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
83	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
84	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
85	N027459-017E,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
86	N027459-018C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
87	N027459-019C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
88	N027459-019CDUP,DUP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
89	N027459-019CMS,MS,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
90	N027459-019CMSD,MSD,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
91	CCV-8,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
92	CCB-8,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/18/2017 9:15:01 AM by IC-05
Last Update: 12/18/2017 5:39:47 PM by IC-05

No.	Name	Inj. Date/Time	Comment
83	LCS-2,LCS,1	12/19/2017 4:09:17 AM	LCS
84	MB-2,MBLK,1	12/19/2017 4:24:35 AM	METHOD BLANK
85	N027459-017E,SAMP,100	12/19/2017 4:39:52 AM	SAMP,0.1>10mL
86	N027459-018C,SAMP,2000	12/19/2017 4:55:10 AM	SAMP,0.005>10mL
87	N027459-019C,SAMP,1000	12/19/2017 5:10:28 AM	SAMP,0.01>10mL
88	N027459-019CDUP,DUP,1000	12/19/2017 5:25:46 AM	DUP,0.01>10mL
89	N027459-019CMS,MS,1000	12/19/2017 5:41:04 AM	MS,0.01>10mL
90	N027459-019CMSD,MSD,1000	12/19/2017 5:56:21 AM	MSD,0.01>10mL
91	CCV-8,CCV,1	12/19/2017 6:11:39 AM	CCV
92	CCB-8,CCB,1	12/19/2017 6:26:57 AM	CCB

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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 73
Created: 12/19/2017 9:53:44 AM by IC-05
Last Update: 12/20/2017 8:57:58 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
3	Std - 0	Standard	1000.0	Anions Default	Anions_171219	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171219	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171219	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171219	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171219	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171219	Finished
9	ICV,ICV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
10	ICB,ICB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
11	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
12	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
13	N027459-001E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
14	N027459-002E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
15	N027459-003C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
16	N027459-004C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
17	N027459-005C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
18	N027459-006C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
19	N027459-007C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
20	N027459-008E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
21	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
22	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
23	N027459-001EMS,MS,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
24	N027459-001EMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
25	N027459-008EMS,MS,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
26	N027459-004CDUP,DUP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
27	N027459-009C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
28	N027459-010C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
29	N027459-011C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
30	N027459-012C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
31	N027459-013C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
32	N027459-014C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
33	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
34	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
35	N027459-015C,SAMP,2	Unknown	1000.0	Anions Default	Anions_171219	Finished
36	N027459-016E,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
37	N027459-017E,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
38	N027459-018C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
39	N027459-019C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
40	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
41	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 73
Created: 12/19/2017 9:53:44 AM by IC-05
Last Update: 12/20/2017 8:57:58 AM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	12/19/2017 9:54:19 AM	BLANK
2	BLANK,BLANK,1	12/19/2017 10:09:37 AM	BLANK
3	Std - 0	12/19/2017 10:24:55 AM	IBLANK
4	Std - 1	12/19/2017 10:45:27 AM	STD-LOW
5	Std - 2	12/19/2017 11:00:45 AM	STD
6	Std - 3	12/19/2017 11:16:03 AM	STD
7	Std - 4	12/19/2017 11:31:21 AM	STD
8	Std - 5	12/19/2017 11:46:39 AM	STD-HIGH
9	ICV,ICV,1	12/19/2017 12:03:52 PM	ICV
10	ICB,ICB,1	12/19/2017 12:19:10 PM	ICB
11	MB-H2O,MBLK,1	12/19/2017 12:34:28 PM	METHOD BLANK
12	LCS-H2O,LCS,1	12/19/2017 12:49:45 PM	LCS
13	N027459-001E,SAMP,5	12/19/2017 1:05:03 PM	SAMP,2>10mL
14	N027459-002E,SAMP,5	12/19/2017 1:20:21 PM	SAMP,2>10mL
15	N027459-003C,SAMP,10	12/19/2017 1:35:39 PM	SAMP,1>10mL
16	N027459-004C,SAMP,10	12/19/2017 1:50:57 PM	SAMP,1>10mL
17	N027459-005C,SAMP,5	12/19/2017 2:06:15 PM	SAMP,2>10mL
18	N027459-006C,SAMP,5	12/19/2017 2:21:33 PM	SAMP,2>10mL
19	N027459-007C,SAMP,1	12/19/2017 2:36:51 PM	SAMP,10mL
20	N027459-008E,SAMP,5	12/19/2017 2:52:08 PM	SAMP,2>10mL
21	CCV-1,CCV,1	12/19/2017 3:07:26 PM	CCV
22	CCB-1,CCB,1	12/19/2017 3:22:44 PM	CCB
23	N027459-001EMS,MS,5	12/19/2017 3:38:02 PM	MS,2>10mL
24	N027459-001EMSD,MSD,5	12/19/2017 3:53:20 PM	MSD,2>10mL
25	N027459-008EMS,MS,5	12/19/2017 4:08:38 PM	MS,2>10mL
26	N027459-004CDUP,DUP,10	12/19/2017 4:23:56 PM	DUP,1>10mL
27	N027459-009C,SAMP,5	12/19/2017 4:39:14 PM	SAMP,2>10mL
28	N027459-010C,SAMP,5	12/19/2017 4:54:31 PM	SAMP,2>10mL
29	N027459-011C,SAMP,1	12/19/2017 5:09:49 PM	SAMP,10mL
30	N027459-012C,SAMP,1	12/19/2017 5:25:07 PM	SAMP,10mL
31	N027459-013C,SAMP,5	12/19/2017 5:40:25 PM	SAMP,2>10mL
32	N027459-014C,SAMP,5	12/19/2017 5:55:43 PM	SAMP,2>10mL
33	CCV-2,CCV,1	12/19/2017 6:11:01 PM	CCV
34	CCB-2,CCB,1	12/19/2017 6:26:19 PM	CCB
35	N027459-015C,SAMP,2	12/19/2017 6:41:37 PM	SAMP,5>10mL
36	N027459-016E,SAMP,1	12/19/2017 6:56:54 PM	SAMP,10mL
37	N027459-017E,SAMP,1	12/19/2017 7:12:13 PM	SAMP,10mL
38	N027459-018C,SAMP,10	12/19/2017 7:27:30 PM	SAMP,1>10mL
39	N027459-019C,SAMP,1	12/19/2017 7:42:48 PM	SAMP,10mL
40	LCS-2,LCS,1	12/19/2017 7:58:06 PM	LCS
41	MB-2,MBLK,1	12/19/2017 8:13:24 PM	METHOD BLANK

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 73
Created: 12/19/2017 9:53:44 AM by IC-05
Last Update: 12/20/2017 8:57:58 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027485-008D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
43	N027485-008DMS,MS,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
44	N027485-008DMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
45	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
46	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
47	N027523-001C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
48	N027523-001CMS,MS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
49	N027523-002C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
50	N027523-002CDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
51	N027485-001D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
52	N027485-002D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
53	N027485-003D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
54	N027485-004D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
55	N027485-005D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
56	N027485-006D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
57	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
58	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
59	N027485-007D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
60	N027485-009D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
61	N027485-010D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
62	N027485-011E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
63	N027485-012E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
64	N027523-003C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
65	N027523-004C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
66	N027523-005E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
67	N027523-006D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
68	N027523-007D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
69	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
70	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
71	N027523-008D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
72	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
73	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 73
Created: 12/19/2017 9:53:44 AM by IC-05
Last Update: 12/20/2017 8:57:58 AM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027485-008D,SAMP,5	12/19/2017 8:28:42 PM	SAMP,2>10mL
43	N027485-008DMS,MS,5	12/19/2017 8:43:59 PM	MS,2>10mL
44	N027485-008DMSD,MSD,5	12/19/2017 8:59:17 PM	MSD,2>10mL
45	CCV-3,CCV,1	12/19/2017 9:14:35 PM	CCV
46	CCB-3,CCB,1	12/19/2017 9:29:53 PM	CCB
47	N027523-001C,SAMP,1	12/19/2017 9:45:11 PM	SAMP,10mL
48	N027523-001CMS,MS,1	12/19/2017 10:00:28 PM	MS,10mL
49	N027523-002C,SAMP,1	12/19/2017 10:15:46 PM	SAMP,10mL
50	N027523-002CDUP,DUP,1	12/19/2017 10:31:04 PM	DUP,10mL
51	N027485-001D,SAMP,1	12/19/2017 10:46:22 PM	SAMP,10mL
52	N027485-002D,SAMP,10	12/19/2017 11:01:39 PM	SAMP,1>10mL
53	N027485-003D,SAMP,10	12/19/2017 11:16:57 PM	SAMP,1>10mL
54	N027485-004D,SAMP,5	12/19/2017 11:32:15 PM	SAMP,2>10mL
55	N027485-005D,SAMP,5	12/19/2017 11:47:33 PM	SAMP,2>10mL
56	N027485-006D,SAMP,5	12/20/2017 12:02:51 AM	SAMP,2>10mL
57	CCV-4,CCV,1	12/20/2017 12:18:09 AM	CCV
58	CCB-4,CCB,1	12/20/2017 12:33:27 AM	CCB
59	N027485-007D,SAMP,5	12/20/2017 12:48:44 AM	SAMP,2>10mL
60	N027485-009D,SAMP,1	12/20/2017 1:04:02 AM	SAMP,10mL
61	N027485-010D,SAMP,5	12/20/2017 1:19:20 AM	SAMP,2>10mL
62	N027485-011E,SAMP,5	12/20/2017 1:34:38 AM	SAMP,2>10mL
63	N027485-012E,SAMP,5	12/20/2017 1:49:56 AM	SAMP,2>10mL
64	N027523-003C,SAMP,1	12/20/2017 2:05:14 AM	SAMP,10mL
65	N027523-004C,SAMP,1	12/20/2017 2:20:32 AM	SAMP,10mL
66	N027523-005E,SAMP,5	12/20/2017 2:35:49 AM	SAMP,2>10mL
67	N027523-006D,SAMP,5	12/20/2017 2:51:08 AM	SAMP,2>10mL
68	N027523-007D,SAMP,5	12/20/2017 3:06:26 AM	SAMP,2>10mL
69	CCV-5,CCV,1	12/20/2017 3:21:44 AM	CCV
70	CCB-5,CCB,1	12/20/2017 3:37:02 AM	CCB
71	N027523-008D,SAMP,5	12/20/2017 3:52:19 AM	SAMP,2>10mL
72	CCV-6,CCV,1	12/20/2017 4:07:37 AM	CCV
73	CCB-6,CCB,1	12/20/2017 4:22:55 AM	CCB

INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 12/19/2017

Initial Calibration:

Bromide	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.05	0.25	0.5	1.25	2.5	R^2
Area,mAU*min	0.0000	0.0046	0.0160	0.0327	0.0765	0.1579	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814D

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 01/03/2018

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0709	0.1410	0.2824	0.7275	1.5389	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RJB 01/03/2018

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0532	0.2181	0.4423	1.1375	2.3683	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120969**
Client ID: **ICV**	Batch ID: **R120969**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2874374**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.218	0.50	1.250	0	97.4	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120969**
Client ID: **CCV**	Batch ID: **R120969**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2874386**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.234	0.50	1.250	0	98.8	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120969**
Client ID: **CCV**	Batch ID: **R120969**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2874398**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.226	0.50	1.250	0	98.1	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120969**
Client ID: **CCV**	Batch ID: **R120969**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2874410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.251	0.50	1.250	0	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **ICV**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2871025**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.042	0.50	2.000	0	102	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCV**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2871027**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.946	0.50	2.000	0	97.3	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCV**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2871031**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.960	0.50	2.000	0	98.0	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCV**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2871038**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.939	0.50	2.000	0	96.9	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCV**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2871045**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.942	0.50	2.000	0	97.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCV**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/16/2017**	SeqNo: **2871052**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.950	0.50	2.000	0	97.5	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCV**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/16/2017**	SeqNo: **2871059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.949	0.50	2.000	0	97.5	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120938**
Client ID: **ICV**	Batch ID: **R120938**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2872652**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.042	0.50	2.000	0	102	90	110				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120938**
Client ID: **CCV**	Batch ID: **R120938**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2872689**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.953	0.50	2.000	0	97.7	90	110				

Sample ID **CCV-8**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120938**
Client ID: **CCV**	Batch ID: **R120938**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2872699**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.943	0.50	2.000	0	97.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **ICV**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2871070**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.936	0.50	4.000	0	98.4	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCV**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2871072**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.766	0.50	4.000	0	94.2	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCV**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2871076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.772	0.50	4.000	0	94.3	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCV**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2871083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.772	0.50	4.000	0	94.3	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCV**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2871090**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.846	0.50	4.000	0	96.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCV**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/16/2017**	SeqNo: **2871097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.797	0.50	4.000	0	94.9	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCV**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/16/2017**	SeqNo: **2871104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.817	0.50	4.000	0	95.4	90	110				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCV**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/16/2017**	SeqNo: **2871111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.902	0.50	4.000	0	97.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120969**
Client ID: **ICB**	Batch ID: **R120969**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2874375**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120969**
Client ID: **CCB**	Batch ID: **R120969**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2874387**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120969**
Client ID: **CCB**	Batch ID: **R120969**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2874399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120969**
Client ID: **CCB**	Batch ID: **R120969**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2874411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **ICB**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2871026**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCB**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2871028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCB**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2871032**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCB**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2871039**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCB**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2871046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCB**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/16/2017**	SeqNo: **2871053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCB**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/16/2017**	SeqNo: **2871060**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.157	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120938**
Client ID: **ICB**	Batch ID: **R120938**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2872653**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120938**
Client ID: **CCB**	Batch ID: **R120938**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2872690**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120938**
Client ID: **CCB**	Batch ID: **R120938**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2872700**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **ICB**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2871071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCB**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2871073**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCB**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2871077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCB**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2871084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCB**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/15/2017**	SeqNo: **2871091**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCB**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/16/2017**	SeqNo: **2871098**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCB**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/16/2017**	SeqNo: **2871105**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120893**
Client ID: **CCB**	Batch ID: **R120893**	TestNo: **EPA 300.0**		Analysis Date: **12/16/2017**	SeqNo: **2871112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.221	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/15/2017

Sample Name		Retention Time	Evaluation
CCV-1	Chloride	3.764	
CCV-2	Chloride	3.767	
CCV-3	Chloride	3.767	
CCV-4	Chloride	3.764	
CCV-5	Chloride	3.763	
CCV-6	Chloride	3.764	

Average 3.765

Applied RT Window 3.565 - 3.965

MB-R120893_CL	Chloride	N.A.	N.A.
LCS-R120893_CL	Chloride	3.763	PASS
N027459-001E	Chloride	3.763	PASS
N027459-001EMS	Chloride	3.767	PASS
N027459-001EMSD	Chloride	3.767	PASS
N027459-005C	Chloride	3.767	PASS
N027459-005CMS	Chloride	3.767	PASS
N027459-005CDUP	Chloride	3.767	PASS
N027459-002E	Chloride	3.767	PASS
N027459-003C	Chloride	3.767	PASS
N027459-004C	Chloride	3.767	PASS
N027459-006C	Chloride	3.767	PASS
N027459-007C	Chloride	3.767	PASS
N027459-008E	Chloride	3.767	PASS
N027459-009C	Chloride	3.763	PASS
N027459-010C	Chloride	3.767	PASS
N027459-011C	Chloride	3.767	PASS
N027459-012C	Chloride	3.767	PASS
N027459-013C	Chloride	3.764	PASS
N027459-014C	Chloride	3.767	PASS
N027459-015C	Chloride	3.767	PASS
N027459-016E	Chloride	3.767	PASS

rba 12/21/2017

RLB 01/03/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/18/2017

Sample Name		Retention Time	Evaluation
CCV-7	Chloride	3.743	
CCV-8	Chloride	3.744	
	Average	3.744	
	Applied RT Window	3.544 - 3.944	
LCS-R120938_CL	Chloride	3.743	PASS
MB-R120938_CL	Chloride	N.A.	N.A.
N027459-017E	Chloride	3.747	PASS
N027459-018C	Chloride	3.747	PASS
N027459-019C	Chloride	3.747	PASS
N027459-019CDUP	Chloride	3.747	PASS
N027459-019CMS	Chloride	3.747	PASS
N027459-019CMSD	Chloride	3.747	PASS

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RLB 01/03/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/15/2017

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	7.407	
CCV-2	Sulfate	7.404	
CCV-3	Sulfate	7.404	
CCV-4	Sulfate	7.407	
CCV-5	Sulfate	7.403	
CCV-6	Sulfate	7.397	
CCV-7	Sulfate	7.400	

Average 7.403

Applied RT Window 7.203 - 7.603

MB-R120893_SO4	Sulfate	N.A.	N.A.
LCS-R120893_SO4	Sulfate	7.397	PASS
N027459-001E	Sulfate	7.407	PASS
N027459-001EMS	Sulfate	7.410	PASS
N027459-001EMSD	Sulfate	7.407	PASS
N027459-005C	Sulfate	7.404	PASS
N027459-005CMS	Sulfate	7.407	PASS
N027459-005CDUP	Sulfate	7.403	PASS
N027459-002E	Sulfate	7.403	PASS
N027459-003C	Sulfate	7.407	PASS
N027459-004C	Sulfate	7.407	PASS
N027459-006C	Sulfate	7.404	PASS
N027459-007C	Sulfate	7.407	PASS
N027459-008E	Sulfate	7.407	PASS
N027459-009C	Sulfate	7.404	PASS
N027459-010C	Sulfate	7.404	PASS
N027459-011C	Sulfate	7.407	PASS
N027459-012C	Sulfate	7.403	PASS
N027459-013C	Sulfate	7.403	PASS
N027459-014C	Sulfate	7.407	PASS
N027459-015C	Sulfate	7.403	PASS
N027459-016E	Sulfate	7.400	PASS
N027459-017E	Sulfate	7.400	PASS

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RB 01/03/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/15/2017

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	7.407	
CCV-2	Sulfate	7.404	
CCV-3	Sulfate	7.404	
CCV-4	Sulfate	7.407	
CCV-5	Sulfate	7.403	
CCV-6	Sulfate	7.397	
CCV-7	Sulfate	7.400	
	Average	7.403	
	Applied RT Window	7.203 - 7.603	
N027459-018C	Sulfate	7.400	PASS
N027459-019C	Sulfate	7.400	PASS

rba 12/21/2017

RLB 01/03/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/19/2017

Sample Name		Retention Time	Evaluation
ICV	Bromide	5.804	
CCV-1	Bromide	5.807	
CCV-2	Bromide	5.810	
CCV-3	Bromide	5.810	
	Average	5.808	
	Applied RT Window	5.608 - 6.008	
MB-R120969_BR	Bromide	N.A.	N.A.
LCS-R120969_BR	Bromide	5.804	PASS
N027459-001E	Bromide	5.790	PASS
N027459-002E	Bromide	5.797	PASS
N027459-003C	Bromide	5.800	PASS
N027459-004C	Bromide	5.807	PASS
N027459-005C	Bromide	5.800	PASS
N027459-006C	Bromide	5.784	PASS
N027459-007C	Bromide	5.810	PASS
N027459-008E	Bromide	5.807	PASS
N027459-001EMS	Bromide	5.810	PASS
N027459-001EMSD	Bromide	5.810	PASS
N027459-008EMS	Bromide	5.807	PASS
N027459-004CDUP	Bromide	5.800	PASS
N027459-009C	Bromide	5.773	PASS
N027459-010C	Bromide	5.794	PASS
N027459-011C	Bromide	5.797	PASS
N027459-012C	Bromide	5.810	PASS
N027459-013C	Bromide	N.A.	N.A.
N027459-014C	Bromide	5.803	PASS
N027459-015C	Bromide	5.800	PASS
N027459-016E	Bromide	5.810	PASS
N027459-017E	Bromide	5.807	PASS
N027459-018C	Bromide	5.764	PASS
N027459-019C	Bromide	N.A.	N.A.

rba 12/21/2017

RLB 01/03/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 5/23/2017 ; 5/24/2017; 5/25/2017
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Datafile	170523A D36	170523A D37	170523A D38	170524A D17	170524A D18	170525A D45	170525A D46					
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**MDL**	**LOD**	**PQL**
Fluoride	0.020	0.022	0.021	0.020	0.023	0.026	0.024	0.020	0.0021	**0.0065**	0.020	0.10
Chloride	0.133	0.136	0.136	0.133	0.141	0.133	0.136	0.025	0.0029	**0.0091**	0.020	0.50
Nitrite	0.030	0.028	0.027	0.028	0.028	0.027	0.027	0.020	0.0010	**0.0030**	0.010	0.05
Bromide	0.037	0.042	0.043	0.038	0.040	0.032	0.025	0.040	0.0062	**0.0196**	0.040	0.20
Nitrate	0.035	0.034	0.033	0.033	0.033	0.031	0.030	0.020	0.0016	**0.0050**	0.010	0.05
Phosphate	0.047	0.051	0.049	0.046	0.052	0.047	0.059	0.040	0.0043	**0.0135**	0.030	0.10
Sulfate	0.213	0.199	0.208	0.216	0.199	0.201	0.198	0.050	0.0073	**0.0229**	0.050	0.50

MDL/LOD & PQL Verification 2017

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)** Matrix: **WATER**
Method Number: EPA Method 300.0 Unit: mg/L
Analysis Date(s): 5/26/2017
Analyst: Ria Abes

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0065**	0.020	0.024	0.10	0.0906	**91**
Chloride	**0.0091**	0.020	0.130	0.50	0.5635	**113**
Nitrite	**0.0030**	0.010	0.023	0.05	0.0581	**116**
Bromide	**0.0196**	0.040	0.048	0.20	0.194	**97**
Nitrate	**0.0050**	0.010	0.023	0.05	0.0599	**120**
Phosphate	**0.0135**	0.030	0.043	0.10	0.1111	**111**
Sulfate	**0.0229**	0.050	0.195	0.50	0.6178	**124**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121034 **Analyst:** QBM

ASSET #: N027431, N027459, N027485 **Date Analyzed:** 12/22/2017

Method: **4500_NO3**

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 1/3/2018

2nd Level Reviewer RJB 01/03/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N027459-001D**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.4579	*	5
	=	2.2895	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 2.3 mg/L

RLB 01/03/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

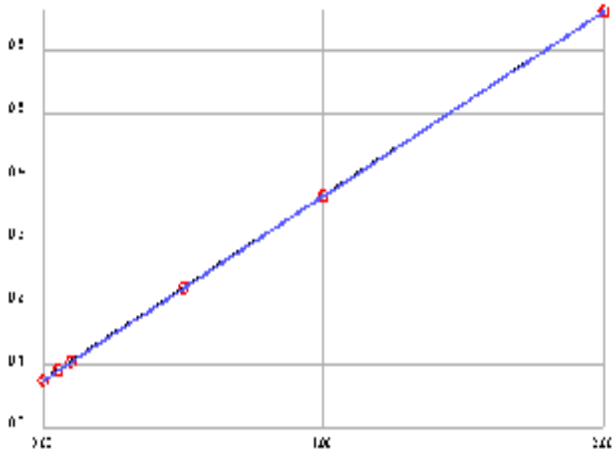
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2922x + 0.0757
Correlation	.999995

Calibrant	Energy	Set	Conc
1	0.0748	0.0000	-0.0031
2	0.0909	0.0500	0.0520
3	0.1050	0.1000	0.1003
4	0.2227	0.5000	0.5031
5	0.3670	1.0000	0.9969
6	0.6603	2.0000	2.0007

Notes:

01/03/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **ICV**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877766**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.537	0.050	0.5000	0	107	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **CCV**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877777**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.507	0.050	0.5000	0	101	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **CCV**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.548	0.050	0.5000	0	110	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **CCV**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877800**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.478	0.050	0.5000	0	95.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **ICB**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **CCB**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877778**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **CCB**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877789**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **CCB**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877801**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 12-22-2017 12:36
Time end: 12-22-2017 15:38

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK> NOT REPORTED	14:55:32	-0.0027		0.0749
2	<BLANK> NOT REPORTED	14:56:26	0.0004		0.0758
3	<CAL1>	14:57:27	-0.0031	[0]	0.0748
4	<CAL2>	14:58:23	0.0520	[0.05]	0.0909
5	<CAL3>	14:59:24	0.1003	[0.1]	0.1050
6	<CAL4>	15:00:18	0.5031	[0.5]	0.2227
7	<CAL5>	15:01:14	0.9969	[1]	0.3670
8	<CAL6>	15:02:09	2.0007	[2]	0.6603
9	,BLANK,BLANK,1, NOT REPORTED	15:03:09	0.0503		0.0904
10	,ICV,ICV,1,	15:04:05	0.5370		0.2326
11	,ICB,ICB,1,	15:05:00	0.0096		0.0785
12	,MB-H2O,MBLK,1,	15:06:02	-0.0017		0.0752
13	,LCS-H2O,LCS,1,	15:06:56	0.4963		0.2207
14	,N027431-005D,SAMP,10,	15:07:57	0.9004		0.3388
15	,N027431-005DDUP,DUP,10,	15:08:53	0.9148		0.3430
16	,N027431-006D,SAMP,20,	15:09:47	0.7522		0.2955
17	,N027431-006DMS,MS,20,	15:10:49	1.2546		0.4423
18	,N027431-006DMSD,MSD,20,	15:11:44	1.2392		0.4378
19	,N027459-001D,SAMP,5,	15:12:40	0.4579		0.2095
20	,BLANK, NOT REPORTED	15:13:40	0.0141		0.0798
21	,CCV-1,CCV,1, NOT REPORTED	15:14:36	0.5243		0.2289
22	,CCV-1,CCV,1,	15:15:31	0.5065		0.2237
23	,CCB-1,CCB,1,	15:16:32	0.0055		0.0773
24	,N027459-002D,SAMP,5,	15:17:27	0.5349		0.2320
25	,N027459-008D,SAMP,10	15:18:22	1.2396		0.4379
26	,N027459-013D,SAMP,1,	15:19:24	0.3310		0.1724

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			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N027459-016D,SAMP,10,	15:20:18	0.8255		0.3169
28	,N027459-017D,SAMP,10,	15:21:20	0.8409		0.3214
29	,N027459-019D,SAMP,1,	15:22:15	0.0219		0.0821
30	,N027485-001C,SAMP,10,	15:23:03	0.4459		0.2060
31	,N027485-002C,SAMP,5,	15:23:47	0.7646		0.2991
32	,BLANK, NOT REPORTED	15:24:36	0.0028		0.0765
33	,CCV-2,CCV,1, NOT REPORTED	15:25:18	0.4963		0.2207
34	,CCV-2,CCV,1,	15:26:02	0.5483		0.2359
35	,CCB-2,CCB,1,	15:26:50	-0.0068		0.0737
36	,N027485-003C,SAMP,5,	15:27:33	0.6667		0.2705
37	,N027485-004C,SAMP,10,	15:28:15	0.8696		0.3298
38	,N027485-005C,SAMP,1,	15:29:04	0.0493		0.0901
39	,N027485-006C,SAMP,1,	15:29:46	0.1393		0.1164
40	,N027485-007C,SAMP,1,	15:30:30	0.1482		0.1190
41	,N027485-008C,SAMP,10,	15:31:19	0.9504		0.3534
42	,N027485-009C,SAMP,20,	15:32:01	0.7338		0.2901
43	,N027485-010C,SAMP,1,	15:32:44	1.1852		0.4220
44	,N027485-011D,SAMP,20,	15:33:32	1.0421		0.3802
45	,BLANK, NOT REPORTED	15:34:16	-0.0034		0.0747
46	,CCV-3,CCV,1, NOT REPORTED	15:35:04	0.4689		0.2127
47	,CCV-3,CCV,1,	15:35:47	0.4778		0.2153
48	,CCB-3,CCB,1,	15:36:31	-0.0079		0.0734

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 12/22/2017
Time Analyzed: 12:31 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171220B
Color reagent: R171220C
2% Copper Sulfate: R171220A
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027485-012D		8.02							
N027523-005D		7.85							
N027523-008C		8.35							
N027523-009C		7.83							
N027523-012C		6.43							
N027524-001C		7.81							
N027524-002C		8.31							
N027524-003C		8.30							
N027524-004C		7.89							
N027524-005C		8.24							
N027524-006C		8.11							
N027524-007C		7.95							
N027524-008C		8.02							
N027524-009C		7.7							
N027524-010C		8.19							
N027524-011C		7.90							
N027524-012C		7.39							
N027524-013C		6.76							
N027546-001C		8.24							
N027546-002C		7.47							

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Book # 1

RLB 01/03/2018

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65994
ASSET #: N027459

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/19/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)		X			X	
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X			X	
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of Ca in LLCCV2 failed, bias high. However Ca have high concentration, thus reported.
%Rec of Ca in N027459-001C PS/MS/MSD failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: _____

2nd Level Reviewer 01/02/2018 Date: _____

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65994
ASSET #: N027459

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/21/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		X
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?		X			X	
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		X
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X			X	
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For K & Na run only.
%Rec of Na in N027459-002C PS/MS/MSD failed. However LCS & DT passed criteria.
%Rec of IS in CCV5 failed. Na in N027459-006B, 011B, 012B, 018B & 019B for rerun.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: —

2nd Level Reviewer 01/02/2018 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65994
ASSET #: N027459

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/22/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		X
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		X
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		X
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			X
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .			X			X
24. LCS compounds within control limits.			X			X
25. MS/MSD, RPD's are within control limits			X			X
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For Na in N027459-006B, 011B, 012B, 018B & 019B rerun only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: —

2nd Level Reviewer 01/02/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Boron concentration, in ug/L , in the original sample as follows:

Boron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N027459-001C** , the concentration ir ug/L is calculated as follows:

Boron , ug/L = 0.73701 * 1 * (25/25) * 1000

Boron , ug/L = 737.01

Reporting results in two significant figures,

Boron , ug/L = 740

% RSD SUMMARY

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	B	0	0.26	15	PASS
Standard1	ICAL	1	B	0.1	1.13	15	PASS
Standard3	ICAL	1	B	1	1.19	15	PASS
Standard4	ICAL	1	B	2.5	0.29	15	PASS
Standard5	ICAL	1	B	3.75	0.44	15	PASS
Standard6	ICAL	1	B	5	0.45	15	PASS
Standard7	ICAL	1	B	10	0.59	15	PASS
ICV	ICV	1	B	5.1	0.28	15	PASS
ICB	ICB	1	B	0.032	8.5	15	PASS
LLICV	CCV1	1	B	0.11	1.62	20	PASS
ICSA1	ICSA	1	B	0.088	1.47	15	PASS
ICSAB1	ICSAB	1	B	1.17	0.43	15	PASS
CCV1	CCV	1	B	5.077	0.44	15	PASS
CCB1	CCB	1	B	0.041	16.48	15	<PQL
CCB1	CCB	1	B	0.013	11.56	15	PASS
MB-65994	MBLK	1	B	0.0018	60.78	15	<PQL
LCS1-65994	LCS	1	B	5.01	0.58	15	PASS
N027459-001C	SAMP	1	B	0.74	0.12	15	PASS
N027459-001C	SAMP	5	B	0.17	0.38	15	PASS
N027459-001C-PS	PS	1	B	5.59	0.65	15	PASS
N027459-001C-MS1	MS	1	B	5.65	0.42	15	PASS
N027459-001C-MSD1	MSD	1	B	5.66	0.45	15	PASS
CCV2	CCV	1	B	4.92	0.23	15	PASS
CCB2	CCB	1	B	0.031	17.11	15	<PQL
N027459-002C	SAMP	1	B	0.78	0.42	15	PASS
N027459-003B	SAMP	1	B	0.65	0.41	15	PASS
N027459-004B	SAMP	1	B	0.77	0.42	15	PASS
N027459-005B	SAMP	1	B	0.79	0.42	15	PASS
N027459-006B	SAMP	1	B	1.84	0.39	15	PASS
N027459-007B	SAMP	1	B	0.39	0.4	15	PASS
N027459-008C	SAMP	1	B	0.37	0.75	15	PASS
N027459-009B	SAMP	1	B	1.25	0.45	15	PASS
N027459-010B	SAMP	1	B	1.29	0.37	15	PASS
N027459-011B	SAMP	1	B	1.46	3.67	15	PASS
CCV3	CCV	1	B	5.2	0.21	15	PASS
CCB3	CCB	1	B	0.058	12.023	15	PASS
N027459-012B	SAMP	1	B	0.22	1.67	15	PASS
CCB3	CCB	1	B	0.021	7.91	15	PASS
N027459-012B	SAMP	1	B	0.2	0.34	15	PASS
N027459-013B	SAMP	1	B	1.73	0.6	15	PASS
N027459-014B	SAMP	1	B	0.8	0.28	15	PASS
N027459-015B	SAMP	1	B	0.41	0.11	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027459-016C	SAMP	1	B	0.88	0.062	15	PASS
N027459-017C	SAMP	1	B	0.9	0.33	15	PASS
N027459-018B	SAMP	1	B	2.19	0.84	15	PASS
N027459-019B	SAMP	1	B	2.19	0.52	15	PASS
CCV4	CCV	1	B	4.9	0.63	15	PASS
CCB4	CCB	1	B	0.0098	9.57	15	PASS
LLCCV1	CCV2	1	B	0.098	1.19	20	PASS
ICSA2	ICSA	1	B	0.084	1.79	15	PASS
ICSAB2	ICSAB	1	B	1.18	0.47	15	PASS
CCV5	CCV	1	B	5.13	0.54	15	PASS
CCB5	CCB	1	B	0.031	4.82	15	PASS
CCV6	CCV	1	B	4.93	0.59	15	PASS
CCB6	CCB	1	B	0.036	56.96	15	<PQL
N027459-003B	SAMP	5	B	0.17	0.13	15	PASS
N027459-004B	SAMP	5	B	0.19	0.43	15	PASS
N027459-006B	SAMP	5	B	0.41	0.6	15	PASS
N027459-018B	SAMP	5	B	0.46	0.38	15	PASS
CCV7	CCV	1	B	4.81	0.42	15	PASS
CCB7	CCB	1	B	0.028	6.54	15	PASS
CCV8	CCV	1	B	4.97	0.8	15	PASS
CCB8	CCB	1	B	0.032	9.49	15	PASS
LLCCV2	CCV2	1	B	0.1	3.18	20	PASS
ICSA3	ICSA	1	B	0.086	0.97	15	PASS
ICSAB3	ICSAB	1	B	1.15	0.53	15	PASS
CCV9	CCV	1	B	4.87	0.67	15	PASS
CCB9	CCB	1	B	0.025	10.58	15	PASS
CCV10	CCV	1	B	4.82	0.81	15	PASS
CCB10	CCB	1	B	0.035	8.23	15	PASS
CCV11	CCV	1	B	4.74	0.42	15	PASS
CCB11	CCB	1	B	0.046	7.74	15	PASS
CCB11	CCB	1	B	0.019	5.52	15	PASS
CCV12	CCV	1	B	4.85	0.53	15	PASS
CCB12	CCB	1	B	0.024	7.59	15	PASS
LLCCV3	CCV2	1	B	0.1	3.0087	20	PASS
ICSA4	ICSA	1	B	0.09	1.081	15	PASS
ICSAB4	ICSAB	1	B	1.13	0.64	15	PASS
CCV13	CCV	1	B	4.89	1.000094	15	PASS
CCB13	CCB	1	B	0.031	9.85	15	PASS
CCV14	CCV	1	B	4.96	0.56	15	PASS
CCB14	CCB	1	B	0.027	1.84	15	PASS
CCV15	CCV	1	B	4.83	0.61	15	PASS
CCB15	CCB	1	B	0.029	4.2	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV16	CCV	1	B	4.8	0.77	15	PASS
CCB16	CCB	1	B	0.047	12.42	15	PASS
CCB16	CCB	1	B	0.02	4.068	15	PASS
CCV17	CCV	1	B	5.24	1.23	15	PASS
CCB17	CCB	1	B	0.06	11.74	15	PASS
LLCCV4	CCV2	1	B	0.12	1.54	20	PASS
LLCCV4	CCV2	1	B	0.079	0.74	20	PASS
ICSA5	ICSA	1	B	0.085	1.33	15	PASS
ICSAB5	ICSAB	1	B	1.22	0.32	15	PASS
ICSAB5	ICSAB	1	B	1.022	2.62	15	PASS
CalBlk	IBLK	1	Ca	0	4.61	15	PASS
Standard1	ICAL	1	Ca	0.2	11.24	15	PASS
Standard2	ICAL	1	Ca	1	4.85	15	PASS
Standard3	ICAL	1	Ca	2	2.89	15	PASS
Standard4	ICAL	1	Ca	5	0.84	15	PASS
Standard5	ICAL	1	Ca	7.5	0.92	15	PASS
Standard6	ICAL	1	Ca	10	0.58	15	PASS
Standard7	ICAL	1	Ca	20	0.33	15	PASS
ICV	ICV	1	Ca	10.1	0.16	15	PASS
ICB	ICB	1	Ca	0.025	67.56	15	<PQL
LLICV	CCV1	1	Ca	0.23	11.41	20	PASS
ICSA1	ICSA	1	Ca	506.49	0.09	15	PASS
ICSAB1	ICSAB	1	Ca	555.54	0.11	15	PASS
CCV1	CCV	1	Ca	10.087	0.51	15	PASS
CCB1	CCB	1	Ca	-0.021	131.14	15	<PQL
CCB1	CCB	1	Ca	0.033	27.36	15	<PQL
MB-65994	MBLK	1	Ca	0.0063	245.057	15	<PQL
LCS1-65994	LCS	1	Ca	10.26	0.43	15	PASS
N027459-001C	SAMP	1	Ca	242.31	0.1	15	PASS
N027459-001C	SAMP	5	Ca	52.22	0.23	15	PASS
N027459-001C-PS	PS	1	Ca	256.86	0.083	15	PASS
N027459-001C-MS1	MS	1	Ca	259.44	0.18	15	PASS
N027459-001C-MSD1	MSD	1	Ca	258.9	0.13	15	PASS
CCV2	CCV	1	Ca	9.9	0.58	15	PASS
CCB2	CCB	1	Ca	0.0035	666.54	15	<PQL
N027459-002C	SAMP	1	Ca	267.18	0.096	15	PASS
N027459-003B	SAMP	1	Ca	862.6	0.16	15	PASS
N027459-004B	SAMP	1	Ca	749.48	0.15	15	PASS
N027459-005B	SAMP	1	Ca	119.88	0.27	15	PASS
N027459-006B	SAMP	1	Ca	518.84	0.046	15	PASS
N027459-007B	SAMP	1	Ca	107.04	0.63	15	PASS
N027459-008C	SAMP	1	Ca	124.57	0.62	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027459-009B	SAMP	1	Ca	171.16	0.2	15	PASS
N027459-010B	SAMP	1	Ca	176.16	0.33	15	PASS
N027459-011B	SAMP	1	Ca	102.77	0.59	15	PASS
CCV3	CCV	1	Ca	10.16	0.48	15	PASS
CCB3	CCB	1	Ca	0.00041	7555.71	15	<PQL
N027459-012B	SAMP	1	Ca	71.48	0.22	15	PASS
CCB3	CCB	1	Ca	0.018	110.92	15	<PQL
N027459-012B	SAMP	1	Ca	71.36	0.29	15	PASS
N027459-013B	SAMP	1	Ca	347.67	0.18	15	PASS
N027459-014B	SAMP	1	Ca	201.84	0.068	15	PASS
N027459-015B	SAMP	1	Ca	118.95	0.14	15	PASS
N027459-016C	SAMP	1	Ca	106.94	0.32	15	PASS
N027459-017C	SAMP	1	Ca	108.74	0.17	15	PASS
N027459-018B	SAMP	1	Ca	594.27	0.45	15	PASS
N027459-019B	SAMP	1	Ca	106.45	0.071	15	PASS
CCV4	CCV	1	Ca	9.88	0.11	15	PASS
CCB4	CCB	1	Ca	0.029	117.34	15	<PQL
LLCCV1	CCV2	1	Ca	0.22	13.79	20	PASS
ICSA2	ICSA	1	Ca	511.76	0.092	15	PASS
ICSAB2	ICSAB	1	Ca	558.43	0.18	15	PASS
CCV5	CCV	1	Ca	10.35	0.77	15	PASS
CCB5	CCB	1	Ca	0.0066	281.14	15	<PQL
CCV6	CCV	1	Ca	10.068	0.64	15	PASS
CCB6	CCB	1	Ca	-0.02	390.28	15	<PQL
N027459-003B	SAMP	5	Ca	171.22	0.086	15	PASS
N027459-004B	SAMP	5	Ca	148.91	0.23	15	PASS
N027459-006B	SAMP	5	Ca	99.7	0.19	15	PASS
N027459-018B	SAMP	5	Ca	107.37	0.079	15	PASS
CCV7	CCV	1	Ca	9.85	0.94	15	PASS
CCB7	CCB	1	Ca	0.031	61.44	15	<PQL
CCV8	CCV	1	Ca	10.064	0.5	15	PASS
CCB8	CCB	1	Ca	0.048	44.45	15	<PQL
LLCCV2	CCV2	1	Ca	0.27	8.72	20	PASS
ICSA3	ICSA	1	Ca	497.08	0.11	15	PASS
ICSAB3	ICSAB	1	Ca	543.69	0.18	15	PASS
CCV9	CCV	1	Ca	10.13	0.85	15	PASS
CCB9	CCB	1	Ca	0.061	16.2	15	<PQL
CCV10	CCV	1	Ca	9.92	0.49	15	PASS
CCB10	CCB	1	Ca	0.063	30.0053	15	<PQL
CCV11	CCV	1	Ca	9.66	0.31	15	PASS
CCB11	CCB	1	Ca	0.049	17.31	15	<PQL
CCB11	CCB	1	Ca	0.053	25.75	15	<PQL

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV12	CCV	1	Ca	9.88	0.73	15	PASS
CCB12	CCB	1	Ca	0.055	96.22	15	<PQL
LLCCV3	CCV2	1	Ca	0.26	4.53	20	PASS
ICSA4	ICSA	1	Ca	489.73	0.39	15	PASS
ICSAB4	ICSAB	1	Ca	536.67	0.25	15	PASS
CCV13	CCV	1	Ca	9.81	0.84	15	PASS
CCB13	CCB	1	Ca	0.061	71.21	15	<PQL
CCV14	CCV	1	Ca	10.006	0.81	15	PASS
CCB14	CCB	1	Ca	0.021	202	15	<PQL
CCV15	CCV	1	Ca	9.48	0.87	15	PASS
CCB15	CCB	1	Ca	0.038	117.27	15	<PQL
CCV16	CCV	1	Ca	9.47	0.34	15	PASS
CCB16	CCB	1	Ca	0.0024	667.76	15	<PQL
CCB16	CCB	1	Ca	0.044	46.61	15	<PQL
CCV17	CCV	1	Ca	10.46	0.51	15	PASS
CCB17	CCB	1	Ca	-0.019	142.64	15	<PQL
LLCCV4	CCV2	1	Ca	0.27	10.024	20	PASS
LLCCV4	CCV2	1	Ca	0.16	3.77	20	PASS
ICSA5	ICSA	1	Ca	511.39	0.15	15	PASS
ICSAB5	ICSAB	1	Ca	561.62	0.28	15	PASS
ICSAB5	ICSAB	1	Ca	464.82	0.11	15	PASS
CalBlk	IBLK	1	Fe	0	4.28	15	PASS
Standard1	ICAL	1	Fe	0.02	0.87	15	PASS
Standard2	ICAL	1	Fe	0.05	0.44	15	PASS
Standard3	ICAL	1	Fe	2	0.44	15	PASS
Standard4	ICAL	1	Fe	5	0.75	15	PASS
Standard5	ICAL	1	Fe	7.5	0.33	15	PASS
Standard6	ICAL	1	Fe	10	1.027	15	PASS
Standard7	ICAL	1	Fe	20	0.18	15	PASS
ICV	ICV	1	Fe	10.27	0.25	15	PASS
ICB	ICB	1	Fe	0.00026	186.27	15	<PQL
LLICV	CCV1	1	Fe	0.022	2.86	20	PASS
ICSA1	ICSA	1	Fe	179.79	0.53	15	PASS
ICSAB1	ICSAB	1	Fe	187.59	0.075	15	PASS
CCV1	CCV	1	Fe	10.069	0.16	15	PASS
CCB1	CCB	1	Fe	-0.00017	84.95	15	<PQL
CCB1	CCB	1	Fe	0.00077	31.18	15	<PQL
MB-65994	MBLK	1	Fe	0.00033	147.049	15	<PQL
LCS1-65994	LCS	1	Fe	0.11	0.48	15	PASS
N027459-001C	SAMP	1	Fe	0.014	1.39	15	PASS
N027459-001C	SAMP	5	Fe	0.003	25.64	15	<PQL
N027459-001C-PS	PS	1	Fe	0.1	0.53	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027459-001C-MS1	MS	1	Fe	0.12	1.59	15	PASS
N027459-001C-MSD1	MSD	1	Fe	0.12	1.11	15	PASS
CCV2	CCV	1	Fe	9.77	0.13	15	PASS
CCB2	CCB	1	Fe	0.0002	102.016	15	<PQL
N027459-002C	SAMP	1	Fe	0.062	0.75	15	PASS
N027459-003B	SAMP	1	Fe	0.025	2.35	15	PASS
N027459-004B	SAMP	1	Fe	0.033	2.87	15	PASS
N027459-005B	SAMP	1	Fe	0.036	1.78	15	PASS
N027459-006B	SAMP	1	Fe	0.11	0.95	15	PASS
N027459-007B	SAMP	1	Fe	0.04	1.26	15	PASS
N027459-008C	SAMP	1	Fe	0.064	0.38	15	PASS
N027459-009B	SAMP	1	Fe	0.043	2.54	15	PASS
N027459-010B	SAMP	1	Fe	0.06	0.5	15	PASS
N027459-011B	SAMP	1	Fe	0.054	1.75	15	PASS
CCV3	CCV	1	Fe	10.41	0.3	15	PASS
CCB3	CCB	1	Fe	-0.00038	191.48	15	<PQL
N027459-012B	SAMP	1	Fe	0.049	0.5	15	PASS
CCB3	CCB	1	Fe	-0.00056	180.67	15	<PQL
N027459-012B	SAMP	1	Fe	0.049	1.11	15	PASS
N027459-013B	SAMP	1	Fe	0.045	0.85	15	PASS
N027459-014B	SAMP	1	Fe	0.035	3.67	15	PASS
N027459-015B	SAMP	1	Fe	3.96	0.084	15	PASS
N027459-016C	SAMP	1	Fe	0.067	0.14	15	PASS
N027459-017C	SAMP	1	Fe	0.39	0.7	15	PASS
N027459-018B	SAMP	1	Fe	41.93	0.067	15	PASS
N027459-019B	SAMP	1	Fe	0.28	0.94	15	PASS
CCV4	CCV	1	Fe	9.84	0.095	15	PASS
CCB4	CCB	1	Fe	-0.00024	315.41	15	<PQL
LLCCV1	CCV2	1	Fe	0.023	3.26	20	PASS
ICSA2	ICSA	1	Fe	181.78	0.087	15	PASS
ICSAB2	ICSAB	1	Fe	188.99	0.08	15	PASS
CCV5	CCV	1	Fe	10.61	0.8	15	PASS
CCB5	CCB	1	Fe	-0.00035	70.82	15	<PQL
CCV6	CCV	1	Fe	9.94	0.081	15	PASS
CCB6	CCB	1	Fe	-0.00036	570.094	15	<PQL
N027459-003B	SAMP	5	Fe	0.0057	8.87	15	PASS
N027459-004B	SAMP	5	Fe	0.0069	5.28	15	PASS
N027459-006B	SAMP	5	Fe	0.025	0.85	15	PASS
N027459-018B	SAMP	5	Fe	9.14	0.095	15	PASS
CCV7	CCV	1	Fe	9.65	0.12	15	PASS
CCB7	CCB	1	Fe	-0.00011	510.0072	15	<PQL
CCV8	CCV	1	Fe	10.27	0.49	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB8	CCB	1	Fe	0.0003	205.79	15	<PQL
LLCCV2	CCV2	1	Fe	0.023	0.9	20	PASS
ICSA3	ICSA	1	Fe	176.99	0.26	15	PASS
ICSAB3	ICSAB	1	Fe	184.65	0.061	15	PASS
CCV9	CCV	1	Fe	10.19	0.37	15	PASS
CCB9	CCB	1	Fe	0.00067	27.46	15	<PQL
CCV10	CCV	1	Fe	10.15	0.17	15	PASS
CCB10	CCB	1	Fe	0.00061	54.82	15	<PQL
CCV11	CCV	1	Fe	9.7	0.18	15	PASS
CCB11	CCB	1	Fe	0.00057	19.74	15	<PQL
CCB11	CCB	1	Fe	0.00089	115.74	15	<PQL
CCV12	CCV	1	Fe	10.18	0.8	15	PASS
CCB12	CCB	1	Fe	0.0005	8.21	15	PASS
LLCCV3	CCV2	1	Fe	0.024	1.89	20	PASS
ICSA4	ICSA	1	Fe	175.82	1.053	15	PASS
ICSAB4	ICSAB	1	Fe	183.95	0.15	15	PASS
CCV13	CCV	1	Fe	10.15	0.56	15	PASS
CCB13	CCB	1	Fe	0.0011	103.41	15	<PQL
CCV14	CCV	1	Fe	10.17	0.018	15	PASS
CCB14	CCB	1	Fe	-0.00054	87.53	15	<PQL
CCV15	CCV	1	Fe	9.94	0.59	15	PASS
CCB15	CCB	1	Fe	-0.0011	9.77	15	PASS
CCV16	CCV	1	Fe	9.92	0.5	15	PASS
CCB16	CCB	1	Fe	0.00074	80.4	15	<PQL
CCB16	CCB	1	Fe	-0.0007	36.19	15	<PQL
CCV17	CCV	1	Fe	10.91	0.67	15	PASS
CCB17	CCB	1	Fe	-0.00067	75.16	15	<PQL
LLCCV4	CCV2	1	Fe	0.025	2.86	20	PASS
LLCCV4	CCV2	1	Fe	0.017	5.58	20	PASS
ICSA5	ICSA	1	Fe	187.83	0.26	15	PASS
ICSAB5	ICSAB	1	Fe	196.9	0.18	15	PASS
ICSAB5	ICSAB	1	Fe	200.61	1.075	15	PASS
CalBlk	IBLK	1	Mg	0	3.29	15	PASS
Standard1	ICAL	1	Mg	0.1	0.36	15	PASS
Standard2	ICAL	1	Mg	1	0.34	15	PASS
Standard3	ICAL	1	Mg	2	0.47	15	PASS
Standard4	ICAL	1	Mg	5	0.56	15	PASS
Standard5	ICAL	1	Mg	7.5	0.35	15	PASS
Standard6	ICAL	1	Mg	10	1.06	15	PASS
Standard7	ICAL	1	Mg	20	0.26	15	PASS
ICV	ICV	1	Mg	10.26	0.12	15	PASS
ICB	ICB	1	Mg	-0.00057	102.75	15	<PQL

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
LLICV	CCV1	1	Mg	0.1	1.00022	20	PASS
ICSA1	ICSA	1	Mg	475.94	0.47	15	PASS
ICSAB1	ICSAB	1	Mg	503.56	0.34	15	PASS
CCV1	CCV	1	Mg	10.004	0.13	15	PASS
CCB1	CCB	1	Mg	-0.00046	52.94	15	<PQL
CCB1	CCB	1	Mg	-0.00092	99.41	15	<PQL
MB-65994	MBLK	1	Mg	0.00002	556.99	15	<PQL
LCS1-65994	LCS	1	Mg	10	0.16	15	PASS
N027459-001C	SAMP	1	Mg	27.93	0.22	15	PASS
N027459-001C	SAMP	5	Mg	6.13	0.16	15	PASS
N027459-001C-PS	PS	1	Mg	37.31	0.066	15	PASS
N027459-001C-MS1	MS	1	Mg	37.82	0.1	15	PASS
N027459-001C-MSD1	MSD	1	Mg	37.82	0.11	15	PASS
CCV2	CCV	1	Mg	9.75	0.24	15	PASS
CCB2	CCB	1	Mg	-0.0016	36.99	15	<PQL
N027459-002C	SAMP	1	Mg	29.42	0.16	15	PASS
N027459-003B	SAMP	1	Mg	3.23	0.18	15	PASS
N027459-004B	SAMP	1	Mg	0.37	1.022	15	PASS
N027459-005B	SAMP	1	Mg	11.96	0.069	15	PASS
N027459-006B	SAMP	1	Mg	25.62	0.21	15	PASS
N027459-007B	SAMP	1	Mg	16.65	0.27	15	PASS
N027459-008C	SAMP	1	Mg	24.061	0.14	15	PASS
N027459-009B	SAMP	1	Mg	12.97	0.17	15	PASS
N027459-010B	SAMP	1	Mg	13.31	0.18	15	PASS
N027459-011B	SAMP	1	Mg	10.43	4.61	15	PASS
CCV3	CCV	1	Mg	10.39	0.35	15	PASS
CCB3	CCB	1	Mg	-0.00072	141.5	15	<PQL
N027459-012B	SAMP	1	Mg	11.14	0.4	15	PASS
CCB3	CCB	1	Mg	-0.00061	50.2	15	<PQL
N027459-012B	SAMP	1	Mg	11.13	0.3	15	PASS
N027459-013B	SAMP	1	Mg	17.44	0.1	15	PASS
N027459-014B	SAMP	1	Mg	24.22	0.16	15	PASS
N027459-015B	SAMP	1	Mg	17.68	0.13	15	PASS
N027459-016C	SAMP	1	Mg	18.012	0.3	15	PASS
N027459-017C	SAMP	1	Mg	18.23	0.23	15	PASS
N027459-018B	SAMP	1	Mg	10.8	0.17	15	PASS
N027459-019B	SAMP	1	Mg	2.78	0.16	15	PASS
CCV4	CCV	1	Mg	9.82	0.3	15	PASS
CCB4	CCB	1	Mg	-0.00072	76.36	15	<PQL
LLCCV1	CCV2	1	Mg	0.11	0.71	20	PASS
ICSA2	ICSA	1	Mg	481.22	0.14	15	PASS
ICSAB2	ICSAB	1	Mg	506.62	0.41	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV5	CCV	1	Mg	10.57	0.75	15	PASS
CCB5	CCB	1	Mg	-0.00024	141.97	15	<PQL
CCV6	CCV	1	Mg	9.88	0.051	15	PASS
CCB6	CCB	1	Mg	0.00095	296.93	15	<PQL
N027459-003B	SAMP	5	Mg	0.76	0.14	15	PASS
N027459-004B	SAMP	5	Mg	0.086	0.38	15	PASS
N027459-006B	SAMP	5	Mg	6.031	0.1	15	PASS
N027459-018B	SAMP	5	Mg	2.42	0.091	15	PASS
CCV7	CCV	1	Mg	9.68	0.057	15	PASS
CCB7	CCB	1	Mg	-0.001	43.7	15	<PQL
CCV8	CCV	1	Mg	10.41	0.51	15	PASS
CCB8	CCB	1	Mg	-0.0014	63.1	15	<PQL
LLCCV2	CCV2	1	Mg	0.1	1.16	20	PASS
ICSA3	ICSA	1	Mg	476.52	0.15	15	PASS
ICSAB3	ICSAB	1	Mg	500.6	0.69	15	PASS
CCV9	CCV	1	Mg	10.32	0.48	15	PASS
CCB9	CCB	1	Mg	-0.0013	70.18	15	<PQL
CCV10	CCV	1	Mg	10.29	0.11	15	PASS
CCB10	CCB	1	Mg	-0.0014	65.99	15	<PQL
CCV11	CCV	1	Mg	9.82	0.36	15	PASS
CCB11	CCB	1	Mg	-0.0014	35.042	15	<PQL
CCB11	CCB	1	Mg	-0.0012	13.65	15	PASS
CCV12	CCV	1	Mg	10.34	0.82	15	PASS
CCB12	CCB	1	Mg	-0.00016	188.32	15	<PQL
LLCCV3	CCV2	1	Mg	0.1	0.81	20	PASS
ICSA4	ICSA	1	Mg	473.9	1.11	15	PASS
ICSAB4	ICSAB	1	Mg	500.15	0.67	15	PASS
CCV13	CCV	1	Mg	10.32	0.34	15	PASS
CCB13	CCB	1	Mg	0.00036	32.88	15	<PQL
CCV14	CCV	1	Mg	10.25	0.18	15	PASS
CCB14	CCB	1	Mg	-0.00055	32.68	15	<PQL
CCV15	CCV	1	Mg	10.007	0.51	15	PASS
CCB15	CCB	1	Mg	-0.00003	276.64	15	<PQL
CCV16	CCV	1	Mg	9.99	0.33	15	PASS
CCB16	CCB	1	Mg	0.00041	25.05	15	<PQL
CCB16	CCB	1	Mg	-0.00009	458.22	15	<PQL
CCV17	CCV	1	Mg	10.98	0.79	15	PASS
CCB17	CCB	1	Mg	-0.00063	95.52	15	<PQL
LLCCV4	CCV2	1	Mg	0.11	0.3	20	PASS
LLCCV4	CCV2	1	Mg	0.081	0.46	20	PASS
ICSA5	ICSA	1	Mg	504.98	0.32	15	PASS
ICSAB5	ICSAB	1	Mg	534.4	0.036	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
ICSAB5	ICSAB	1	Mg	447.75	1.72	15	PASS

RSD SUMMARY: 171221D

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	K	0	8.95	15	PASS
Standard1	ICAL	1	K	0.1	3.36	15	PASS
Standard2	ICAL	1	K	1	0.9	15	PASS
Standard3	ICAL	1	K	5	0.75	15	PASS
Standard4	ICAL	1	K	10	0.12	15	PASS
Standard5	ICAL	1	K	20	0.09	15	PASS
Standard6	ICAL	1	K	40	0.072	15	PASS
ICV	ICV	1	K	9.99	0.1	15	PASS
ICB	ICB	1	K	0	222605.89	15	<PQL
ICSA1	ICSA	1	K	0.0029	156.69	15	<PQL
ICSAB1	ICSAB	1	K	9.99	0.052	15	PASS
MB-65994	MBLK	1	K	-7011.3	146.14	15	<PQL
LCS2-65994	LCS	1	K	-860.79	24.87	15	<PQL
N027459-001C	SAMP	100	K	18501	186.19	15	NR!
MB-65994	MBLK	1	K	-0.0016	670.38	15	<PQL
LCS2-65994	LCS	1	K	19.53	0.15	15	PASS
N027459-001C	SAMP	100	K	0.15	4.86	15	PASS
N027459-002C	SAMP	1	K	14.094	0.76	15	PASS
N027459-002C	SAMP	5	K	2.85	0.39	15	PASS
N027459-002C-PS	PS	1	K	36.74	0.36	15	PASS
N027459-002C-MS2	MS	1	K	37.81	0.25	15	PASS
CCV1	CCV	1	K	10.12	0.17	15	PASS
CCB1	CCB	1	K	0.053	13.84	15	PASS
N027459-002C-MSD2	MSD	1	K	37.62	0.27	15	PASS
N027459-002C	SAMP	100	K	0.25	6.6	15	PASS
N027459-002C	SAMP	500	K	0.12	1.13	15	PASS
N027459-002C-PS	PS	100	K	0.41	2.43	15	PASS
N027459-002C-MS2	MS	100	K	0.41	2.038	15	PASS
N027459-002C-MSD2	MSD	100	K	0.42	1.52	15	PASS
N027459-002C	SAMP	25	K	0.59	3.16	15	PASS
N027459-002C-PS	PS	5	K	7.48	2.75	15	PASS
N027459-002C-MS2	MS	5	K	7.35	0.32	15	PASS
N027459-002C-MSD2	MSD	5	K	7.34	0.26	15	PASS
CCV2	CCV	1	K	10.021	0.18	15	PASS
CCB2	CCB	1	K	0.037	20.29	15	<PQL
N027459-003B	SAMP	100	K	0.49	0.52	15	PASS
N027459-004B	SAMP	100	K	0.41	0.39	15	PASS
N027459-005B	SAMP	100	K	0.13	13.93	15	PASS
N027459-006B	SAMP	25	K	1.45	0.51	15	PASS
N027459-007B	SAMP	10	K	0.74	0.74	15	PASS
N027459-008C	SAMP	1	K	8.76	0.19	15	PASS
N027459-008C	SAMP	10	K	0.89	1.45	15	PASS

RSD SUMMARY: 171221D

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027459-009B	SAMP	100	K	0.16	6.039	15	PASS
N027459-010B	SAMP	100	K	0.16	7.93	15	PASS
N027459-011B	SAMP	100	K	0.89	1.023	15	PASS
CCV3	CCV	1	K	10.1	0.11	15	PASS
CCB3	CCB	1	K	0.0079	148.29	15	<PQL
N027459-012B	SAMP	10	K	0.13	5.31	15	PASS
N027459-011B	SAMP	100	K	0.87	0.53	15	PASS
N027459-006B	SAMP	25	K	1.46	0.65	15	PASS
N027459-013B	SAMP	100	K	0.21	2.047	15	PASS
N027459-014B	SAMP	100	K	0.12	7.62	15	PASS
N027459-015B	SAMP	25	K	0.33	2.64	15	PASS
N027459-016C	SAMP	1	K	6.93	0.14	15	PASS
N027459-016C	SAMP	10	K	0.72	1.56	15	PASS
N027459-017C	SAMP	1	K	7.039	0.12	15	PASS
N027459-017C	SAMP	10	K	0.74	0.97	15	PASS
CCV4	CCV	1	K	10.081	0.057	15	PASS
CCB4	CCB	1	K	-0.006	109.95	15	<PQL
N027459-018B	SAMP	100	K	0.42	1.88	15	PASS
N027459-019B	SAMP	100	K	0.23	3.92	15	PASS
N027459-006B	SAMP	250	K	0.15	13.92	15	PASS
N027459-012B	SAMP	10	K	0.73	0.64	15	PASS
N027459-011B	SAMP	1000	K	-0.01	161.25	15	<PQL
N027459-018B	SAMP	250	K	0.17	4.35	15	PASS
CCV5	CCV	1	K	205.42	154.18	15	NR!
CCB5	CCB	1	K	-0.0012	1081.82	15	<PQL
ICSA2	ICSA	1	K	-0.0057	235.84	15	<PQL
ICSAB2	ICSAB	1	K	10.004	0.043	15	PASS
CalBlk	IBLK	1	Na	0	16.52	15	<PQL
Standard1	ICAL	1	Na	0.1	6.17	15	PASS
Standard2	ICAL	1	Na	1	0.59	15	PASS
Standard3	ICAL	1	Na	5	0.66	15	PASS
Standard4	ICAL	1	Na	10	0.033	15	PASS
Standard5	ICAL	1	Na	20	0.12	15	PASS
Standard6	ICAL	1	Na	40	0.2	15	PASS
ICV	ICV	1	Na	10.11	0.24	15	PASS
ICB	ICB	1	Na	-0.0078	55.14	15	<PQL
ICSA1	ICSA	1	Na	-0.0044	83.39	15	<PQL
ICSAB1	ICSAB	1	Na	10.096	0.02	15	PASS
MB-65994	MBLK	1	Na	-691.87	125.032	15	<PQL
LCS2-65994	LCS	1	Na	-103.76	23.039	15	<PQL
N027459-001C	SAMP	100	Na	1622.8	198.096	15	NR!
MB-65994	MBLK	1	Na	0.0026	174.29	15	<PQL

RSD SUMMARY: 171221D

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
LCS2-65994	LCS	1	Na	20.91	0.39	15	PASS
N027459-001C	SAMP	100	Na	11.56	0.29	15	PASS
N027459-002C	SAMP	1	Na	1702.4	1.77	15	PASS
N027459-002C	SAMP	5	Na	404.24	1.077	15	PASS
N027459-002C-PS	PS	1	Na	1654.3	1.35	15	PASS
N027459-002C-MS2	MS	1	Na	1741.4	1.15	15	PASS
CCV1	CCV	1	Na	10.38	0.47	15	PASS
CCB1	CCB	1	Na	0.25	1.9	15	PASS
N027459-002C-MSD2	MSD	1	Na	1755.9	0.93	15	PASS
N027459-002C	SAMP	100	Na	20.76	0.14	15	PASS
N027459-002C	SAMP	500	Na	4.5	0.46	15	PASS
N027459-002C-PS	PS	100	Na	20.77	0.15	15	PASS
N027459-002C-MS2	MS	100	Na	21.95	0.26	15	PASS
N027459-002C-MSD2	MSD	100	Na	22.041	0.096	15	PASS
N027459-002C	SAMP	25	Na	85.99	0.098	15	PASS
N027459-002C-PS	PS	5	Na	444.9	2.32	15	PASS
N027459-002C-MS2	MS	5	Na	431.57	0.49	15	PASS
N027459-002C-MSD2	MSD	5	Na	434.77	1.4	15	PASS
CCV2	CCV	1	Na	10.3	0.52	15	PASS
CCB2	CCB	1	Na	0.15	5.83	15	PASS
N027459-003B	SAMP	100	Na	31.19	0.61	15	PASS
N027459-004B	SAMP	100	Na	32.33	0.04	15	PASS
N027459-005B	SAMP	100	Na	9.87	0.28	15	PASS
N027459-006B	SAMP	25	Na	161.94	0.78	15	PASS
N027459-007B	SAMP	10	Na	30.45	0.081	15	PASS
N027459-008C	SAMP	1	Na	229.5	0.5	15	PASS
N027459-008C	SAMP	10	Na	23.52	0.21	15	PASS
N027459-009B	SAMP	100	Na	17.77	0.24	15	PASS
N027459-010B	SAMP	100	Na	18.18	0.2	15	PASS
N027459-011B	SAMP	100	Na	116.83	0.057	15	PASS
CCV3	CCV	1	Na	10.28	0.39	15	PASS
CCB3	CCB	1	Na	0.074	9.62	15	PASS
N027459-012B	SAMP	10	Na	12.64	0.2	15	PASS
N027459-011B	SAMP	100	Na	112.98	1.14	15	PASS
N027459-006B	SAMP	25	Na	163.56	0.64	15	PASS
N027459-013B	SAMP	100	Na	27.12	0.12	15	PASS
N027459-014B	SAMP	100	Na	10.8	0.083	15	PASS
N027459-015B	SAMP	25	Na	14.2	0.055	15	PASS
N027459-016C	SAMP	1	Na	295.64	0.37	15	PASS
N027459-016C	SAMP	10	Na	30.99	0.12	15	PASS
N027459-017C	SAMP	1	Na	295.96	0.25	15	PASS
N027459-017C	SAMP	10	Na	32.079	0.2	15	PASS

RSD SUMMARY: 171221D

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV4	CCV	1	Na	10.24	0.1	15	PASS
CCB4	CCB	1	Na	0.062	6.43	15	PASS
N027459-018B	SAMP	100	Na	43.45	0.16	15	PASS
N027459-019B	SAMP	100	Na	29.49	0.031	15	PASS
N027459-006B	SAMP	250	Na	16.7	0.29	15	PASS
N027459-012B	SAMP	10	Na	18.79	0.17	15	PASS
N027459-011B	SAMP	1000	Na	1.38	0.19	15	PASS
N027459-018B	SAMP	250	Na	17.61	0.26	15	PASS
CCV5	CCV	1	Na	59.29	130.88	15	NR!
CCB5	CCB	1	Na	0.014	23.28	15	<PQL
ICSA2	ICSA	1	Na	0.012	21.24	15	<PQL
ICSAB2	ICSAB	1	Na	10.049	0.39	15	PASS

RSD SUMMARY: 171222A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	5.41	15	PASS
Standard1	ICAL	1	Na	0.1	7.28	15	PASS
Standard2	ICAL	1	Na	1	0.68	15	PASS
Standard3	ICAL	1	Na	5	0.55	15	PASS
Standard4	ICAL	1	Na	10	0.13	15	PASS
Standard5	ICAL	1	Na	20	0.04	15	PASS
Standard6	ICAL	1	Na	40	0.093	15	PASS
ICV	ICV	1	Na	10.1	0.2	15	PASS
ICB	ICB	1	Na	-0.0033	38.45	15	<PQL
ICSA1	ICSA	1	Na	-0.0015	344.54	15	<PQL
ICSAB1	ICSAB	1	Na	10.16	0.16	15	PASS
N027459-006B	SAMP	250	Na	16.73	0.025	15	PASS
N027459-012B	SAMP	10	Na	18.84	0.13	15	PASS
N027459-011B	SAMP	100	Na	12.55	0.099	15	PASS
N027459-018B	SAMP	250	Na	17.81	0.054	15	PASS
CCV1	CCV	1	Na	10.49	0.33	15	PASS
CCB1	CCB	1	Na	0.09	5.39	15	PASS
CCV2	CCV	1	Na	10.4	0.045	15	PASS
CCB2	CCB	1	Na	0.03	10.15	15	PASS
CCV3	CCV	1	Na	10.53	0.14	15	PASS
CCB3	CCB	1	Na	0.042	1.73	15	PASS
CCV4	CCV	1	Na	10.83	0.37	15	PASS
CCB4	CCB	1	Na	0.066	4.17	15	PASS
ICSA2	ICSA	1	Na	0.055	2.098	15	PASS
ICSAB2	ICSAB	1	Na	10.82	0.23	15	PASS

RSD SUMMARY: 171222B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	7.1	15	PASS
Standard1	ICAL	1	Na	0.1	2.28	15	PASS
Standard2	ICAL	1	Na	1	0.21	15	PASS
Standard3	ICAL	1	Na	5	0.059	15	PASS
Standard4	ICAL	1	Na	10	0.066	15	PASS
Standard5	ICAL	1	Na	20	0.18	15	PASS
Standard6	ICAL	1	Na	40	0.025	15	PASS
ICV	ICV	1	Na	10.18	0.34	15	PASS
ICB	ICB	1	Na	-0.00074	563.25	15	<PQL
ICSA1	ICSA	1	Na	0.00053	922.43	15	<PQL
ICSAB1	ICSAB	1	Na	10.23	0.16	15	PASS
CCV1	CCV	1	Na	10.11	0.044	15	PASS
CCB1	CCB	1	Na	-0.0071	35.7	15	<PQL
CCV2	CCV	1	Na	10.14	0.18	15	PASS
CCB2	CCB	1	Na	-0.0075	38.1	15	<PQL
CCV3	CCV	1	Na	10.54	0.067	15	PASS
CCB3	CCB	1	Na	0.13	6.26	15	PASS
N027459-019B	SAMP	100	Na	29.16	0.28	15	PASS
CCV4	CCV	1	Na	10.47	0.33	15	PASS
CCB4	CCB	1	Na	0.12	3.48	15	PASS
CCV5	CCV	1	Na	10.31	0.018	15	PASS
CCB5	CCB	1	Na	0.044	7.75	15	PASS
CCV6	CCV	1	Na	10.26	0.099	15	PASS
CCB6	CCB	1	Na	0.033	12.15	15	PASS
ICSA2	ICSA	1	Na	0.032	8.66	15	PASS
ICSAB2	ICSAB	1	Na	10.27	0.086	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 171219A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201K/MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201K/-171030G/-171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/19/2017	10:23:34 AM
2	Standard1	ICAL	1	12/19/2017	10:28:24 AM
3	Standard2	ICAL	1	12/19/2017	10:33:45 AM
11	Standard3	ICAL	1	12/19/2017	10:39:04 AM
12	Standard4	ICAL	1	12/19/2017	10:44:25 AM
6	Standard5	ICAL	1	12/19/2017	10:51:46 AM
7	Standard6	ICAL	1	12/19/2017	10:59:06 AM
8	Standard7	ICAL	1	12/19/2017	11:06:41 AM
9	ICV	ICV	1	12/19/2017	11:10:28 AM
1	ICB	ICB	1	12/19/2017	11:21:16 AM
2	LLICV	CCV1	1	12/19/2017	11:26:34 AM
4	ICSA1	ICSA	1	12/19/2017	11:40:02 AM
5	ICSAB1	ICSAB	1	12/19/2017	11:47:34 AM
122	N027429-010B	SAMP	5	12/19/2017	11:55:06 AM
123	N027430-015B	SAMP	5	12/19/2017	12:02:00 PM
108	MB-65991	MBLK	1	12/19/2017	12:08:53 PM
109	LCS1-65991	LCS	1	12/19/2017	12:13:44 PM
110	N027437-001A	SAMP	1	12/19/2017	12:21:07 PM
111	N027437-002A	SAMP	1	12/19/2017	12:26:28 PM
112	N027437-002A	SAMP	5	12/19/2017	12:33:22 PM
113	N027437-002A-PS	PS	1	12/19/2017	12:38:43 PM
114	N027437-002AMS1	MS	1	12/19/2017	12:45:38 PM
115	N027437-002AMSD1	MSD	1	12/19/2017	12:52:31 PM
7	CCV1	CCV	1	12/19/2017	12:59:24 PM
1	CCB1	CCB	1	12/19/2017	01:06:15 PM
1	CCB1	CCB	1	12/19/2017	01:14:21 PM
116	N027437-003C	SAMP	1	12/19/2017	01:19:09 PM
117	N027437-004A	SAMP	1	12/19/2017	01:24:04 PM
118	N027437-005A	SAMP	1	12/19/2017	01:29:27 PM
38	MB-65994	MBLK	1	12/19/2017	01:34:18 PM
39	LCS1-65994	LCS	1	12/19/2017	01:39:09 PM
40	N027459-001C	SAMP	1	12/19/2017	01:46:29 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
41	N027459-001C	SAMP	5	12/19/2017	01:53:19 PM
42	N027459-001C-PS	PS	1	12/19/2017	01:58:11 PM
43	N027459-001C-MS1	MS	1	12/19/2017	02:05:02 PM
44	N027459-001C-MSD1	MSD	1	12/19/2017	02:11:54 PM
7	CCV2	CCV	1	12/19/2017	02:18:46 PM
1	CCB2	CCB	1	12/19/2017	02:25:37 PM
45	N027459-002C	SAMP	1	12/19/2017	02:30:56 PM
46	N027459-003B	SAMP	1	12/19/2017	02:37:46 PM
47	N027459-004B	SAMP	1	12/19/2017	02:44:38 PM
48	N027459-005B	SAMP	1	12/19/2017	02:51:28 PM
49	N027459-006B	SAMP	1	12/19/2017	02:58:20 PM
50	N027459-007B	SAMP	1	12/19/2017	03:05:13 PM
51	N027459-008C	SAMP	1	12/19/2017	03:12:46 PM
52	N027459-009B	SAMP	1	12/19/2017	03:20:08 PM
53	N027459-010B	SAMP	1	12/19/2017	03:26:58 PM
54	N027459-011B	SAMP	1	12/19/2017	03:33:50 PM
7	CCV3	CCV	1	12/19/2017	03:40:40 PM
1	CCB3	CCB	1	12/19/2017	03:48:03 PM
55	N027459-012B	SAMP	1	12/19/2017	03:53:21 PM
1	CCB3	CCB	1	12/19/2017	03:58:33 PM
55	N027459-012B	SAMP	1	12/19/2017	04:03:22 PM
56	N027459-013B	SAMP	1	12/19/2017	04:08:43 PM
57	N027459-014B	SAMP	1	12/19/2017	04:15:34 PM
58	N027459-015B	SAMP	1	12/19/2017	04:22:24 PM
59	N027459-016C	SAMP	1	12/19/2017	04:29:17 PM
60	N027459-017C	SAMP	1	12/19/2017	04:36:09 PM
61	N027459-018B	SAMP	1	12/19/2017	04:43:02 PM
62	N027459-019B	SAMP	1	12/19/2017	04:50:27 PM
63	MB-66042	MBLK	1	12/19/2017	04:57:19 PM
64	LCS1-66042	LCS	1	12/19/2017	05:02:10 PM
7	CCV4	CCV	1	12/19/2017	05:09:31 PM
1	CCB4	CCB	1	12/19/2017	05:34:54 PM
2	LLCCV1	CCV2	1	12/19/2017	05:39:42 PM
4	ICSA2	ICSA	1	12/19/2017	05:45:03 PM
5	ICSAB2	ICSAB	1	12/19/2017	05:52:35 PM
65	N027485-001B	SAMP	1	12/19/2017	06:00:08 PM
66	N027485-001B	SAMP	5	12/19/2017	06:05:00 PM
67	N027485-001B-PS	PS	1	12/19/2017	06:10:22 PM
68	N027485-001B-MS1	MS	1	12/19/2017	06:17:41 PM
69	N027485-001B-MSD1	MSD	1	12/19/2017	06:24:34 PM
70	N027485-002B	SAMP	1	12/19/2017	06:31:26 PM
71	N027485-003B	SAMP	1	12/19/2017	06:38:18 PM
72	N027485-004B	SAMP	1	12/19/2017	06:45:10 PM
73	N027485-005B	SAMP	1	12/19/2017	06:52:03 PM
74	N027485-006B	SAMP	1	12/19/2017	06:58:55 PM
7	CCV5	CCV	1	12/19/2017	07:05:47 PM
1	CCB5	CCB	1	12/19/2017	07:15:36 PM
75	N027485-007B	SAMP	1	12/19/2017	07:20:24 PM
76	N027485-008B	SAMP	1	12/19/2017	07:27:16 PM
77	N027485-009B	SAMP	1	12/19/2017	07:34:47 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
78	N027485-010B	SAMP	1	12/19/2017	07:41:39 PM
79	N027485-011C	SAMP	1	12/19/2017	07:48:31 PM
80	N027485-012C	SAMP	1	12/19/2017	07:55:53 PM
81	N027523-001B	SAMP	1	12/19/2017	08:03:16 PM
82	N027523-002B	SAMP	1	12/19/2017	08:10:40 PM
83	N027523-003B	SAMP	1	12/19/2017	08:16:01 PM
84	N027523-004B	SAMP	1	12/19/2017	08:21:22 PM
7	CCV6	CCV	1	12/19/2017	08:26:44 PM
1	CCB6	CCB	1	12/19/2017	08:33:35 PM
85	N027523-005C	SAMP	1	12/19/2017	08:38:25 PM
86	N027523-006C	SAMP	1	12/19/2017	08:45:18 PM
87	N027523-007C	SAMP	1	12/19/2017	08:52:10 PM
88	N027523-008B	SAMP	1	12/19/2017	08:59:02 PM
14	N027459-003B	SAMP	5	12/19/2017	09:05:54 PM
15	N027459-004B	SAMP	5	12/19/2017	09:12:43 PM
16	N027459-006B	SAMP	5	12/19/2017	09:19:32 PM
17	N027459-018B	SAMP	5	12/19/2017	09:24:22 PM
89	MB-66081	MBLK	1	12/19/2017	09:31:12 PM
90	LCS1-66081	LCS	1	12/19/2017	09:36:14 PM
7	CCV7	CCV	1	12/19/2017	09:43:36 PM
1	CCB7	CCB	1	12/19/2017	09:53:44 PM
91	N027523-009B	SAMP	1	12/19/2017	09:58:31 PM
92	N027523-009B	SAMP	5	12/19/2017	10:05:24 PM
93	N027523-009B-PS	PS	1	12/19/2017	10:12:17 PM
94	N027523-009B-MS1	MS	1	12/19/2017	10:19:10 PM
95	N027523-009B-MSD1	MSD	1	12/19/2017	10:26:03 PM
96	N027523-012B	SAMP	1	12/19/2017	10:32:56 PM
97	N027546-001B	SAMP	1	12/19/2017	10:39:51 PM
98	N027546-002B	SAMP	1	12/19/2017	10:47:14 PM
99	N027546-003B	SAMP	1	12/19/2017	10:54:08 PM
100	N027546-004B	SAMP	1	12/19/2017	11:01:01 PM
7	CCV8	CCV	1	12/19/2017	11:07:54 PM
1	CCB8	CCB	1	12/19/2017	11:15:16 PM
2	LLCCV2	CCV2	1	12/19/2017	11:20:35 PM
4	ICSA3	ICSA	1	12/19/2017	11:25:54 PM
5	ICSAB3	ICSAB	1	12/19/2017	11:33:27 PM
101	N027546-005B	SAMP	1	12/19/2017	11:40:59 PM
102	N027546-006B	SAMP	1	12/19/2017	11:47:52 PM
103	N027546-007B	SAMP	1	12/19/2017	11:55:15 PM
104	N027546-008B	SAMP	1	12/20/2017	12:02:08 AM
105	N027546-009B	SAMP	1	12/20/2017	12:09:00 AM
106	N027546-010B	SAMP	1	12/20/2017	12:15:53 AM
107	MB-66082	MBLK	1	12/20/2017	12:22:46 AM
108	LCS1-66082	LCS	1	12/20/2017	12:27:38 AM
109	N027557-001B	SAMP	1	12/20/2017	12:35:02 AM
110	N027557-001B	SAMP	5	12/20/2017	12:41:54 AM
7	CCV9	CCV	1	12/20/2017	12:46:48 AM
1	CCB9	CCB	1	12/20/2017	12:54:10 AM
111	N027557-001B-PS	PS	1	12/20/2017	12:59:28 AM
112	N027557-001B-MS1	MS	1	12/20/2017	01:06:23 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
113	N027557-001B-MSD1	MSD	1	12/20/2017	01:13:17 AM
114	N027557-002B	SAMP	1	12/20/2017	01:20:11 AM
115	N027557-003B	SAMP	1	12/20/2017	01:27:03 AM
116	N027557-004B	SAMP	1	12/20/2017	01:33:56 AM
117	N027557-005B	SAMP	1	12/20/2017	01:40:49 AM
118	N027557-006B	SAMP	1	12/20/2017	01:47:42 AM
119	N027557-007B	SAMP	1	12/20/2017	01:54:34 AM
120	N027557-008B	SAMP	1	12/20/2017	02:01:28 AM
7	CCV10	CCV	1	12/20/2017	02:06:50 AM
1	CCB10	CCB	1	12/20/2017	02:14:12 AM
121	N027557-009B	SAMP	1	12/20/2017	02:19:30 AM
122	N027557-010B	SAMP	1	12/20/2017	02:26:54 AM
123	MB-66080	MBLK	1	12/20/2017	02:32:17 AM
124	LCS1-66080	LCS	1	12/20/2017	02:37:09 AM
125	N027524-001E	SAMP	1	12/20/2017	02:44:33 AM
126	N027524-001E	SAMP	5	12/20/2017	02:51:26 AM
127	N027524-001E-PS	PS	1	12/20/2017	02:56:47 AM
128	N027524-001E-MS1	MS	1	12/20/2017	03:03:41 AM
129	N027524-001E-MSD1	MSD	1	12/20/2017	03:10:35 AM
130	N027524-002E	SAMP	1	12/20/2017	03:17:29 AM
7	CCV11	CCV	1	12/20/2017	03:24:21 AM
1	CCB11	CCB	1	12/20/2017	03:31:12 AM
131	N027524-003E	SAMP	1	12/20/2017	03:36:30 AM
1	CCB11	CCB	1	12/20/2017	03:47:23 AM
131	N027524-003E	SAMP	1	12/20/2017	03:52:10 AM
132	N027524-004E	SAMP	1	12/20/2017	03:59:04 AM
133	N027524-005E	SAMP	1	12/20/2017	04:05:57 AM
134	N027524-006E	SAMP	1	12/20/2017	04:12:49 AM
135	N027524-007E	SAMP	1	12/20/2017	04:17:42 AM
136	N027524-008E	SAMP	1	12/20/2017	04:22:35 AM
137	N027524-009E	SAMP	1	12/20/2017	04:29:28 AM
138	N027524-010E	SAMP	1	12/20/2017	04:36:21 AM
139	N027524-011E	SAMP	1	12/20/2017	04:43:14 AM
140	N027524-011E-MS1	MS	1	12/20/2017	04:50:07 AM
7	CCV12	CCV	1	12/20/2017	04:57:01 AM
1	CCB12	CCB	1	12/20/2017	05:07:37 AM
2	LLCCV3	CCV2	1	12/20/2017	05:12:57 AM
4	ICSA4	ICSA	1	12/20/2017	05:18:16 AM
5	ICSAB4	ICSAB	1	12/20/2017	05:25:48 AM
141	N027524-012E	SAMP	1	12/20/2017	05:33:21 AM
142	N027524-013E	SAMP	1	12/20/2017	05:40:14 AM
143	N027556-001E	SAMP	1	12/20/2017	05:47:07 AM
144	N027556-002E	SAMP	1	12/20/2017	05:54:00 AM
145	N027556-003E	SAMP	1	12/20/2017	06:00:53 AM
146	N027556-004D	SAMP	1	12/20/2017	06:07:46 AM
147	N027556-005D	SAMP	1	12/20/2017	06:14:39 AM
148	N027556-006E	SAMP	1	12/20/2017	06:21:32 AM
18	N027485-002B	SAMP	5	12/20/2017	06:28:25 AM
19	N027485-003B	SAMP	5	12/20/2017	06:35:15 AM
7	CCV13	CCV	1	12/20/2017	06:42:05 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CCB13	CCB	1	12/20/2017	06:49:25 AM
20	N027485-010B	SAMP	5	12/20/2017	06:54:44 AM
149	N027523-009B	SAMP	25	12/20/2017	07:43:23 AM
150	N027523-009B-PS	PS	5	12/20/2017	07:48:17 AM
151	N027523-009B-MS1	MS	5	12/20/2017	07:55:12 AM
152	N027523-009B-MSD1	MSD	5	12/20/2017	08:02:06 AM
153	N027557-005B	SAMP	5	12/20/2017	08:05:46 AM
154	N027557-007B	SAMP	5	12/20/2017	08:12:39 AM
38	MB-66083	MBLK	1	12/20/2017	08:19:33 AM
39	LCS1-66083	LCS	1	12/20/2017	08:23:38 AM
40	N027524-001F	SAMP	1	12/20/2017	08:29:29 AM
7	CCV14	CCV	1	12/20/2017	08:34:48 AM
1	CCB14	CCB	1	12/20/2017	08:47:22 AM
41	N027524-001F	SAMP	5	12/20/2017	08:51:40 AM
42	N027524-001F-PS	PS	1	12/20/2017	08:56:29 AM
43	N027524-001F-MS1	MS	1	12/20/2017	09:01:50 AM
44	N027524-001F-MSD1	MSD	1	12/20/2017	09:07:11 AM
45	N027524-002F	SAMP	1	12/20/2017	09:12:32 AM
46	N027524-003F	SAMP	1	12/20/2017	09:17:54 AM
47	N027524-004F	SAMP	1	12/20/2017	09:23:15 AM
48	N027524-005F	SAMP	1	12/20/2017	09:28:37 AM
49	N027524-006F	SAMP	1	12/20/2017	09:33:59 AM
50	N027524-007F	SAMP	1	12/20/2017	09:39:21 AM
7	CCV15	CCV	1	12/20/2017	09:50:33 AM
1	CCB15	CCB	1	12/20/2017	10:04:37 AM
51	N027524-008F	SAMP	1	12/20/2017	10:09:24 AM
52	N027524-009F	SAMP	1	12/20/2017	10:14:46 AM
53	N027524-010F	SAMP	1	12/20/2017	10:20:08 AM
54	N027524-011F	SAMP	1	12/20/2017	10:25:39 AM
55	N027524-012F	SAMP	1	12/20/2017	10:31:01 AM
56	N027524-013F	SAMP	1	12/20/2017	10:36:21 AM
57	N027556-001F	SAMP	1	12/20/2017	10:41:41 AM
58	N027556-002F	SAMP	1	12/20/2017	10:47:03 AM
59	N027556-003F	SAMP	1	12/20/2017	10:52:24 AM
60	N027556-006F	SAMP	1	12/20/2017	10:57:45 AM
7	CCV16	CCV	1	12/20/2017	11:03:06 AM
1	CCB16	CCB	1	12/20/2017	11:08:59 AM
1	CCB16	CCB	1	12/20/2017	11:17:02 AM
61	N027556-008E	SAMP	1	12/20/2017	11:20:47 AM
62	N027556-009E	SAMP	1	12/20/2017	11:25:39 AM
63	N027556-010F	SAMP	1	12/20/2017	11:31:31 AM
7	CCV17	CCV	1	12/20/2017	11:40:26 AM
1	CCB17	CCB	1	12/20/2017	11:46:17 AM
2	LLCCV4	CCV2	1	12/20/2017	11:51:05 AM
2	LLCCV4	CCV2	1	12/20/2017	12:04:06 PM
4	ICSA5	ICSA	1	12/20/2017	12:08:54 PM
5	ICSAB5	ICSAB	1	12/20/2017	12:14:57 PM
5	ICSAB5	ICSAB	1	12/20/2017	12:24:11 PM

INJECTION LOG: 171221D

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-170601A,0.025<50mL
Standard2	MWST-170601A,0.25<50mL
Standard3	MWST-170601A,1.25<50mL
Standard4	MWST-170601A,2.5<50mL
Standard5	MWST-170601A,5<50mL
Standard6	MWST-170601A,10<50mL
ICV	MWST-171030L
CCV	MWST-170601A,2.5<50mL
ICSA/ICSAB	MWST-170601L/MWST-170601B
Int. Std. (Sc):	MSST-171009C/B
PS Spike	MSST-130329D/E

MWST-171201R

MWST-171201R
MWST-171201P/ MWST-171201S

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/21/2017	08:01:05 PM
26	Standard1	ICAL	1	12/21/2017	08:04:24 PM
27	Standard2	ICAL	1	12/21/2017	08:07:40 PM
28	Standard3	ICAL	1	12/21/2017	08:11:29 PM
29	Standard4	ICAL	1	12/21/2017	08:15:21 PM
30	Standard5	ICAL	1	12/21/2017	08:19:15 PM
31	Standard6	ICAL	1	12/21/2017	08:23:18 PM
32	ICV	ICV	1	12/21/2017	08:27:24 PM
1	ICB	ICB	1	12/21/2017	08:31:19 PM
33	ICSA1	ICSA	1	12/21/2017	08:34:36 PM
34	ICSAB1	ICSAB	1	12/21/2017	08:37:54 PM
98	MB-65994	MBLK	1	12/21/2017	08:41:50 PM
99	LCS2-65994	LCS	1	12/21/2017	08:45:10 PM
100	N027459-001C	SAMP	100	12/21/2017	08:48:30 PM
98	MB-65994	MBLK	1	12/21/2017	08:53:08 PM
99	LCS2-65994	LCS	1	12/21/2017	08:56:29 PM
100	N027459-001C	SAMP	100	12/21/2017	09:00:34 PM
101	N027459-002C	SAMP	1	12/21/2017	09:03:57 PM
102	N027459-002C	SAMP	5	12/21/2017	09:09:34 PM
103	N027459-002C-PS	PS	1	12/21/2017	09:15:02 PM
104	N027459-002C-MS2	MS	1	12/21/2017	09:20:40 PM
8	CCV1	CCV	1	12/21/2017	09:26:19 PM
1	CCB1	CCB	1	12/21/2017	09:30:13 PM
105	N027459-002C-MSD2	MSD	1	12/21/2017	09:33:31 PM
106	N027459-002C	SAMP	100	12/21/2017	09:38:43 PM
107	N027459-002C	SAMP	500	12/21/2017	09:42:05 PM
108	N027459-002C-PS	PS	100	12/21/2017	09:45:26 PM
109	N027459-002C-MS2	MS	100	12/21/2017	09:48:47 PM
110	N027459-002C-MSD2	MSD	100	12/21/2017	09:52:08 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
111	N027459-002C	SAMP	25	12/21/2017	09:55:29 PM
112	N027459-002C-PS	PS	5	12/21/2017	09:59:23 PM
113	N027459-002C-MS2	MS	5	12/21/2017	10:04:50 PM
114	N027459-002C-MSD2	MSD	5	12/21/2017	10:10:19 PM
8	CCV2	CCV	1	12/21/2017	10:15:48 PM
1	CCB2	CCB	1	12/21/2017	10:19:42 PM
115	N027459-003B	SAMP	100	12/21/2017	10:23:00 PM
116	N027459-004B	SAMP	100	12/21/2017	10:26:21 PM
117	N027459-005B	SAMP	100	12/21/2017	10:29:42 PM
118	N027459-006B	SAMP	25	12/21/2017	10:33:03 PM
119	N027459-007B	SAMP	10	12/21/2017	10:37:56 PM
120	N027459-008C	SAMP	1	12/21/2017	10:41:48 PM
121	N027459-008C	SAMP	10	12/21/2017	10:54:53 PM
122	N027459-009B	SAMP	100	12/21/2017	10:58:46 PM
123	N027459-010B	SAMP	100	12/21/2017	11:02:07 PM
124	N027459-011B	SAMP	100	12/21/2017	11:05:29 PM
8	CCV3	CCV	1	12/21/2017	11:10:21 PM
1	CCB3	CCB	1	12/21/2017	11:14:15 PM
125	N027459-012B	SAMP	10	12/21/2017	11:17:33 PM
124	N027459-011B	SAMP	100	12/21/2017	11:20:54 PM
118	N027459-006B	SAMP	25	12/21/2017	11:25:47 PM
126	N027459-013B	SAMP	100	12/21/2017	11:30:39 PM
127	N027459-014B	SAMP	100	12/21/2017	11:35:13 PM
128	N027459-015B	SAMP	25	12/21/2017	11:38:35 PM
129	N027459-016C	SAMP	1	12/21/2017	11:41:57 PM
130	N027459-016C	SAMP	10	12/21/2017	11:46:53 PM
131	N027459-017C	SAMP	1	12/21/2017	11:50:44 PM
132	N027459-017C	SAMP	10	12/21/2017	11:55:40 PM
8	CCV4	CCV	1	12/21/2017	11:59:32 PM
1	CCB4	CCB	1	12/22/2017	12:03:27 AM
133	N027459-018B	SAMP	100	12/22/2017	12:06:45 AM
134	N027459-019B	SAMP	100	12/22/2017	12:12:44 AM
135	N027459-006B	SAMP	250	12/22/2017	12:47:39 AM
136	N027459-012B	SAMP	10	12/22/2017	12:51:00 AM
138	N027459-011B	SAMP	1000	12/22/2017	12:56:27 AM
139	N027459-018B	SAMP	250	12/22/2017	12:59:48 AM
8	CCV5	CCV	1	12/22/2017	01:03:10 AM
1	CCB5	CCB	1	12/22/2017	01:08:05 AM
33	ICSA2	ICSA	1	12/22/2017	01:11:22 AM
34	ICSAB2	ICSAB	1	12/22/2017	01:14:40 AM

INJECTION LOG: 171222A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-170601A,0.025<50mL
Standard2	MWST-170601A,0.25<50mL
Standard3	MWST-170601A,1.25<50mL
Standard4	MWST-170601A,2.5<50mL
Standard5	MWST-170601A,5<50mL
Standard6	MWST-170601A,10<50mL
ICV	MWST-171030L
CCV	MWST-170601A,2.5<50mL
ICSA/ICSAB	MWST-170601L/MWST-170601B
Int. Std. (Sc):	MSST-171009C/B
PS Spike	MSST-130329D/E

MWST-171201R

MWST-171201R
MWST-171201P/ MWST-171201S

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/22/2017	09:12:20 AM
26	Standard1	ICAL	1	12/22/2017	09:15:36 AM
27	Standard2	ICAL	1	12/22/2017	09:18:53 AM
28	Standard3	ICAL	1	12/22/2017	09:22:41 AM
29	Standard4	ICAL	1	12/22/2017	09:26:32 AM
30	Standard5	ICAL	1	12/22/2017	09:30:26 AM
31	Standard6	ICAL	1	12/22/2017	09:34:29 AM
32	ICV	ICV	1	12/22/2017	09:38:48 AM
1	ICB	ICB	1	12/22/2017	09:42:42 AM
33	ICSA1	ICSA	1	12/22/2017	09:46:00 AM
34	ICSAB1	ICSAB	1	12/22/2017	09:49:18 AM
135	N027459-006B	SAMP	250	12/22/2017	09:53:04 AM
136	N027459-012B	SAMP	10	12/22/2017	09:56:26 AM
140	N027459-011B	SAMP	100	12/22/2017	10:00:18 AM
139	N027459-018B	SAMP	250	12/22/2017	10:03:40 AM
38	MB-66138	MBLK	1	12/22/2017	10:08:28 AM
39	LCS2-66138	LCS	1	12/22/2017	10:11:46 AM
40	N027631-001A	SAMP	1	12/22/2017	10:15:35 AM
41	N027631-001A	SAMP	5	12/22/2017	10:20:27 AM
42	N027631-001A-PS	PS	1	12/22/2017	10:24:18 AM
43	N027631-001A-MS2	MS	1	12/22/2017	10:29:23 AM
29	CCV1	CCV	1	12/22/2017	10:34:28 AM
1	CCB1	CCB	1	12/22/2017	10:38:23 AM
44	N027631-001A-MSD2	MSD	1	12/22/2017	10:41:40 AM
39	LCS2-66138	LCS	1	12/22/2017	10:49:44 AM
45	N027631-001A	SAMP	25	12/22/2017	10:53:48 AM
46	N027631-001A	SAMP	125	12/22/2017	10:57:08 AM
47	N027631-001A-PS	PS	25	12/22/2017	11:00:27 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
48	N027631-001A-MS2	MS	25	12/22/2017	11:04:17 AM
49	N027631-001A-MSD2	MSD	25	12/22/2017	11:08:08 AM
50	N027601-001A	SAMP	1000	12/22/2017	11:17:07 AM
51	N027604-001A	SAMP	1000	12/22/2017	11:20:26 AM
52	N027606-001A	SAMP	1000	12/22/2017	11:23:45 AM
29	CCV2	CCV	1	12/22/2017	11:27:03 AM
1	CCB2	CCB	1	12/22/2017	11:30:56 AM
53	N027607-001A	SAMP	1000	12/22/2017	11:34:12 AM
54	N027608-001A	SAMP	1000	12/22/2017	11:37:31 AM
55	N027601-001A	SAMP	100	12/22/2017	11:41:14 AM
56	N027601-001A	SAMP	2500	12/22/2017	11:46:05 AM
57	N027604-001A	SAMP	2500	12/22/2017	11:49:24 AM
58	N027606-001A	SAMP	100	12/22/2017	11:52:44 AM
59	N027607-001A	SAMP	100	12/22/2017	11:56:03 AM
60	N027608-001A	SAMP	100	12/22/2017	12:00:22 PM
62	MB-66156	MBLK	1	12/22/2017	12:03:43 PM
63	LCS2-66156	LCS	1	12/22/2017	12:07:02 PM
29	CCV3	CCV	1	12/22/2017	12:11:07 PM
1	CCB3	CCB	1	12/22/2017	12:15:01 PM
64	N027631-001A	SAMP	1	12/22/2017	12:18:17 PM
65	N027631-001A	SAMP	5	12/22/2017	12:23:10 PM
66	N027631-001A-PS	PS	1	12/22/2017	12:27:01 PM
67	N027631-001A-MS2	MS	1	12/22/2017	12:32:07 PM
68	N027631-001A-MSD2	MSD	1	12/22/2017	12:37:14 PM
69	N027631-001A	SAMP	25	12/22/2017	12:42:21 PM
70	N027631-001A	SAMP	125	12/22/2017	12:45:41 PM
71	N027631-001A-PS	PS	25	12/22/2017	12:49:01 PM
72	N027631-001A-MS2	MS	25	12/22/2017	12:52:51 PM
73	N027631-001A-MSD2	MSD	25	12/22/2017	12:56:42 PM
29	CCV4	CCV	1	12/22/2017	01:00:33 PM
1	CCB4	CCB	1	12/22/2017	01:04:28 PM
33	ICSA2	ICSA	1	12/22/2017	01:07:45 PM
34	ICSAB2	ICSAB	1	12/22/2017	01:11:02 PM

INJECTION LOG: 171222B

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-170601A,0.025<50mL
Standard2	MWST-170601A,0.25<50mL
Standard3	MWST-170601A,1.25<50mL
Standard4	MWST-170601A,2.5<50mL
Standard5	MWST-170601A,5<50mL
Standard6	MWST-170601A,10<50mL
ICV	MWST-171030L
CCV	MWST-170601A,2.5<50mL
ICSA/ICSAB	MWST-170601L/MWST-170601B
Int. Std. (Sc):	MSST-171009C/B
PS Spike	MSST-130329D/E

MWST-171201R

MWST-171201R
MWST-171201P/ MWST-171201S

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/22/2017	03:17:22 PM
26	Standard1	ICAL	1	12/22/2017	03:20:39 PM
27	Standard2	ICAL	1	12/22/2017	03:23:56 PM
28	Standard3	ICAL	1	12/22/2017	03:27:44 PM
29	Standard4	ICAL	1	12/22/2017	03:31:34 PM
30	Standard5	ICAL	1	12/22/2017	03:35:29 PM
31	Standard6	ICAL	1	12/22/2017	03:39:32 PM
32	ICV	ICV	1	12/22/2017	03:42:45 PM
1	ICB	ICB	1	12/22/2017	03:46:40 PM
33	ICSA1	ICSA	1	12/22/2017	03:49:57 PM
34	ICSAB1	ICSAB	1	12/22/2017	03:53:15 PM
38	MB-66042	MBLK	1	12/22/2017	03:57:11 PM
39	LCS2-66042	LCS	1	12/22/2017	04:00:28 PM
38	MB-66042	MBLK	1	12/22/2017	04:03:36 PM
39	LCS2-66042	LCS	1	12/22/2017	04:06:54 PM
51	N027523-001B	SAMP	100	12/22/2017	04:10:58 PM
52	N027523-002B	SAMP	100	12/22/2017	04:14:17 PM
53	N027523-003B	SAMP	100	12/22/2017	04:17:37 PM
54	N027523-004B	SAMP	100	12/22/2017	04:20:55 PM
55	N027523-005C	SAMP	100	12/22/2017	04:24:15 PM
56	N027523-006C	SAMP	100	12/22/2017	04:27:33 PM
8	CCV1	CCV	1	12/22/2017	04:30:52 PM
1	CCB1	CCB	1	12/22/2017	04:34:47 PM
57	N027523-007C	SAMP	100	12/22/2017	04:38:04 PM
58	N027523-008B	SAMP	100	12/22/2017	04:41:22 PM
54	N027523-004B	SAMP	100	12/22/2017	04:44:42 PM
49	N027485-011C	SAMP	100	12/22/2017	04:48:01 PM
50	N027485-012C	SAMP	100	12/22/2017	04:51:21 PM
40	N027485-001B	SAMP	100	12/22/2017	04:55:11 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
41	N027485-003B	SAMP	100	12/22/2017	04:58:28 PM
42	N027485-004B	SAMP	100	12/22/2017	05:02:06 PM
43	N027485-005B	SAMP	500	12/22/2017	05:05:24 PM
44	N027485-006B	SAMP	500	12/22/2017	05:08:44 PM
8	CCV2	CCV	1	12/22/2017	05:12:03 PM
1	CCB2	CCB	1	12/22/2017	05:15:57 PM
157	N027428-001D	SAMP	10	12/22/2017	05:19:56 PM
45	N027485-007B	SAMP	500	12/22/2017	05:23:49 PM
46	N027485-008B	SAMP	10	12/22/2017	05:30:00 PM
47	N027485-009B	SAMP	100	12/22/2017	05:33:51 PM
48	N027485-010B	SAMP	100	12/22/2017	05:37:11 PM
59	N027485-002B	SAMP	5	12/22/2017	05:40:31 PM
60	N027485-002B	SAMP	25	12/22/2017	05:45:59 PM
61	N027485-002B-PS	PS	5	12/22/2017	05:49:51 PM
62	N027485-002B-MS2	MS	5	12/22/2017	05:55:19 PM
63	N027485-002B-MSD2	MSD	5	12/22/2017	06:00:46 PM
8	CCV3	CCV	1	12/22/2017	06:06:13 PM
1	CCB3	CCB	1	12/22/2017	06:10:07 PM
64	N027485-002B	SAMP	100	12/22/2017	06:13:25 PM
65	N027485-002B	SAMP	500	12/22/2017	06:16:45 PM
66	N027485-002B-PS	PS	100	12/22/2017	06:20:05 PM
67	N027485-002B-MS2	MS	100	12/22/2017	06:23:55 PM
68	N027485-002B-MSD2	MSD	100	12/22/2017	06:27:46 PM
69	N027485-011C	SAMP	1	12/22/2017	06:31:06 PM
70	N027485-012C	SAMP	1	12/22/2017	06:36:33 PM
71	N027523-005C	SAMP	1	12/22/2017	06:41:59 PM
72	N027459-019B	SAMP	100	12/22/2017	06:46:54 PM
73	MB-66080	MBLK	1	12/22/2017	06:50:14 PM
8	CCV4	CCV	1	12/22/2017	06:53:35 PM
1	CCB4	CCB	1	12/22/2017	06:57:31 PM
74	LCS2-66080	LCS	1	12/22/2017	07:00:48 PM
75	N027524-001E	SAMP	100	12/22/2017	07:04:53 PM
76	N027524-002E	SAMP	100	12/22/2017	07:08:13 PM
77	N027524-003E	SAMP	100	12/22/2017	07:11:33 PM
78	N027524-004E	SAMP	100	12/22/2017	07:14:53 PM
79	N027524-005E	SAMP	100	12/22/2017	07:18:13 PM
80	N027524-006E	SAMP	100	12/22/2017	07:21:33 PM
81	N027524-007E	SAMP	100	12/22/2017	07:24:54 PM
82	N027524-008E	SAMP	100	12/22/2017	07:28:15 PM
83	N027524-009E	SAMP	100	12/22/2017	07:31:35 PM
8	CCV5	CCV	1	12/22/2017	07:34:56 PM
1	CCB5	CCB	1	12/22/2017	07:38:51 PM
84	N027524-010E	SAMP	100	12/22/2017	07:42:09 PM
85	N027524-011E	SAMP	100	12/22/2017	07:45:29 PM
86	N027524-012E	SAMP	100	12/22/2017	07:48:50 PM
87	N027524-013E	SAMP	100	12/22/2017	07:52:10 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
88	N027556-001E	SAMP	100	12/22/2017	07:55:31 PM
89	N027556-002E	SAMP	100	12/22/2017	07:58:51 PM
90	N027556-003E	SAMP	100	12/22/2017	08:02:11 PM
91	N027556-004D	SAMP	100	12/22/2017	08:05:31 PM
92	N027556-004D	SAMP	100	12/22/2017	08:09:21 PM
93	N027556-006E	SAMP	100	12/22/2017	08:13:13 PM
8	CCV6	CCV	1	12/22/2017	08:16:34 PM
1	CCB6	CCB	1	12/22/2017	08:20:29 PM
33	ICSA2	ICSA	1	12/22/2017	08:23:47 PM
34	ICSAB2	ICSAB	1	12/22/2017	08:27:06 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/11/2017 7:57:15**
Prep End Date: **12/11/2017 3:00:00**
Prep Batch **65994** Prep Code: **3010_W_DISS**

Reviewed/ Date: 01/02/2018
Initials/ Date: FOR
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-49**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-65994	Aqueous		25	☐	0	0	25	1.000		
LCS2-65994	Aqueous		25	☐	0	0	25	1.000		
MB-65994	Aqueous		25	☐	0	0	25	1.000		
N027459-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-002C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-002C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-007B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9589	HYDROCHLORIC ACID
9601	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/11/2017 7:57:15**
Prep End Date: **12/11/2017 3:00:00**
Prep Batch **65994** Prep Code: **3010_W_DISS**

Reviewed/ Date: 01/02/2018
Initials/ Date: FOR
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-49**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027459-008C	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-015B	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-016C	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-017C	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-018B	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-019B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9589	HYDROCHLORIC ACID
9601	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 171219A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Boron								
CalBlk	12/19/2017	10:23:34 AM	B	249.677	5558	0.00	mg/L	
Standard1	12/19/2017	10:28:24 AM	B	249.677	3689	0.1000	mg/L	
Standard3	12/19/2017	10:39:04 AM	B	249.677	38154	1.000	mg/L	
Standard4	12/19/2017	10:44:25 AM	B	249.677	95676	2.500	mg/L	
Standard5	12/19/2017	10:51:46 AM	B	249.677	146881	3.750	mg/L	
Standard6	12/19/2017	10:59:06 AM	B	249.677	191523	5.000	mg/L	
Standard7	12/19/2017	11:06:41 AM	B	249.677	378948	10.000	mg/L	0.9999
Magnesium								
CalBlk	12/19/2017	10:23:34 AM	Mg	279.079	249	0.00	mg/L	
Standard1	12/19/2017	10:28:24 AM	Mg	279.079	1423	0.1000	mg/L	
Standard2	12/19/2017	10:33:45 AM	Mg	279.079	13161	1.000	mg/L	
Standard3	12/19/2017	10:39:04 AM	Mg	279.079	27739	2.000	mg/L	
Standard4	12/19/2017	10:44:25 AM	Mg	279.079	68479	5.000	mg/L	
Standard5	12/19/2017	10:51:46 AM	Mg	279.079	103673	7.500	mg/L	
Standard6	12/19/2017	10:59:06 AM	Mg	279.079	137290	10.000	mg/L	
Standard7	12/19/2017	11:06:41 AM	Mg	279.079	262216	20.000	mg/L	0.9997
Calcium								
CalBlk	12/19/2017	10:23:34 AM	Ca	227.546	-144	0.00	mg/L	
Standard1	12/19/2017	10:28:24 AM	Ca	227.546	62	0.2000	mg/L	
Standard2	12/19/2017	10:33:45 AM	Ca	227.546	278	1.000	mg/L	
Standard3	12/19/2017	10:39:04 AM	Ca	227.546	591	2.000	mg/L	
Standard4	12/19/2017	10:44:25 AM	Ca	227.546	1444	5.000	mg/L	
Standard5	12/19/2017	10:51:46 AM	Ca	227.546	2153	7.500	mg/L	
Standard6	12/19/2017	10:59:06 AM	Ca	227.546	2875	10.000	mg/L	
Standard7	12/19/2017	11:06:41 AM	Ca	227.546	5631	20.000	mg/L	0.9999
Iron								
CalBlk	12/19/2017	10:23:34 AM	Fe	273.953	-142	0.00	mg/L	
Standard1	12/19/2017	10:28:24 AM	Fe	273.953	491	0.0200	mg/L	
Standard2	12/19/2017	10:33:45 AM	Fe	273.953	1636	0.050	mg/L	
Standard3	12/19/2017	10:39:04 AM	Fe	273.953	44331	2.000	mg/L	
Standard4	12/19/2017	10:44:25 AM	Fe	273.953	109375	5.000	mg/L	
Standard5	12/19/2017	10:51:46 AM	Fe	273.953	165425	7.500	mg/L	
Standard6	12/19/2017	10:59:06 AM	Fe	273.953	218762	10.000	mg/L	
Standard7	12/19/2017	11:06:41 AM	Fe	273.953	417464	20.000	mg/L	0.9997

INITIAL CALIBRATION SUMMARY: 171221D

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	12/21/2017	08:01:05 PM	Na	589.594	186	0.00	mg/L	
Standard1	12/21/2017	08:04:24 PM	Na	589.594	396	0.1000	mg/L	
Standard2	12/21/2017	08:07:40 PM	Na	589.594	3576	1.000	mg/L	
Standard3	12/21/2017	08:11:29 PM	Na	589.594	17807	5.000	mg/L	
Standard4	12/21/2017	08:15:21 PM	Na	589.594	35789	10.000	mg/L	
Standard5	12/21/2017	08:19:15 PM	Na	589.594	70762	20.000	mg/L	
Standard6	12/21/2017	08:23:18 PM	Na	589.594	141630	40.000	mg/L	1.0000
Potassium								
CalBlk	12/21/2017	08:01:05 PM	K	766.451	454	0.00	mg/L	
Standard1	12/21/2017	08:04:24 PM	K	766.451	507	0.1000	mg/L	
Standard2	12/21/2017	08:07:40 PM	K	766.451	4359	1.000	mg/L	
Standard3	12/21/2017	08:11:29 PM	K	766.451	22038	5.000	mg/L	
Standard4	12/21/2017	08:15:21 PM	K	766.451	44252	10.000	mg/L	
Standard5	12/21/2017	08:19:15 PM	K	766.451	88243	20.000	mg/L	
Standard6	12/21/2017	08:23:18 PM	K	766.451	178318	40.000	mg/L	1.0000

INITIAL CALIBRATION SUMMARY: 171222A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	12/22/2017	09:12:20 AM	Na	589.594	-182	0.00	mg/L	
Standard1	12/22/2017	09:15:36 AM	Na	589.594	437	0.1000	mg/L	
Standard2	12/22/2017	09:18:53 AM	Na	589.594	3746	1.000	mg/L	
Standard3	12/22/2017	09:22:41 AM	Na	589.594	18831	5.000	mg/L	
Standard4	12/22/2017	09:26:32 AM	Na	589.594	37501	10.000	mg/L	
Standard5	12/22/2017	09:30:26 AM	Na	589.594	74358	20.000	mg/L	
Standard6	12/22/2017	09:34:29 AM	Na	589.594	148950	40.000	mg/L	1.0000

INITIAL CALIBRATION SUMMARY: 171222B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	12/22/2017	03:17:22 PM	Na	589.594	-138	0.00	mg/L	
Standard1	12/22/2017	03:20:39 PM	Na	589.594	474	0.1000	mg/L	
Standard2	12/22/2017	03:23:56 PM	Na	589.594	3944	1.000	mg/L	
Standard3	12/22/2017	03:27:44 PM	Na	589.594	20031	5.000	mg/L	
Standard4	12/22/2017	03:31:34 PM	Na	589.594	39935	10.000	mg/L	
Standard5	12/22/2017	03:35:29 PM	Na	589.594	78537	20.000	mg/L	
Standard6	12/22/2017	03:39:32 PM	Na	589.594	156629	40.000	mg/L	1.0000

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872867**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5099.945	100	5000	0	102	90	110				
Calcium	10101.951	500	10000	0	101	90	110				
Iron	10265.234	20	10000	0	103	90	110				
Magnesium	10256.827	100	10000	0	103	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	107.330	100	100.0	0	107	80	120				
Calcium	225.252	500	200.0	0	113	80	120				
Iron	22.111	20	20.00	0	111	80	120				
Magnesium	101.031	100	100.0	0	101	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5077.114	100	5000	0	102	90	110				
Calcium	10087.496	500	10000	0	101	90	110				
Iron	10068.629	20	10000	0	101	90	110				
Magnesium	10003.649	100	10000	0	100	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4918.676	100	5000	0	98.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9904.520	500	10000	0	99.0	90	110				
Iron	9773.781	20	10000	0	97.7	90	110				
Magnesium	9754.873	100	10000	0	97.5	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5195.547	100	5000	0	104	90	110				
Calcium	10165.050	500	10000	0	102	90	110				
Iron	10413.547	20	10000	0	104	90	110				
Magnesium	10394.623	100	10000	0	104	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4895.955	100	5000	0	97.9	90	110				
Calcium	9876.655	500	10000	0	98.8	90	110				
Iron	9839.064	20	10000	0	98.4	90	110				
Magnesium	9818.277	100	10000	0	98.2	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **ZZZZZZ** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	98.336	100	100.0	0	98.3	70	130				
Calcium	220.353	500	200.0	0	110	70	130				
Iron	22.875	20	20.00	0	114	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	106.753	100	100.0	0	107	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872936**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5129.771	100	5000	0	103	90	110				
Calcium	10352.156	500	10000	0	104	90	110				
Iron	10606.001	20	10000	0	106	90	110				
Magnesium	10567.979	100	10000	0	106	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4927.431	100	5000	0	98.5	90	110				
Calcium	10068.129	500	10000	0	101	90	110				
Iron	9935.813	20	10000	0	99.4	90	110				
Magnesium	9882.452	100	10000	0	98.8	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872960**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4810.929	100	5000	0	96.2	90	110				
Calcium	9847.946	500	10000	0	98.5	90	110				
Iron	9653.480	20	10000	0	96.5	90	110				
Magnesium	9675.889	100	10000	0	96.8	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV8** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872972**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4965.895	100	5000	0	99.3	90	110				
Calcium	10063.850	500	10000	0	101	90	110				
Iron	10273.994	20	10000	0	103	90	110				
Magnesium	10406.273	100	10000	0	104	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **ZZZZZZ** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	103.773	100	100.0	0	104	70	130				
Calcium	266.163	500	200.0	0	133	70	130				S
Iron	23.330	20	20.00	0	117	70	130				
Magnesium	103.517	100	100.0	0	104	70	130				

Sample ID **CCV9** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873638**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4872.771	100	5000	0	97.5	90	110				
Calcium	10125.639	500	10000	0	101	90	110				
Iron	10186.375	20	10000	0	102	90	110				
Magnesium	10324.037	100	10000	0	103	90	110				

Sample ID **CCV10** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873650**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4823.347	100	5000	0	96.5	90	110				
Calcium	9918.903	500	10000	0	99.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Ca on LLCCV2 is biased high however, samples for this analyte are greater than the regular CCV which passed QC criteria.

06/25/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV10** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873650**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10147.604	20	10000	0	101	90	110				
Magnesium	10289.389	100	10000	0	103	90	110				

Sample ID **CCV11** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873662**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4737.324	100	5000	0	94.7	90	110				
Calcium	9659.769	500	10000	0	96.6	90	110				
Iron	9699.493	20	10000	0	97.0	90	110				
Magnesium	9819.285	100	10000	0	98.2	90	110				

Sample ID **CCV12** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873676**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4853.109	100	5000	0	97.1	90	110				
Calcium	9875.510	500	10000	0	98.8	90	110				
Iron	10180.551	20	10000	0	102	90	110				
Magnesium	10344.144	100	10000	0	103	90	110				

Sample ID **LLCCV3** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **ZZZZZZ** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873678**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	100.097	100	100.0	0	100	70	130				
Calcium	258.351	500	200.0	0	129	70	130				
Iron	23.915	20	20.00	0	120	70	130				
Magnesium	103.278	100	100.0	0	103	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV13** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873691**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4892.170	100	5000	0	97.8	90	110				
Calcium	9814.263	500	10000	0	98.1	90	110				
Iron	10150.534	20	10000	0	102	90	110				
Magnesium	10319.095	100	10000	0	103	90	110				

Sample ID **CCV14** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873703**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4956.354	100	5000	0	99.1	90	110				
Calcium	10006.400	500	10000	0	100	90	110				
Iron	10171.821	20	10000	0	102	90	110				
Magnesium	10251.213	100	10000	0	103	90	110				

Sample ID **CCV15** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4827.137	100	5000	0	96.5	90	110				
Calcium	9477.839	500	10000	0	94.8	90	110				
Iron	9936.651	20	10000	0	99.4	90	110				
Magnesium	10006.673	100	10000	0	100	90	110				

Sample ID **CCV16** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4799.843	100	5000	0	96.0	90	110				
Calcium	9474.062	500	10000	0	94.7	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV16**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9916.966	20	10000	0	99.2	90	110				
Magnesium	9990.379	100	10000	0	99.9	90	110				

Sample ID **CCV17**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873733**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5240.337	100	5000	0	105	90	110				
Calcium	10458.405	500	10000	0	105	90	110				
Iron	10912.185	20	10000	0	109	90	110				
Magnesium	10979.376	100	10000	0	110	90	110				

Sample ID **LLCCV4**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	79.427	100	100.0	0	79.4	70	130				
Calcium	164.854	500	200.0	0	82.4	70	130				
Iron	17.487	20	20.00	0	87.4	70	130				
Magnesium	80.638	100	100.0	0	80.6	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121017**
Client ID: **ICV**	Batch ID: **R121017**	TestNo: **EPA 6010B**		Analysis Date: **12/21/2017**	SeqNo: **2876736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9985.082	500	10000	0	99.9	90	110				
Sodium	10111.456	500	10000	0	101	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121017**
Client ID: **CCV**	Batch ID: **R121017**	TestNo: **EPA 6010B**		Analysis Date: **12/21/2017**	SeqNo: **2876750**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10123.391	500	10000	0	101	90	110				
Sodium	10379.455	500	10000	0	104	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121017**
Client ID: **CCV**	Batch ID: **R121017**	TestNo: **EPA 6010B**		Analysis Date: **12/21/2017**	SeqNo: **2876762**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10020.553	500	10000	0	100	90	110				
Sodium	10305.300	500	10000	0	103	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121017**
Client ID: **CCV**	Batch ID: **R121017**	TestNo: **EPA 6010B**		Analysis Date: **12/21/2017**	SeqNo: **2876774**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10103.800	500	10000	0	101	90	110				
Sodium	10274.982	500	10000	0	103	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121017**
Client ID: **CCV**	Batch ID: **R121017**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2876797**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10081.204	500	10000	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121017**
Client ID: **CCV**	Batch ID: **R121017**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2876797**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10239.803	500	10000	0	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121033**
Client ID: **ICV**	Batch ID: **R121033**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10104.358	500	10000	0	101	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121033**
Client ID: **CCV**	Batch ID: **R121033**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10488.450	500	10000	0	105	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121033**
Client ID: **CCV**	Batch ID: **R121033**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10404.433	500	10000	0	104	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121033**
Client ID: **CCV**	Batch ID: **R121033**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10527.736	500	10000	0	105	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121033**
Client ID: **CCV**	Batch ID: **R121033**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10826.151	500	10000	0	108	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **ICV**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10175.198	500	10000	0	102	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCV**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10109.954	500	10000	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCV**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10142.589	500	10000	0	101	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCV**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10542.144	500	10000	0	105	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCV**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10466.692	500	10000	0	105	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCV**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10309.898	500	10000	0	103	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCV**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10255.749	500	10000	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872868**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	31.928	100									
Calcium	25.289	500									
Iron	0.264	20									
Magnesium	-0.57117	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	13.483	100									
Calcium	33.130	500									
Iron	0.775	20									
Magnesium	-0.917742	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	30.699	100									
Calcium	3.457	500									
Iron	0.203	20									
Magnesium	-1.651536	100									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	21.321	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	17.578	500									
Iron	-0.562511	20									
Magnesium	-0.614019	100									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	9.787	100									
Calcium	29.385	500									
Iron	-0.242624	20									
Magnesium	-0.716168	100									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872937**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	30.912	100									
Calcium	6.563	500									
Iron	-0.349232	20									
Magnesium	-0.244004	100									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	36.370	100									
Calcium	-20.165979	500									
Iron	-0.362088	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	0.953	100									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	28.308	100									
Calcium	31.182	500									
Iron	-0.109383	20									
Magnesium	-1.026871	100									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	31.732	100									
Calcium	48.382	500									
Iron	0.302	20									
Magnesium	-1.353948	100									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873639**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	25.230	100									
Calcium	61.218	500									
Iron	0.666	20									
Magnesium	-1.306078	100									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873651**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	35.337	100									
Calcium	63.322	500									
Iron	0.612	20									
Magnesium	-1.400694	100									

Sample ID **CCB11**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	19.326	100									
Calcium	53.447	500									
Iron	0.887	20									
Magnesium	-1.219422	100									

Sample ID **CCB12**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873677**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	24.142	100									
Calcium	54.893	500									
Iron	0.497	20									
Magnesium	-0.155927	100									

Sample ID **CCB13**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873692**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	30.685	100									
Calcium	60.610	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB13**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873692**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.102	20									
Magnesium	0.364	100									

Sample ID **CCB14**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873704**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	27.482	100									
Calcium	21.048	500									
Iron	-0.54473	20									
Magnesium	-0.548792	100									

Sample ID **CCB15**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873716**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	29.200	100									
Calcium	37.689	500									
Iron	-1.097273	20									
Magnesium	-0.032286	100									

Sample ID **CCB16**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873729**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	20.228	100									
Calcium	43.740	500									
Iron	-0.701584	20									
Magnesium	-0.088455	100									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**CCB17**	SampType:	**CCB**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**120943**
Client ID:	**CCB**	Batch ID:	**R120943**	TestNo:	**EPA 6010B**			Analysis Date:	**12/20/2017**	SeqNo:	**2873734**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	59.735	100									
Calcium	-18.816967	500									
Iron	-0.670956	20									
Magnesium	-0.629145	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121017**
Client ID: **ICB**	Batch ID: **R121017**	TestNo: **EPA 6010B**		Analysis Date: **12/21/2017**	SeqNo: **2876737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	0.004	500									
Sodium	-7.800328	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121017**
Client ID: **CCB**	Batch ID: **R121017**	TestNo: **EPA 6010B**		Analysis Date: **12/21/2017**	SeqNo: **2876751**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	53.395	500									
Sodium	248.387	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121017**
Client ID: **CCB**	Batch ID: **R121017**	TestNo: **EPA 6010B**		Analysis Date: **12/21/2017**	SeqNo: **2876763**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	37.106	500									
Sodium	149.813	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121017**
Client ID: **CCB**	Batch ID: **R121017**	TestNo: **EPA 6010B**		Analysis Date: **12/21/2017**	SeqNo: **2876775**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	7.910	500									
Sodium	74.191	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121017**
Client ID: **CCB**	Batch ID: **R121017**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2876786**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	-6.030907	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**CCB4**	SampType:	**CCB**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**121017**
Client ID:	**CCB**	Batch ID:	**R121017**	TestNo:	**EPA 6010B**			Analysis Date:	**12/22/2017**	SeqNo:	**2876786**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	61.576	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121033**
Client ID: **ICB**	Batch ID: **R121033**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-3.334326	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121033**
Client ID: **CCB**	Batch ID: **R121033**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	89.803	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121033**
Client ID: **CCB**	Batch ID: **R121033**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	30.185	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121033**
Client ID: **CCB**	Batch ID: **R121033**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877508**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	41.731	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121033**
Client ID: **CCB**	Batch ID: **R121033**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	66.471	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **ICB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877885**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-0.744353	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877899**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-7.114299	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-7.508067	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	134.661	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	115.981	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
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- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCB5	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	121039
Client ID:	CCB	Batch ID:	R121039	TestNo:	EPA 6010B			Analysis Date:	12/22/2017	SeqNo:	2877947

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	44.411	500									

Sample ID	CCB6	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	121039
Client ID:	CCB	Batch ID:	R121039	TestNo:	EPA 6010B			Analysis Date:	12/22/2017	SeqNo:	2877959

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	32.744	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872870**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	498329.453	50	500000	0	99.7	80	120				
Boron	88.100	100									
Calcium	506490.713	500	500000	0	101	80	120				
Iron	179793.677	20	200000	0	89.9	80	120				
Magnesium	475935.929	100	500000	0	95.2	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSAB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	546782.249	50	500000	0	109	80	120				
Boron	1173.352	100	1000	0	117	80	120				
Calcium	555538.618	500	500000	0	111	80	120				
Iron	187588.653	20	200000	0	93.8	80	120				
Magnesium	503556.663	100	500000	0	101	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	505775.123	50	500000	0	101	80	120				
Boron	83.607	100									
Calcium	511760.390	500	500000	0	102	80	120				
Iron	181783.344	20	200000	0	90.9	80	120				
Magnesium	481219.806	100	500000	0	96.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	ICSAB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872925

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	551426.519	50	500000	0	110	80	120				
Boron	1175.249	100	1000	0	118	80	120				
Calcium	558431.588	500	500000	0	112	80	120				
Iron	188992.776	20	200000	0	94.5	80	120				
Magnesium	506616.951	100	500000	0	101	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	ICSA	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872975

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	494366.698	50	500000	0	98.9	80	120				
Boron	85.578	100									
Calcium	497081.940	500	500000	0	99.4	80	120				
Iron	176987.327	20	200000	0	88.5	80	120				
Magnesium	476524.153	100	500000	0	95.3	80	120				

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	ICSAB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872976

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	541047.279	50	500000	0	108	80	120				
Boron	1146.351	100	1000	0	115	80	120				
Calcium	543688.104	500	500000	0	109	80	120				
Iron	184653.505	20	200000	0	92.3	80	120				
Magnesium	500595.553	100	500000	0	100	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873679**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	491037.277	50	500000	0	98.2	80	120				
Boron	90.141	100									
Calcium	489727.156	500	500000	0	97.9	80	120				
Iron	175817.995	20	200000	0	87.9	80	120				
Magnesium	473899.027	100	500000	0	94.8	80	120				

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSAB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873680**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	538707.628	50	500000	0	108	80	120				
Boron	1129.484	100	1000	0	113	80	120				
Calcium	536671.907	500	500000	0	107	80	120				
Iron	183946.460	20	200000	0	92.0	80	120				
Magnesium	500154.534	100	500000	0	100	80	120				

Sample ID **ICSA5**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	519089.326	50	500000	0	104	80	120				
Boron	85.383	100									
Calcium	511388.117	500	500000	0	102	80	120				
Iron	187834.978	20	200000	0	93.9	80	120				
Magnesium	504975.878	100	500000	0	101	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB5**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSAB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	473861.160	50	500000	0	94.8	80	120				
Boron	1022.046	100	1000	0	102	80	120				
Calcium	464818.220	500	500000	0	93.0	80	120				
Iron	200609.345	20	200000	0	100	80	120				
Magnesium	447746.521	100	500000	0	89.5	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	121017
Client ID:	ICSA	Batch ID:	R121017	TestNo:	EPA 6010B			Analysis Date:	12/21/2017	SeqNo:	2876738

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	2.925	500									
Sodium	-4.356142	500									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	121017
Client ID:	ICSAB	Batch ID:	R121017	TestNo:	EPA 6010B			Analysis Date:	12/21/2017	SeqNo:	2876739

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9985.354	500	10000	0	99.9	80	120				
Sodium	10096.353	500	10000	0	101	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	121017
Client ID:	ICSA	Batch ID:	R121017	TestNo:	EPA 6010B			Analysis Date:	12/22/2017	SeqNo:	2876795

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	-5.720469	500									
Sodium	11.705	500									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	121017
Client ID:	ICSAB	Batch ID:	R121017	TestNo:	EPA 6010B			Analysis Date:	12/22/2017	SeqNo:	2876796

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10004.486	500	10000	0	100	80	120				
Sodium	10048.998	500	10000	0	100	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121033**
Client ID: **ICSA**	Batch ID: **R121033**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-1.459082	500									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121033**
Client ID: **ICSAB**	Batch ID: **R121033**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877472**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10156.653	500	10000	0	102	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121033**
Client ID: **ICSA**	Batch ID: **R121033**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	55.454	500									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121033**
Client ID: **ICSAB**	Batch ID: **R121033**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10821.554	500	10000	0	108	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **ICSA**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	0.528	500									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **ICSAB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877887**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10226.982	500	10000	0	102	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **ICSA**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877960**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	31.954	500									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **ICSAB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10266.940	500	10000	0	103	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	98.9	65-125	PASS
Standard2	ICAL	1	1.053	105.31	65-125	PASS
Standard3	ICAL	1	1.046	104.59	65-125	PASS
Standard4	ICAL	1	1.074	107.38	65-125	PASS
Standard5	ICAL	1	0.99	98.63	65-125	PASS
Standard6	ICAL	1	0.93	93.39	65-125	PASS
Standard7	ICAL	1	0.95	94.61	65-125	PASS
ICV	ICV	1	0.94	94.18	65-125	PASS
ICB	ICB	1	1.015	101.49	65-125	PASS
LLICV	CCV1	1	1.034	103.35	65-125	PASS
ICSA1	ICSA	1	1.015	101.5	65-125	PASS
ICSAB1	ICSAB	1	0.82	81.74	65-125	PASS
CCV1	CCV	1	0.98	97.92	65-125	PASS
CCB1	CCB	1	1	99.98	65-125	PASS
CCB1	CCB	1	1.031	103.1	65-125	PASS
MB-65994	MBLK	1	1.015	101.53	65-125	PASS
LCS1-65994	LCS	1	0.95	94.55	65-125	PASS
N027459-001C	SAMP	1	0.94	94.3	65-125	PASS
N027459-001C	SAMP	5	0.97	97.44	65-125	PASS
N027459-001C-PS	PS	1	0.92	92.5	65-125	PASS
N027459-001C-MS1	MS	1	0.91	91.18	65-125	PASS
N027459-001C-MSD1	MSD	1	0.92	91.86	65-125	PASS
CCV2	CCV	1	1.03	102.97	65-125	PASS
CCB2	CCB	1	1.042	104.16	65-125	PASS
N027459-002C	SAMP	1	0.89	89.43	65-125	PASS
N027459-003B	SAMP	1	0.84	84.44	65-125	PASS
N027459-004B	SAMP	1	0.83	83.072	65-125	PASS
N027459-005B	SAMP	1	0.94	93.98	65-125	PASS
N027459-006B	SAMP	1	0.8	80.14	65-125	PASS
N027459-007B	SAMP	1	0.97	97.21	65-125	PASS
N027459-008C	SAMP	1	1.0012	100.12	65-125	PASS
N027459-009B	SAMP	1	0.92	92.14	65-125	PASS
N027459-010B	SAMP	1	0.92	92.23	65-125	PASS
N027459-011B	SAMP	1	0.88	88.32	65-125	PASS
CCV3	CCV	1	0.98	97.7	65-125	PASS
CCB3	CCB	1	1.042	104.17	65-125	PASS
N027459-012B	SAMP	1	0.98	98.48	65-125	PASS
CCB3	CCB	1	1.022	102.22	65-125	PASS
N027459-012B	SAMP	1	0.99	98.8	65-125	PASS
N027459-013B	SAMP	1	0.83	82.75	65-125	PASS

INTERNAL STANDARD: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N027459-014B	SAMP	1	0.88	88.003	65-125	PASS
N027459-015B	SAMP	1	0.97	96.97	65-125	PASS
N027459-016C	SAMP	1	0.97	96.88	65-125	PASS
N027459-017C	SAMP	1	0.99	98.99	65-125	PASS
N027459-018B	SAMP	1	0.75	75.036	65-125	PASS
N027459-019B	SAMP	1	0.87	86.73	65-125	PASS
CCV4	CCV	1	1.011	101.06	65-125	PASS
CCB4	CCB	1	1	99.81	65-125	PASS
LLCCV1	CCV2	1	1.033	103.33	65-125	PASS
ICSA2	ICSA	1	1.045	104.52	65-125	PASS
ICSAB2	ICSAB	1	0.84	84.43	65-125	PASS
CCV5	CCV	1	0.99	98.91	65-125	PASS
CCB5	CCB	1	1.0069	100.69	65-125	PASS
CCV6	CCV	1	1.028	102.84	65-125	PASS
CCB6	CCB	1	1.0096	100.96	65-125	PASS
N027459-003B	SAMP	5	0.94	94.1	65-125	PASS
N027459-004B	SAMP	5	0.94	93.75	65-125	PASS
N027459-006B	SAMP	5	0.94	93.55	65-125	PASS
N027459-018B	SAMP	5	0.92	92.48	65-125	PASS
CCV7	CCV	1	1.037	103.74	65-125	PASS
CCB7	CCB	1	1.037	103.7	65-125	PASS
CCV8	CCV	1	1.072	107.21	65-125	PASS
CCB8	CCB	1	1.094	109.41	65-125	PASS
LLCCV2	CCV2	1	1.15	115.04	65-125	PASS
ICSA3	ICSA	1	1.15	114.65	65-125	PASS
ICSAB3	ICSAB	1	0.9	90.38	65-125	PASS
CCV9	CCV	1	1.075	107.45	65-125	PASS
CCB9	CCB	1	1.085	108.54	65-125	PASS
CCV10	CCV	1	1.088	108.83	65-125	PASS
CCB10	CCB	1	1.11	110.82	65-125	PASS
CCV11	CCV	1	1.11	110.54	65-125	PASS
CCB11	CCB	1	1.095	109.54	65-125	PASS
CCB11	CCB	1	1.1	110.07	65-125	PASS
CCV12	CCV	1	1.079	107.91	65-125	PASS
CCB12	CCB	1	1.11	110.73	65-125	PASS
LLCCV3	CCV2	1	1.17	116.58	65-125	PASS
ICSA4	ICSA	1	1.16	115.81	65-125	PASS
ICSAB4	ICSAB	1	0.91	91.32	65-125	PASS
CCV13	CCV	1	1.073	107.34	65-125	PASS
CCB13	CCB	1	1.097	109.65	65-125	PASS
CCV14	CCV	1	1.074	107.42	65-125	PASS

INTERNAL STANDARD: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCB14	CCB	1	1.048	104.82	65-125	PASS
CCV15	CCV	1	1.029	102.92	65-125	PASS
CCB15	CCB	1	1.038	103.82	65-125	PASS
CCV16	CCV	1	1.033	103.32	65-125	PASS
CCB16	CCB	1	1.042	104.16	65-125	PASS
CCB16	CCB	1	1.043	104.26	65-125	PASS
CCV17	CCV	1	1.023	102.26	65-125	PASS
CCB17	CCB	1	1.012	101.22	65-125	PASS
LLCCV4	CCV2	1	1.12	111.89	65-125	PASS
LLCCV4	CCV2	1	1.047	104.73	65-125	PASS
ICSA5	ICSA	1	1.11	111.01	65-125	PASS
ICSAB5	ICSAB	1	0.88	87.76	65-125	PASS
ICSAB5	ICSAB	1	1.043	104.34	65-125	PASS

INTERNAL STANDARD: 171221D

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1	99.54	65-125	PASS
Standard2	ICAL	1	1.0068	100.68	65-125	PASS
Standard3	ICAL	1	0.98	98.39	65-125	PASS
Standard4	ICAL	1	0.99	99.47	65-125	PASS
Standard5	ICAL	1	0.98	98.099	65-125	PASS
Standard6	ICAL	1	0.97	96.93	65-125	PASS
ICV	ICV	1	0.99	99.042	65-125	PASS
ICB	ICB	1	1.0018	100.18	65-125	PASS
ICSA1	ICSA	1	1.0022	100.22	65-125	PASS
ICSAB1	ICSAB	1	0.99	99.35	65-125	PASS
MB-65994	MBLK	1	-0.00006	-0.006	65-125	NR!
LCS2-65994	LCS	1	-0.00011	-0.011	65-125	NR!
N027459-001C	SAMP	100	-0.00005	-0.005	65-125	NR!
MB-65994	MBLK	1	1	99.89	65-125	PASS
LCS2-65994	LCS	1	1.041	104.13	65-125	PASS
N027459-001C	SAMP	100	1	99.81	65-125	PASS
N027459-002C	SAMP	1	0.96	95.9	65-125	PASS
N027459-002C	SAMP	5	0.98	98.14	65-125	PASS
N027459-002C-PS	PS	1	0.97	96.84	65-125	PASS
N027459-002C-MS2	MS	1	0.96	95.61	65-125	PASS
CCV1	CCV	1	1	99.78	65-125	PASS
CCB1	CCB	1	1.0038	100.38	65-125	PASS
N027459-002C-MSD2	MSD	1	0.94	94.008	65-125	PASS
N027459-002C	SAMP	100	1.0069	100.69	65-125	PASS
N027459-002C	SAMP	500	1	99.56	65-125	PASS
N027459-002C-PS	PS	100	1	99.77	65-125	PASS
N027459-002C-MS2	MS	100	0.99	98.76	65-125	PASS
N027459-002C-MSD2	MSD	100	0.98	98.24	65-125	PASS
N027459-002C	SAMP	25	0.97	97.28	65-125	PASS
N027459-002C-PS	PS	5	0.94	93.79	65-125	PASS
N027459-002C-MS2	MS	5	0.94	94.21	65-125	PASS
N027459-002C-MSD2	MSD	5	0.93	93.36	65-125	PASS
CCV2	CCV	1	0.99	99.025	65-125	PASS
CCB2	CCB	1	1	99.69	65-125	PASS
N027459-003B	SAMP	100	0.96	95.66	65-125	PASS
N027459-004B	SAMP	100	0.96	96.12	65-125	PASS
N027459-005B	SAMP	100	0.97	96.69	65-125	PASS
N027459-006B	SAMP	25	0.94	93.8	65-125	PASS
N027459-007B	SAMP	10	0.97	96.8	65-125	PASS
N027459-008C	SAMP	1	0.99	99.02	65-125	PASS

INTERNAL STANDARD: 171221D

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N027459-008C	SAMP	10	0.97	97.2	65-125	PASS
N027459-009B	SAMP	100	0.97	97.005	65-125	PASS
N027459-010B	SAMP	100	0.97	96.71	65-125	PASS
N027459-011B	SAMP	100	0.96	96.077	65-125	PASS
CCV3	CCV	1	0.97	96.7	65-125	PASS
CCB3	CCB	1	0.98	98.14	65-125	PASS
N027459-012B	SAMP	10	0.97	97.097	65-125	PASS
N027459-011B	SAMP	100	0.97	96.51	65-125	PASS
N027459-006B	SAMP	25	0.95	95.19	65-125	PASS
N027459-013B	SAMP	100	0.98	97.53	65-125	PASS
N027459-014B	SAMP	100	0.98	97.93	65-125	PASS
N027459-015B	SAMP	25	0.98	98.45	65-125	PASS
N027459-016C	SAMP	1	0.97	96.98	65-125	PASS
N027459-016C	SAMP	10	0.99	98.83	65-125	PASS
N027459-017C	SAMP	1	1	99.67	65-125	PASS
N027459-017C	SAMP	10	0.99	99.34	65-125	PASS
CCV4	CCV	1	0.99	99.13	65-125	PASS
CCB4	CCB	1	1.0006	100.06	65-125	PASS
N027459-018B	SAMP	100	0.98	98.37	65-125	PASS
N027459-019B	SAMP	100	1	99.68	65-125	PASS
N027459-006B	SAMP	250	1.0051	100.51	65-125	PASS
N027459-012B	SAMP	10	1.0084	100.84	65-125	PASS
N027459-011B	SAMP	1000	1.0087	100.87	65-125	PASS
N027459-018B	SAMP	250	0.99	99.083	65-125	PASS
CCV5	CCV	1	0.35	34.71	65-125	NR!
CCB5	CCB	1	1.012	101.22	65-125	PASS
ICSA2	ICSA	1	1.018	101.79	65-125	PASS
ICSAB2	ICSAB	1	1.0034	100.34	65-125	PASS

INTERNAL STANDARD: 171222A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1	99.74	65-125	PASS
Standard2	ICAL	1	1.0086	100.86	65-125	PASS
Standard3	ICAL	1	0.99	98.85	65-125	PASS
Standard4	ICAL	1	0.99	99.33	65-125	PASS
Standard5	ICAL	1	0.98	97.55	65-125	PASS
Standard6	ICAL	1	0.96	96.26	65-125	PASS
ICV	ICV	1	0.99	99.47	65-125	PASS
ICB	ICB	1	1	100	65-125	PASS
ICSA1	ICSA	1	1.014	101.37	65-125	PASS
ICSAB1	ICSAB	1	0.98	97.79	65-125	PASS
N027459-006B	SAMP	250	0.98	98.46	65-125	PASS
N027459-012B	SAMP	10	0.99	98.89	65-125	PASS
N027459-011B	SAMP	100	0.97	97.12	65-125	PASS
N027459-018B	SAMP	250	0.98	97.57	65-125	PASS
CCV1	CCV	1	0.97	96.89	65-125	PASS
CCB1	CCB	1	0.99	98.69	65-125	PASS
CCV2	CCV	1	0.97	96.66	65-125	PASS
CCB2	CCB	1	0.98	97.63	65-125	PASS
CCV3	CCV	1	0.98	97.75	65-125	PASS
CCB3	CCB	1	0.99	99.47	65-125	PASS
CCV4	CCV	1	0.96	96.47	65-125	PASS
CCB4	CCB	1	1	99.73	65-125	PASS
ICSA2	ICSA	1	1	99.94	65-125	PASS
ICSAB2	ICSAB	1	0.97	97.009	65-125	PASS

INTERNAL STANDARD: 171222B

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.98	98.35	65-125	PASS
Standard2	ICAL	1	0.99	99.36	65-125	PASS
Standard3	ICAL	1	0.97	97.45	65-125	PASS
Standard4	ICAL	1	0.96	96.31	65-125	PASS
Standard5	ICAL	1	0.96	95.89	65-125	PASS
Standard6	ICAL	1	0.94	94.3	65-125	PASS
ICV	ICV	1	0.97	96.98	65-125	PASS
ICB	ICB	1	1.0026	100.26	65-125	PASS
ICSA1	ICSA	1	0.99	99.49	65-125	PASS
ICSAB1	ICSAB	1	0.97	97.081	65-125	PASS
CCV1	CCV	1	0.97	96.7	65-125	PASS
CCB1	CCB	1	1	99.59	65-125	PASS
CCV2	CCV	1	0.96	96.032	65-125	PASS
CCB2	CCB	1	0.99	99.43	65-125	PASS
CCV3	CCV	1	0.95	94.95	65-125	PASS
CCB3	CCB	1	0.98	97.57	65-125	PASS
N027459-019B	SAMP	100	0.96	95.87	65-125	PASS
CCV4	CCV	1	0.94	93.6	65-125	PASS
CCB4	CCB	1	0.97	97.36	65-125	PASS
CCV5	CCV	1	0.97	96.85	65-125	PASS
CCB5	CCB	1	1.0018	100.18	65-125	PASS
CCV6	CCV	1	0.97	97.19	65-125	PASS
CCB6	CCB	1	1.01	101	65-125	PASS
ICSA2	ICSA	1	1.0071	100.71	65-125	PASS
ICSAB2	ICSAB	1	0.98	98.26	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N027459
Test Method: EPA 6010B
Analysis Date: 12/19/2017 & 12/21/2017

Matrix: Groundwater
Batch No.: 65994

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B & Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027459-001C DT 5X	Boron	ug/L	871.3629	NA	737.0084	18.23%	10
N027459-001C DT 5X	Calcium	ug/L	261111.6	PASS	242313.7	7.76%	10
N027459-001C DT 5X	Iron	ug/L	15.15601	NA	14.16453	7.00%	10
N027459-001C DT 5X	Magnesium	ug/L	30668.66	PASS	27935.37	9.78%	10
N027459-002C DT 25X	Potassium	ug/L	14788.05	PASS	14261.3	3.69%	10
N027459-002C DT 500X	Sodium	ug/L	2248300	PASS	2076070	8.30%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N027459-001C-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **65994**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2872892**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5592.441	100	5000	737.0	97.1	80	120				
Calcium	256862.158	500	10000	242300	145	80	120				S
Iron	103.512	20	100.0	14.16	89.3	80	120				
Magnesium	37309.108	100	10000	27940	93.7	80	120				

Sample ID **N027459-002C-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121017**
Client ID: **ZZZZZZ**	Batch ID: **65994**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/21/2017**	SeqNo: **2876755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2076978.338	50000	20000	2076000	4.54	80	120				S

Sample ID **N027459-002C-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121017**
Client ID: **ZZZZZZ**	Batch ID: **65994**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/21/2017**	SeqNo: **2876759**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	37421.797	2500	20000	14260	116	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

LOD & PQL VERIFICATION

Analytical Method: EPA 6010B / 200.7
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analyst: MI

Matrix: Water
Units: mg/L

Compound	MDL	LOD		PQL		
		Spike	Recovered	Spike	Recovered	% Recovery
Sodium	0.02621	0.10	0.08408	0.5	0.52080	104.2
Potassium	0.03815	0.10	0.13587	0.5	0.48231	96.5
Strontium	0.00545	0.02	0.02459	0.05	0.06052	121.0

Method Detection Limit

Analytical Method: EPA 6010B / 200.7
Digestion Method: EPA 3010A
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: mg/L

Analyte	1	2	3	4	5	6	7	SD	Ave	AMT SPIKED	%RSD	MDL	PQL
Potassium	0.15443	0.16201	0.14301	0.16141	0.16124	0.12965	0.14652	0.01215	0.15118	0.1000	8.0	0.03815	0.5
Sodium	0.11445	0.11459	0.11678	0.11286	0.11394	0.09515	0.10066	0.00835	0.10978	0.1000	7.6	0.02621	0.5
Strontium	0.02939	0.03046	0.0307	0.02962	0.03209	0.02708	0.02772	0.00174	0.02958	0.0250	5.9	0.00545	0.05

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66021
ASSET #: N027459

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 12/20/2018

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)		X			X	
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)		X			X	
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X			X	
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X			X	
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?		X			X	
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X	X		X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of Ni in LLCCV1 & 2 failed, bias high. However samples are ND.
%Rec of Cu & Ni in LLICV failed, bias low. For rerun.
%RSD of Se in CCV's and sample reference failed > 15. Se for rerun.
%RSD of Mn in N027459-003B & As in N027459-008C failed > 15%. For rerun.
%Rec of Ba in N027459-001C PS/MS/MSD failed. However LCS passed criteria.
For Confirmation:
N027459-013B (6020) = 6.4 ug/L :confirmation: 7.1 ug/L ; N027459-013A (218.6) = 5.0 ug/L :confirmation: 4.8 ug/L
N027459-015B (6020) = 93 ug/L :confirmation: 76 ug/L ; N027459-015A (218.6) = 12 ug/L :confirmation: 65 ug/L

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: CEI Date: —
2nd Level Reviewer: 01/03/2018 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66021
ASSET #: N027459

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 12/22/2017

Method:

- [ ] EPA 6010B / 200.7
- [x] EPA 6020 / 200.8
- [ ] EPA 7470A / 7471A/245.1
- [ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X			X	
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For Cu & Zn rerun only.
%Rec of Cu in N027459-001C PS/MS/MSD failed. However LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: —

2nd Level Reviewer [signature] 01/03/2018 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66021
ASSET #: N027459
Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 1/2/2018

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X			X	
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For Se rerun only.
For Mn in N027459-003B & As in N027459-008C rerun only.
%RSD of Se in LLICV & LLCCV1 failed > 20%. However %Rec of LLICV & LLCCV1 passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: —
2nd Level Reviewer 01/03/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N027459-001C** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 20.0472 * 1 * (25/25)

Chromium , ug/L = 20.0472

Reporting results in two significant figures,

Chromium , ug/L = 20

% RSD SUMMARY

PERCENT RSD SUMMARY: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	107 Ag [3]				111 Cd [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.068	2.094	15	PASS	0.1	10.35	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.48	2.77	15	PASS	0.5	3.35	15	PASS
Std3-5/50 ppb	ICAL	1	4.99	1.12	15	PASS	5.15	0.87	15	PASS
Std4-10/100 ppb	ICAL	1	10.093	1.15	15	PASS	10.096	1.2	15	PASS
Std5-20/200 ppb	ICAL	1	20.00042	0.51	15	PASS	20	1.36	15	PASS
Std6-40/400 ppb	ICAL	1	39.98	0.23	15	PASS	40.71	0.51	15	PASS
Std7-100/1000 ppb	ICAL	1	105.2	0.97	15	PASS	100.22	1.35	15	PASS
Std8-200/2000 ppb	ICAL	1	172.74	1.9	15	PASS	199.74	0.52	15	PASS
ICV	ICV	1	9.57	0.9	15	PASS	10.11	0.78	15	PASS
ICB	ICB	1	0.19	5.65	15	PASS	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.52	2.43	20	PASS	0.5	5.24	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	18.97	0.79	15	PASS	17.44	1.32	15	PASS
LLICV	CCV1	1	0.65	2.85	20	PASS	0.51	6.035	20	PASS
MB-66021	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-66021	LCS	1	9.63	0.74	15	PASS	10.16	0.87	15	PASS
N027459-001C	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-001C	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-001C	SAMP	25	0.0035	11.78	15	PASS	<0.000	N/A	15	<PQL
N027459-001C-PS	PS	1	9.65	0.93	15	PASS	8.98	0.41	15	PASS
N027459-001C-PS	PS	5	2.15	1.79	15	PASS	2	1.28	15	PASS
N027459-001C-MS	MS	1	9.78	1.34	15	PASS	8.86	0.68	15	PASS
N027459-001C-MS	MS	5	2.13	1.31	15	PASS	1.92	1.92	15	PASS
N027459-001C-MSD	MSD	1	9.7	0.69	15	PASS	8.84	1.028	15	PASS
CCV1	CCV	1	20.47	0.52	15	PASS	20.41	0.82	15	PASS
CCB1	CCB	1	0.16	7.72	15	PASS	<0.000	N/A	15	<PQL
N027459-001C-MSD	MSD	5	2.083	0.76	15	PASS	1.91	1.49	15	PASS
N027459-002C	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-002C	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-003B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-003B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-004B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-004B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-005B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-001C	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-006B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.3	0.89	15	PASS	20.84	0.8	15	PASS
CCB2	CCB	1	0.14	10.5	15	PASS	0.0037	397.97	15	<PQL
LLCCV1	CCV2	1	0.52	3.035	20	PASS	0.52	6.84	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	107 Ag [3]				111 Cd [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSAB2	ICSAB	1	18.93	1.27	15	PASS	17.52	1.55	15	PASS
N027459-006B	SAMP	5	0.039	26.089	15	<PQL	<0.000	N/A	15	<PQL
N027459-007B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-007B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-008C	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-008C	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-009B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-009B	SAMP	5	0.0063	7.18	15	PASS	0.0043	312.12	15	<PQL
N027459-010B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-010B	SAMP	5	0.12	1.38	15	PASS	<0.000	N/A	15	<PQL
N027459-011B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.73	0.76	15	PASS	20.49	2.056	15	PASS
CCB3	CCB	1	0.0022	88.85	15	<PQL	0.02	57.59	15	<PQL
N027459-011B	SAMP	5	0.019	7.4	15	PASS	0.0067	157.24	15	<PQL
N027459-012B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-012B	SAMP	5	0.0023	116.81	15	<PQL	<0.000	N/A	15	<PQL
N027459-013B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-013B	SAMP	5	<0.000	N/A	15	<PQL	0.061	14.48	15	PASS
N027459-014B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-014B	SAMP	5	<0.000	N/A	15	<PQL	0.000074	5447.33	15	<PQL
N027459-015B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-016C	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-016C	SAMP	10	0.046	13.53	15	PASS	<0.000	N/A	15	<PQL
CCV4	CCV	1	20.31	0.94	15	PASS	20.24	0.81	15	PASS
CCB4	CCB	1	0.17	13.95	15	PASS	0.017	139.0021	15	<PQL
N027459-017C	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-017C	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-018B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-018B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-019B	SAMP	1	<0.000	N/A	15	<PQL	0.073	20	15	<PQL
N027459-019B	SAMP	5	<0.000	N/A	15	<PQL	0.07	10.22	15	PASS
N027459-017C	SAMP	10	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-018B	SAMP	25	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-010B	SAMP	5	<0.000	N/A	15	<PQL	0.044	24.24	15	<PQL
N027459-006B	SAMP	50	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV5	CCV	1	20.42	0.67	15	PASS	20.35	2.29	15	PASS
CCB5	CCB	1	0.15	13.38	15	PASS	0.027	44.022	15	<PQL
LLCCV2	CCV2	1	0.53	3.45	20	PASS	0.53	4.57	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	18.88	0.63	15	PASS	16.95	0.71	15	PASS

PERCENT RSD SUMMARY: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	121 Sb [3]				137 Ba [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	2.087	15	PASS	0.15	17.27	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.52	9.28	15	PASS	0.57	2.4	15	PASS
Std3-5/50 ppb	ICAL	1	4.85	0.91	15	PASS	5.21	1.069	15	PASS
Std4-10/100 ppb	ICAL	1	9.71	0.98	15	PASS	10.34	0.93	15	PASS
Std5-20/200 ppb	ICAL	1	19.26	0.56	15	PASS	20.65	0.54	15	PASS
Std6-40/400 ppb	ICAL	1	38.9	0.45	15	PASS	40.84	0.91	15	PASS
Std7-100/1000 ppb	ICAL	1	99.75	1.032	15	PASS	101.12	0.63	15	PASS
Std8-200/2000 ppb	ICAL	1	200.44	0.01	15	PASS	199.19	0.65	15	PASS
ICV	ICV	1	9.49	0.61	15	PASS	10.74	0.63	15	PASS
ICB	ICB	1	0.1	6.71	15	PASS	0.046	24.92	15	<PQL
LLICV	CCV1	1	0.55	3.27	20	PASS	1.03	0.44	20	PASS
ICSA1	ICSA	1	0.042	9.76	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.35	0.16	15	PASS	18.0069	0.63	15	PASS
LLICV	CCV1	1	0.51	0.75	20	PASS	1.11	2.76	20	PASS
MB-66021	MBLK	1	0.016	13.44	15	PASS	0.11	16.73	15	<PQL
LCS-66021	LCS	1	9.55	0.042	15	PASS	10.42	0.56	15	PASS
N027459-001C	SAMP	1	0.073	9.58	15	PASS	70.12	0.59	15	PASS
N027459-001C	SAMP	5	0.013	17.24	15	<PQL	14.47	1.49	15	PASS
N027459-001C	SAMP	25	0.0034	72.71	15	<PQL	1.43	2.46	15	PASS
N027459-001C-PS	PS	1	9.77	1.53	15	PASS	79.8	0.7	15	PASS
N027459-001C-PS	PS	5	2.047	1.17	15	PASS	16.18	1.29	15	PASS
N027459-001C-MS	MS	1	9.63	0.36	15	PASS	75.89	0.54	15	PASS
N027459-001C-MS	MS	5	1.99	0.89	15	PASS	15.68	0.72	15	PASS
N027459-001C-MSD	MSD	1	9.6	0.63	15	PASS	76.89	0.6	15	PASS
CCV1	CCV	1	19.14	1.12	15	PASS	20.79	0.51	15	PASS
CCB1	CCB	1	0.029	3.73	15	PASS	<0.000	N/A	15	<PQL
N027459-001C-MSD	MSD	5	2.029	0.94	15	PASS	15.69	1.046	15	PASS
N027459-002C	SAMP	1	0.066	6.52	15	PASS	34.89	0.29	15	PASS
N027459-002C	SAMP	5	0.0091	5.25	15	PASS	7.042	0.67	15	PASS
N027459-003B	SAMP	1	0.38	2.85	15	PASS	92.22	0.85	15	PASS
N027459-003B	SAMP	5	0.067	11.77	15	PASS	19.036	0.74	15	PASS
N027459-004B	SAMP	1	1.19	2.88	15	PASS	45.26	1.092	15	PASS
N027459-004B	SAMP	5	0.23	1.46	15	PASS	9.05	0.55	15	PASS
N027459-005B	SAMP	1	0.018	8.21	15	PASS	52.64	1	15	PASS
N027459-001C	SAMP	1	0.055	5.11	15	PASS	69.61	0.87	15	PASS
N027459-006B	SAMP	1	0.11	9.74	15	PASS	44.87	1.3	15	PASS
CCV2	CCV	1	19.86	0.93	15	PASS	21.39	0.2	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.48	0.9	20	PASS	1.08	2.35	20	PASS
ICSA2	ICSA	1	0.013	11.36	15	PASS	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	121 Sb [3]				137 Ba [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSAB2	ICSAB	1	19.85	1.36	15	PASS	18.35	0.88	15	PASS
N027459-006B	SAMP	5	0.048	4.8	15	PASS	8.89	1.18	15	PASS
N027459-007B	SAMP	1	0.026	20.85	15	<PQL	77	0.62	15	PASS
N027459-007B	SAMP	5	0.0062	41.74	15	<PQL	13.95	0.5	15	PASS
N027459-008C	SAMP	1	0.039	11.51	15	PASS	54.29	0.58	15	PASS
N027459-008C	SAMP	5	<0.000	N/A	15	<PQL	10.13	0.81	15	PASS
N027459-009B	SAMP	1	0.11	8.7	15	PASS	68.72	1.35	15	PASS
N027459-009B	SAMP	5	0.012	12.59	15	PASS	14.013	0.6	15	PASS
N027459-010B	SAMP	1	0.11	5.87	15	PASS	68.78	1.12	15	PASS
N027459-010B	SAMP	5	0.022	9.48	15	PASS	13.43	2.34	15	PASS
N027459-011B	SAMP	1	0.011	30.96	15	<PQL	115.94	1.87	15	PASS
CCV3	CCV	1	19.11	0.16	15	PASS	21.014	0.84	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-011B	SAMP	5	0.003	95.33	15	<PQL	23.37	0.31	15	PASS
N027459-012B	SAMP	1	0.021	26.23	15	<PQL	95.043	0.73	15	PASS
N027459-012B	SAMP	5	<0.000	N/A	15	<PQL	19.44	0.81	15	PASS
N027459-013B	SAMP	1	0.049	10.12	15	PASS	36.89	1.43	15	PASS
N027459-013B	SAMP	5	0.0073	17.49	15	<PQL	7.46	1.55	15	PASS
N027459-014B	SAMP	1	0.019	33.82	15	<PQL	88.68	1.31	15	PASS
N027459-014B	SAMP	5	<0.000	N/A	15	<PQL	18.36	0.42	15	PASS
N027459-015B	SAMP	1	0.029	13.32	15	PASS	96.58	0.93	15	PASS
N027459-016C	SAMP	1	0.016	5.075	15	PASS	21.096	0.64	15	PASS
N027459-016C	SAMP	10	<0.000	N/A	15	<PQL	1.29	4.41	15	PASS
CCV4	CCV	1	18.94	0.51	15	PASS	21.49	1.61	15	PASS
CCB4	CCB	1	0.035	9.64	15	PASS	0.026	74.82	15	<PQL
N027459-017C	SAMP	1	0.024	10.17	15	PASS	21.18	0.39	15	PASS
N027459-017C	SAMP	5	0.00078	190.66	15	<PQL	2.77	0.12	15	PASS
N027459-018B	SAMP	1	0.033	26.26	15	<PQL	96.79	0.67	15	PASS
N027459-018B	SAMP	5	<0.000	N/A	15	<PQL	19.63	1.69	15	PASS
N027459-019B	SAMP	1	0.026	6.67	15	PASS	107.12	0.89	15	PASS
N027459-019B	SAMP	5	<0.000	N/A	15	<PQL	21.05	2.31	15	PASS
N027459-017C	SAMP	10	<0.000	N/A	15	<PQL	1.28	7.098	15	PASS
N027459-018B	SAMP	25	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-010B	SAMP	5	0.011	33.46	15	<PQL	13.78	2.57	15	PASS
N027459-006B	SAMP	50	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV5	CCV	1	18.95	1.53	15	PASS	20.97	0.58	15	PASS
CCB5	CCB	1	0.025	1.49	15	PASS	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.49	1.35	20	PASS	1.099	3.87	20	PASS
ICSA3	ICSA	1	0.018	9.68	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	18.74	0.57	15	PASS	19.22	0.88	15	PASS

PERCENT RSD SUMMARY: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	205 Tl [3]				208 Pb [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.087	3.19	15	PASS	0.097	1.85	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.46	2.09	15	PASS	0.49	2.38	15	PASS
Std3-5/50 ppb	ICAL	1	4.85	0.49	15	PASS	4.91	0.95	15	PASS
Std4-10/100 ppb	ICAL	1	9.79	0.45	15	PASS	9.8	0.3	15	PASS
Std5-20/200 ppb	ICAL	1	19.57	0.22	15	PASS	19.63	0.79	15	PASS
Std6-40/400 ppb	ICAL	1	40.74	0.82	15	PASS	38.92	0.83	15	PASS
Std7-100/1000 ppb	ICAL	1	101.34	0.94	15	PASS	100.58	0.91	15	PASS
Std8-200/2000 ppb	ICAL	1	199.24	1.0047	15	PASS	199.97	0.59	15	PASS
ICV	ICV	1	10.68	0.94	15	PASS	9.82	1.13	15	PASS
ICB	ICB	1	0.028	4.52	15	PASS	0.021	17.55	15	<PQL
LLICV	CCV1	1	0.51	1.11	20	PASS	0.97	0.83	20	PASS
ICSA1	ICSA	1	0.019	12.25	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.33	0.42	15	PASS	19.034	0.95	15	PASS
LLICV	CCV1	1	0.52	1.31	20	PASS	0.99	1.42	20	PASS
MB-66021	MBLK	1	0.092	3.37	15	PASS	<0.000	N/A	15	<PQL
LCS-66021	LCS	1	10.59	1.37	15	PASS	9.73	0.92	15	PASS
N027459-001C	SAMP	1	0.11	2.33	15	PASS	<0.000	N/A	15	<PQL
N027459-001C	SAMP	5	0.024	10.17	15	PASS	<0.000	N/A	15	<PQL
N027459-001C	SAMP	25	0.013	20.49	15	<PQL	<0.000	N/A	15	<PQL
N027459-001C-PS	PS	1	9.77	0.85	15	PASS	10.35	1.038	15	PASS
N027459-001C-PS	PS	5	1.99	1.55	15	PASS	2.021	0.86	15	PASS
N027459-001C-MS	MS	1	9.71	2.15	15	PASS	10.21	0.62	15	PASS
N027459-001C-MS	MS	5	1.97	0.43	15	PASS	2	0.69	15	PASS
N027459-001C-MSD	MSD	1	9.7	0.95	15	PASS	10.14	0.5	15	PASS
CCV1	CCV	1	19.64	0.63	15	PASS	19.71	0.56	15	PASS
CCB1	CCB	1	0.054	2.26	15	PASS	<0.000	N/A	15	<PQL
N027459-001C-MSD	MSD	5	1.88	1.26	15	PASS	2	0.66	15	PASS
N027459-002C	SAMP	1	0.097	2.9	15	PASS	<0.000	N/A	15	<PQL
N027459-002C	SAMP	5	0.032	20.62	15	<PQL	<0.000	N/A	15	<PQL
N027459-003B	SAMP	1	0.049	8.076	15	PASS	<0.000	N/A	15	<PQL
N027459-003B	SAMP	5	0.017	18.97	15	<PQL	<0.000	N/A	15	<PQL
N027459-004B	SAMP	1	0.035	8.69	15	PASS	<0.000	N/A	15	<PQL
N027459-004B	SAMP	5	0.0073	19.038	15	<PQL	<0.000	N/A	15	<PQL
N027459-005B	SAMP	1	0.072	4.81	15	PASS	<0.000	N/A	15	<PQL
N027459-001C	SAMP	1	0.059	5.48	15	PASS	<0.000	N/A	15	<PQL
N027459-006B	SAMP	1	0.085	11.16	15	PASS	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.55	0.62	15	PASS	19.62	0.79	15	PASS
CCB2	CCB	1	0.033	11.2	15	PASS	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.48	2.57	20	PASS	0.96	0.57	20	PASS
ICSA2	ICSA	1	0.015	10.024	15	PASS	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	205 Tl [3]				208 Pb [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSAB2	ICSAB	1	20.37	0.3	15	PASS	19.13	0.21	15	PASS
N027459-006B	SAMP	5	0.017	15.62	15	<PQL	<0.000	N/A	15	<PQL
N027459-007B	SAMP	1	0.044	2.34	15	PASS	<0.000	N/A	15	<PQL
N027459-007B	SAMP	5	0.015	11.78	15	PASS	<0.000	N/A	15	<PQL
N027459-008C	SAMP	1	0.061	1.77	15	PASS	<0.000	N/A	15	<PQL
N027459-008C	SAMP	5	0.0056	49.42	15	<PQL	<0.000	N/A	15	<PQL
N027459-009B	SAMP	1	0.027	7.3	15	PASS	<0.000	N/A	15	<PQL
N027459-009B	SAMP	5	0.003	51.31	15	<PQL	<0.000	N/A	15	<PQL
N027459-010B	SAMP	1	0.019	20.55	15	<PQL	<0.000	N/A	15	<PQL
N027459-010B	SAMP	5	0.014	6.45	15	PASS	<0.000	N/A	15	<PQL
N027459-011B	SAMP	1	0.025	6.025	15	PASS	<0.000	N/A	15	<PQL
CCV3	CCV	1	19.68	0.85	15	PASS	19.81	0.88	15	PASS
CCB3	CCB	1	0.013	14.63	15	PASS	<0.000	N/A	15	<PQL
N027459-011B	SAMP	5	0.0097	23.54	15	<PQL	<0.000	N/A	15	<PQL
N027459-012B	SAMP	1	0.049	12.47	15	PASS	<0.000	N/A	15	<PQL
N027459-012B	SAMP	5	0.0091	17.32	15	<PQL	<0.000	N/A	15	<PQL
N027459-013B	SAMP	1	0.069	4.55	15	PASS	<0.000	N/A	15	<PQL
N027459-013B	SAMP	5	0.024	14.58	15	PASS	<0.000	N/A	15	<PQL
N027459-014B	SAMP	1	0.041	6.93	15	PASS	<0.000	N/A	15	<PQL
N027459-014B	SAMP	5	0.011	3.78	15	PASS	<0.000	N/A	15	<PQL
N027459-015B	SAMP	1	0.069	1.5	15	PASS	0.96	1.25	15	PASS
N027459-016C	SAMP	1	0.059	4.6	15	PASS	<0.000	N/A	15	<PQL
N027459-016C	SAMP	10	0.0094	15.014	15	<PQL	<0.000	N/A	15	<PQL
CCV4	CCV	1	19.76	0.96	15	PASS	19.79	1.075	15	PASS
CCB4	CCB	1	0.034	6.49	15	PASS	0.0091	32.21	15	<PQL
N027459-017C	SAMP	1	0.065	3.02	15	PASS	<0.000	N/A	15	<PQL
N027459-017C	SAMP	5	0.013	10.7	15	PASS	<0.000	N/A	15	<PQL
N027459-018B	SAMP	1	0.031	2.97	15	PASS	<0.000	N/A	15	<PQL
N027459-018B	SAMP	5	0.0081	32.009	15	<PQL	<0.000	N/A	15	<PQL
N027459-019B	SAMP	1	0.014	12.34	15	PASS	<0.000	N/A	15	<PQL
N027459-019B	SAMP	5	0.0088	41.68	15	<PQL	<0.000	N/A	15	<PQL
N027459-017C	SAMP	10	0.011	10.36	15	PASS	<0.000	N/A	15	<PQL
N027459-018B	SAMP	25	0.009	31.038	15	<PQL	<0.000	N/A	15	<PQL
N027459-010B	SAMP	5	0.012	11.67	15	PASS	<0.000	N/A	15	<PQL
N027459-006B	SAMP	50	0.0054	31.76	15	<PQL	<0.000	N/A	15	<PQL
CCV5	CCV	1	19.79	0.15	15	PASS	19.78	0.5	15	PASS
CCB5	CCB	1	0.019	12.23	15	PASS	0.018	24.8	15	<PQL
LLCCV2	CCV2	1	0.49	0.69	20	PASS	0.99	0.96	20	PASS
ICSA3	ICSA	1	0.01	9.022	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.58	0.53	15	PASS	19.31	0.16	15	PASS

PERCENT RSD SUMMARY: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	51 V [2]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.13	29.073	15	<PQL	0.091	14.49	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.55	7.36	15	PASS	0.52	2.97	15	PASS
Std3-5/50 ppb	ICAL	1	5.18	1.59	15	PASS	5.029	2.96	15	PASS
Std4-10/100 ppb	ICAL	1	10.23	0.095	15	PASS	9.97	0.84	15	PASS
Std5-20/200 ppb	ICAL	1	20.61	1.71	15	PASS	20.17	2.84	15	PASS
Std6-40/400 ppb	ICAL	1	40.82	0.95	15	PASS	40.25	0.24	15	PASS
Std7-100/1000 ppb	ICAL	1	101.48	0.69	15	PASS	99.87	0.52	15	PASS
Std8-200/2000 ppb	ICAL	1	199.019	1.21	15	PASS	194.75	0.73	15	PASS
ICV	ICV	1	10.27	1.93	15	PASS	10.11	2.14	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.96	6.28	20	PASS	0.96	3.8	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.022	63.3	15	<PQL
ICSAB1	ICSAB	1	20.74	1.42	15	PASS	19.62	0.56	15	PASS
LLICV	CCV1	1	1.21	0.38	20	PASS	1.23	1.11	20	PASS
MB-66021	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-66021	LCS	1	10.75	2.28	15	PASS	10.44	1.39	15	PASS
N027459-001C	SAMP	1	2.69	4.57	15	PASS	20.047	1.17	15	PASS
N027459-001C	SAMP	5	0.53	8.12	15	PASS	4.21	2.92	15	PASS
N027459-001C	SAMP	25	0.22	9.84	15	PASS	0.87	1.97	15	PASS
N027459-001C-PS	PS	1	12.97	1.22	15	PASS	29.64	0.43	15	PASS
N027459-001C-PS	PS	5	2.58	0.73	15	PASS	6.12	0.84	15	PASS
N027459-001C-MS	MS	1	12.88	1.01	15	PASS	28.31	0.72	15	PASS
N027459-001C-MS	MS	5	2.52	3.65	15	PASS	5.88	2.36	15	PASS
N027459-001C-MSD	MSD	1	12.77	0.46	15	PASS	28.099	1.51	15	PASS
CCV1	CCV	1	21.95	1.23	15	PASS	21.33	1.75	15	PASS
CCB1	CCB	1	0.077	24.55	15	<PQL	<0.000	N/A	15	<PQL
N027459-001C-MSD	MSD	5	2.63	6.006	15	PASS	5.76	1.87	15	PASS
N027459-002C	SAMP	1	1.57	5.46	15	PASS	29.21	2.6	15	PASS
N027459-002C	SAMP	5	0.29	8.27	15	PASS	6.15	3.35	15	PASS
N027459-003B	SAMP	1	11.65	1.41	15	PASS	35.3	1.39	15	PASS
N027459-003B	SAMP	5	2.3	1.67	15	PASS	7.49	0.68	15	PASS
N027459-004B	SAMP	1	23.8	0.13	15	PASS	1.92	2.42	15	PASS
N027459-004B	SAMP	5	4.76	2.97	15	PASS	0.36	3.98	15	PASS
N027459-005B	SAMP	1	8.98	1.48	15	PASS	14.36	2.0043	15	PASS
N027459-001C	SAMP	1	2.89	0.78	15	PASS	21.18	0.93	15	PASS
N027459-006B	SAMP	1	4.79	1.14	15	PASS	4059.0042	0.66	15	PASS
CCV2	CCV	1	20.74	0.99	15	PASS	21.92	0.35	15	PASS
CCB2	CCB	1	0.24	20.45	15	<PQL	0.14	8.23	15	PASS
LLCCV1	CCV2	1	1.27	3.48	20	PASS	1.11	4.035	20	PASS
ICSA2	ICSA	1	0.032	77.14	15	<PQL	0.2	10.16	15	PASS

PERCENT RSD SUMMARY: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	51 V [2]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSAB2	ICSAB	1	21.33	1.54	15	PASS	20.6	1.75	15	PASS
N027459-006B	SAMP	5	0.98	5.82	15	PASS	859.92	1.85	15	PASS
N027459-007B	SAMP	1	4.87	2.66	15	PASS	332.81	1.36	15	PASS
N027459-007B	SAMP	5	1.052	9.58	15	PASS	68.47	1.53	15	PASS
N027459-008C	SAMP	1	8.015	2.43	15	PASS	89.7	0.12	15	PASS
N027459-008C	SAMP	5	1.86	3.69	15	PASS	20.18	0.62	15	PASS
N027459-009B	SAMP	1	3.83	3.89	15	PASS	8.35	3.39	15	PASS
N027459-009B	SAMP	5	0.83	7.22	15	PASS	1.9	2.13	15	PASS
N027459-010B	SAMP	1	3.75	0.52	15	PASS	8.11	1.45	15	PASS
N027459-010B	SAMP	5	0.83	0.75	15	PASS	1.82	2.94	15	PASS
N027459-011B	SAMP	1	3.45	1.8	15	PASS	16.32	1.043	15	PASS
CCV3	CCV	1	21.091	0.59	15	PASS	20.56	1.64	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.1	14.74	15	PASS
N027459-011B	SAMP	5	0.74	2.52	15	PASS	3.39	2.99	15	PASS
N027459-012B	SAMP	1	2.11	3.91	15	PASS	18.28	0.61	15	PASS
N027459-012B	SAMP	5	0.59	3.62	15	PASS	3.98	3.35	15	PASS
N027459-013B	SAMP	1	6.19	1.26	15	PASS	6.43	1.57	15	PASS
N027459-013B	SAMP	5	1.25	3.85	15	PASS	1.45	4.92	15	PASS
N027459-014B	SAMP	1	8.12	1.26	15	PASS	12.2	1.52	15	PASS
N027459-014B	SAMP	5	1.6	4.35	15	PASS	2.58	1.4	15	PASS
N027459-015B	SAMP	1	11.12	1.11	15	PASS	92.78	1.15	15	PASS
N027459-016C	SAMP	1	10.092	1.56	15	PASS	1411.086	0.98	15	PASS
N027459-016C	SAMP	10	1.045	1.87	15	PASS	144.18	0.68	15	PASS
CCV4	CCV	1	20.59	1.41	15	PASS	20.37	0.46	15	PASS
CCB4	CCB	1	0.047	49.5	15	<PQL	0.29	5.91	15	PASS
N027459-017C	SAMP	1	10.39	2.64	15	PASS	1435.53	1.48	15	PASS
N027459-017C	SAMP	5	2.07	0.41	15	PASS	303.45	2.37	15	PASS
N027459-018B	SAMP	1	0.35	11.31	15	PASS	<0.000	N/A	15	<PQL
N027459-018B	SAMP	5	<0.000	N/A	15	<PQL	0.014	77.33	15	<PQL
N027459-019B	SAMP	1	0.12	22.84	15	<PQL	<0.000	N/A	15	<PQL
N027459-019B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-017C	SAMP	10	0.87	7.71	15	PASS	143.52	0.31	15	PASS
N027459-018B	SAMP	25	<0.000	N/A	15	<PQL	0.12	11.53	15	PASS
N027459-010B	SAMP	5	0.68	11.049	15	PASS	1.73	1.26	15	PASS
N027459-006B	SAMP	50	0.011	356.79	15	<PQL	85.87	0.08	15	PASS
CCV5	CCV	1	20.58	1.86	15	PASS	20.2	1.72	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.071	18.74	15	<PQL
LLCCV2	CCV2	1	1.068	3.15	20	PASS	1.064	1.65	20	PASS
ICSA3	ICSA	1	0.14	99.21	15	<PQL	0.13	9.91	15	PASS
ICSAB3	ICSAB	1	21.25	1.65	15	PASS	20.22	1.079	15	PASS

PERCENT RSD SUMMARY: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				59 Co [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	25.51	15	<PQL	0.09	5.46	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.52	9.3	15	PASS	0.5	1.29	15	PASS
Std3-5/50 ppb	ICAL	1	5.13	3.079	15	PASS	5.076	1.21	15	PASS
Std4-10/100 ppb	ICAL	1	10.081	1.46	15	PASS	10.24	1.58	15	PASS
Std5-20/200 ppb	ICAL	1	21.025	2.65	15	PASS	20.44	0.67	15	PASS
Std6-40/400 ppb	ICAL	1	40.21	2.28	15	PASS	40.46	0.23	15	PASS
Std7-100/1000 ppb	ICAL	1	99.7	1.94	15	PASS	100.75	0.81	15	PASS
Std8-200/2000 ppb	ICAL	1	193.63	0.4	15	PASS	199.48	0.88	15	PASS
ICV	ICV	1	95.78	0.51	15	PASS	9.61	1.013	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.0014	182.5	15	<PQL
LLICV	CCV1	1	0.51	13.74	20	PASS	0.5	7.47	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	23.056	0.19	15	PASS	19.13	1.078	15	PASS
LLICV	CCV1	1	0.56	7.93	20	PASS	0.51	2.53	20	PASS
MB-66021	MBLK	1	0.072	14.56	15	PASS	0.085	8.71	15	PASS
LCS-66021	LCS	1	98.54	1.74	15	PASS	9.98	0.77	15	PASS
N027459-001C	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-001C	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-001C	SAMP	25	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-001C-PS	PS	1	91.39	0.55	15	PASS	8.58	1.0077	15	PASS
N027459-001C-PS	PS	5	19.21	0.62	15	PASS	1.88	2.32	15	PASS
N027459-001C-MS	MS	1	90.68	0.64	15	PASS	8.55	1.34	15	PASS
N027459-001C-MS	MS	5	18.94	1.051	15	PASS	1.83	0.79	15	PASS
N027459-001C-MSD	MSD	1	90.17	0.47	15	PASS	8.44	1.19	15	PASS
CCV1	CCV	1	21.27	1.38	15	PASS	21.69	1.38	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.00052	240.76	15	<PQL
N027459-001C-MSD	MSD	5	18.92	1.42	15	PASS	1.85	2.57	15	PASS
N027459-002C	SAMP	1	4.92	1.064	15	PASS	<0.000	N/A	15	<PQL
N027459-002C	SAMP	5	1.018	1.63	15	PASS	<0.000	N/A	15	<PQL
N027459-003B	SAMP	1	2.13	88.22	15	NR!	<0.000	N/A	15	<PQL
N027459-003B	SAMP	5	0.7	5.98	15	PASS	<0.000	N/A	15	<PQL
N027459-004B	SAMP	1	4.16	1.25	15	PASS	<0.000	N/A	15	<PQL
N027459-004B	SAMP	5	0.84	1.23	15	PASS	<0.000	N/A	15	<PQL
N027459-005B	SAMP	1	1.058	2.85	15	PASS	<0.000	N/A	15	<PQL
N027459-001C	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-006B	SAMP	1	4.59	1.51	15	PASS	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.35	0.89	15	PASS	20.34	1.24	15	PASS
CCB2	CCB	1	0.0019	1159.55	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.58	5.14	20	PASS	0.5	4.27	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				59 Co [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSAB2	ICSAB	1	23.12	1.87	15	PASS	19.71	1.21	15	PASS
N027459-006B	SAMP	5	0.99	5.68	15	PASS	<0.000	N/A	15	<PQL
N027459-007B	SAMP	1	<0.000	N/A	15	<PQL	0.00076	204.73	15	<PQL
N027459-007B	SAMP	5	<0.000	N/A	15	<PQL	0.0016	206.87	15	<PQL
N027459-008C	SAMP	1	<0.000	N/A	15	<PQL	0.037	15.18	15	<PQL
N027459-008C	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-009B	SAMP	1	1.94	1.55	15	PASS	<0.000	N/A	15	<PQL
N027459-009B	SAMP	5	0.38	4.43	15	PASS	<0.000	N/A	15	<PQL
N027459-010B	SAMP	1	1.96	4.37	15	PASS	<0.000	N/A	15	<PQL
N027459-010B	SAMP	5	0.39	12.46	15	PASS	<0.000	N/A	15	<PQL
N027459-011B	SAMP	1	1.97	2.39	15	PASS	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.84	1.11	15	PASS	21.098	1.71	15	PASS
CCB3	CCB	1	0.02	54.3	15	<PQL	0.0027	110.077	15	<PQL
N027459-011B	SAMP	5	0.37	4.11	15	PASS	<0.000	N/A	15	<PQL
N027459-012B	SAMP	1	0.31	22.8	15	<PQL	0.23	5.71	15	PASS
N027459-012B	SAMP	5	0.042	53.84	15	<PQL	0.036	5.4	15	PASS
N027459-013B	SAMP	1	5.9	2.22	15	PASS	<0.000	N/A	15	<PQL
N027459-013B	SAMP	5	1.23	2.38	15	PASS	<0.000	N/A	15	<PQL
N027459-014B	SAMP	1	0.24	46.42	15	<PQL	0.35	2.08	15	PASS
N027459-014B	SAMP	5	0.062	49.92	15	<PQL	0.073	5.47	15	PASS
N027459-015B	SAMP	1	159.3	0.82	15	PASS	4.19	1.35	15	PASS
N027459-016C	SAMP	1	<0.000	N/A	15	<PQL	0.028	35.14	15	<PQL
N027459-016C	SAMP	10	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV4	CCV	1	20.79	0.56	15	PASS	20.48	1.28	15	PASS
CCB4	CCB	1	0.032	39.26	15	<PQL	0.0085	18.68	15	<PQL
N027459-017C	SAMP	1	<0.000	N/A	15	<PQL	0.022	27.1	15	<PQL
N027459-017C	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-018B	SAMP	1	3387.26	1.27	15	PASS	<0.000	N/A	15	<PQL
N027459-018B	SAMP	5	746.38	0.17	15	PASS	<0.000	N/A	15	<PQL
N027459-019B	SAMP	1	142.18	0.95	15	PASS	<0.000	N/A	15	<PQL
N027459-019B	SAMP	5	30.14	1.21	15	PASS	<0.000	N/A	15	<PQL
N027459-017C	SAMP	10	0.024	30.57	15	<PQL	<0.000	N/A	15	<PQL
N027459-018B	SAMP	25	153.0058	1.22	15	PASS	<0.000	N/A	15	<PQL
N027459-010B	SAMP	5	0.48	3.38	15	PASS	<0.000	N/A	15	<PQL
N027459-006B	SAMP	50	0.13	6.84	15	PASS	<0.000	N/A	15	<PQL
CCV5	CCV	1	20.8	1.18	15	PASS	20.52	1.12	15	PASS
CCB5	CCB	1	0.055	11.76	15	PASS	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.58	4.47	20	PASS	0.5	2.33	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	23.77	1.26	15	PASS	19.92	0.71	15	PASS

PERCENT RSD SUMMARY: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	60 Ni [2]				63 Cu [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.092	32.33	15	<PQL	0.013	252.74	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.49	7.87	15	PASS	0.33	4.26	15	PASS
Std3-5/50 ppb	ICAL	1	5.069	1.53	15	PASS	5	2.74	15	PASS
Std4-10/100 ppb	ICAL	1	10.28	1.36	15	PASS	10.0024	1.033	15	PASS
Std5-20/200 ppb	ICAL	1	20.22	2.64	15	PASS	20.14	2.011	15	PASS
Std6-40/400 ppb	ICAL	1	40.98	0.97	15	PASS	40.79	0.77	15	PASS
Std7-100/1000 ppb	ICAL	1	99.53	0.72	15	PASS	99.25	0.75	15	PASS
Std8-200/2000 ppb	ICAL	1	200.00097	1.52	15	PASS	200.2	1.5	15	PASS
ICV	ICV	1	10.7	1.64	15	PASS	9.98	1.82	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.89	7.7	20	PASS	0.64	4.18	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	18.4	0.42	15	PASS	17.35	2.27	15	PASS
LLICV	CCV1	1	1.99	2.89	20	PASS	0.66	4.89	20	PASS
MB-66021	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-66021	LCS	1	10.78	0.47	15	PASS	10.36	1.3	15	PASS
N027459-001C	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-001C	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-001C	SAMP	25	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-001C-PS	PS	1	8.74	1.047	15	PASS	4.55	2.46	15	PASS
N027459-001C-PS	PS	5	1.61	5.55	15	PASS	0.58	8.97	15	PASS
N027459-001C-MS	MS	1	9.057	1.94	15	PASS	4.78	1.59	15	PASS
N027459-001C-MS	MS	5	1.6	3.33	15	PASS	0.65	4.76	15	PASS
N027459-001C-MSD	MSD	1	8.8	1.11	15	PASS	4.72	4.29	15	PASS
CCV1	CCV	1	20.72	1.16	15	PASS	20.33	0.97	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-001C-MSD	MSD	5	1.79	3.52	15	PASS	0.53	7.42	15	PASS
N027459-002C	SAMP	1	0.74	14.38	15	PASS	<0.000	N/A	15	<PQL
N027459-002C	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-003B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-003B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-004B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-004B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-005B	SAMP	1	1.95	1.26	15	PASS	<0.000	N/A	15	<PQL
N027459-001C	SAMP	1	1.031	7.56	15	PASS	<0.000	N/A	15	<PQL
N027459-006B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	21.22	0.7	15	PASS	20.15	1.55	15	PASS
CCB2	CCB	1	0.55	6.32	15	PASS	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.39	4.59	20	PASS	0.7	3.97	20	PASS
ICSA2	ICSA	1	0.32	15.039	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	60 Ni [2]				63 Cu [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSAB2	ICSAB	1	19.57	1.63	15	PASS	17.57	1.86	15	PASS
N027459-006B	SAMP	5	0.61	4.93	15	PASS	<0.000	N/A	15	<PQL
N027459-007B	SAMP	1	0.86	10.92	15	PASS	<0.000	N/A	15	<PQL
N027459-007B	SAMP	5	0.3	20.38	15	<PQL	<0.000	N/A	15	<PQL
N027459-008C	SAMP	1	1.092	6.04	15	PASS	<0.000	N/A	15	<PQL
N027459-008C	SAMP	5	0.74	10.71	15	PASS	<0.000	N/A	15	<PQL
N027459-009B	SAMP	1	2.54	3.59	15	PASS	<0.000	N/A	15	<PQL
N027459-009B	SAMP	5	0.6	3.48	15	PASS	<0.000	N/A	15	<PQL
N027459-010B	SAMP	1	2.78	1.84	15	PASS	<0.000	N/A	15	<PQL
N027459-010B	SAMP	5	0.94	1.059	15	PASS	<0.000	N/A	15	<PQL
N027459-011B	SAMP	1	1.75	5.59	15	PASS	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.33	1.93	15	PASS	19.79	1.2	15	PASS
CCB3	CCB	1	0.48	9.33	15	PASS	<0.000	N/A	15	<PQL
N027459-011B	SAMP	5	0.7	3.38	15	PASS	<0.000	N/A	15	<PQL
N027459-012B	SAMP	1	2.34	4.78	15	PASS	<0.000	N/A	15	<PQL
N027459-012B	SAMP	5	0.76	5.39	15	PASS	<0.000	N/A	15	<PQL
N027459-013B	SAMP	1	0.23	20.35	15	<PQL	<0.000	N/A	15	<PQL
N027459-013B	SAMP	5	0.39	7.27	15	PASS	<0.000	N/A	15	<PQL
N027459-014B	SAMP	1	0.81	19.11	15	<PQL	<0.000	N/A	15	<PQL
N027459-014B	SAMP	5	0.75	2.56	15	PASS	<0.000	N/A	15	<PQL
N027459-015B	SAMP	1	27.17	1.081	15	PASS	18.53	1.54	15	PASS
N027459-016C	SAMP	1	3.3	2.16	15	PASS	<0.000	N/A	15	<PQL
N027459-016C	SAMP	10	1.25	5.39	15	PASS	<0.000	N/A	15	<PQL
CCV4	CCV	1	20.64	1.13	15	PASS	19.6	0.57	15	PASS
CCB4	CCB	1	0.84	3.62	15	PASS	<0.000	N/A	15	<PQL
N027459-017C	SAMP	1	2.73	8.27	15	PASS	<0.000	N/A	15	<PQL
N027459-017C	SAMP	5	0.99	10.6	15	PASS	<0.000	N/A	15	<PQL
N027459-018B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-018B	SAMP	5	0.37	25.52	15	<PQL	<0.000	N/A	15	<PQL
N027459-019B	SAMP	1	0.3	24.3	15	<PQL	<0.000	N/A	15	<PQL
N027459-019B	SAMP	5	1.76	5.91	15	PASS	<0.000	N/A	15	<PQL
N027459-017C	SAMP	10	2.82	2.066	15	PASS	<0.000	N/A	15	<PQL
N027459-018B	SAMP	25	2.041	3.96	15	PASS	<0.000	N/A	15	<PQL
N027459-010B	SAMP	5	2.35	6.9	15	PASS	<0.000	N/A	15	<PQL
N027459-006B	SAMP	50	1.4	1.88	15	PASS	<0.000	N/A	15	<PQL
CCV5	CCV	1	21.26	0.43	15	PASS	19.77	0.93	15	PASS
CCB5	CCB	1	1.17	1.58	15	PASS	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	2.024	5.82	20	PASS	0.77	7.94	20	PASS
ICSA3	ICSA	1	0.76	7.7	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	21.6	2.071	15	PASS	17.55	0.95	15	PASS

PERCENT RSD SUMMARY: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	66 Zn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	<0.000	N/A	15	<PQL	0.086	29.85	15	<PQL
Std2-0.5/5 ppb	ICAL	1	<0.000	N/A	15	<PQL	0.45	10.14	15	PASS
Std3-5/50 ppb	ICAL	1	3.8	6.063	15	PASS	5.088	4.094	15	PASS
Std4-10/100 ppb	ICAL	1	8.086	4.56	15	PASS	10.11	1.88	15	PASS
Std5-20/200 ppb	ICAL	1	17.89	1.69	15	PASS	20.35	3.41	15	PASS
Std6-40/400 ppb	ICAL	1	38.91	0.56	15	PASS	40.74	1.12	15	PASS
Std7-100/1000 ppb	ICAL	1	99.094	0.95	15	PASS	99.16	0.58	15	PASS
Std8-200/2000 ppb	ICAL	1	200.98	0.67	15	PASS	200.23	0.98	15	PASS
ICV	ICV	1	97.22	1.3	15	PASS	10.19	2.6	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.0016	442.59	15	<PQL
LLICV	CCV1	1	7.3	3.1	20	PASS	0.088	3.66	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	13.04	1.88	15	PASS	19.87	3.063	15	PASS
LLICV	CCV1	1	6.56	6.42	20	PASS	0.12	17.62	20	PASS
MB-66021	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-66021	LCS	1	97.73	0.75	15	PASS	9.9	0.86	15	PASS
N027459-001C	SAMP	1	<0.000	N/A	15	<PQL	0.99	12.27	15	PASS
N027459-001C	SAMP	5	<0.000	N/A	15	<PQL	0.21	20.85	15	NR!
N027459-001C	SAMP	25	<0.000	N/A	15	<PQL	0.028	54.4	15	<PQL
N027459-001C-PS	PS	1	98.78	1.31	15	PASS	11.028	1.43	15	PASS
N027459-001C-PS	PS	5	20.54	1.26	15	PASS	2.24	2.57	15	PASS
N027459-001C-MS	MS	1	98.99	2.12	15	PASS	10.61	2.031	15	PASS
N027459-001C-MS	MS	5	19.61	4.14	15	PASS	2.19	2.22	15	PASS
N027459-001C-MSD	MSD	1	96.22	1.63	15	PASS	10.59	2.066	15	PASS
CCV1	CCV	1	16.75	1.097	15	PASS	20.39	1.52	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.012	100.23	15	<PQL
N027459-001C-MSD	MSD	5	19.27	2.94	15	PASS	2.29	3.17	15	PASS
N027459-002C	SAMP	1	<0.000	N/A	15	<PQL	0.84	4.45	15	PASS
N027459-002C	SAMP	5	<0.000	N/A	15	<PQL	0.17	26.51	15	NR!
N027459-003B	SAMP	1	<0.000	N/A	15	<PQL	3.97	2.55	15	PASS
N027459-003B	SAMP	5	<0.000	N/A	15	<PQL	0.74	0.94	15	PASS
N027459-004B	SAMP	1	<0.000	N/A	15	<PQL	4.88	2.63	15	PASS
N027459-004B	SAMP	5	<0.000	N/A	15	<PQL	0.99	3.26	15	PASS
N027459-005B	SAMP	1	<0.000	N/A	15	<PQL	2.3	6.7	15	PASS
N027459-001C	SAMP	1	<0.000	N/A	15	<PQL	1.0009	3.24	15	PASS
N027459-006B	SAMP	1	<0.000	N/A	15	<PQL	3.42	6.16	15	PASS
CCV2	CCV	1	16.96	3.23	15	PASS	21.02	2.83	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	6.54	1.72	20	PASS	0.09	24.73	20	<PQL
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	66 Zn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSAB2	ICSAB	1	12.82	3.86	15	PASS	20.22	1.38	15	PASS
N027459-006B	SAMP	5	<0.000	N/A	15	<PQL	0.74	6.42	15	PASS
N027459-007B	SAMP	1	<0.000	N/A	15	<PQL	1.00046	10.35	15	PASS
N027459-007B	SAMP	5	<0.000	N/A	15	<PQL	0.25	19.82	15	NR!
N027459-008C	SAMP	1	0.24	56.69	15	<PQL	1.18	15.44	15	NR!
N027459-008C	SAMP	5	<0.000	N/A	15	<PQL	0.23	32.5	15	NR!
N027459-009B	SAMP	1	0.29	135.45	15	<PQL	2.33	3.35	15	PASS
N027459-009B	SAMP	5	<0.000	N/A	15	<PQL	0.49	3.57	15	PASS
N027459-010B	SAMP	1	<0.000	N/A	15	<PQL	2.35	2.08	15	PASS
N027459-010B	SAMP	5	<0.000	N/A	15	<PQL	0.44	3.64	15	PASS
N027459-011B	SAMP	1	<0.000	N/A	15	<PQL	1.89	2.65	15	PASS
CCV3	CCV	1	16.88	3.55	15	PASS	20.14	1.75	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-011B	SAMP	5	<0.000	N/A	15	<PQL	0.42	8.18	15	PASS
N027459-012B	SAMP	1	<0.000	N/A	15	<PQL	0.42	14.59	15	PASS
N027459-012B	SAMP	5	<0.000	N/A	15	<PQL	0.072	32.57	15	<PQL
N027459-013B	SAMP	1	<0.000	N/A	15	<PQL	3.23	2.2	15	PASS
N027459-013B	SAMP	5	<0.000	N/A	15	<PQL	0.65	13.3	15	PASS
N027459-014B	SAMP	1	<0.000	N/A	15	<PQL	1.78	6.76	15	PASS
N027459-014B	SAMP	5	<0.000	N/A	15	<PQL	0.37	6.75	15	PASS
N027459-015B	SAMP	1	4.4	5.55	15	PASS	2.17	3.81	15	PASS
N027459-016C	SAMP	1	<0.000	N/A	15	<PQL	1.73	3.69	15	PASS
N027459-016C	SAMP	10	<0.000	N/A	15	<PQL	0.15	14.35	15	PASS
CCV4	CCV	1	16.79	2.38	15	PASS	20.28	0.28	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.0077	63.66	15	<PQL
N027459-017C	SAMP	1	12.72	3.097	15	PASS	1.75	7.93	15	PASS
N027459-017C	SAMP	5	<0.000	N/A	15	<PQL	0.35	8.39	15	PASS
N027459-018B	SAMP	1	<0.000	N/A	15	<PQL	0.14	30.88	15	NR!
N027459-018B	SAMP	5	<0.000	N/A	15	<PQL	0.015	45.37	15	<PQL
N027459-019B	SAMP	1	<0.000	N/A	15	<PQL	0.37	9.7	15	PASS
N027459-019B	SAMP	5	<0.000	N/A	15	<PQL	0.076	18.69	15	<PQL
N027459-017C	SAMP	10	<0.000	N/A	15	<PQL	0.18	26.47	15	NR!
N027459-018B	SAMP	25	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-010B	SAMP	5	<0.000	N/A	15	<PQL	0.46	8.15	15	PASS
N027459-006B	SAMP	50	<0.000	N/A	15	<PQL	0.056	36.9	15	<PQL
CCV5	CCV	1	16.79	1.34	15	PASS	20.61	2.13	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.01	17.89	15	<PQL
LLCCV2	CCV2	1	6.46	3.6	20	PASS	0.099	3.79	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	12.78	2.53	15	PASS	20.4	1.0022	15	PASS

PERCENT RSD SUMMARY: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				9 Be [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.099	9.88	15	PASS	0.089	3.12	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.48	10.41	15	PASS	0.5	3.49	15	PASS
Std3-5/50 ppb	ICAL	1	4.88	6.59	15	PASS	5.048	1.61	15	PASS
Std4-10/100 ppb	ICAL	1	9.99	3.15	15	PASS	10.047	2.17	15	PASS
Std5-20/200 ppb	ICAL	1	20.2	1.11	15	PASS	20.38	0.93	15	PASS
Std6-40/400 ppb	ICAL	1	40.34	1.1	15	PASS	40.24	0.46	15	PASS
Std7-100/1000 ppb	ICAL	1	98.86	2.9	15	PASS	101.46	1.011	15	PASS
Std8-200/2000 ppb	ICAL	1	200.49	2.86	15	PASS	199.18	0.76	15	PASS
ICV	ICV	1	10.16	1.82	15	PASS	9.74	1.95	15	PASS
ICB	ICB	1	0.011	173.21	15	<PQL	0.012	29.79	15	<PQL
LLICV	CCV1	1	0.53	23.36	20	NR!	0.49	3.68	20	PASS
ICSA1	ICSA	1	0.026	34.34	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	17.6	4.58	15	PASS	19.77	0.31	15	PASS
LLICV	CCV1	1	0.52	19.37	20	PASS	0.51	2.19	20	PASS
MB-66021	MBLK	1	0.0046	173.21	15	<PQL	<0.000	N/A	15	<PQL
LCS-66021	LCS	1	10.23	0.68	15	PASS	9.48	0.96	15	PASS
N027459-001C	SAMP	1	0.72	15.38	15	NR!	0.0053	95.77	15	<PQL
N027459-001C	SAMP	5	0.22	11.16	15	PASS	<0.000	N/A	15	<PQL
N027459-001C	SAMP	25	0.058	65.24	15	<PQL	<0.000	N/A	15	<PQL
N027459-001C-PS	PS	1	9.53	11.84	15	PASS	10.64	0.52	15	PASS
N027459-001C-PS	PS	5	2.05	14.14	15	PASS	2.1	0.89	15	PASS
N027459-001C-MS	MS	1	9.57	1.89	15	PASS	10.39	1.75	15	PASS
N027459-001C-MS	MS	5	1.92	7.13	15	PASS	2.087	2.64	15	PASS
N027459-001C-MSD	MSD	1	9.5	9.87	15	PASS	10.41	2.41	15	PASS
CCV1	CCV	1	21.45	1.92	15	PASS	20.27	1.28	15	PASS
CCB1	CCB	1	0.016	114.19	15	<PQL	0.0025	168.41	15	<PQL
N027459-001C-MSD	MSD	5	2.094	21.7	15	NR!	2.00056	0.78	15	PASS
N027459-002C	SAMP	1	1.05	5.96	15	PASS	0.0042	87.89	15	<PQL
N027459-002C	SAMP	5	0.21	36.09	15	<PQL	<0.000	N/A	15	<PQL
N027459-003B	SAMP	1	4.61	1.91	15	PASS	<0.000	N/A	15	<PQL
N027459-003B	SAMP	5	0.91	15.65	15	NR!	0.0013	212.91	15	<PQL
N027459-004B	SAMP	1	4.37	5.47	15	PASS	0.0049	41.64	15	<PQL
N027459-004B	SAMP	5	1.041	2.34	15	PASS	<0.000	N/A	15	<PQL
N027459-005B	SAMP	1	0.81	10.3	15	PASS	0.0059	92.25	15	<PQL
N027459-001C	SAMP	1	1.017	7.44	15	PASS	0.000082	3299.5	15	<PQL
N027459-006B	SAMP	1	2.77	17.6	15	NR!	0.016	22.44	15	<PQL
CCV2	CCV	1	21.69	2.32	15	PASS	19.82	0.45	15	PASS
CCB2	CCB	1	0.044	64.94	15	<PQL	0.0023	67.8	15	<PQL
LLCCV1	CCV2	1	0.59	17.63	20	PASS	0.48	3.33	20	PASS
ICSA2	ICSA	1	0.0057	173.21	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				9 Be [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSAB2	ICSAB	1	19.2	4.64	15	PASS	19.037	0.4	15	PASS
N027459-006B	SAMP	5	0.48	13.85	15	PASS	<0.000	N/A	15	<PQL
N027459-007B	SAMP	1	3.42	12.36	15	PASS	0.013	175.79	15	<PQL
N027459-007B	SAMP	5	0.81	16.65	15	NR!	0.015	37.3	15	<PQL
N027459-008C	SAMP	1	7.99	1.34	15	PASS	0.0078	59.18	15	<PQL
N027459-008C	SAMP	5	1.73	4.74	15	PASS	<0.000	N/A	15	<PQL
N027459-009B	SAMP	1	0.5	52.5	15	<PQL	0.0075	22.34	15	<PQL
N027459-009B	SAMP	5	0.058	67.43	15	<PQL	<0.000	N/A	15	<PQL
N027459-010B	SAMP	1	0.48	19.69	15	<PQL	<0.000	N/A	15	<PQL
N027459-010B	SAMP	5	0.1	70.24	15	<PQL	<0.000	N/A	15	<PQL
N027459-011B	SAMP	1	0.62	17.015	15	NR!	<0.000	N/A	15	<PQL
CCV3	CCV	1	22.59	1.83	15	PASS	20.34	0.71	15	PASS
CCB3	CCB	1	0.011	86.61	15	<PQL	0.0046	53.82	15	<PQL
N027459-011B	SAMP	5	0.12	37.31	15	<PQL	<0.000	N/A	15	<PQL
N027459-012B	SAMP	1	5.32	10.8	15	PASS	<0.000	N/A	15	<PQL
N027459-012B	SAMP	5	1.08	17.96	15	NR!	<0.000	N/A	15	<PQL
N027459-013B	SAMP	1	0.48	28.91	15	<PQL	0.021	15.54	15	<PQL
N027459-013B	SAMP	5	0.11	43.89	15	<PQL	0.017	46.03	15	<PQL
N027459-014B	SAMP	1	0.85	30.018	15	NR!	<0.000	N/A	15	<PQL
N027459-014B	SAMP	5	0.24	16.18	15	<PQL	<0.000	N/A	15	<PQL
N027459-015B	SAMP	1	2.93	5.81	15	PASS	0.088	10.43	15	PASS
N027459-016C	SAMP	1	5.045	6.2	15	PASS	<0.000	N/A	15	<PQL
N027459-016C	SAMP	10	0.53	14.11	15	PASS	<0.000	N/A	15	<PQL
CCV4	CCV	1	21.71	2.85	15	PASS	20.035	2.56	15	PASS
CCB4	CCB	1	0.038	114.93	15	<PQL	0.021	43.53	15	<PQL
N027459-017C	SAMP	1	5.9	11.15	15	PASS	0.0055	122.71	15	<PQL
N027459-017C	SAMP	5	1.061	7.37	15	PASS	<0.000	N/A	15	<PQL
N027459-018B	SAMP	1	0.024	173.21	15	<PQL	0.0044	175.12	15	<PQL
N027459-018B	SAMP	5	0.049	64.15	15	<PQL	<0.000	N/A	15	<PQL
N027459-019B	SAMP	1	0.056	107.39	15	<PQL	<0.000	N/A	15	<PQL
N027459-019B	SAMP	5	0.019	0.64	15	PASS	<0.000	N/A	15	<PQL
N027459-017C	SAMP	10	0.63	11.32	15	PASS	<0.000	N/A	15	<PQL
N027459-018B	SAMP	25	0.0061	173.21	15	<PQL	0.000036	6486.066	15	<PQL
N027459-010B	SAMP	5	0.068	42.032	15	<PQL	<0.000	N/A	15	<PQL
N027459-006B	SAMP	50	0.11	61.033	15	<PQL	<0.000	N/A	15	<PQL
CCV5	CCV	1	22.29	3.99	15	PASS	19.62	0.1	15	PASS
CCB5	CCB	1	0.033	51.24	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.62	17.024	20	PASS	0.49	3.5	20	PASS
ICSA3	ICSA	1	0.034	100.42	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.99	2.21	15	PASS	18.92	0.17	15	PASS

PERCENT RSD SUMMARY: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.097	13.073	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.51	2.92	15	PASS
Std3-5/50 ppb	ICAL	1	4.87	2.64	15	PASS
Std4-10/100 ppb	ICAL	1	10.0057	0.64	15	PASS
Std5-20/200 ppb	ICAL	1	19.8	1.36	15	PASS
Std6-40/400 ppb	ICAL	1	39.56	0.61	15	PASS
Std7-100/1000 ppb	ICAL	1	99.42	0.8	15	PASS
Std8-200/2000 ppb	ICAL	1	200.4	0.71	15	PASS
ICV	ICV	1	9.74	0.28	15	PASS
ICB	ICB	1	0.089	20.85	15	<PQL
LLICV	CCV1	1	0.52	2.82	20	PASS
ICSA1	ICSA	1	0.047	28.4	15	<PQL
ICSAB1	ICSAB	1	22.21	0.42	15	PASS
LLICV	CCV1	1	0.55	5.48	20	PASS
MB-66021	MBLK	1	0.016	29.11	15	<PQL
LCS-66021	LCS	1	9.62	2.43	15	PASS
N027459-001C	SAMP	1	9.44	1.23	15	PASS
N027459-001C	SAMP	5	1.79	0.15	15	PASS
N027459-001C	SAMP	25	0.33	1.22	15	PASS
N027459-001C-PS	PS	1	21.21	0.57	15	PASS
N027459-001C-PS	PS	5	4.057	1.3	15	PASS
N027459-001C-MS	MS	1	20.55	0.57	15	PASS
N027459-001C-MS	MS	5	3.94	2.63	15	PASS
N027459-001C-MSD	MSD	1	20.58	1.26	15	PASS
CCV1	CCV	1	19.38	1.69	15	PASS
CCB1	CCB	1	0.053	16.62	15	<PQL
N027459-001C-MSD	MSD	5	3.9	1.77	15	PASS
N027459-002C	SAMP	1	24.24	0.3	15	PASS
N027459-002C	SAMP	5	4.72	3.71	15	PASS
N027459-003B	SAMP	1	23.00045	0.6	15	PASS
N027459-003B	SAMP	5	4.42	1.12	15	PASS
N027459-004B	SAMP	1	42.79	0.49	15	PASS
N027459-004B	SAMP	5	8.0081	1.82	15	PASS
N027459-005B	SAMP	1	17.17	0.6	15	PASS
N027459-001C	SAMP	1	9.24	2.35	15	PASS
N027459-006B	SAMP	1	45.63	0.42	15	PASS
CCV2	CCV	1	20.34	0.24	15	PASS
CCB2	CCB	1	0.0047	153.61	15	<PQL
LLCCV1	CCV2	1	0.5	3.64	20	PASS
ICSA2	ICSA	1	0.023	33.74	15	<PQL

PERCENT RSD SUMMARY: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
ICSAB2	ICSAB	1	21.99	0.78	15	PASS
N027459-006B	SAMP	5	8.46	1.42	15	PASS
N027459-007B	SAMP	1	10.083	2.22	15	PASS
N027459-007B	SAMP	5	2.028	2.79	15	PASS
N027459-008C	SAMP	1	4.66	1.68	15	PASS
N027459-008C	SAMP	5	0.92	1.68	15	PASS
N027459-009B	SAMP	1	26.91	3.067	15	PASS
N027459-009B	SAMP	5	5.1	1.54	15	PASS
N027459-010B	SAMP	1	27.062	1.67	15	PASS
N027459-010B	SAMP	5	4.94	2.32	15	PASS
N027459-011B	SAMP	1	16.29	1.69	15	PASS
CCV3	CCV	1	19.58	1.23	15	PASS
CCB3	CCB	1	0.019	27.68	15	<PQL
N027459-011B	SAMP	5	3.11	1.00066	15	PASS
N027459-012B	SAMP	1	6.12	1.14	15	PASS
N027459-012B	SAMP	5	1.18	3.32	15	PASS
N027459-013B	SAMP	1	56.8	1.093	15	PASS
N027459-013B	SAMP	5	10.55	0.33	15	PASS
N027459-014B	SAMP	1	15.61	1.93	15	PASS
N027459-014B	SAMP	5	2.96	1.99	15	PASS
N027459-015B	SAMP	1	14.3	1.49	15	PASS
N027459-016C	SAMP	1	4.73	0.83	15	PASS
N027459-016C	SAMP	10	0.4	5.85	15	PASS
CCV4	CCV	1	19.35	1.37	15	PASS
CCB4	CCB	1	0.045	15.61	15	<PQL
N027459-017C	SAMP	1	4.75	3.26	15	PASS
N027459-017C	SAMP	5	0.93	6.0047	15	PASS
N027459-018B	SAMP	1	1.66	2.1	15	PASS
N027459-018B	SAMP	5	0.3	3.012	15	PASS
N027459-019B	SAMP	1	62.071	0.7	15	PASS
N027459-019B	SAMP	5	11.59	2.13	15	PASS
N027459-017C	SAMP	10	0.48	7.52	15	PASS
N027459-018B	SAMP	25	0.058	13.23	15	PASS
N027459-010B	SAMP	5	5.061	0.92	15	PASS
N027459-006B	SAMP	50	0.8	2.25	15	PASS
CCV5	CCV	1	19.53	2.14	15	PASS
CCB5	CCB	1	0.031	7.38	15	PASS
LLCCV2	CCV2	1	0.44	9.83	20	PASS
ICSA3	ICSA	1	0.033	17.23	15	<PQL
ICSAB3	ICSAB	1	22	0.88	15	PASS

PERCENT RSD SUMMARY: 171222B

Instrument ID: ICPMS-02

Sample Name	Type	DF	63 Cu [2]				66 Zn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	8.86	15	PASS	0.29	2.49	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.54	5.14	15	PASS	0.84	9.58	15	PASS
Std3-5/50 ppb	ICAL	1	5.083	2.39	15	PASS	5.66	4.023	15	PASS
Std4-10/100 ppb	ICAL	1	10.058	0.96	15	PASS	10.64	4.59	15	PASS
Std5-20/200 ppb	ICAL	1	20.063	0.5	15	PASS	21.08	2.98	15	PASS
Std6-40/400 ppb	ICAL	1	39.94	2.5	15	PASS	40.84	1.86	15	PASS
Std7-100/1000 ppb	ICAL	1	98.29	1.086	15	PASS	102.97	0.8	15	PASS
Std8-200/2000 ppb	ICAL	1	192.92	0.57	15	PASS	198.19	1.12	15	PASS
ICV	ICV	1	10.21	1.015	15	PASS	97.35	1.97	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.037	62.04	15	<PQL
LLICV	CCV1	1	1.053	2.9	20	PASS	10.55	3.046	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	17.77	0.88	15	PASS	16.86	1.57	15	PASS
LLICV	CCV1	1	1.16	1.25	20	PASS	10.46	1.38	20	PASS
MB-66021	MBLK	1	0.03	13.041	15	PASS	0.029	14.25	15	PASS
LCS-66021	LCS	1	10.7	0.54	15	PASS	96.77	1.19	15	PASS
N027459-001C	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-001C	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV1	CCV	1	21.7	1.043	15	PASS	21.42	2.23	15	PASS
CCB1	CCB	1	0.021	16.096	15	<PQL	0.011	424.13	15	<PQL
N027459-001C-PS	PS	1	4.34	2.95	15	PASS	96.87	3.46	15	PASS
N027459-001C-MS	MS	1	4.58	0.71	15	PASS	95.52	1.93	15	PASS
N027459-001C-MSD	MSD	1	4.69	5.56	15	PASS	95.76	1.49	15	PASS
N027459-002C	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027459-002C	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.74	2.39	15	PASS	20.28	2.46	15	PASS
CCB2	CCB	1	0.12	4.041	15	PASS	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.26	2.72	20	PASS	10.45	2.89	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	17.83	2.52	15	PASS	16.65	1.18	15	PASS

PERCENT RSD SUMMARY: 180102A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.095	8.6	15	PASS	0.07	21.19	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.49	3.45	15	PASS	0.54	11.7	15	PASS
Std3-5/50 ppb	ICAL	1	5.037	2.68	15	PASS	5.035	0.66	15	PASS
Std4-10/100 ppb	ICAL	1	10.36	0.27	15	PASS	10.13	2.62	15	PASS
Std5-20/200 ppb	ICAL	1	20.17	1.046	15	PASS	19.86	1.1	15	PASS
Std6-40/400 ppb	ICAL	1	41.11	0.18	15	PASS	40.023	0.92	15	PASS
Std7-100/1000 ppb	ICAL	1	100.93	1.079	15	PASS	99.96	1.19	15	PASS
Std8-200/2000 ppb	ICAL	1	199.28	0.21	15	PASS	200.021	0.47	15	PASS
ICV	ICV	1	108.32	1.22	15	PASS	10.68	1.44	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.018	29.87	15	<PQL
LLICV	CCV1	1	0.53	4.099	20	PASS	0.1	32.05	20	NR!
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	17.48	0.67	15	PASS	20.34	1.95	15	PASS
LLICV	CCV1	1	0.51	5.85	20	PASS	0.1	21.98	20	<PQL
N027429-002B	SAMP	1	21.42	1.33	15	PASS	0.22	12.048	15	PASS
N027429-006B	SAMP	5	6.64	2.33	15	PASS	1.46	8.67	15	PASS
N027429-007B	SAMP	1	77.5	0.4	15	PASS	7.9	0.86	15	PASS
N027429-010B	SAMP	25	0.36	8.79	15	PASS	0.063	39.18	15	<PQL
MB-66021	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-66021	LCS	1	110.48	0.23	15	PASS	10.82	2.27	15	PASS
N027459-001C	SAMP	1	<0.000	N/A	15	<PQL	1.017	1.99	15	PASS
N027459-001C	SAMP	5	<0.000	N/A	15	<PQL	0.19	15.94	15	NR!
N027459-001C-PS	PS	1	93.99	1.46	15	PASS	11.31	1.018	15	PASS
N027459-001C-MS	MS	1	93.6	0.74	15	PASS	11.51	0.26	15	PASS
CCV1	CCV	1	20.15	0.4	15	PASS	20.081	1.11	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0041	96.11	15	<PQL
N027459-001C-MSD	MSD	1	94.49	1.22	15	PASS	11.55	0.74	15	PASS
N027459-001C	SAMP	1	<0.000	N/A	15	<PQL	1.1	3.51	15	PASS
N027459-002C	SAMP	1	5.37	1.085	15	PASS	0.95	7.11	15	PASS
N027459-003B	SAMP	1	3.5	1.63	15	PASS	4.21	3.19	15	PASS
N027459-004B	SAMP	1	4.28	1.57	15	PASS	5.16	1.76	15	PASS
N027459-005B	SAMP	1	1.19	6.6	15	PASS	2.45	5.26	15	PASS
N027459-006B	SAMP	5	1.058	2.98	15	PASS	0.66	4.26	15	PASS
N027459-007B	SAMP	1	<0.000	N/A	15	<PQL	0.97	4.25	15	PASS
N027459-008C	SAMP	1	0.13	19.96	15	<PQL	1.15	5.54	15	PASS
N027459-009B	SAMP	5	0.45	1.19	15	PASS	0.51	3.088	15	PASS
CCV2	CCV	1	20.79	0.97	15	PASS	20.27	1.97	15	PASS
CCB2	CCB	1	0.0086	67.051	15	<PQL	<0.000	N/A	15	<PQL
N027459-010B	SAMP	5	0.46	4.63	15	PASS	0.52	3.23	15	PASS
N027459-011B	SAMP	5	0.46	9.39	15	PASS	0.41	14.77	15	PASS

PERCENT RSD SUMMARY: 180102A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027459-012B	SAMP	1	0.41	22.23	15	<PQL	0.46	10.03	15	PASS
N027459-013B	SAMP	5	1.33	2.95	15	PASS	0.65	5.03	15	PASS
N027459-014B	SAMP	5	0.12	3.05	15	PASS	0.32	9.46	15	PASS
N027459-015B	SAMP	1	168.97	1.18	15	PASS	2.57	4.95	15	PASS
N027459-016C	SAMP	1	<0.000	N/A	15	<PQL	1.71	2.97	15	PASS
N027459-017C	SAMP	5	<0.000	N/A	15	<PQL	0.37	7.54	15	PASS
N027459-018B	SAMP	5	788.58	0.33	15	PASS	0.005	299.69	15	<PQL
N027459-019B	SAMP	5	32.16	0.79	15	PASS	0.064	34.76	15	<PQL
CCV3	CCV	1	20.75	1.6	15	PASS	20.13	1.068	15	PASS
CCB3	CCB	1	0.0099	124.71	15	<PQL	<0.000	N/A	15	<PQL
N027459-004B	SAMP	1	4.53	0.54	15	PASS	4.97	3.13	15	PASS
N027459-006B	SAMP	5	1.12	2.44	15	PASS	0.68	1.77	15	PASS
N027459-017C	SAMP	5	<0.000	N/A	15	<PQL	0.36	3.3	15	PASS
N027459-004B	SAMP	5	0.95	1.56	15	PASS	1.0057	1.51	15	PASS
N027459-017C	SAMP	5	<0.000	N/A	15	<PQL	0.35	6.96	15	PASS
CCV4	CCV	1	20.93	2.32	15	PASS	19.92	0.97	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.52	3.72	20	PASS	0.083	3.45	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	18.12	0.41	15	PASS	20.58	2.037	15	PASS

PERCENT RSD SUMMARY: 180102A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.13	70.75	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.46	12.6	15	PASS
Std3-5/50 ppb	ICAL	1	4.78	5.032	15	PASS
Std4-10/100 ppb	ICAL	1	9.81	8.052	15	PASS
Std5-20/200 ppb	ICAL	1	19.78	3.53	15	PASS
Std6-40/400 ppb	ICAL	1	40.15	1.19	15	PASS
Std7-100/1000 ppb	ICAL	1	99.81	2.028	15	PASS
Std8-200/2000 ppb	ICAL	1	200.1	0.086	15	PASS
ICV	ICV	1	10.94	3.55	15	PASS
ICB	ICB	1	0.043	50.13	15	<PQL
LLICV	CCV1	1	0.58	20.87	20	NR!
ICSA1	ICSA	1	0.043	100.83	15	<PQL
ICSAB1	ICSAB	1	18.92	4.13	15	PASS
LLICV	CCV1	1	0.62	9.99	20	PASS
N027429-002B	SAMP	1	0.37	8.0067	15	PASS
N027429-006B	SAMP	5	0.042	29.88	15	<PQL
N027429-007B	SAMP	1	1.52	7.12	15	PASS
N027429-010B	SAMP	25	0.13	22.28	15	<PQL
MB-66021	MBLK	1	0.016	95.87	15	<PQL
LCS-66021	LCS	1	10.57	1.62	15	PASS
N027459-001C	SAMP	1	0.9	15.57	15	NR!
N027459-001C	SAMP	5	0.24	6.94	15	PASS
N027459-001C-PS	PS	1	9.78	7.031	15	PASS
N027459-001C-MS	MS	1	9.87	5.46	15	PASS
CCV1	CCV	1	19.74	2.52	15	PASS
CCB1	CCB	1	0.0054	109.65	15	<PQL
N027459-001C-MSD	MSD	1	10.11	4.027	15	PASS
N027459-001C	SAMP	1	1.11	4.092	15	PASS
N027459-002C	SAMP	1	1.088	10.24	15	PASS
N027459-003B	SAMP	1	4.83	9.56	15	PASS
N027459-004B	SAMP	1	4.66	8.51	15	PASS
N027459-005B	SAMP	1	0.82	10.32	15	PASS
N027459-006B	SAMP	5	0.52	15.58	15	NR!
N027459-007B	SAMP	1	3.58	6.014	15	PASS
N027459-008C	SAMP	1	7.62	1.063	15	PASS
N027459-009B	SAMP	5	0.12	10.61	15	PASS
CCV2	CCV	1	19.9	2.7	15	PASS
CCB2	CCB	1	0.012	145.73	15	<PQL
N027459-010B	SAMP	5	0.16	42.2	15	<PQL
N027459-011B	SAMP	5	0.15	26.99	15	<PQL

PERCENT RSD SUMMARY: 180102A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment
N027459-012B	SAMP	1	5.26	2.44	15	PASS
N027459-013B	SAMP	5	0.095	69.73	15	<PQL
N027459-014B	SAMP	5	0.19	21.59	15	<PQL
N027459-015B	SAMP	1	3.072	4.33	15	PASS
N027459-016C	SAMP	1	5.3	3.12	15	PASS
N027459-017C	SAMP	5	1.057	15.16	15	NR!
N027459-018B	SAMP	5	0.0026	319.64	15	<PQL
N027459-019B	SAMP	5	0.014	107.33	15	<PQL
CCV3	CCV	1	19.36	4.54	15	PASS
CCB3	CCB	1	0.012	144.62	15	<PQL
N027459-004B	SAMP	1	4.71	6.61	15	PASS
N027459-006B	SAMP	5	0.52	10.097	15	PASS
N027459-017C	SAMP	5	1.2	15.63	15	NR!
N027459-004B	SAMP	5	1.027	1.33	15	PASS
N027459-017C	SAMP	5	0.99	11.79	15	PASS
CCV4	CCV	1	19.35	2.95	15	PASS
CCB4	CCB	1	0.024	139.8	15	<PQL
LLCCV1	CCV2	1	0.5	32.71	20	NR!
ICSA2	ICSA	1	0.023	31.62	15	<PQL
ICSAB2	ICSAB	1	19.38	1.81	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 171220B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B1220001.D	RINSE	RINSE	1	12/20/17 11:56 PM
B1220002.D	Cal Blank	IBLK	1	12/21/17 12:01 AM
B1220003.D	Std1-0.1/1 ppb	ICAL	1	12/21/17 12:07 AM
B1220004.D	Std2-0.5/5 ppb	ICAL	1	12/21/17 12:12 AM
B1220005.D	Std3-5/50 ppb	ICAL	1	12/21/17 12:18 AM
B1220006.D	Std4-10/100 ppb	ICAL	1	12/21/17 12:24 AM
B1220007.D	Std5-20/200 ppb	ICAL	1	12/21/17 12:29 AM
B1220008.D	Std6-40/400 ppb	ICAL	1	12/21/17 12:35 AM
B1220009.D	Std7-100/1000 ppb	ICAL	1	12/21/17 12:40 AM
B1220010.D	Std8-200/2000 ppb	ICAL	1	12/21/17 12:46 AM
B1220011.D	ICV	ICV	1	12/21/17 12:51 AM
B1220012.D	ICB	ICB	1	12/21/17 12:57 AM
B1220013.D	LLICV	CCV1	1	12/21/17 1:03 AM
B1220014.D	ICSA1	ICSA	1	12/21/17 1:08 AM
B1220015.D	ICSAB1	ICSAB	1	12/21/17 1:14 AM
B1220016.D	LLICV	CCV1	1	12/21/17 1:21 AM
B1220017.D	MB-66021	MBLK	1	12/21/17 1:25 AM
B1220018.D	LCS-66021	LCS	1	12/21/17 1:32 AM
B1220019.D	N027459-001C	SAMP	1	12/21/17 1:36 AM
B1220020.D	N027459-001C	SAMP	5	12/21/17 1:42 AM
B1220021.D	N027459-001C	SAMP	25	12/21/17 1:48 AM
B1220022.D	N027459-001C-PS	PS	1	12/21/17 1:53 AM
B1220023.D	N027459-001C-PS	PS	5	12/21/17 1:59 AM
B1220024.D	N027459-001C-MS	MS	1	12/21/17 2:04 AM
B1220025.D	N027459-001C-MS	MS	5	12/21/17 2:10 AM
B1220026.D	N027459-001C-MSD	MSD	1	12/21/17 2:16 AM
B1220027.D	CCV1	CCV	1	12/21/17 2:22 AM
B1220028.D	CCB1	CCB	1	12/21/17 2:27 AM
B1220029.D	N027459-001C-MSD	MSD	5	12/21/17 2:32 AM
B1220030.D	N027459-002C	SAMP	1	12/21/17 2:38 AM
B1220031.D	N027459-002C	SAMP	5	12/21/17 2:44 AM
B1220032.D	N027459-003B	SAMP	1	12/21/17 2:49 AM
B1220033.D	N027459-003B	SAMP	5	12/21/17 2:55 AM
B1220034.D	N027459-004B	SAMP	1	12/21/17 3:00 AM
B1220035.D	N027459-004B	SAMP	5	12/21/17 3:06 AM
B1220036.D	N027459-005B	SAMP	1	12/21/17 3:12 AM
B1220037.D	N027459-001C	SAMP	1	12/21/17 3:17 AM
B1220038.D	N027459-006B	SAMP	1	12/21/17 3:23 AM
B1220039.D	CCV2	CCV	1	12/21/17 3:29 AM
B1220040.D	CCB2	CCB	1	12/21/17 3:34 AM
B1220041.D	LLCCV1	CCV2	1	12/21/17 3:40 AM
B1220042.D	ICSA2	ICSA	1	12/21/17 3:46 AM

INJECTION LOG: 171220B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B1220043.D	ICSAB2	ICSAB	1	12/21/17 3:51 AM
B1220044.D	N027459-006B	SAMP	5	12/21/17 3:56 AM
B1220045.D	N027459-007B	SAMP	1	12/21/17 4:02 AM
B1220046.D	N027459-007B	SAMP	5	12/21/17 4:08 AM
B1220047.D	N027459-008C	SAMP	1	12/21/17 4:13 AM
B1220048.D	N027459-008C	SAMP	5	12/21/17 4:18 AM
B1220049.D	N027459-009B	SAMP	1	12/21/17 4:24 AM
B1220050.D	N027459-009B	SAMP	5	12/21/17 4:30 AM
B1220051.D	N027459-010B	SAMP	1	12/21/17 4:36 AM
B1220052.D	N027459-010B	SAMP	5	12/21/17 4:41 AM
B1220053.D	N027459-011B	SAMP	1	12/21/17 4:47 AM
B1220054.D	CCV3	CCV	1	12/21/17 4:52 AM
B1220055.D	CCB3	CCB	1	12/21/17 4:57 AM
B1220056.D	N027459-011B	SAMP	5	12/21/17 5:03 AM
B1220057.D	N027459-012B	SAMP	1	12/21/17 5:09 AM
B1220058.D	N027459-012B	SAMP	5	12/21/17 5:14 AM
B1220059.D	N027459-013B	SAMP	1	12/21/17 5:20 AM
B1220060.D	N027459-013B	SAMP	5	12/21/17 5:26 AM
B1220061.D	N027459-014B	SAMP	1	12/21/17 5:32 AM
B1220062.D	N027459-014B	SAMP	5	12/21/17 5:38 AM
B1220063.D	N027459-015B	SAMP	1	12/21/17 5:44 AM
B1220064.D	N027459-016C	SAMP	1	12/21/17 5:49 AM
B1220065.D	N027459-016C	SAMP	10	12/21/17 5:55 AM
B1220066.D	CCV4	CCV	1	12/21/17 6:01 AM
B1220067.D	CCB4	CCB	1	12/21/17 6:07 AM
B1220068.D	N027459-017C	SAMP	1	12/21/17 6:14 AM
B1220069.D	N027459-017C	SAMP	5	12/21/17 6:19 AM
B1220070.D	N027459-018B	SAMP	1	12/21/17 6:24 AM
B1220071.D	N027459-018B	SAMP	5	12/21/17 6:30 AM
B1220072.D	N027459-019B	SAMP	1	12/21/17 6:36 AM
B1220073.D	N027459-019B	SAMP	5	12/21/17 6:41 AM
B1220074.D	N027459-017C	SAMP	10	12/21/17 6:48 AM
B1220075.D	N027459-018B	SAMP	25	12/21/17 6:53 AM
B1220076.D	N027459-010B	SAMP	5	12/21/17 6:59 AM
B1220077.D	N027459-006B	SAMP	50	12/21/17 7:05 AM
B1220078.D	CCV5	CCV	1	12/21/17 7:10 AM
B1220079.D	CCB5	CCB	1	12/21/17 7:16 AM
B1220080.D	LLCCV2	CCV2	1	12/21/17 7:21 AM
B1220081.D	ICSA3	ICSA	1	12/21/17 7:27 AM
B1220082.D	ICSAB3	ICSAB	1	12/21/17 7:33 AM

INJECTION LOG: 171222B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B1222001.D	RINSE	RINSE	1	12/22/17 3:34 PM
B1222002.D	Cal Blank	IBLK	1	12/22/17 3:39 PM
B1222003.D	Std1-0.1/1 ppb	ICAL	1	12/22/17 3:45 PM
B1222004.D	Std2-0.5/5 ppb	ICAL	1	12/22/17 3:51 PM
B1222005.D	Std3-5/50 ppb	ICAL	1	12/22/17 3:56 PM
B1222006.D	Std4-10/100 ppb	ICAL	1	12/22/17 4:02 PM
B1222007.D	Std5-20/200 ppb	ICAL	1	12/22/17 4:07 PM
B1222008.D	Std6-40/400 ppb	ICAL	1	12/22/17 4:13 PM
B1222009.D	Std7-100/1000 ppb	ICAL	1	12/22/17 4:18 PM
B1222010.D	Std8-200/2000 ppb	ICAL	1	12/22/17 4:24 PM
B1222011.D	ICV	ICV	1	12/22/17 4:30 PM
B1222012.D	ICB	ICB	1	12/22/17 4:35 PM
B1222013.D	LLICV	CCV1	1	12/22/17 4:41 PM
B1222014.D	ICSA1	ICSA	1	12/22/17 4:46 PM
B1222015.D	ICSAB1	ICSAB	1	12/22/17 4:52 PM
B1222016.D	LLICV	CCV1	1	12/22/17 4:58 PM
B1222017.D	N027429-001B-MS	MS	1	12/22/17 5:06 PM
B1222018.D	N027429-002B	SAMP	1	12/22/17 5:11 PM
B1222019.D	N027429-006B	SAMP	5	12/22/17 5:17 PM
B1222020.D	N027429-006B	SAMP	25	12/22/17 5:23 PM
B1222021.D	N027429-007B	SAMP	1	12/22/17 5:29 PM
B1222022.D	N027429-002B	SAMP	1	12/22/17 5:34 PM
B1222023.D	MB-66021	MBLK	1	12/22/17 5:40 PM
B1222024.D	LCS-66021	LCS	1	12/22/17 5:45 PM
B1222025.D	N027459-001C	SAMP	1	12/22/17 5:51 PM
B1222026.D	N027459-001C	SAMP	5	12/22/17 5:57 PM
B1222027.D	CCV1	CCV	1	12/22/17 6:06 PM
B1222028.D	CCB1	CCB	1	12/22/17 6:11 PM
B1222029.D	N027459-001C-PS	PS	1	12/22/17 6:17 PM
B1222030.D	N027459-001C-MS	MS	1	12/22/17 6:23 PM
B1222031.D	N027459-001C-MSD	MSD	1	12/22/17 6:28 PM
B1222032.D	N027459-002C	SAMP	1	12/22/17 6:34 PM
B1222033.D	N027459-002C	SAMP	5	12/22/17 6:39 PM
B1222034.D	CCV2	CCV	1	12/22/17 6:45 PM
B1222035.D	CCB2	CCB	1	12/22/17 6:51 PM
B1222036.D	LLCCV1	CCV2	1	12/22/17 6:56 PM
B1222037.D	ICSA2	ICSA	1	12/22/17 7:02 PM
B1222038.D	ICSAB2	ICSAB	1	12/22/17 7:07 PM

INJECTION LOG: 180102A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0102001.D	RINSE	RINSE	1	01/02/18 1:49 PM
A0102002.D	Cal Blank	IBLK	1	01/02/18 1:55 PM
A0102003.D	Std1-0.1/1 ppb	ICAL	1	01/02/18 2:01 PM
A0102004.D	Std2-0.5/5 ppb	ICAL	1	01/02/18 2:07 PM
A0102005.D	Std3-5/50 ppb	ICAL	1	01/02/18 2:12 PM
A0102006.D	Std4-10/100 ppb	ICAL	1	01/02/18 2:18 PM
A0102007.D	Std5-20/200 ppb	ICAL	1	01/02/18 2:25 PM
A0102008.D	Std6-40/400 ppb	ICAL	1	01/02/18 2:31 PM
A0102009.D	Std7-100/1000 ppb	ICAL	1	01/02/18 2:37 PM
A0102010.D	Std8-200/2000 ppb	ICAL	1	01/02/18 2:43 PM
A0102011.D	ICV	ICV	1	01/02/18 2:49 PM
A0102012.D	ICB	ICB	1	01/02/18 2:54 PM
A0102013.D	LLICV	CCV1	1	01/02/18 3:00 PM
A0102014.D	ICSA1	ICSA	1	01/02/18 3:06 PM
A0102015.D	ICSAB1	ICSAB	1	01/02/18 3:12 PM
A0102016.D	LLICV	CCV1	1	01/02/18 3:18 PM
A0102017.D	N027429-002B	SAMP	1	01/02/18 3:23 PM
A0102018.D	N027429-006B	SAMP	5	01/02/18 3:29 PM
A0102019.D	N027429-007B	SAMP	1	01/02/18 3:34 PM
A0102020.D	N027429-010B	SAMP	25	01/02/18 3:40 PM
A0102021.D	MB-66021	MBLK	1	01/02/18 3:46 PM
A0102022.D	LCS-66021	LCS	1	01/02/18 3:51 PM
A0102023.D	N027459-001C	SAMP	1	01/02/18 3:57 PM
A0102024.D	N027459-001C	SAMP	5	01/02/18 4:02 PM
A0102025.D	N027459-001C-PS	PS	1	01/02/18 4:08 PM
A0102026.D	N027459-001C-MS	MS	1	01/02/18 4:13 PM
A0102027.D	CCV1	CCV	1	01/02/18 4:19 PM
A0102028.D	CCB1	CCB	1	01/02/18 4:25 PM
A0102029.D	N027459-001C-MSD	MSD	1	01/02/18 4:31 PM
A0102030.D	N027459-001C	SAMP	1	01/02/18 4:37 PM
A0102031.D	N027459-002C	SAMP	1	01/02/18 4:43 PM
A0102032.D	N027459-003B	SAMP	1	01/02/18 4:48 PM
A0102033.D	N027459-004B	SAMP	1	01/02/18 4:54 PM
A0102034.D	N027459-005B	SAMP	1	01/02/18 5:00 PM
A0102035.D	N027459-006B	SAMP	5	01/02/18 5:06 PM
A0102036.D	N027459-007B	SAMP	1	01/02/18 5:14 PM
A0102037.D	N027459-008C	SAMP	1	01/02/18 5:19 PM
A0102038.D	N027459-009B	SAMP	5	01/02/18 5:25 PM
A0102039.D	CCV2	CCV	1	01/02/18 5:30 PM
A0102040.D	CCB2	CCB	1	01/02/18 5:36 PM
A0102041.D	N027459-010B	SAMP	5	01/02/18 5:41 PM
A0102042.D	N027459-011B	SAMP	5	01/02/18 5:47 PM

INJECTION LOG: 180102A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0102043.D	N027459-012B	SAMP	1	01/02/18 5:52 PM
A0102044.D	N027459-013B	SAMP	5	01/02/18 5:58 PM
A0102045.D	N027459-014B	SAMP	5	01/02/18 6:04 PM
A0102046.D	N027459-015B	SAMP	1	01/02/18 6:09 PM
A0102047.D	N027459-016C	SAMP	1	01/02/18 6:15 PM
A0102048.D	N027459-017C	SAMP	5	01/02/18 6:20 PM
A0102049.D	N027459-018B	SAMP	5	01/02/18 6:26 PM
A0102050.D	N027459-019B	SAMP	5	01/02/18 6:31 PM
A0102051.D	CCV3	CCV	1	01/02/18 6:37 PM
A0102052.D	CCB3	CCB	1	01/02/18 6:42 PM
A0102053.D	N027459-004B	SAMP	1	01/02/18 6:48 PM
A0102054.D	N027459-006B	SAMP	5	01/02/18 6:53 PM
A0102055.D	N027459-017C	SAMP	5	01/02/18 6:59 PM
A0102056.D	N027459-004B	SAMP	5	01/02/18 7:04 PM
A0102057.D	N027459-017C	SAMP	5	01/02/18 7:10 PM
A0102058.D	CCV4	CCV	1	01/02/18 7:16 PM
A0102059.D	CCB4	CCB	1	01/02/18 7:21 PM
A0102060.D	LLCCV1	CCV2	1	01/02/18 7:27 PM
A0102061.D	ICSA2	ICSA	1	01/02/18 7:32 PM
A0102062.D	ICSAB2	ICSAB	1	01/02/18 7:38 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/12/2017 12:45:4**
Prep End Date: **12/12/2017 6:00:00**
Prep Batch **66021** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 01/03/2018
Initials/ Date: 01/03/2018
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.7**	**02-16**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66021	Aqueous		25	☐	0	0	25	1.000		
MB-66021	Aqueous		25	☐	0	0	25	1.000		
N027459-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-008C	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-010B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/12/2017 12:45:4**
Prep End Date: **12/12/2017 6:00:00**
Reviewed/ Date: 01/03/2018
Initials/ Date: 01/03/2018

Prep Batch **66021** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.7**	**02-16**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027459-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-015B	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-016C	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-017C	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-018B	Groundwater	<2	25	☐	0	0	25	1.000		
N027459-019B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 20 Dec 2017 02:10:17 pm
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	160949.00	0.00	
24	Mg	535541.00	0.00	
25	Mg	71149.60	0.00	
26	Mg	82622.80	0.00	
59	Co	731408.00	0.00	
115	In	1360180.00	0.00	
206	Pb	371476.00	0.00	
207	Pb	322046.00	0.00	
208	Pb	786938.00	0.00	

RSD (%)

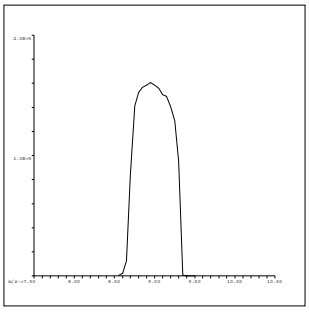
Element		Actual	Required	Flag
9	Be	1.30	5.00	
24	Mg	1.01	5.00	
25	Mg	0.97	5.00	
26	Mg	1.45	5.00	
59	Co	1.10	5.00	
115	In	1.40	5.00	
206	Pb	0.91	5.00	
207	Pb	0.87	5.00	
208	Pb	0.50	5.00	

Ion Ratio

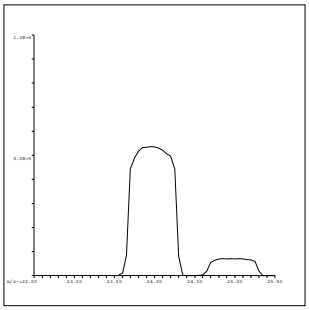
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

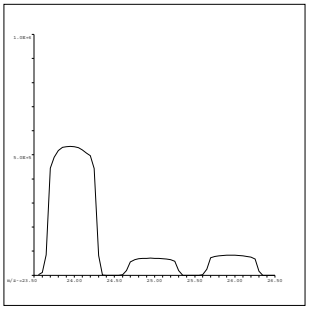
Element	Actual	Required	Flag



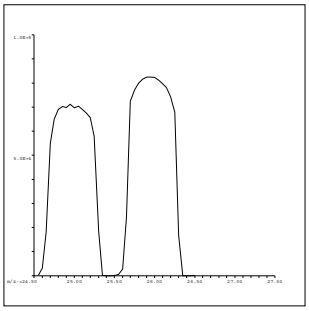
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



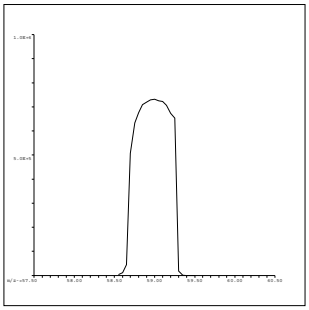
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



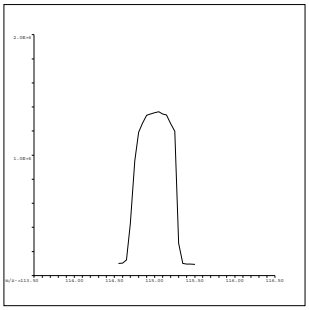
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



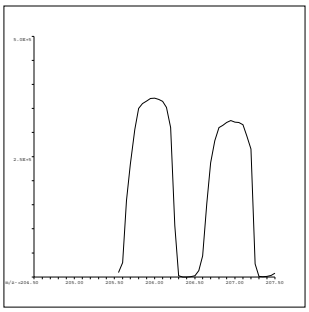
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



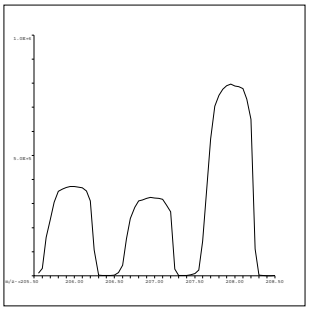
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



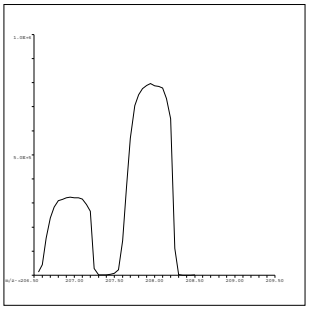
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 22 Dec 2017 05:52:56 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	63459.90	0.00	
24 Mg	232468.00	0.00	
25 Mg	30699.20	0.00	
26 Mg	35785.40	0.00	
59 Co	308914.00	0.00	
115 In	563835.00	0.00	
206 Pb	169533.00	0.00	
207 Pb	147870.00	0.00	
208 Pb	362565.00	0.00	

RSD (%)

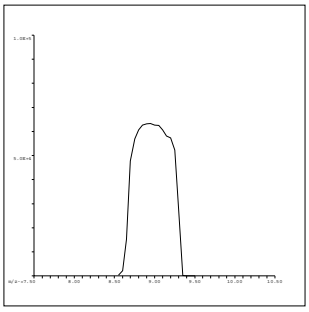
Element	Actual	Required	Flag
9 Be	0.14	5.00	
24 Mg	2.62	5.00	
25 Mg	4.81	5.00	
26 Mg	0.75	5.00	
59 Co	1.03	5.00	
115 In	0.34	5.00	
206 Pb	1.18	5.00	
207 Pb	0.73	5.00	
208 Pb	0.50	5.00	

Ion Ratio

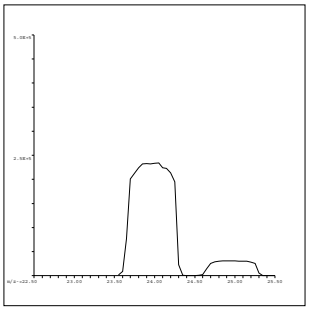
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

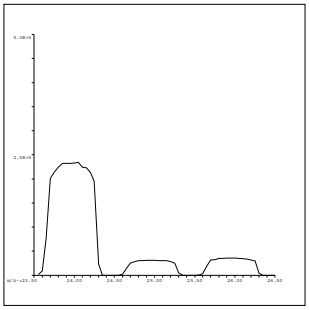
Element	Actual	Required	Flag



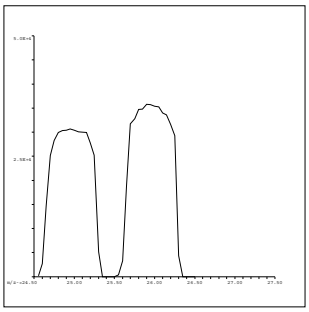
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



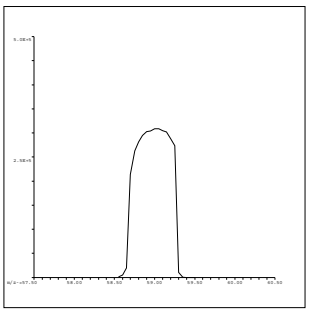
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



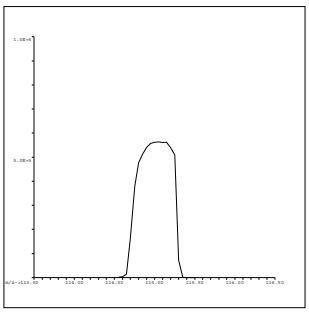
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



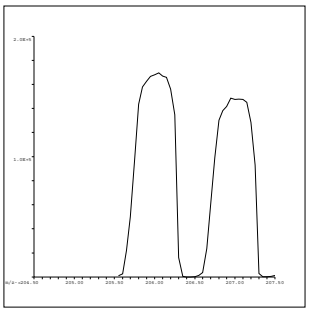
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



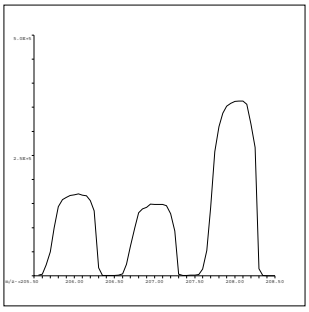
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



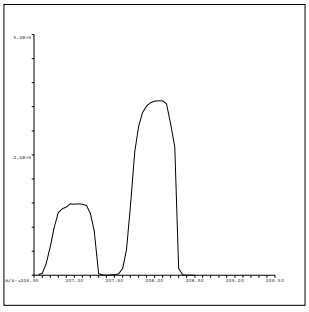
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.05
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.05
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.05
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 2 Jan 2018 10:47:44 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	164242.00	0.00	
24 Mg	658850.00	0.00	
25 Mg	87067.30	0.00	
26 Mg	100137.00	0.00	
59 Co	808018.00	0.00	
115 In	1349420.00	0.00	
206 Pb	386220.00	0.00	
207 Pb	336788.00	0.00	
208 Pb	824151.00	0.00	

RSD (%)

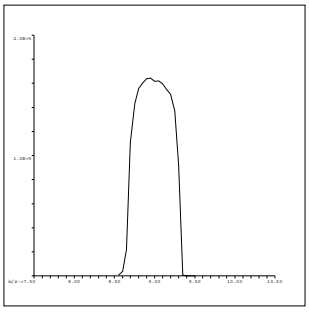
Element	Actual	Required	Flag
9 Be	0.81	5.00	
24 Mg	0.89	5.00	
25 Mg	0.86	5.00	
26 Mg	0.53	5.00	
59 Co	0.30	5.00	
115 In	1.05	5.00	
206 Pb	0.35	5.00	
207 Pb	0.67	5.00	
208 Pb	0.38	5.00	

Ion Ratio

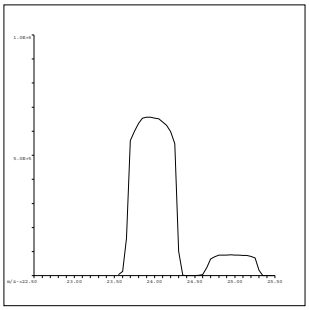
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

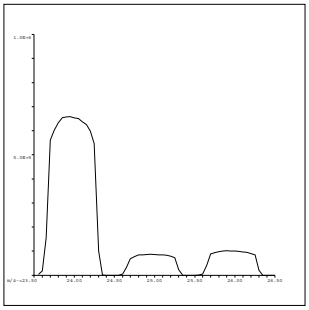
Element	Actual	Required	Flag



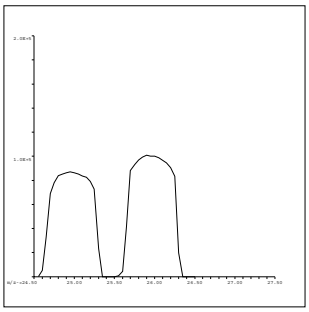
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



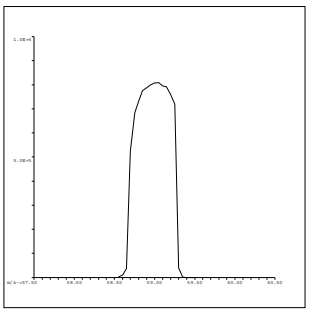
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



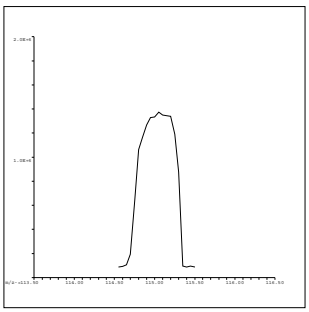
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



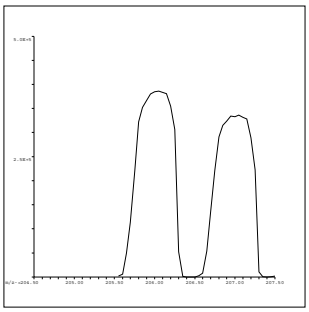
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



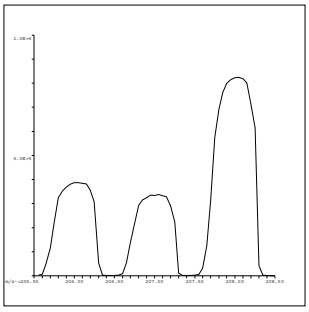
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



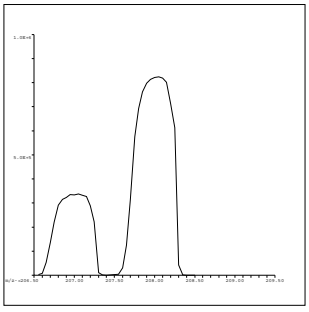
115 In
Mass Calib.
Actual: 115.10
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.05
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.05
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.05
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 171220B

Instrument ID: ICPMS-02

Analyte	Data File	B1220002.D	B1220003.D	B1220004.D	B1220005.D	B1220006.D	B1220007.D	B1220008.D	B1220009.D	B1220010.D	
	Acq. Date-Time	12/21/2017 12:01 AM	12/21/2017 12:07 AM	12/21/2017 12:12 AM	12/21/2017 12:18 AM	12/21/2017 12:24 AM	12/21/2017 12:29 AM	12/21/2017 12:35 AM	12/21/2017 12:40 AM	12/21/2017 12:46 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
6 Li (ISTD) [3]	CPS	1109903.3		1074810.6	1060892.9	1036432.3	1000387.4	1004418.4	973587.9	964983.7	
9 Be [3]	CPS	54.4		3639.4	36170.3	70258	137530.5	272615.7	666161.1	1296298.4	1.0000
45 Sc (ISTD) [2]	CPS	56216.8		55590.4	54466.6	52871.5	51109.5	51760.5	50539.8	51106.3	
59 Co [2]	CPS	42		3926	38541.2	75420.1	145491.2	291696.3	709126.2	1419889.2	1.0000
55 Mn [2]	CPS	162.6		1363.9	11743.7	22244.8	44690.4	86414.1	208962.4	410305.1	0.9999
52 Cr [2]	CPS	495.4		2702.3	21487.5	40911.7	79532.1	160249.1	387533.3	763729.6	1.0000
51 V [2]	CPS	1209		2930.4	17059.4	31618.8	60475.6	120203.5	290200.9	574400.3	1.0000
72 Ge (ISTD) [1]	CPS	47582.5		46090.5	45037.5	44288.8	42381.6	42818.1	42088.6	41598.5	
78 Se [1]	CPS	0		104.5	1041.2	2095.8	4056.2	8184.6	19711.5	39515.7	1.0000
72 Ge (ISTD) [2]	CPS	36551.8	37055.1	36313.5	35332.5	34343.7	33733.6	33786	33655.5	32842.8	
75 As [2]	CPS	15.6	54.7	217.8	2218	4271.7	8425.8	16891.9	40927.5	80633.1	1.0000
66 Zn [2]	CPS	3249.6		2192.7	6012.2	8997.5	15918.5	31146.2	74390.5	144224.9	0.9999
63 Cu [2]	CPS	4781.2		6647.2	32403	58562.8	111339.2	221326.6	530170.7	1039046.6	1.0000
60 Ni [2]	CPS	1262.1		2267.8	11442.5	21345.5	40084.2	80209.5	192388.4	376066.4	0.9999
103 Rh (ISTD) [2]	CPS	1176022.4		1156108.9	1148873.7	1113384.2	1093444.9	1105632.9	1070399.7	1061376	
95 Mo [2]	CPS	37.8		1405.7	13145.9	26144.3	50766.8	102546.3	249429.2	498537.3	1.0000
103 Rh (ISTD) [3]	CPS	2595708.6		2551666.4	2498059.8	2474172.3	2402028.3	2402256	2346071.3	2321690.3	
107 Ag [3]	CPS	402.5		10676.1	105215.4	210457.7	404519.7	808275.3	2076559.7	3373757	1.0000
115 In (ISTD) [3]	CPS	2600029		2555485	2528082.4	2505160.1	2448759.7	2436841.1	2420249	2370933.2	
121 Sb [3]	CPS	293.3		9097	82336.6	163098.8	315801.3	634495.9	1615467.1	3179827.9	1.0000
111 Cd [3]	CPS	164.7		2574.3	24636.2	47717.1	92218.5	186685.3	456211.6	890606.7	1.0000
159 Tb (ISTD) [3]	CPS	3936451.1		3886249.6	3841001.1	3811266	3703135.3	3740340.9	3711331.3	3695471	
137 Ba [3]	CPS	180		3550.7	30414.8	59744.9	115803.5	231126.3	567619.5	1113221.9	1.0000
209 Bi (ISTD) [3]	CPS	2542227.6		2538597.2	2514475.8	2501748.8	2445524	2466831.7	2430743.8	2405019.4	
208 Pb [3]	CPS	5111.5		35326.3	303047.8	597472.3	1164668.7	2324059.1	5911503	11623240.4	1.0000
205 Tl [3]	CPS	1019		21839	216328.3	432935.9	845459.7	1774195.3	4346964.2	8454047.9	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 171222B

Instrument ID: ICPMS-02

Analyte	Data File	B1222002.D	B1222004.D	B1222005.D	B1222006.D	B1222007.D	B1222008.D	B1222009.D	B1222010.D	
	Acq. Date-Time	12/22/2017 03:39 PM	12/22/2017 03:51 PM	12/22/2017 03:56 PM	12/22/2017 04:02 PM	12/22/2017 04:07 PM	12/22/2017 04:13 PM	12/22/2017 04:18 PM	12/22/2017 04:24 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
72 Ge (ISTD) [2]	CPS	37342.4	36853.5	36961.6	36762.1	36767.9	36669.8	35864.7	35351.4	
66 Zn [2]	CPS	112.7	768.3	4574	8450.6	16644.6	32040.8	78873.3	149531	0.9998
63 Cu [2]	CPS	848.8	3609.4	27214.1	52744.7	104401.7	206374.1	495711.2	958318.5	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 180102A

Instrument ID: ICPMS-02

Analyte	Data File	A0102002.D	A0102003.D	A0102004.D	A0102005.D	A0102006.D	A0102007.D	A0102008.D	A0102009.D	A0102010.D	
	Acq. Date-Time	01/02/2018 01:55 PM	01/02/2018 02:01 PM	01/02/2018 02:07 PM	01/02/2018 02:12 PM	01/02/2018 02:18 PM	01/02/2018 02:25 PM	01/02/2018 02:31 PM	01/02/2018 02:37 PM	01/02/2018 02:43 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	97601		91705.4	88382.8	83270.6	83597.6	81659.2	82037.4	81224.8	
55 Mn [2]	CPS	201.1		1973.2	17688	34102.3	66500	132211.7	325873.8	636871.1	1.0000
72 Ge (ISTD) [1]	CPS	77176.8		74440	72038	69455.8	68255.5	67576	65964.8	65749.7	
78 Se [1]	CPS	2.2		141.1	1404.6	2775.9	5495.6	11046.4	26802.9	53560.3	1.0000
72 Ge (ISTD) [2]	CPS	64510.3	64317.3	61794.4	59241.5	56410.7	56876.4	55791.6	55113.9	54277.8	
75 As [2]	CPS	29.8	80.4	403.6	3370.6	6429.8	12689.5	25053.5	61778.2	121715	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121008**
Client ID: **ICV** Batch ID: **R121008** TestNo: **EPA 6020** Analysis Date: **12/21/2017** SeqNo: **2876438**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.491	0.50	10.00	0	94.9	90	110				
Arsenic	10.185	0.10	10.00	0	102	90	110				
Barium	10.743	1.0	10.00	0	107	90	110				
Beryllium	9.739	0.50	10.00	0	97.4	90	110				
Cadmium	10.113	0.50	10.00	0	101	90	110				
Cobalt	9.609	0.50	10.00	0	96.1	90	110				
Lead	9.816	1.0	10.00	0	98.2	90	110				
Manganese	95.780	0.50	100.0	0	95.8	90	110				
Molybdenum	9.744	0.50	10.00	0	97.4	90	110				
Nickel	10.701	1.0	10.00	0	107	90	110				
Silver	9.570	0.50	10.00	0	95.7	90	110				
Thallium	10.676	0.50	10.00	0	107	90	110				
Vanadium	10.269	1.0	10.00	0	103	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121008**
Client ID: **ZZZZZZ** Batch ID: **R121008** TestNo: **EPA 6020** Analysis Date: **12/21/2017** SeqNo: **2876440**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.551	0.50	0.5000	0	110	80	120				
Arsenic	0.088	0.10	0.1000	0	88.3	80	120				
Barium	1.030	1.0	1.000	0	103	80	120				
Beryllium	0.494	0.50	0.5000	0	98.9	80	120				
Cadmium	0.505	0.50	0.5000	0	101	80	120				
Cobalt	0.503	0.50	0.5000	0	101	80	120				
Lead	0.974	1.0	1.000	0	97.4	80	120				
Manganese	0.509	0.50	0.5000	0	102	80	120				
Molybdenum	0.523	0.50	0.5000	0	105	80	120				
Nickel	0.894	1.0	1.000	0	89.4	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **ZZZZZZ**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876440**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.518	0.50	0.5000	0	104	80	120				
Thallium	0.507	0.50	0.5000	0	101	80	120				
Vanadium	0.957	1.0	1.000	0	95.7	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **CCV**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	19.144	0.50	20.00	0	95.7	90	110				
Arsenic	20.392	0.10	20.00	0	102	90	110				
Barium	20.791	1.0	20.00	0	104	90	110				
Beryllium	20.265	0.50	20.00	0	101	90	110				
Cadmium	20.412	0.50	20.00	0	102	90	110				
Cobalt	21.689	0.50	20.00	0	108	90	110				
Lead	19.706	1.0	20.00	0	98.5	90	110				
Manganese	21.275	0.50	20.00	0	106	90	110				
Molybdenum	19.382	0.50	20.00	0	96.9	90	110				
Nickel	20.724	1.0	20.00	0	104	90	110				
Silver	20.471	0.50	20.00	0	102	90	110				
Thallium	19.642	0.50	20.00	0	98.2	90	110				
Vanadium	21.948	1.0	20.00	0	110	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **CCV**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876466**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	19.865	0.50	20.00	0	99.3	90	110				
Arsenic	21.020	0.10	20.00	0	105	90	110				
Barium	21.388	1.0	20.00	0	107	90	110				
Beryllium	19.824	0.50	20.00	0	99.1	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121008**
Client ID: **CCV** Batch ID: **R121008** TestNo: **EPA 6020** Analysis Date: **12/21/2017** SeqNo: **2876466**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	20.844	0.50	20.00	0	104	90	110				
Cobalt	20.338	0.50	20.00	0	102	90	110				
Lead	19.623	1.0	20.00	0	98.1	90	110				
Manganese	20.352	0.50	20.00	0	102	90	110				
Molybdenum	20.336	0.50	20.00	0	102	90	110				
Nickel	21.217	1.0	20.00	0	106	90	110				
Silver	20.297	0.50	20.00	0	101	90	110				
Thallium	19.553	0.50	20.00	0	97.8	90	110				
Vanadium	20.736	1.0	20.00	0	104	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121008**
Client ID: **ZZZZZZ** Batch ID: **R121008** TestNo: **EPA 6020** Analysis Date: **12/21/2017** SeqNo: **2876468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.478	0.50	0.5000	0	95.7	70	130				
Arsenic	0.090	0.10	0.1000	0	90.0	70	130				
Barium	1.080	1.0	1.000	0	108	70	130				
Beryllium	0.482	0.50	0.5000	0	96.4	70	130				
Cadmium	0.516	0.50	0.5000	0	103	70	130				
Cobalt	0.495	0.50	0.5000	0	99.0	70	130				
Lead	0.965	1.0	1.000	0	96.5	70	130				
Manganese	0.580	0.50	0.5000	0	116	70	130				
Molybdenum	0.502	0.50	0.5000	0	100	70	130				
Nickel	1.388	1.0	1.000	0	139	70	130				S
Silver	0.516	0.50	0.5000	0	103	70	130				
Thallium	0.484	0.50	0.5000	0	96.8	70	130				
Vanadium	1.270	1.0	1.000	0	127	70	130				

Ni on LLCCV1 & LLCCV2 is biased high, however samples are non-detect for this analyte.Regular CCVs passed criteria.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

01/03/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **CCV**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876481**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	19.106	0.50	20.00	0	95.5	90	110				
Arsenic	20.145	0.10	20.00	0	101	90	110				
Barium	21.014	1.0	20.00	0	105	90	110				
Beryllium	20.335	0.50	20.00	0	102	90	110				
Cadmium	20.488	0.50	20.00	0	102	90	110				
Cobalt	21.098	0.50	20.00	0	105	90	110				
Lead	19.808	1.0	20.00	0	99.0	90	110				
Manganese	20.840	0.50	20.00	0	104	90	110				
Molybdenum	19.582	0.50	20.00	0	97.9	90	110				
Nickel	20.330	1.0	20.00	0	102	90	110				
Silver	20.729	0.50	20.00	0	104	90	110				
Thallium	19.681	0.50	20.00	0	98.4	90	110				
Vanadium	21.091	1.0	20.00	0	105	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **CCV**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	18.944	0.50	20.00	0	94.7	90	110				
Arsenic	20.282	0.10	20.00	0	101	90	110				
Barium	21.494	1.0	20.00	0	107	90	110				
Beryllium	20.035	0.50	20.00	0	100	90	110				
Cadmium	20.244	0.50	20.00	0	101	90	110				
Cobalt	20.483	0.50	20.00	0	102	90	110				
Lead	19.793	1.0	20.00	0	99.0	90	110				
Manganese	20.794	0.50	20.00	0	104	90	110				
Molybdenum	19.355	0.50	20.00	0	96.8	90	110				
Nickel	20.639	1.0	20.00	0	103	90	110				
Silver	20.312	0.50	20.00	0	102	90	110				
Thallium	19.758	0.50	20.00	0	98.8	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **CCV**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	20.590	1.0	20.00	0	103	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **CCV**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	18.950	0.50	20.00	0	94.7	90	110				
Arsenic	20.609	0.10	20.00	0	103	90	110				
Barium	20.972	1.0	20.00	0	105	90	110				
Beryllium	19.616	0.50	20.00	0	98.1	90	110				
Cadmium	20.355	0.50	20.00	0	102	90	110				
Cobalt	20.523	0.50	20.00	0	103	90	110				
Lead	19.776	1.0	20.00	0	98.9	90	110				
Manganese	20.803	0.50	20.00	0	104	90	110				
Molybdenum	19.526	0.50	20.00	0	97.6	90	110				
Nickel	21.261	1.0	20.00	0	106	90	110				
Silver	20.417	0.50	20.00	0	102	90	110				
Thallium	19.794	0.50	20.00	0	99.0	90	110				
Vanadium	20.579	1.0	20.00	0	103	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **ZZZZZZ**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.486	0.50	0.5000	0	97.3	70	130				
Arsenic	0.099	0.10	0.1000	0	98.5	70	130				
Barium	1.099	1.0	1.000	0	110	70	130				
Beryllium	0.491	0.50	0.5000	0	98.2	70	130				
Cadmium	0.526	0.50	0.5000	0	105	70	130				
Cobalt	0.497	0.50	0.5000	0	99.3	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121008**
Client ID: **ZZZZZZ** Batch ID: **R121008** TestNo: **EPA 6020** Analysis Date: **12/21/2017** SeqNo: **2876507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.987	1.0	1.000	0	98.7	70	130				
Manganese	0.581	0.50	0.5000	0	116	70	130				
Molybdenum	0.442	0.50	0.5000	0	88.3	70	130				
Nickel	2.024	1.0	1.000	0	202	70	130				S
Silver	0.533	0.50	0.5000	0	107	70	130				
Thallium	0.490	0.50	0.5000	0	98.0	70	130				
Vanadium	1.068	1.0	1.000	0	107	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121154**
Client ID: **ICV**	Batch ID: **R121154**	TestNo: **EPA 6020**		Analysis Date: **12/22/2017**	SeqNo: **2881316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	10.209	1.0	10.00	0	102	90	110				
Zinc	97.347	10	100.0	0	97.3	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121154**
Client ID: **ZZZZZZ**	Batch ID: **R121154**	TestNo: **EPA 6020**		Analysis Date: **12/22/2017**	SeqNo: **2881321**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	1.157	1.0	1.000	0	116	80	120				
Zinc	10.455	10	10.00	0	105	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121154**
Client ID: **CCV**	Batch ID: **R121154**	TestNo: **EPA 6020**		Analysis Date: **12/22/2017**	SeqNo: **2881332**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	21.701	1.0	20.00	0	109	90	110				
Zinc	21.418	10	20.00	0	107	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121154**
Client ID: **CCV**	Batch ID: **R121154**	TestNo: **EPA 6020**		Analysis Date: **12/22/2017**	SeqNo: **2881339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	20.736	1.0	20.00	0	104	90	110				
Zinc	20.276	10	20.00	0	101	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121154**
Client ID: **ZZZZZZ**	Batch ID: **R121154**	TestNo: **EPA 6020**		Analysis Date: **12/22/2017**	SeqNo: **2881341**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	1.262	1.0	1.000	0	126	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121154**
Client ID: **ZZZZZZ**	Batch ID: **R121154**	TestNo: **EPA 6020**		Analysis Date: **12/22/2017**	SeqNo: **2881341**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	10.449	10	10.00	0	104	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **ICV**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881578**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.679	0.10	10.00	0	107	90	110				
Manganese	108.315	0.50	100.0	0	108	90	110				
Selenium	10.941	0.50	10.00	0	109	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **ZZZZZZ**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881580**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.580	0.50	0.5000	0	116	80	120				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **ZZZZZZ**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.100	0.10	0.1000	0	99.6	80	120				
Manganese	0.512	0.50	0.5000	0	102	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **CCV**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881594**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.081	0.10	20.00	0	100	90	110				
Manganese	20.154	0.50	20.00	0	101	90	110				
Selenium	19.738	0.50	20.00	0	98.7	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **CCV**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **CCV**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.272	0.10	20.00	0	101	90	110				
Manganese	20.789	0.50	20.00	0	104	90	110				
Selenium	19.905	0.50	20.00	0	99.5	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **CCV**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881618**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.126	0.10	20.00	0	101	90	110				
Manganese	20.747	0.50	20.00	0	104	90	110				
Selenium	19.359	0.50	20.00	0	96.8	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **CCV**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.921	0.10	20.00	0	99.6	90	110				
Manganese	20.930	0.50	20.00	0	105	90	110				
Selenium	19.353	0.50	20.00	0	96.8	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **ZZZZZZ**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881627**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.083	0.10	0.1000	0	83.0	70	130				
Manganese	0.524	0.50	0.5000	0	105	70	130				
Selenium	0.501	0.50	0.5000	0	100	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **ICV**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.109	1.0	10.00	0	101	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **ZZZZZZ**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.958	1.0	1.000	0	95.8	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **CCV**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.327	1.0	20.00	0	107	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **CCV**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876394**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.923	1.0	20.00	0	110	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **ZZZZZZ**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876396**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.112	1.0	1.000	0	111	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	CCV3	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121008
Client ID:	CCV	Batch ID:	R121008	TestNo:	EPA 6020			Analysis Date:	12/21/2017	SeqNo:	2876409

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.559	1.0	20.00	0	103	90	110				

Sample ID	CCV4	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121008
Client ID:	CCV	Batch ID:	R121008	TestNo:	EPA 6020			Analysis Date:	12/21/2017	SeqNo:	2876421

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.374	1.0	20.00	0	102	90	110				

Sample ID	CCV5	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121008
Client ID:	CCV	Batch ID:	R121008	TestNo:	EPA 6020			Analysis Date:	12/21/2017	SeqNo:	2876433

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.202	1.0	20.00	0	101	90	110				

Sample ID	LLCCV2	SampType:	CCV2	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121008
Client ID:	ZZZZZZ	Batch ID:	R121008	TestNo:	EPA 6020			Analysis Date:	12/21/2017	SeqNo:	2876435

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.064	1.0	1.000	0	106	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121008**
Client ID: **ICB** Batch ID: **R121008** TestNo: **EPA 6020** Analysis Date: **12/21/2017** SeqNo: **2876439**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.102	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.089	0.50									
Nickel	ND	1.0									
Silver	0.194	0.50									
Thallium	ND	0.50									
Vanadium	ND	1.0									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121008**
Client ID: **CCB** Batch ID: **R121008** TestNo: **EPA 6020** Analysis Date: **12/21/2017** SeqNo: **2876455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.053	0.50									
Nickel	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	CCB1	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121008
Client ID:	CCB	Batch ID:	R121008	TestNo:	EPA 6020			Analysis Date:	12/21/2017	SeqNo:	2876455

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.159	0.50									
Thallium	0.054	0.50									
Vanadium	0.077	1.0									

Sample ID	CCB2	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121008
Client ID:	CCB	Batch ID:	R121008	TestNo:	EPA 6020			Analysis Date:	12/21/2017	SeqNo:	2876467

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Nickel	0.546	1.0									
Silver	0.139	0.50									
Thallium	0.033	0.50									
Vanadium	0.236	1.0									

Sample ID	CCB3	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121008
Client ID:	CCB	Batch ID:	R121008	TestNo:	EPA 6020			Analysis Date:	12/21/2017	SeqNo:	2876482

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **CCB**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876482**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Nickel	0.479	1.0									
Silver	ND	0.50									
Thallium	ND	0.50									
Vanadium	ND	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **CCB**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876494**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.035	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.045	0.50									
Nickel	0.839	1.0									
Silver	0.168	0.50									
Thallium	0.034	0.50									
Vanadium	0.047	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	CCB5	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121008
Client ID:	CCB	Batch ID:	R121008	TestNo:	EPA 6020			Analysis Date:	12/21/2017	SeqNo:	2876506

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Nickel	1.172	1.0									
Silver	0.149	0.50									
Thallium	ND	0.50									
Vanadium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121154**
Client ID: **ICB**	Batch ID: **R121154**	TestNo: **EPA 6020**		Analysis Date: **12/22/2017**	SeqNo: **2881317**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	1.0									
Zinc	ND	10									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121154**
Client ID: **CCB**	Batch ID: **R121154**	TestNo: **EPA 6020**		Analysis Date: **12/22/2017**	SeqNo: **2881333**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	1.0									
Zinc	ND	10									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121154**
Client ID: **CCB**	Batch ID: **R121154**	TestNo: **EPA 6020**		Analysis Date: **12/22/2017**	SeqNo: **2881340**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	1.0									
Zinc	ND	10									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **ICB**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	0.043	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **CCB**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881595**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **CCB**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881607**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **CCB**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881619**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **CCB**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881626**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **ICB**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876367**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **CCB**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876383**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **CCB**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876395**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.140	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **CCB**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.103	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **CCB**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876422**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.285	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **CCB**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.071	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121008**
Client ID: **ICSA** Batch ID: **R121008** TestNo: **EPA 6020** Analysis Date: **12/21/2017** SeqNo: **2876441**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.042	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.047	0.50									
Nickel	ND	1.0									
Silver	ND	0.50									
Thallium	ND	0.50									
Vanadium	ND	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121008**
Client ID: **ICSAB** Batch ID: **R121008** TestNo: **EPA 6020** Analysis Date: **12/21/2017** SeqNo: **2876442**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	19.350	0.50	20.00	0	96.8	80	120				
Arsenic	19.868	0.10	20.00	0	99.3	80	120				
Barium	18.007	1.0	20.00	0	90.0	80	120				
Beryllium	19.774	0.50	20.00	0	98.9	80	120				
Cadmium	17.442	0.50	20.00	0	87.2	80	120				
Cobalt	19.125	0.50	20.00	0	95.6	80	120				
Lead	19.034	1.0	20.00	0	95.2	80	120				
Manganese	23.056	0.50	20.00	0	115	80	120				
Molybdenum	22.208	0.50	20.00	0	111	80	120				
Nickel	18.401	1.0	20.00	0	92.0	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **ICSAB**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876442**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	18.972	0.50	20.00	0	94.9	80	120				
Thallium	20.333	0.50	20.00	0	102	80	120				
Vanadium	20.743	1.0	20.00	0	104	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **ICSA**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Nickel	0.319	1.0									
Silver	ND	0.50									
Thallium	ND	0.50									
Vanadium	0.032	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **ICSAB**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	19.848	0.50	20.00	0	99.2	80	120				
Arsenic	20.219	0.10	20.00	0	101	80	120				
Barium	18.350	1.0	20.00	0	91.8	80	120				
Beryllium	19.037	0.50	20.00	0	95.2	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **ICSAB**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	17.516	0.50	20.00	0	87.6	80	120				
Cobalt	19.710	0.50	20.00	0	98.6	80	120				
Lead	19.130	1.0	20.00	0	95.6	80	120				
Manganese	23.123	0.50	20.00	0	116	80	120				
Molybdenum	21.988	0.50	20.00	0	110	80	120				
Nickel	19.571	1.0	20.00	0	97.9	80	120				
Silver	18.931	0.50	20.00	0	94.7	80	120				
Thallium	20.368	0.50	20.00	0	102	80	120				
Vanadium	21.333	1.0	20.00	0	107	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **ICSA**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876508**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Nickel	0.762	1.0									
Silver	ND	0.50									
Thallium	ND	0.50									
Vanadium	0.139	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **ICSAB**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	18.736	0.50	20.00	0	93.7	80	120				
Arsenic	20.397	0.10	20.00	0	102	80	120				
Barium	19.220	1.0	20.00	0	96.1	80	120				
Beryllium	18.919	0.50	20.00	0	94.6	80	120				
Cadmium	16.948	0.50	20.00	0	84.7	80	120				
Cobalt	19.922	0.50	20.00	0	99.6	80	120				
Lead	19.309	1.0	20.00	0	96.5	80	120				
Manganese	23.769	0.50	20.00	0	119	80	120				
Molybdenum	21.999	0.50	20.00	0	110	80	120				
Nickel	21.603	1.0	20.00	0	108	80	120				
Silver	18.877	0.50	20.00	0	94.4	80	120				
Thallium	20.577	0.50	20.00	0	103	80	120				
Vanadium	21.250	1.0	20.00	0	106	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121154**
Client ID: **ICSA**	Batch ID: **R121154**	TestNo: **EPA 6020**		Analysis Date: **12/22/2017**	SeqNo: **2881319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	1.0									
Zinc	ND	10									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121154**
Client ID: **ICSAB**	Batch ID: **R121154**	TestNo: **EPA 6020**		Analysis Date: **12/22/2017**	SeqNo: **2881320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	17.769	1.0	20.00	0	88.8	80	120				
Zinc	16.862	10	20.00	0	84.3	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121154**
Client ID: **ICSA**	Batch ID: **R121154**	TestNo: **EPA 6020**		Analysis Date: **12/22/2017**	SeqNo: **2881342**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	1.0									
Zinc	ND	10									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121154**
Client ID: **ICSAB**	Batch ID: **R121154**	TestNo: **EPA 6020**		Analysis Date: **12/22/2017**	SeqNo: **2881343**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	17.832	1.0	20.00	0	89.2	80	120				
Zinc	16.648	10	20.00	0	83.2	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **ICSA**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881581**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	0.043	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **ICSAB**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881582**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.343	0.10	20.00	0	102	80	120				
Manganese	17.476	0.50	20.00	0	87.4	80	120				
Selenium	18.919	0.50	20.00	0	94.6	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **ICSA**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121160**
Client ID: **ICSAB**	Batch ID: **R121160**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2881629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.580	0.10	20.00	0	103	80	120				
Manganese	18.120	0.50	20.00	0	90.6	80	120				
Selenium	19.376	0.50	20.00	0	96.9	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121008
Client ID:	ICSA	Batch ID:	R121008	TestNo:	EPA 6020			Analysis Date:	12/21/2017	SeqNo:	2876369

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.022	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121008
Client ID:	ICSAB	Batch ID:	R121008	TestNo:	EPA 6020			Analysis Date:	12/21/2017	SeqNo:	2876370

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.622	1.0	20.00	0	98.1	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121008
Client ID:	ICSA	Batch ID:	R121008	TestNo:	EPA 6020			Analysis Date:	12/21/2017	SeqNo:	2876397

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.202	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121008
Client ID:	ICSAB	Batch ID:	R121008	TestNo:	EPA 6020			Analysis Date:	12/21/2017	SeqNo:	2876398

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.599	1.0	20.00	0	103	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121008
Client ID:	ICSA	Batch ID:	R121008	TestNo:	EPA 6020			Analysis Date:	12/21/2017	SeqNo:	2876436

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.133	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121008**
Client ID: **ICSAB**	Batch ID: **R121008**	TestNo: **EPA 6020**		Analysis Date: **12/21/2017**	SeqNo: **2876437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.222	1.0	20.00	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [3]					115 In (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	2595708.6	2595708.6	100	PASS	70-125	2600029	2600029	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	2608259.3	2595708.6	100.48	PASS	70-125	2630467.7	2600029	101.17	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	2551666.4	2595708.6	98.3	PASS	70-125	2555485	2600029	98.29	PASS	70-125
Std3-5/50 ppb	ICAL	1	2498059.8	2595708.6	96.24	PASS	70-125	2528082.4	2600029	97.23	PASS	70-125
Std4-10/100 ppb	ICAL	1	2474172.3	2595708.6	95.32	PASS	70-125	2505160.1	2600029	96.35	PASS	70-125
Std5-20/200 ppb	ICAL	1	2402028.3	2595708.6	92.54	PASS	70-125	2448759.7	2600029	94.18	PASS	70-125
Std6-40/400 ppb	ICAL	1	2402256	2595708.6	92.55	PASS	70-125	2436841.1	2600029	93.72	PASS	70-125
Std7-100/1000 ppb	ICAL	1	2346071.3	2595708.6	90.38	PASS	70-125	2420249	2600029	93.085	PASS	70-125
Std8-200/2000 ppb	ICAL	1	2321690.3	2595708.6	89.44	PASS	70-125	2370933.2	2600029	91.19	PASS	70-125
ICV	ICV	1	2995172.7	2595708.6	115.39	PASS	70-125	3114251.3	2600029	119.78	PASS	70-125
ICB	ICB	1	2326025.1	2595708.6	89.61	PASS	70-125	2360616.3	2600029	90.79	PASS	70-125
LLICV	CCV1	1	2377711.1	2595708.6	91.6	PASS	70-125	2421957.8	2600029	93.15	PASS	70-125
ICSA1	ICSA	1	2562950.8	2595708.6	98.74	PASS	70-125	2672986.4	2600029	102.81	PASS	70-125
ICSAB1	ICSAB	1	2186350.7	2595708.6	84.23	PASS	70-125	2348537.6	2600029	90.33	PASS	70-125
LLICV	CCV1	1	2504768.5	2595708.6	96.5	PASS	70-125	2575568.1	2600029	99.059	PASS	70-125
MB-66021	MBLK	1	2454749.4	2595708.6	94.57	PASS	70-125	2439529.5	2600029	93.83	PASS	70-125
LCS-66021	LCS	1	2959937.3	2595708.6	114.03	PASS	70-125	3084655.5	2600029	118.64	PASS	70-125
N027459-001C	SAMP	1	1801556.6	2595708.6	69.41	NR!	70-125	1920039.5	2600029	73.85	PASS	70-125
N027459-001C	SAMP	5	2249718.5	2595708.6	86.67	PASS	70-125	2351840.1	2600029	90.45	PASS	70-125
N027459-001C	SAMP	25	2474501.5	2595708.6	95.33	PASS	70-125	2576940.2	2600029	99.11	PASS	70-125
N027459-001C-PS	PS	1	1974013.6	2595708.6	76.049	PASS	70-125	2091399.2	2600029	80.44	PASS	70-125
N027459-001C-PS	PS	5	2337839.9	2595708.6	90.066	PASS	70-125	2458279.3	2600029	94.55	PASS	70-125
N027459-001C-MS	MS	1	2094118.9	2595708.6	80.68	PASS	70-125	2217830	2600029	85.3	PASS	70-125
N027459-001C-MS	MS	5	2551725.4	2595708.6	98.31	PASS	70-125	2667282.6	2600029	102.59	PASS	70-125
N027459-001C-MSD	MSD	1	2172241	2595708.6	83.69	PASS	70-125	2300743	2600029	88.49	PASS	70-125
CCV1	CCV	1	2535880.5	2595708.6	97.7	PASS	70-125	2656162.2	2600029	102.16	PASS	70-125
CCB1	CCB	1	3014553.9	2595708.6	116.14	PASS	70-125	3038391.6	2600029	116.86	PASS	70-125
N027459-001C-MSD	MSD	5	2517994.9	2595708.6	97.006	PASS	70-125	2626053.5	2600029	101	PASS	70-125
N027459-002C	SAMP	1	2003987.1	2595708.6	77.2	PASS	70-125	2136575.7	2600029	82.18	PASS	70-125
N027459-002C	SAMP	5	2539364.7	2595708.6	97.83	PASS	70-125	2633866.6	2600029	101.3	PASS	70-125
N027459-003B	SAMP	1	1964939.4	2595708.6	75.7	PASS	70-125	2095348.9	2600029	80.59	PASS	70-125
N027459-003B	SAMP	5	2474398.1	2595708.6	95.33	PASS	70-125	2592203.8	2600029	99.7	PASS	70-125
N027459-004B	SAMP	1	1838664.9	2595708.6	70.83	PASS	70-125	1956951.6	2600029	75.27	PASS	70-125
N027459-004B	SAMP	5	2395634.2	2595708.6	92.29	PASS	70-125	2487869.6	2600029	95.69	PASS	70-125
N027459-005B	SAMP	1	2219654.3	2595708.6	85.51	PASS	70-125	2355812.5	2600029	90.61	PASS	70-125
N027459-001C	SAMP	1	1859462.4	2595708.6	71.64	PASS	70-125	2072873.1	2600029	79.72	PASS	70-125
N027459-006B	SAMP	1	1587029.8	2595708.6	61.14	NR!	70-125	1700003.4	2600029	65.38	NR!	70-125
CCV2	CCV	1	2721405	2595708.6	104.84	PASS	70-125	2734613.6	2600029	105.18	PASS	70-125
CCB2	CCB	1	2385621	2595708.6	91.91	PASS	70-125	2479334.8	2600029	95.36	PASS	70-125
LLCCV1	CCV2	1	2488159.7	2595708.6	95.86	PASS	70-125	2569575.5	2600029	98.83	PASS	70-125
ICSA2	ICSA	1	2419880.6	2595708.6	93.23	PASS	70-125	2586766	2600029	99.49	PASS	70-125

INTERNAL STANDARD: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [3]					115 In (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
ICSAB2	ICSAB	1	2067811	2595708.6	79.66	PASS	70-125	2187191	2600029	84.12	PASS	70-125
N027459-006B	SAMP	5	1912609.6	2595708.6	73.68	PASS	70-125	2034208.2	2600029	78.24	PASS	70-125
N027459-007B	SAMP	1	2106479.4	2595708.6	81.15	PASS	70-125	2219414	2600029	85.36	PASS	70-125
N027459-007B	SAMP	5	2341366.9	2595708.6	90.2	PASS	70-125	2462988.8	2600029	94.73	PASS	70-125
N027459-008C	SAMP	1	2108899.5	2595708.6	81.25	PASS	70-125	2217470	2600029	85.29	PASS	70-125
N027459-008C	SAMP	5	2217481.7	2595708.6	85.43	PASS	70-125	2371122.6	2600029	91.2	PASS	70-125
N027459-009B	SAMP	1	1674482.7	2595708.6	64.51	NR!	70-125	1802294.7	2600029	69.32	NR!	70-125
N027459-009B	SAMP	5	1982566	2595708.6	76.38	PASS	70-125	2124284.4	2600029	81.7	PASS	70-125
N027459-010B	SAMP	1	1689864.5	2595708.6	65.1	NR!	70-125	1813929	2600029	69.77	NR!	70-125
N027459-010B	SAMP	5	2047485	2595708.6	78.88	PASS	70-125	2189607.3	2600029	84.21	PASS	70-125
N027459-011B	SAMP	1	1884759.9	2595708.6	72.61	PASS	70-125	2082262.9	2600029	80.086	PASS	70-125
CCV3	CCV	1	2719360.6	2595708.6	104.76	PASS	70-125	2865723.6	2600029	110.22	PASS	70-125
CCB3	CCB	1	2855243.1	2595708.6	110	PASS	70-125	2962122.3	2600029	113.93	PASS	70-125
N027459-011B	SAMP	5	2241713.9	2595708.6	86.36	PASS	70-125	2420634.3	2600029	93.1	PASS	70-125
N027459-012B	SAMP	1	2164931	2595708.6	83.4	PASS	70-125	2339342	2600029	89.97	PASS	70-125
N027459-012B	SAMP	5	2328210.1	2595708.6	89.69	PASS	70-125	2487576	2600029	95.67	PASS	70-125
N027459-013B	SAMP	1	1605073.5	2595708.6	61.84	NR!	70-125	1800541.3	2600029	69.25	NR!	70-125
N027459-013B	SAMP	5	2247336.8	2595708.6	86.58	PASS	70-125	2443423.9	2600029	93.98	PASS	70-125
N027459-014B	SAMP	1	1897189.2	2595708.6	73.089	PASS	70-125	2109534.9	2600029	81.14	PASS	70-125
N027459-014B	SAMP	5	2550474.2	2595708.6	98.26	PASS	70-125	2768078.6	2600029	106.46	PASS	70-125
N027459-015B	SAMP	1	2402265.4	2595708.6	92.55	PASS	70-125	2612299.2	2600029	100.47	PASS	70-125
N027459-016C	SAMP	1	2433438	2595708.6	93.75	PASS	70-125	2589994.7	2600029	99.61	PASS	70-125
N027459-016C	SAMP	10	2838476.9	2595708.6	109.35	PASS	70-125	2964867	2600029	114.03	PASS	70-125
CCV4	CCV	1	3100473.4	2595708.6	119.45	PASS	70-125	3229010.1	2600029	124.19	PASS	70-125
CCB4	CCB	1	2942634.5	2595708.6	113.37	PASS	70-125	3053134.8	2600029	117.43	PASS	70-125
N027459-017C	SAMP	1	2158876.7	2595708.6	83.17	PASS	70-125	2362891.7	2600029	90.88	PASS	70-125
N027459-017C	SAMP	5	2549896	2595708.6	98.24	PASS	70-125	2701765.9	2600029	103.91	PASS	70-125
N027459-018B	SAMP	1	1386401.1	2595708.6	53.41	NR!	70-125	1603036.4	2600029	61.65	NR!	70-125
N027459-018B	SAMP	5	2123428	2595708.6	81.81	PASS	70-125	2351119.6	2600029	90.43	PASS	70-125
N027459-019B	SAMP	1	1784215.3	2595708.6	68.74	NR!	70-125	1993455.5	2600029	76.67	PASS	70-125
N027459-019B	SAMP	5	2205523.1	2595708.6	84.97	PASS	70-125	2418217.2	2600029	93.007	PASS	70-125
N027459-017C	SAMP	10	3144868	2595708.6	121.16	PASS	70-125	2653161.5	2600029	102.04	PASS	70-125
N027459-018B	SAMP	25	2321436.8	2595708.6	89.43	PASS	70-125	2504988.8	2600029	96.34	PASS	70-125
N027459-010B	SAMP	5	2249175.6	2595708.6	86.65	PASS	70-125	2439155.2	2600029	93.81	PASS	70-125
N027459-006B	SAMP	50	2460090.4	2595708.6	94.78	PASS	70-125	2609217.8	2600029	100.35	PASS	70-125
CCV5	CCV	1	2766240.3	2595708.6	106.57	PASS	70-125	2887020.1	2600029	111.04	PASS	70-125
CCB5	CCB	1	2692796.3	2595708.6	103.74	PASS	70-125	2789916.3	2600029	107.3	PASS	70-125
LLCCV2	CCV2	1	2725108.4	2595708.6	104.99	PASS	70-125	2831860.5	2600029	108.92	PASS	70-125
ICSA3	ICSA	1	2530505.6	2595708.6	97.49	PASS	70-125	2752887.8	2600029	105.88	PASS	70-125
ICSAB3	ICSAB	1	2197954.9	2595708.6	84.68	PASS	70-125	2425399.9	2600029	93.28	PASS	70-125

INTERNAL STANDARD: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					209 Bi (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	3936451.1	3936451.1	100	PASS	70-125	2542227.6	2542227.6	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	3958480.8	3936451.1	100.56	PASS	70-125	2581215.5	2542227.6	101.53	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	3886249.6	3936451.1	98.72	PASS	70-125	2538597.2	2542227.6	99.86	PASS	70-125
Std3-5/50 ppb	ICAL	1	3841001.1	3936451.1	97.58	PASS	70-125	2514475.8	2542227.6	98.91	PASS	70-125
Std4-10/100 ppb	ICAL	1	3811266	3936451.1	96.82	PASS	70-125	2501748.8	2542227.6	98.41	PASS	70-125
Std5-20/200 ppb	ICAL	1	3703135.3	3936451.1	94.073	PASS	70-125	2445524	2542227.6	96.2	PASS	70-125
Std6-40/400 ppb	ICAL	1	3740340.9	3936451.1	95.018	PASS	70-125	2466831.7	2542227.6	97.034	PASS	70-125
Std7-100/1000 ppb	ICAL	1	3711331.3	3936451.1	94.28	PASS	70-125	2430743.8	2542227.6	95.61	PASS	70-125
Std8-200/2000 ppb	ICAL	1	3695471	3936451.1	93.88	PASS	70-125	2405019.4	2542227.6	94.6	PASS	70-125
ICV	ICV	1	4526315.3	3936451.1	114.98	PASS	70-125	2859797.6	2542227.6	112.49	PASS	70-125
ICB	ICB	1	3665123.3	3936451.1	93.11	PASS	70-125	2401027	2542227.6	94.45	PASS	70-125
LLICV	CCV1	1	3744015.2	3936451.1	95.11	PASS	70-125	2447546.7	2542227.6	96.28	PASS	70-125
ICSA1	ICSA	1	4126171	3936451.1	104.82	PASS	70-125	2367198.9	2542227.6	93.12	PASS	70-125
ICSAB1	ICSAB	1	3558690.2	3936451.1	90.4	PASS	70-125	2135013.4	2542227.6	83.98	PASS	70-125
LLICV	CCV1	1	3824496.2	3936451.1	97.16	PASS	70-125	2441771.7	2542227.6	96.049	PASS	70-125
MB-66021	MBLK	1	3608432.8	3936451.1	91.67	PASS	70-125	2320062.8	2542227.6	91.26	PASS	70-125
LCS-66021	LCS	1	4623485.9	3936451.1	117.45	PASS	70-125	3017226.1	2542227.6	118.68	PASS	70-125
N027459-001C	SAMP	1	3033582.2	3936451.1	77.064	PASS	70-125	1666605.6	2542227.6	65.56	NR!	70-125
N027459-001C	SAMP	5	3597495.6	3936451.1	91.39	PASS	70-125	2128401.7	2542227.6	83.72	PASS	70-125
N027459-001C	SAMP	25	3876855.3	3936451.1	98.49	PASS	70-125	2398586.1	2542227.6	94.35	PASS	70-125
N027459-001C-PS	PS	1	3263898.5	3936451.1	82.91	PASS	70-125	1782935.1	2542227.6	70.13	PASS	70-125
N027459-001C-PS	PS	5	3775333.5	3936451.1	95.91	PASS	70-125	2218295	2542227.6	87.26	PASS	70-125
N027459-001C-MS	MS	1	3404539.2	3936451.1	86.49	PASS	70-125	1841520	2542227.6	72.44	PASS	70-125
N027459-001C-MS	MS	5	3983805.3	3936451.1	101.2	PASS	70-125	2323259.1	2542227.6	91.39	PASS	70-125
N027459-001C-MSD	MSD	1	3463625.1	3936451.1	87.99	PASS	70-125	1873630.8	2542227.6	73.7	PASS	70-125
CCV1	CCV	1	3986739.6	3936451.1	101.28	PASS	70-125	2587692.2	2542227.6	101.79	PASS	70-125
CCB1	CCB	1	4422969.6	3936451.1	112.36	PASS	70-125	2812504.1	2542227.6	110.63	PASS	70-125
N027459-001C-MSD	MSD	5	3887468.1	3936451.1	98.76	PASS	70-125	2249927.4	2542227.6	88.5	PASS	70-125
N027459-002C	SAMP	1	3190341.2	3936451.1	81.046	PASS	70-125	1667677	2542227.6	65.6	NR!	70-125
N027459-002C	SAMP	5	3881971.7	3936451.1	98.62	PASS	70-125	2177808.1	2542227.6	85.67	PASS	70-125
N027459-003B	SAMP	1	3156901	3936451.1	80.2	PASS	70-125	1573140	2542227.6	61.88	NR!	70-125
N027459-003B	SAMP	5	3786061.3	3936451.1	96.18	PASS	70-125	2111713.5	2542227.6	83.065	PASS	70-125
N027459-004B	SAMP	1	2930176.4	3936451.1	74.44	PASS	70-125	1459520	2542227.6	57.41	NR!	70-125
N027459-004B	SAMP	5	3666483.8	3936451.1	93.14	PASS	70-125	2024100.1	2542227.6	79.62	PASS	70-125
N027459-005B	SAMP	1	3451652.9	3936451.1	87.68	PASS	70-125	1838761.5	2542227.6	72.33	PASS	70-125
N027459-001C	SAMP	1	3269931.7	3936451.1	83.068	PASS	70-125	1709125.6	2542227.6	67.23	NR!	70-125
N027459-006B	SAMP	1	2543564.7	3936451.1	64.62	NR!	70-125	1204828.4	2542227.6	47.39	NR!	70-125
CCV2	CCV	1	3885181.6	3936451.1	98.7	PASS	70-125	2426653.9	2542227.6	95.45	PASS	70-125
CCB2	CCB	1	3772796.3	3936451.1	95.84	PASS	70-125	2420989.5	2542227.6	95.23	PASS	70-125
LLCCV1	CCV2	1	3918502.9	3936451.1	99.54	PASS	70-125	2539314.6	2542227.6	99.89	PASS	70-125
ICSA2	ICSA	1	3989042.2	3936451.1	101.34	PASS	70-125	2253470.1	2542227.6	88.64	PASS	70-125

INTERNAL STANDARD: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					209 Bi (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
ICSAB2	ICSAB	1	3203340.9	3936451.1	81.38	PASS	70-125	1891642.4	2542227.6	74.41	PASS	70-125
N027459-006B	SAMP	5	3062361.3	3936451.1	77.79	PASS	70-125	1698367.9	2542227.6	66.81	NR!	70-125
N027459-007B	SAMP	1	3280383	3936451.1	83.33	PASS	70-125	1858989.7	2542227.6	73.12	PASS	70-125
N027459-007B	SAMP	5	3541477.7	3936451.1	89.97	PASS	70-125	2131099.4	2542227.6	83.83	PASS	70-125
N027459-008C	SAMP	1	3291212.8	3936451.1	83.61	PASS	70-125	1842881.5	2542227.6	72.49	PASS	70-125
N027459-008C	SAMP	5	3629535.2	3936451.1	92.2	PASS	70-125	2247757.6	2542227.6	88.42	PASS	70-125
N027459-009B	SAMP	1	2782375	3936451.1	70.68	PASS	70-125	1467105.9	2542227.6	57.71	NR!	70-125
N027459-009B	SAMP	5	3197171.6	3936451.1	81.22	PASS	70-125	1826285.3	2542227.6	71.84	PASS	70-125
N027459-010B	SAMP	1	2760832.6	3936451.1	70.14	PASS	70-125	1444188.2	2542227.6	56.81	NR!	70-125
N027459-010B	SAMP	5	3420749.8	3936451.1	86.9	PASS	70-125	1989783.3	2542227.6	78.27	PASS	70-125
N027459-011B	SAMP	1	3218810.3	3936451.1	81.77	PASS	70-125	1728926.6	2542227.6	68.008	NR!	70-125
CCV3	CCV	1	4278109.5	3936451.1	108.68	PASS	70-125	2717187.4	2542227.6	106.88	PASS	70-125
CCB3	CCB	1	4376496.3	3936451.1	111.18	PASS	70-125	2804328.4	2542227.6	110.31	PASS	70-125
N027459-011B	SAMP	5	3706449.3	3936451.1	94.16	PASS	70-125	2176900	2542227.6	85.63	PASS	70-125
N027459-012B	SAMP	1	3616865.3	3936451.1	91.88	PASS	70-125	2059339.1	2542227.6	81.005	PASS	70-125
N027459-012B	SAMP	5	3794903.4	3936451.1	96.4	PASS	70-125	2346205	2542227.6	92.29	PASS	70-125
N027459-013B	SAMP	1	2861967.1	3936451.1	72.7	PASS	70-125	1431609.9	2542227.6	56.31	NR!	70-125
N027459-013B	SAMP	5	3745008.8	3936451.1	95.14	PASS	70-125	2063152	2542227.6	81.16	PASS	70-125
N027459-014B	SAMP	1	3277464.5	3936451.1	83.26	PASS	70-125	1747666.4	2542227.6	68.75	NR!	70-125
N027459-014B	SAMP	5	4182367.4	3936451.1	106.25	PASS	70-125	2383364	2542227.6	93.75	PASS	70-125
N027459-015B	SAMP	1	4010776	3936451.1	101.89	PASS	70-125	2193922.1	2542227.6	86.3	PASS	70-125
N027459-016C	SAMP	1	3912333.7	3936451.1	99.39	PASS	70-125	2145809	2542227.6	84.41	PASS	70-125
N027459-016C	SAMP	10	4365289.9	3936451.1	110.89	PASS	70-125	2676020.2	2542227.6	105.26	PASS	70-125
CCV4	CCV	1	4719459	3936451.1	119.89	PASS	70-125	2965920.9	2542227.6	116.67	PASS	70-125
CCB4	CCB	1	4501679.6	3936451.1	114.36	PASS	70-125	2859794.3	2542227.6	112.49	PASS	70-125
N027459-017C	SAMP	1	3653158.4	3936451.1	92.8	PASS	70-125	2045479.4	2542227.6	80.46	PASS	70-125
N027459-017C	SAMP	5	4118308.6	3936451.1	104.62	PASS	70-125	2495908.2	2542227.6	98.18	PASS	70-125
N027459-018B	SAMP	1	2558882.5	3936451.1	65.005	NR!	70-125	1167255.5	2542227.6	45.91	NR!	70-125
N027459-018B	SAMP	5	3626206.9	3936451.1	92.12	PASS	70-125	1956068.6	2542227.6	76.94	PASS	70-125
N027459-019B	SAMP	1	3007194	3936451.1	76.39	PASS	70-125	1496924.4	2542227.6	58.88	NR!	70-125
N027459-019B	SAMP	5	3572990.6	3936451.1	90.77	PASS	70-125	1951448.5	2542227.6	76.76	PASS	70-125
N027459-017C	SAMP	10	3864132.6	3936451.1	98.16	PASS	70-125	2366340.3	2542227.6	93.081	PASS	70-125
N027459-018B	SAMP	25	3728284.1	3936451.1	94.71	PASS	70-125	2194188	2542227.6	86.31	PASS	70-125
N027459-010B	SAMP	5	3710287.2	3936451.1	94.25	PASS	70-125	2072032.4	2542227.6	81.5	PASS	70-125
N027459-006B	SAMP	50	3908173.3	3936451.1	99.28	PASS	70-125	2330669	2542227.6	91.68	PASS	70-125
CCV5	CCV	1	4299107.6	3936451.1	109.21	PASS	70-125	2694113.2	2542227.6	105.97	PASS	70-125
CCB5	CCB	1	4193826.9	3936451.1	106.54	PASS	70-125	2663405.2	2542227.6	104.77	PASS	70-125
LLCCV2	CCV2	1	4275892.5	3936451.1	108.62	PASS	70-125	2727425.9	2542227.6	107.28	PASS	70-125
ICSA3	ICSA	1	4217371.4	3936451.1	107.14	PASS	70-125	2345343.7	2542227.6	92.26	PASS	70-125
ICSAB3	ICSAB	1	3602702.2	3936451.1	91.52	PASS	70-125	2136629.4	2542227.6	84.046	PASS	70-125

INTERNAL STANDARD: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	56216.8	56216.8	100	PASS	70-125	36551.8	36551.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	56957.1	56216.8	101.32	PASS	70-125	37055.1	36551.8	101.38	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	55590.4	56216.8	98.89	PASS	70-125	36313.5	36551.8	99.35	PASS	70-125
Std3-5/50 ppb	ICAL	1	54466.6	56216.8	96.89	PASS	70-125	35332.5	36551.8	96.66	PASS	70-125
Std4-10/100 ppb	ICAL	1	52871.5	56216.8	94.049	PASS	70-125	34343.7	36551.8	93.96	PASS	70-125
Std5-20/200 ppb	ICAL	1	51109.5	56216.8	90.91	PASS	70-125	33733.6	36551.8	92.29	PASS	70-125
Std6-40/400 ppb	ICAL	1	51760.5	56216.8	92.073	PASS	70-125	33786	36551.8	92.43	PASS	70-125
Std7-100/1000 ppb	ICAL	1	50539.8	56216.8	89.9	PASS	70-125	33655.5	36551.8	92.076	PASS	70-125
Std8-200/2000 ppb	ICAL	1	51106.3	56216.8	90.91	PASS	70-125	32842.8	36551.8	89.85	PASS	70-125
ICV	ICV	1	63971.7	56216.8	113.79	PASS	70-125	42605.6	36551.8	116.56	PASS	70-125
ICB	ICB	1	49523.5	56216.8	88.094	PASS	70-125	33056.7	36551.8	90.44	PASS	70-125
LLICV	CCV1	1	50028.2	56216.8	88.99	PASS	70-125	33604.4	36551.8	91.94	PASS	70-125
ICSA1	ICSA	1	60432.6	56216.8	107.5	PASS	70-125	37464	36551.8	102.5	PASS	70-125
ICSAB1	ICSAB	1	52241.7	56216.8	92.93	PASS	70-125	33468.6	36551.8	91.56	PASS	70-125
LLICV	CCV1	1	51500.7	56216.8	91.61	PASS	70-125	35300.3	36551.8	96.58	PASS	70-125
MB-66021	MBLK	1	56463.1	56216.8	100.44	PASS	70-125	37094.1	36551.8	101.48	PASS	70-125
LCS-66021	LCS	1	59324.4	56216.8	105.53	PASS	70-125	39983.2	36551.8	109.39	PASS	70-125
N027459-001C	SAMP	1	44675.2	56216.8	79.47	PASS	70-125	26803.9	36551.8	73.33	PASS	70-125
N027459-001C	SAMP	5	53775.6	56216.8	95.66	PASS	70-125	33394.9	36551.8	91.36	PASS	70-125
N027459-001C	SAMP	25	56778.9	56216.8	101	PASS	70-125	37012.9	36551.8	101.26	PASS	70-125
N027459-001C-PS	PS	1	47533.4	56216.8	84.55	PASS	70-125	28673.9	36551.8	78.45	PASS	70-125
N027459-001C-PS	PS	5	57689.8	56216.8	102.62	PASS	70-125	35884.7	36551.8	98.17	PASS	70-125
N027459-001C-MS	MS	1	52739.7	56216.8	93.81	PASS	70-125	31481.2	36551.8	86.13	PASS	70-125
N027459-001C-MS	MS	5	62108.7	56216.8	110.48	PASS	70-125	39203.6	36551.8	107.25	PASS	70-125
N027459-001C-MSD	MSD	1	55574.7	56216.8	98.86	PASS	70-125	33388.4	36551.8	91.35	PASS	70-125
CCV1	CCV	1	49049.7	56216.8	87.25	PASS	70-125	34086.5	36551.8	93.26	PASS	70-125
CCB1	CCB	1	67447.1	56216.8	119.98	PASS	70-125	45377.5	36551.8	124.15	PASS	70-125
N027459-001C-MSD	MSD	5	61118.6	56216.8	108.72	PASS	70-125	39116.7	36551.8	107.02	PASS	70-125
N027459-002C	SAMP	1	52314.4	56216.8	93.058	PASS	70-125	30607.3	36551.8	83.74	PASS	70-125
N027459-002C	SAMP	5	63697.9	56216.8	113.31	PASS	70-125	39041.1	36551.8	106.81	PASS	70-125
N027459-003B	SAMP	1	55217.9	56216.8	98.22	PASS	70-125	29763.6	36551.8	81.43	PASS	70-125
N027459-003B	SAMP	5	64207.7	56216.8	114.21	PASS	70-125	38934.1	36551.8	106.52	PASS	70-125
N027459-004B	SAMP	1	53778.6	56216.8	95.66	PASS	70-125	29237	36551.8	79.99	PASS	70-125
N027459-004B	SAMP	5	61375.1	56216.8	109.18	PASS	70-125	36318	36551.8	99.36	PASS	70-125
N027459-005B	SAMP	1	58960.8	56216.8	104.88	PASS	70-125	34499.6	36551.8	94.39	PASS	70-125
N027459-001C	SAMP	1	41550.8	56216.8	73.91	PASS	70-125	24499.1	36551.8	67.026	NR!	70-125
N027459-006B	SAMP	1	46425.8	56216.8	82.58	PASS	70-125	25656.5	36551.8	70.19	PASS	70-125
CCV2	CCV	1	62269.3	56216.8	110.77	PASS	70-125	40873.2	36551.8	111.82	PASS	70-125
CCB2	CCB	1	46793.3	56216.8	83.24	PASS	70-125	32482.2	36551.8	88.87	PASS	70-125
LLCCV1	CCV2	1	50015.1	56216.8	88.97	PASS	70-125	34652.2	36551.8	94.8	PASS	70-125
ICSA2	ICSA	1	53838.1	56216.8	95.77	PASS	70-125	34166.7	36551.8	93.47	PASS	70-125

INTERNAL STANDARD: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
ICSAB2	ICSAB	1	48579.6	56216.8	86.41	PASS	70-125	31865.4	36551.8	87.18	PASS	70-125
N027459-006B	SAMP	5	47514.3	56216.8	84.52	PASS	70-125	29507.6	36551.8	80.73	PASS	70-125
N027459-007B	SAMP	1	51510.6	56216.8	91.63	PASS	70-125	32414.2	36551.8	88.68	PASS	70-125
N027459-007B	SAMP	5	55343	56216.8	98.45	PASS	70-125	36313.7	36551.8	99.35	PASS	70-125
N027459-008C	SAMP	1	51584.8	56216.8	91.76	PASS	70-125	32741.5	36551.8	89.58	PASS	70-125
N027459-008C	SAMP	5	45376.2	56216.8	80.72	PASS	70-125	30047.5	36551.8	82.21	PASS	70-125
N027459-009B	SAMP	1	40166.2	56216.8	71.45	PASS	70-125	24793.9	36551.8	67.83	NR!	70-125
N027459-009B	SAMP	5	46588.5	56216.8	82.87	PASS	70-125	30420.3	36551.8	83.23	PASS	70-125
N027459-010B	SAMP	1	42573.3	56216.8	75.73	PASS	70-125	25559.6	36551.8	69.93	NR!	70-125
N027459-010B	SAMP	5	41415.8	56216.8	73.67	PASS	70-125	26774.9	36551.8	73.25	PASS	70-125
N027459-011B	SAMP	1	41246.6	56216.8	73.37	PASS	70-125	25332.6	36551.8	69.31	NR!	70-125
CCV3	CCV	1	56348.3	56216.8	100.23	PASS	70-125	38431.7	36551.8	105.14	PASS	70-125
CCB3	CCB	1	56135.3	56216.8	99.86	PASS	70-125	38694.5	36551.8	105.86	PASS	70-125
N027459-011B	SAMP	5	47603.5	56216.8	84.68	PASS	70-125	31306.4	36551.8	85.65	PASS	70-125
N027459-012B	SAMP	1	47304.6	56216.8	84.15	PASS	70-125	30714.3	36551.8	84.03	PASS	70-125
N027459-012B	SAMP	5	49222.9	56216.8	87.56	PASS	70-125	33399.5	36551.8	91.38	PASS	70-125
N027459-013B	SAMP	1	40633.9	56216.8	72.28	PASS	70-125	23394.2	36551.8	64.003	NR!	70-125
N027459-013B	SAMP	5	51692.2	56216.8	91.95	PASS	70-125	32282.7	36551.8	88.32	PASS	70-125
N027459-014B	SAMP	1	43428.6	56216.8	77.25	PASS	70-125	25610.8	36551.8	70.067	PASS	70-125
N027459-014B	SAMP	5	57439.9	56216.8	102.18	PASS	70-125	36989.4	36551.8	101.2	PASS	70-125
N027459-015B	SAMP	1	57296.3	56216.8	101.92	PASS	70-125	34901.6	36551.8	95.49	PASS	70-125
N027459-016C	SAMP	1	56835.5	56216.8	101.1	PASS	70-125	35772.2	36551.8	97.87	PASS	70-125
N027459-016C	SAMP	10	63504.1	56216.8	112.96	PASS	70-125	42437.2	36551.8	116.1	PASS	70-125
CCV4	CCV	1	66870.6	56216.8	118.95	PASS	70-125	44731	36551.8	122.38	PASS	70-125
CCB4	CCB	1	60791.8	56216.8	108.14	PASS	70-125	41931.5	36551.8	114.72	PASS	70-125
N027459-017C	SAMP	1	47956.7	56216.8	85.31	PASS	70-125	29258.2	36551.8	80.046	PASS	70-125
N027459-017C	SAMP	5	54454.5	56216.8	96.87	PASS	70-125	36420.4	36551.8	99.64	PASS	70-125
N027459-018B	SAMP	1	34272.8	56216.8	60.97	NR!	70-125	18630.3	36551.8	50.97	NR!	70-125
N027459-018B	SAMP	5	49076.5	56216.8	87.3	PASS	70-125	29894.8	36551.8	81.79	PASS	70-125
N027459-019B	SAMP	1	47337.6	56216.8	84.21	PASS	70-125	26154.1	36551.8	71.55	PASS	70-125
N027459-019B	SAMP	5	53097.9	56216.8	94.45	PASS	70-125	32249.6	36551.8	88.23	PASS	70-125
N027459-017C	SAMP	10	58029.9	56216.8	103.23	PASS	70-125	37982	36551.8	103.91	PASS	70-125
N027459-018B	SAMP	25	53825.9	56216.8	95.75	PASS	70-125	34514	36551.8	94.42	PASS	70-125
N027459-010B	SAMP	5	52335.7	56216.8	93.096	PASS	70-125	32541.1	36551.8	89.027	PASS	70-125
N027459-006B	SAMP	50	55338.6	56216.8	98.44	PASS	70-125	36210	36551.8	99.065	PASS	70-125
CCV5	CCV	1	58760.3	56216.8	104.52	PASS	70-125	39427.6	36551.8	107.87	PASS	70-125
CCB5	CCB	1	55955	56216.8	99.53	PASS	70-125	38047.4	36551.8	104.09	PASS	70-125
LLCCV2	CCV2	1	55756.6	56216.8	99.18	PASS	70-125	38400.6	36551.8	105.06	PASS	70-125
ICSA3	ICSA	1	57311.7	56216.8	101.95	PASS	70-125	36363.6	36551.8	99.49	PASS	70-125
ICSAB3	ICSAB	1	47238.1	56216.8	84.028	PASS	70-125	31167.4	36551.8	85.27	PASS	70-125

INTERNAL STANDARD: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					6 Li (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	47582.5	47582.5	100	PASS	70-125	1109903.3	1109903.3	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	47587.1	47582.5	100.01	PASS	70-125	1120335.3	1109903.3	100.94	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	46090.5	47582.5	96.86	PASS	70-125	1074810.6	1109903.3	96.84	PASS	70-125
Std3-5/50 ppb	ICAL	1	45037.5	47582.5	94.65	PASS	70-125	1060892.9	1109903.3	95.58	PASS	70-125
Std4-10/100 ppb	ICAL	1	44288.8	47582.5	93.078	PASS	70-125	1036432.3	1109903.3	93.38	PASS	70-125
Std5-20/200 ppb	ICAL	1	42381.6	47582.5	89.07	PASS	70-125	1000387.4	1109903.3	90.13	PASS	70-125
Std6-40/400 ppb	ICAL	1	42818.1	47582.5	89.99	PASS	70-125	1004418.4	1109903.3	90.5	PASS	70-125
Std7-100/1000 ppb	ICAL	1	42088.6	47582.5	88.45	PASS	70-125	973587.9	1109903.3	87.72	PASS	70-125
Std8-200/2000 ppb	ICAL	1	41598.5	47582.5	87.42	PASS	70-125	964983.7	1109903.3	86.94	PASS	70-125
ICV	ICV	1	49849.2	47582.5	104.76	PASS	70-125	1245695.8	1109903.3	112.23	PASS	70-125
ICB	ICB	1	41518.1	47582.5	87.25	PASS	70-125	972861.6	1109903.3	87.65	PASS	70-125
LLICV	CCV1	1	43048.8	47582.5	90.47	PASS	70-125	1002429.4	1109903.3	90.32	PASS	70-125
ICSA1	ICSA	1	45586.7	47582.5	95.81	PASS	70-125	1257927.5	1109903.3	113.34	PASS	70-125
ICSAB1	ICSAB	1	41725.5	47582.5	87.69	PASS	70-125	1017366.3	1109903.3	91.66	PASS	70-125
LLICV	CCV1	1	40398.9	47582.5	84.9	PASS	70-125	1028119.9	1109903.3	92.63	PASS	70-125
MB-66021	MBLK	1	49996.3	47582.5	105.07	PASS	70-125	992551.4	1109903.3	89.43	PASS	70-125
LCS-66021	LCS	1	46637.5	47582.5	98.014	PASS	70-125	1179843.2	1109903.3	106.3	PASS	70-125
N027459-001C	SAMP	1	34710	47582.5	72.95	PASS	70-125	733141.2	1109903.3	66.055	NR!	70-125
N027459-001C	SAMP	5	43416.3	47582.5	91.24	PASS	70-125	1021815.6	1109903.3	92.063	PASS	70-125
N027459-001C	SAMP	25	48699.1	47582.5	102.35	PASS	70-125	1105486	1109903.3	99.6	PASS	70-125
N027459-001C-PS	PS	1	35889.2	47582.5	75.43	PASS	70-125	810748.8	1109903.3	73.047	PASS	70-125
N027459-001C-PS	PS	5	45864.1	47582.5	96.39	PASS	70-125	1069334.5	1109903.3	96.34	PASS	70-125
N027459-001C-MS	MS	1	39028.7	47582.5	82.023	PASS	70-125	893265.4	1109903.3	80.48	PASS	70-125
N027459-001C-MS	MS	5	49891.5	47582.5	104.85	PASS	70-125	1164224.9	1109903.3	104.89	PASS	70-125
N027459-001C-MSD	MSD	1	41646.1	47582.5	87.52	PASS	70-125	925624.7	1109903.3	83.4	PASS	70-125
CCV1	CCV	1	39179.1	47582.5	82.34	PASS	70-125	948564	1109903.3	85.46	PASS	70-125
CCB1	CCB	1	57410.5	47582.5	120.65	PASS	70-125	1332234.6	1109903.3	120.03	PASS	70-125
N027459-001C-MSD	MSD	5	49011.2	47582.5	103	PASS	70-125	1140242	1109903.3	102.73	PASS	70-125
N027459-002C	SAMP	1	36609.7	47582.5	76.94	PASS	70-125	802133.4	1109903.3	72.27	PASS	70-125
N027459-002C	SAMP	5	49359.9	47582.5	103.74	PASS	70-125	1170359.1	1109903.3	105.45	PASS	70-125
N027459-003B	SAMP	1	34576.3	47582.5	72.67	PASS	70-125	661905.5	1109903.3	59.64	NR!	70-125
N027459-003B	SAMP	5	45818.6	47582.5	96.29	PASS	70-125	1174195	1109903.3	105.79	PASS	70-125
N027459-004B	SAMP	1	33715.9	47582.5	70.86	PASS	70-125	645641.5	1109903.3	58.17	NR!	70-125
N027459-004B	SAMP	5	43908.9	47582.5	92.28	PASS	70-125	1100562.9	1109903.3	99.16	PASS	70-125
N027459-005B	SAMP	1	40724	47582.5	85.59	PASS	70-125	979669.8	1109903.3	88.27	PASS	70-125
N027459-001C	SAMP	1	27006.3	47582.5	56.76	NR!	70-125	693570.5	1109903.3	62.49	NR!	70-125
N027459-006B	SAMP	1	27962.5	47582.5	58.77	NR!	70-125	442761.2	1109903.3	39.89	NR!	70-125
CCV2	CCV	1	48381.6	47582.5	101.68	PASS	70-125	1243209.3	1109903.3	112.01	PASS	70-125
CCB2	CCB	1	37328.1	47582.5	78.45	PASS	70-125	924758.3	1109903.3	83.32	PASS	70-125
LLCCV1	CCV2	1	42291.5	47582.5	88.88	PASS	70-125	941271.9	1109903.3	84.81	PASS	70-125
ICSA2	ICSA	1	41543.8	47582.5	87.31	PASS	70-125	991300.2	1109903.3	89.31	PASS	70-125

INTERNAL STANDARD: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					6 Li (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
ICSAB2	ICSAB	1	37447.3	47582.5	78.7	PASS	70-125	964047.1	1109903.3	86.86	PASS	70-125
N027459-006B	SAMP	5	34939.4	47582.5	73.43	PASS	70-125	843097.8	1109903.3	75.96	PASS	70-125
N027459-007B	SAMP	1	39017.7	47582.5	82	PASS	70-125	939172.5	1109903.3	84.62	PASS	70-125
N027459-007B	SAMP	5	44726.7	47582.5	94	PASS	70-125	1054327.8	1109903.3	94.99	PASS	70-125
N027459-008C	SAMP	1	39718.2	47582.5	83.47	PASS	70-125	936147.4	1109903.3	84.34	PASS	70-125
N027459-008C	SAMP	5	34641	47582.5	72.8	PASS	70-125	864576.1	1109903.3	77.9	PASS	70-125
N027459-009B	SAMP	1	29021	47582.5	60.99	NR!	70-125	589577.9	1109903.3	53.12	NR!	70-125
N027459-009B	SAMP	5	36401.5	47582.5	76.5	PASS	70-125	833255	1109903.3	75.075	PASS	70-125
N027459-010B	SAMP	1	29919.3	47582.5	62.88	NR!	70-125	627583.9	1109903.3	56.54	NR!	70-125
N027459-010B	SAMP	5	30291.1	47582.5	63.66	NR!	70-125	795854.8	1109903.3	71.7	PASS	70-125
N027459-011B	SAMP	1	29182.5	47582.5	61.33	NR!	70-125	689453.5	1109903.3	62.12	NR!	70-125
CCV3	CCV	1	45299.3	47582.5	95.2	PASS	70-125	1030416.8	1109903.3	92.84	PASS	70-125
CCB3	CCB	1	44104.8	47582.5	92.69	PASS	70-125	1126488.3	1109903.3	101.49	PASS	70-125
N027459-011B	SAMP	5	36698.9	47582.5	77.13	PASS	70-125	868843.5	1109903.3	78.28	PASS	70-125
N027459-012B	SAMP	1	36557.3	47582.5	76.83	PASS	70-125	823873.6	1109903.3	74.23	PASS	70-125
N027459-012B	SAMP	5	40233.9	47582.5	84.56	PASS	70-125	890251.5	1109903.3	80.21	PASS	70-125
N027459-013B	SAMP	1	25391.6	47582.5	53.36	NR!	70-125	528315.6	1109903.3	47.6	NR!	70-125
N027459-013B	SAMP	5	35631.9	47582.5	74.88	PASS	70-125	897034.9	1109903.3	80.82	PASS	70-125
N027459-014B	SAMP	1	27698.8	47582.5	58.21	NR!	70-125	755825.7	1109903.3	68.098	NR!	70-125
N027459-014B	SAMP	5	42189.7	47582.5	88.67	PASS	70-125	1046109.6	1109903.3	94.25	PASS	70-125
N027459-015B	SAMP	1	38565.4	47582.5	81.05	PASS	70-125	967212.4	1109903.3	87.14	PASS	70-125
N027459-016C	SAMP	1	42444.9	47582.5	89.2	PASS	70-125	968967.9	1109903.3	87.3	PASS	70-125
N027459-016C	SAMP	10	50027.6	47582.5	105.14	PASS	70-125	1113052.7	1109903.3	100.28	PASS	70-125
CCV4	CCV	1	54226.5	47582.5	113.96	PASS	70-125	1157859.6	1109903.3	104.32	PASS	70-125
CCB4	CCB	1	48934.3	47582.5	102.84	PASS	70-125	1086441	1109903.3	97.89	PASS	70-125
N027459-017C	SAMP	1	32665.8	47582.5	68.65	NR!	70-125	793555.2	1109903.3	71.5	PASS	70-125
N027459-017C	SAMP	5	42392.8	47582.5	89.093	PASS	70-125	941735.4	1109903.3	84.85	PASS	70-125
N027459-018B	SAMP	1	19432.2	47582.5	40.84	NR!	70-125	348155	1109903.3	31.37	NR!	70-125
N027459-018B	SAMP	5	33656.7	47582.5	70.73	PASS	70-125	854500.6	1109903.3	76.99	PASS	70-125
N027459-019B	SAMP	1	29214.7	47582.5	61.4	NR!	70-125	541940	1109903.3	48.83	NR!	70-125
N027459-019B	SAMP	5	36789	47582.5	77.32	PASS	70-125	941787	1109903.3	84.85	PASS	70-125
N027459-017C	SAMP	10	44758	47582.5	94.064	PASS	70-125	1046278.5	1109903.3	94.27	PASS	70-125
N027459-018B	SAMP	25	39333.8	47582.5	82.66	PASS	70-125	968677.5	1109903.3	87.28	PASS	70-125
N027459-010B	SAMP	5	37996.3	47582.5	79.85	PASS	70-125	944055.5	1109903.3	85.057	PASS	70-125
N027459-006B	SAMP	50	41946	47582.5	88.15	PASS	70-125	983603.4	1109903.3	88.62	PASS	70-125
CCV5	CCV	1	46395.8	47582.5	97.51	PASS	70-125	1055323.4	1109903.3	95.082	PASS	70-125
CCB5	CCB	1	43027.8	47582.5	90.43	PASS	70-125	998284.3	1109903.3	89.94	PASS	70-125
LLCCV2	CCV2	1	44922.7	47582.5	94.41	PASS	70-125	1002586.4	1109903.3	90.33	PASS	70-125
ICSA3	ICSA	1	41844.8	47582.5	87.94	PASS	70-125	1039845.8	1109903.3	93.69	PASS	70-125
ICSAB3	ICSAB	1	34628.9	47582.5	72.78	PASS	70-125	859895.6	1109903.3	77.47	PASS	70-125

INTERNAL STANDARD: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	1176022.4	1176022.4	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	1196720.8	1176022.4	101.76	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	1156108.9	1176022.4	98.31	PASS	70-125
Std3-5/50 ppb	ICAL	1	1148873.7	1176022.4	97.69	PASS	70-125
Std4-10/100 ppb	ICAL	1	1113384.2	1176022.4	94.67	PASS	70-125
Std5-20/200 ppb	ICAL	1	1093444.9	1176022.4	92.98	PASS	70-125
Std6-40/400 ppb	ICAL	1	1105632.9	1176022.4	94.015	PASS	70-125
Std7-100/1000 ppb	ICAL	1	1070399.7	1176022.4	91.019	PASS	70-125
Std8-200/2000 ppb	ICAL	1	1061376	1176022.4	90.25	PASS	70-125
ICV	ICV	1	1362670.8	1176022.4	115.87	PASS	70-125
ICB	ICB	1	1062746.1	1176022.4	90.37	PASS	70-125
LLICV	CCV1	1	1093869.2	1176022.4	93.014	PASS	70-125
ICSA1	ICSA	1	1127787.3	1176022.4	95.9	PASS	70-125
ICSAB1	ICSAB	1	990308.3	1176022.4	84.21	PASS	70-125
LLICV	CCV1	1	1113766	1176022.4	94.71	PASS	70-125
MB-66021	MBLK	1	1126349.9	1176022.4	95.78	PASS	70-125
LCS-66021	LCS	1	1333518.3	1176022.4	113.39	PASS	70-125
N027459-001C	SAMP	1	772949.8	1176022.4	65.73	NR!	70-125
N027459-001C	SAMP	5	1001284.4	1176022.4	85.14	PASS	70-125
N027459-001C	SAMP	25	1120843.6	1176022.4	95.31	PASS	70-125
N027459-001C-PS	PS	1	826310.8	1176022.4	70.26	PASS	70-125
N027459-001C-PS	PS	5	1065993.3	1176022.4	90.64	PASS	70-125
N027459-001C-MS	MS	1	908939.2	1176022.4	77.29	PASS	70-125
N027459-001C-MS	MS	5	1145815.4	1176022.4	97.43	PASS	70-125
N027459-001C-MSD	MSD	1	939605.9	1176022.4	79.9	PASS	70-125
CCV1	CCV	1	1118907.4	1176022.4	95.14	PASS	70-125
CCB1	CCB	1	1412208.9	1176022.4	120.08	PASS	70-125
N027459-001C-MSD	MSD	5	1133971.7	1176022.4	96.42	PASS	70-125
N027459-002C	SAMP	1	860142.8	1176022.4	73.14	PASS	70-125
N027459-002C	SAMP	5	1128071.2	1176022.4	95.92	PASS	70-125
N027459-003B	SAMP	1	831006.2	1176022.4	70.66	PASS	70-125
N027459-003B	SAMP	5	1115351.1	1176022.4	94.84	PASS	70-125
N027459-004B	SAMP	1	815746.4	1176022.4	69.36	NR!	70-125
N027459-004B	SAMP	5	1068913.8	1176022.4	90.89	PASS	70-125
N027459-005B	SAMP	1	980659.2	1176022.4	83.39	PASS	70-125
N027459-001C	SAMP	1	767416.4	1176022.4	65.26	NR!	70-125
N027459-006B	SAMP	1	703600.7	1176022.4	59.83	NR!	70-125
CCV2	CCV	1	1225406.5	1176022.4	104.2	PASS	70-125
CCB2	CCB	1	1053210.9	1176022.4	89.56	PASS	70-125
LLCCV1	CCV2	1	1121023.5	1176022.4	95.32	PASS	70-125
ICSA2	ICSA	1	1055166.5	1176022.4	89.72	PASS	70-125

INTERNAL STANDARD: 171220B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
ICSAB2	ICSAB	1	922499.9	1176022.4	78.44	PASS	70-125
N027459-006B	SAMP	5	844837.7	1176022.4	71.84	PASS	70-125
N027459-007B	SAMP	1	943705.8	1176022.4	80.25	PASS	70-125
N027459-007B	SAMP	5	1064268	1176022.4	90.5	PASS	70-125
N027459-008C	SAMP	1	942711.9	1176022.4	80.16	PASS	70-125
N027459-008C	SAMP	5	963216.5	1176022.4	81.9	PASS	70-125
N027459-009B	SAMP	1	721785.1	1176022.4	61.38	NR!	70-125
N027459-009B	SAMP	5	901505.2	1176022.4	76.66	PASS	70-125
N027459-010B	SAMP	1	739668.1	1176022.4	62.9	NR!	70-125
N027459-010B	SAMP	5	853654.9	1176022.4	72.59	PASS	70-125
N027459-011B	SAMP	1	765863.6	1176022.4	65.12	NR!	70-125
CCV3	CCV	1	1241539.3	1176022.4	105.57	PASS	70-125
CCB3	CCB	1	1285012.9	1176022.4	109.27	PASS	70-125
N027459-011B	SAMP	5	965757.6	1176022.4	82.12	PASS	70-125
N027459-012B	SAMP	1	940679.1	1176022.4	79.99	PASS	70-125
N027459-012B	SAMP	5	1038614.1	1176022.4	88.32	PASS	70-125
N027459-013B	SAMP	1	686437.9	1176022.4	58.37	NR!	70-125
N027459-013B	SAMP	5	979867.4	1176022.4	83.32	PASS	70-125
N027459-014B	SAMP	1	799121.9	1176022.4	67.95	NR!	70-125
N027459-014B	SAMP	5	1117025.7	1176022.4	94.98	PASS	70-125
N027459-015B	SAMP	1	1051661.5	1176022.4	89.43	PASS	70-125
N027459-016C	SAMP	1	1059747.7	1176022.4	90.11	PASS	70-125
N027459-016C	SAMP	10	1314008.9	1176022.4	111.73	PASS	70-125
CCV4	CCV	1	1446523.1	1176022.4	123	PASS	70-125
CCB4	CCB	1	1375850.7	1176022.4	116.99	PASS	70-125
N027459-017C	SAMP	1	921565.7	1176022.4	78.36	PASS	70-125
N027459-017C	SAMP	5	1126201.1	1176022.4	95.76	PASS	70-125
N027459-018B	SAMP	1	546615.2	1176022.4	46.48	NR!	70-125
N027459-018B	SAMP	5	899714.6	1176022.4	76.5	PASS	70-125
N027459-019B	SAMP	1	757881.5	1176022.4	64.44	NR!	70-125
N027459-019B	SAMP	5	972302.6	1176022.4	82.68	PASS	70-125
N027459-017C	SAMP	10	1144228.2	1176022.4	97.3	PASS	70-125
N027459-018B	SAMP	25	1041609.5	1176022.4	88.57	PASS	70-125
N027459-010B	SAMP	5	986252.2	1176022.4	83.86	PASS	70-125
N027459-006B	SAMP	50	1098034.6	1176022.4	93.37	PASS	70-125
CCV5	CCV	1	1277030.3	1176022.4	108.59	PASS	70-125
CCB5	CCB	1	1203123.3	1176022.4	102.3	PASS	70-125
LLCCV2	CCV2	1	1268204.9	1176022.4	107.84	PASS	70-125
ICSA3	ICSA	1	1114011.7	1176022.4	94.73	PASS	70-125
ICSAB3	ICSAB	1	957094.9	1176022.4	81.38	PASS	70-125

INTERNAL STANDARD: 171222B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	37342.4	37342.4	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	37608.6	37342.4	100.71	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	36853.5	37342.4	98.69	PASS	70-125
Std3-5/50 ppb	ICAL	1	36961.6	37342.4	98.98	PASS	70-125
Std4-10/100 ppb	ICAL	1	36762.1	37342.4	98.45	PASS	70-125
Std5-20/200 ppb	ICAL	1	36767.9	37342.4	98.46	PASS	70-125
Std6-40/400 ppb	ICAL	1	36669.8	37342.4	98.2	PASS	70-125
Std7-100/1000 ppb	ICAL	1	35864.7	37342.4	96.043	PASS	70-125
Std8-200/2000 ppb	ICAL	1	35351.4	37342.4	94.67	PASS	70-125
ICV	ICV	1	35781.2	37342.4	95.82	PASS	70-125
ICB	ICB	1	35644.3	37342.4	95.45	PASS	70-125
LLICV	CCV1	1	35505	37342.4	95.08	PASS	70-125
ICSA1	ICSA	1	33737.9	37342.4	90.35	PASS	70-125
ICSAB1	ICSAB	1	27339.2	37342.4	73.21	PASS	70-125
LLICV	CCV1	1	42238.9	37342.4	113.11	PASS	70-125
MB-66021	MBLK	1	41505.8	37342.4	111.15	PASS	70-125
LCS-66021	LCS	1	40051.1	37342.4	107.25	PASS	70-125
N027459-001C	SAMP	1	29417.3	37342.4	78.78	PASS	70-125
N027459-001C	SAMP	5	37251.1	37342.4	99.76	PASS	70-125
CCV1	CCV	1	39386.1	37342.4	105.47	PASS	70-125
CCB1	CCB	1	38547.4	37342.4	103.23	PASS	70-125
N027459-001C-PS	PS	1	30071.9	37342.4	80.53	PASS	70-125
N027459-001C-MS	MS	1	30571.7	37342.4	81.87	PASS	70-125
N027459-001C-MSD	MSD	1	28943.1	37342.4	77.51	PASS	70-125
N027459-002C	SAMP	1	27877.9	37342.4	74.65	PASS	70-125
N027459-002C	SAMP	5	34590.7	37342.4	92.63	PASS	70-125
CCV2	CCV	1	42209.8	37342.4	113.04	PASS	70-125
CCB2	CCB	1	40292.8	37342.4	107.9	PASS	70-125
LLCCV1	CCV2	1	39662.4	37342.4	106.21	PASS	70-125
ICSA2	ICSA	1	33958.4	37342.4	90.94	PASS	70-125
ICSAB2	ICSAB	1	27498.5	37342.4	73.64	PASS	70-125

INTERNAL STANDARD: 180102A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	97601	97601	100	PASS	70-125	64510.3	64510.3	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	95478.6	97601	97.83	PASS	70-125	64317.3	64510.3	99.7	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	91705.4	97601	93.96	PASS	70-125	61794.4	64510.3	95.79	PASS	70-125
Std3-5/50 ppb	ICAL	1	88382.8	97601	90.56	PASS	70-125	59241.5	64510.3	91.83	PASS	70-125
Std4-10/100 ppb	ICAL	1	83270.6	97601	85.32	PASS	70-125	56410.7	64510.3	87.44	PASS	70-125
Std5-20/200 ppb	ICAL	1	83597.6	97601	85.65	PASS	70-125	56876.4	64510.3	88.17	PASS	70-125
Std6-40/400 ppb	ICAL	1	81659.2	97601	83.67	PASS	70-125	55791.6	64510.3	86.48	PASS	70-125
Std7-100/1000 ppb	ICAL	1	82037.4	97601	84.054	PASS	70-125	55113.9	64510.3	85.43	PASS	70-125
Std8-200/2000 ppb	ICAL	1	81224.8	97601	83.22	PASS	70-125	54277.8	64510.3	84.14	PASS	70-125
ICV	ICV	1	78565.8	97601	80.5	PASS	70-125	53608.8	64510.3	83.1	PASS	70-125
ICB	ICB	1	78338.4	97601	80.26	PASS	70-125	54102.9	64510.3	83.87	PASS	70-125
LLICV	CCV1	1	78671.3	97601	80.61	PASS	70-125	54180.7	64510.3	83.99	PASS	70-125
ICSA1	ICSA	1	88684.6	97601	90.86	PASS	70-125	57302.3	64510.3	88.83	PASS	70-125
ICSAB1	ICSAB	1	93332.9	97601	95.63	PASS	70-125	60409	64510.3	93.64	PASS	70-125
LLICV	CCV1	1	92620.4	97601	94.9	PASS	70-125	62823.6	64510.3	97.39	PASS	70-125
N027429-002B	SAMP	1	89336.2	97601	91.53	PASS	70-125	60062.4	64510.3	93.11	PASS	70-125
N027429-006B	SAMP	5	95387.2	97601	97.73	PASS	70-125	59196.6	64510.3	91.76	PASS	70-125
N027429-007B	SAMP	1	111481.2	97601	114.22	PASS	70-125	71484.7	64510.3	110.81	PASS	70-125
N027429-010B	SAMP	25	109637.8	97601	112.33	PASS	70-125	71052.9	64510.3	110.14	PASS	70-125
MB-66021	MBLK	1	105383.8	97601	107.97	PASS	70-125	70879	64510.3	109.87	PASS	70-125
LCS-66021	LCS	1	95674.3	97601	98.026	PASS	70-125	65780.7	64510.3	101.97	PASS	70-125
N027459-001C	SAMP	1	91455.4	97601	93.7	PASS	70-125	56009.2	64510.3	86.82	PASS	70-125
N027459-001C	SAMP	5	107620.2	97601	110.27	PASS	70-125	69933.3	64510.3	108.41	PASS	70-125
N027459-001C-PS	PS	1	104430.8	97601	107	PASS	70-125	62741.4	64510.3	97.26	PASS	70-125
N027459-001C-MS	MS	1	109691.7	97601	112.39	PASS	70-125	64530.3	64510.3	100.03	PASS	70-125
CCV1	CCV	1	120577.2	97601	123.54	PASS	70-125	78913	64510.3	122.33	PASS	70-125
CCB1	CCB	1	114360	97601	117.17	PASS	70-125	74452.1	64510.3	115.41	PASS	70-125
N027459-001C-MSD	MSD	1	103685.6	97601	106.23	PASS	70-125	61485.4	64510.3	95.31	PASS	70-125
N027459-001C	SAMP	1	112780.6	97601	115.55	PASS	70-125	65153.9	64510.3	101	PASS	70-125
N027459-002C	SAMP	1	106859.1	97601	109.49	PASS	70-125	61368.4	64510.3	95.13	PASS	70-125
N027459-003B	SAMP	1	95260.7	97601	97.6	PASS	70-125	52284.3	64510.3	81.048	PASS	70-125
N027459-004B	SAMP	1	85112.6	97601	87.2	PASS	70-125	46799	64510.3	72.55	PASS	70-125
N027459-005B	SAMP	1	92791.1	97601	95.072	PASS	70-125	56702.3	64510.3	87.9	PASS	70-125
N027459-006B	SAMP	5	113286.1	97601	116.07	PASS	70-125	70217	64510.3	108.85	PASS	70-125
N027459-007B	SAMP	1	98295.8	97601	100.71	PASS	70-125	63267.8	64510.3	98.074	PASS	70-125
N027459-008C	SAMP	1	98746	97601	101.17	PASS	70-125	62736.9	64510.3	97.25	PASS	70-125
N027459-009B	SAMP	5	96685.5	97601	99.062	PASS	70-125	62654.4	64510.3	97.12	PASS	70-125
CCV2	CCV	1	94821.5	97601	97.15	PASS	70-125	64861.7	64510.3	100.54	PASS	70-125
CCB2	CCB	1	85077.1	97601	87.17	PASS	70-125	59705.3	64510.3	92.55	PASS	70-125
N027459-010B	SAMP	5	82428.5	97601	84.45	PASS	70-125	54583.1	64510.3	84.61	PASS	70-125
N027459-011B	SAMP	5	82736.5	97601	84.77	PASS	70-125	55059.1	64510.3	85.35	PASS	70-125

INTERNAL STANDARD: 180102A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027459-012B	SAMP	1	86630.3	97601	88.76	PASS	70-125	58319.3	64510.3	90.4	PASS	70-125
N027459-013B	SAMP	5	82650.8	97601	84.68	PASS	70-125	54020	64510.3	83.74	PASS	70-125
N027459-014B	SAMP	5	84768.7	97601	86.85	PASS	70-125	56824.1	64510.3	88.085	PASS	70-125
N027459-015B	SAMP	1	89480.9	97601	91.68	PASS	70-125	55455.2	64510.3	85.96	PASS	70-125
N027459-016C	SAMP	1	90014.5	97601	92.23	PASS	70-125	58361.8	64510.3	90.47	PASS	70-125
N027459-017C	SAMP	5	87895.2	97601	90.056	PASS	70-125	59376.6	64510.3	92.042	PASS	70-125
N027459-018B	SAMP	5	79381.7	97601	81.33	PASS	70-125	50881.4	64510.3	78.87	PASS	70-125
N027459-019B	SAMP	5	93779.9	97601	96.085	PASS	70-125	58933.5	64510.3	91.36	PASS	70-125
CCV3	CCV	1	97096.4	97601	99.48	PASS	70-125	65459.4	64510.3	101.47	PASS	70-125
CCB3	CCB	1	87422.7	97601	89.57	PASS	70-125	60075.7	64510.3	93.13	PASS	70-125
N027459-004B	SAMP	1	73601.9	97601	75.41	PASS	70-125	41785.5	64510.3	64.77	NR!	70-125
N027459-006B	SAMP	5	89093.5	97601	91.28	PASS	70-125	55333.2	64510.3	85.77	PASS	70-125
N027459-017C	SAMP	5	98216.8	97601	100.63	PASS	70-125	65931.4	64510.3	102.2	PASS	70-125
N027459-004B	SAMP	5	93223.4	97601	95.51	PASS	70-125	58862.2	64510.3	91.24	PASS	70-125
N027459-017C	SAMP	5	91646.1	97601	93.9	PASS	70-125	62157.8	64510.3	96.35	PASS	70-125
CCV4	CCV	1	88426.7	97601	90.6	PASS	70-125	61642.6	64510.3	95.55	PASS	70-125
CCB4	CCB	1	84930.8	97601	87.018	PASS	70-125	59035.4	64510.3	91.51	PASS	70-125
LLCCV1	CCV2	1	83589.6	97601	85.64	PASS	70-125	58756.6	64510.3	91.081	PASS	70-125
ICSA2	ICSA	1	81431.3	97601	83.43	PASS	70-125	54632.1	64510.3	84.69	PASS	70-125
ICSAB2	ICSAB	1	83455.7	97601	85.51	PASS	70-125	55178.5	64510.3	85.53	PASS	70-125

INTERNAL STANDARD: 180102A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	77176.8	77176.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	76970.4	77176.8	99.73	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	74440	77176.8	96.45	PASS	70-125
Std3-5/50 ppb	ICAL	1	72038	77176.8	93.34	PASS	70-125
Std4-10/100 ppb	ICAL	1	69455.8	77176.8	90	PASS	70-125
Std5-20/200 ppb	ICAL	1	68255.5	77176.8	88.44	PASS	70-125
Std6-40/400 ppb	ICAL	1	67576	77176.8	87.56	PASS	70-125
Std7-100/1000 ppb	ICAL	1	65964.8	77176.8	85.47	PASS	70-125
Std8-200/2000 ppb	ICAL	1	65749.7	77176.8	85.19	PASS	70-125
ICV	ICV	1	64535.8	77176.8	83.62	PASS	70-125
ICB	ICB	1	65777.7	77176.8	85.23	PASS	70-125
LLICV	CCV1	1	65630.3	77176.8	85.039	PASS	70-125
ICSA1	ICSA	1	66550.7	77176.8	86.23	PASS	70-125
ICSAB1	ICSAB	1	70821.8	77176.8	91.77	PASS	70-125
LLICV	CCV1	1	78590.5	77176.8	101.83	PASS	70-125
N027429-002B	SAMP	1	66766.8	77176.8	86.51	PASS	70-125
N027429-006B	SAMP	5	66721.1	77176.8	86.45	PASS	70-125
N027429-007B	SAMP	1	82598.8	77176.8	107.03	PASS	70-125
N027429-010B	SAMP	25	85824.1	77176.8	111.2	PASS	70-125
MB-66021	MBLK	1	84242.8	77176.8	109.16	PASS	70-125
LCS-66021	LCS	1	79694.7	77176.8	103.26	PASS	70-125
N027459-001C	SAMP	1	60698.1	77176.8	78.65	PASS	70-125
N027459-001C	SAMP	5	79339.2	77176.8	102.8	PASS	70-125
N027459-001C-PS	PS	1	67632.8	77176.8	87.63	PASS	70-125
N027459-001C-MS	MS	1	69712.6	77176.8	90.33	PASS	70-125
CCV1	CCV	1	95066.3	77176.8	123.18	PASS	70-125
CCB1	CCB	1	88750.3	77176.8	115	PASS	70-125
N027459-001C-MSD	MSD	1	68645.8	77176.8	88.95	PASS	70-125
N027459-001C	SAMP	1	72827.3	77176.8	94.36	PASS	70-125
N027459-002C	SAMP	1	68828.6	77176.8	89.18	PASS	70-125
N027459-003B	SAMP	1	58977.1	77176.8	76.42	PASS	70-125
N027459-004B	SAMP	1	53317.8	77176.8	69.085	NR!	70-125
N027459-005B	SAMP	1	64601.9	77176.8	83.71	PASS	70-125
N027459-006B	SAMP	5	80541.5	77176.8	104.36	PASS	70-125
N027459-007B	SAMP	1	72695.4	77176.8	94.19	PASS	70-125
N027459-008C	SAMP	1	73428.6	77176.8	95.14	PASS	70-125
N027459-009B	SAMP	5	73061.3	77176.8	94.67	PASS	70-125
CCV2	CCV	1	78234.1	77176.8	101.37	PASS	70-125
CCB2	CCB	1	73157.4	77176.8	94.79	PASS	70-125
N027459-010B	SAMP	5	63463	77176.8	82.23	PASS	70-125
N027459-011B	SAMP	5	64751.4	77176.8	83.9	PASS	70-125

INTERNAL STANDARD: 180102A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria
N027459-012B	SAMP	1	66152.3	77176.8	85.72	PASS	70-125
N027459-013B	SAMP	5	61633.5	77176.8	79.86	PASS	70-125
N027459-014B	SAMP	5	65274.3	77176.8	84.58	PASS	70-125
N027459-015B	SAMP	1	61075.1	77176.8	79.14	PASS	70-125
N027459-016C	SAMP	1	66299.7	77176.8	85.91	PASS	70-125
N027459-017C	SAMP	5	70831.8	77176.8	91.78	PASS	70-125
N027459-018B	SAMP	5	56714.9	77176.8	73.49	PASS	70-125
N027459-019B	SAMP	5	65658.2	77176.8	85.075	PASS	70-125
CCV3	CCV	1	79403.1	77176.8	102.88	PASS	70-125
CCB3	CCB	1	71288.3	77176.8	92.37	PASS	70-125
N027459-004B	SAMP	1	44036.9	77176.8	57.06	NR!	70-125
N027459-006B	SAMP	5	63168.4	77176.8	81.85	PASS	70-125
N027459-017C	SAMP	5	74988.1	77176.8	97.16	PASS	70-125
N027459-004B	SAMP	5	66770.2	77176.8	86.52	PASS	70-125
N027459-017C	SAMP	5	72448.8	77176.8	93.87	PASS	70-125
CCV4	CCV	1	73060.3	77176.8	94.67	PASS	70-125
CCB4	CCB	1	70106.4	77176.8	90.84	PASS	70-125
LLCCV1	CCV2	1	69260.8	77176.8	89.74	PASS	70-125
ICSA2	ICSA	1	64378.7	77176.8	83.42	PASS	70-125
ICSAB2	ICSAB	1	63374.6	77176.8	82.12	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N027459
Test Method: EPA 6020
Analysis Date: 12/20/2017, 12/22/2017 & 1/2/2017

Matrix: Groundwater
Batch No.: 66021

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to several analytes. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027459-001C DT 5X	Antimony	ug/L	0	NA	0.073158	100.00%	10
N027459-001C DT 5X	Arsenic	ug/L	1.029616	NA	0.994482	3.53%	10
N027459-001C DT 5X	Barium	ug/L	72.3568	PASS	70.12253	3.19%	10
N027459-001C DT 25X	Beryllium	ug/L	0	NA	0		10
N027459-001C DT 5X	Cadmium	ug/L	0	NA	0		10
N027459-001C DT 5X	Chromium	ug/L	21.05338	NA	20.04724	5.02%	10
N027459-001C DT 5X	Cobalt	ug/L	0	NA	0		10
N027459-001C DT 5X	Copper	ug/L	0	NA	0		10
N027459-001C DT 25X	Lead	ug/L	0	NA	0		10
N027459-001C DT 5X	Manganese	ug/L	0	NA	0	8.0%	10
N027459-001C DT 25X	Molybdenum	ug/L	8.946111	NA	8.946111	0.00%	10
N027459-001C DT 5X	Nickel	ug/L	0	NA	0		10
N027459-001C DT 5X	Selenium	ug/L	1.186349	NA	1.105856	7.28%	10
N027459-001C DT 25X	Silver	ug/L	0	NA	0		10
N027459-001C DT 25X	Thallium	ug/L	0	NA	0		10
N027459-001C DT 5X	Vanadium	ug/L	2.626404	NA	2.690669	2.39%	10
N027459-001C DT 5X	Zinc	ug/L	0	NA	0		10

8.234

Note: NA - Not applicable

Mary 01/03/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027459-001C-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121008
Client ID:	ZZZZZZ	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876449

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.769	0.50	10.00	0.07316	97.0	80	120				
Arsenic	11.028	0.10	10.00	0.9945	100	80	120				
Barium	79.798	1.0	10.00	70.12	96.8	80	120				
Cadmium	8.981	0.50	10.00	0	89.8	80	120				
Cobalt	8.580	0.50	10.00	0	85.8	80	120				
Manganese	91.390	0.50	100.0	0	91.4	80	120				
Nickel	8.744	1.0	10.00	0	87.4	80	120				
Vanadium	12.969	1.0	10.00	2.691	103	80	120				

Sample ID	N027459-001C-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121008
Client ID:	ZZZZZZ	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876450

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	10.513	2.5	10.00	0	105	80	120				
Lead	10.103	5.0	10.00	0	101	80	120				
Molybdenum	20.286	2.5	10.00	8.946	113	80	120				
Silver	10.727	2.5	10.00	0	107	80	120				
Thallium	9.932	2.5	10.00	0	99.3	80	120				

Sample ID	N027459-001C-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121154
Client ID:	ZZZZZZ	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2881334

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	4.338	1.0	10.00	0	43.4	80	120				S
Zinc	96.870	10	100.0	0	96.9	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027459-001C-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121160
Client ID:	ZZZZZZ	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2881592

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.785	0.50	10.00	1.106	86.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N027459-001C-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121008
Client ID:	ZZZZZZ	Batch ID:	66021	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	12/21/2017	SeqNo:	2876377

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	29.641	1.0	10.00	20.05	95.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

EPA 7470A
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 65990
ASSET #: N027459

Instrument ID: AA-01
Analyst: MG
Date Analyzed: 12/11/2017

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[X] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)			X			
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.			X			
7. Are ICSA and AB within ± 20% of expected value?			X			
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)			X			
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).			X			
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: _____

2nd Level Reviewer 12/26/2017 Date: _____

SAMPLE CALCULATION

SAMPLE CALCULATION

WORKORDER NO: N027459
TEST METHOD: EPA 7470
MATRIX: Groundwater

FORMULA:

Calculate the Mercury concentration in ug/L in the sample is as follows:

Mercury, ug/L = A * DF

where:
A = ug/L, instrument calculated concentration
DF = Dilution factor

For Sample **N027459-001C** , the concentration in ug/L is calculated as follows:

Mercury, ug/L = 0.07431 * 1

Mercury, ug/L = 0.07431

Reporting results in two significant figures,

Mercury, ug/L = 0.074

Since reporting limit is 0.20. ug/L,

Mercury, ug/L = ND

% RSD SUMMARY

RSD SUMMARY: 171211WB

Instrument ID: AA-01

Sample Name	Type	DF	Concentration	RSD	Criteria	Comment
Calibration Zero	IBLK	1	0	4.047	20	PASS
Standard #1	ICAL	1	0.2	0.5	20	PASS
Standard #2	ICAL	1	1	1.11	20	PASS
Standard #3	ICAL	1	5	0.68	20	PASS
Standard #4	ICAL	1	10	1.36	20	PASS
Standard #5	ICAL	1	20	1.55	20	PASS
ICV	ICV	1	10.05613	0.69	20	PASS
ICB	ICB	1	0.05487	13.74	20	PASS
CCV1	CCV	1	10.13561	0.73	20	PASS
CCB1	CCB	1	0.04903	14.032	20	PASS
CCV2	CCV	1	10.19938	0.53	20	PASS
CCB2	CCB	1	0.10054	5.31	20	PASS
CCV3	CCV	1	10.28027	1.11	20	PASS
CCB3	CCB	1	0.11818	5.19	20	PASS
CCV4	CCV	1	10.66566	0.41	20	PASS
CCB4	CCB	1	0.08055	9.32	20	PASS
MB-65990	MBLK	1	0.07716	8.28	20	PASS
LCS-65990	LCS	1	4.93351	1.2	20	PASS
N027437-002BMS	MS	1	5.16498	0.67	20	PASS
N027437-002BMSD	MSD	1	5.1615	0.73	20	PASS
N027437-002B	SAMP	1	0.1394	5.11	20	PASS
N027437-001B	SAMP	1	0.06796	5.9	20	PASS
N027437-003D	SAMP	1	0.06229	29.39	20	<PQL
N027437-004B	SAMP	1	0.05174	27.87	20	<PQL
N027437-005B	SAMP	1	0.03881	12.16	20	PASS
N027459-001C	SAMP	1	0.07431	6.37	20	PASS
CCV5	CCV	1	10.44474	0.39	20	PASS
CCB5	CCB	1	0.1132	6.63	20	PASS
N027459-002C	SAMP	1	0.0616	16.88	20	PASS
N027467-001A	SAMP	1	2.00084	3.1	20	PASS
N027467-002A	SAMP	1	0.21006	4.24	20	PASS
N027467-003A	SAMP	1	0.33091	2.04	20	PASS
N027467-004A	SAMP	1	0.39423	0.16	20	PASS
N027467-005A	SAMP	1	0.41588	0.3	20	PASS
N027467-006A	SAMP	1	0.44874	3.84	20	PASS
N027467-007A	SAMP	1	0.4324	1.44	20	PASS
N027467-008A	SAMP	1	0.24217	2.16	20	PASS
N027467-009A	SAMP	1	0.2521	3.078	20	PASS
CCV6	CCV	1	10.42052	0.21	20	PASS
CCB6	CCB	1	0.08363	8.27	20	PASS
N027467-010A	SAMP	1	0.26326	2.72	20	PASS
N027467-012A	SAMP	1	0.229	4.76	20	PASS

RSD SUMMARY: 171211WB

Instrument ID: AA-01

Sample Name	Type	DF	Concentration	RSD	Criteria	Comment
N027467-013A	SAMP	1	0.3631	3.52	20	PASS
N027467-014A	SAMP	1	0.28804	0.4	20	PASS
CCV7	CCV	1	10.60023	0.74	20	PASS
CCB7	CCB	1	0.08998	4.96	20	PASS

ANALYSIS RUN LOG

INJECTION LOG: 171211WB

Instrument ID: AA-01

Sample ID	Type	DF	Date	Time	Comments
Calibration Zero	IBLK	1	12/11/2017	13:44:34	Reported
Standard #1	ICAL	1	12/11/2017	13:47:15	Reported
Standard #2	ICAL	1	12/11/2017	13:49:57	Reported
Standard #3	ICAL	1	12/11/2017	13:52:40	Reported
Standard #4	ICAL	1	12/11/2017	13:55:24	Reported
Standard #5	ICAL	1	12/11/2017	13:58:08	Reported
ICV	ICV	1	12/11/2017	14:00:51	Reported
ICB	ICB	1	12/11/2017	14:03:32	Reported
MB-65987	MBLK	1	12/11/2017	14:06:14	Reported
LCS-65987	LCS	1	12/11/2017	14:08:57	Reported
LCSD-65987	LCSD	1	12/11/2017	14:11:41	Reported
N027398-001A	SAMP	1	12/11/2017	14:14:24	Reported
N027400-001A	SAMP	1	12/11/2017	14:17:06	Reported
N027400-002A	SAMP	1	12/11/2017	14:19:48	Reported
N027400-003A	SAMP	1	12/11/2017	14:22:31	Reported
N027400-004A	SAMP	1	12/11/2017	14:25:14	Reported
N027400-005A	SAMP	1	12/11/2017	14:27:58	Reported
N027400-006A	SAMP	1	12/11/2017	14:30:43	Reported
CCV1	CCV	1	12/11/2017	14:33:26	Reported
CCB1	CCB	1	12/11/2017	14:36:08	Reported
N027400-007A	SAMP	1	12/11/2017	14:38:50	Reported
N027400-008A	SAMP	1	12/11/2017	14:41:33	Reported
N027401-001A	SAMP	1	12/11/2017	14:44:15	Reported
N027401-003A	SAMP	1	12/11/2017	14:46:59	Reported
N027401-004A	SAMP	1	12/11/2017	14:49:43	Reported
N027401-006A	SAMP	1	12/11/2017	14:52:27	Reported
N027401-007A	SAMP	1	12/11/2017	14:55:13	Reported
N027401-008A	SAMP	1	12/11/2017	14:57:57	Reported
N027401-009A	SAMP	1	12/11/2017	15:00:40	Reported
N027401-011A	SAMP	1	12/11/2017	15:03:24	Reported
CCV2	CCV	1	12/11/2017	15:06:07	Reported
CCB2	CCB	1	12/11/2017	15:08:49	Reported
MB-65989	MBLK	1	12/11/2017	15:11:32	Reported
LCS-65989	LCS	1	12/11/2017	15:14:17	Reported
N027437-002AMS	MS	1	12/11/2017	15:17:03	Reported
N027437-002AMSD	MSD	1	12/11/2017	15:19:49	Reported
N027437-002A	SAMP	1	12/11/2017	15:22:34	Reported
N027401-012A	SAMP	1	12/11/2017	15:25:17	Reported
N027401-013A	SAMP	1	12/11/2017	15:28:02	Reported
N027401-014A	SAMP	1	12/11/2017	15:30:46	Reported
N027401-015A	SAMP	1	12/11/2017	15:33:32	Reported
N027401-016A	SAMP	1	12/11/2017	15:36:18	Reported

INJECTION LOG: 171211WB

Instrument ID: AA-01

Sample ID	Type	DF	Date	Time	Comments
CCV3	CCV	1	12/11/2017	15:39:02	Reported
CCB3	CCB	1	12/11/2017	15:41:44	Reported
N027401-017A	SAMP	1	12/11/2017	15:44:29	Reported
N027437-001A	SAMP	1	12/11/2017	15:47:14	Reported
N027437-003C	SAMP	1	12/11/2017	15:49:58	Reported
N027437-004A	SAMP	1	12/11/2017	15:52:43	Reported
N027437-005A	SAMP	1	12/11/2017	15:55:29	Reported
N027412-001A	SAMP	1	12/11/2017	15:58:15	Reported
N027413-001A	SAMP	1	12/11/2017	16:01:01	Reported
N027414-001A	SAMP	1	12/11/2017	16:03:49	Reported
N027416-001A	SAMP	1	12/11/2017	16:06:35	Reported
N027417-001A	SAMP	1	12/11/2017	16:09:20	Reported
CCV4	CCV	1	12/11/2017	16:12:04	Reported
CCB4	CCB	1	12/11/2017	16:14:46	Reported
MB-65990	MBLK	1	12/11/2017	16:17:30	Reported
LCS-65990	LCS	1	12/11/2017	16:20:17	Reported
N027437-002BMS	MS	1	12/11/2017	16:23:03	Reported
N027437-002BMSD	MSD	1	12/11/2017	16:25:51	Reported
N027437-002B	SAMP	1	12/11/2017	16:28:39	Reported
N027437-001B	SAMP	1	12/11/2017	16:31:26	Reported
N027437-003D	SAMP	1	12/11/2017	16:34:12	Reported
N027437-004B	SAMP	1	12/11/2017	16:36:58	Reported
N027437-005B	SAMP	1	12/11/2017	16:39:45	Reported
N027459-001C	SAMP	1	12/11/2017	16:42:33	Reported
CCV5	CCV	1	12/11/2017	16:45:17	Reported
CCB5	CCB	1	12/11/2017	16:47:59	Reported
N027459-002C	SAMP	1	12/11/2017	16:50:45	Reported
N027467-001A	SAMP	1	12/11/2017	16:53:34	Reported
N027467-002A	SAMP	1	12/11/2017	16:56:21	Reported
N027467-003A	SAMP	1	12/11/2017	16:59:07	Reported
N027467-004A	SAMP	1	12/11/2017	17:01:54	Reported
N027467-005A	SAMP	1	12/11/2017	17:04:42	Reported
N027467-006A	SAMP	1	12/11/2017	17:07:30	Reported
N027467-007A	SAMP	1	12/11/2017	17:10:19	Reported
N027467-008A	SAMP	1	12/11/2017	17:13:08	Reported
N027467-009A	SAMP	1	12/11/2017	17:15:56	Reported
CCV6	CCV	1	12/11/2017	17:18:40	Reported
CCB6	CCB	1	12/11/2017	17:21:23	Reported
N027467-010A	SAMP	1	12/11/2017	17:24:08	Reported
N027467-012A	SAMP	1	12/11/2017	17:26:56	Reported
N027467-013A	SAMP	1	12/11/2017	17:29:44	Reported
N027467-014A	SAMP	1	12/11/2017	17:32:33	Reported

INJECTION LOG: 171211WB

Instrument ID: AA-01

Sample ID	Type	DF	Date	Time	Comments
CCV7	CCV	1	12/11/2017	17:35:19	Reported
CCB7	CCB	1	12/11/2017	17:38:01	Reported

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/11/2017 7:48:20**
Prep End Date: **12/11/2017 11:30:0**
Prep Batch **65990** Prep Code: **7470_PR_DIS**

Reviewed/ Date: 12/26/2017
Initials/ Date: for MG
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-1-31**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-65990	Aqueous		25	☐	0	0	50	2.000		
MB-65990	Aqueous		25	☐	0	0	50	2.000		
N027437-001B	Water	<2	25	☐	0	0	50	2.000		
N027437-002B	Water	<2	25	☐	0	0	50	2.000		
N027437-002BMS	Water	<2	25	☐	0	0	50	2.000		
N027437-002BMS	Water	<2	25	☐	0	0	50	2.000		
N027437-003D	Water	<2	25	☐	0	0	50	2.000		
N027437-004B	Water	<2	25	☐	0	0	50	2.000		
N027437-005B	Water	<2	25	☐	0	0	50	2.000		
N027459-001C	Groundwater	<2	25	☐	0	0	50	2.000		
N027459-002C	Groundwater	<2	25	☐	0	0	50	2.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8541	Potassium Persulfate
8755	POTASSIUM PERMANGANATE
9306	SODIUM CHLORIDE
9307	HYDROXYGLAMINE HCl
9465	sulfuric acid
9601	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171211	500 ppb Hg ICAL/CCV	ICAL/CCV	0.25
2MWST-171211	500 ppb Hg ICV/LCS/LCSD/MS/MSD	ICV/LCS/MS/M	0.25

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 171211WB

Instrument ID: AA-01

	Stock	Working
Standard Concentration:	1,000 PPM	500 PPB
ICAL Standard:	2MSST-160906C	2MWST-171211A

Comments:

Calibration Acceptance Criteria: > 0.995 Correlation

Sample ID	Date	Time	Concentration	Units	Ave Absorbance	Comments	R
Calibration Zero	12/11/2017	13:44:34	0	PPB	37.2563	Reported	
Standard #1	12/11/2017	13:47:15	0.2	PPB	150.29569	Reported	
Standard #2	12/11/2017	13:49:57	1	PPB	507.39666	Reported	
Standard #3	12/11/2017	13:52:40	5	PPB	2420.11494	Reported	
Standard #4	12/11/2017	13:55:24	10	PPB	4992.75762	Reported	
Standard #5	12/11/2017	13:58:08	20	PPB	9886.94199	Reported	1.000

* Please note that the instrument printout for the 'Average Absorbance' were represented in three significant figures. The exact values are represented in the ICAL Summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID **ICV**	SampType: **ICV**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120738**
Client ID: **ICV**	Batch ID: **R120738**	TestNo: **EPA 7470A**		Analysis Date: **12/11/2017**	SeqNo: **2863399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.056	0.20	10.00	0	101	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120738**
Client ID: **CCV**	Batch ID: **R120738**	TestNo: **EPA 7470A**		Analysis Date: **12/11/2017**	SeqNo: **2863412**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.136	0.20	10.00	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120738**
Client ID: **CCV**	Batch ID: **R120738**	TestNo: **EPA 7470A**		Analysis Date: **12/11/2017**	SeqNo: **2863438**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.199	0.20	10.00	0	102	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120738**
Client ID: **CCV**	Batch ID: **R120738**	TestNo: **EPA 7470A**		Analysis Date: **12/11/2017**	SeqNo: **2863450**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.280	0.20	10.00	0	103	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120738**
Client ID: **CCV**	Batch ID: **R120738**	TestNo: **EPA 7470A**		Analysis Date: **12/11/2017**	SeqNo: **2863462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.666	0.20	10.00	0	107	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID	CCV5	SampType:	CCV	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120738
Client ID:	CCV	Batch ID:	R120738	TestNo:	EPA 7470A			Analysis Date:	12/11/2017	SeqNo:	2863474

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.445	0.20	10.00	0	104	90	110				

Sample ID	CCV6	SampType:	CCV	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120738
Client ID:	CCV	Batch ID:	R120738	TestNo:	EPA 7470A			Analysis Date:	12/11/2017	SeqNo:	2863486

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.421	0.20	10.00	0	104	90	110				

Sample ID	CCV7	SampType:	CCV	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120738
Client ID:	CCV	Batch ID:	R120738	TestNo:	EPA 7470A			Analysis Date:	12/11/2017	SeqNo:	2863492

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.600	0.20	10.00	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID **ICB**	SampType: **ICB**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120738**
Client ID: **ICB**	Batch ID: **R120738**	TestNo: **EPA 7470A**		Analysis Date: **12/11/2017**	SeqNo: **2863400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.055	0.20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120738**
Client ID: **CCB**	Batch ID: **R120738**	TestNo: **EPA 7470A**		Analysis Date: **12/11/2017**	SeqNo: **2863414**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.049	0.20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120738**
Client ID: **CCB**	Batch ID: **R120738**	TestNo: **EPA 7470A**		Analysis Date: **12/11/2017**	SeqNo: **2863439**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.101	0.20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120738**
Client ID: **CCB**	Batch ID: **R120738**	TestNo: **EPA 7470A**		Analysis Date: **12/11/2017**	SeqNo: **2863451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.118	0.20									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120738**
Client ID: **CCB**	Batch ID: **R120738**	TestNo: **EPA 7470A**		Analysis Date: **12/11/2017**	SeqNo: **2863463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.081	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027459
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID	CCB5	SampType:	CCB	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120738
Client ID:	CCB	Batch ID:	R120738	TestNo:	EPA 7470A			Analysis Date:	12/11/2017	SeqNo:	2863475

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.113	0.20									

Sample ID	CCB6	SampType:	CCB	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120738
Client ID:	CCB	Batch ID:	R120738	TestNo:	EPA 7470A			Analysis Date:	12/11/2017	SeqNo:	2863487

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.084	0.20									

Sample ID	CCB7	SampType:	CCB	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120738
Client ID:	CCB	Batch ID:	R120738	TestNo:	EPA 7470A			Analysis Date:	12/11/2017	SeqNo:	2863493

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.090	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limits

Method Name:	Mercury
Method Number:	EPA Method 7470/245.1
Date of Analysis:	4/5/2016
Analyst:	Claire Ignacio/ Amy Mata
Matrix:	Water
Spike Concentration:	0.2 ug/L

Compound	#1	#2	#3	#4	#5	#6	#7	SD	MDL	LOD	PQL
Mercury, ug/L	0.29	0.30	0.29	0.24	0.30	0.24	0.30	0.028	0.0870	0.10	0.20

LOD: **0.10 ug/L**
LOQ: **0.20 ug/L**

LOD Verification @ 0.10 ug/L

Spike Amount: ug/L	0.100
Actual Amount: ug/L	0.130
% Recovery:	**130%**

LOQ Verification @ 0.20 ug/L

Spike Amount: ug/L	0.200
Actual Amount: ug/L	0.210
% Recovery:	**105%**

January 04, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027485

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 11, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburdy for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027485

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Subcontracted Analyses:

Oxygen/Deuterium was subcontracted to Zymax- Pittsburg,PA.

Analytical Comments for EPA 300.0:

Dilution was necessary for most of the samples due to precipitation upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N027485-001B-MS1 and N027485-001B-MSD1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N027485-002B-MS2 and N027485-002B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N027485-001B-MS and N027485-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary on some analytes for most of the samples due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

ASSET Laboratories

Date: *04-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027485
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027485-001A	MW-70-105-Q417	Groundwater	12/11/2017 2:58:00 PM	12/11/2017	1/4/2018
N027485-001B	MW-70-105-Q417	Groundwater	12/11/2017 2:58:00 PM	12/11/2017	1/4/2018
N027485-001C	MW-70-105-Q417	Groundwater	12/11/2017 2:58:00 PM	12/11/2017	1/4/2018
N027485-001D	MW-70-105-Q417	Groundwater	12/11/2017 2:58:00 PM	12/11/2017	1/4/2018
N027485-002A	MW-70BR-225-3V-Q417	Groundwater	12/11/2017 2:19:00 PM	12/11/2017	1/4/2018
N027485-002B	MW-70BR-225-3V-Q417	Groundwater	12/11/2017 2:19:00 PM	12/11/2017	1/4/2018
N027485-002C	MW-70BR-225-3V-Q417	Groundwater	12/11/2017 2:19:00 PM	12/11/2017	1/4/2018
N027485-002D	MW-70BR-225-3V-Q417	Groundwater	12/11/2017 2:19:00 PM	12/11/2017	1/4/2018
N027485-003A	MW-70BR-225-LF-Q417	Groundwater	12/11/2017 12:52:00 PM	12/11/2017	1/4/2018
N027485-003B	MW-70BR-225-LF-Q417	Groundwater	12/11/2017 12:52:00 PM	12/11/2017	1/4/2018
N027485-003C	MW-70BR-225-LF-Q417	Groundwater	12/11/2017 12:52:00 PM	12/11/2017	1/4/2018
N027485-003D	MW-70BR-225-LF-Q417	Groundwater	12/11/2017 12:52:00 PM	12/11/2017	1/4/2018
N027485-004A	MW-51-Q417	Groundwater	12/11/2017 2:20:00 PM	12/11/2017	1/4/2018
N027485-004B	MW-51-Q417	Groundwater	12/11/2017 2:20:00 PM	12/11/2017	1/4/2018
N027485-004C	MW-51-Q417	Groundwater	12/11/2017 2:20:00 PM	12/11/2017	1/4/2018
N027485-004D	MW-51-Q417	Groundwater	12/11/2017 2:20:00 PM	12/11/2017	1/4/2018
N027485-005A	MW-57-185-3V-Q417	Groundwater	12/11/2017 3:00:00 PM	12/11/2017	1/4/2018
N027485-005B	MW-57-185-3V-Q417	Groundwater	12/11/2017 3:00:00 PM	12/11/2017	1/4/2018
N027485-005C	MW-57-185-3V-Q417	Groundwater	12/11/2017 3:00:00 PM	12/11/2017	1/4/2018
N027485-005D	MW-57-185-3V-Q417	Groundwater	12/11/2017 3:00:00 PM	12/11/2017	1/4/2018
N027485-006A	MW-57-185-LF_D-Q417	Groundwater	12/11/2017 1:21:00 PM	12/11/2017	1/4/2018
N027485-006B	MW-57-185-LF_D-Q417	Groundwater	12/11/2017 1:21:00 PM	12/11/2017	1/4/2018
N027485-006C	MW-57-185-LF_D-Q417	Groundwater	12/11/2017 1:21:00 PM	12/11/2017	1/4/2018
N027485-006D	MW-57-185-LF_D-Q417	Groundwater	12/11/2017 1:21:00 PM	12/11/2017	1/4/2018
N027485-007A	MW-57-185-LF_S-Q417	Groundwater	12/11/2017 12:51:00 PM	12/11/2017	1/4/2018
N027485-007B	MW-57-185-LF_S-Q417	Groundwater	12/11/2017 12:51:00 PM	12/11/2017	1/4/2018
N027485-007C	MW-57-185-LF_S-Q417	Groundwater	12/11/2017 12:51:00 PM	12/11/2017	1/4/2018
N027485-007D	MW-57-185-LF_S-Q417	Groundwater	12/11/2017 12:51:00 PM	12/11/2017	1/4/2018
N027485-008A	MW-57-070-Q417	Groundwater	12/11/2017 1:00:00 PM	12/11/2017	1/4/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027485
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027485-008B	MW-57-070-Q417	Groundwater	12/11/2017 1:00:00 PM	12/11/2017	1/4/2018
N027485-008C	MW-57-070-Q417	Groundwater	12/11/2017 1:00:00 PM	12/11/2017	1/4/2018
N027485-008D	MW-57-070-Q417	Groundwater	12/11/2017 1:00:00 PM	12/11/2017	1/4/2018
N027485-009A	MW-12-Q417	Groundwater	12/11/2017 3:05:00 PM	12/11/2017	1/4/2018
N027485-009B	MW-12-Q417	Groundwater	12/11/2017 3:05:00 PM	12/11/2017	1/4/2018
N027485-009C	MW-12-Q417	Groundwater	12/11/2017 3:05:00 PM	12/11/2017	1/4/2018
N027485-009D	MW-12-Q417	Groundwater	12/11/2017 3:05:00 PM	12/11/2017	1/4/2018
N027485-010A	MW-58BR-Q417	Groundwater	12/11/2017 3:31:00 PM	12/11/2017	1/4/2018
N027485-010B	MW-58BR-Q417	Groundwater	12/11/2017 3:31:00 PM	12/11/2017	1/4/2018
N027485-010C	MW-58BR-Q417	Groundwater	12/11/2017 3:31:00 PM	12/11/2017	1/4/2018
N027485-010D	MW-58BR-Q417	Groundwater	12/11/2017 3:31:00 PM	12/11/2017	1/4/2018
N027485-011A	MW-26-Q417	Groundwater	12/11/2017 1:15:00 PM	12/11/2017	1/4/2018
N027485-011B	MW-26-Q417	Groundwater	12/11/2017 1:15:00 PM	12/11/2017	1/4/2018
N027485-011C	MW-26-Q417	Groundwater	12/11/2017 1:15:00 PM	12/11/2017	1/4/2018
N027485-011D	MW-26-Q417	Groundwater	12/11/2017 1:15:00 PM	12/11/2017	1/4/2018
N027485-011E	MW-26-Q417	Groundwater	12/11/2017 1:15:00 PM	12/11/2017	1/4/2018
N027485-012A	MW-907-Q417	Groundwater	12/11/2017 1:25:00 PM	12/11/2017	1/4/2018
N027485-012B	MW-907-Q417	Groundwater	12/11/2017 1:25:00 PM	12/11/2017	1/4/2018
N027485-012C	MW-907-Q417	Groundwater	12/11/2017 1:25:00 PM	12/11/2017	1/4/2018
N027485-012D	MW-907-Q417	Groundwater	12/11/2017 1:25:00 PM	12/11/2017	1/4/2018
N027485-012E	MW-907-Q417	Groundwater	12/11/2017 1:25:00 PM	12/11/2017	1/4/2018
N027485-013A	MW-729-Q417	Groundwater	12/11/2017 3:20:00 PM	12/11/2017	1/4/2018
N027485-014A	MW-730-Q417	Groundwater	12/11/2017 3:30:00 PM	12/11/2017	1/4/2018
N027485-015A	MW-731-Q417	Groundwater	12/11/2017 4:00:00 PM	12/11/2017	1/4/2018
N027485-016A	MW-732-Q417	Groundwater	12/11/2017 1:10:00 PM	12/11/2017	1/4/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70-105-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:58:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171212C**	QC Batch: **R120780**			PrepDate			Analyst: **LR**
Specific Conductance	3500	0.10	0.10		umhos/cm	1	12/12/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-3V-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:19:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171212C**	QC Batch: **R120780**			PrepDate			Analyst: **LR**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	12/12/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-LF-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 12:52:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171212C**	QC Batch: **R120780**			PrepDate			Analyst: **LR**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	12/12/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-51-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171212C**	QC Batch: **R120780**			PrepDate			Analyst: **LR**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	12/12/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-3V-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171212C**	QC Batch: **R120780**			PrepDate			Analyst: **LR**
Specific Conductance	18000	0.10	0.10		umhos/cm	1	12/12/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_D-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:21:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171212C**	QC Batch: **R120780**			PrepDate			Analyst: **LR**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	12/12/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_S-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 12:51:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171212C**	QC Batch: **R120780**			PrepDate			Analyst: **LR**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	12/12/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-070-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171212C**	QC Batch: **R120780**			PrepDate			Analyst: **LR**
Specific Conductance	2400	0.10	0.10		umhos/cm	1	12/12/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-12-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171212C**	QC Batch: **R120780**			PrepDate			Analyst: **LR**
Specific Conductance	7200	0.10	0.10		umhos/cm	1	12/12/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:31:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171212C**	QC Batch: **R120780**			PrepDate			Analyst: **LR**
Specific Conductance	7900	0.10	0.10		umhos/cm	1	12/12/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-26-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:15:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171212C**	QC Batch: **R120780**			PrepDate			Analyst: **LR**
Specific Conductance	3800	0.10	0.10		umhos/cm	1	12/12/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171212C**	QC Batch: **R120780**			PrepDate			Analyst: **LR**
Specific Conductance	3800	0.10	0.10		umhos/cm	1	12/12/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N027485-005DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120780
Client ID:	ZZZZZZ	Batch ID:	R120780	TestNo:	EPA 120.1			Analysis Date:	12/12/2017	SeqNo:	2862641

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	17590.000	0.10						17560	0.171	10	

Sample ID	N027485-011EDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120780
Client ID:	ZZZZZZ	Batch ID:	R120780	TestNo:	EPA 120.1			Analysis Date:	12/12/2017	SeqNo:	2862648

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	3810.000	0.10						3800	0.263	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70-105-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:58:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214H**	QC Batch: **66076**			PrepDate	**12/14/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2000	25	25		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-3V-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:19:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214H**	QC Batch: **66076**				PrepDate	**12/14/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	6900	100	100		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-LF-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 12:52:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214H**	QC Batch: **66076**				PrepDate	**12/14/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	6700	100	100		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-51-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214H**	QC Batch: **66076**				PrepDate	**12/14/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	6500	100	100		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-3V-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214H**	QC Batch: **66076**				PrepDate	**12/14/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	9800	100	100		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_D-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:21:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214H**	QC Batch: **66076**				PrepDate	**12/14/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	9600	100	100		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_S-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 12:51:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171215E**	QC Batch: **66095**				PrepDate	**12/15/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	9800	100	100		mg/L	1	12/15/2017 01:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-070-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171215E**	QC Batch: **66095**				PrepDate	**12/15/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1500	17	17		mg/L	1	12/15/2017 01:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-12-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171215E**	QC Batch: **66095**			PrepDate	**12/15/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3800	50	50		mg/L	1	12/15/2017 01:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:31:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171215E**	QC Batch: **66095**			PrepDate	**12/15/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4800	50	50		mg/L	1	12/15/2017 01:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-26-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:15:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171215E**	QC Batch: **66095**			PrepDate	**12/15/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2300	25	25		mg/L	1	12/15/2017 01:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171215E**	QC Batch: **66095**				PrepDate	**12/15/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2300	25	25		mg/L	1	12/15/2017 01:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-66076	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/14/2017	RunNo:	120877
Client ID:	LCSW	Batch ID:	66076	TestNo:	SM2540C			Analysis Date:	12/14/2017	SeqNo:	2869168

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	946.000	10	1000	0	94.6	80	120				

Sample ID	MB-66076	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/14/2017	RunNo:	120877
Client ID:	PBW	Batch ID:	66076	TestNo:	SM2540C			Analysis Date:	12/14/2017	SeqNo:	2869169

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N027485-005DDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/14/2017	RunNo:	120877
Client ID:	ZZZZZZ	Batch ID:	66076	TestNo:	SM2540C			Analysis Date:	12/14/2017	SeqNo:	2869179

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	10290.000	100						9850	4.37	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-66095	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/15/2017	RunNo:	120880
Client ID:	LCSW	Batch ID:	66095	TestNo:	SM2540C			Analysis Date:	12/15/2017	SeqNo:	2869280

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	940.000	10	1000	0	94.0	80	120				

Sample ID	MB-66095	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/15/2017	RunNo:	120880
Client ID:	PBW	Batch ID:	66095	TestNo:	SM2540C			Analysis Date:	12/15/2017	SeqNo:	2869281

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N027485-007DDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/15/2017	RunNo:	120880
Client ID:	ZZZZZZ	Batch ID:	66095	TestNo:	SM2540C			Analysis Date:	12/15/2017	SeqNo:	2869283

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	10080.000	100						9770	3.12	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-001

Client Sample ID: MW-70-105-Q417
Collection Date: 12/11/2017 2:58:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	160	0.66	4.0		µg/L	20	12/15/2017 10:26 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180102D**	QC Batch: **66022**			PrepDate	**12/14/2017**		Analyst: **CEI**
Chromium	150	0.019	1.0		µg/L	1	1/2/2018 10:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-002

Client Sample ID: MW-70BR-225-3V-Q417
Collection Date: 12/11/2017 2:19:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1700	6.6	40		µg/L	200	12/15/2017 09:39 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180103A**	QC Batch: **66022**			PrepDate	**12/14/2017**		Analyst: **CEI**
Chromium	1800	0.48	25		µg/L	25	1/3/2018 06:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-LF-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 12:52:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1400	6.6	40		µg/L	200	12/15/2017 09:48 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180103A**	QC Batch: **66022**			PrepDate	**12/14/2017**		Analyst: **CEI**
Chromium	1600	0.48	25		µg/L	25	1/3/2018 06:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-51-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	3700	33	200		µg/L	1000	12/15/2017 11:32 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180103A**	QC Batch: **66022**			PrepDate	**12/14/2017**		Analyst: **CEI**
Chromium	4100	0.48	25		µg/L	25	1/3/2018 06:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-3V-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	8.2	0.17	1.0		µg/L	5	12/15/2017 11:51 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103A**	QC Batch: **66022**			PrepDate	**12/14/2017**		Analyst: **CEI**
Chromium	7.4	0.019	1.0		µg/L	1	1/3/2018 06:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_D-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:21:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	3.1	0.17	1.0		µg/L	5	12/15/2017 12:10 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180103A**	QC Batch: **66022**			PrepDate	**12/14/2017**		Analyst: **CEI**
Chromium	2.7	0.019	1.0		µg/L	1	1/3/2018 06:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-007

Client Sample ID: MW-57-185-LF_S-Q417
Collection Date: 12/11/2017 12:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A** QC Batch: **R120903**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	3.0	0.17	1.0		µg/L	5	12/15/2017 12:29 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103A** QC Batch: **66022**				PrepDate	**12/14/2017**		Analyst: **CEI**
Chromium	3.3	0.019	1.0		µg/L	1	1/3/2018 06:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-070-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	420	3.3	20		µg/L	100	12/15/2017 01:07 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180102D**	QC Batch: **66022**			PrepDate	**12/14/2017**		Analyst: **CEI**
Chromium	430	0.096	5.0		µg/L	5	1/3/2018 01:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-009

Client Sample ID: MW-12-Q417
Collection Date: 12/11/2017 3:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1800	17	100		µg/L	500	12/15/2017 01:26 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180102D**	QC Batch: **66022**			PrepDate	**12/14/2017**		Analyst: **CEI**
Chromium	2100	0.48	25		µg/L	25	1/3/2018 02:04 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:31:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A** QC Batch: **R120903**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	39	0.17	1.0		µg/L	5	12/15/2017 01:45 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180102D** QC Batch: **66022**				PrepDate	**12/14/2017**		Analyst: **CEI**
Chromium	41	0.019	1.0		µg/L	1	1/3/2018 01:53 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-26-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:15:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	2300	17	100		µg/L	500	12/15/2017 02:03 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180102D**	QC Batch: **66022**			PrepDate	**12/14/2017**		Analyst: **CEI**
Chromium	2600	0.48	25		µg/L	25	1/3/2018 02:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_171215A** QC Batch: **R120903**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	2400	17	100		µg/L	500	12/15/2017 02:22 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180102D** QC Batch: **66022**				PrepDate	**12/14/2017**		Analyst: **CEI**
Chromium	2500	0.48	25		µg/L	25	1/3/2018 02:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-729-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/15/2017 03:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-730-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/15/2017 03:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-731-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/15/2017 08:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-732-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/15/2017 04:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R120903**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **PBW**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870594**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R120903**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **LCSW**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870595**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.228	0.20	5.000	0	105	90	110				

Sample ID **N027485-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870599**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	260.554	4.0	100.0	156.5	104	90	110				

Sample ID **N027485-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870600**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	260.346	4.0	100.0	156.5	104	90	110	260.6	0.0799	20	

Sample ID **N027485-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870603**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2757.320	40	1000	1730	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027485-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870604**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2468.720	40	1000	1430	104	90	110				

Sample ID **N027485-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9037.100	200	5000	3727	106	90	110				

Sample ID **N027485-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870608**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.460	1.0	5.000	8.194	105	90	110				

Sample ID **N027485-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870610**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.309	1.0	5.000	3.066	105	90	110				

Sample ID **N027485-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.394	1.0	5.000	3.029	107	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027485-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870616

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	938.900	20	500.0	419.0	104	90	110				

Sample ID	N027485-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870618

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4392.300	100	2500	1795	104	90	110				

Sample ID	N027485-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870620

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	65.788	1.0	25.00	38.85	108	90	110				

Sample ID	N027485-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870622

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4952.800	100	2500	2341	104	90	110				

Sample ID	N027485-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870624

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4983.750	100	2500	2388	104	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027485-003ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870627

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1430.860	40						1430	0.0671	20	

Sample ID	N027485-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870629

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.056	0.20	1.000	0	106	90	110				

Sample ID	N027485-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870631

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.086	0.20	1.000	0	109	90	110				

Sample ID	N027485-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870632

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.057	0.20	1.000	0	106	90	110				

Sample ID	N027485-016AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870634

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0	106	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027459-018AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870638

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.654	1.0	5.000	0	93.1	90	110				

Sample ID	N027459-019AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870640

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.193	1.0	5.000	0	104	90	110				

Sample ID	N027459-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870644

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	17.987	0.40	10.00	7.873	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66022	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121175
Client ID:	PBW	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2882374

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66022	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121175
Client ID:	LCSW	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2882375

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.955	1.0	10.00	0	99.5	85	115				

Sample ID	N027485-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121175
Client ID:	ZZZZZZ	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2882391

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	157.980	1.0	10.00	153.5	45.0	75	125				S

Sample ID	N027485-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121175
Client ID:	ZZZZZZ	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2882393

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	156.223	1.0	10.00	153.5	27.4	75	125	158.0	1.12	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70-105-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:58:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	88	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-3V-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:19:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	43	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-LF-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 12:52:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	40	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-51-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	80	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-3V-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	37	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_D-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:21:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	87	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_S-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 12:51:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	90	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-070-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	76	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-12-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	110	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:31:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	41	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-26-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:15:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	120	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	120	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R120856**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120856**
Client ID: **LCSW**	Batch ID: **R120856**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2868272**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	101.464	5.0	100.0	0	101	85	115				

Sample ID **MB-R120856**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120856**
Client ID: **PBW**	Batch ID: **R120856**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2868273**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N027459-003CDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120856**
Client ID: **ZZZZZZ**	Batch ID: **R120856**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2868275**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	16.736	5.0						15.69	6.45	30	

Sample ID **N027459-017EMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120856**
Client ID: **ZZZZZZ**	Batch ID: **R120856**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2868290**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	188.285	5.0	100.0	92.05	96.2	75	125				

Sample ID **N027459-017EMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120856**
Client ID: **ZZZZZZ**	Batch ID: **R120856**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2868291**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	190.377	5.0	100.0	92.05	98.3	75	125	188.3	1.10	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID	LCS-R120882	SampType:	LCS	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120882
Client ID:	LCSW	Batch ID:	R120882	TestNo:	SM 2320 B			Analysis Date:	12/15/2017	SeqNo:	2869307

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	98.739	5.0	100.0	0	98.7	85	115				

Sample ID	MB-R120882	SampType:	MBLK	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120882
Client ID:	PBW	Batch ID:	R120882	TestNo:	SM 2320 B			Analysis Date:	12/15/2017	SeqNo:	2869308

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID	N027485-008DMS	SampType:	MS	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120882
Client ID:	ZZZZZZ	Batch ID:	R120882	TestNo:	SM 2320 B			Analysis Date:	12/15/2017	SeqNo:	2869314

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	171.218	5.0	100.0	75.63	95.6	75	125				

Sample ID	N027485-008DMSD	SampType:	MSD	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120882
Client ID:	ZZZZZZ	Batch ID:	R120882	TestNo:	SM 2320 B			Analysis Date:	12/15/2017	SeqNo:	2869315

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	176.471	5.0	100.0	75.63	101	75	125	171.2	3.02	20	

Sample ID	N027523-001CDUP	SampType:	DUP	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120882
Client ID:	ZZZZZZ	Batch ID:	R120882	TestNo:	SM 2320 B			Analysis Date:	12/15/2017	SeqNo:	2869321

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	76.681	5.0						78.78	2.70	30	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-001

Client Sample ID: MW-70-105-Q417
Collection Date: 12/11/2017 2:58:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/19/2017 10:46 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Chloride	980	1.8	100		mg/L	200	12/18/2017 05:11 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Sulfate	260	1.1	25		mg/L	50	12/18/2017 06:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-002

Client Sample ID: MW-70BR-225-3V-Q417
Collection Date: 12/11/2017 2:19:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.20	5.0		mg/L	10	12/19/2017 11:01 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Chloride	4500	18	1000		mg/L	2000	12/18/2017 03:55 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Sulfate	800	2.3	50		mg/L	100	12/19/2017 01:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-003

Client Sample ID: MW-70BR-225-LF-Q417
Collection Date: 12/11/2017 12:52:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.20	5.0		mg/L	10	12/19/2017 11:16 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Chloride	4100	18	1000		mg/L	2000	12/18/2017 04:10 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Sulfate	760	2.3	50		mg/L	100	12/19/2017 01:36 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-004

Client Sample ID: MW-51-Q417
Collection Date: 12/11/2017 2:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/19/2017 11:32 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Chloride	4200	18	1000		mg/L	2000	12/18/2017 08:45 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Sulfate	690	1.1	25		mg/L	50	12/18/2017 09:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-005

Client Sample ID: MW-57-185-3V-Q417
Collection Date: 12/11/2017 3:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/19/2017 11:47 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Chloride	6100	18	1000		mg/L	2000	12/18/2017 04:25 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Sulfate	750	2.3	50		mg/L	100	12/19/2017 01:51 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-006

Client Sample ID: MW-57-185-LF_D-Q417
Collection Date: 12/11/2017 1:21:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/20/2017 12:02 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Chloride	6000	18	1000		mg/L	2000	12/18/2017 04:40 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Sulfate	730	2.3	50		mg/L	100	12/19/2017 02:06 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-007

Client Sample ID: MW-57-185-LF_S-Q417
Collection Date: 12/11/2017 12:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/20/2017 12:48 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Chloride	6000	18	1000		mg/L	2000	12/18/2017 04:56 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Sulfate	740	2.3	50		mg/L	100	12/19/2017 02:22 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-008

Client Sample ID: MW-57-070-Q417
Collection Date: 12/11/2017 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/19/2017 08:28 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Chloride	770	1.8	100		mg/L	200	12/18/2017 09:16 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Sulfate	90	0.23	5.0		mg/L	10	12/18/2017 10:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-009

Client Sample ID: MW-12-Q417
Collection Date: 12/11/2017 3:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	0.93	0.020	0.50		mg/L	1	12/20/2017 01:04 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Chloride	2000	4.6	250		mg/L	500	12/18/2017 10:17 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Sulfate	480	2.3	50		mg/L	100	12/18/2017 10:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-010

Client Sample ID: MW-58BR-Q417
Collection Date: 12/11/2017 3:31:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/20/2017 01:19 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**			PrepDate				Analyst: **RAB**
Chloride	2600	9.1	500		mg/L	1000	12/18/2017 10:48 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**			PrepDate				Analyst: **RAB**
Sulfate	520	2.3	50		mg/L	100	12/18/2017 11:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-011

Client Sample ID: MW-26-Q417
Collection Date: 12/11/2017 1:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/20/2017 01:34 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Chloride	910	1.8	100		mg/L	200	12/18/2017 07:44 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Sulfate	500	2.3	50		mg/L	100	12/18/2017 08:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-012

Client Sample ID: MW-907-Q417
Collection Date: 12/11/2017 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/20/2017 01:49 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Chloride	900	1.8	100		mg/L	200	12/18/2017 11:18 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Sulfate	510	2.3	50		mg/L	100	12/18/2017 11:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	LCS-R120970_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120970
Client ID:	LCSW	Batch ID:	R120970	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874470

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.223	0.50	1.250	0	97.8	90	110				

Sample ID	MB-R120970_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120970
Client ID:	PBW	Batch ID:	R120970	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874471

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	N027485-008DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120970
Client ID:	ZZZZZZ	Batch ID:	R120970	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874473

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	6.983	2.5	6.250	0.3850	106	80	120				

Sample ID	N027485-008DMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120970
Client ID:	ZZZZZZ	Batch ID:	R120970	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874474

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	7.017	2.5	6.250	0.3850	106	80	120	6.983	0.486	20	

Sample ID	N027523-001CMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120970
Client ID:	ZZZZZZ	Batch ID:	R120970	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874478

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.565	0.50	1.250	0.2819	103	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	N027523-002CDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120970
Client ID:	ZZZZZZ	Batch ID:	R120970	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874480

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.084	0.50						0.1061	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R120937_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	PBW	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872521

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R120937_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	LCSW	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872522

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.071	0.50	2.000	0	104	90	110				

Sample ID	N027485-001DDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872535

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	981.340	100						975.4	0.605	20	

Sample ID	N027485-001DMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872536

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1408.480	100	400.0	975.4	108	80	120				

Sample ID	N027485-001DMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872537

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1421.160	100	400.0	975.4	111	80	120	1408	0.896	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N027485-011EMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872541

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1320.820	100	400.0	910.6	103	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R120937_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	PBW	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872591

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R120937_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	LCSW	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872592

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.846	0.50	4.000	0	96.1	90	110				

Sample ID	N027485-001DDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872602

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	257.605	25						261.0	1.32	20	

Sample ID	N027485-001DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872603

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	459.490	25	200.0	261.0	99.2	80	120				

Sample ID	N027485-001DMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872604

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	458.065	25	200.0	261.0	98.5	80	120	459.5	0.311	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N027485-011EMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872606

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	904.840	50	400.0	499.1	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70-105-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:58:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	4.5	0.22	0.50		mg/L	10	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-3V-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:19:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	3.8	0.11	0.25		mg/L	5	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-LF-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 12:52:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	3.3	0.11	0.25		mg/L	5	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-51-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	8.7	0.22	0.50		mg/L	10	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-3V-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_D-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:21:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.14	0.022	0.050		mg/L	1	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_S-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 12:51:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.15	0.022	0.050		mg/L	1	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-070-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	9.5	0.22	0.50		mg/L	10	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-12-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	15	0.44	1.0		mg/L	20	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:31:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.2	0.022	0.050		mg/L	1	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-26-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:15:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	21	0.44	1.0		mg/L	20	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222D**	QC Batch: **R121037**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	20	0.44	1.0		mg/L	20	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R121034**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **PBW**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877768**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R121034**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **LCSW**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.496	0.050	0.5000	0	99.3	85	115				

Sample ID **N027431-005DDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **ZZZZZZ**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877771**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.148	0.50						9.004	1.59	20	

Sample ID **N027431-006DMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **ZZZZZZ**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877773**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	25.092	1.0	10.00	15.04	100	75	125				

Sample ID **N027431-006DMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **ZZZZZZ**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877774**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	24.784	1.0	10.00	15.04	97.4	75	125	25.09	1.24	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R121037	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121037
Client ID:	PBW	Batch ID:	R121037	TestNo:	SM4500-NO3			Analysis Date:	12/22/2017	SeqNo:	2877836

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R121037	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121037
Client ID:	LCSW	Batch ID:	R121037	TestNo:	SM4500-NO3			Analysis Date:	12/22/2017	SeqNo:	2877837

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.476	0.050	0.5000	0	95.2	85	115				

Sample ID	N027523-005DMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121037
Client ID:	ZZZZZZ	Batch ID:	R121037	TestNo:	SM4500-NO3			Analysis Date:	12/22/2017	SeqNo:	2877840

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.032	0.25	2.500	3.434	104	75	125				

Sample ID	N027523-005DMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121037
Client ID:	ZZZZZZ	Batch ID:	R121037	TestNo:	SM4500-NO3			Analysis Date:	12/22/2017	SeqNo:	2877841

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.779	0.25	2.500	3.434	93.8	75	125	6.032	4.28	20	

Sample ID	N027523-008CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121037
Client ID:	ZZZZZZ	Batch ID:	R121037	TestNo:	SM4500-NO3			Analysis Date:	12/22/2017	SeqNo:	2877843

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.313	0.050						1.204	8.59	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-001

Client Sample ID: MW-70-105-Q417
Collection Date: 12/11/2017 2:58:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	620	38	100		ug/L	1	12/19/2017 06:00 PM
Calcium	99000	28	500		ug/L	1	12/19/2017 06:00 PM
Iron	37	1.8	20		ug/L	1	12/19/2017 06:00 PM
Magnesium	9100	4.4	100		ug/L	1	12/19/2017 06:00 PM
Sodium	620000	2600	50000		ug/L	100	12/22/2017 04:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-002

Client Sample ID: MW-70BR-225-3V-Q417
Collection Date: 12/11/2017 2:19:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	1500	38	100		ug/L	1	12/19/2017 06:31 PM
Calcium	630000	140	2500		ug/L	5	12/20/2017 06:28 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 06:31 PM
Magnesium	26000	4.4	100		ug/L	1	12/19/2017 06:31 PM
Sodium	2300000	2600	50000		ug/L	100	12/22/2017 06:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-003

Client Sample ID: MW-70BR-225-LF-Q417
Collection Date: 12/11/2017 12:52:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	1400	38	100		ug/L	1	12/19/2017 06:38 PM
Calcium	630000	140	2500		ug/L	5	12/20/2017 06:35 AM
Iron	110	1.8	20		ug/L	1	12/19/2017 06:38 PM
Magnesium	24000	4.4	100		ug/L	1	12/19/2017 06:38 PM
Sodium	2200000	2600	50000		ug/L	100	12/22/2017 04:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-004

Client Sample ID: MW-51-Q417
Collection Date: 12/11/2017 2:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	1600	38	100		ug/L	1	12/19/2017 06:45 PM
Calcium	300000	28	500		ug/L	1	12/19/2017 06:45 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 06:45 PM
Magnesium	19000	4.4	100		ug/L	1	12/19/2017 06:45 PM
Sodium	2600000	2600	50000		ug/L	100	12/22/2017 05:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-3V-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**				PrepDate	**12/13/2017**	Analyst: **CEI**
Boron	2500	38	100		ug/L	1	12/19/2017 06:52 PM
Calcium	350000	28	500		ug/L	1	12/19/2017 06:52 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 06:52 PM
Magnesium	2000	4.4	100		ug/L	1	12/19/2017 06:52 PM
Sodium	4000000	13000	250000		ug/L	500	12/22/2017 05:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-006

Client Sample ID: MW-57-185-LF_D-Q417
Collection Date: 12/11/2017 1:21:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_171219B** QC Batch: **66042** PrepDate **12/13/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	2300	38	100		ug/L	1	12/19/2017 06:58 PM
Calcium	390000	28	500		ug/L	1	12/19/2017 06:58 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 06:58 PM
Magnesium	ND	4.4	100		ug/L	1	12/19/2017 06:58 PM
Sodium	3800000	13000	250000		ug/L	500	12/22/2017 05:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-007

Client Sample ID: MW-57-185-LF_S-Q417
Collection Date: 12/11/2017 12:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	2300	38	100		ug/L	1	12/19/2017 07:20 PM
Calcium	390000	28	500		ug/L	1	12/19/2017 07:20 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 07:20 PM
Magnesium	ND	4.4	100		ug/L	1	12/19/2017 07:20 PM
Sodium	3800000	13000	250000		ug/L	500	12/22/2017 05:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-008

Client Sample ID: MW-57-070-Q417
Collection Date: 12/11/2017 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	170	38	100		ug/L	1	12/19/2017 07:27 PM
Calcium	370000	28	500		ug/L	1	12/19/2017 07:27 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 07:27 PM
Magnesium	23000	4.4	100		ug/L	1	12/19/2017 07:27 PM
Sodium	94000	260	5000		ug/L	10	12/22/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-009

Client Sample ID: MW-12-Q417
Collection Date: 12/11/2017 3:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	1200	38	100		ug/L	1	12/19/2017 07:34 PM
Calcium	42000	28	500		ug/L	1	12/19/2017 07:34 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 07:34 PM
Magnesium	7200	4.4	100		ug/L	1	12/19/2017 07:34 PM
Sodium	1500000	2600	50000		ug/L	100	12/22/2017 05:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-010

Client Sample ID: MW-58BR-Q417
Collection Date: 12/11/2017 3:31:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	1000	38	100		ug/L	1	12/19/2017 07:41 PM
Calcium	480000	140	2500		ug/L	5	12/20/2017 06:54 AM
Iron	230	1.8	20		ug/L	1	12/19/2017 07:41 PM
Magnesium	24000	4.4	100		ug/L	1	12/19/2017 07:41 PM
Sodium	1300000	2600	50000		ug/L	100	12/22/2017 05:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-011

Client Sample ID: MW-26-Q417
Collection Date: 12/11/2017 1:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	1000	38	100		ug/L	1	12/19/2017 07:48 PM
Calcium	160000	28	500		ug/L	1	12/19/2017 07:48 PM
Iron	99	1.8	20		ug/L	1	12/19/2017 07:48 PM
Magnesium	37000	4.4	100		ug/L	1	12/19/2017 07:48 PM
Potassium	12000	38	500		ug/L	1	12/22/2017 06:31 PM
Sodium	620000	2600	50000		ug/L	100	12/22/2017 04:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-012

Client Sample ID: MW-907-Q417
Collection Date: 12/11/2017 1:25:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_171219B** QC Batch: **66042** PrepDate **12/13/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	990	38	100		ug/L	1	12/19/2017 07:55 PM
Calcium	150000	28	500		ug/L	1	12/19/2017 07:55 PM
Iron	110	1.8	20		ug/L	1	12/19/2017 07:55 PM
Magnesium	36000	4.4	100		ug/L	1	12/19/2017 07:55 PM
Potassium	12000	38	500		ug/L	1	12/22/2017 06:36 PM
Sodium	600000	2600	50000		ug/L	100	12/22/2017 04:51 PM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-66042**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/13/2017**	RunNo: **120943**
Client ID: **PBW**	Batch ID: **66042**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2872919**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	39.668	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-66042**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/13/2017**	RunNo: **120943**
Client ID: **LCSW**	Batch ID: **66042**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2872920**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4658.382	100	5000	0	93.2	85	115				
Calcium	9550.427	500	10000	0	95.5	85	115				
Iron	111.284	20	100.0	0	111	85	115				
Magnesium	9359.822	100	10000	0	93.6	85	115				

Sample ID **N027485-001B-MS1**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/13/2017**	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **66042**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2872929**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5401.750	100	5000	622.3	95.6	75	125				
Calcium	114168.705	500	10000	99230	149	75	125				S
Iron	130.704	20	100.0	37.24	93.5	75	125				
Magnesium	18441.376	100	10000	9130	93.1	75	125				

Sample ID **N027485-001B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/13/2017**	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **66042**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2872930**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5435.339	100	5000	622.3	96.3	75	125	5402	0.620	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027485-001B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	120943
Client ID:	ZZZZZZ	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2872930

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	114588.712	500	10000	99230	154	75	125	114200	0.367	20	S
Iron	132.205	20	100.0	37.24	95.0	75	125	130.7	1.14	20	
Magnesium	18529.658	100	10000	9130	94.0	75	125	18440	0.478	20	

Sample ID	MB-66042	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	121039
Client ID:	PBW	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2877890

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	ND	500									
Sodium	ND	500									

Sample ID	LCS2-66042	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	121039
Client ID:	LCSW	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2877891

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	19753.474	500	20000	0	98.8	85	115				
Sodium	20542.580	500	20000	0	103	85	115				

Sample ID	N027485-002B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	121039
Client ID:	ZZZZZZ	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2877920

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	55943.272	2500	20000	32930	115	75	125				

Sample ID	N027485-002B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	121039
Client ID:	ZZZZZZ	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2877921

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	56100.259	2500	20000	32930	116	75	125	55940	0.280	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027485-002B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	121039	
Client ID:	ZZZZZZ	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2877927	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium	2452204.526	50000	20000	2335000	586	75	125				S	

Sample ID	N027485-002B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	121039	
Client ID:	ZZZZZZ	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2877928	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium	2409150.832	50000	20000	2335000	370	75	125	2452000	1.77	20	S	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-001

Client Sample ID: MW-70-105-Q417
Collection Date: 12/11/2017 2:58:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180102E**	QC Batch: **66022**			PrepDate	**12/14/2017**	Analyst: **CEI**	
Arsenic	3.9	0.025	0.10		µg/L	1	1/2/2018 10:58 PM
Manganese	11	0.056	0.50		µg/L	1	1/2/2018 10:58 PM
Molybdenum	72	0.039	0.50		µg/L	1	1/2/2018 10:58 PM
Selenium	4.9	0.028	0.50		µg/L	1	1/2/2018 10:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-3V-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:19:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180102E**	QC Batch: **66022**				PrepDate	**12/14/2017**	Analyst: **CEI**
Arsenic	1.9	0.025	0.10		µg/L	1	1/2/2018 11:50 PM
Manganese	1.1	0.056	0.50		µg/L	1	1/2/2018 11:50 PM
Molybdenum	18	0.19	2.5		µg/L	5	1/3/2018 12:25 AM
Selenium	2.7	0.028	0.50		µg/L	1	1/2/2018 11:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-003

Client Sample ID: MW-70BR-225-LF-Q417
Collection Date: 12/11/2017 12:52:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180102E**	QC Batch: **66022**			PrepDate	**12/14/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/3/2018 12:31 AM
Manganese	5.7	0.056	0.50		µg/L	1	1/3/2018 12:31 AM
Molybdenum	21	0.19	2.5		µg/L	5	1/3/2018 12:37 AM
Selenium	ND	0.14	2.5		µg/L	5	1/3/2018 12:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-51-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180102E**	QC Batch: **66022**				PrepDate	**12/14/2017**	Analyst: **CEI**
Arsenic	3.8	0.025	0.10		µg/L	1	1/3/2018 12:43 AM
Manganese	4.1	0.056	0.50		µg/L	1	1/3/2018 12:43 AM
Molybdenum	48	0.19	2.5		µg/L	5	1/3/2018 12:48 AM
Selenium	14	0.028	0.50		µg/L	1	1/3/2018 12:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-005

Client Sample ID: MW-57-185-3V-Q417
Collection Date: 12/11/2017 3:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180102E**	QC Batch: **66022**			PrepDate	**12/14/2017**	Analyst: **CEI**	
Arsenic	11	0.12	0.50		µg/L	5	1/3/2018 01:00 AM
Manganese	160	0.056	0.50		µg/L	1	1/3/2018 12:54 AM
Molybdenum	84	0.19	2.5		µg/L	5	1/3/2018 01:00 AM
Selenium	ND	0.14	2.5		µg/L	5	1/3/2018 01:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_D-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:21:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180102E**	QC Batch: **66022**			PrepDate	**12/14/2017**		Analyst: **CEI**
Arsenic	3.9	0.12	0.50		µg/L	5	1/3/2018 01:12 AM
Manganese	5.8	0.056	0.50		µg/L	1	1/3/2018 01:06 AM
Molybdenum	84	0.19	2.5		µg/L	5	1/3/2018 01:12 AM
Selenium	ND	0.14	2.5		µg/L	5	1/3/2018 01:12 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_S-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 12:51:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180102E**	QC Batch: **66022**				PrepDate	**12/14/2017**	Analyst: **CEI**
Arsenic	3.2	0.12	0.50		µg/L	5	1/3/2018 01:35 AM
Manganese	6.9	0.056	0.50		µg/L	1	1/3/2018 01:17 AM
Molybdenum	89	0.19	2.5		µg/L	5	1/3/2018 01:35 AM
Selenium	ND	0.14	2.5		µg/L	5	1/3/2018 01:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-008

Client Sample ID: MW-57-070-Q417
Collection Date: 12/11/2017 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180102E**	QC Batch: **66022**			PrepDate	**12/14/2017**	Analyst: **CEI**	
Arsenic	1.5	0.025	0.10		µg/L	1	1/3/2018 01:41 AM
Manganese	ND	0.056	0.50		µg/L	1	1/3/2018 01:41 AM
Molybdenum	2.8	0.039	0.50		µg/L	1	1/3/2018 01:41 AM
Selenium	3.8	0.028	0.50		µg/L	1	1/3/2018 01:41 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-009

Client Sample ID: MW-12-Q417
Collection Date: 12/11/2017 3:05:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180102E** QC Batch: **66022** PrepDate **12/14/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.031	0.50		µg/L	1	1/2/2018 09:59 PM
Arsenic	38	0.025	0.10		µg/L	1	1/2/2018 09:59 PM
Barium	46	0.070	1.0		µg/L	1	1/2/2018 09:59 PM
Beryllium	ND	0.043	0.50		µg/L	1	1/2/2018 09:59 PM
Cadmium	ND	0.047	0.50		µg/L	1	1/2/2018 09:59 PM
Cobalt	ND	0.026	0.50		µg/L	1	1/2/2018 09:59 PM
Copper	ND	0.26	1.0		µg/L	1	1/2/2018 09:59 PM
Lead	ND	0.037	1.0		µg/L	1	1/2/2018 09:59 PM
Manganese	2.2	0.056	0.50		µg/L	1	1/2/2018 09:59 PM
Molybdenum	9.7	0.039	0.50		µg/L	1	1/2/2018 09:59 PM
Nickel	1.6	0.040	1.0		µg/L	1	1/2/2018 09:59 PM
Selenium	24	0.028	0.50		µg/L	1	1/2/2018 09:59 PM
Silver	ND	0.059	0.50		µg/L	1	1/2/2018 09:59 PM
Thallium	ND	0.030	0.50		µg/L	1	1/2/2018 09:59 PM
Vanadium	16	0.021	1.0		µg/L	1	1/3/2018 05:10 PM
Zinc	ND	0.27	10		µg/L	1	1/2/2018 09:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:31:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180103A**	QC Batch: **66022**				PrepDate	**12/14/2017**	Analyst: **CEI**
Arsenic	1.8	0.12	0.50		µg/L	5	1/3/2018 06:57 PM
Manganese	330	0.28	2.5		µg/L	5	1/3/2018 01:58 AM
Molybdenum	24	0.19	2.5		µg/L	5	1/3/2018 01:58 AM
Selenium	ND	0.14	2.5		µg/L	5	1/3/2018 06:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-011

Client Sample ID: MW-26-Q417
Collection Date: 12/11/2017 1:15:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180102E** QC Batch: **66022** PrepDate **12/14/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.031	0.50		µg/L	1	1/2/2018 10:11 PM
Arsenic	2.0	0.025	0.10		µg/L	1	1/2/2018 10:11 PM
Barium	36	0.070	1.0		µg/L	1	1/2/2018 10:11 PM
Beryllium	ND	0.043	0.50		µg/L	1	1/2/2018 10:11 PM
Cadmium	ND	0.047	0.50		µg/L	1	1/2/2018 10:11 PM
Cobalt	ND	0.026	0.50		µg/L	1	1/2/2018 10:11 PM
Copper	ND	0.26	1.0		µg/L	1	1/2/2018 10:11 PM
Lead	ND	0.037	1.0		µg/L	1	1/2/2018 10:11 PM
Manganese	3.6	0.056	0.50		µg/L	1	1/2/2018 10:11 PM
Molybdenum	34	0.039	0.50		µg/L	1	1/2/2018 10:11 PM
Nickel	4.9	0.040	1.0		µg/L	1	1/2/2018 10:11 PM
Selenium	41	0.028	0.50		µg/L	1	1/2/2018 10:11 PM
Silver	ND	0.059	0.50		µg/L	1	1/2/2018 10:11 PM
Thallium	ND	0.030	0.50		µg/L	1	1/2/2018 10:11 PM
Vanadium	8.4	0.021	1.0		µg/L	1	1/3/2018 05:16 PM
Zinc	ND	0.27	10		µg/L	1	1/2/2018 10:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-012

Client Sample ID: MW-907-Q417
Collection Date: 12/11/2017 1:25:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180102E** QC Batch: **66022** PrepDate **12/14/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.031	0.50		µg/L	1	1/2/2018 10:23 PM
Arsenic	1.9	0.025	0.10		µg/L	1	1/2/2018 10:23 PM
Barium	35	0.070	1.0		µg/L	1	1/2/2018 10:23 PM
Beryllium	ND	0.043	0.50		µg/L	1	1/2/2018 10:23 PM
Cadmium	ND	0.047	0.50		µg/L	1	1/2/2018 10:23 PM
Cobalt	ND	0.026	0.50		µg/L	1	1/2/2018 10:23 PM
Copper	ND	0.26	1.0		µg/L	1	1/2/2018 10:23 PM
Lead	ND	0.037	1.0		µg/L	1	1/2/2018 10:23 PM
Manganese	0.96	0.056	0.50		µg/L	1	1/2/2018 10:23 PM
Molybdenum	33	0.039	0.50		µg/L	1	1/2/2018 10:23 PM
Nickel	6.1	0.040	1.0		µg/L	1	1/2/2018 10:23 PM
Selenium	40	0.028	0.50		µg/L	1	1/2/2018 10:23 PM
Silver	ND	0.059	0.50		µg/L	1	1/2/2018 10:23 PM
Thallium	ND	0.030	0.50		µg/L	1	1/2/2018 10:23 PM
Vanadium	7.9	0.021	1.0		µg/L	1	1/3/2018 05:21 PM
Zinc	ND	0.27	10		µg/L	1	1/2/2018 10:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66022**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/14/2017**	RunNo: **121176**
Client ID: **PBW**	Batch ID: **66022**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/2/2018**	SeqNo: **2882470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.039	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.080	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Silver	0.172	0.50									
Thallium	0.072	0.50									
Zinc	ND	10									

Sample ID **LCS-66022**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/14/2017**	RunNo: **121176**
Client ID: **LCSW**	Batch ID: **66022**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/2/2018**	SeqNo: **2882471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.594	0.50	10.00	0	95.9	85	115				
Arsenic	10.068	0.10	10.00	0	101	85	115				
Barium	9.869	1.0	10.00	0	98.7	85	115				
Beryllium	9.831	0.50	10.00	0	98.3	85	115				
Cadmium	10.155	0.50	10.00	0	102	85	115				
Cobalt	9.625	0.50	10.00	0	96.3	85	115				
Copper	9.858	1.0	10.00	0	98.6	85	115				
Lead	9.954	1.0	10.00	0	99.5	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	LCS-66022	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121176
Client ID:	LCSW	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2882471

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	99.844	0.50	100.0	0	99.8	85	115				
Molybdenum	9.775	0.50	10.00	0	97.7	85	115				
Nickel	10.210	1.0	10.00	0	102	85	115				
Selenium	9.423	0.50	10.00	0	94.2	85	115				
Silver	9.434	0.50	10.00	0	94.3	85	115				
Thallium	9.897	0.50	10.00	0	99.0	85	115				
Zinc	102.047	10	100.0	0	102	85	115				

Sample ID	N027485-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121176
Client ID:	ZZZZZZ	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2882487

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.067	0.50	10.00	0.08078	99.9	75	125				
Arsenic	14.588	0.10	10.00	3.881	107	75	125				
Barium	71.282	1.0	10.00	63.49	77.9	75	125				
Beryllium	10.773	0.50	10.00	0	108	75	125				
Cadmium	9.822	0.50	10.00	0	98.2	75	125				
Cobalt	9.185	0.50	10.00	0	91.9	75	125				
Copper	8.246	1.0	10.00	0	82.5	75	125				
Lead	10.971	1.0	10.00	0	110	75	125				
Manganese	109.145	0.50	100.0	11.34	97.8	75	125				
Molybdenum	81.348	0.50	10.00	71.60	97.5	75	125				
Nickel	11.267	1.0	10.00	1.330	99.4	75	125				
Selenium	14.355	0.50	10.00	4.853	95.0	75	125				
Silver	9.976	0.50	10.00	0	99.8	75	125				
Thallium	10.873	0.50	10.00	0.8445	100	75	125				
Zinc	117.977	10	100.0	0	118	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027485-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121176
Client ID:	ZZZZZZ	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2882489

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.199	0.50	10.00	0.08078	101	75	125	10.07	1.30	20	
Arsenic	14.431	0.10	10.00	3.881	106	75	125	14.59	1.08	20	
Barium	71.934	1.0	10.00	63.49	84.4	75	125	71.28	0.910	20	
Beryllium	10.625	0.50	10.00	0	106	75	125	10.77	1.38	20	
Cadmium	9.731	0.50	10.00	0	97.3	75	125	9.822	0.930	20	
Cobalt	9.045	0.50	10.00	0	90.4	75	125	9.185	1.54	20	
Copper	8.131	1.0	10.00	0	81.3	75	125	8.246	1.41	20	
Lead	10.868	1.0	10.00	0	109	75	125	10.97	0.936	20	
Manganese	107.405	0.50	100.0	11.34	96.1	75	125	109.1	1.61	20	
Molybdenum	81.932	0.50	10.00	71.60	103	75	125	81.35	0.716	20	
Nickel	11.302	1.0	10.00	1.330	99.7	75	125	11.27	0.310	20	
Selenium	13.447	0.50	10.00	4.853	85.9	75	125	14.36	6.53	20	
Silver	9.993	0.50	10.00	0	99.9	75	125	9.976	0.169	20	
Thallium	10.833	0.50	10.00	0.8445	99.9	75	125	10.87	0.372	20	
Zinc	115.797	10	100.0	0	116	75	125	118.0	1.86	20	

Sample ID	MB-66022	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121192
Client ID:	PBW	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883829

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	ND	1.0									

Sample ID	LCS-66022	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121192
Client ID:	LCSW	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883830

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	10.252	1.0	10.00	0	103	85	115				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027485-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121192
Client ID:	ZZZZZZ	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883840

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	14.407	1.0	10.00	4.152	103	75	125				

Sample ID	N027485-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121192
Client ID:	ZZZZZZ	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883841

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	14.323	1.0	10.00	4.152	102	75	125	14.41	0.587	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-12-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **NV00922-AA1_171213B** QC Batch: **66041**				PrepDate	**12/13/2017**		Analyst: **MG**
Mercury	ND	0.087	0.20		µg/L	1	12/13/2017 08:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-26-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:15:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **NV00922-AA1_171213B** QC Batch: **66041**				PrepDate	**12/13/2017**		Analyst: **MG**
Mercury	ND	0.087	0.20		µg/L	1	12/13/2017 08:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **NV00922-AA1_171213B** QC Batch: **66041**				PrepDate	**12/13/2017**		Analyst: **MG**
Mercury	ND	0.087	0.20		µg/L	1	12/13/2017 08:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID	MB-66041	SampType:	MBLK	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/13/2017	RunNo:	120796
Client ID:	PBW	Batch ID:	66041	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863951

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.125	0.20									

Sample ID	LCS-66041	SampType:	LCS	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/13/2017	RunNo:	120796
Client ID:	LCSW	Batch ID:	66041	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863952

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.881	0.20	5.000	0	97.6	85	115				

Sample ID	N027485-009B-MS	SampType:	MS	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/13/2017	RunNo:	120796
Client ID:	ZZZZZZ	Batch ID:	66041	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863953

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.802	0.20	5.000	0	96.0	75	125				

Sample ID	N027485-009B-MSD	SampType:	MSD	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/13/2017	RunNo:	120796
Client ID:	ZZZZZZ	Batch ID:	66041	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863954

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.972	0.20	5.000	0	99.4	75	125	4.802	3.48	20	

Sample ID	N027524-008E-MS	SampType:	MS	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/13/2017	RunNo:	120796
Client ID:	ZZZZZZ	Batch ID:	66041	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863972

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.663	0.20	5.000	0.1035	91.2	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

| | | |

ASSET LABORATORIES
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CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition: 1. Chilled Y; 2. Headspace; 3. Container Intact; 4. Seal Present; 5. IR number 2; 6. Method of Cooling: Ice
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	
Title: Geologist II	Phone: 916-786-3302 Fax:		Sample Temp: 2-9°C
Signature: Date: 12/11/2017	Sampled By: Gantt Jeffers	Matrix: Ground x; Potable; NPDES; Surface; Sediment; Soil; Other Solid	
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*		Courier: Tracking No.:
Project Name: PG&E Topock - GMP	Signature: Date: 12/11/2017		
Project Number: RC000753.801B			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2. SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2. SO4, NH4, OH 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3 500 mL poly	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) 1 liter poly	Specific Conductance (EPA 120.1) 1 liter poly	Total Dissolved Solids (SM2540C) 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027485-11	MW-26-Q417	12/11/2017	13:15		X		X		X		X	X				X	X	X	X	X	X	E	5	P	BNS	
2	-12	MW-907-Q417	12/11/2017	13:25		X		X		X		X	X				X	X	X	X	X	X	E	5	P	BNS	
3	-13	MW-729-Q417	12/11/2017	15:20		X																	E	1	P	B	
4	-14	MW-730-Q417	12/11/2017	15:30		X																	E	1	P	B	
5	-15	MW-731-Q417	12/11/2017	16:00		X																	E	1	P	B	
6	-16	MW-732-Q417	12/11/2017	13:10		X																	E	1	P	B	
7																											
8																											
9																											
10																											

Relinquished by (Signature and Printed Name): G. Jeffers	Date/Time: 12.11.17 15:55	Relinquished by (Signature and Printed Name):	Date/Time: 12/11/17 1550
Relinquished by (Signature and Printed Name):	Date/Time: 12/11/17 1800	Relinquished by (Signature and Printed Name):	Date/Time: 12/11/17 1800
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

- A = < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B = (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/11/2017	Workorder:	N027485
Rep sample Temp (Deg C):	2.1/2.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	N/A	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 12/20/2017

Reviewed By: 12/22/2017

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (760) 781 3338
FAX: (805) 544-8226
Acct #:

Field Sampler: Gantt Jeffers

14-Dec-17

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**OXY_DEUT**		
N027485-011B / MW-26-Q417	Groundwater	12/11/2017 1:15:00 PM	8OZP	1		
N027485-012B / MW-907-Q417	Groundwater	12/11/2017 1:25:00 PM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N27485A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Oxygen and Deuterium Stable Isotopes SFIRM. EDD Requirement Labspec7 edata.

Fedex #: 771000116324

	Date/Time		Date/Time
Relinquished by:	12/14/2017 16:00	**Received by:**	
Relinquished by:		**Received by:**	

ASSET Laboratories

WORK ORDER Summary

12-Dec-17

WorkOrder: N027485

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/11/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027485-001A	MW-70-105-Q417	12/11/2017 2:58:00 PM	12/26/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-001B			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027485-001C			12/26/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027485-001D			12/26/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/26/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/26/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/26/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027485-002A	MW-70BR-225-3V-Q417	12/11/2017 2:19:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-002B			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027485-002C			12/26/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

12-Dec-17

WorkOrder: N027485

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/11/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027485-002D	MW-70BR-225-3V-Q417	12/11/2017 2:19:00 PM	12/26/2017	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/26/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/26/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/26/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027485-003A	MW-70BR-225-LF-Q417	12/11/2017 12:52:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-003B			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027485-003C			12/26/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027485-003D			12/26/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/26/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/26/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/26/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027485-004A	MW-51-Q417	12/11/2017 2:20:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

12-Dec-17

WorkOrder: N027485

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/11/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027485-004B	MW-51-Q417	12/11/2017 2:20:00 PM	12/26/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027485-004C			12/26/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027485-004D			12/26/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/26/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/26/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/26/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027485-005A	MW-57-185-3V-Q417	12/11/2017 3:00:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-005B			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027485-005C			12/26/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027485-005D			12/26/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

12-Dec-17

WorkOrder: N027485

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/11/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027485-005D	MW-57-185-3V-Q417	12/11/2017 3:00:00 PM	12/26/2017	Groundwater	SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/26/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/26/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027485-006A	MW-57-185-LF_D-Q417	12/11/2017 1:21:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-006B			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027485-006C			12/26/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027485-006D			12/26/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/26/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/26/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/26/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027485-007A	MW-57-185-LF_S-Q417	12/11/2017 12:51:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-007B			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

12-Dec-17

WorkOrder: N027485

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/11/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027485-007B	MW-57-185-LF_S-Q417	12/11/2017 12:51:00 PM	12/26/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027485-007C			12/26/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027485-007D			12/26/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/26/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/26/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/26/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027485-008A	MW-57-070-Q417	12/11/2017 1:00:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-008B			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027485-008C			12/26/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027485-008D			12/26/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/26/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW

WORK ORDER Summary

12-Dec-17

WorkOrder: N027485

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/11/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027485-008D	MW-57-070-Q417	12/11/2017 1:00:00 PM	12/26/2017	Groundwater		Total Dissolved Solids Prep	☐	☐	☐	WW
			12/26/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027485-009A	MW-12-Q417	12/11/2017 3:05:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-009B			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017			DISSOLVED MERCURY PREP	☐	☐	☐	WW
			12/26/2017		EPA 7470A	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N027485-009C			12/26/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027485-009D			12/26/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/26/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/26/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/26/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

12-Dec-17

WorkOrder: N027485

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/11/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027485-010A	MW-58BR-Q417	12/11/2017 3:31:00 PM	12/26/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-010B			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027485-010C			12/26/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027485-010D			12/26/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/26/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/26/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/26/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027485-011A	MW-26-Q417	12/11/2017 1:15:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-011B			12/26/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027485-011C			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017			DISSOLVED MERCURY PREP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

12-Dec-17

WorkOrder: N027485

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/11/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027485-011C	MW-26-Q417	12/11/2017 1:15:00 PM	12/26/2017	Groundwater	EPA 7470A	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N027485-011D			12/26/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027485-011E			12/26/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/26/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/26/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/26/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027485-012A	MW-907-Q417	12/11/2017 1:25:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-012B			12/26/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027485-012C			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017			DISSOLVED MERCURY PREP	☐	☐	☐	WW
			12/26/2017		EPA 7470A	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N027485-012D			12/26/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027485-012E			12/26/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/26/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

12-Dec-17

WorkOrder: N027485

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/11/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027485-012E	MW-907-Q417	12/11/2017 1:25:00 PM	12/26/2017	Groundwater		Total Dissolved Solids Prep	☐	☐	☐	WW
			12/26/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027485-013A	MW-729-Q417	12/11/2017 3:20:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-014A	MW-730-Q417	12/11/2017 3:30:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-015A	MW-731-Q417	12/11/2017 4:00:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-016A	MW-732-Q417	12/11/2017 1:10:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-017A	FOLDER	12/25/2017	12/26/2017		EDD	RWQCB	☐	☐	☐	LAB
			12/26/2017		Folder	Folder	☐	☐	☐	LAB
			12/26/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP

Project No.: RC000753.801B

ASSET Laboratories Work Order:

N027485

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

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January 04, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027485

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 11, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburdi for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Subcontracted Analyses:

Oxygen/Deuterium was subcontracted to Zymax- Pittsburg,PA.

Analytical Comments for EPA 300.0:

Dilution was necessary for most of the samples due to precipitation upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N027485-001B-MS1 and N027485-001B-MSD1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N027485-002B-MS2 and N027485-002B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N027485-001B-MS and N027485-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary on some analytes for most of the samples due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

ASSET Laboratories

Date: *04-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027485
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027485-001A	MW-70-105-Q417	Groundwater	12/11/2017 2:58:00 PM	12/11/2017	1/4/2018
N027485-001B	MW-70-105-Q417	Groundwater	12/11/2017 2:58:00 PM	12/11/2017	1/4/2018
N027485-001C	MW-70-105-Q417	Groundwater	12/11/2017 2:58:00 PM	12/11/2017	1/4/2018
N027485-001D	MW-70-105-Q417	Groundwater	12/11/2017 2:58:00 PM	12/11/2017	1/4/2018
N027485-002A	MW-70BR-225-3V-Q417	Groundwater	12/11/2017 2:19:00 PM	12/11/2017	1/4/2018
N027485-002B	MW-70BR-225-3V-Q417	Groundwater	12/11/2017 2:19:00 PM	12/11/2017	1/4/2018
N027485-002C	MW-70BR-225-3V-Q417	Groundwater	12/11/2017 2:19:00 PM	12/11/2017	1/4/2018
N027485-002D	MW-70BR-225-3V-Q417	Groundwater	12/11/2017 2:19:00 PM	12/11/2017	1/4/2018
N027485-003A	MW-70BR-225-LF-Q417	Groundwater	12/11/2017 12:52:00 PM	12/11/2017	1/4/2018
N027485-003B	MW-70BR-225-LF-Q417	Groundwater	12/11/2017 12:52:00 PM	12/11/2017	1/4/2018
N027485-003C	MW-70BR-225-LF-Q417	Groundwater	12/11/2017 12:52:00 PM	12/11/2017	1/4/2018
N027485-003D	MW-70BR-225-LF-Q417	Groundwater	12/11/2017 12:52:00 PM	12/11/2017	1/4/2018
N027485-004A	MW-51-Q417	Groundwater	12/11/2017 2:20:00 PM	12/11/2017	1/4/2018
N027485-004B	MW-51-Q417	Groundwater	12/11/2017 2:20:00 PM	12/11/2017	1/4/2018
N027485-004C	MW-51-Q417	Groundwater	12/11/2017 2:20:00 PM	12/11/2017	1/4/2018
N027485-004D	MW-51-Q417	Groundwater	12/11/2017 2:20:00 PM	12/11/2017	1/4/2018
N027485-005A	MW-57-185-3V-Q417	Groundwater	12/11/2017 3:00:00 PM	12/11/2017	1/4/2018
N027485-005B	MW-57-185-3V-Q417	Groundwater	12/11/2017 3:00:00 PM	12/11/2017	1/4/2018
N027485-005C	MW-57-185-3V-Q417	Groundwater	12/11/2017 3:00:00 PM	12/11/2017	1/4/2018
N027485-005D	MW-57-185-3V-Q417	Groundwater	12/11/2017 3:00:00 PM	12/11/2017	1/4/2018
N027485-006A	MW-57-185-LF_D-Q417	Groundwater	12/11/2017 1:21:00 PM	12/11/2017	1/4/2018
N027485-006B	MW-57-185-LF_D-Q417	Groundwater	12/11/2017 1:21:00 PM	12/11/2017	1/4/2018
N027485-006C	MW-57-185-LF_D-Q417	Groundwater	12/11/2017 1:21:00 PM	12/11/2017	1/4/2018
N027485-006D	MW-57-185-LF_D-Q417	Groundwater	12/11/2017 1:21:00 PM	12/11/2017	1/4/2018
N027485-007A	MW-57-185-LF_S-Q417	Groundwater	12/11/2017 12:51:00 PM	12/11/2017	1/4/2018
N027485-007B	MW-57-185-LF_S-Q417	Groundwater	12/11/2017 12:51:00 PM	12/11/2017	1/4/2018
N027485-007C	MW-57-185-LF_S-Q417	Groundwater	12/11/2017 12:51:00 PM	12/11/2017	1/4/2018
N027485-007D	MW-57-185-LF_S-Q417	Groundwater	12/11/2017 12:51:00 PM	12/11/2017	1/4/2018
N027485-008A	MW-57-070-Q417	Groundwater	12/11/2017 1:00:00 PM	12/11/2017	1/4/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027485
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027485-008B	MW-57-070-Q417	Groundwater	12/11/2017 1:00:00 PM	12/11/2017	1/4/2018
N027485-008C	MW-57-070-Q417	Groundwater	12/11/2017 1:00:00 PM	12/11/2017	1/4/2018
N027485-008D	MW-57-070-Q417	Groundwater	12/11/2017 1:00:00 PM	12/11/2017	1/4/2018
N027485-009A	MW-12-Q417	Groundwater	12/11/2017 3:05:00 PM	12/11/2017	1/4/2018
N027485-009B	MW-12-Q417	Groundwater	12/11/2017 3:05:00 PM	12/11/2017	1/4/2018
N027485-009C	MW-12-Q417	Groundwater	12/11/2017 3:05:00 PM	12/11/2017	1/4/2018
N027485-009D	MW-12-Q417	Groundwater	12/11/2017 3:05:00 PM	12/11/2017	1/4/2018
N027485-010A	MW-58BR-Q417	Groundwater	12/11/2017 3:31:00 PM	12/11/2017	1/4/2018
N027485-010B	MW-58BR-Q417	Groundwater	12/11/2017 3:31:00 PM	12/11/2017	1/4/2018
N027485-010C	MW-58BR-Q417	Groundwater	12/11/2017 3:31:00 PM	12/11/2017	1/4/2018
N027485-010D	MW-58BR-Q417	Groundwater	12/11/2017 3:31:00 PM	12/11/2017	1/4/2018
N027485-011A	MW-26-Q417	Groundwater	12/11/2017 1:15:00 PM	12/11/2017	1/4/2018
N027485-011B	MW-26-Q417	Groundwater	12/11/2017 1:15:00 PM	12/11/2017	1/4/2018
N027485-011C	MW-26-Q417	Groundwater	12/11/2017 1:15:00 PM	12/11/2017	1/4/2018
N027485-011D	MW-26-Q417	Groundwater	12/11/2017 1:15:00 PM	12/11/2017	1/4/2018
N027485-011E	MW-26-Q417	Groundwater	12/11/2017 1:15:00 PM	12/11/2017	1/4/2018
N027485-012A	MW-907-Q417	Groundwater	12/11/2017 1:25:00 PM	12/11/2017	1/4/2018
N027485-012B	MW-907-Q417	Groundwater	12/11/2017 1:25:00 PM	12/11/2017	1/4/2018
N027485-012C	MW-907-Q417	Groundwater	12/11/2017 1:25:00 PM	12/11/2017	1/4/2018
N027485-012D	MW-907-Q417	Groundwater	12/11/2017 1:25:00 PM	12/11/2017	1/4/2018
N027485-012E	MW-907-Q417	Groundwater	12/11/2017 1:25:00 PM	12/11/2017	1/4/2018
N027485-013A	MW-729-Q417	Groundwater	12/11/2017 3:20:00 PM	12/11/2017	1/4/2018
N027485-014A	MW-730-Q417	Groundwater	12/11/2017 3:30:00 PM	12/11/2017	1/4/2018
N027485-015A	MW-731-Q417	Groundwater	12/11/2017 4:00:00 PM	12/11/2017	1/4/2018
N027485-016A	MW-732-Q417	Groundwater	12/11/2017 1:10:00 PM	12/11/2017	1/4/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70-105-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:58:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171212C**	QC Batch: **R120780**			PrepDate			Analyst: **LR**
Specific Conductance	3500	0.10	0.10		umhos/cm	1	12/12/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-3V-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:19:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171212C**	QC Batch: **R120780**			PrepDate			Analyst: **LR**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	12/12/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-003

Client Sample ID: MW-70BR-225-LF-Q417
Collection Date: 12/11/2017 12:52:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171212C**	QC Batch: **R120780**			PrepDate			Analyst: **LR**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	12/12/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-004

Client Sample ID: MW-51-Q417
Collection Date: 12/11/2017 2:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171212C**	QC Batch: **R120780**			PrepDate			Analyst: **LR**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	12/12/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-005

Client Sample ID: MW-57-185-3V-Q417
Collection Date: 12/11/2017 3:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171212C**	QC Batch: **R120780**			PrepDate			Analyst: **LR**
Specific Conductance	18000	0.10	0.10		umhos/cm	1	12/12/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_D-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:21:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171212C**	QC Batch: **R120780**			PrepDate			Analyst: **LR**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	12/12/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_S-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 12:51:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171212C**	QC Batch: **R120780**			PrepDate			Analyst: **LR**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	12/12/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-070-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171212C**	QC Batch: **R120780**			PrepDate			Analyst: **LR**
Specific Conductance	2400	0.10	0.10		umhos/cm	1	12/12/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-12-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171212C**	QC Batch: **R120780**			PrepDate			Analyst: **LR**
Specific Conductance	7200	0.10	0.10		umhos/cm	1	12/12/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-010

Client Sample ID: MW-58BR-Q417
Collection Date: 12/11/2017 3:31:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171212C**	QC Batch: **R120780**			PrepDate			Analyst: **LR**
Specific Conductance	7900	0.10	0.10		umhos/cm	1	12/12/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-26-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:15:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171212C**	QC Batch: **R120780**			PrepDate			Analyst: **LR**
Specific Conductance	3800	0.10	0.10		umhos/cm	1	12/12/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171212C**	QC Batch: **R120780**			PrepDate			Analyst: **LR**
Specific Conductance	3800	0.10	0.10		umhos/cm	1	12/12/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N027485-005DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120780
Client ID:	ZZZZZZ	Batch ID:	R120780	TestNo:	EPA 120.1			Analysis Date:	12/12/2017	SeqNo:	2862641

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	17590.000	0.10						17560	0.171	10	

Sample ID	N027485-011EDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120780
Client ID:	ZZZZZZ	Batch ID:	R120780	TestNo:	EPA 120.1			Analysis Date:	12/12/2017	SeqNo:	2862648

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	3810.000	0.10						3800	0.263	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70-105-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:58:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214H**	QC Batch: **66076**				PrepDate	**12/14/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2000	25	25		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-3V-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:19:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214H**	QC Batch: **66076**				PrepDate	**12/14/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	6900	100	100		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-LF-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 12:52:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214H**	QC Batch: **66076**			PrepDate	**12/14/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	6700	100	100		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-51-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214H**	QC Batch: **66076**				PrepDate	**12/14/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	6500	100	100		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-3V-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214H**	QC Batch: **66076**				PrepDate	**12/14/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	9800	100	100		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_D-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:21:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171214H**	QC Batch: **66076**				PrepDate	**12/14/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	9600	100	100		mg/L	1	12/14/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_S-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 12:51:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171215E**	QC Batch: **66095**			PrepDate	**12/15/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	9800	100	100		mg/L	1	12/15/2017 01:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-070-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171215E**	QC Batch: **66095**				PrepDate	**12/15/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1500	17	17		mg/L	1	12/15/2017 01:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-12-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171215E**	QC Batch: **66095**				PrepDate	**12/15/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3800	50	50		mg/L	1	12/15/2017 01:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:31:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171215E**	QC Batch: **66095**			PrepDate	**12/15/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4800	50	50		mg/L	1	12/15/2017 01:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-26-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:15:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171215E**	QC Batch: **66095**			PrepDate	**12/15/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2300	25	25		mg/L	1	12/15/2017 01:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171215E**	QC Batch: **66095**			PrepDate	**12/15/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2300	25	25		mg/L	1	12/15/2017 01:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-66076	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/14/2017	RunNo:	120877
Client ID:	LCSW	Batch ID:	66076	TestNo:	SM2540C			Analysis Date:	12/14/2017	SeqNo:	2869168

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	946.000	10	1000	0	94.6	80	120				

Sample ID	MB-66076	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/14/2017	RunNo:	120877
Client ID:	PBW	Batch ID:	66076	TestNo:	SM2540C			Analysis Date:	12/14/2017	SeqNo:	2869169

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N027485-005DDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/14/2017	RunNo:	120877
Client ID:	ZZZZZZ	Batch ID:	66076	TestNo:	SM2540C			Analysis Date:	12/14/2017	SeqNo:	2869179

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	10290.000	100						9850	4.37	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66095**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/15/2017**	RunNo: **120880**
Client ID: **LCSW**	Batch ID: **66095**	TestNo: **SM2540C**		Analysis Date: **12/15/2017**	SeqNo: **2869280**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	940.000	10	1000	0	94.0	80	120				

Sample ID **MB-66095**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/15/2017**	RunNo: **120880**
Client ID: **PBW**	Batch ID: **66095**	TestNo: **SM2540C**		Analysis Date: **12/15/2017**	SeqNo: **2869281**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N027485-007DDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/15/2017**	RunNo: **120880**
Client ID: **ZZZZZZ**	Batch ID: **66095**	TestNo: **SM2540C**		Analysis Date: **12/15/2017**	SeqNo: **2869283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	10080.000	100						9770	3.12	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-001

Client Sample ID: MW-70-105-Q417
Collection Date: 12/11/2017 2:58:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	160	0.66	4.0		µg/L	20	12/15/2017 10:26 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180102D**	QC Batch: **66022**			PrepDate	**12/14/2017**		Analyst: **CEI**
Chromium	150	0.019	1.0		µg/L	1	1/2/2018 10:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-002

Client Sample ID: MW-70BR-225-3V-Q417
Collection Date: 12/11/2017 2:19:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1700	6.6	40		µg/L	200	12/15/2017 09:39 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180103A**	QC Batch: **66022**			PrepDate	**12/14/2017**		Analyst: **CEI**
Chromium	1800	0.48	25		µg/L	25	1/3/2018 06:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-003

Client Sample ID: MW-70BR-225-LF-Q417
Collection Date: 12/11/2017 12:52:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1400	6.6	40		µg/L	200	12/15/2017 09:48 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180103A**	QC Batch: **66022**			PrepDate	**12/14/2017**		Analyst: **CEI**
Chromium	1600	0.48	25		µg/L	25	1/3/2018 06:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-004

Client Sample ID: MW-51-Q417
Collection Date: 12/11/2017 2:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	3700	33	200		µg/L	1000	12/15/2017 11:32 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180103A**	QC Batch: **66022**			PrepDate	**12/14/2017**		Analyst: **CEI**
Chromium	4100	0.48	25		µg/L	25	1/3/2018 06:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-005

Client Sample ID: MW-57-185-3V-Q417
Collection Date: 12/11/2017 3:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A** QC Batch: **R120903**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	8.2	0.17	1.0		µg/L	5	12/15/2017 11:51 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180103A** QC Batch: **66022**				PrepDate	**12/14/2017**		Analyst: **CEI**
Chromium	7.4	0.019	1.0		µg/L	1	1/3/2018 06:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-006

Client Sample ID: MW-57-185-LF_D-Q417
Collection Date: 12/11/2017 1:21:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A** QC Batch: **R120903**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	3.1	0.17	1.0		µg/L	5	12/15/2017 12:10 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180103A** QC Batch: **66022**				PrepDate **12/14/2017**			Analyst: **CEI**
Chromium	2.7	0.019	1.0		µg/L	1	1/3/2018 06:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-007

Client Sample ID: MW-57-185-LF_S-Q417
Collection Date: 12/11/2017 12:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A** QC Batch: **R120903**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	3.0	0.17	1.0		µg/L	5	12/15/2017 12:29 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A	**EPA 6020**			
RunID: **NV00922-ICP7_180103A** QC Batch: **66022**				PrepDate	**12/14/2017**		Analyst: **CEI**
Chromium	3.3	0.019	1.0		µg/L	1	1/3/2018 06:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-008

Client Sample ID: MW-57-070-Q417
Collection Date: 12/11/2017 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	420	3.3	20		µg/L	100	12/15/2017 01:07 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180102D**	QC Batch: **66022**			PrepDate	**12/14/2017**		Analyst: **CEI**
Chromium	430	0.096	5.0		µg/L	5	1/3/2018 01:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-009

Client Sample ID: MW-12-Q417
Collection Date: 12/11/2017 3:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1800	17	100		µg/L	500	12/15/2017 01:26 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180102D**	QC Batch: **66022**			PrepDate	**12/14/2017**		Analyst: **CEI**
Chromium	2100	0.48	25		µg/L	25	1/3/2018 02:04 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-010

Client Sample ID: MW-58BR-Q417
Collection Date: 12/11/2017 3:31:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A** QC Batch: **R120903**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	39	0.17	1.0		µg/L	5	12/15/2017 01:45 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A	**EPA 6020**			
RunID: **NV00922-ICP7_180102D** QC Batch: **66022**				PrepDate	**12/14/2017**		Analyst: **CEI**
Chromium	41	0.019	1.0		µg/L	1	1/3/2018 01:53 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-011

Client Sample ID: MW-26-Q417
Collection Date: 12/11/2017 1:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	2300	17	100		µg/L	500	12/15/2017 02:03 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180102D**	QC Batch: **66022**			PrepDate	**12/14/2017**		Analyst: **CEI**
Chromium	2600	0.48	25		µg/L	25	1/3/2018 02:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	2400	17	100		µg/L	500	12/15/2017 02:22 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180102D**	QC Batch: **66022**			PrepDate	**12/14/2017**		Analyst: **CEI**
Chromium	2500	0.48	25		µg/L	25	1/3/2018 02:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-729-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/15/2017 03:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-730-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/15/2017 03:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-731-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/15/2017 08:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-732-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171215A**	QC Batch: **R120903**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/15/2017 04:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	**MB-R120903**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID:	**PBW**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870594**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	**LCS-R120903**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID:	**LCSW**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870595**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.228	0.20	5.000	0	105	90	110				

Sample ID	**N027485-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID:	**ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870599**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	260.554	4.0	100.0	156.5	104	90	110				

Sample ID	**N027485-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID:	**ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870600**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	260.346	4.0	100.0	156.5	104	90	110	260.6	0.0799	20	

Sample ID	**N027485-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID:	**ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870603**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2757.320	40	1000	1730	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027485-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870604**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2468.720	40	1000	1430	104	90	110				

Sample ID **N027485-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9037.100	200	5000	3727	106	90	110				

Sample ID **N027485-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870608**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.460	1.0	5.000	8.194	105	90	110				

Sample ID **N027485-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870610**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.309	1.0	5.000	3.066	105	90	110				

Sample ID **N027485-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.394	1.0	5.000	3.029	107	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027485-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120903**
Client ID: **ZZZZZZ** Batch ID: **R120903** TestNo: **EPA 218.6** Analysis Date: **12/15/2017** SeqNo: **2870616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	938.900	20	500.0	419.0	104	90	110				

Sample ID **N027485-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120903**
Client ID: **ZZZZZZ** Batch ID: **R120903** TestNo: **EPA 218.6** Analysis Date: **12/15/2017** SeqNo: **2870618**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4392.300	100	2500	1795	104	90	110				

Sample ID **N027485-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120903**
Client ID: **ZZZZZZ** Batch ID: **R120903** TestNo: **EPA 218.6** Analysis Date: **12/15/2017** SeqNo: **2870620**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	65.788	1.0	25.00	38.85	108	90	110				

Sample ID **N027485-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120903**
Client ID: **ZZZZZZ** Batch ID: **R120903** TestNo: **EPA 218.6** Analysis Date: **12/15/2017** SeqNo: **2870622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4952.800	100	2500	2341	104	90	110				

Sample ID **N027485-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120903**
Client ID: **ZZZZZZ** Batch ID: **R120903** TestNo: **EPA 218.6** Analysis Date: **12/15/2017** SeqNo: **2870624**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4983.750	100	2500	2388	104	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027485-003ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870627**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1430.860	40						1430	0.0671	20	

Sample ID **N027485-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.056	0.20	1.000	0	106	90	110				

Sample ID **N027485-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870631**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.086	0.20	1.000	0	109	90	110				

Sample ID **N027485-015AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870632**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.057	0.20	1.000	0	106	90	110				

Sample ID **N027485-016AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870634**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0	106	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027459-018AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870638

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.654	1.0	5.000	0	93.1	90	110				

Sample ID	N027459-019AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870640

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.193	1.0	5.000	0	104	90	110				

Sample ID	N027459-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120903
Client ID:	ZZZZZZ	Batch ID:	R120903	TestNo:	EPA 218.6			Analysis Date:	12/15/2017	SeqNo:	2870644

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	17.987	0.40	10.00	7.873	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-66022**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/14/2017**	RunNo: **121175**
Client ID: **PBW**	Batch ID: **66022**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/2/2018**	SeqNo: **2882374**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-66022**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/14/2017**	RunNo: **121175**
Client ID: **LCSW**	Batch ID: **66022**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/2/2018**	SeqNo: **2882375**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.955	1.0	10.00	0	99.5	85	115				

Sample ID **N027485-001B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/14/2017**	RunNo: **121175**
Client ID: **ZZZZZZ**	Batch ID: **66022**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/2/2018**	SeqNo: **2882391**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	157.980	1.0	10.00	153.5	45.0	75	125				S

Sample ID **N027485-001B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/14/2017**	RunNo: **121175**
Client ID: **ZZZZZZ**	Batch ID: **66022**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/2/2018**	SeqNo: **2882393**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	156.223	1.0	10.00	153.5	27.4	75	125	158.0	1.12	20	S

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70-105-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:58:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	88	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-3V-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:19:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	43	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-003

Client Sample ID: MW-70BR-225-LF-Q417
Collection Date: 12/11/2017 12:52:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171214D**	QC Batch: **R120856**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	40	1.2	5.0		mg/L	1	12/14/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-51-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	80	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-3V-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	37	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_D-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:21:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	87	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-007

Client Sample ID: MW-57-185-LF_S-Q417
Collection Date: 12/11/2017 12:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	90	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-070-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	76	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-12-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	110	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-010

Client Sample ID: MW-58BR-Q417
Collection Date: 12/11/2017 3:31:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	41	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-011

Client Sample ID: MW-26-Q417
Collection Date: 12/11/2017 1:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	120	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	120	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R120856**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120856**
Client ID: **LCSW**	Batch ID: **R120856**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2868272**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	101.464	5.0	100.0	0	101	85	115				

Sample ID **MB-R120856**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120856**
Client ID: **PBW**	Batch ID: **R120856**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2868273**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N027459-003CDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120856**
Client ID: **ZZZZZZ**	Batch ID: **R120856**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2868275**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	16.736	5.0						15.69	6.45	30	

Sample ID **N027459-017EMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120856**
Client ID: **ZZZZZZ**	Batch ID: **R120856**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2868290**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	188.285	5.0	100.0	92.05	96.2	75	125				

Sample ID **N027459-017EMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120856**
Client ID: **ZZZZZZ**	Batch ID: **R120856**	TestNo: **SM 2320 B**		Analysis Date: **12/14/2017**	SeqNo: **2868291**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	190.377	5.0	100.0	92.05	98.3	75	125	188.3	1.10	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID	LCS-R120882	SampType:	LCS	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120882		
Client ID:	LCSW	Batch ID:	R120882	TestNo:	SM 2320 B			Analysis Date:	12/15/2017	SeqNo:	2869307		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Alkalinity, Total (As CaCO3)	98.739	5.0	100.0	0	98.7	85	115						

Sample ID	MB-R120882	SampType:	MBLK	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120882		
Client ID:	PBW	Batch ID:	R120882	TestNo:	SM 2320 B			Analysis Date:	12/15/2017	SeqNo:	2869308		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Alkalinity, Total (As CaCO3)	ND	5.0											

Sample ID	N027485-008DMS	SampType:	MS	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120882		
Client ID:	ZZZZZZ	Batch ID:	R120882	TestNo:	SM 2320 B			Analysis Date:	12/15/2017	SeqNo:	2869314		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Alkalinity, Total (As CaCO3)	171.218	5.0	100.0	75.63	95.6	75	125						

Sample ID	N027485-008DMSD	SampType:	MSD	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120882		
Client ID:	ZZZZZZ	Batch ID:	R120882	TestNo:	SM 2320 B			Analysis Date:	12/15/2017	SeqNo:	2869315		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Alkalinity, Total (As CaCO3)	176.471	5.0	100.0	75.63	101	75	125	171.2	3.02	20			

Sample ID	N027523-001CDUP	SampType:	DUP	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	120882		
Client ID:	ZZZZZZ	Batch ID:	R120882	TestNo:	SM 2320 B			Analysis Date:	12/15/2017	SeqNo:	2869321		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Alkalinity, Total (As CaCO3)	76.681	5.0						78.78	2.70	30			

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-001

Client Sample ID: MW-70-105-Q417
Collection Date: 12/11/2017 2:58:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/19/2017 10:46 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Chloride	980	1.8	100		mg/L	200	12/18/2017 05:11 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Sulfate	260	1.1	25		mg/L	50	12/18/2017 06:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-002

Client Sample ID: MW-70BR-225-3V-Q417
Collection Date: 12/11/2017 2:19:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.20	5.0		mg/L	10	12/19/2017 11:01 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Chloride	4500	18	1000		mg/L	2000	12/18/2017 03:55 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Sulfate	800	2.3	50		mg/L	100	12/19/2017 01:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-003

Client Sample ID: MW-70BR-225-LF-Q417
Collection Date: 12/11/2017 12:52:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.20	5.0		mg/L	10	12/19/2017 11:16 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Chloride	4100	18	1000		mg/L	2000	12/18/2017 04:10 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Sulfate	760	2.3	50		mg/L	100	12/19/2017 01:36 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-004

Client Sample ID: MW-51-Q417
Collection Date: 12/11/2017 2:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/19/2017 11:32 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Chloride	4200	18	1000		mg/L	2000	12/18/2017 08:45 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Sulfate	690	1.1	25		mg/L	50	12/18/2017 09:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-005

Client Sample ID: MW-57-185-3V-Q417
Collection Date: 12/11/2017 3:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/19/2017 11:47 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Chloride	6100	18	1000		mg/L	2000	12/18/2017 04:25 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Sulfate	750	2.3	50		mg/L	100	12/19/2017 01:51 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-006

Client Sample ID: MW-57-185-LF_D-Q417
Collection Date: 12/11/2017 1:21:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/20/2017 12:02 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Chloride	6000	18	1000		mg/L	2000	12/18/2017 04:40 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Sulfate	730	2.3	50		mg/L	100	12/19/2017 02:06 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-007

Client Sample ID: MW-57-185-LF_S-Q417
Collection Date: 12/11/2017 12:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/20/2017 12:48 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Chloride	6000	18	1000		mg/L	2000	12/18/2017 04:56 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Sulfate	740	2.3	50		mg/L	100	12/19/2017 02:22 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-008

Client Sample ID: MW-57-070-Q417
Collection Date: 12/11/2017 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/19/2017 08:28 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Chloride	770	1.8	100		mg/L	200	12/18/2017 09:16 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Sulfate	90	0.23	5.0		mg/L	10	12/18/2017 10:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-009

Client Sample ID: MW-12-Q417
Collection Date: 12/11/2017 3:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	0.93	0.020	0.50		mg/L	1	12/20/2017 01:04 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Chloride	2000	4.6	250		mg/L	500	12/18/2017 10:17 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Sulfate	480	2.3	50		mg/L	100	12/18/2017 10:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-010

Client Sample ID: MW-58BR-Q417
Collection Date: 12/11/2017 3:31:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/20/2017 01:19 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Chloride	2600	9.1	500		mg/L	1000	12/18/2017 10:48 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Sulfate	520	2.3	50		mg/L	100	12/18/2017 11:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-011

Client Sample ID: MW-26-Q417
Collection Date: 12/11/2017 1:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/20/2017 01:34 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Chloride	910	1.8	100		mg/L	200	12/18/2017 07:44 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Sulfate	500	2.3	50		mg/L	100	12/18/2017 08:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-012

Client Sample ID: MW-907-Q417
Collection Date: 12/11/2017 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/20/2017 01:49 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Chloride	900	1.8	100		mg/L	200	12/18/2017 11:18 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171218A** QC Batch: **R120937**				PrepDate			Analyst: **RAB**
Sulfate	510	2.3	50		mg/L	100	12/18/2017 11:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	LCS-R120970_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120970
Client ID:	LCSW	Batch ID:	R120970	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874470

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.223	0.50	1.250	0	97.8	90	110				

Sample ID	MB-R120970_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120970
Client ID:	PBW	Batch ID:	R120970	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874471

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	N027485-008DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120970
Client ID:	ZZZZZZ	Batch ID:	R120970	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874473

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	6.983	2.5	6.250	0.3850	106	80	120				

Sample ID	N027485-008DMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120970
Client ID:	ZZZZZZ	Batch ID:	R120970	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874474

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	7.017	2.5	6.250	0.3850	106	80	120	6.983	0.486	20	

Sample ID	N027523-001CMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120970
Client ID:	ZZZZZZ	Batch ID:	R120970	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874478

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.565	0.50	1.250	0.2819	103	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	N027523-002CDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120970
Client ID:	ZZZZZZ	Batch ID:	R120970	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874480

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.084	0.50						0.1061	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R120937_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	PBW	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872521

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R120937_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	LCSW	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872522

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.071	0.50	2.000	0	104	90	110				

Sample ID	N027485-001DDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872535

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	981.340	100						975.4	0.605	20	

Sample ID	N027485-001DMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872536

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1408.480	100	400.0	975.4	108	80	120				

Sample ID	N027485-001DMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872537

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1421.160	100	400.0	975.4	111	80	120	1408	0.896	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N027485-011EMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872541

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1320.820	100	400.0	910.6	103	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R120937_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	PBW	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872591

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R120937_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	LCSW	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872592

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.846	0.50	4.000	0	96.1	90	110				

Sample ID	N027485-001DDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872602

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	257.605	25						261.0	1.32	20	

Sample ID	N027485-001DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872603

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	459.490	25	200.0	261.0	99.2	80	120				

Sample ID	N027485-001DMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872604

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	458.065	25	200.0	261.0	98.5	80	120	459.5	0.311	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N027485-011EMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	120937
Client ID:	ZZZZZZ	Batch ID:	R120937	TestNo:	EPA 300.0			Analysis Date:	12/18/2017	SeqNo:	2872606

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	904.840	50	400.0	499.1	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70-105-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:58:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	4.5	0.22	0.50		mg/L	10	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-3V-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:19:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	3.8	0.11	0.25		mg/L	5	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-003

Client Sample ID: MW-70BR-225-LF-Q417
Collection Date: 12/11/2017 12:52:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	3.3	0.11	0.25		mg/L	5	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-51-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	8.7	0.22	0.50		mg/L	10	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-3V-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_D-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:21:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.14	0.022	0.050		mg/L	1	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_S-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 12:51:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.15	0.022	0.050		mg/L	1	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-070-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	9.5	0.22	0.50		mg/L	10	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-12-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	15	0.44	1.0		mg/L	20	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-010

Client Sample ID: MW-58BR-Q417
Collection Date: 12/11/2017 3:31:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.2	0.022	0.050		mg/L	1	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-26-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:15:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222B**	QC Batch: **R121034**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	21	0.44	1.0		mg/L	20	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-012

Client Sample ID: MW-907-Q417
Collection Date: 12/11/2017 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222D**	QC Batch: **R121037**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	20	0.44	1.0		mg/L	20	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R121034**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **PBW**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877768**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R121034**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **LCSW**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.496	0.050	0.5000	0	99.3	85	115				

Sample ID **N027431-005DDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **ZZZZZZ**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877771**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.148	0.50						9.004	1.59	20	

Sample ID **N027431-006DMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **ZZZZZZ**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877773**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	25.092	1.0	10.00	15.04	100	75	125				

Sample ID **N027431-006DMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **ZZZZZZ**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877774**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	24.784	1.0	10.00	15.04	97.4	75	125	25.09	1.24	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R121037**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **PBW**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R121037**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **LCSW**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877837**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.476	0.050	0.5000	0	95.2	85	115				

Sample ID **N027523-005DMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **ZZZZZZ**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877840**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.032	0.25	2.500	3.434	104	75	125				

Sample ID **N027523-005DMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **ZZZZZZ**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.779	0.25	2.500	3.434	93.8	75	125	6.032	4.28	20	

Sample ID **N027523-008CDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **ZZZZZZ**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877843**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.313	0.050						1.204	8.59	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-001

Client Sample ID: MW-70-105-Q417
Collection Date: 12/11/2017 2:58:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	620	38	100		ug/L	1	12/19/2017 06:00 PM
Calcium	99000	28	500		ug/L	1	12/19/2017 06:00 PM
Iron	37	1.8	20		ug/L	1	12/19/2017 06:00 PM
Magnesium	9100	4.4	100		ug/L	1	12/19/2017 06:00 PM
Sodium	620000	2600	50000		ug/L	100	12/22/2017 04:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-3V-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 2:19:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	1500	38	100		ug/L	1	12/19/2017 06:31 PM
Calcium	630000	140	2500		ug/L	5	12/20/2017 06:28 AM
Iron	ND	1.8	20		ug/L	1	12/19/2017 06:31 PM
Magnesium	26000	4.4	100		ug/L	1	12/19/2017 06:31 PM
Sodium	2300000	2600	50000		ug/L	100	12/22/2017 06:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-003

Client Sample ID: MW-70BR-225-LF-Q417
Collection Date: 12/11/2017 12:52:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	1400	38	100		ug/L	1	12/19/2017 06:38 PM
Calcium	630000	140	2500		ug/L	5	12/20/2017 06:35 AM
Iron	110	1.8	20		ug/L	1	12/19/2017 06:38 PM
Magnesium	24000	4.4	100		ug/L	1	12/19/2017 06:38 PM
Sodium	2200000	2600	50000		ug/L	100	12/22/2017 04:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-004

Client Sample ID: MW-51-Q417
Collection Date: 12/11/2017 2:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	1600	38	100		ug/L	1	12/19/2017 06:45 PM
Calcium	300000	28	500		ug/L	1	12/19/2017 06:45 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 06:45 PM
Magnesium	19000	4.4	100		ug/L	1	12/19/2017 06:45 PM
Sodium	2600000	2600	50000		ug/L	100	12/22/2017 05:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-005

Client Sample ID: MW-57-185-3V-Q417
Collection Date: 12/11/2017 3:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	2500	38	100		ug/L	1	12/19/2017 06:52 PM
Calcium	350000	28	500		ug/L	1	12/19/2017 06:52 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 06:52 PM
Magnesium	2000	4.4	100		ug/L	1	12/19/2017 06:52 PM
Sodium	4000000	13000	250000		ug/L	500	12/22/2017 05:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-006

Client Sample ID: MW-57-185-LF_D-Q417
Collection Date: 12/11/2017 1:21:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	2300	38	100		ug/L	1	12/19/2017 06:58 PM
Calcium	390000	28	500		ug/L	1	12/19/2017 06:58 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 06:58 PM
Magnesium	ND	4.4	100		ug/L	1	12/19/2017 06:58 PM
Sodium	3800000	13000	250000		ug/L	500	12/22/2017 05:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-007

Client Sample ID: MW-57-185-LF_S-Q417
Collection Date: 12/11/2017 12:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	2300	38	100		ug/L	1	12/19/2017 07:20 PM
Calcium	390000	28	500		ug/L	1	12/19/2017 07:20 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 07:20 PM
Magnesium	ND	4.4	100		ug/L	1	12/19/2017 07:20 PM
Sodium	3800000	13000	250000		ug/L	500	12/22/2017 05:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-008

Client Sample ID: MW-57-070-Q417
Collection Date: 12/11/2017 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	170	38	100		ug/L	1	12/19/2017 07:27 PM
Calcium	370000	28	500		ug/L	1	12/19/2017 07:27 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 07:27 PM
Magnesium	23000	4.4	100		ug/L	1	12/19/2017 07:27 PM
Sodium	94000	260	5000		ug/L	10	12/22/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-009

Client Sample ID: MW-12-Q417
Collection Date: 12/11/2017 3:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**	Analyst: **CEI**	
Boron	1200	38	100		ug/L	1	12/19/2017 07:34 PM
Calcium	42000	28	500		ug/L	1	12/19/2017 07:34 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 07:34 PM
Magnesium	7200	4.4	100		ug/L	1	12/19/2017 07:34 PM
Sodium	1500000	2600	50000		ug/L	100	12/22/2017 05:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-010

Client Sample ID: MW-58BR-Q417
Collection Date: 12/11/2017 3:31:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	1000	38	100		ug/L	1	12/19/2017 07:41 PM
Calcium	480000	140	2500		ug/L	5	12/20/2017 06:54 AM
Iron	230	1.8	20		ug/L	1	12/19/2017 07:41 PM
Magnesium	24000	4.4	100		ug/L	1	12/19/2017 07:41 PM
Sodium	1300000	2600	50000		ug/L	100	12/22/2017 05:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-011

Client Sample ID: MW-26-Q417
Collection Date: 12/11/2017 1:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	1000	38	100		ug/L	1	12/19/2017 07:48 PM
Calcium	160000	28	500		ug/L	1	12/19/2017 07:48 PM
Iron	99	1.8	20		ug/L	1	12/19/2017 07:48 PM
Magnesium	37000	4.4	100		ug/L	1	12/19/2017 07:48 PM
Potassium	12000	38	500		ug/L	1	12/22/2017 06:31 PM
Sodium	620000	2600	50000		ug/L	100	12/22/2017 04:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-012

Client Sample ID: MW-907-Q417
Collection Date: 12/11/2017 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	990	38	100		ug/L	1	12/19/2017 07:55 PM
Calcium	150000	28	500		ug/L	1	12/19/2017 07:55 PM
Iron	110	1.8	20		ug/L	1	12/19/2017 07:55 PM
Magnesium	36000	4.4	100		ug/L	1	12/19/2017 07:55 PM
Potassium	12000	38	500		ug/L	1	12/22/2017 06:36 PM
Sodium	600000	2600	50000		ug/L	100	12/22/2017 04:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-66042** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/13/2017** RunNo: **120943**
Client ID: **PBW** Batch ID: **66042** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2017** SeqNo: **2872919**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	39.668	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-66042** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/13/2017** RunNo: **120943**
Client ID: **LCSW** Batch ID: **66042** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2017** SeqNo: **2872920**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4658.382	100	5000	0	93.2	85	115				
Calcium	9550.427	500	10000	0	95.5	85	115				
Iron	111.284	20	100.0	0	111	85	115				
Magnesium	9359.822	100	10000	0	93.6	85	115				

Sample ID **N027485-001B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/13/2017** RunNo: **120943**
Client ID: **ZZZZZZ** Batch ID: **66042** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2017** SeqNo: **2872929**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5401.750	100	5000	622.3	95.6	75	125				
Calcium	114168.705	500	10000	99230	149	75	125				S
Iron	130.704	20	100.0	37.24	93.5	75	125				
Magnesium	18441.376	100	10000	9130	93.1	75	125				

Sample ID **N027485-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/13/2017** RunNo: **120943**
Client ID: **ZZZZZZ** Batch ID: **66042** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2017** SeqNo: **2872930**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5435.339	100	5000	622.3	96.3	75	125	5402	0.620	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027485-001B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	120943
Client ID:	ZZZZZZ	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2872930

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	114588.712	500	10000	99230	154	75	125	114200	0.367	20	S
Iron	132.205	20	100.0	37.24	95.0	75	125	130.7	1.14	20	
Magnesium	18529.658	100	10000	9130	94.0	75	125	18440	0.478	20	

Sample ID	MB-66042	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	121039
Client ID:	PBW	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2877890

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	ND	500									
Sodium	ND	500									

Sample ID	LCS2-66042	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	121039
Client ID:	LCSW	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2877891

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	19753.474	500	20000	0	98.8	85	115				
Sodium	20542.580	500	20000	0	103	85	115				

Sample ID	N027485-002B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	121039
Client ID:	ZZZZZZ	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2877920

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	55943.272	2500	20000	32930	115	75	125				

Sample ID	N027485-002B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	121039
Client ID:	ZZZZZZ	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2877921

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	56100.259	2500	20000	32930	116	75	125	55940	0.280	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027485-002B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	121039
Client ID:	ZZZZZZ	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2877927

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2452204.526	50000	20000	2335000	586	75	125				S

Sample ID	N027485-002B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	121039
Client ID:	ZZZZZZ	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2877928

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2409150.832	50000	20000	2335000	370	75	125	2452000	1.77	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-001

Client Sample ID: MW-70-105-Q417
Collection Date: 12/11/2017 2:58:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180102E**	QC Batch: **66022**			PrepDate	**12/14/2017**	Analyst: **CEI**	
Arsenic	3.9	0.025	0.10		µg/L	1	1/2/2018 10:58 PM
Manganese	11	0.056	0.50		µg/L	1	1/2/2018 10:58 PM
Molybdenum	72	0.039	0.50		µg/L	1	1/2/2018 10:58 PM
Selenium	4.9	0.028	0.50		µg/L	1	1/2/2018 10:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-002

Client Sample ID: MW-70BR-225-3V-Q417
Collection Date: 12/11/2017 2:19:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180102E**	QC Batch: **66022**			PrepDate	**12/14/2017**		Analyst: **CEI**
Arsenic	1.9	0.025	0.10		µg/L	1	1/2/2018 11:50 PM
Manganese	1.1	0.056	0.50		µg/L	1	1/2/2018 11:50 PM
Molybdenum	18	0.19	2.5		µg/L	5	1/3/2018 12:25 AM
Selenium	2.7	0.028	0.50		µg/L	1	1/2/2018 11:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-003

Client Sample ID: MW-70BR-225-LF-Q417
Collection Date: 12/11/2017 12:52:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180102E**	QC Batch: **66022**			PrepDate	**12/14/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/3/2018 12:31 AM
Manganese	5.7	0.056	0.50		µg/L	1	1/3/2018 12:31 AM
Molybdenum	21	0.19	2.5		µg/L	5	1/3/2018 12:37 AM
Selenium	ND	0.14	2.5		µg/L	5	1/3/2018 12:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-004

Client Sample ID: MW-51-Q417
Collection Date: 12/11/2017 2:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180102E**	QC Batch: **66022**			PrepDate	**12/14/2017**		Analyst: **CEI**
Arsenic	3.8	0.025	0.10		µg/L	1	1/3/2018 12:43 AM
Manganese	4.1	0.056	0.50		µg/L	1	1/3/2018 12:43 AM
Molybdenum	48	0.19	2.5		µg/L	5	1/3/2018 12:48 AM
Selenium	14	0.028	0.50		µg/L	1	1/3/2018 12:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-005

Client Sample ID: MW-57-185-3V-Q417
Collection Date: 12/11/2017 3:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180102E**	QC Batch: **66022**			PrepDate	**12/14/2017**	Analyst: **CEI**	
Arsenic	11	0.12	0.50		µg/L	5	1/3/2018 01:00 AM
Manganese	160	0.056	0.50		µg/L	1	1/3/2018 12:54 AM
Molybdenum	84	0.19	2.5		µg/L	5	1/3/2018 01:00 AM
Selenium	ND	0.14	2.5		µg/L	5	1/3/2018 01:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_D-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:21:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180102E**	QC Batch: **66022**				PrepDate	**12/14/2017**	Analyst: **CEI**
Arsenic	3.9	0.12	0.50		µg/L	5	1/3/2018 01:12 AM
Manganese	5.8	0.056	0.50		µg/L	1	1/3/2018 01:06 AM
Molybdenum	84	0.19	2.5		µg/L	5	1/3/2018 01:12 AM
Selenium	ND	0.14	2.5		µg/L	5	1/3/2018 01:12 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-007

Client Sample ID: MW-57-185-LF_S-Q417
Collection Date: 12/11/2017 12:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180102E**	QC Batch: **66022**			PrepDate	**12/14/2017**		Analyst: **CEI**
Arsenic	3.2	0.12	0.50		µg/L	5	1/3/2018 01:35 AM
Manganese	6.9	0.056	0.50		µg/L	1	1/3/2018 01:17 AM
Molybdenum	89	0.19	2.5		µg/L	5	1/3/2018 01:35 AM
Selenium	ND	0.14	2.5		µg/L	5	1/3/2018 01:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-008

Client Sample ID: MW-57-070-Q417
Collection Date: 12/11/2017 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180102E**	QC Batch: **66022**			PrepDate	**12/14/2017**	Analyst: **CEI**	
Arsenic	1.5	0.025	0.10		µg/L	1	1/3/2018 01:41 AM
Manganese	ND	0.056	0.50		µg/L	1	1/3/2018 01:41 AM
Molybdenum	2.8	0.039	0.50		µg/L	1	1/3/2018 01:41 AM
Selenium	3.8	0.028	0.50		µg/L	1	1/3/2018 01:41 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-009

Client Sample ID: MW-12-Q417
Collection Date: 12/11/2017 3:05:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180102E** QC Batch: **66022** PrepDate **12/14/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.031	0.50		µg/L	1	1/2/2018 09:59 PM
Arsenic	38	0.025	0.10		µg/L	1	1/2/2018 09:59 PM
Barium	46	0.070	1.0		µg/L	1	1/2/2018 09:59 PM
Beryllium	ND	0.043	0.50		µg/L	1	1/2/2018 09:59 PM
Cadmium	ND	0.047	0.50		µg/L	1	1/2/2018 09:59 PM
Cobalt	ND	0.026	0.50		µg/L	1	1/2/2018 09:59 PM
Copper	ND	0.26	1.0		µg/L	1	1/2/2018 09:59 PM
Lead	ND	0.037	1.0		µg/L	1	1/2/2018 09:59 PM
Manganese	2.2	0.056	0.50		µg/L	1	1/2/2018 09:59 PM
Molybdenum	9.7	0.039	0.50		µg/L	1	1/2/2018 09:59 PM
Nickel	1.6	0.040	1.0		µg/L	1	1/2/2018 09:59 PM
Selenium	24	0.028	0.50		µg/L	1	1/2/2018 09:59 PM
Silver	ND	0.059	0.50		µg/L	1	1/2/2018 09:59 PM
Thallium	ND	0.030	0.50		µg/L	1	1/2/2018 09:59 PM
Vanadium	16	0.021	1.0		µg/L	1	1/3/2018 05:10 PM
Zinc	ND	0.27	10		µg/L	1	1/2/2018 09:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-010

Client Sample ID: MW-58BR-Q417
Collection Date: 12/11/2017 3:31:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103A**	QC Batch: **66022**			PrepDate	**12/14/2017**	Analyst: **CEI**	
Arsenic	1.8	0.12	0.50		µg/L	5	1/3/2018 06:57 PM
Manganese	330	0.28	2.5		µg/L	5	1/3/2018 01:58 AM
Molybdenum	24	0.19	2.5		µg/L	5	1/3/2018 01:58 AM
Selenium	ND	0.14	2.5		µg/L	5	1/3/2018 06:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *04-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-011

Client Sample ID: MW-26-Q417
Collection Date: 12/11/2017 1:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180102E**	QC Batch: **66022**			PrepDate	**12/14/2017**		Analyst: **CEI**
Antimony	ND	0.031	0.50		µg/L	1	1/2/2018 10:11 PM
Arsenic	2.0	0.025	0.10		µg/L	1	1/2/2018 10:11 PM
Barium	36	0.070	1.0		µg/L	1	1/2/2018 10:11 PM
Beryllium	ND	0.043	0.50		µg/L	1	1/2/2018 10:11 PM
Cadmium	ND	0.047	0.50		µg/L	1	1/2/2018 10:11 PM
Cobalt	ND	0.026	0.50		µg/L	1	1/2/2018 10:11 PM
Copper	ND	0.26	1.0		µg/L	1	1/2/2018 10:11 PM
Lead	ND	0.037	1.0		µg/L	1	1/2/2018 10:11 PM
Manganese	3.6	0.056	0.50		µg/L	1	1/2/2018 10:11 PM
Molybdenum	34	0.039	0.50		µg/L	1	1/2/2018 10:11 PM
Nickel	4.9	0.040	1.0		µg/L	1	1/2/2018 10:11 PM
Selenium	41	0.028	0.50		µg/L	1	1/2/2018 10:11 PM
Silver	ND	0.059	0.50		µg/L	1	1/2/2018 10:11 PM
Thallium	ND	0.030	0.50		µg/L	1	1/2/2018 10:11 PM
Vanadium	8.4	0.021	1.0		µg/L	1	1/3/2018 05:16 PM
Zinc	ND	0.27	10		µg/L	1	1/2/2018 10:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027485
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027485-012

Client Sample ID: MW-907-Q417
Collection Date: 12/11/2017 1:25:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180102E** QC Batch: **66022** PrepDate **12/14/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.031	0.50		µg/L	1	1/2/2018 10:23 PM
Arsenic	1.9	0.025	0.10		µg/L	1	1/2/2018 10:23 PM
Barium	35	0.070	1.0		µg/L	1	1/2/2018 10:23 PM
Beryllium	ND	0.043	0.50		µg/L	1	1/2/2018 10:23 PM
Cadmium	ND	0.047	0.50		µg/L	1	1/2/2018 10:23 PM
Cobalt	ND	0.026	0.50		µg/L	1	1/2/2018 10:23 PM
Copper	ND	0.26	1.0		µg/L	1	1/2/2018 10:23 PM
Lead	ND	0.037	1.0		µg/L	1	1/2/2018 10:23 PM
Manganese	0.96	0.056	0.50		µg/L	1	1/2/2018 10:23 PM
Molybdenum	33	0.039	0.50		µg/L	1	1/2/2018 10:23 PM
Nickel	6.1	0.040	1.0		µg/L	1	1/2/2018 10:23 PM
Selenium	40	0.028	0.50		µg/L	1	1/2/2018 10:23 PM
Silver	ND	0.059	0.50		µg/L	1	1/2/2018 10:23 PM
Thallium	ND	0.030	0.50		µg/L	1	1/2/2018 10:23 PM
Vanadium	7.9	0.021	1.0		µg/L	1	1/3/2018 05:21 PM
Zinc	ND	0.27	10		µg/L	1	1/2/2018 10:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66022**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/14/2017**	RunNo: **121176**
Client ID: **PBW**	Batch ID: **66022**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/2/2018**	SeqNo: **2882470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.039	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.080	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Silver	0.172	0.50									
Thallium	0.072	0.50									
Zinc	ND	10									

Sample ID **LCS-66022**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/14/2017**	RunNo: **121176**
Client ID: **LCSW**	Batch ID: **66022**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/2/2018**	SeqNo: **2882471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.594	0.50	10.00	0	95.9	85	115				
Arsenic	10.068	0.10	10.00	0	101	85	115				
Barium	9.869	1.0	10.00	0	98.7	85	115				
Beryllium	9.831	0.50	10.00	0	98.3	85	115				
Cadmium	10.155	0.50	10.00	0	102	85	115				
Cobalt	9.625	0.50	10.00	0	96.3	85	115				
Copper	9.858	1.0	10.00	0	98.6	85	115				
Lead	9.954	1.0	10.00	0	99.5	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	LCS-66022	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121176
Client ID:	LCSW	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2882471

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	99.844	0.50	100.0	0	99.8	85	115				
Molybdenum	9.775	0.50	10.00	0	97.7	85	115				
Nickel	10.210	1.0	10.00	0	102	85	115				
Selenium	9.423	0.50	10.00	0	94.2	85	115				
Silver	9.434	0.50	10.00	0	94.3	85	115				
Thallium	9.897	0.50	10.00	0	99.0	85	115				
Zinc	102.047	10	100.0	0	102	85	115				

Sample ID	N027485-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121176
Client ID:	ZZZZZZ	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2882487

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.067	0.50	10.00	0.08078	99.9	75	125				
Arsenic	14.588	0.10	10.00	3.881	107	75	125				
Barium	71.282	1.0	10.00	63.49	77.9	75	125				
Beryllium	10.773	0.50	10.00	0	108	75	125				
Cadmium	9.822	0.50	10.00	0	98.2	75	125				
Cobalt	9.185	0.50	10.00	0	91.9	75	125				
Copper	8.246	1.0	10.00	0	82.5	75	125				
Lead	10.971	1.0	10.00	0	110	75	125				
Manganese	109.145	0.50	100.0	11.34	97.8	75	125				
Molybdenum	81.348	0.50	10.00	71.60	97.5	75	125				
Nickel	11.267	1.0	10.00	1.330	99.4	75	125				
Selenium	14.355	0.50	10.00	4.853	95.0	75	125				
Silver	9.976	0.50	10.00	0	99.8	75	125				
Thallium	10.873	0.50	10.00	0.8445	100	75	125				
Zinc	117.977	10	100.0	0	118	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027485-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121176
Client ID:	ZZZZZZ	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2882489

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.199	0.50	10.00	0.08078	101	75	125	10.07	1.30	20	
Arsenic	14.431	0.10	10.00	3.881	106	75	125	14.59	1.08	20	
Barium	71.934	1.0	10.00	63.49	84.4	75	125	71.28	0.910	20	
Beryllium	10.625	0.50	10.00	0	106	75	125	10.77	1.38	20	
Cadmium	9.731	0.50	10.00	0	97.3	75	125	9.822	0.930	20	
Cobalt	9.045	0.50	10.00	0	90.4	75	125	9.185	1.54	20	
Copper	8.131	1.0	10.00	0	81.3	75	125	8.246	1.41	20	
Lead	10.868	1.0	10.00	0	109	75	125	10.97	0.936	20	
Manganese	107.405	0.50	100.0	11.34	96.1	75	125	109.1	1.61	20	
Molybdenum	81.932	0.50	10.00	71.60	103	75	125	81.35	0.716	20	
Nickel	11.302	1.0	10.00	1.330	99.7	75	125	11.27	0.310	20	
Selenium	13.447	0.50	10.00	4.853	85.9	75	125	14.36	6.53	20	
Silver	9.993	0.50	10.00	0	99.9	75	125	9.976	0.169	20	
Thallium	10.833	0.50	10.00	0.8445	99.9	75	125	10.87	0.372	20	
Zinc	115.797	10	100.0	0	116	75	125	118.0	1.86	20	

Sample ID	MB-66022	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121192
Client ID:	PBW	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883829

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	ND	1.0									

Sample ID	LCS-66022	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121192
Client ID:	LCSW	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883830

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	10.252	1.0	10.00	0	103	85	115				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027485-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121192
Client ID:	ZZZZZZ	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883840

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	14.407	1.0	10.00	4.152	103	75	125				

Sample ID	N027485-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121192
Client ID:	ZZZZZZ	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883841

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	14.323	1.0	10.00	4.152	102	75	125	14.41	0.587	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-12-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 3:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **NV00922-AA1_171213B**	QC Batch: **66041**			PrepDate	**12/13/2017**		Analyst: **MG**
Mercury	ND	0.087	0.20		µg/L	1	12/13/2017 08:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-26-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:15:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **NV00922-AA1_171213B**	QC Batch: **66041**			PrepDate	**12/13/2017**		Analyst: **MG**
Mercury	ND	0.087	0.20		µg/L	1	12/13/2017 08:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q417
Lab Order:	N027485	**Collection Date:**	12/11/2017 1:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027485-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **NV00922-AA1_171213B** QC Batch: **66041**				PrepDate	**12/13/2017**		Analyst: **MG**
Mercury	ND	0.087	0.20		µg/L	1	12/13/2017 08:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID	MB-66041	SampType:	MBLK	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/13/2017	RunNo:	120796
Client ID:	PBW	Batch ID:	66041	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863951

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.125	0.20									

Sample ID	LCS-66041	SampType:	LCS	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/13/2017	RunNo:	120796
Client ID:	LCSW	Batch ID:	66041	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863952

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.881	0.20	5.000	0	97.6	85	115				

Sample ID	N027485-009B-MS	SampType:	MS	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/13/2017	RunNo:	120796
Client ID:	ZZZZZZ	Batch ID:	66041	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863953

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.802	0.20	5.000	0	96.0	75	125				

Sample ID	N027485-009B-MSD	SampType:	MSD	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/13/2017	RunNo:	120796
Client ID:	ZZZZZZ	Batch ID:	66041	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863954

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.972	0.20	5.000	0	99.4	75	125	4.802	3.48	20	

Sample ID	N027524-008E-MS	SampType:	MS	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/13/2017	RunNo:	120796
Client ID:	ZZZZZZ	Batch ID:	66041	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863972

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.663	0.20	5.000	0.1035	91.2	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes		EDD Requirement		QA/QC	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:		Excel EDD		RTNE	
				Geotracker		RWQCB	✓
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:		Labspec		CalTrans	
				Others	✓	LEVEL III	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#	Specify: RWQCB		LEVEL IV	
Submitted By: Gantt Jeffers						Regulatory	
Title: Geologist II	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200	Fax:	Global ID:		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number		Z
6. Method of Cooling:	ice	
Sample Temp:	2.9°C / 2.9°C	

Signature: Date: 12/11/2017

I hereby authorize ASSET Labs to perform the tests indicated below.

Sampled By: Gantt Jeffers

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Signature: Date: 12/11/2017

Project Name: PG&E Topock - GMP

Project Number: RC000753.801B

Courier:

Tracking No.:

Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM — 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3 — 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 — 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3 — 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3 — 500 mL poly	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3 — 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3 — 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4 — 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) — 1 liter poly	Specific Conductance (EPA 120.1) — 1 liter poly	Total Dissolved Solids (SM2540C) — 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) — 1 liter poly					Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027485-01	MW-70-105-Q417	12/11/2017	14:58		X			X		X							X	X	X	X	X					E	4	P	BNS	
2	-02	MW-70BR-225-3V-Q417	12/11/2017	14:19		X			X		X							X	X	X	X	X					E	4	P	BNS	
3	-03	MW-70BR-225-LF-Q417	12/11/2017	12:52		X			X		X							X	X	X	X	X					E	4	P	BNS	
4	-04	MW-51-Q417	12/11/2017	14:20		X			X		X							X	X	X	X	X					E	4	P	BNS	
5	-05	MW-57-185-3V-Q417	12/11/2017	15:00		X			X		X							X	X	X	X	X					E	4	P	BNS	
6	-06	MW-57-185-LF_D-Q417	12/11/2017	13:21		X			X		X							X	X	X	X	X					E	4	P	BNS	
7	-07	MW-57-185-LF_S-Q417	12/11/2017	12:51		X			X		X							X	X	X	X	X					E	4	P	BNS	
8	-08	MW-57-070-Q417	12/11/2017	13:00		X			X		X							X	X	X	X	X					E	4	P	BNS	
9	-09	MW-12-Q417	12/11/2017	15:05		X						X	X				X	X	X	X	X	X					E	4	P	BNS	
10	-10	MW-58BR-Q417	12/11/2017	15:31		X			X		X							X	X	X	X	X					E	4	P	BNS	

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
G. Jeffers	12.11.17 15:55		12/11/17 1555
	12/11/17 1455		12/11/17 1455

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis.
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B = (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	
Title: Geologist II	Phone: 916-786-3302 Fax:		
Signature: Date: 12/12/2017	Sampled By: Gantt Jeffers		
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.		
Project Name: PG&E Topock - GMP	Signature: Date: 12/11/2017		
Project Number: RC000753.801B			

Matrix: Ground x; Sediment; Potable; Soil; NPDES; Other Solid; Surface

Sample Receipt Condition

	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	2	
6. Method of Cooling:	ice	
Sample Temp:	2-9°C	

Courier:

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2. SO4, NH4, OH; 250 mL poly	Cr(VI) FF (E218.6) (NH4)2. SO4, NH4, OH; 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM; 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3; 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4; 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0); 1 liter poly	Specific Conductance (EPA 120.1); 1 liter poly	Total Dissolved Solids (SM2540C); 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B); 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027485-11	MW-26-Q417	12/11/2017	13:15		X		X		X		X	X				X	X	X	X	X	X	E	5	P	BNS	
2	-12	MW-907-Q417	12/11/2017	13:25		X		X		X		X	X				X	X	X	X	X	X	E	5	P	BNS	
3	-13	MW-729-Q417	12/11/2017	15:20		X																	E	1	P	B	
4	-14	MW-730-Q417	12/11/2017	15:30		X																	E	1	P	B	
5	-15	MW-731-Q417	12/11/2017	16:00		X																	E	1	P	B	
6	-16	MW-732-Q417	12/11/2017	13:10		X																	E	1	P	B	
7																											
8																											
9																											
10																											

Relinquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
G. Jeffers	12.11.17 15:55		
	12/11/17 1700		12/11/17 1700

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B = (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/11/2017	Workorder:	N027485
Rep sample Temp (Deg C):	2.1/2.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	N/A	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 12/20/2017

Reviewed By: 12/22/2017

ASSET Laboratories

WORK ORDER Summary

12-Dec-17

WorkOrder: N027485

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/11/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027485-001A	MW-70-105-Q417	12/11/2017 2:58:00 PM	12/26/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-001B			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027485-001C			12/26/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027485-001D			12/26/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/26/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/26/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/26/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027485-002A	MW-70BR-225-3V-Q417	12/11/2017 2:19:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-002B			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027485-002C			12/26/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

WORK ORDER Summary

12-Dec-17

WorkOrder: N027485

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/11/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027485-002D	MW-70BR-225-3V-Q417	12/11/2017 2:19:00 PM	12/26/2017	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/26/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/26/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/26/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027485-003A	MW-70BR-225-LF-Q417	12/11/2017 12:52:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-003B			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027485-003C			12/26/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027485-003D			12/26/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/26/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/26/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/26/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027485-004A	MW-51-Q417	12/11/2017 2:20:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

WORK ORDER Summary

12-Dec-17

WorkOrder: N027485

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/11/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027485-004B	MW-51-Q417	12/11/2017 2:20:00 PM	12/26/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027485-004C			12/26/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027485-004D			12/26/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/26/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/26/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/26/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027485-005A	MW-57-185-3V-Q417	12/11/2017 3:00:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-005B			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027485-005C			12/26/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027485-005D			12/26/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

WORK ORDER Summary

12-Dec-17

WorkOrder: N027485

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/11/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027485-005D	MW-57-185-3V-Q417	12/11/2017 3:00:00 PM	12/26/2017	Groundwater	SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/26/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/26/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027485-006A	MW-57-185-LF_D-Q417	12/11/2017 1:21:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-006B			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027485-006C			12/26/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027485-006D			12/26/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/26/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/26/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/26/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027485-007A	MW-57-185-LF_S-Q417	12/11/2017 12:51:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-007B			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

12-Dec-17

WorkOrder: N027485

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/11/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027485-007B	MW-57-185-LF_S-Q417	12/11/2017 12:51:00 PM	12/26/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027485-007C			12/26/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027485-007D			12/26/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/26/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/26/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/26/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027485-008A	MW-57-070-Q417	12/11/2017 1:00:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-008B			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027485-008C			12/26/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027485-008D			12/26/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/26/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW

WORK ORDER Summary

12-Dec-17

WorkOrder: N027485

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/11/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027485-008D	MW-57-070-Q417	12/11/2017 1:00:00 PM	12/26/2017	Groundwater		Total Dissolved Solids Prep	☐	☐	☐	WW
			12/26/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027485-009A	MW-12-Q417	12/11/2017 3:05:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-009B			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017			DISSOLVED MERCURY PREP	☐	☐	☐	WW
			12/26/2017		EPA 7470A	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N027485-009C			12/26/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027485-009D			12/26/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/26/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/26/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/26/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

WORK ORDER Summary

12-Dec-17

WorkOrder: N027485

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/11/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027485-010A	MW-58BR-Q417	12/11/2017 3:31:00 PM	12/26/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-010B			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027485-010C			12/26/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027485-010D			12/26/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/26/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/26/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/26/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027485-011A	MW-26-Q417	12/11/2017 1:15:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-011B			12/26/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027485-011C			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017			DISSOLVED MERCURY PREP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

12-Dec-17

WorkOrder: N027485

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/11/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027485-011C	MW-26-Q417	12/11/2017 1:15:00 PM	12/26/2017	Groundwater	EPA 7470A	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N027485-011D			12/26/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027485-011E			12/26/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/26/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/26/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/26/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027485-012A	MW-907-Q417	12/11/2017 1:25:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-012B			12/26/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027485-012C			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/26/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/26/2017			DISSOLVED MERCURY PREP	☐	☐	☐	WW
			12/26/2017		EPA 7470A	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N027485-012D			12/26/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027485-012E			12/26/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/26/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW

WORK ORDER Summary

12-Dec-17

WorkOrder: N027485

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/11/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027485-012E	MW-907-Q417	12/11/2017 1:25:00 PM	12/26/2017	Groundwater		Total Dissolved Solids Prep	☐	☐	☐	WW
			12/26/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/26/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027485-013A	MW-729-Q417	12/11/2017 3:20:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-014A	MW-730-Q417	12/11/2017 3:30:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-015A	MW-731-Q417	12/11/2017 4:00:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-016A	MW-732-Q417	12/11/2017 1:10:00 PM	12/26/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027485-017A	FOLDER	12/25/2017	12/26/2017		EDD	RWQCB	☐	☐	☐	LAB
			12/26/2017		Folder	Folder	☐	☐	☐	LAB
			12/26/2017		Folder	Folder	☐	☐	☐	LAB

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (760) 781 3338
FAX: (805) 544-8226
Acct #:

Field Sampler: Gantt Jeffers

14-Dec-17

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**OXY_DEUT**		
N027485-011B / MW-26-Q417	Groundwater	12/11/2017 1:15:00 PM	8OZP	1		
N027485-012B / MW-907-Q417	Groundwater	12/11/2017 1:25:00 PM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N27485A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Oxygen and Deuterium Stable Isotopes SFIRM. EDD Requirement Labspec7 edata.

Fedex #: 771000116324

	Date/Time		Date/Time
Relinquished by:	12/14/2017 16:00	**Received by:**	
Relinquished by:		**Received by:**	

List of Analysts

ASSET Laboratories Work Order: N027485

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F, EPA 6020_Dissolved
Claire Ignacio	EPA 6010B_Dissolved, EPA 7470A_Dissolved , EPA 6020_Dissolved
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	EPA 120.1, SM 2540C, SM 2320 B

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120780 **Analyst:** LSR

ASSET #: N027485 **Date Analyzed:** 12/12/2017

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 12/22/2017

2nd Level Reviewer: RLB 01/04/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 12/8/17 1700

Analyst: LSR (CONT'D)

Standard	Std ID	Reading	Comments
9.43 µS/cm	CINV - 171018A	1.42 @ 21.1°C	% Rec: (90-110%)
1410	170887C	1424 @ 21.3°C	
9986	171018B	10070 @ 21.4°C	
99672	170887F	99300 @ 21.4°C	

	Sample ID	Matrix	Reading	Comments
1	N0274J9-014C	H2O	5270 @ 20.8°C	
2	15C		2080 @ 20.4°C	
3	16E		1834 @ 20.1°C	1413 CINV 170615G
4	17E		1832 @ 19.8°C	= 1475 @ 21.2
5	18C		13670 @ 20.2°C	10000 CINV 170887F
6	18C DUP		13620 @ 20.0°C	= 10220 @ 21.4°C
7	19C		10620 @ 20.4°C	99672 CINV 170831B
8				= 98900 @ 21.5°C
9				
10				
Dup				Accept: 10% water, 20% soil
56	Std Chk:			% Rec: (90-110%)

Date: 12/12/17 1730

Analyst: LSR

Julia Ramit 12/22/2017

RB 01/04/2018

Standard	Std ID	Reading	Comments
9.43 µS/cm	CINV - 171018A	9.58 @ 21.9°C	% Rec: (90-110%)
1410	170887C	1423 @ 21.7°C	
9986	171018B	10220 @ 21.6°C	10220
99842	171218	101300 @ 21.6°C	

	Sample ID	Matrix	Reading	Comments
1	N0277485-001D	H2O	3480 @ 20.7°C	
2	2D		12540 @ 20.3°C	
3	3D		11970 @ 20.2°C	1413 CINV 170615G
4	4D		12460 @ 20.2°C	= 1466 @ 21.1°C
5	5D		17560 @ 20.2°C	10000 CINV 170887F
6	5D DUP		17590 @ 19.9°C	= 10480 @ 21.1°C
7	6D		16390 @ 20.2°C	99672 CINV 170831B
8	7D		16350 @ 20.2°C	= 103900 @ 21.0°C
9	8D		2410 @ 20.0°C	
10	9D		7150 @ 20.0°C	
Dup	10D		7930 @ 20.0°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

ASSET LABORATORIES
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00722

Conductivity Logbook

Date: 12/12/17 1730
Analyst: LSR CONT'D

Standard	Std ID	Reading	Comments
9.43 uS/cm	CINV-170187A	9.58 @ 21.9°C	% Rec: (90-110%)
1410	170822C	1423 @ 21.7°C	
9986	170187B	10220 @ 21.6°C	
99842	171121B	101500 @ 21.6°C	

	Sample ID	Matrix	Reading	Comments
1	NO27485-011E	H2O	3800 @ 20.3°C	
2	11EDUP		3810 @ 20.0°C	
3	12E		3810 @ 20.0°C	
4				
5				
6				
7				
8	1413 uS/cm	CINV-170615G	1464 @ 21.6°C	
9	10000	170822F	103900 @ 21.5°C	
10	99672	170831B	104200 @ 21.5°C	
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: 12/13/17 1430
Analyst: LSR

Julia Ramit 12/22/2017
RB 01/04/2018

Standard	Std ID	Reading	Comments
9.43 uS/cm	CINV-170187A	955 @ 23.2°C	% Rec: (90-110%)
1410	170822C	1418 @ 22.9°C	
9986	170187B	9960 @ 22.9°C	
99447	171121B	99400 @ 22.6°C	

	Sample ID	Matrix	Reading	Comments
1	NO27523-001C	H2O	1633 @ 22.8°C	
2	2C		10031 @ 21.9°C	
3	3C		1179 @ 20.9°C	1413 CINV 170615G
4	4C		12332 @ 20.9°C	= 1435 @ 23.5°C
5	5E		2930 @ 20.9°C	10000 CINV 170822F
6	6D		11050 @ 20.9°C	= 9970 @ 23.1°C
7	7D		11020 @ 20.7°C	99672 CINV 170831B
8	8D		5780 @ 20.4°C	= 96500 @ 22.9°C
9	9D		15760 @ 20.4°C	
10	9D DUP		15210 @ 20.1°C	
Dup	12D		13630 @ 20.1°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

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SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66076/66095 **Analyst:** LSR

ASSET #: N027485 **Date Analyzed:** 12/14,12/15/17

Method: EPA 160.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 12/26/2017

2nd Level Reviewer RLB 01/04/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N027485-001D,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(53.7762 - 53.6976)*1000000}{40}$$

= 1965 mg/L

Reporting result in two significant figures,

TDS = 2000 mg/L

Julia Ramit 12/26/2017

RLB 01/04/2018

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/14/2017 1:07:26**
Prep End Date:

Reviewed/ Date: RB 01/04/2018
Initials/ Date: Lilia Ramit 12/26/2017

Prep Batch **66076** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units
mL / mL

Sample ID	Matrix	Cond pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66076	Water	1WST171211C	100	☐	0	0	100	1.000		
MB-66076	Water		100	☐	0	0	100	1.000		
N027482-001B	Groundwater	~~3480~~ 2700	100 /50	☐	0	0	100	1.000		
N027482-002B	Groundwater	3450	100 /40	☐	0	0	100	1.000		
N027482-003B	Groundwater	2900	100 /50	☐	0	0	100	1.000		
N027482-004B	Groundwater	1954	100 /75	☐	0	0	100	1.000		
N027485-001D	Groundwater	3480	100 /40	☐	0	0	100	1.000		
N027485-002D	Groundwater	12540	100 /10	☐	0	0	100	1.000		
N027485-003D	Groundwater	11970	100 /10	☐	0	0	100	1.000		
N027485-004D	Groundwater	12460	100 /10	☐	0	0	100	1.000		
N027485-005D	Groundwater	17560	100 /10	☐	0	0	100	1.000		
N027485-005D-DU	Groundwater	↓	100 /10	☐	0	0	100	1.000		
N027485-006D	Groundwater	16390	100 /10	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9666

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/14/2017 1:07:26**
Prep End Date: **12/15/2017 11:15:0**

Reviewed/ Date: RLB 01/04/2018
Initials/ Date: Lilia Ramit 12/26/2017

Prep Batch **66076** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66076	Water		100	☐	0	0	100	1.000		
MB-66076	Water		100	☐	0	0	100	1.000		
N027482-001B	Groundwater		50	☐	0	0	100	2.000		
N027482-002B	Groundwater		40	☐	0	0	100	2.500		
N027482-003B	Groundwater		50	☐	0	0	100	2.000		
N027482-004B	Groundwater		75	☐	0	0	100	1.333		
N027485-001D	Groundwater		40	☐	0	0	100	2.500		
N027485-002D	Groundwater		10	☐	0	0	100	10.000		
N027485-003D	Groundwater		10	☐	0	0	100	10.000		
N027485-004D	Groundwater		10	☐	0	0	100	10.000		
N027485-005D	Groundwater		10	☐	0	0	100	10.000		
N027485-005D-DU	Groundwater		10	☐	0	0	100	10.000		
N027485-006D	Groundwater		10	☐	0	0	100	10.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9666	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171211C	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/15/2017 1:20:30**
Prep End Date:

Reviewed/ Date: RLB 01/04/2018

Initials/ Date: Lilia Ramit 12/26/2017

Prep Batch **66095** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66095	Water	[illegible]	100	☐	0	0	100	1.000		
MB-66095	Water		100	☐	0	0	100	1.000		
N027485-007D	Groundwater	16350	100 /10	☐	0	0	100	1.000		
N027485-007D-DU	Groundwater	1	100 /10	☐	0	0	100	1.000		
N027485-008D	Groundwater	2410	100 /60	☐	0	0	100	1.000		
N027485-009D	Groundwater	7150	100 /20	☐	0	0	100	1.000		
N027485-010D	Groundwater	7930	100 /20	☐	0	0	100	1.000		
N027485-011E	Groundwater	3580	100 /40	☐	0	0	100	1.000		
N027485-012E	Groundwater	3810	100 /40	☐	0	0	100	1.000		
N027510-001A	Groundwater	1931	100 /75	☐	0	0	100	1.000		
N027510-002A	Groundwater	2820	100 /50	☐	0	0	100	1.000		
N027510-003A	Groundwater	3170	100 /40	☐	0	0	100	1.000		
N027518-001A	Water	2530	100 /50	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9667

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/15/2017 1:20:30**
Prep End Date: **12/16/2017 10:30:0**
Reviewed/ Date: RLB 01/04/2018
Initials/ Date: Lilia Ramit 12/26/2017
Prep Batch **66095** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**
Prep Factor Units: **mL / mL** Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66095	Water		100	☐	0	0	100	1.000		
MB-66095	Water		100	☐	0	0	100	1.000		
N027485-007D	Groundwater		10	☐	0	0	100	10.000		
N027485-007D-DU	Groundwater		10	☐	0	0	100	10.000		
N027485-008D	Groundwater		60	☐	0	0	100	1.667		
N027485-009D	Groundwater		20	☐	0	0	100	5.000		
N027485-010D	Groundwater		20	☐	0	0	100	5.000		
N027485-011E	Groundwater		40	☐	0	0	100	2.500		
N027485-012E	Groundwater		40	☐	0	0	100	2.500		
N027510-001A	Groundwater		75	☐	0	0	100	1.333		
N027510-002A	Groundwater		50	☐	0	0	100	2.000		
N027510-003A	Groundwater		40	☐	0	0	100	2.500		
N027518-001A	Water		50	☐	0	0	100	2.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9667	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171211C	1000 ppm NaCl	LCS	100

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/14/17 1307 AA	MB 660776	100	68.3871 68.3873	68.3873 68.3875	
EE	LCS 660776	100	68.2065 68.2069	68.3016 68.3015	
DL	NO27482-001B	50	53.7823 53.7822	53.8689 53.8685	
CB	2B	40	53.5331 53.5334	53.6078 53.6077	
B	3B	50	54.4441 54.4441	54.5624 54.5522	
12	4B	75	53.6906 53.6910	53.8046 53.8044	
8	NO27485-001D	40	53.6972 53.6976	53.7763 53.7762	
T	2D	10	46.0442 46.0443	46.1132 46.1133	
M	3D	10	49.0609 49.0613	49.1279 49.1282	
XX	4D	10	49.6362 49.6365	49.7014 49.7013	

ASSET Laboratories

Logbook#8

Silvia Ramit 12/26/2017

01/04/2018

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/14/17 16	NO37485-005D	10	49.3556 49.3557	49.4539 49.4572	
15	SD ap	10	48.8867 48.8867	48.9895 48.9896	
C	GD	10	50.3705 50.3706	50.4663 50.4662	
	1				
	Julia Ramit	12/26/2017			

Closing wt: 49.0998 12/15/17 1115

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TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
12/15/2017									
MB-66076	100	68.3873	68.3875	2	1	2			MBLK
LCS-66076	100	68.2069	68.3015	946	1	946			LCS
N027482-001B	50	53.7822	53.8685	863	2	1726	2700	0.639	SAMP
N027482-002B	40	53.5334	53.6077	743	2.5	1857.5	3450	0.538	SAMP
N027482-003B	50	54.4441	54.5522	1081	2	2162	2900	0.746	SAMP
N027482-004B	75	53.691	53.8044	1134	1.33333333	1512	1954	0.774	SAMP
N027485-001D	40	53.6976	53.7762	786	2.5	1965	3480	0.565	SAMP
N027485-002D	10	46.0443	46.1133	690	10	6900	12540	0.550	SAMP
N027485-003D	10	49.0613	49.1282	669	10	6690	11970	0.559	SAMP
N027485-004D	10	49.6365	49.7013	648	10	6480	12460	0.520	SAMP
N027485-005D	10	49.3557	49.4542	985	10	9850	17560	0.561	SAMP
N027485-005DDUP	10	48.8867	48.9896	1029	10	10290	17560	0.586	DUP
N027485-006D	10	50.3706	50.4662	956	10	9560	16390	0.583	SAMP

Julia Ramit 12/26/2017

RLB 01/04/2018

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/15/17 1020 4	MB 66095	100	74.5262 74.5259	74.5287 74.5258	
DD	LCS 66095	100	71.6222 71.6225	71.7163 71.7165	
IF	NO27485-007D	10	60.6208 60.6211	60.7187 60.7188	
A	7D DUP	10	59.1197 59.1197	59.2208 59.2205	
9	8D	60	61.1388 61.1384	61.2257 61.2255	
RR	9D	20	62.3283 62.3279	62.4049 62.4047	
31	10D	20	63.3023 63.3022	63.3985 63.3988	
(-)	11E	40	60.5844 60.5842	60.6773 60.6772	
8	12E	40	53.6974 53.6973	53.7909 53.7907	
CB	NO27510.001A	75	53.5358 53.5362	53.6323 53.6327	

Julia Ramit 12/26/2017

RB 01/04/2018

ASSET Laboratories 12/19/17 Logbook#8

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/15/17 DK	NO27510.002A	50	53.7843 53.7847	53.8835 53.8832	
LG	3A	40	76.5567 76.5571	76.6434 76.6435	
LG	NO27578-001A	50	76.1796 76.1800	76.2877 76.2878	12/15/17
Silvia Ramit	12/26/2017				
RLB	01/04/2018				

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TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
12/16/2017									
MB-66095	100	74.5259	74.5258	-1	1	-1			MBLK
LCS-66095	100	71.6225	71.7165	940	1	940			LCS
N027485-007D	10	60.6211	60.7188	977	10	9770	16350	0.598	SAMP
N027485-007DDUP	10	59.1197	59.2205	1008	10	10080	16350	0.617	DUP
N027485-008D	60	61.1384	61.2255	871	1.66666667	1451.66667	2410	0.602	SAMP
N027485-009D	20	62.3279	62.4047	768	5	3840	7150	0.537	SAMP
N027485-010D	20	63.3022	63.3988	966	5	4830	7930	0.609	SAMP
N027485-011E	40	60.5842	60.6772	930	2.5	2325	3800	0.612	SAMP
N027485-012E	40	53.6973	53.7907	934	2.5	2335	3810	0.613	SAMP
N027510-001A	75	53.5362	53.6322	960	1.33333333	1280	1931	0.663	SAMP
N027510-002A	50	53.7847	53.8832	985	2	1970	2820	0.699	SAMP
N027510-003A	40	76.5571	76.6435	864	2.5	2160	3100	0.697	SAMP
N027518-001A	50	76.18	76.2878	1078	2	2156	2530	0.852	SAMP

Silvia Ramit 12/26/2017

RB 01/04/2018

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120903
ASSET #: N027485

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 12/15/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

Dilution was necessary in N027485-005A/6A/7A due to matrix interference.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 12/22/2017

2nd Level Reviewer RLB 01/04/2018 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N027485-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 7.8260 * 20$$

$$Cr^{+6}, \mu g/L = 156.52$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 160}$$

rba 12/22/2017

RLB 01/04/2018

ANALYSIS RUN LOG

INJECTION LOG: 171128A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/28/17 10:57 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/28/17 11:08 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/28/17 11:17 AM	Reported
13	MB-R120468	MBLK	1	Hexavalent Chromium	11/28/17 11:27 AM	Reported
14	LCS-R120468	LCS	1	Hexavalent Chromium	11/28/17 11:36 AM	Reported
15	N027215-001A	SAMP	1	Hexavalent Chromium	11/28/17 11:47 AM	Reported
16	N027215-002A	SAMP	1	Hexavalent Chromium	11/28/17 11:59 AM	Reported
17	N027215-003A	SAMP	1	Hexavalent Chromium	11/28/17 12:08 PM	Reported
18	N027215-004A	SAMP	1	Hexavalent Chromium	11/28/17 12:18 PM	Reported
19	N027215-005A	SAMP	1	Hexavalent Chromium	11/28/17 12:27 PM	Reported
20	N027215-002ADUP	DUP	1	Hexavalent Chromium	11/28/17 12:37 PM	Reported
21	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 12:46 PM	Not Reported
22	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 12:56 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	11/28/17 1:05 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/28/17 1:14 PM	Reported
25	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:04 PM	Not Reported
26	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:16 PM	Not Reported
27	N027215-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:29 PM	Reported
28	N027215-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:41 PM	Reported
29	CCV-2	CCV	1	Hexavalent Chromium	11/28/17 2:50 PM	Reported
30	CCB-2	CCB	1	Hexavalent Chromium	11/28/17 3:00 PM	Reported



Injection Log Summary

Sequence Details

Name:	**IC-07_171128A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**28/Nov/17 15:47:35**
No. of Injections:	**33**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		11/28/2017 10:57	Finished	ICV @5ppb, IWST-171002A
11	PQL@0.2ppb,CCV2,1	12	1000	Unknown		11/28/2017 11:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		11/28/2017 11:17	Finished	ICB R171114C
13	MB-H2O,MBLK,1	14	1000	Unknown		11/28/2017 11:27	Finished	MB R171114C
14	LCS-H2O,LCS,1	15	1000	Unknown		11/28/2017 11:36	Finished	LCS, IWST-171002B
15	N027215-001A,SAMP	17	1000	Unknown		11/28/2017 11:47	Finished	SAMP,10mL
16	N027215-002A,SAMP	18	1000	Unknown		11/28/2017 11:59	Finished	SAMP,10mL
17	N027215-003A,SAMP	19	1000	Unknown		11/28/2017 12:08	Finished	SAMP,10mL
18	N027215-004A,SAMP	20	1000	Unknown		11/28/2017 12:18	Finished	SAMP,10mL
19	N027215-005A,SAMP	21	1000	Unknown		11/28/2017 12:27	Finished	SAMP,10mL
20	N027215-002ADUP,D	22	1000	Unknown		11/28/2017 12:37	Finished	DUP,10mL
21	N027157-001AMS,MS	23	1000	Unknown		11/28/2017 12:46	Finished	MS (5ppb), IWST-171002B,10
22	N027157-001AMSD,M	24	1000	Unknown		11/28/2017 12:56	Finished	MSD (5ppb), IWST-171002B,1(
23	CCV-1,CCV1,1,	25	1000	Unknown		11/28/2017 13:05	Finished	CCV @10ppb, IWST-171002A
24	CCB-1,CCB,1,	26	1000	Unknown		11/28/2017 13:14	Finished	CCB R171031A
25	N027157-001AMS,MS	28	1000	Unknown		11/28/2017 14:04	Finished	MS (5ppb), IWST-171002B,10
26	N027157-001AMSD,M	29	1000	Unknown		11/28/2017 14:16	Finished	MSD (5ppb), IWST-171002B,1(
27	N027215-001AMS,MS	31	1000	Unknown		11/28/2017 14:29	Finished	MS (5ppb), IWST-171002B,10
28	N027215-001AMSD,M	32	1000	Unknown		11/28/2017 14:41	Finished	MSD (5ppb), IWST-171002B,1(
29	CCV-2,CCV,1,	33	1000	Unknown		11/28/2017 14:50	Finished	CCV @5ppb, IWST-171002A
30	CCB-2,CCB,1,	34	1000	Unknown		11/28/2017 15:00	Finished	CCB R171031A
31	SHUTDOWN	35	1000	Unknown		11/28/2017 15:09	Finished	
32	Eluent: R171128A	36	1000	Unknown		n.a.	Finished	Eluent
33	PCR: R171128B	37	1000	Unknown		n.a.	Finished	Post-Column Reagent

rba 11/29/2017

INJECTION LOG: 171215A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/15/17 8:31 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/15/17 8:42 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/15/17 8:51 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/15/17 9:01 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/15/17 9:10 AM	Reported
15	MB-R120903	MBLK	1	Hexavalent Chromium	12/15/17 9:20 AM	Reported
16	LCS-R120903	LCS	1	Hexavalent Chromium	12/15/17 9:29 AM	Reported
17	N027485-002A	SAMP	200	Hexavalent Chromium	12/15/17 9:39 AM	Reported
18	N027485-003A	SAMP	200	Hexavalent Chromium	12/15/17 9:48 AM	Reported
19	N027485-005A	SAMP	1	Hexavalent Chromium	12/15/17 9:57 AM	Not Reported
20	N027485-006A	SAMP	1	Hexavalent Chromium	12/15/17 10:07 AM	Not Reported
21	N027485-007A	SAMP	1	Hexavalent Chromium	12/15/17 10:16 AM	Not Reported
22	N027485-001A	SAMP	20	Hexavalent Chromium	12/15/17 10:26 AM	Reported
23	N027485-001AMS	MS	20	Hexavalent Chromium	12/15/17 10:35 AM	Reported
24	N027485-001AMSD	MSD	20	Hexavalent Chromium	12/15/17 10:45 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/15/17 10:54 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/15/17 11:04 AM	Reported
27	N027485-002AMS	MS	200	Hexavalent Chromium	12/15/17 11:13 AM	Reported
28	N027485-003AMS	MS	200	Hexavalent Chromium	12/15/17 11:23 AM	Reported
29	N027485-004A	SAMP	1000	Hexavalent Chromium	12/15/17 11:32 AM	Reported
30	N027485-004AMS	MS	1000	Hexavalent Chromium	12/15/17 11:42 AM	Reported
31	N027485-005A	SAMP	5	Hexavalent Chromium	12/15/17 11:51 AM	Reported
32	N027485-005AMS	MS	5	Hexavalent Chromium	12/15/17 12:00 PM	Reported
33	N027485-006A	SAMP	5	Hexavalent Chromium	12/15/17 12:10 PM	Reported
34	N027485-006AMS	MS	5	Hexavalent Chromium	12/15/17 12:19 PM	Reported
35	N027485-007A	SAMP	5	Hexavalent Chromium	12/15/17 12:29 PM	Reported
36	N027485-007AMS	MS	5	Hexavalent Chromium	12/15/17 12:38 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/15/17 12:48 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/15/17 12:57 PM	Reported
39	N027485-008A	SAMP	100	Hexavalent Chromium	12/15/17 1:07 PM	Reported
40	N027485-008AMS	MS	100	Hexavalent Chromium	12/15/17 1:16 PM	Reported
41	N027485-009A	SAMP	500	Hexavalent Chromium	12/15/17 1:26 PM	Reported
42	N027485-009AMS	MS	500	Hexavalent Chromium	12/15/17 1:35 PM	Reported

INJECTION LOG: 171215A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027485-010A	SAMP	5	Hexavalent Chromium	12/15/17 1:45 PM	Reported
44	N027485-010AMS	MS	5	Hexavalent Chromium	12/15/17 1:54 PM	Reported
45	N027485-011A	SAMP	500	Hexavalent Chromium	12/15/17 2:03 PM	Reported
46	N027485-011AMS	MS	500	Hexavalent Chromium	12/15/17 2:13 PM	Reported
47	N027485-012A	SAMP	500	Hexavalent Chromium	12/15/17 2:22 PM	Reported
48	N027485-012AMS	MS	500	Hexavalent Chromium	12/15/17 2:32 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/15/17 2:41 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/15/17 2:51 PM	Reported
51	N027485-003ADUP	DUP	200	Hexavalent Chromium	12/15/17 3:06 PM	Reported
52	N027485-013A	SAMP	1	Hexavalent Chromium	12/15/17 3:18 PM	Reported
53	N027485-013AMS	MS	1	Hexavalent Chromium	12/15/17 3:27 PM	Reported
54	N027485-014A	SAMP	1	Hexavalent Chromium	12/15/17 3:36 PM	Reported
55	N027485-014AMS	MS	1	Hexavalent Chromium	12/15/17 3:46 PM	Reported
56	N027485-015A	SAMP	1	Hexavalent Chromium	12/15/17 3:55 PM	Not Reported
57	N027485-015AMS	MS	1	Hexavalent Chromium	12/15/17 4:05 PM	Reported
58	N027485-016A	SAMP	1	Hexavalent Chromium	12/15/17 4:14 PM	Reported
59	N027485-016AMS	MS	1	Hexavalent Chromium	12/15/17 4:24 PM	Reported
60	N027459-009A	SAMP	1	Hexavalent Chromium	12/15/17 4:33 PM	Not Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/15/17 4:43 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/15/17 4:52 PM	Reported
63	N027459-009AMS	MS	1	Hexavalent Chromium	12/15/17 5:02 PM	Not Reported
64	N027459-018A	SAMP	5	Hexavalent Chromium	12/15/17 5:11 PM	Reported
65	N027459-018AMS	MS	5	Hexavalent Chromium	12/15/17 5:21 PM	Reported
66	N027459-019A	SAMP	5	Hexavalent Chromium	12/15/17 5:30 PM	Reported
67	N027459-019AMS	MS	5	Hexavalent Chromium	12/15/17 5:39 PM	Reported
68	N027485-005AMS	MS	1	Hexavalent Chromium	12/15/17 5:49 PM	Not Reported
69	N027485-006AMS	MS	1	Hexavalent Chromium	12/15/17 5:58 PM	Not Reported
70	N027485-007AMS	MS	1	Hexavalent Chromium	12/15/17 6:08 PM	Not Reported
71	N027459-019A	SAMP	1	Hexavalent Chromium	12/15/17 6:17 PM	Not Reported
72	N027459-019AMS	MS	1	Hexavalent Chromium	12/15/17 6:27 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	12/15/17 6:36 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	12/15/17 6:46 PM	Reported
75	N027459-018A	SAMP	1	Hexavalent Chromium	12/15/17 6:55 PM	Not Reported
76	N027459-018AMS	MS	1	Hexavalent Chromium	12/15/17 7:05 PM	Not Reported
77	N027404-005A	SAMP	5	Hexavalent Chromium	12/15/17 7:14 PM	Not Reported
78	N027404-005AMS	MS	5	Hexavalent Chromium	12/15/17 7:24 PM	Not Reported
79	N027404-009A	SAMP	5	Hexavalent Chromium	12/15/17 7:33 PM	Not Reported
80	N027404-009AMS	MS	5	Hexavalent Chromium	12/15/17 7:42 PM	Not Reported
81	N027459-009A	SAMP	2	Hexavalent Chromium	12/15/17 7:52 PM	Reported
82	N027459-009AMS	MS	2	Hexavalent Chromium	12/15/17 8:01 PM	Reported
83	N027485-015A	SAMP	1	Hexavalent Chromium	12/15/17 8:11 PM	Reported
84	CCV-7	CCV	1	Hexavalent Chromium	12/15/17 8:20 PM	Reported

INJECTION LOG: 171215A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCB-7	CCB	1	Hexavalent Chromium	12/15/17 8:30 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171215A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**15/Dec/17 21:00:35**
No. of Injections:	**88**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/15/2017 08:31	Finished	BLANK
11	BLANK	2	1000	Unknown		12/15/2017 08:42	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/15/2017 08:51	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/15/2017 09:01	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/15/2017 09:10	Finished	CCB R171129A
15	MB-H2O,MBLK,1	6	1000	Unknown		12/15/2017 09:20	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/15/2017 09:29	Finished	LCS, IWST-171002B
17	N027485-002A,SAMP	8	1000	Unknown		12/15/2017 09:39	Finished	SAMP,0.05>10mL
18	N027485-003A,SAMP	9	1000	Unknown		12/15/2017 09:48	Finished	SAMP,0.05>10mL
19	N027485-005A,SAMP	10	1000	Unknown		12/15/2017 09:57	Finished	SAMP,10mL
20	N027485-006A,SAMP	11	1000	Unknown		12/15/2017 10:07	Finished	SAMP,10mL
21	N027485-007A,SAMP	12	1000	Unknown		12/15/2017 10:16	Finished	SAMP,10mL
22	N027485-001A,SAMP	13	1000	Unknown		12/15/2017 10:26	Finished	SAMP,0.5>10mL
23	N027485-001AMS,MS	14	1000	Unknown		12/15/2017 10:35	Finished	MS (5ppb), IWST-171002B,0.5
24	N027485-001AMSD,M	15	1000	Unknown		12/15/2017 10:45	Finished	MSD (5ppb), IWST-171002B,0.
25	CCV-2,CCV1,1,	16	1000	Unknown		12/15/2017 10:54	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	17	1000	Unknown		12/15/2017 11:04	Finished	CCB R171129A
27	N027485-002AMS,MS	18	1000	Unknown		12/15/2017 11:13	Finished	MS (5ppb), IWST-171002B,0.0
28	N027485-003AMS,MS	19	1000	Unknown		12/15/2017 11:23	Finished	MS (5ppb), IWST-171002B,0.0
29	N027485-004A,SAMP	20	1000	Unknown		12/15/2017 11:32	Finished	SAMP,0.01>10mL
30	N027485-004AMS,MS	21	1000	Unknown		12/15/2017 11:42	Finished	MS (5ppb), IWST-171002B,0.0
31	N027485-005A,SAMP	22	1000	Unknown		12/15/2017 11:51	Finished	SAMP,2>10mL
32	N027485-005AMS,MS	23	1000	Unknown		12/15/2017 12:00	Finished	MS (1ppb), IWST-171002B,2>1
33	N027485-006A,SAMP	24	1000	Unknown		12/15/2017 12:10	Finished	SAMP,2>10mL
34	N027485-006AMS,MS	25	1000	Unknown		12/15/2017 12:19	Finished	MS (1ppb), IWST-171002B,2>1
35	N027485-007A,SAMP	26	1000	Unknown		12/15/2017 12:29	Finished	SAMP,2>10mL
36	N027485-007AMS,MS	27	1000	Unknown		12/15/2017 12:38	Finished	MS (1ppb), IWST-171002B,2>1
37	CCV-3,CCV,1,	28	1000	Unknown		12/15/2017 12:48	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	29	1000	Unknown		12/15/2017 12:57	Finished	CCB R171129A
39	N027485-008A,SAMP	30	1000	Unknown		12/15/2017 13:07	Finished	SAMP,0.1>10mL
40	N027485-008AMS,MS	31	1000	Unknown		12/15/2017 13:16	Finished	MS (5ppb), IWST-171002B,0.1
41	N027485-009A,SAMP	32	1000	Unknown		12/15/2017 13:26	Finished	SAMP,0.02>10mL
42	N027485-009AMS,MS	33	1000	Unknown		12/15/2017 13:35	Finished	MS (5ppb), IWST-171002B,0.0
43	N027485-010A,SAMP	34	1000	Unknown		12/15/2017 13:45	Finished	SAMP,2>10mL
44	N027485-010AMS,MS	35	1000	Unknown		12/15/2017 13:54	Finished	MS (5ppb), IWST-171002B,2>1
45	N027485-011A,SAMP	36	1000	Unknown		12/15/2017 14:03	Finished	SAMP,0.02>10mL
46	N027485-011AMS,MS	37	1000	Unknown		12/15/2017 14:13	Finished	MS (5ppb), IWST-171002B,0.0
47	N027485-012A,SAMP	38	1000	Unknown		12/15/2017 14:22	Finished	SAMP,0.02>10mL
48	N027485-012AMS,MS	39	1000	Unknown		12/15/2017 14:32	Finished	MS (5ppb), IWST-171002B,0.0
49	CCV-4,CCV1,1,	40	1000	Unknown		12/15/2017 14:41	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	41	1000	Unknown		12/15/2017 14:51	Finished	CCB R171129A
51	N027485-003ADUP,D	1	1000	Unknown		12/15/2017 15:06	Finished	DUP,0.05>10mL
52	N027485-013A,SAMP	2	1000	Unknown		12/15/2017 15:18	Finished	SAMP,10mL
53	N027485-013AMS,MS	3	1000	Unknown		12/15/2017 15:27	Finished	MS (1ppb), IWST-171002B,10
54	N027485-014A,SAMP	4	1000	Unknown		12/15/2017 15:36	Finished	SAMP,10mL
55	N027485-014AMS,MS	5	1000	Unknown		12/15/2017 15:46	Finished	MS (1ppb), IWST-171002B,10
56	N027485-015A,SAMP	6	1000	Unknown		12/15/2017 15:55	Finished	SAMP,10mL
57	N027485-015AMS,MS	7	1000	Unknown		12/15/2017 16:05	Finished	MS (1ppb), IWST-171002B,10
58	N027485-016A,SAMP	8	1000	Unknown		12/15/2017 16:14	Finished	SAMP,10mL
59	N027485-016AMS,MS	9	1000	Unknown		12/15/2017 16:24	Finished	MS (1ppb), IWST-171002B,10
60	N027459-009A,SAMP	10	1000	Unknown		12/15/2017 16:33	Finished	SAMP,10mL

61	CCV-5,CCV,1,	11	1000	Unknown		12/15/2017 16:43	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	12	1000	Unknown		12/15/2017 16:52	Finished	CCB R171129A
63	N027459-009AMS,MS	13	1000	Unknown		12/15/2017 17:02	Finished	MS (5ppb), IWST-171002B,10
64	N027459-018A,SAMP	14	1000	Unknown		12/15/2017 17:11	Finished	SAMP,2>10mL
65	N027459-018AMS,MS	15	1000	Unknown		12/15/2017 17:21	Finished	MS (1ppb), IWST-171002B,2>1
66	N027459-019A,SAMP	16	1000	Unknown		12/15/2017 17:30	Finished	SAMP,2>10mL
67	N027459-019AMS,MS	17	1000	Unknown		12/15/2017 17:39	Finished	MS (1ppb), IWST-171002B,2>1
68	N027485-005AMS,MS	18	1000	Unknown		12/15/2017 17:49	Finished	MS (1ppb), IWST-171002B,10
69	N027485-006AMS,MS	19	1000	Unknown		12/15/2017 17:58	Finished	MS (1ppb), IWST-171002B,10
70	N027485-007AMS,MS	20	1000	Unknown		12/15/2017 18:08	Finished	MS (1ppb), IWST-171002B,10
71	N027459-019A,SAMP	21	1000	Unknown		12/15/2017 18:17	Finished	SAMP,10mL
72	N027459-019AMS,MS	22	1000	Unknown		12/15/2017 18:27	Finished	MS (1ppb), IWST-171002B,10
73	CCV-6,CCV1,1,	23	1000	Unknown		12/15/2017 18:36	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	24	1000	Unknown		12/15/2017 18:46	Finished	CCB R171129A
75	N027459-018A,SAMP	25	1000	Unknown		12/15/2017 18:55	Finished	SAMP,10mL
76	N027459-018AMS,MS	26	1000	Unknown		12/15/2017 19:05	Finished	MS (1ppb), IWST-171002B,10
77	N027404-005A,SAMP	27	1000	Unknown		12/15/2017 19:14	Finished	SAMP,2>10mL
78	N027404-005AMS,MS	28	1000	Unknown		12/15/2017 19:24	Finished	MS (1ppb), IWST-171002B,2>1
79	N027404-009A,SAMP	29	1000	Unknown		12/15/2017 19:33	Finished	SAMP,2>10mL
80	N027404-009AMS,MS	30	1000	Unknown		12/15/2017 19:42	Finished	MS (1ppb), IWST-171002B,2>1
81	N027459-009A,SAMP	31	1000	Unknown		12/15/2017 19:52	Finished	SAMP,5>10mL
82	N027459-009AMS,MS	32	1000	Unknown		12/15/2017 20:01	Finished	MS (5ppb), IWST-171002B,5>1
83	N027485-015A,SAMP	33	1000	Unknown		12/15/2017 20:11	Finished	SAMP,10mL
84	CCV-7,CCV,1,	34	1000	Unknown		12/15/2017 20:20	Finished	CCV @5ppb, IWST-171002A
85	CCB-7,CCB,1,	35	1000	Unknown		12/15/2017 20:30	Finished	CCB R171129A
86	SHUTDOWN	36	1000	Unknown		12/15/2017 20:39	Finished	
87	Eluent: R171214A	37	1000	Unknown		n.a.	Finished	Eluent
88	PCR: R171214B	38	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 12/13/17
Time Prepared: 1310H
Prepared By: MC

Slope: 97.8%
pH 4: 4.00 at 25.0C
7: 7.02 at 25.0C
10: 10.02 at 25.0C
LCS: 6.98

Reagent ID:
Sulfuric Acid: ~~7465~~ 9665
Diphenylcarbazide: CINV-170620A
NH4OH + NH4SO4 eluent: ~~B171213~~ M71214A
NH4OH + NH4SO4 buffer: M71129A

GN NaOH: M70509A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	ND27451-17A	9.24	9.35	250 mL	250 mL	2 drops	M71129A
2)	18A	9.32	—				
3)	19A	9.45	—				
4)	20A	9.52	—				
5)	ND27518-1D	9.18	9.34			3 drops	
6)	ND27485-1A	9.34	—				
7)	2A	9.41	—				
8)	3A	9.45	—				
9)	4A	9.35	—				
10)	5A	9.52	—				
11)	6A	9.59	—				
12)	7A	9.61	—				
13)	8A	9.36	—				
14)	9A	9.41	—				
15) MC	10A	9.32 10	—				
	11A	9.25	9.30			1 drop	

Sample Preparation

Date Prepared: 12/13/17
Time Prepared: 1310H
Prepared By: MC

Reagent ID:
Sulfuric Acid: ~~7465~~ 9665
Diphenylcarbazide: CINV-170620A
NH4OH + NH4SO4 eluent: B171213 → M71214A
NH4OH + NH4SO4 buffer: B171129A

GN NaOH: M70509A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	ND27485-12A	9.17	9.36	250 mL	250 mL	3 drops	B171129A
2)	13A	9.49	—				
3)	14A	9.45	—				
4)	15A	9.45	—				
5)	16A	9.41	—				
6)	ND27523-1A	9.55	—				
7)	2A	9.47	—				
8)	2A	9.46	—				1/2
9)	3A	9.51	—				2/2
10)	3A	9.51	—				1/2
11)	4A	9.42	—				2/2
12)	5A	9.46	—				
13)	6A	9.48	—				
14)	7A	9.50	—				
15)	8A	9.20	9.34			3 drops ← 3 drops	
	9A	8.90	9.34			6 drops ← 6 drops	MC

Logbook No. 13

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 11/28/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0529	0.2484	1.2584	2.5328	3.7596	5.0155	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-171002A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RLB 01/04/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ICV**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2870588**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.092	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2870589**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.185	0.20	0.2000	0	92.6	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **CCV**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870591**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.104	0.20	5.000	0	102	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870592**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.192	0.20	0.2000	0	96.2	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870601**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.229	0.20	10.00	0	102	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **CCV**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870613**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.061	0.20	5.000	0	101	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.232	0.20	10.00	0	102	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **CCV**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870635**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.049	0.20	5.000	0	101	95	105				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ZZZZZZ**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870641**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.275	0.20	10.00	0	103	95	105				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **CCV**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.099	0.20	5.000	0	102	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **ICB**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2870590**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **CCB**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870593**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **CCB**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **CCB**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870614**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **CCB**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870626**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **CCB**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870636**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **CCB**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870642**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120903**
Client ID: **CCB**	Batch ID: **R120903**	TestNo: **EPA 218.6**		Analysis Date: **12/15/2017**	SeqNo: **2870647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/15/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.165	
CCV-7	4.165	
Average	4.165	
Actual RT Window	4.085 - 4.245	
Applied RT Window	3.965 - 4.365	
MB-R120903	N.A.	N.A.
LCS-R120903	4.165	PASS
N027485-002A	4.156	PASS
N027485-003A	4.156	PASS
N027485-005A	N.A.	N.A.
N027485-006A	N.A.	N.A.
N027485-007A	N.A.	N.A.
N027485-001A	4.165	PASS
N027485-001AMS	4.156	PASS
N027485-001AMSD	4.156	PASS
N027485-002AMS	4.165	PASS
N027485-003AMS	4.156	PASS
N027485-004A	4.165	PASS
N027485-004AMS	4.156	PASS
N027485-005A	4.098	PASS
N027485-005AMS	4.106	PASS
N027485-006A	4.098	PASS
N027485-006AMS	4.098	PASS
N027485-007A	4.106	PASS
N027485-007AMS	4.106	PASS
N027485-008A	4.156	PASS
N027485-008AMS	4.165	PASS

RJB 01/04/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/15/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.165	
CCV-7	4.165	
Average	4.165	
Actual RT Window	4.085 - 4.245	
Applied RT Window	3.965 - 4.365	
N027485-009A	4.156	PASS
N027485-009AMS	4.156	PASS
N027485-010A	4.140	PASS
N027485-010AMS	4.140	PASS
N027485-011A	4.156	PASS
N027485-011AMS	4.156	PASS
N027485-012A	4.156	PASS
N027485-012AMS	4.156	PASS
N027485-003ADUP	4.156	PASS
N027485-013A	N.A.	N.A.
N027485-013AMS	4.156	PASS
N027485-014A	N.A.	N.A.
N027485-014AMS	4.156	PASS
N027485-015A	N.A.	N.A.
N027485-015AMS	4.165	PASS
N027485-016A	N.A.	N.A.
N027485-016AMS	4.156	PASS
N027459-009A	3.990	PASS
N027459-009AMS	3.990	PASS
N027459-018A	N.A.	N.A.
N027459-018AMS	4.106	PASS
N027459-019A	N.A.	N.A.



01/04/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/15/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.165	
CCV-7	4.165	
Average	4.165	
Actual RT Window	4.085 - 4.245	
Applied RT Window	3.965 - 4.365	
N027459-019AMS	4.123	PASS
N027485-005AMS	N.A.	N.A.
N027485-006AMS	N.A.	N.A.
N027485-007AMS	N.A.	N.A.
N027459-019A	N.A.	N.A.
N027459-019AMS	3.823	FAIL
N027459-018A	N.A.	N.A.
N027459-018AMS	N.A.	N.A.
N027404-005A	4.115	PASS
N027404-005AMS	4.123	PASS
N027404-009A	4.131	PASS
N027404-009AMS	4.131	PASS
N027459-009A	4.090	PASS
N027459-009AMS	4.090	PASS
N027485-015A	N.A.	N.A.

RB 01/04/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 Unit: ug/L
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

MDL/LOD & PQL Verification 2017

Method Name: **Hexavalent Chromium by IC**
Method Number: EPA Method 218.6
Analysis Date(s): 5/31/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: µg/L

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.103

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.194	**97**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 171128A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/28/17 10:57 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/28/17 11:08 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/28/17 11:17 AM	Reported
13	MB-R120468	MBLK	1	Hexavalent Chromium	11/28/17 11:27 AM	Reported
14	LCS-R120468	LCS	1	Hexavalent Chromium	11/28/17 11:36 AM	Reported
15	N027215-001A	SAMP	1	Hexavalent Chromium	11/28/17 11:47 AM	Reported
16	N027215-002A	SAMP	1	Hexavalent Chromium	11/28/17 11:59 AM	Reported
17	N027215-003A	SAMP	1	Hexavalent Chromium	11/28/17 12:08 PM	Reported
18	N027215-004A	SAMP	1	Hexavalent Chromium	11/28/17 12:18 PM	Reported
19	N027215-005A	SAMP	1	Hexavalent Chromium	11/28/17 12:27 PM	Reported
20	N027215-002ADUP	DUP	1	Hexavalent Chromium	11/28/17 12:37 PM	Reported
21	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 12:46 PM	Not Reported
22	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 12:56 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	11/28/17 1:05 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/28/17 1:14 PM	Reported
25	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:04 PM	Not Reported
26	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:16 PM	Not Reported
27	N027215-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:29 PM	Reported
28	N027215-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:41 PM	Reported
29	CCV-2	CCV	1	Hexavalent Chromium	11/28/17 2:50 PM	Reported
30	CCB-2	CCB	1	Hexavalent Chromium	11/28/17 3:00 PM	Reported

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Injection Log Summary

Sequence Details

Name:	**IC-07_171128A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**28/Nov/17 15:47:35**
No. of Injections:	**33**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		11/28/2017 10:57	Finished	ICV @5ppb, IWST-171002A
11	PQL@0.2ppb,CCV2,	12	1000	Unknown		11/28/2017 11:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		11/28/2017 11:17	Finished	ICB R171114C
13	MB-H2O,MBLK,1	14	1000	Unknown		11/28/2017 11:27	Finished	MB R171114C
14	LCS-H2O,LCS,1	15	1000	Unknown		11/28/2017 11:36	Finished	LCS, IWST-171002B
15	N027215-001A,SAMF	17	1000	Unknown		11/28/2017 11:47	Finished	SAMP,10mL
16	N027215-002A,SAMF	18	1000	Unknown		11/28/2017 11:59	Finished	SAMP,10mL
17	N027215-003A,SAMF	19	1000	Unknown		11/28/2017 12:08	Finished	SAMP,10mL
18	N027215-004A,SAMF	20	1000	Unknown		11/28/2017 12:18	Finished	SAMP,10mL
19	N027215-005A,SAMF	21	1000	Unknown		11/28/2017 12:27	Finished	SAMP,10mL
20	N027215-002ADUP,D	22	1000	Unknown		11/28/2017 12:37	Finished	DUP,10mL
21	N027157-001AMS,MS	23	1000	Unknown		11/28/2017 12:46	Finished	MS (5ppb), IWST-171002B,10
22	N027157-001AMSD,M	24	1000	Unknown		11/28/2017 12:56	Finished	MSD (5ppb), IWST-171002B,1
23	CCV-1,CCV1,1,	25	1000	Unknown		11/28/2017 13:05	Finished	CCV @10ppb, IWST-171002A
24	CCB-1,CCB,1,	26	1000	Unknown		11/28/2017 13:14	Finished	CCB R171031A
25	N027157-001AMS,MS	28	1000	Unknown		11/28/2017 14:04	Finished	MS (5ppb), IWST-171002B,10
26	N027157-001AMSD,M	29	1000	Unknown		11/28/2017 14:16	Finished	MSD (5ppb), IWST-171002B,1
27	N027215-001AMS,MS	31	1000	Unknown		11/28/2017 14:29	Finished	MS (5ppb), IWST-171002B,10
28	N027215-001AMSD,M	32	1000	Unknown		11/28/2017 14:41	Finished	MSD (5ppb), IWST-171002B,1
29	CCV-2,CCV,1,	33	1000	Unknown		11/28/2017 14:50	Finished	CCV @5ppb, IWST-171002A
30	CCB-2,CCB,1,	34	1000	Unknown		11/28/2017 15:00	Finished	CCB R171031A
31	SHUTDOWN	35	1000	Unknown		11/28/2017 15:09	Finished	
32	Eluent: R171128A	36	1000	Unknown		n.a.	Finished	Eluent
33	PCR: R171128B	37	1000	Unknown		n.a.	Finished	Post-Column Reagent

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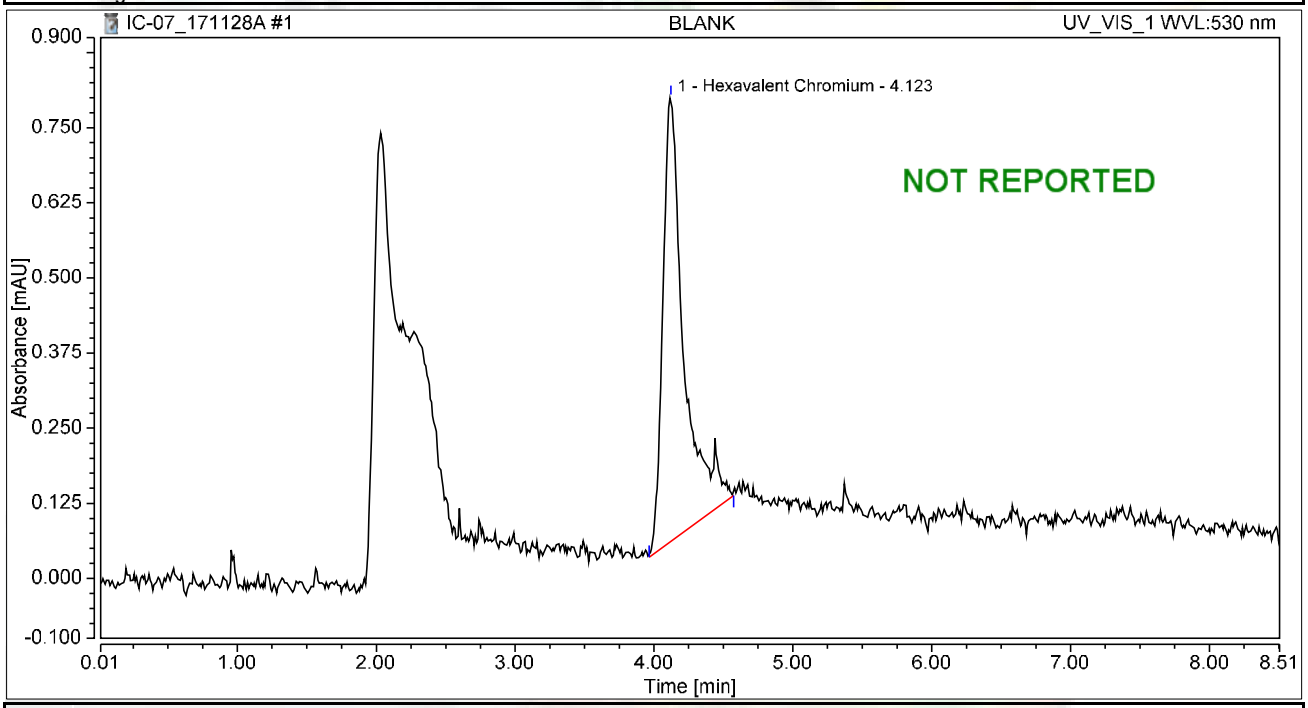
Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

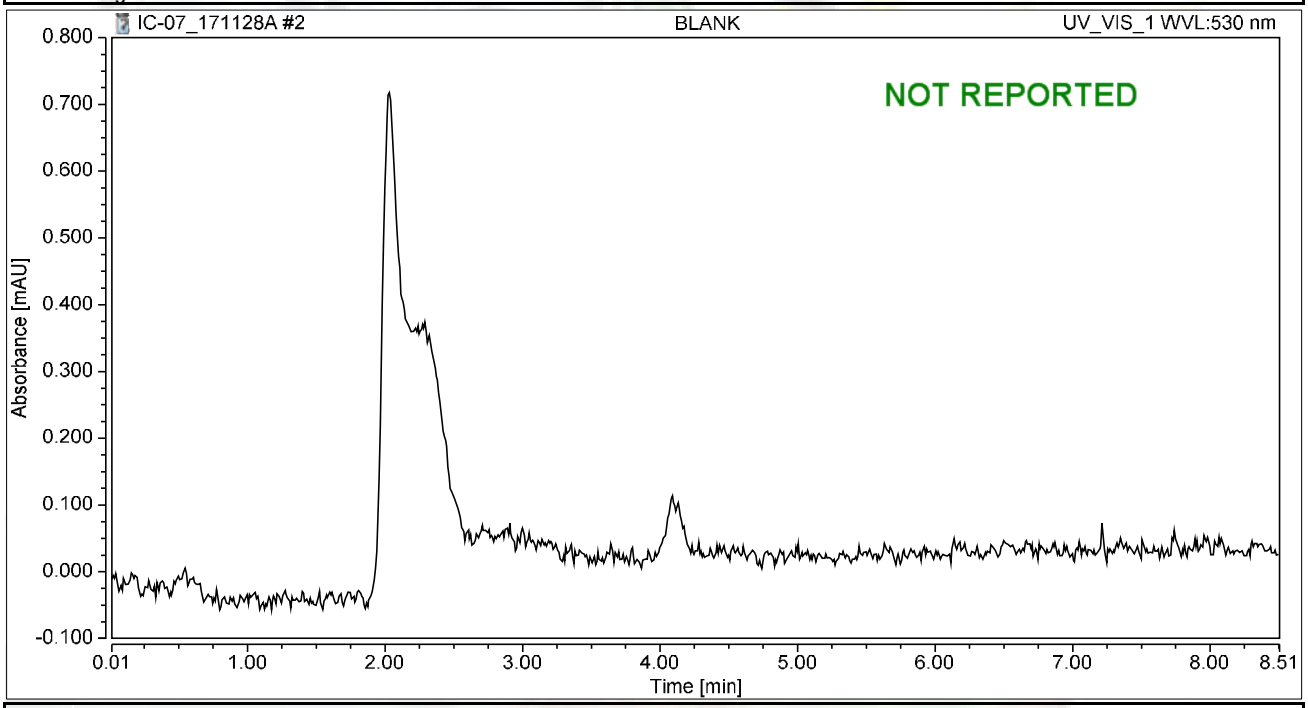
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.130	0.738	100.00	100.00	0.5193
Total:			**0.130**	**0.738**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

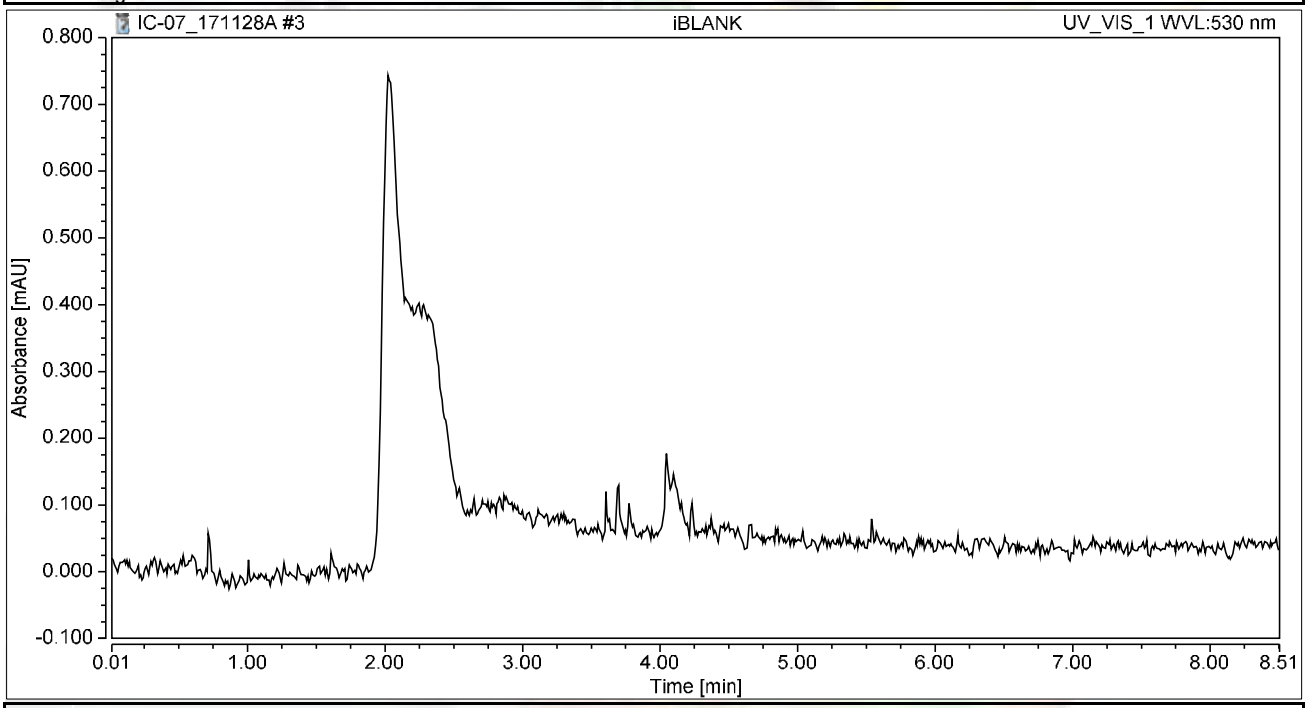
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

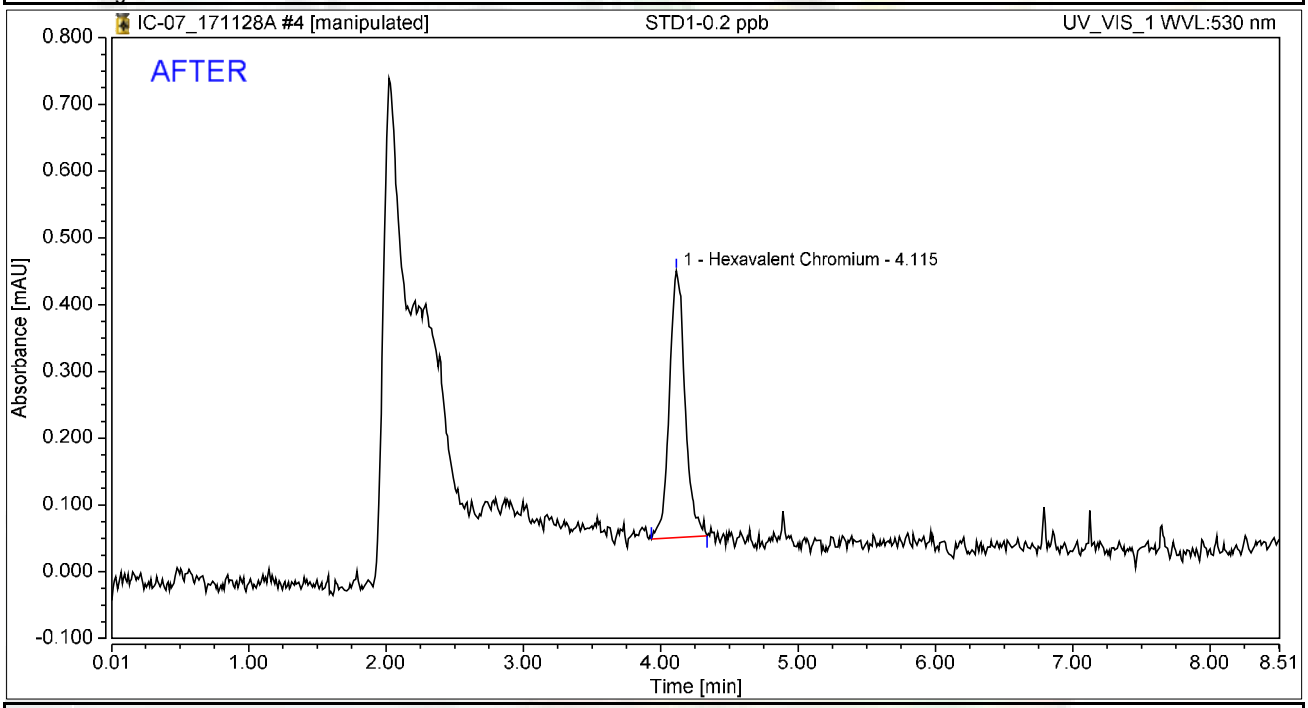
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.053	0.400	100.00	100.00	0.2108
Total:			**0.053**	**0.400**	**100.00**	**100.00**	

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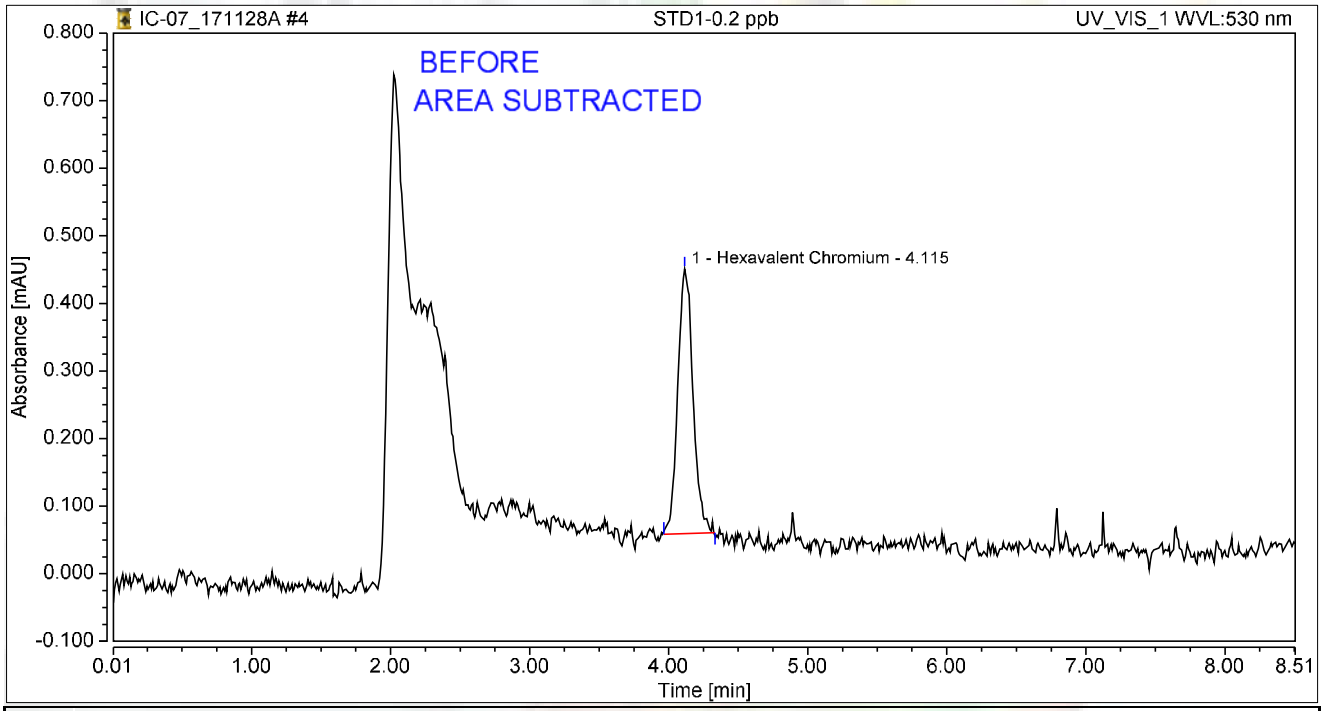
Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.050	0.391	100.00	100.00	0.1957
Total:			**0.050**	**0.391**	**100.00**	**100.00**	

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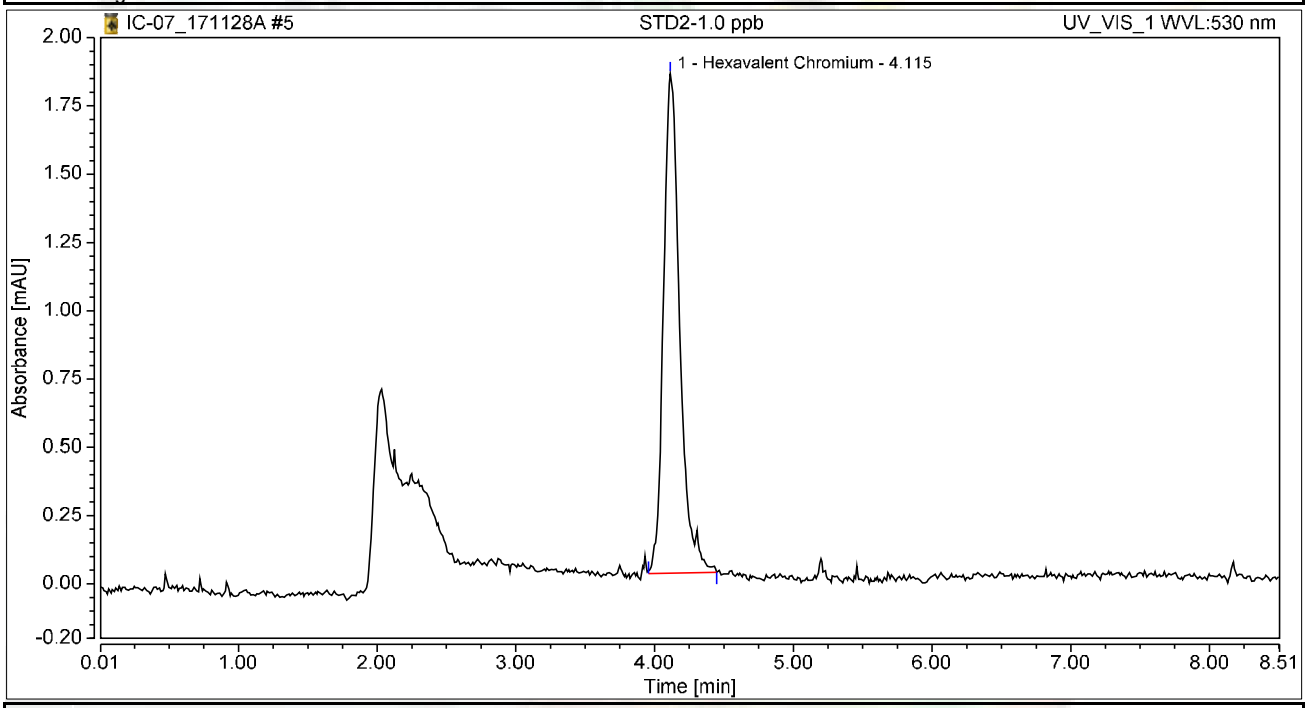
Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

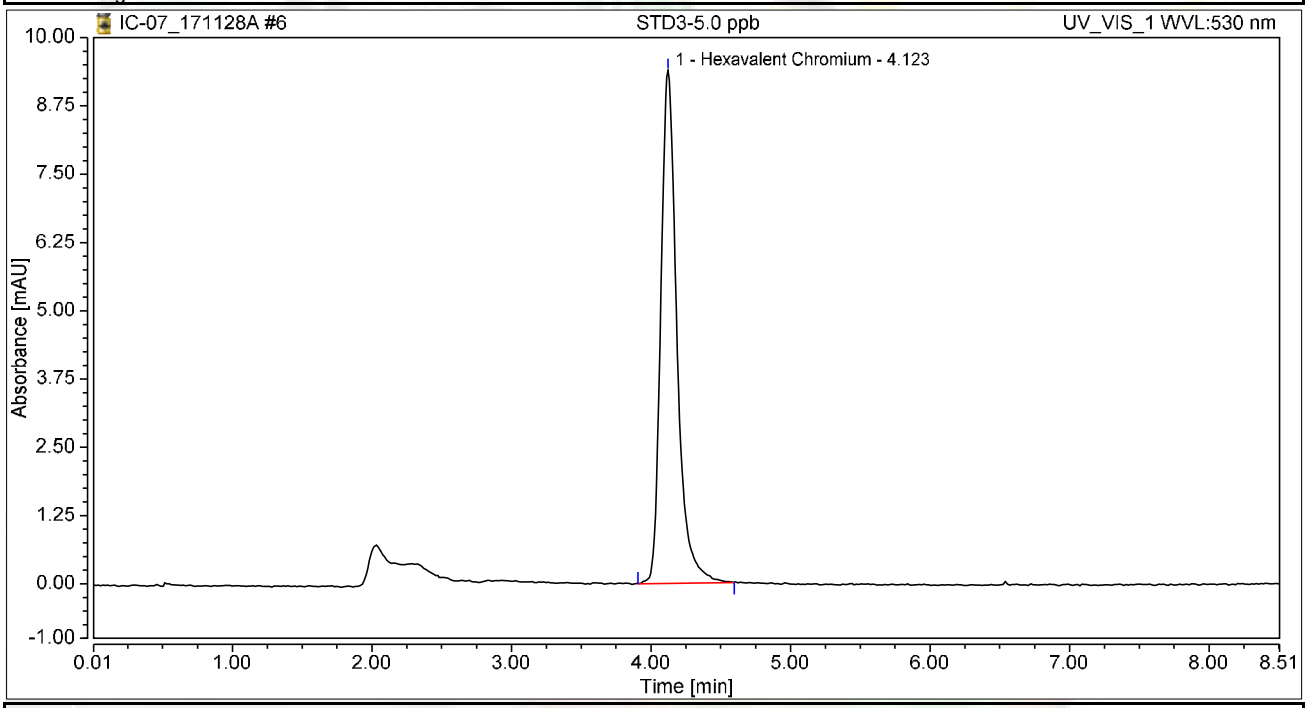
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.248	1.827	100.00	100.00	0.9892
Total:			**0.248**	**1.827**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

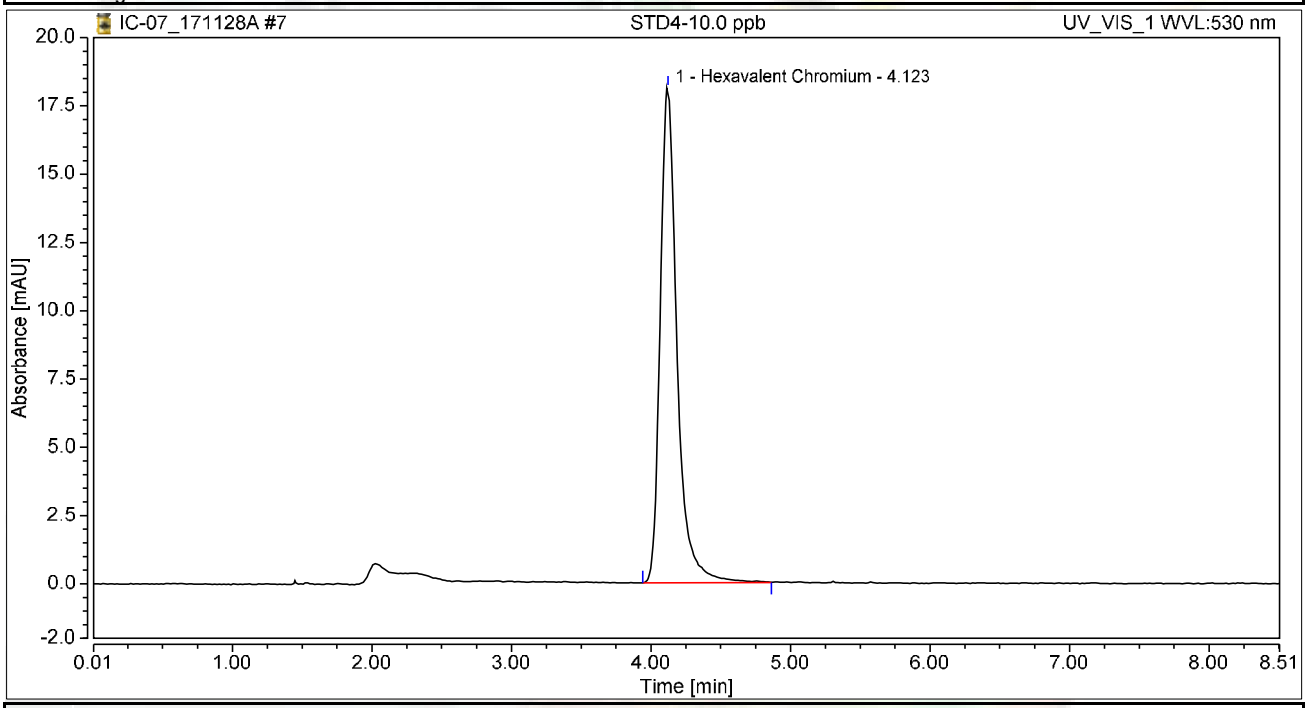
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.258	9.388	100.00	100.00	5.0118
Total:			**1.258**	**9.388**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

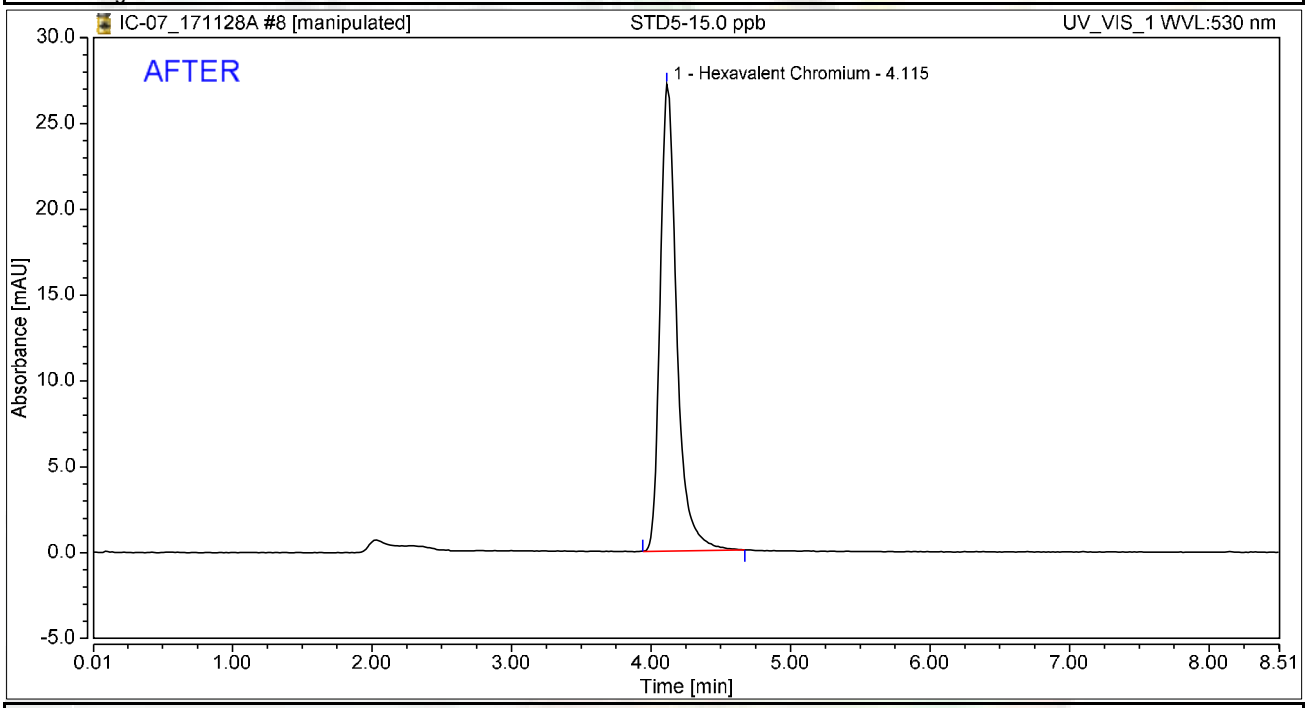
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	2.533	18.115	100.00	100.00	10.0869
Total:			**2.533**	**18.115**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	3.760	27.183	100.00	100.00	14.9728
Total:			**3.760**	**27.183**	**100.00**	**100.00**	

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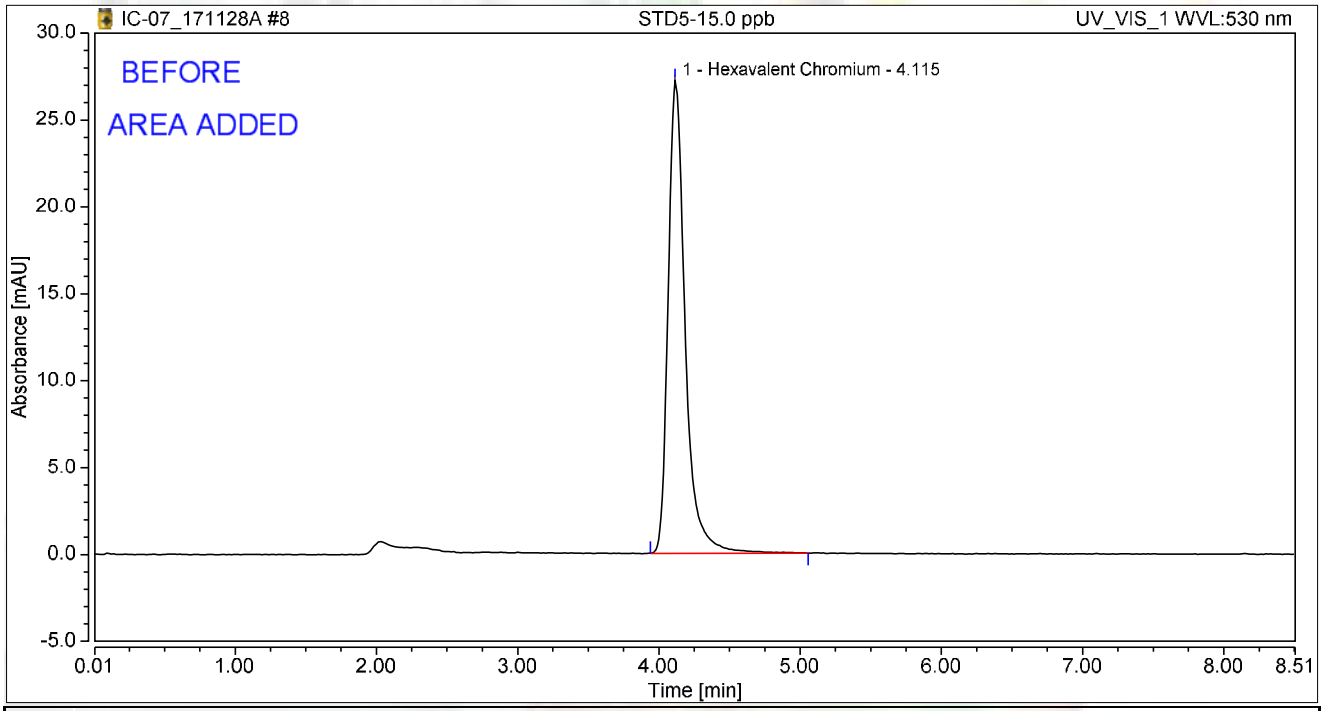
Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	3.807	27.204	100.00	100.00	14.9839
Total:			**3.807**	**27.204**	**100.00**	**100.00**	

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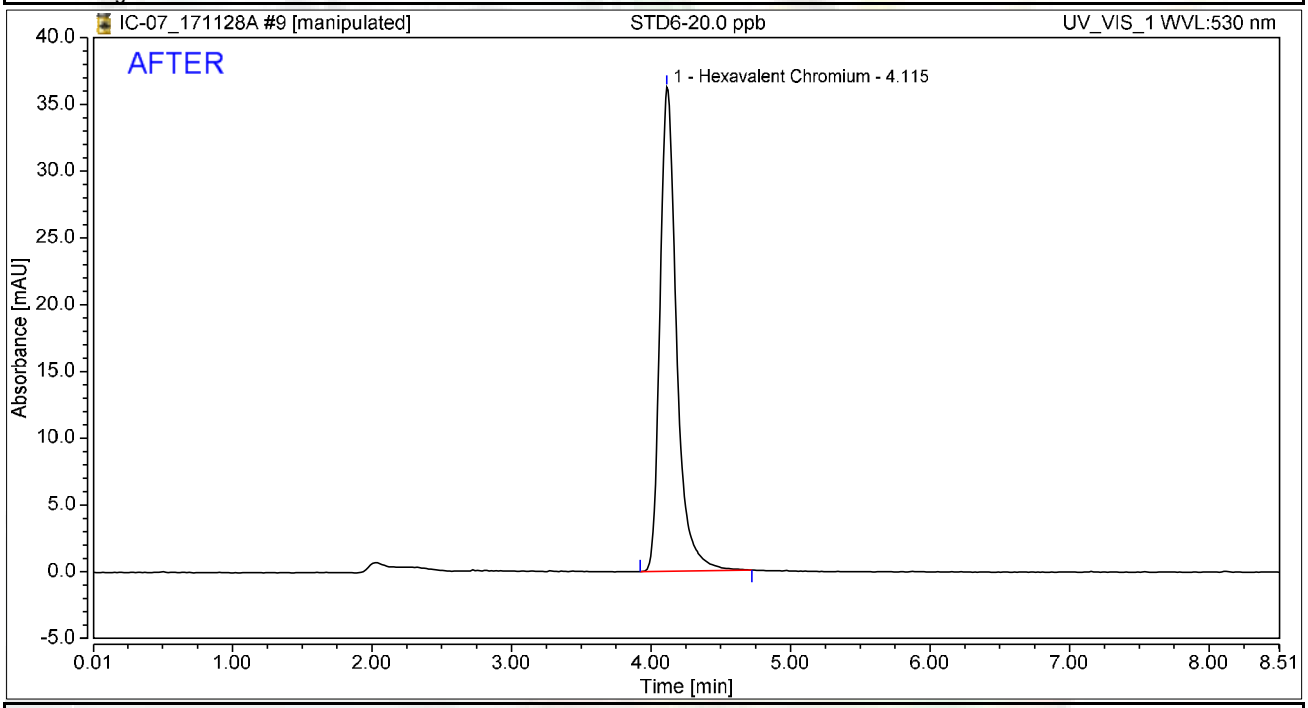
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	5.015	36.251	100.00	100.00	19.9744
Total:			**5.015**	**36.251**	**100.00**	**100.00**	

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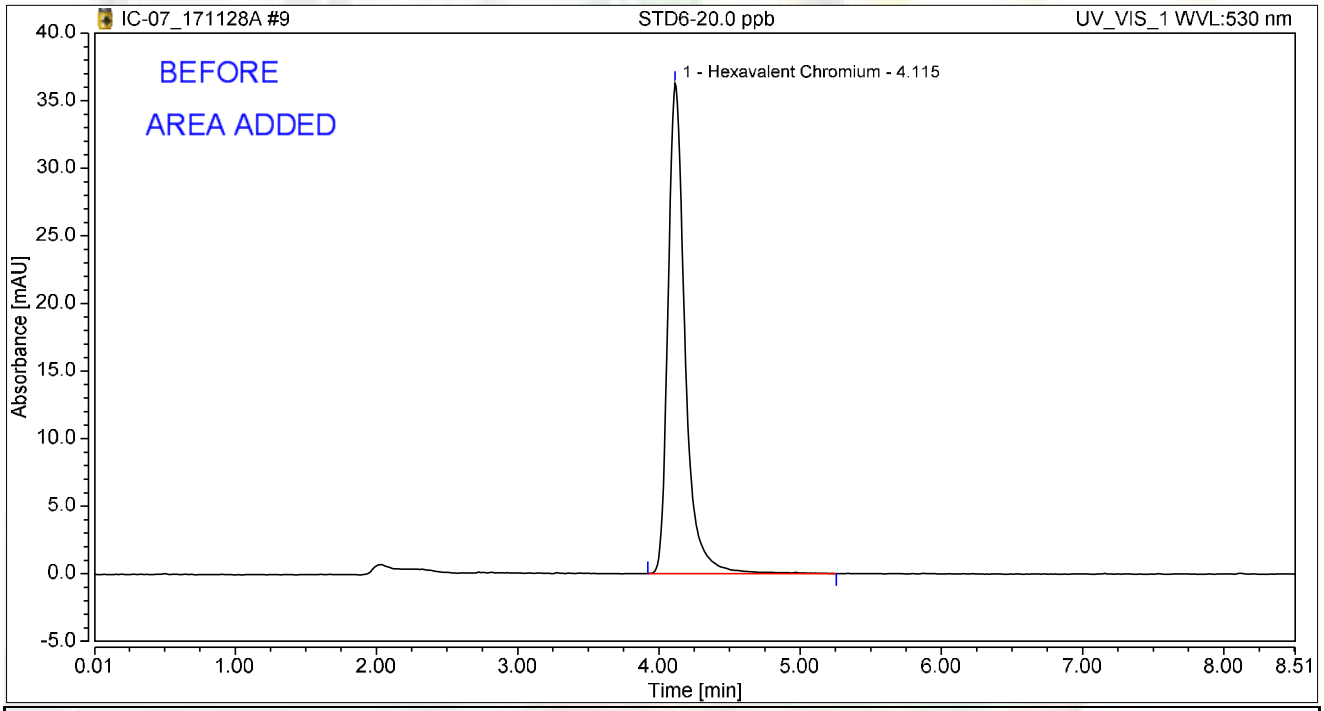
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	5.092	36.279	100.00	100.00	20.0407
Total:			**5.092**	**36.279**	**100.00**	**100.00**	

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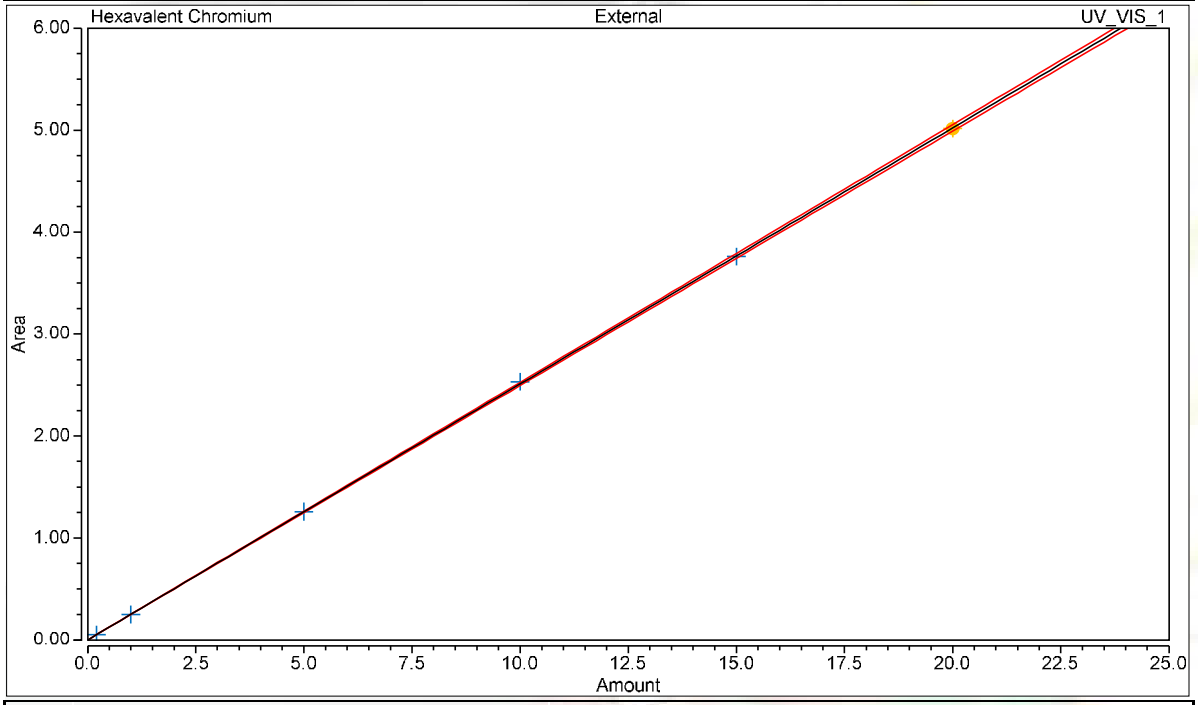
Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2511
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99997

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

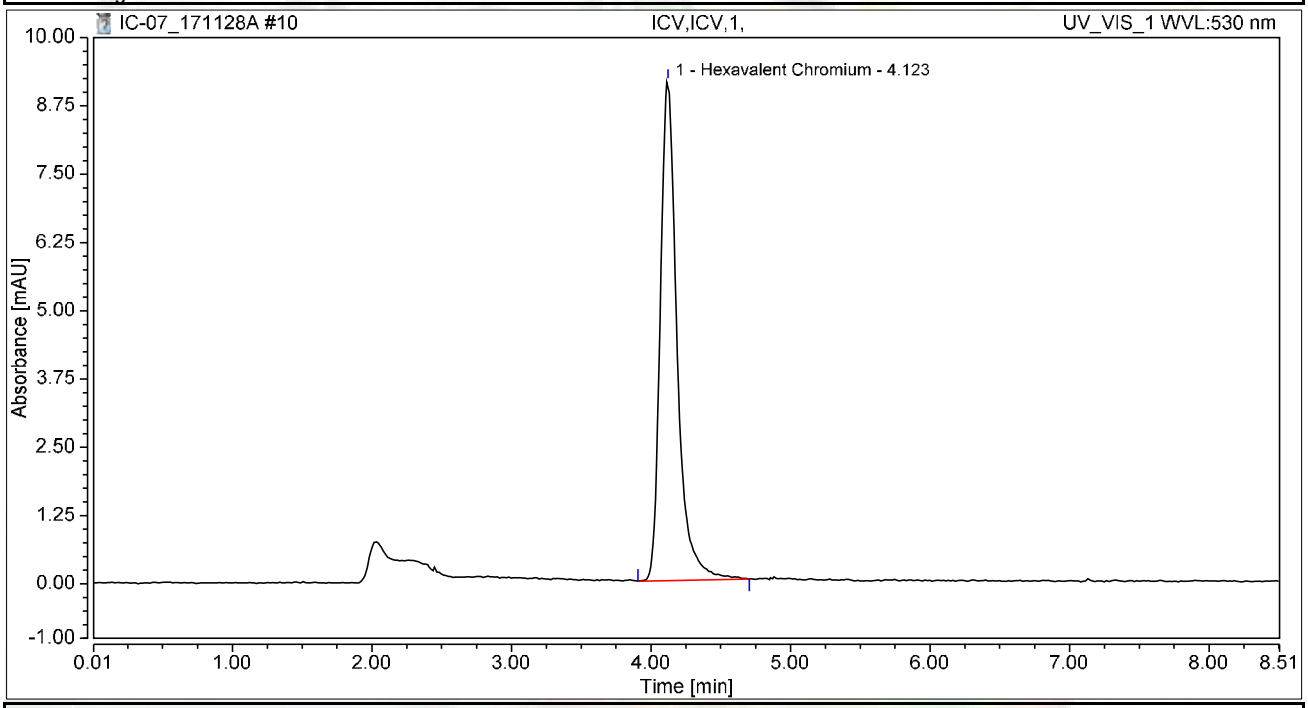
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0529	0.053	0.400
5	STD2-1.0 ppb	02	1.0000	0.2484	0.248	1.827
6	STD3-5.0 ppb	03	5.0000	1.2584	1.258	9.388
7	STD4-10.0 ppb	04	10.0000	2.5328	2.533	18.115
8	STD5-15.0 ppb	05	15.0000	3.7596	3.760	27.183
9	STD6-20.0 ppb	06	20.0000	5.0155	5.015	36.251

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

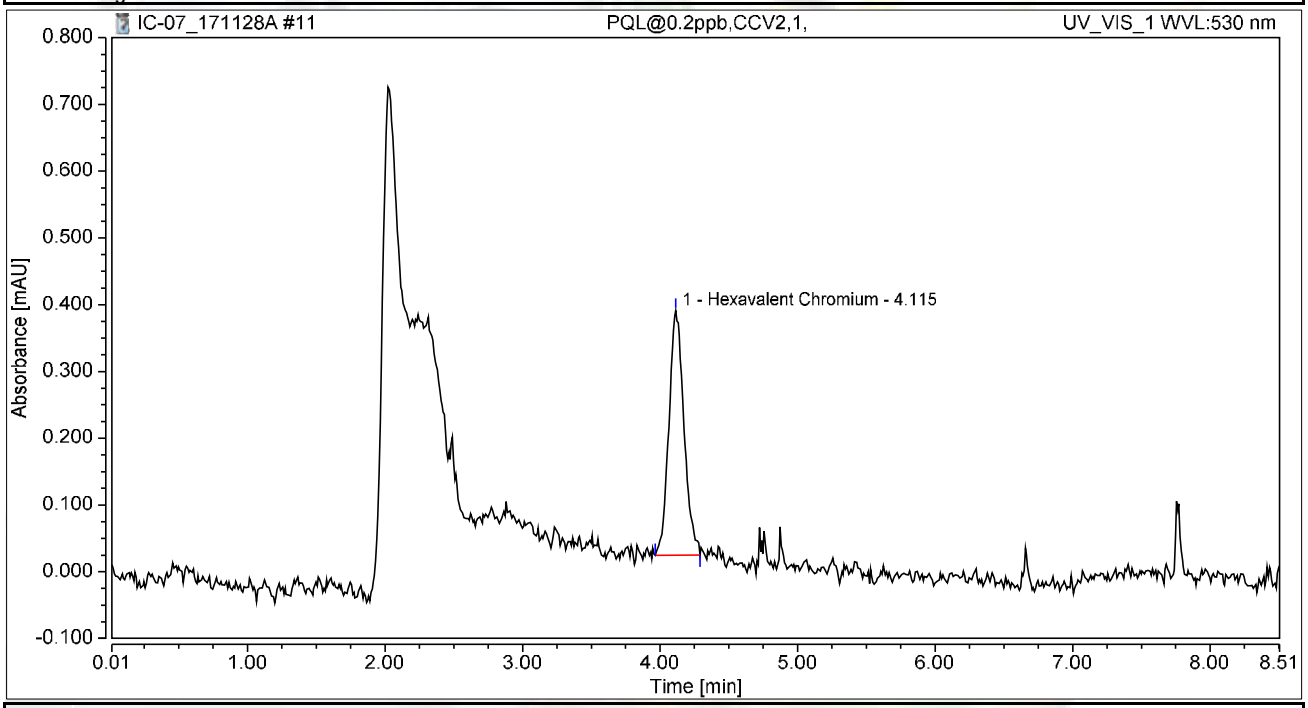
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.279	9.143	100.00	100.00	5.0922
Total:			**1.279**	**9.143**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

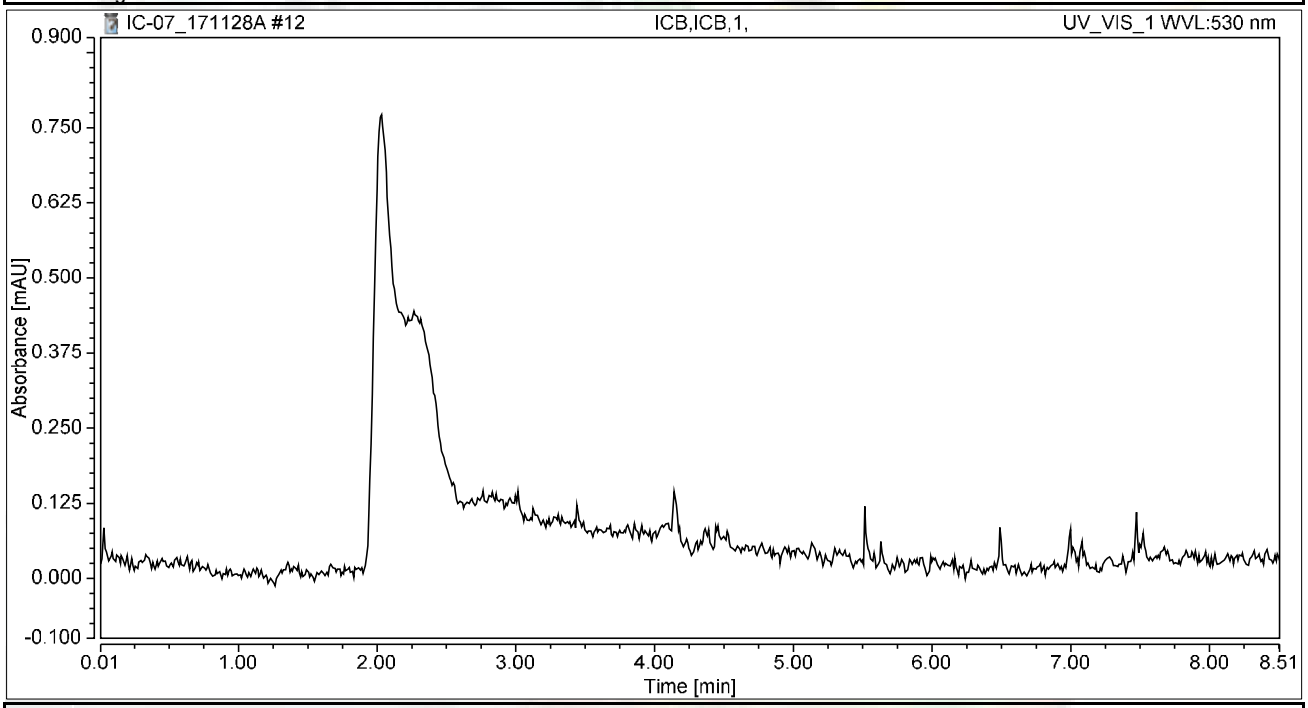
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.046	0.367	100.00	100.00	0.1851
Total:			**0.046**	**0.367**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 171215A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/15/17 8:31 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/15/17 8:42 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/15/17 8:51 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/15/17 9:01 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/15/17 9:10 AM	Reported
15	MB-R120903	MBLK	1	Hexavalent Chromium	12/15/17 9:20 AM	Reported
16	LCS-R120903	LCS	1	Hexavalent Chromium	12/15/17 9:29 AM	Reported
17	N027485-002A	SAMP	200	Hexavalent Chromium	12/15/17 9:39 AM	Reported
18	N027485-003A	SAMP	200	Hexavalent Chromium	12/15/17 9:48 AM	Reported
19	N027485-005A	SAMP	1	Hexavalent Chromium	12/15/17 9:57 AM	Not Reported
20	N027485-006A	SAMP	1	Hexavalent Chromium	12/15/17 10:07 AM	Not Reported
21	N027485-007A	SAMP	1	Hexavalent Chromium	12/15/17 10:16 AM	Not Reported
22	N027485-001A	SAMP	20	Hexavalent Chromium	12/15/17 10:26 AM	Reported
23	N027485-001AMS	MS	20	Hexavalent Chromium	12/15/17 10:35 AM	Reported
24	N027485-001AMSD	MSD	20	Hexavalent Chromium	12/15/17 10:45 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/15/17 10:54 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/15/17 11:04 AM	Reported
27	N027485-002AMS	MS	200	Hexavalent Chromium	12/15/17 11:13 AM	Reported
28	N027485-003AMS	MS	200	Hexavalent Chromium	12/15/17 11:23 AM	Reported
29	N027485-004A	SAMP	1000	Hexavalent Chromium	12/15/17 11:32 AM	Reported
30	N027485-004AMS	MS	1000	Hexavalent Chromium	12/15/17 11:42 AM	Reported
31	N027485-005A	SAMP	5	Hexavalent Chromium	12/15/17 11:51 AM	Reported
32	N027485-005AMS	MS	5	Hexavalent Chromium	12/15/17 12:00 PM	Reported
33	N027485-006A	SAMP	5	Hexavalent Chromium	12/15/17 12:10 PM	Reported
34	N027485-006AMS	MS	5	Hexavalent Chromium	12/15/17 12:19 PM	Reported
35	N027485-007A	SAMP	5	Hexavalent Chromium	12/15/17 12:29 PM	Reported
36	N027485-007AMS	MS	5	Hexavalent Chromium	12/15/17 12:38 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/15/17 12:48 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/15/17 12:57 PM	Reported
39	N027485-008A	SAMP	100	Hexavalent Chromium	12/15/17 1:07 PM	Reported
40	N027485-008AMS	MS	100	Hexavalent Chromium	12/15/17 1:16 PM	Reported
41	N027485-009A	SAMP	500	Hexavalent Chromium	12/15/17 1:26 PM	Reported
42	N027485-009AMS	MS	500	Hexavalent Chromium	12/15/17 1:35 PM	Reported

INJECTION LOG: 171215A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027485-010A	SAMP	5	Hexavalent Chromium	12/15/17 1:45 PM	Reported
44	N027485-010AMS	MS	5	Hexavalent Chromium	12/15/17 1:54 PM	Reported
45	N027485-011A	SAMP	500	Hexavalent Chromium	12/15/17 2:03 PM	Reported
46	N027485-011AMS	MS	500	Hexavalent Chromium	12/15/17 2:13 PM	Reported
47	N027485-012A	SAMP	500	Hexavalent Chromium	12/15/17 2:22 PM	Reported
48	N027485-012AMS	MS	500	Hexavalent Chromium	12/15/17 2:32 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/15/17 2:41 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/15/17 2:51 PM	Reported
51	N027485-003ADUP	DUP	200	Hexavalent Chromium	12/15/17 3:06 PM	Reported
52	N027485-013A	SAMP	1	Hexavalent Chromium	12/15/17 3:18 PM	Reported
53	N027485-013AMS	MS	1	Hexavalent Chromium	12/15/17 3:27 PM	Reported
54	N027485-014A	SAMP	1	Hexavalent Chromium	12/15/17 3:36 PM	Reported
55	N027485-014AMS	MS	1	Hexavalent Chromium	12/15/17 3:46 PM	Reported
56	N027485-015A	SAMP	1	Hexavalent Chromium	12/15/17 3:55 PM	Not Reported
57	N027485-015AMS	MS	1	Hexavalent Chromium	12/15/17 4:05 PM	Reported
58	N027485-016A	SAMP	1	Hexavalent Chromium	12/15/17 4:14 PM	Reported
59	N027485-016AMS	MS	1	Hexavalent Chromium	12/15/17 4:24 PM	Reported
60	N027459-009A	SAMP	1	Hexavalent Chromium	12/15/17 4:33 PM	Not Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/15/17 4:43 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/15/17 4:52 PM	Reported
63	N027459-009AMS	MS	1	Hexavalent Chromium	12/15/17 5:02 PM	Not Reported
64	N027459-018A	SAMP	5	Hexavalent Chromium	12/15/17 5:11 PM	Reported
65	N027459-018AMS	MS	5	Hexavalent Chromium	12/15/17 5:21 PM	Reported
66	N027459-019A	SAMP	5	Hexavalent Chromium	12/15/17 5:30 PM	Reported
67	N027459-019AMS	MS	5	Hexavalent Chromium	12/15/17 5:39 PM	Reported
68	N027485-005AMS	MS	1	Hexavalent Chromium	12/15/17 5:49 PM	Not Reported
69	N027485-006AMS	MS	1	Hexavalent Chromium	12/15/17 5:58 PM	Not Reported
70	N027485-007AMS	MS	1	Hexavalent Chromium	12/15/17 6:08 PM	Not Reported
71	N027459-019A	SAMP	1	Hexavalent Chromium	12/15/17 6:17 PM	Not Reported
72	N027459-019AMS	MS	1	Hexavalent Chromium	12/15/17 6:27 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	12/15/17 6:36 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	12/15/17 6:46 PM	Reported
75	N027459-018A	SAMP	1	Hexavalent Chromium	12/15/17 6:55 PM	Not Reported
76	N027459-018AMS	MS	1	Hexavalent Chromium	12/15/17 7:05 PM	Not Reported
77	N027404-005A	SAMP	5	Hexavalent Chromium	12/15/17 7:14 PM	Not Reported
78	N027404-005AMS	MS	5	Hexavalent Chromium	12/15/17 7:24 PM	Not Reported
79	N027404-009A	SAMP	5	Hexavalent Chromium	12/15/17 7:33 PM	Not Reported
80	N027404-009AMS	MS	5	Hexavalent Chromium	12/15/17 7:42 PM	Not Reported
81	N027459-009A	SAMP	2	Hexavalent Chromium	12/15/17 7:52 PM	Reported
82	N027459-009AMS	MS	2	Hexavalent Chromium	12/15/17 8:01 PM	Reported
83	N027485-015A	SAMP	1	Hexavalent Chromium	12/15/17 8:11 PM	Reported
84	CCV-7	CCV	1	Hexavalent Chromium	12/15/17 8:20 PM	Reported

INJECTION LOG: 171215A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCB-7	CCB	1	Hexavalent Chromium	12/15/17 8:30 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171215A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**15/Dec/17 21:00:35**
No. of Injections:	**88**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/15/2017 08:31	Finished	BLANK
11	BLANK	2	1000	Unknown		12/15/2017 08:42	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/15/2017 08:51	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/15/2017 09:01	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/15/2017 09:10	Finished	CCB R171129A
15	MB-H2O,MBLK,1	6	1000	Unknown		12/15/2017 09:20	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/15/2017 09:29	Finished	LCS, IWST-171002B
17	N027485-002A,SAMF	8	1000	Unknown		12/15/2017 09:39	Finished	SAMP,0.05>10mL
18	N027485-003A,SAMF	9	1000	Unknown		12/15/2017 09:48	Finished	SAMP,0.05>10mL
19	N027485-005A,SAMF	10	1000	Unknown		12/15/2017 09:57	Finished	SAMP,10mL
20	N027485-006A,SAMF	11	1000	Unknown		12/15/2017 10:07	Finished	SAMP,10mL
21	N027485-007A,SAMF	12	1000	Unknown		12/15/2017 10:16	Finished	SAMP,10mL
22	N027485-001A,SAMF	13	1000	Unknown		12/15/2017 10:26	Finished	SAMP,0.5>10mL
23	N027485-001AMS,MS	14	1000	Unknown		12/15/2017 10:35	Finished	MS (5ppb), IWST-171002B,0.5
24	N027485-001AMSD,M	15	1000	Unknown		12/15/2017 10:45	Finished	MSD (5ppb), IWST-171002B,0.
25	CCV-2,CCV1,1,	16	1000	Unknown		12/15/2017 10:54	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	17	1000	Unknown		12/15/2017 11:04	Finished	CCB R171129A
27	N027485-002AMS,MS	18	1000	Unknown		12/15/2017 11:13	Finished	MS (5ppb), IWST-171002B,0.0
28	N027485-003AMS,MS	19	1000	Unknown		12/15/2017 11:23	Finished	MS (5ppb), IWST-171002B,0.0
29	N027485-004A,SAMF	20	1000	Unknown		12/15/2017 11:32	Finished	SAMP,0.01>10mL
30	N027485-004AMS,MS	21	1000	Unknown		12/15/2017 11:42	Finished	MS (5ppb), IWST-171002B,0.0
31	N027485-005A,SAMF	22	1000	Unknown		12/15/2017 11:51	Finished	SAMP,2>10mL
32	N027485-005AMS,MS	23	1000	Unknown		12/15/2017 12:00	Finished	MS (1ppb), IWST-171002B,2>1
33	N027485-006A,SAMF	24	1000	Unknown		12/15/2017 12:10	Finished	SAMP,2>10mL
34	N027485-006AMS,MS	25	1000	Unknown		12/15/2017 12:19	Finished	MS (1ppb), IWST-171002B,2>1
35	N027485-007A,SAMF	26	1000	Unknown		12/15/2017 12:29	Finished	SAMP,2>10mL
36	N027485-007AMS,MS	27	1000	Unknown		12/15/2017 12:38	Finished	MS (1ppb), IWST-171002B,2>1
37	CCV-3,CCV,1,	28	1000	Unknown		12/15/2017 12:48	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	29	1000	Unknown		12/15/2017 12:57	Finished	CCB R171129A
39	N027485-008A,SAMF	30	1000	Unknown		12/15/2017 13:07	Finished	SAMP,0.1>10mL
40	N027485-008AMS,MS	31	1000	Unknown		12/15/2017 13:16	Finished	MS (5ppb), IWST-171002B,0.1
41	N027485-009A,SAMF	32	1000	Unknown		12/15/2017 13:26	Finished	SAMP,0.02>10mL
42	N027485-009AMS,MS	33	1000	Unknown		12/15/2017 13:35	Finished	MS (5ppb), IWST-171002B,0.0
43	N027485-010A,SAMF	34	1000	Unknown		12/15/2017 13:45	Finished	SAMP,2>10mL
44	N027485-010AMS,MS	35	1000	Unknown		12/15/2017 13:54	Finished	MS (5ppb), IWST-171002B,2>1
45	N027485-011A,SAMF	36	1000	Unknown		12/15/2017 14:03	Finished	SAMP,0.02>10mL
46	N027485-011AMS,MS	37	1000	Unknown		12/15/2017 14:13	Finished	MS (5ppb), IWST-171002B,0.0
47	N027485-012A,SAMF	38	1000	Unknown		12/15/2017 14:22	Finished	SAMP,0.02>10mL
48	N027485-012AMS,MS	39	1000	Unknown		12/15/2017 14:32	Finished	MS (5ppb), IWST-171002B,0.0
49	CCV-4,CCV1,1,	40	1000	Unknown		12/15/2017 14:41	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	41	1000	Unknown		12/15/2017 14:51	Finished	CCB R171129A
51	N027485-003ADUP,D	1	1000	Unknown		12/15/2017 15:06	Finished	DUP,0.05>10mL
52	N027485-013A,SAMF	2	1000	Unknown		12/15/2017 15:18	Finished	SAMP,10mL
53	N027485-013AMS,MS	3	1000	Unknown		12/15/2017 15:27	Finished	MS (1ppb), IWST-171002B,10
54	N027485-014A,SAMF	4	1000	Unknown		12/15/2017 15:36	Finished	SAMP,10mL
55	N027485-014AMS,MS	5	1000	Unknown		12/15/2017 15:46	Finished	MS (1ppb), IWST-171002B,10
56	N027485-015A,SAMF	6	1000	Unknown		12/15/2017 15:55	Finished	SAMP,10mL
57	N027485-015AMS,MS	7	1000	Unknown		12/15/2017 16:05	Finished	MS (1ppb), IWST-171002B,10
58	N027485-016A,SAMF	8	1000	Unknown		12/15/2017 16:14	Finished	SAMP,10mL
59	N027485-016AMS,MS	9	1000	Unknown		12/15/2017 16:24	Finished	MS (1ppb), IWST-171002B,10
60	N027459-009A,SAMF	10	1000	Unknown		12/15/2017 16:33	Finished	SAMP,10mL

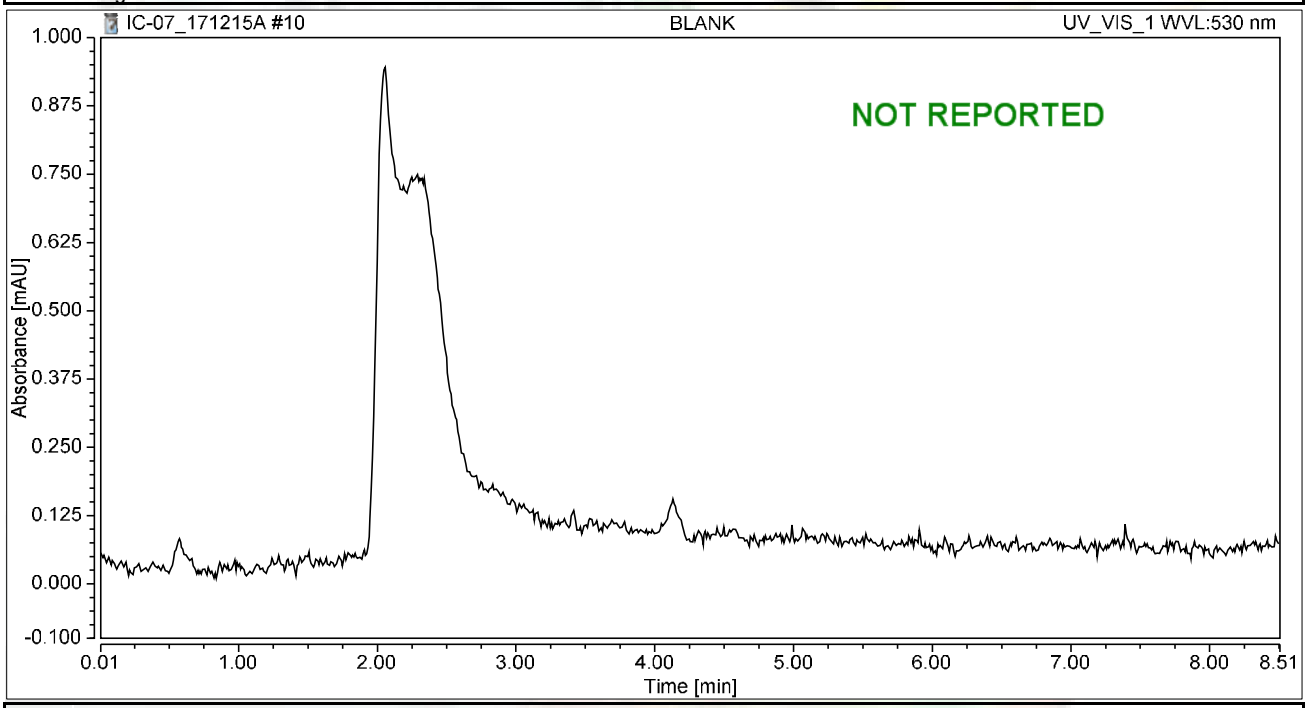
61	CCV-5,CCV,1,	11	1000	Unknown		12/15/2017 16:43	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	12	1000	Unknown		12/15/2017 16:52	Finished	CCB R171129A
63	N027459-009AMS,MS	13	1000	Unknown		12/15/2017 17:02	Finished	MS (5ppb), IWST-171002B,10
64	N027459-018A,SAMP	14	1000	Unknown		12/15/2017 17:11	Finished	SAMP,2>10mL
65	N027459-018AMS,MS	15	1000	Unknown		12/15/2017 17:21	Finished	MS (1ppb), IWST-171002B,2>1
66	N027459-019A,SAMP	16	1000	Unknown		12/15/2017 17:30	Finished	SAMP,2>10mL
67	N027459-019AMS,MS	17	1000	Unknown		12/15/2017 17:39	Finished	MS (1ppb), IWST-171002B,2>1
68	N027485-005AMS,MS	18	1000	Unknown		12/15/2017 17:49	Finished	MS (1ppb), IWST-171002B,10
69	N027485-006AMS,MS	19	1000	Unknown		12/15/2017 17:58	Finished	MS (1ppb), IWST-171002B,10
70	N027485-007AMS,MS	20	1000	Unknown		12/15/2017 18:08	Finished	MS (1ppb), IWST-171002B,10
71	N027459-019A,SAMP	21	1000	Unknown		12/15/2017 18:17	Finished	SAMP,10mL
72	N027459-019AMS,MS	22	1000	Unknown		12/15/2017 18:27	Finished	MS (1ppb), IWST-171002B,10
73	CCV-6,CCV1,1,	23	1000	Unknown		12/15/2017 18:36	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	24	1000	Unknown		12/15/2017 18:46	Finished	CCB R171129A
75	N027459-018A,SAMP	25	1000	Unknown		12/15/2017 18:55	Finished	SAMP,10mL
76	N027459-018AMS,MS	26	1000	Unknown		12/15/2017 19:05	Finished	MS (1ppb), IWST-171002B,10
77	N027404-005A,SAMP	27	1000	Unknown		12/15/2017 19:14	Finished	SAMP,2>10mL
78	N027404-005AMS,MS	28	1000	Unknown		12/15/2017 19:24	Finished	MS (1ppb), IWST-171002B,2>1
79	N027404-009A,SAMP	29	1000	Unknown		12/15/2017 19:33	Finished	SAMP,2>10mL
80	N027404-009AMS,MS	30	1000	Unknown		12/15/2017 19:42	Finished	MS (1ppb), IWST-171002B,2>1
81	N027459-009A,SAMP	31	1000	Unknown		12/15/2017 19:52	Finished	SAMP,5>10mL
82	N027459-009AMS,MS	32	1000	Unknown		12/15/2017 20:01	Finished	MS (5ppb), IWST-171002B,5>1
83	N027485-015A,SAMP	33	1000	Unknown		12/15/2017 20:11	Finished	SAMP,10mL
84	CCV-7,CCV,1,	34	1000	Unknown		12/15/2017 20:20	Finished	CCV @5ppb, IWST-171002A
85	CCB-7,CCB,1,	35	1000	Unknown		12/15/2017 20:30	Finished	CCB R171129A
86	SHUTDOWN	36	1000	Unknown		12/15/2017 20:39	Finished	
87	Eluent: R171214A	37	1000	Unknown		n.a.	Finished	Eluent
88	PCR: R171214B	38	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 08:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

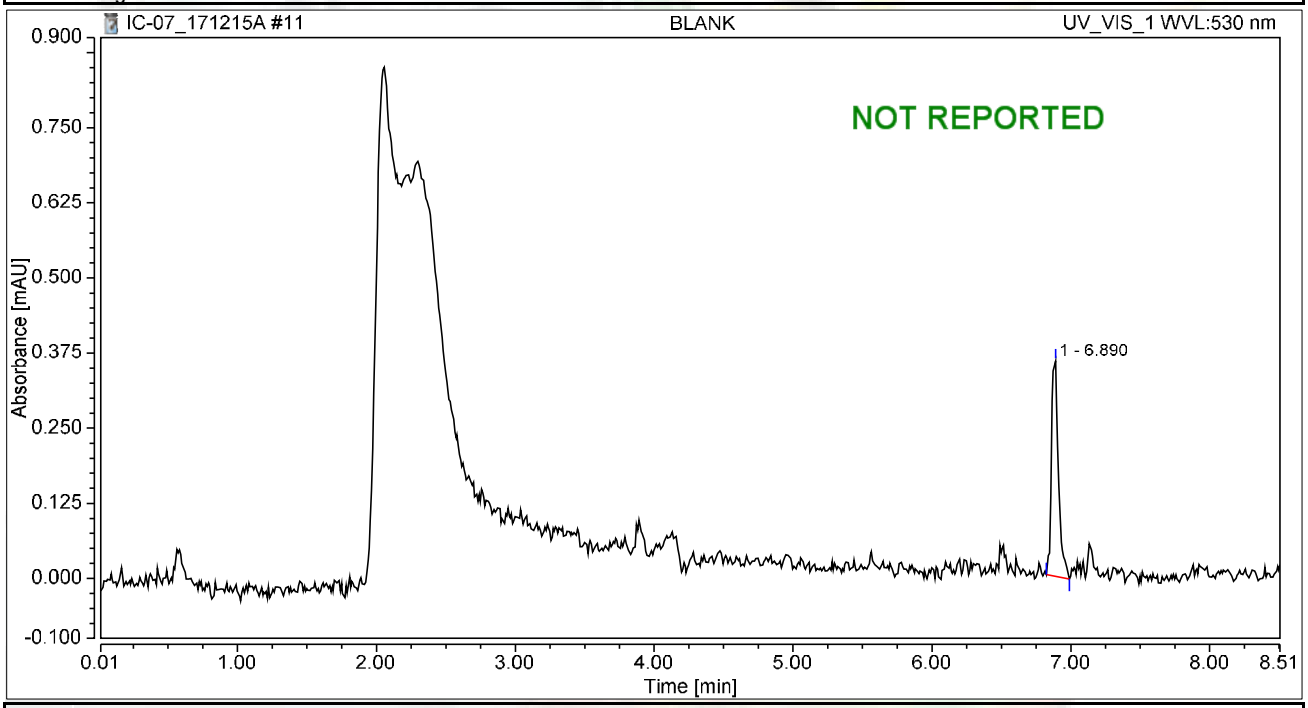
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 08:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

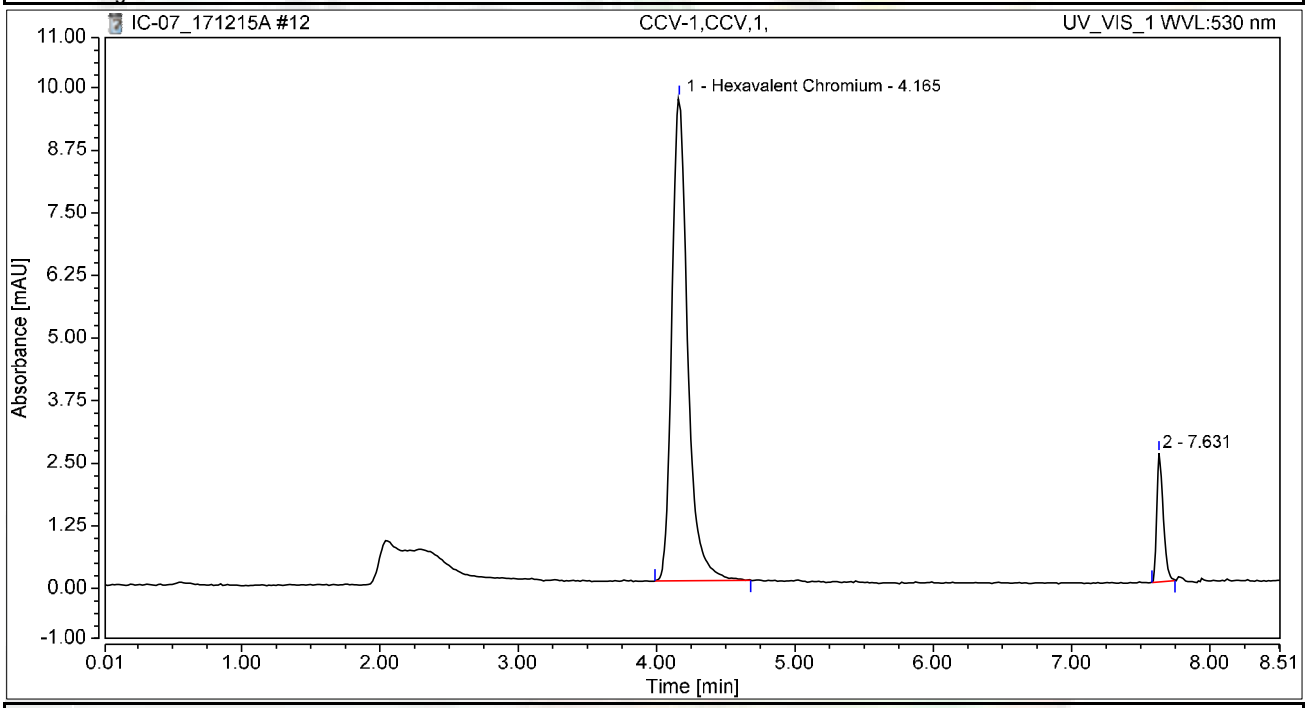
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		6.890	0.021	0.358	100.00	100.00	n.a.
Total:			**0.021**	**0.358**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 08:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

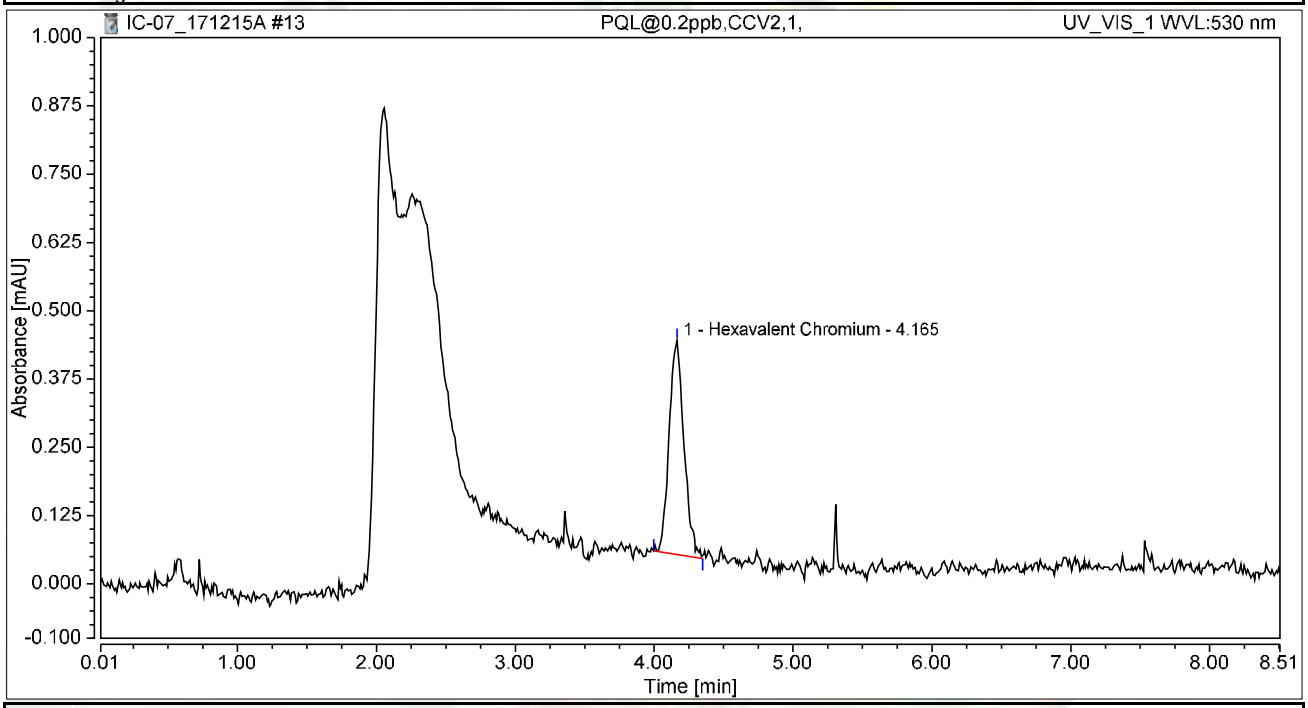
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.281	9.652	90.10	78.99	5.1035
2		7.631	0.141	2.567	9.90	21.01	n.a.
Total:			**1.422**	**12.219**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 09:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

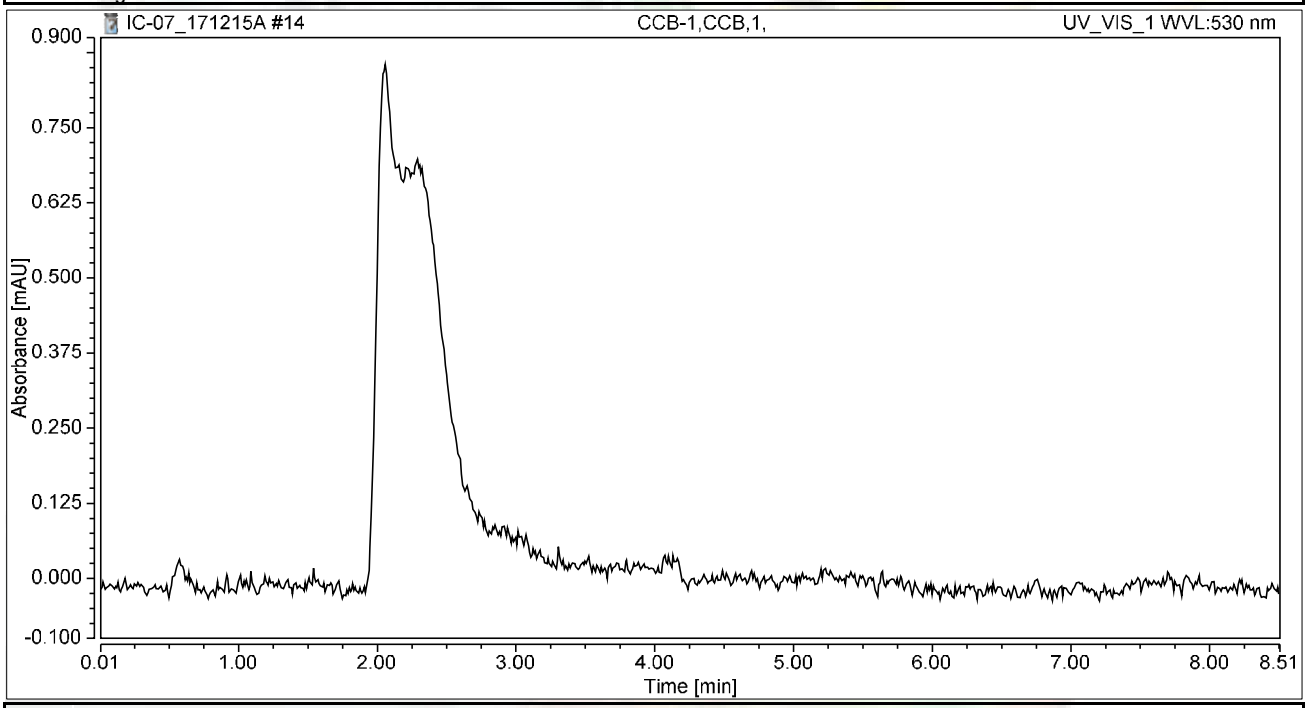
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.048	0.392	100.00	100.00	0.1924
Total:			**0.048**	**0.392**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 09:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

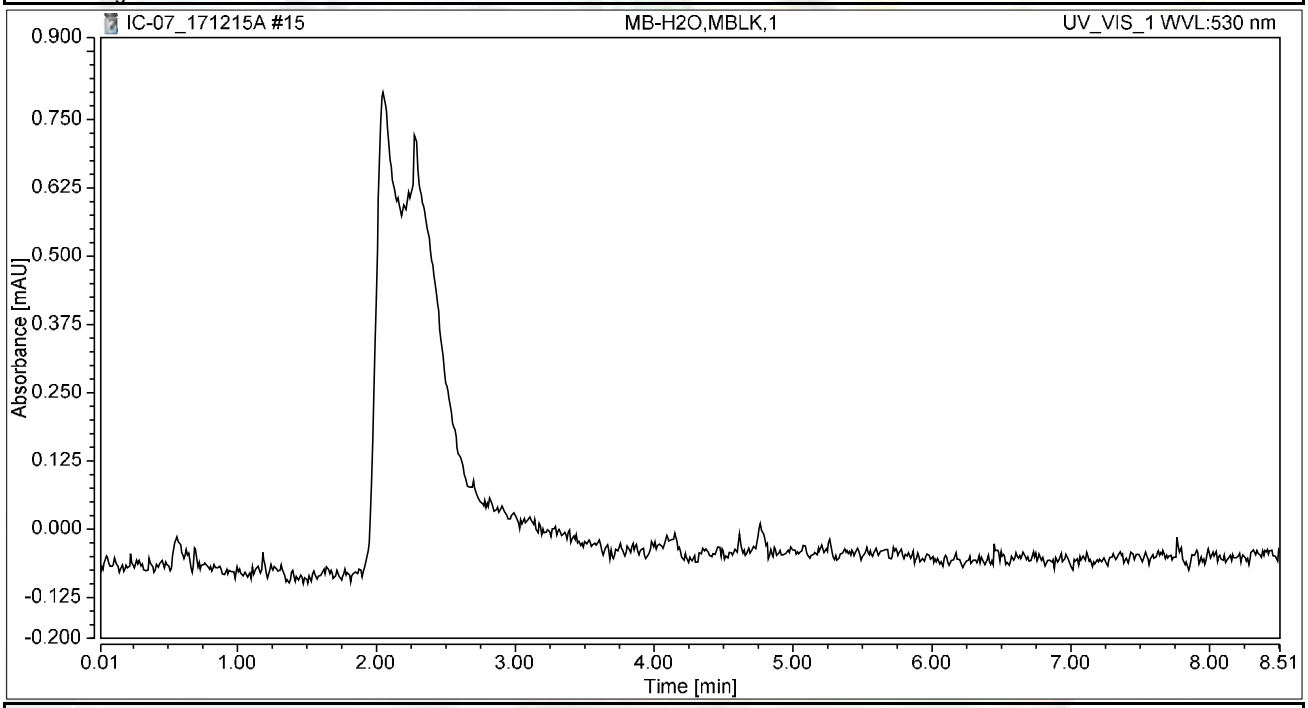
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 09:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

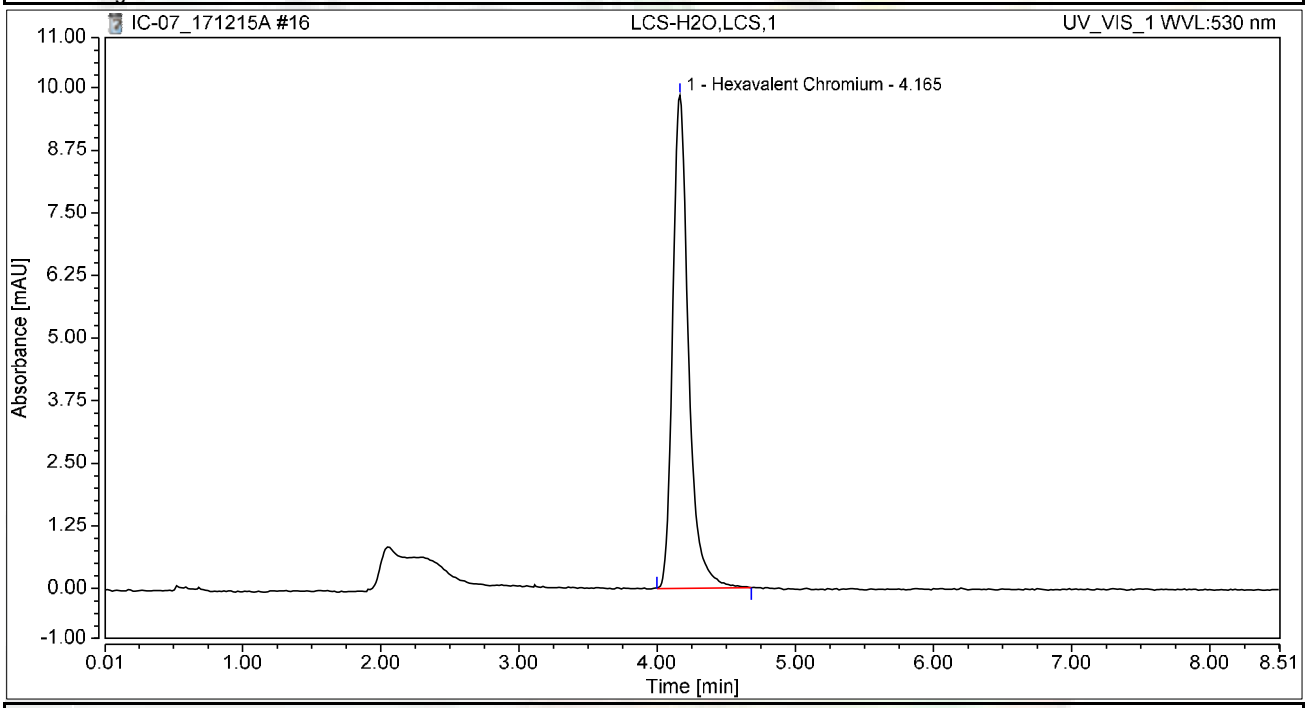
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 09:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

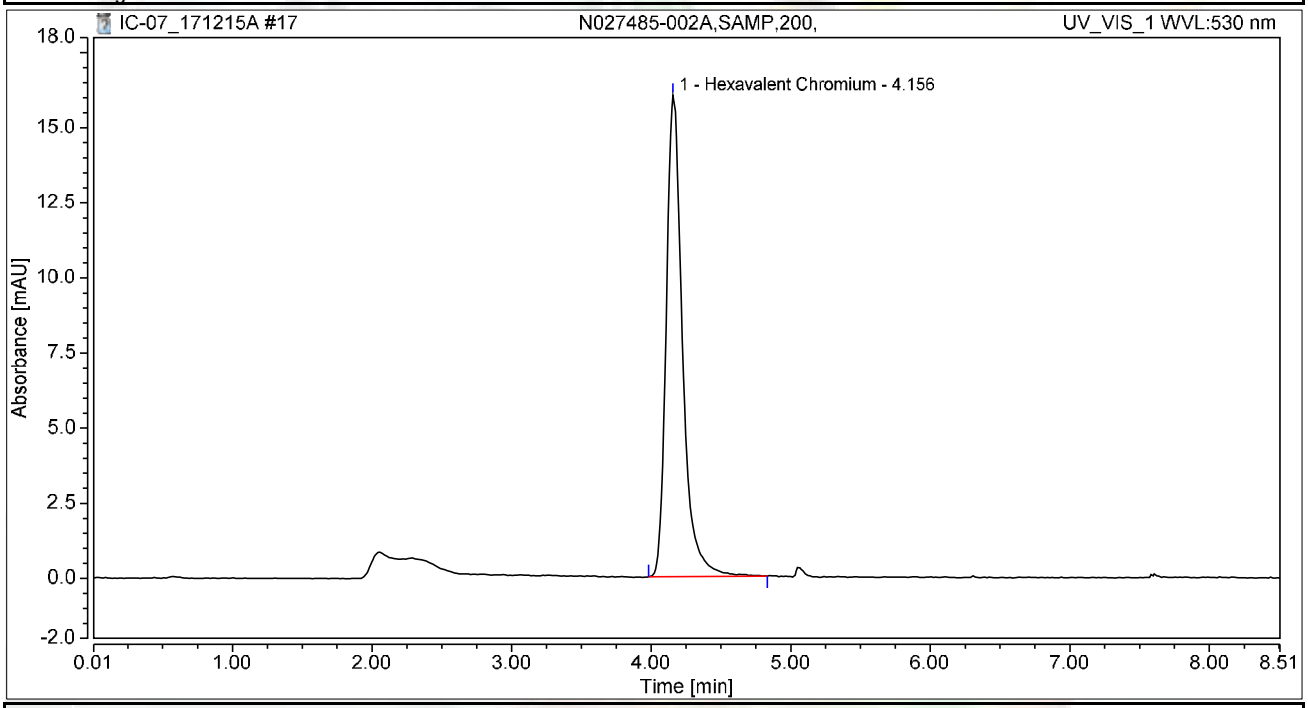
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.313	9.849	100.00	100.00	5.2277
Total:			**1.313**	**9.849**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-002A,SAMP,200,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 09:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

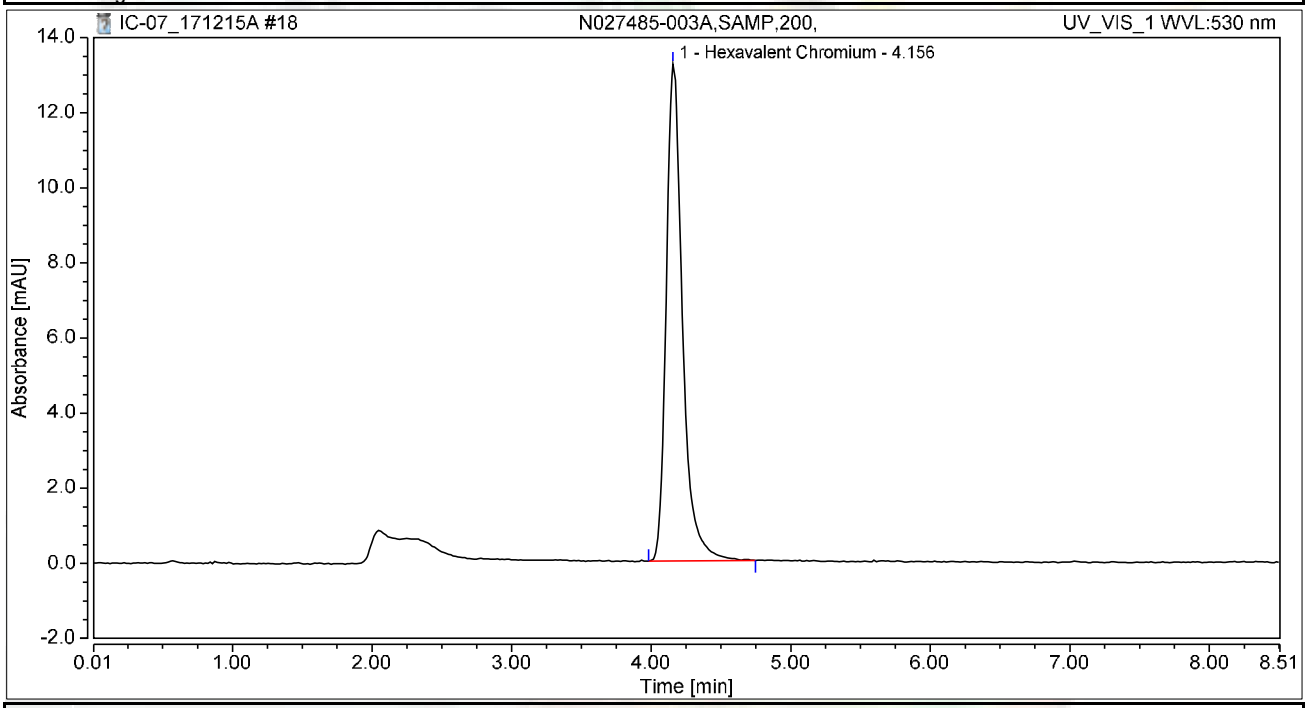
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.172	16.016	100.00	100.00	8.6508
Total:			**2.172**	**16.016**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-003A,SAMP,200,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 09:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

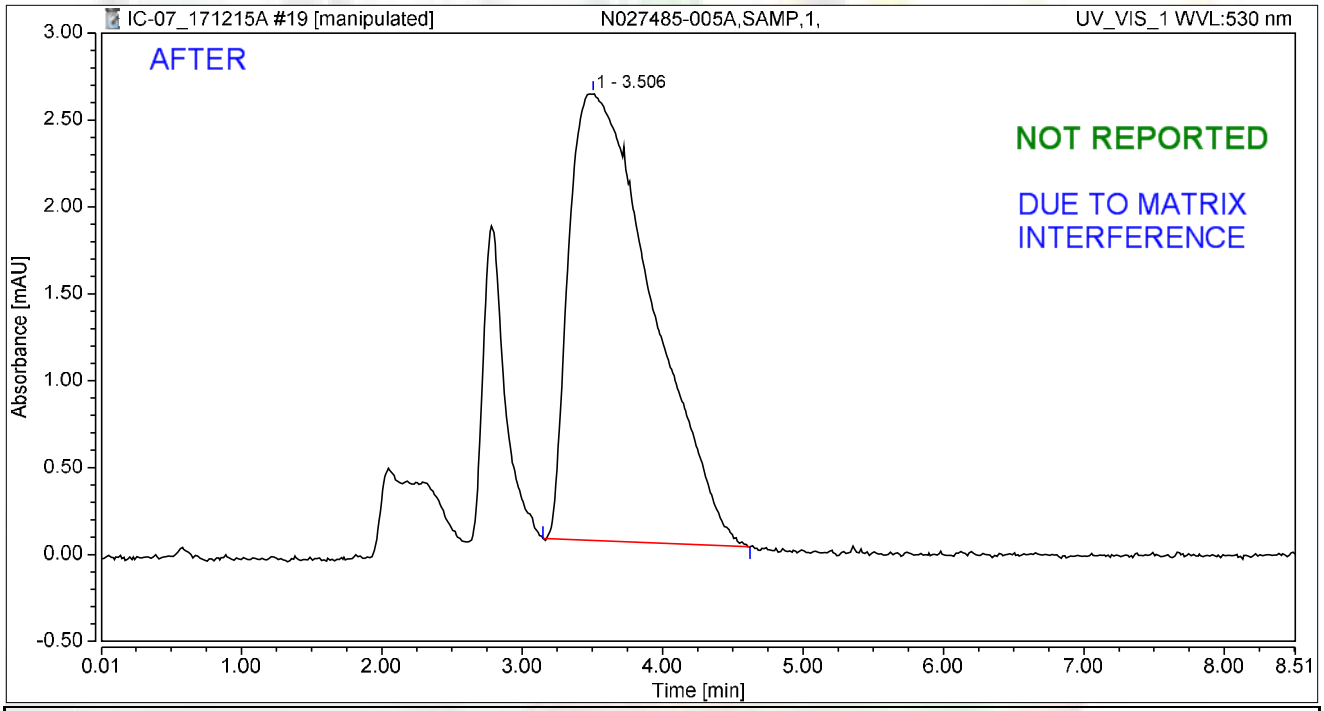
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.795	13.237	100.00	100.00	7.1495
Total:			**1.795**	**13.237**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 09:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.506	1.762	2.574	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**1.762**	**2.574**	**100.00**	**100.00**	

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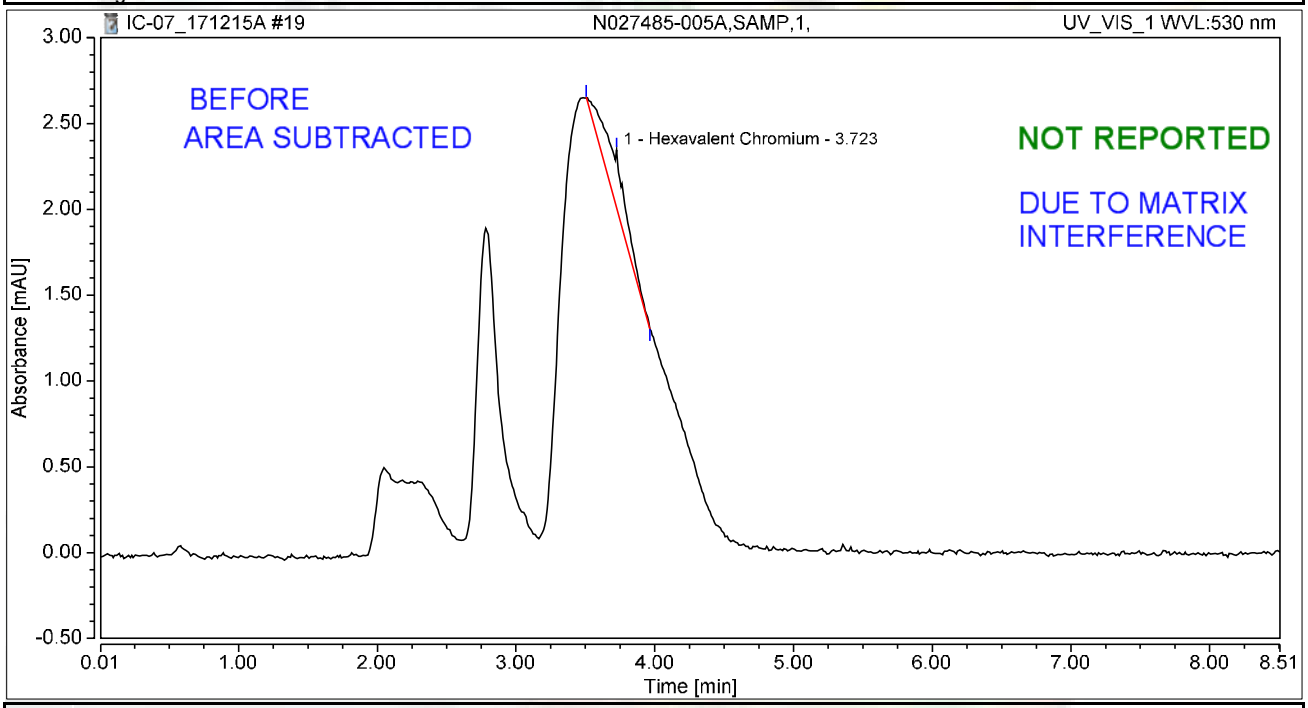
Chromatogram and Results

Injection Details

Injection Name:	**N027485-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 09:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	0.063	0.331	100.00	100.00	0.2517
Total:			**0.063**	**0.331**	**100.00**	**100.00**	

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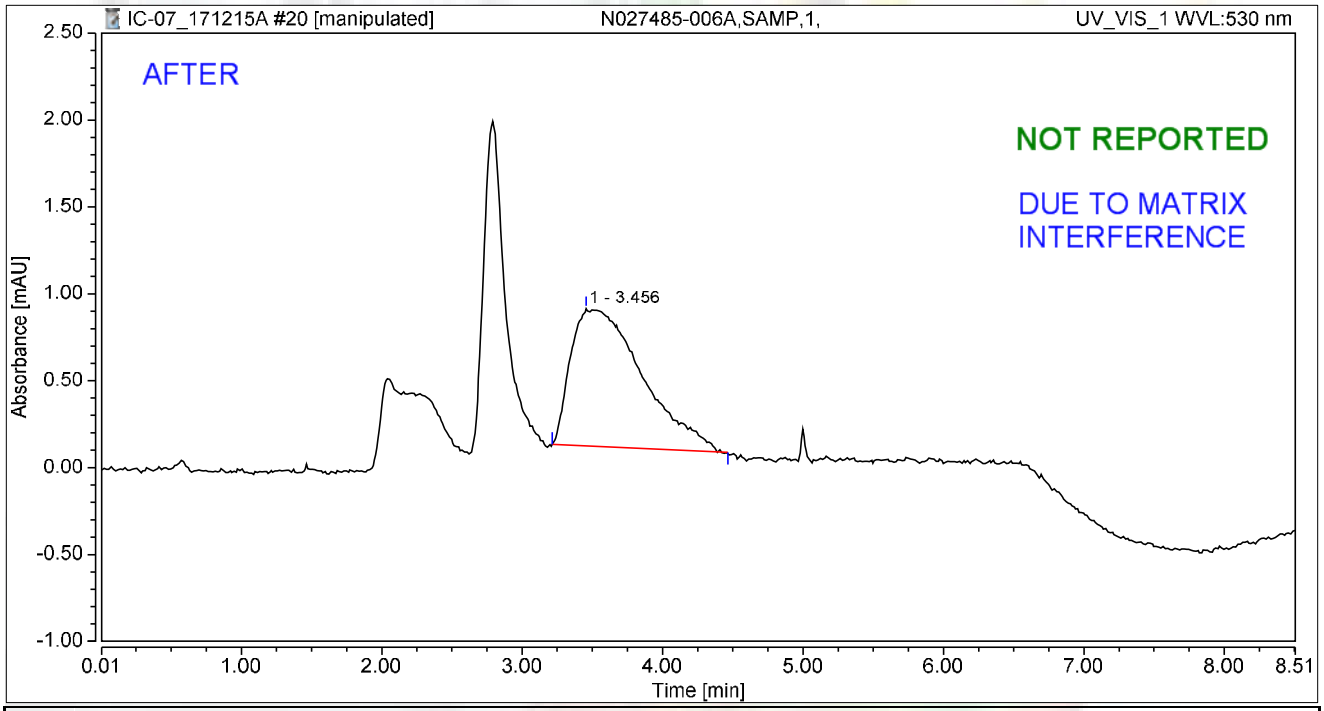
Chromatogram and Results

Injection Details

Injection Name:	**N027485-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 10:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.456	0.466	0.789	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.466**	**0.789**	**100.00**	**100.00**	

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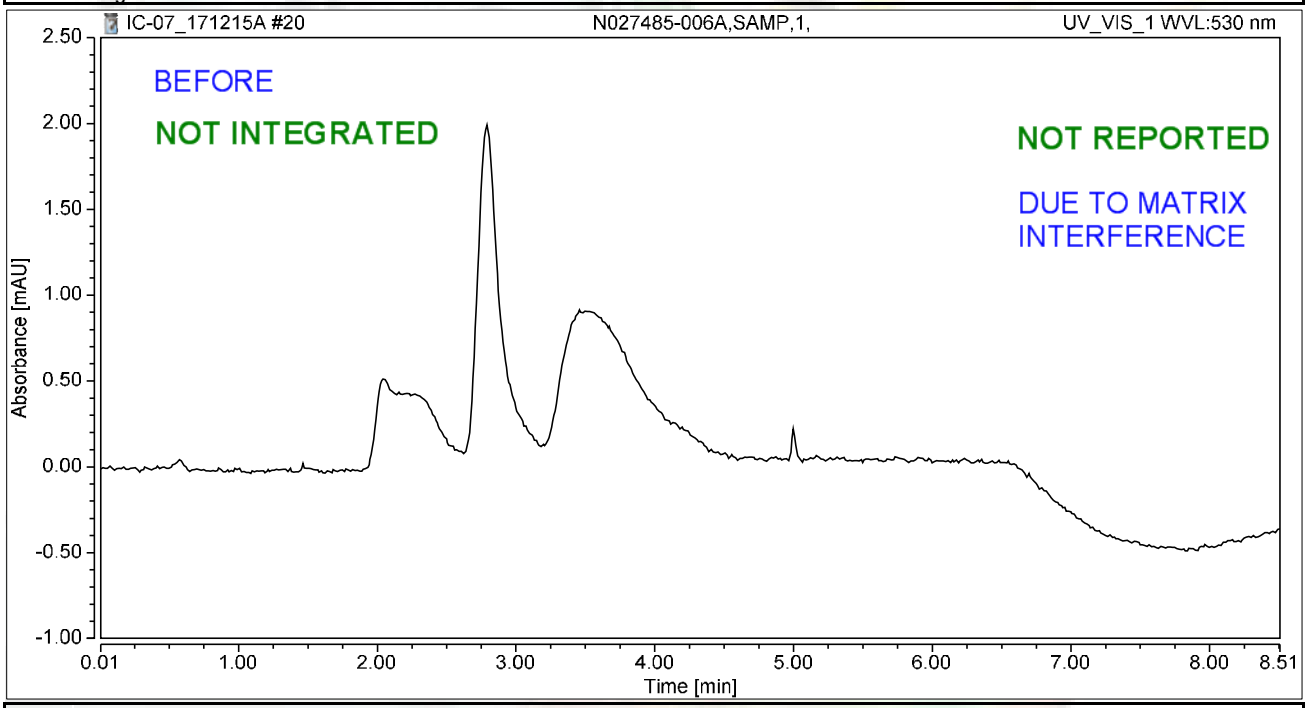
Chromatogram and Results

Injection Details

Injection Name:	**N027485-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 10:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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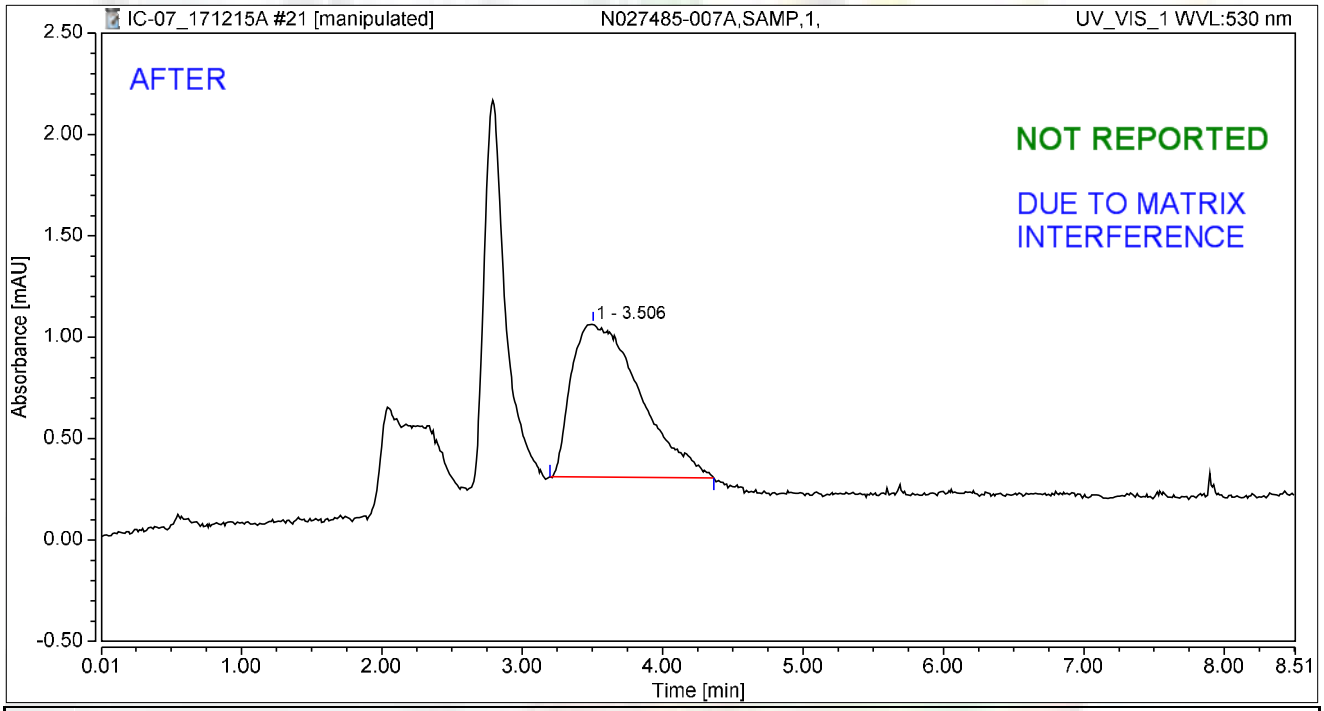
Chromatogram and Results

Injection Details

Injection Name:	**N027485-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 10:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.506	0.431	0.757	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.431**	**0.757**	**100.00**	**100.00**	

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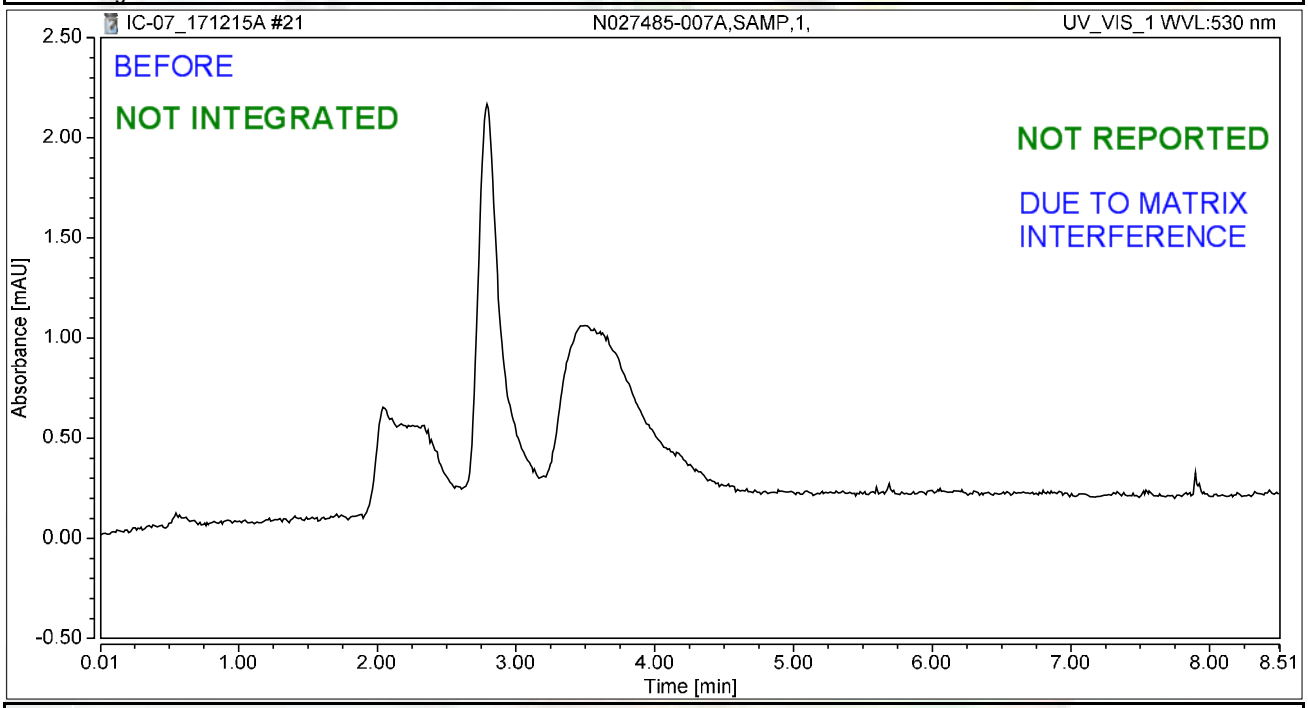
Chromatogram and Results

Injection Details

Injection Name:	**N027485-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 10:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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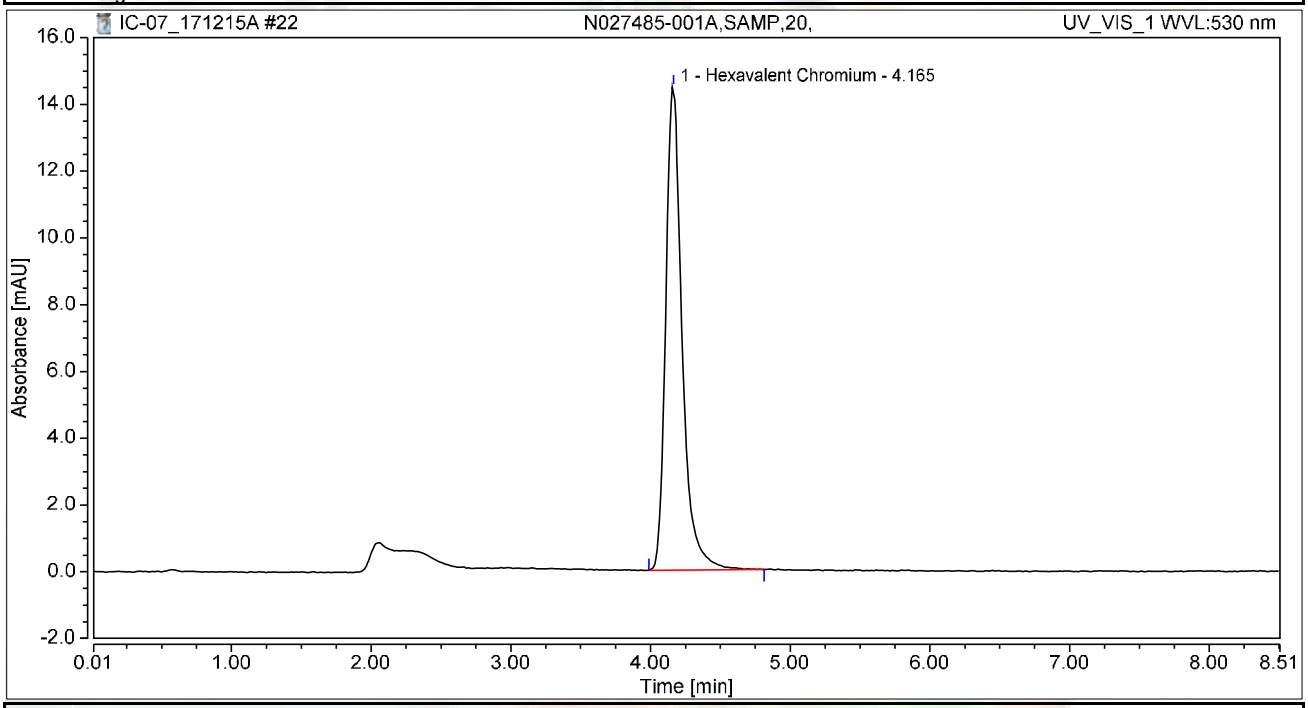
Chromatogram and Results

Injection Details

Injection Name:	**N027485-001A,SAMP,20,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 10:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

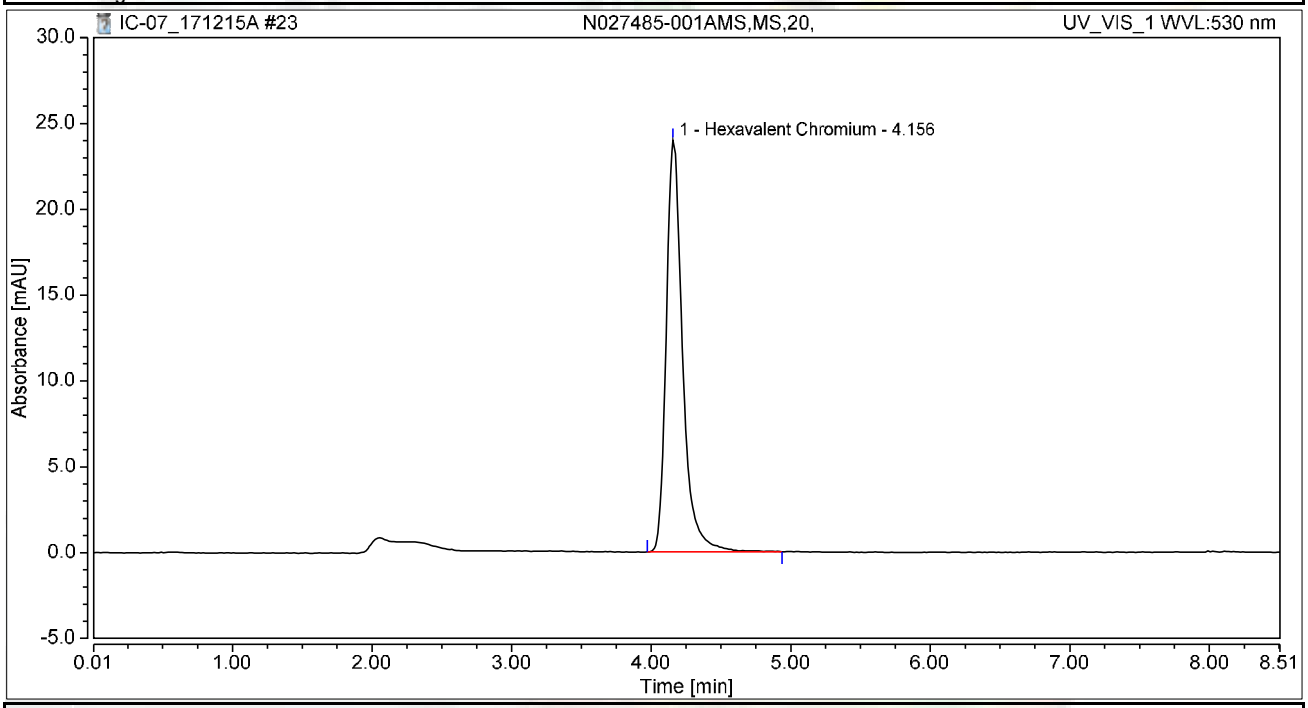
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.965	14.478	100.00	100.00	7.8260
Total:			**1.965**	**14.478**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-001AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 10:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

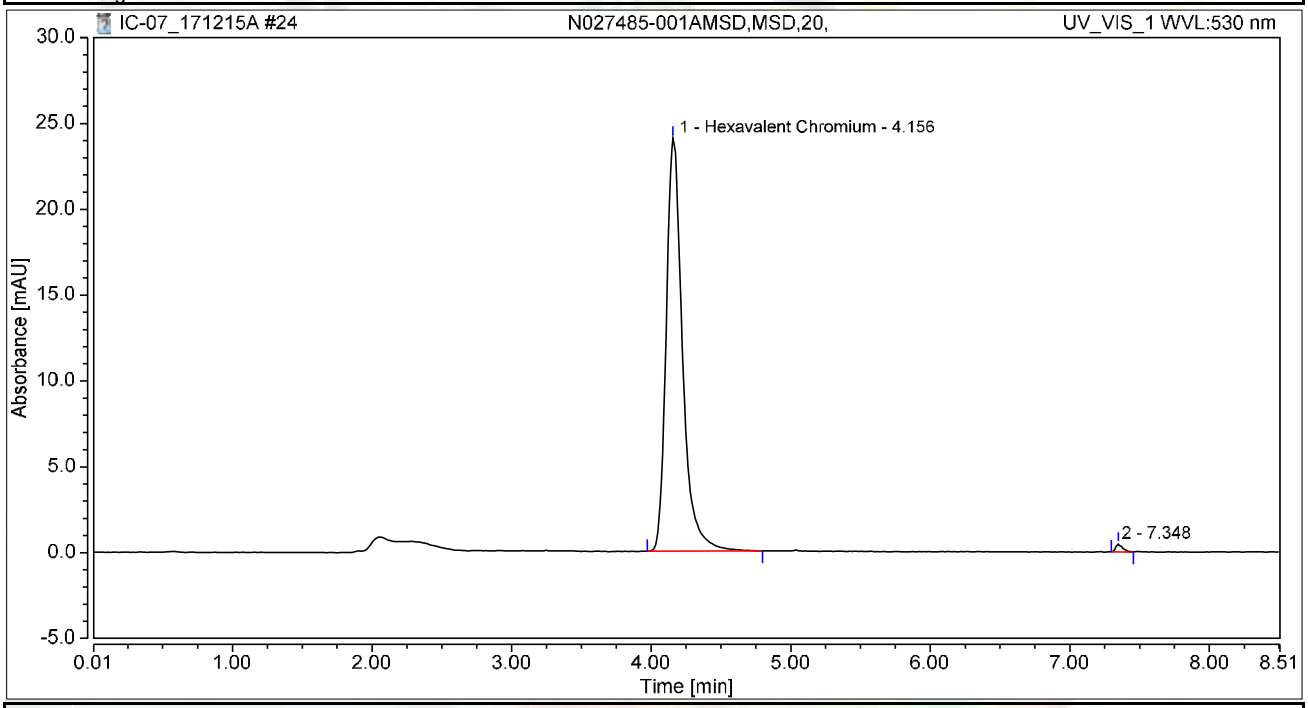
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	3.271	23.978	100.00	100.00	13.0277
Total:			**3.271**	**23.978**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-001AMSD,MSD,20,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 10:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

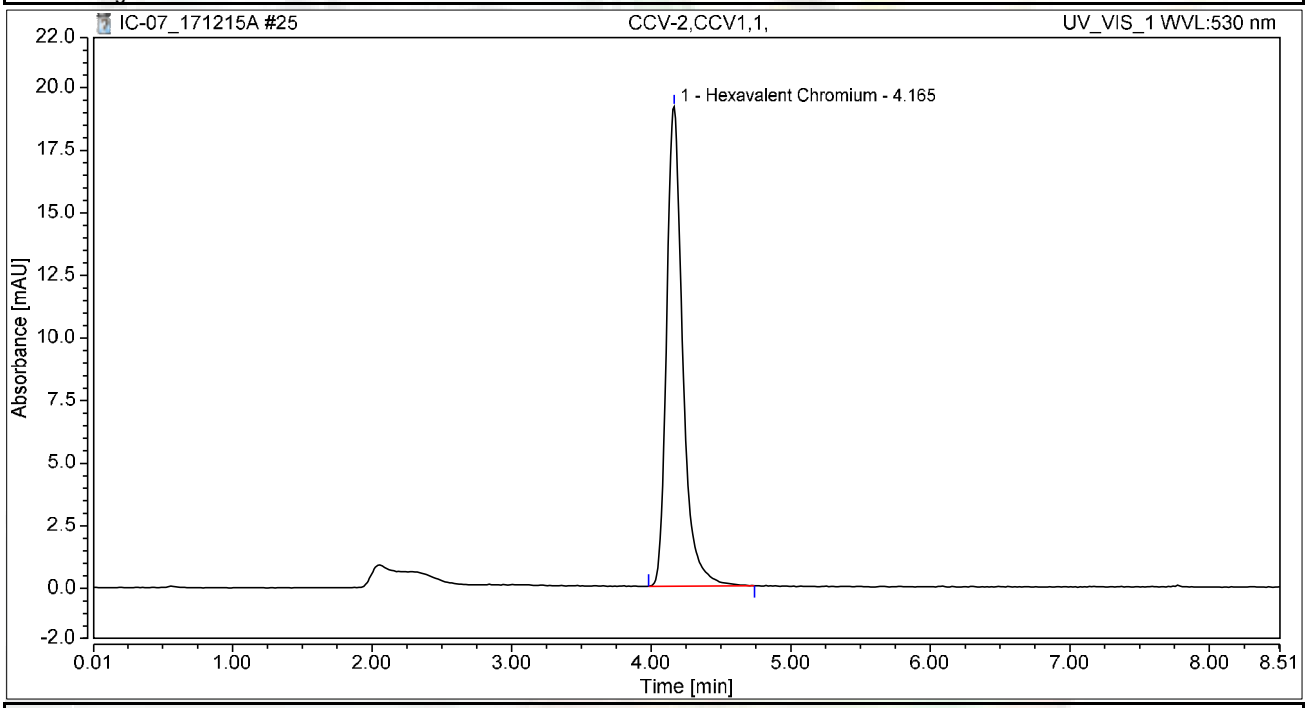
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	3.269	24.064	99.18	98.09	13.0173
2		7.348	0.027	0.468	0.82	1.91	n.a.
Total:			**3.296**	**24.532**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 10:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

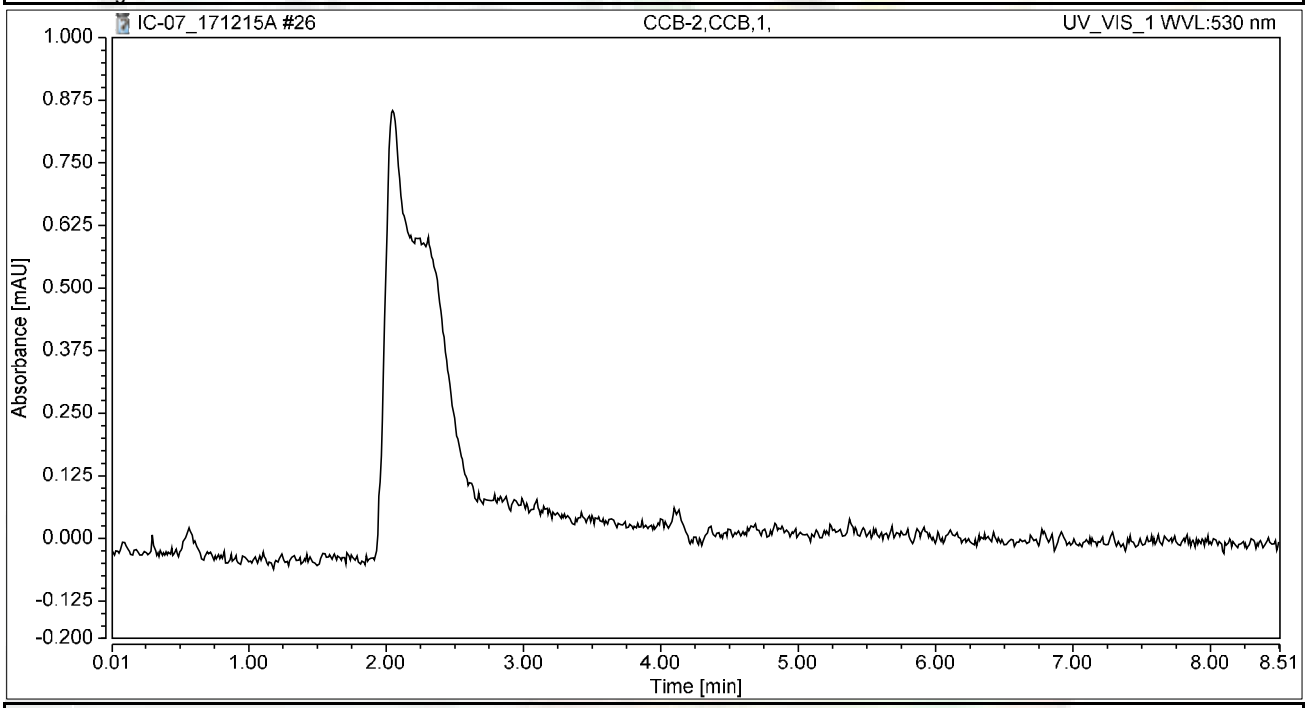
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.568	19.151	100.00	100.00	10.2288
Total:			**2.568**	**19.151**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 11:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

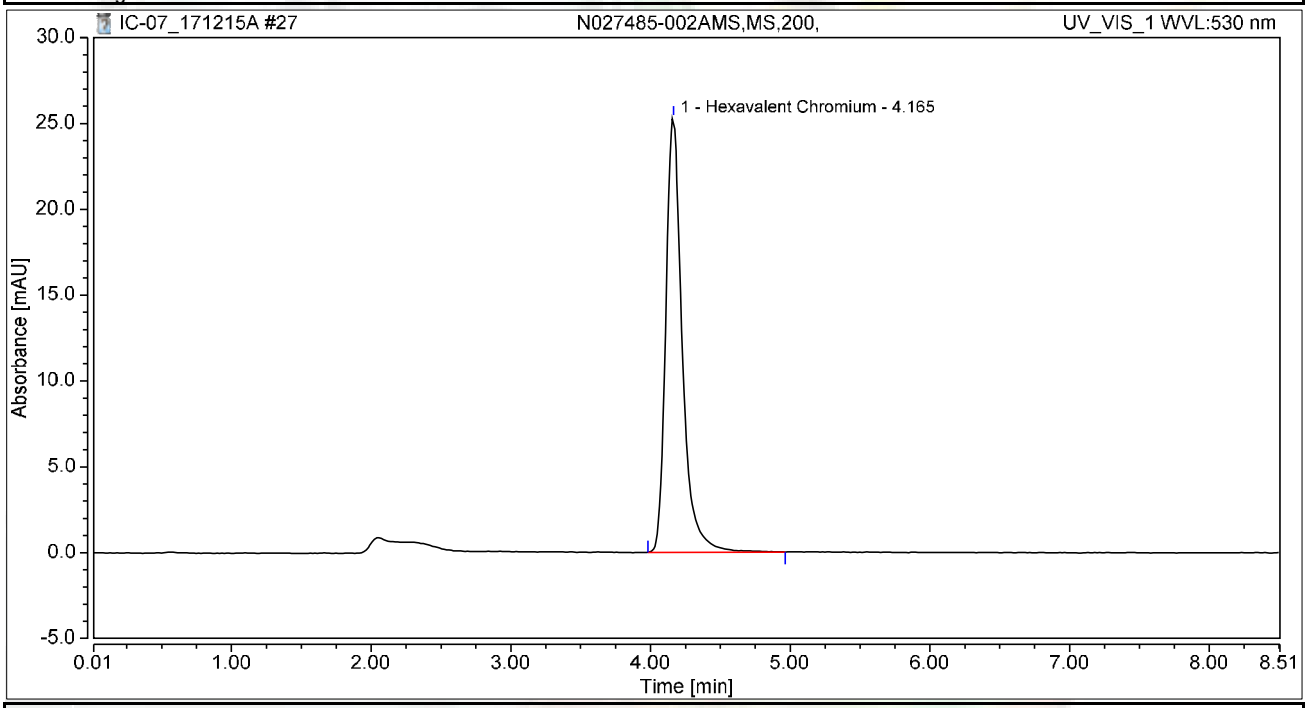
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-002AMS,MS,200,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 11:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

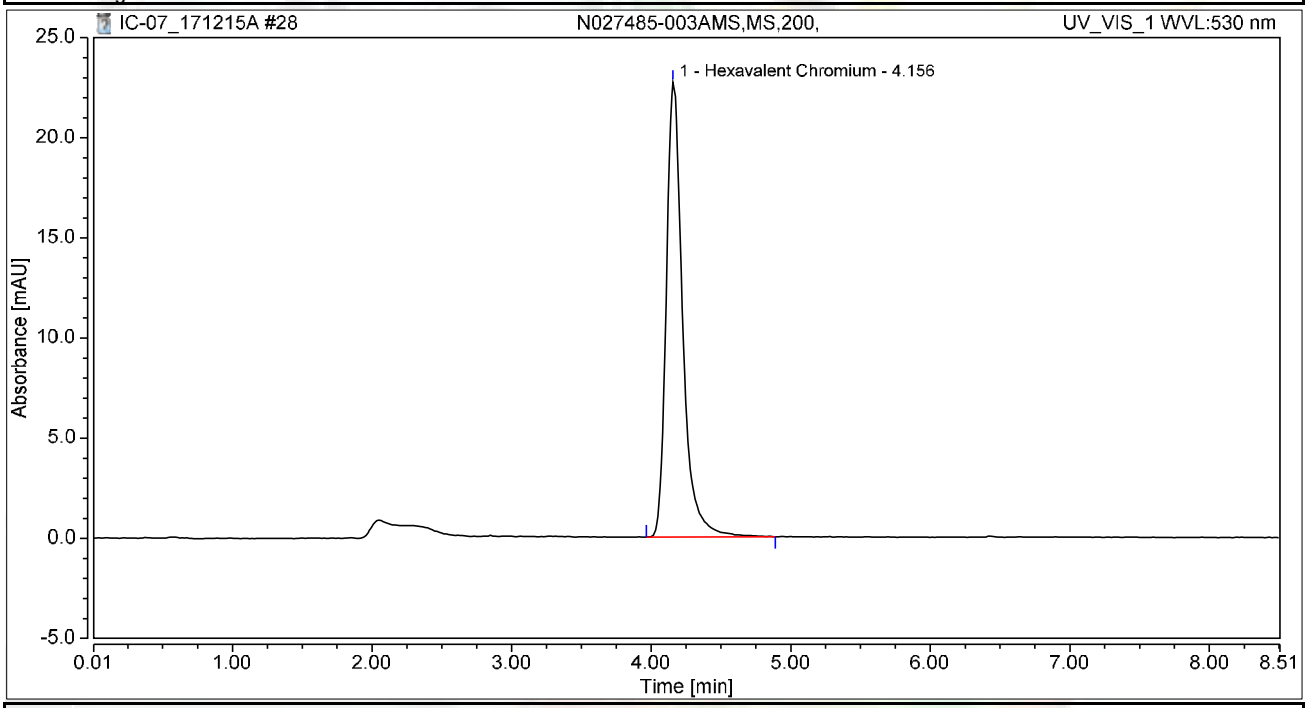
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	3.462	25.302	100.00	100.00	13.7866
Total:			**3.462**	**25.302**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-003AMS,MS,200,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 11:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

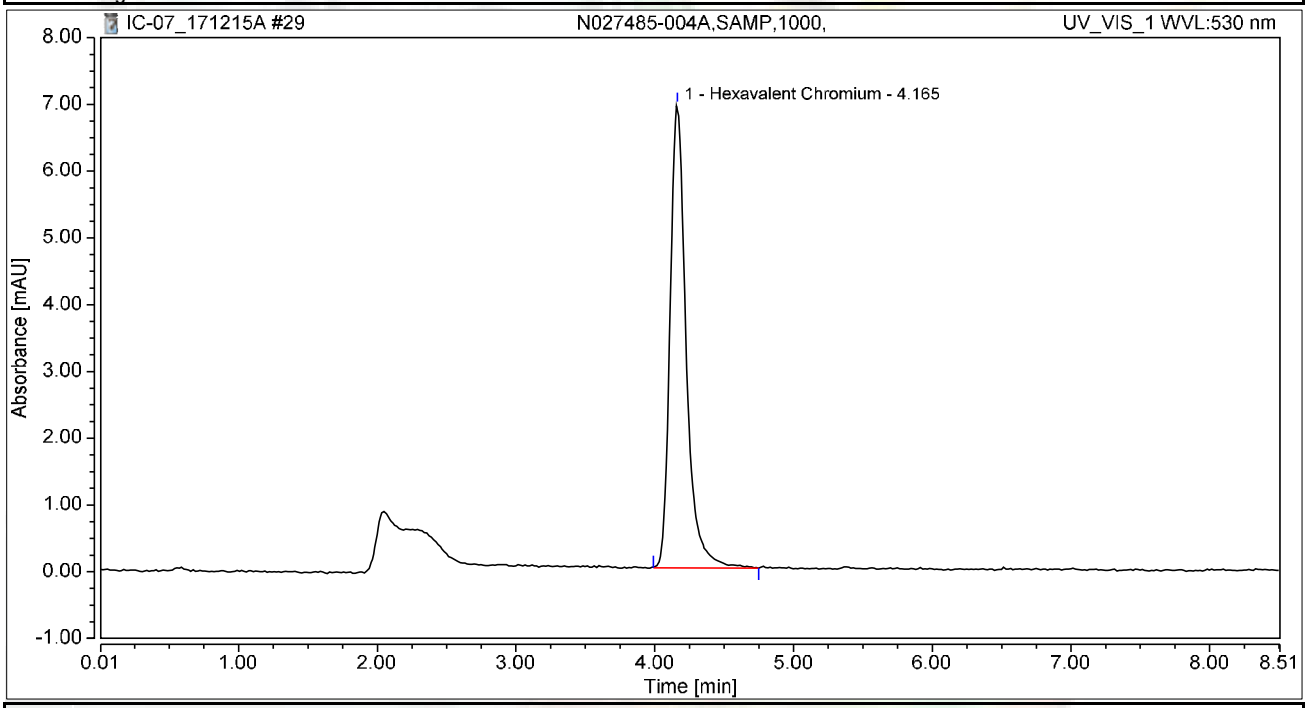
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	3.099	22.708	100.00	100.00	12.3436
Total:			**3.099**	**22.708**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-004A,SAMP,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 11:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

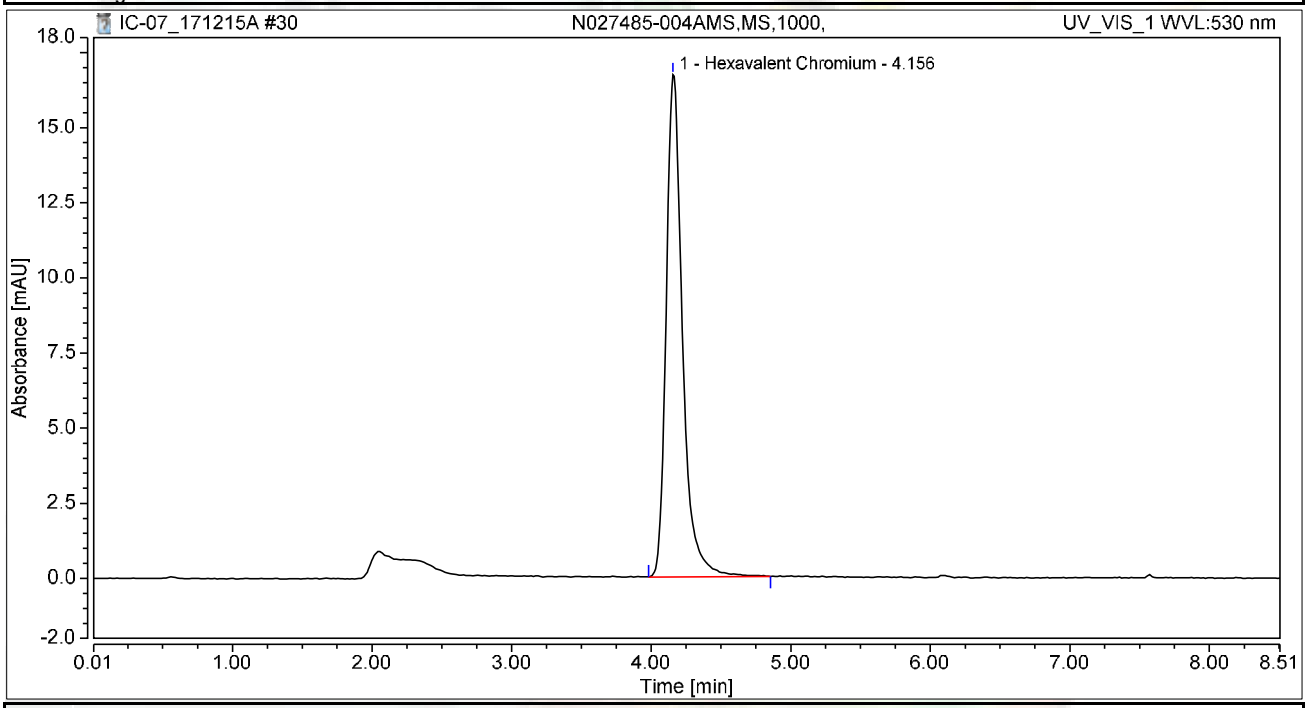
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.936	6.935	100.00	100.00	3.7268
Total:			**0.936**	**6.935**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-004AMS,MS,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 11:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

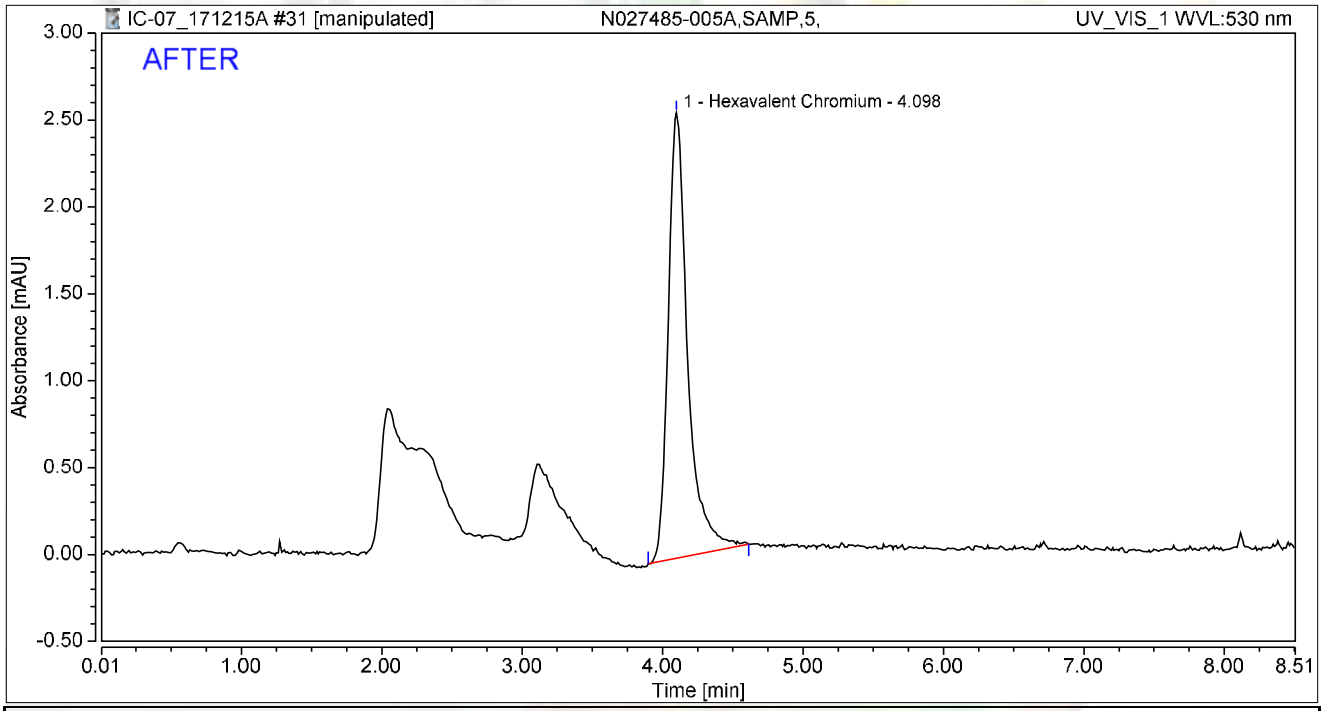
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.269	16.721	100.00	100.00	9.0371
Total:			**2.269**	**16.721**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-005A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 11:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.412	2.563	100.00	100.00	1.6388
Total:			**0.412**	**2.563**	**100.00**	**100.00**	

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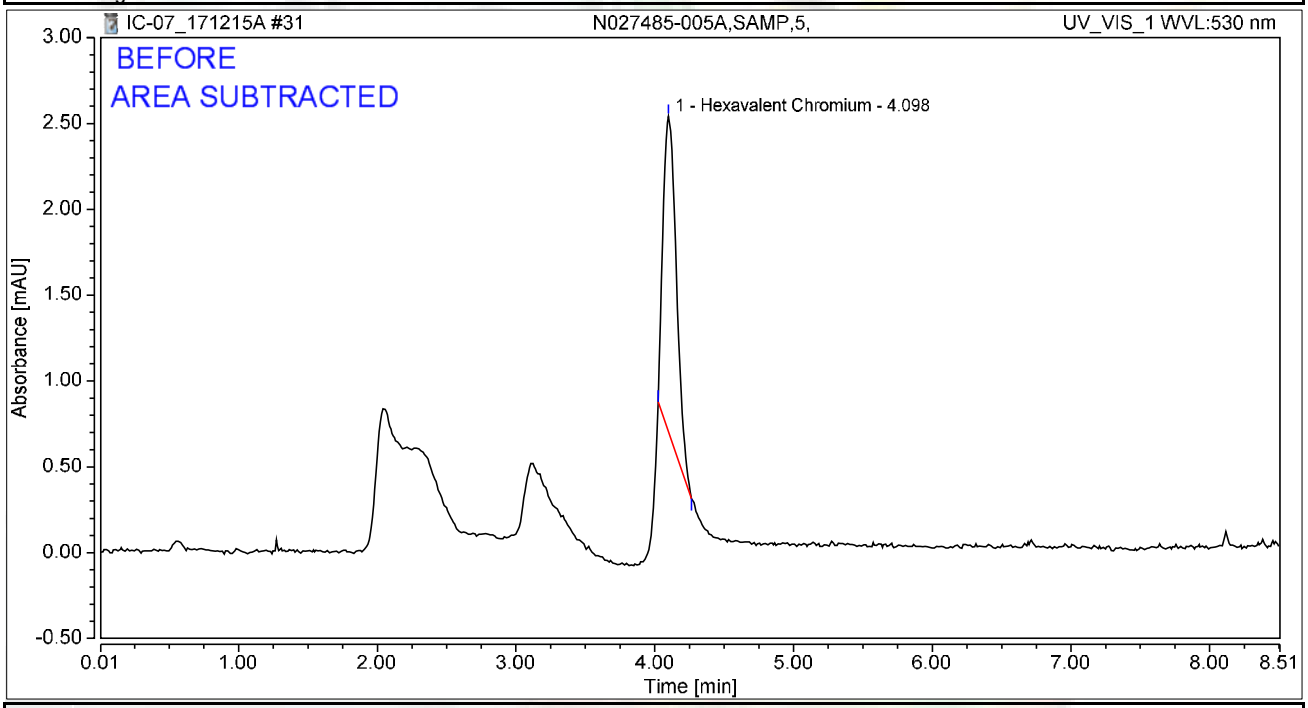
Chromatogram and Results

Injection Details

Injection Name:	**N027485-005A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 11:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.208	1.838	100.00	100.00	0.8289
Total:			**0.208**	**1.838**	**100.00**	**100.00**	

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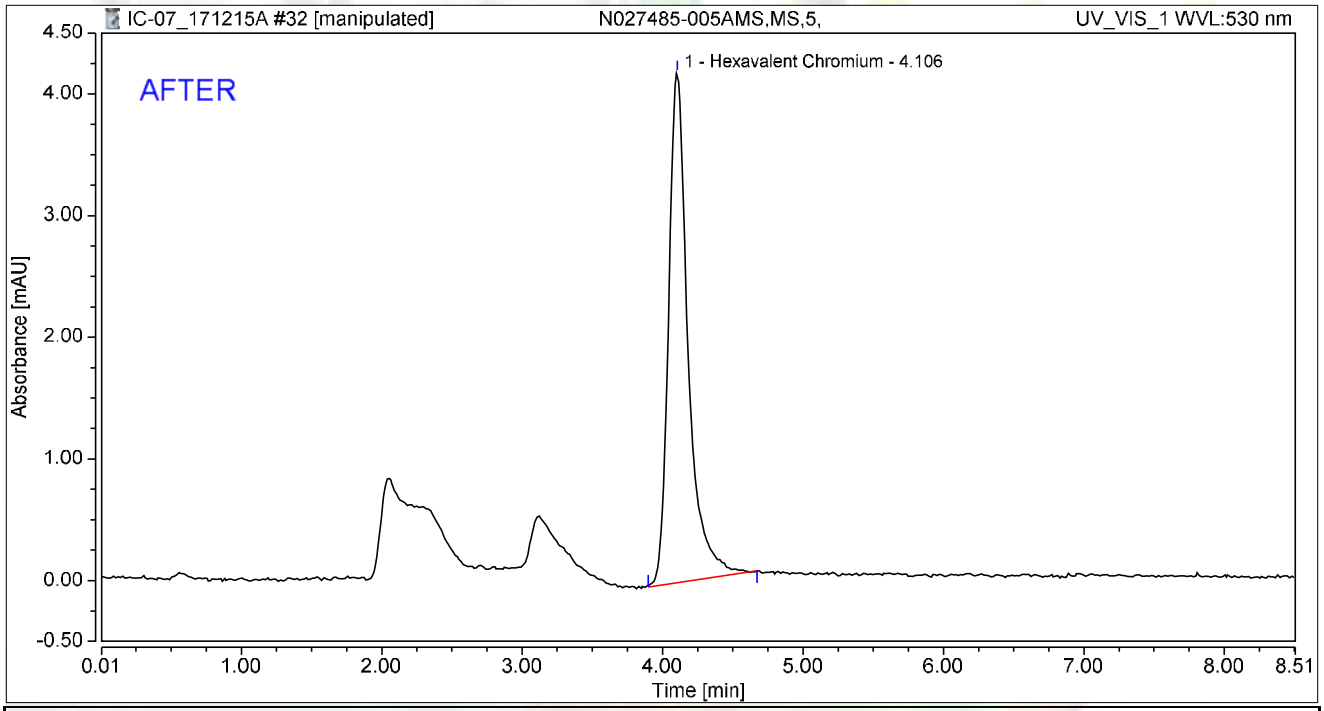
Chromatogram and Results

Injection Details

Injection Name:	**N027485-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 12:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.676	4.190	100.00	100.00	2.6919
Total:			**0.676**	**4.190**	**100.00**	**100.00**	

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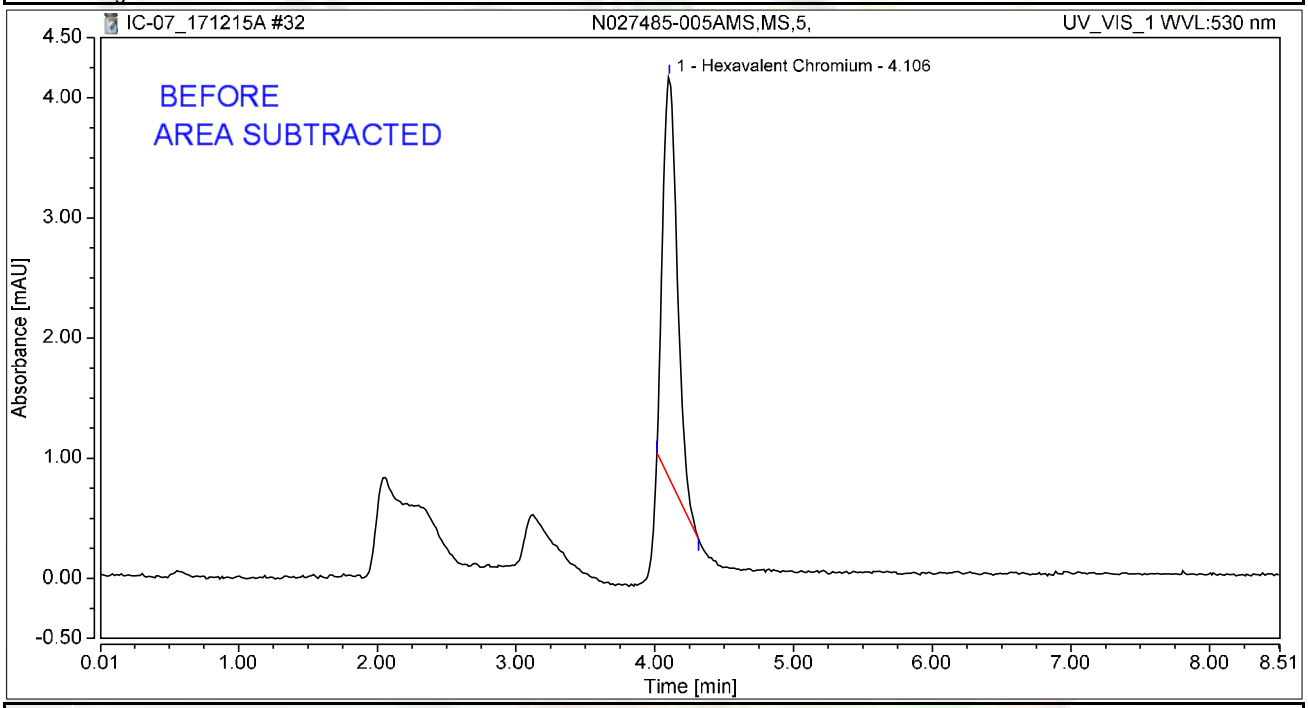
Chromatogram and Results

Injection Details

Injection Name:	**N027485-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 12:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.410	3.346	100.00	100.00	1.6344
Total:			**0.410**	**3.346**	**100.00**	**100.00**	

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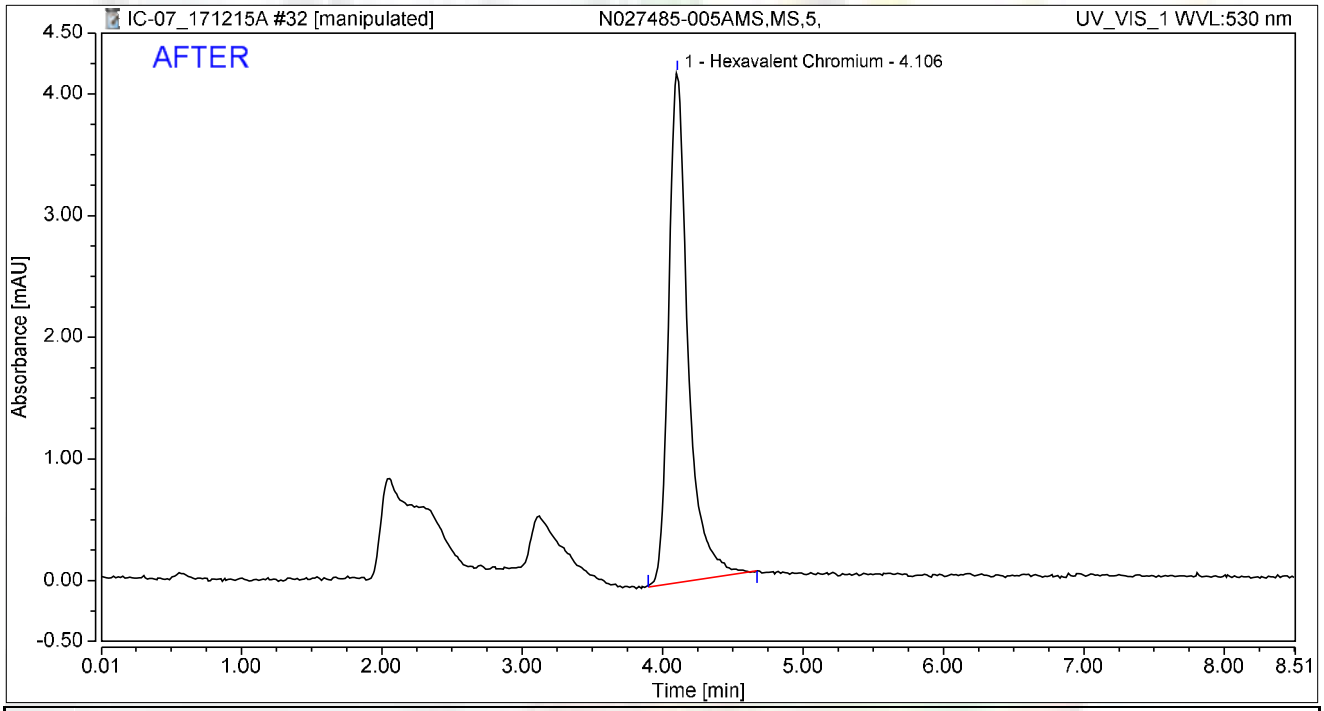
Chromatogram and Results

Injection Details

Injection Name:	**N027485-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 12:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.676	4.190	100.00	100.00	2.6919
Total:			**0.676**	**4.190**	**100.00**	**100.00**	

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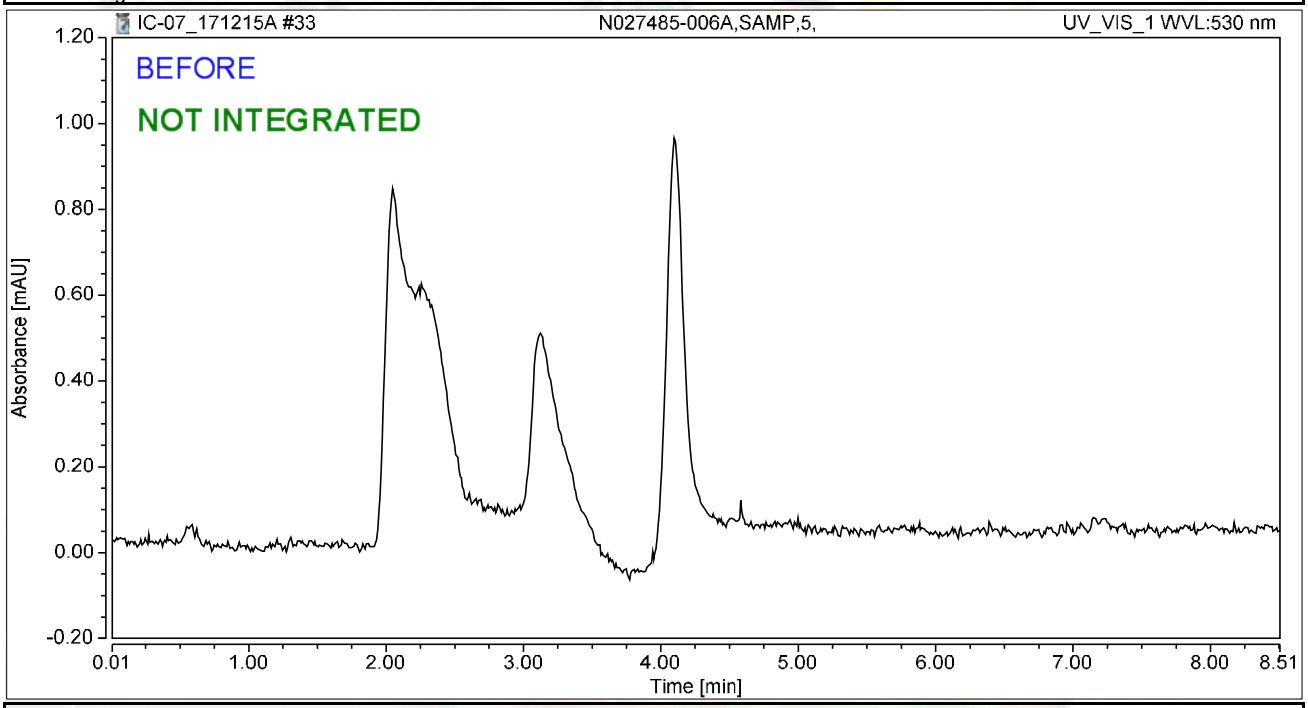
Chromatogram and Results

Injection Details

Injection Name:	**N027485-006A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 12:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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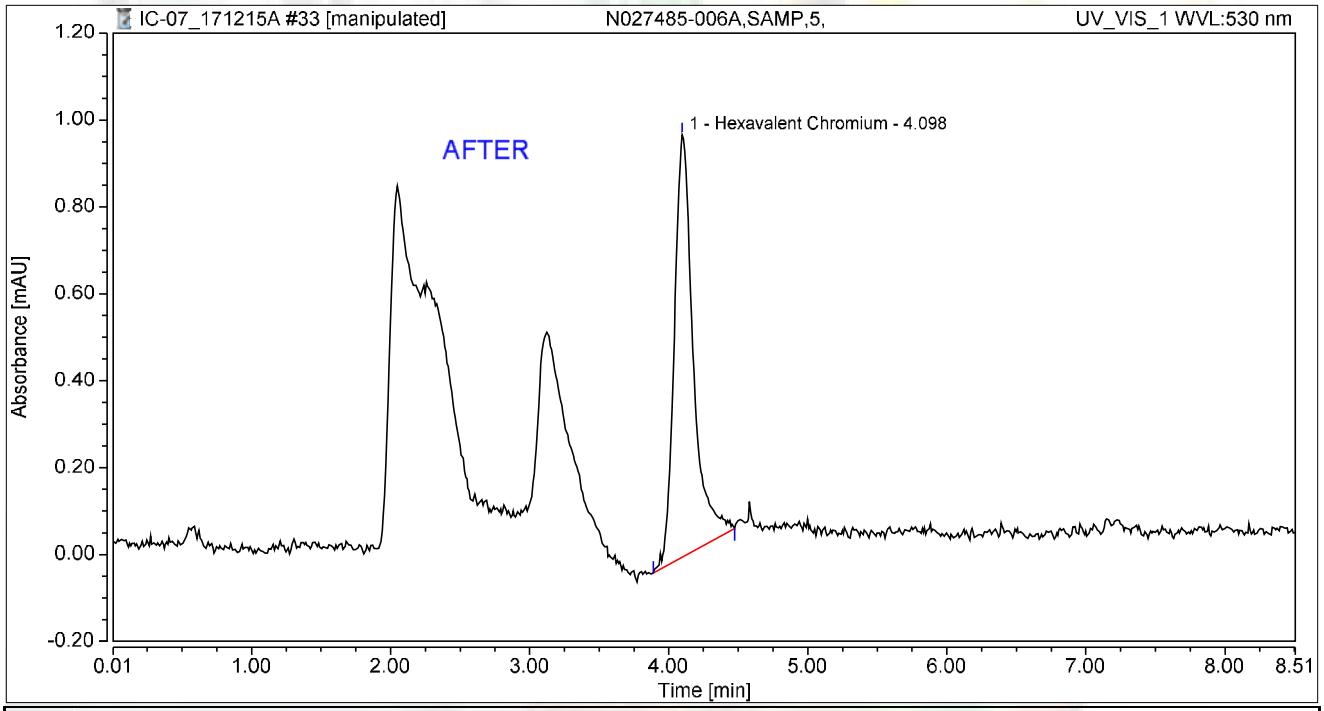
Chromatogram and Results

Injection Details

Injection Name:	**N027485-006A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 12:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.154	0.972	100.00	100.00	0.6131
Total:			**0.154**	**0.972**	**100.00**	**100.00**	

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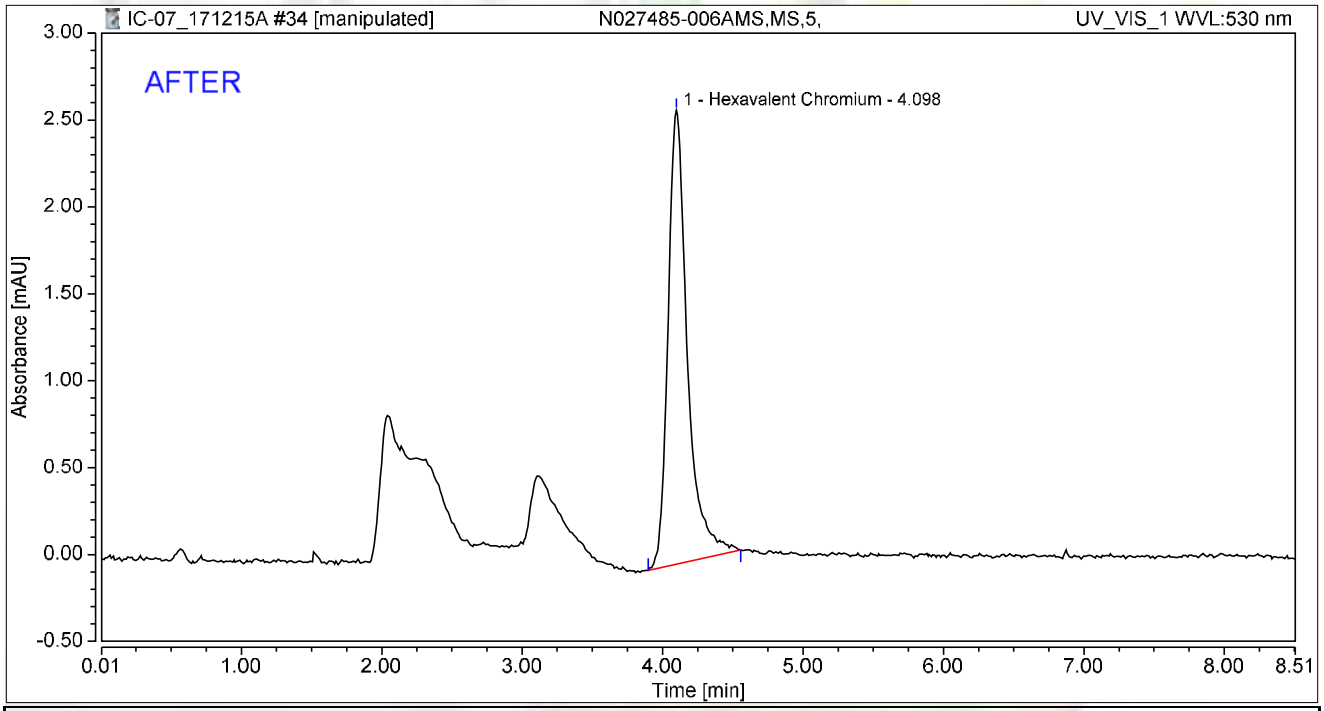
Chromatogram and Results

Injection Details

Injection Name:	**N027485-006AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 12:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.417	2.611	100.00	100.00	1.6618
Total:			**0.417**	**2.611**	**100.00**	**100.00**	

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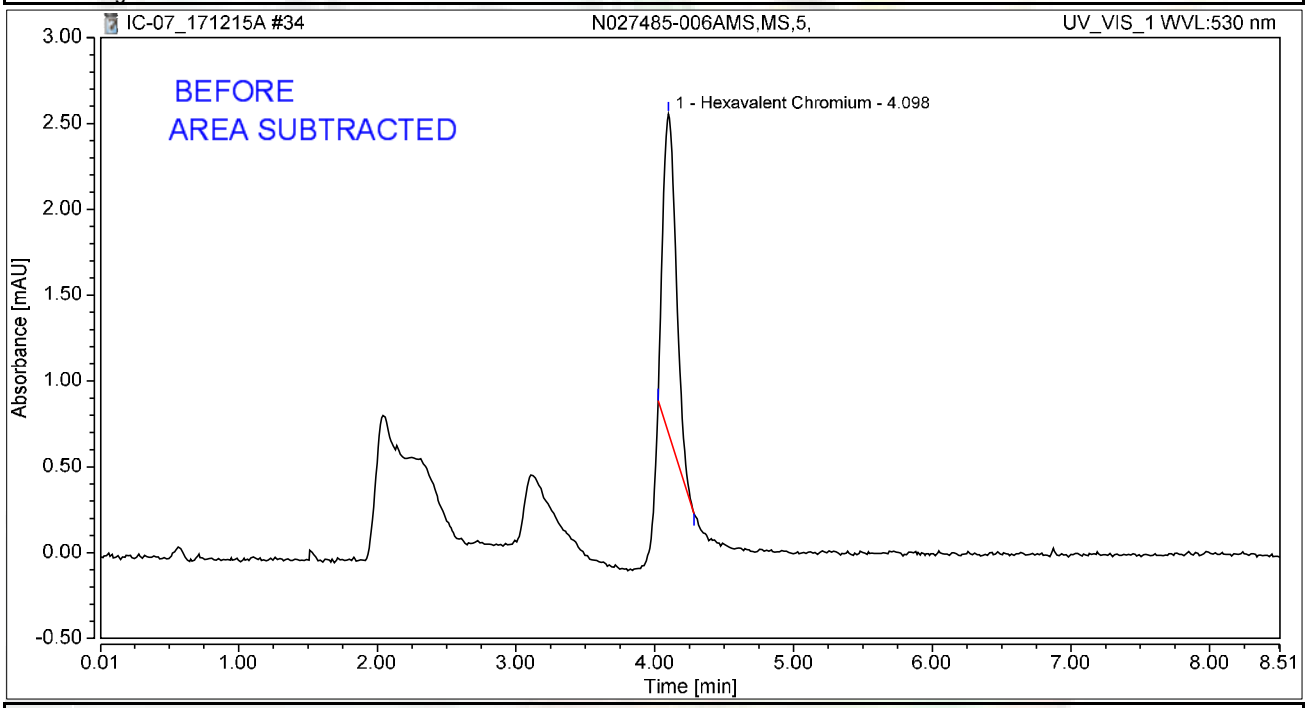
Chromatogram and Results

Injection Details

Injection Name:	**N027485-006AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 12:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.210	1.859	100.00	100.00	0.8355
Total:			**0.210**	**1.859**	**100.00**	**100.00**	

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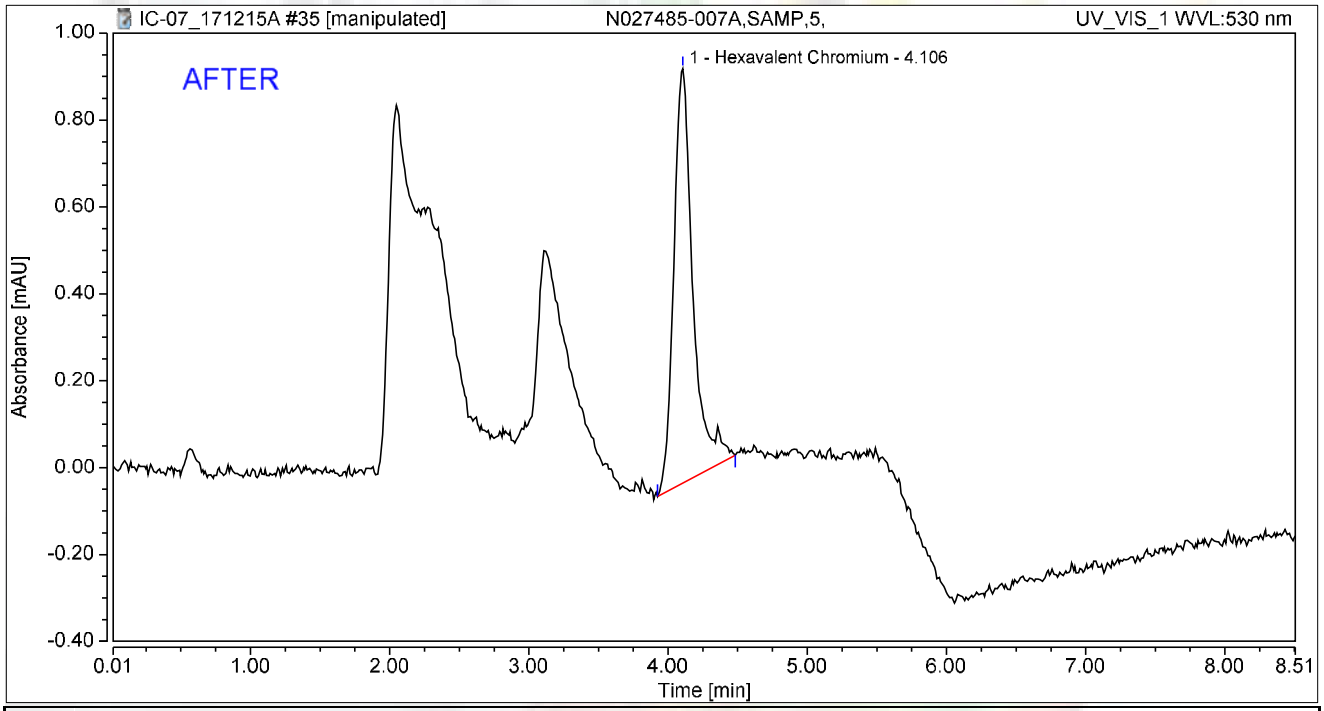
Chromatogram and Results

Injection Details

Injection Name:	**N027485-007A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 12:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.152	0.954	100.00	100.00	0.6058
Total:			**0.152**	**0.954**	**100.00**	**100.00**	

rba 12/22/2017

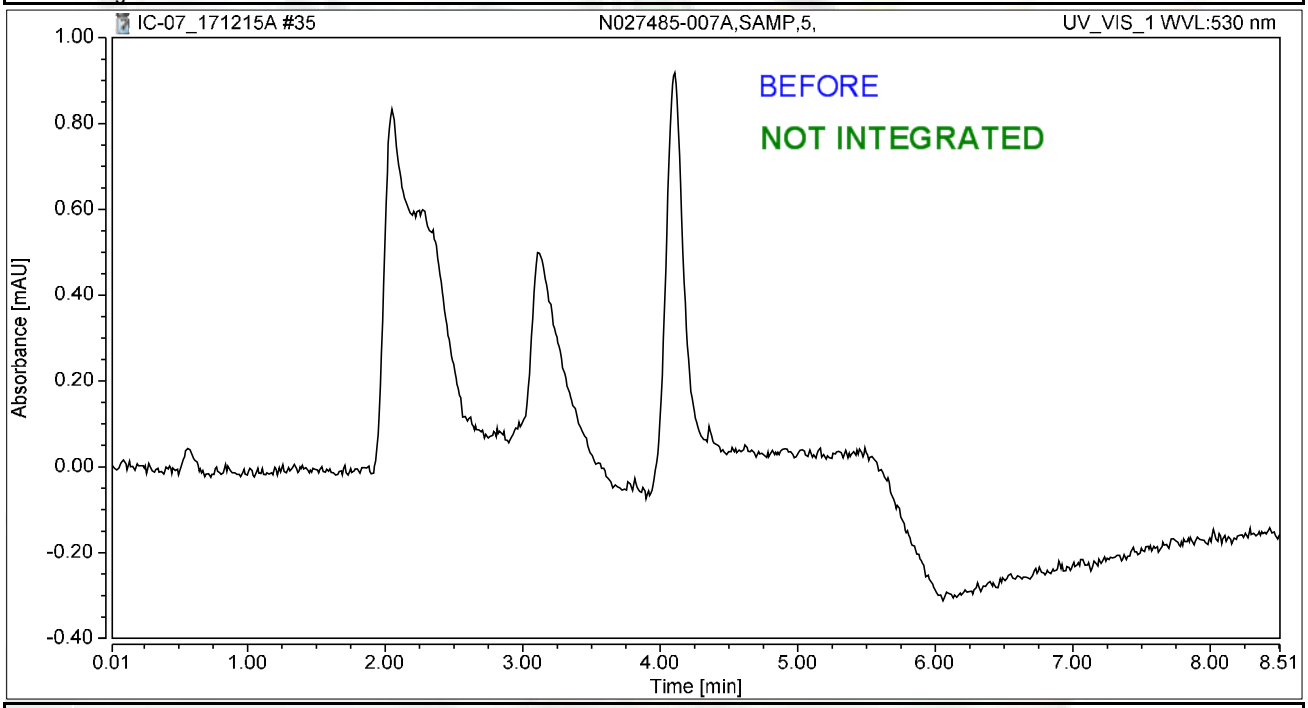
RB 01/03/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027485-007A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 12:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

rba 12/22/2017

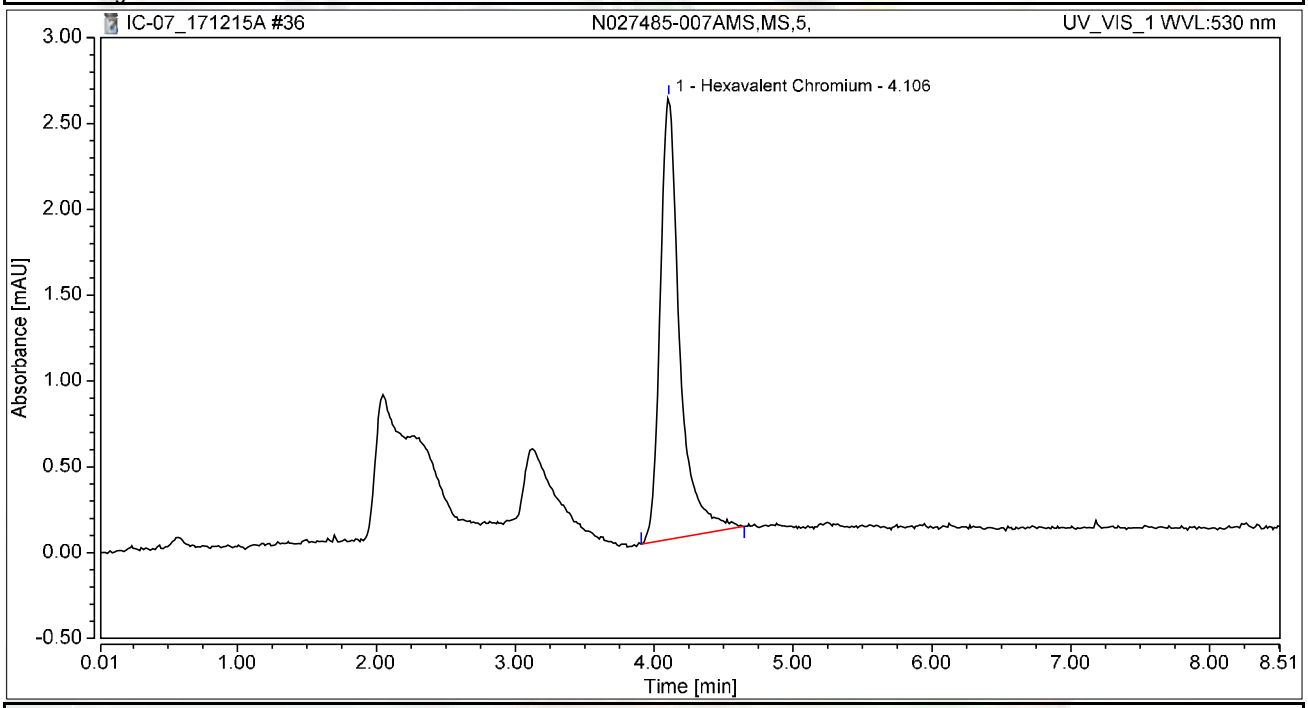
01/03/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027485-007AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 12:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

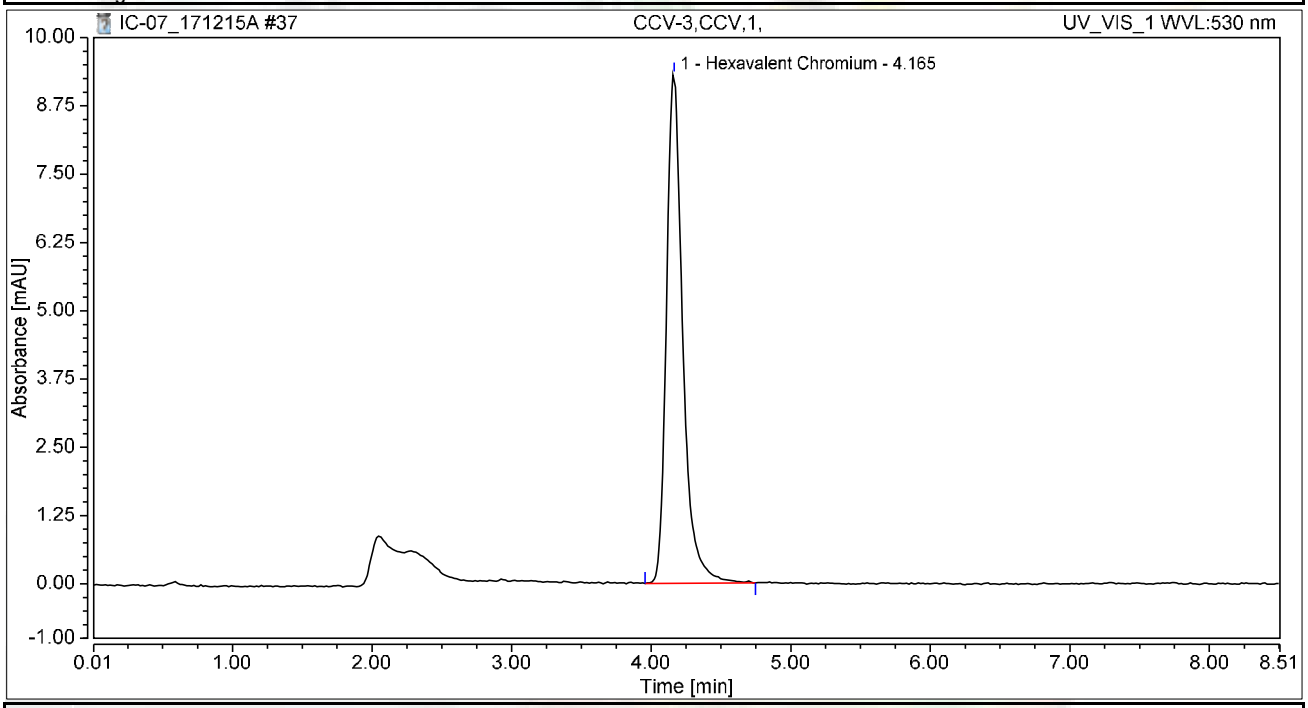
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.422	2.575	100.00	100.00	1.6788
Total:			**0.422**	**2.575**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 12:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

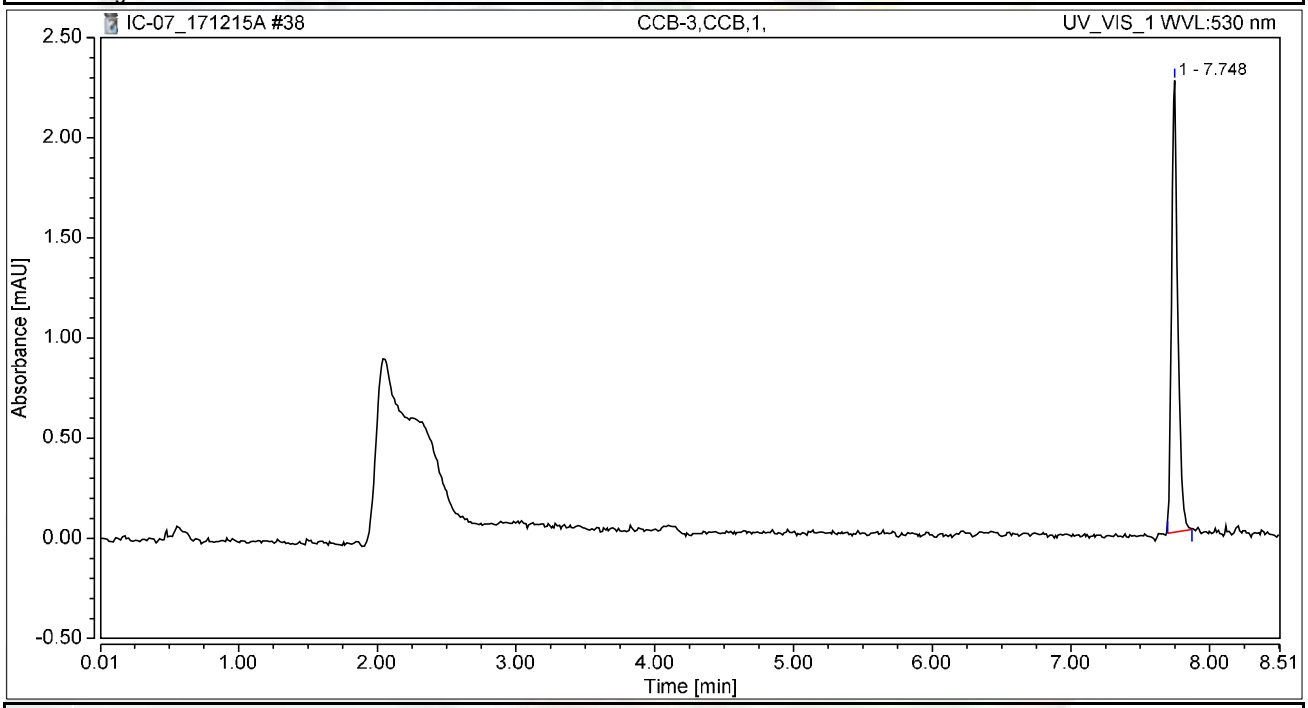
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.271	9.318	100.00	100.00	5.0612
Total:			**1.271**	**9.318**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 12:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

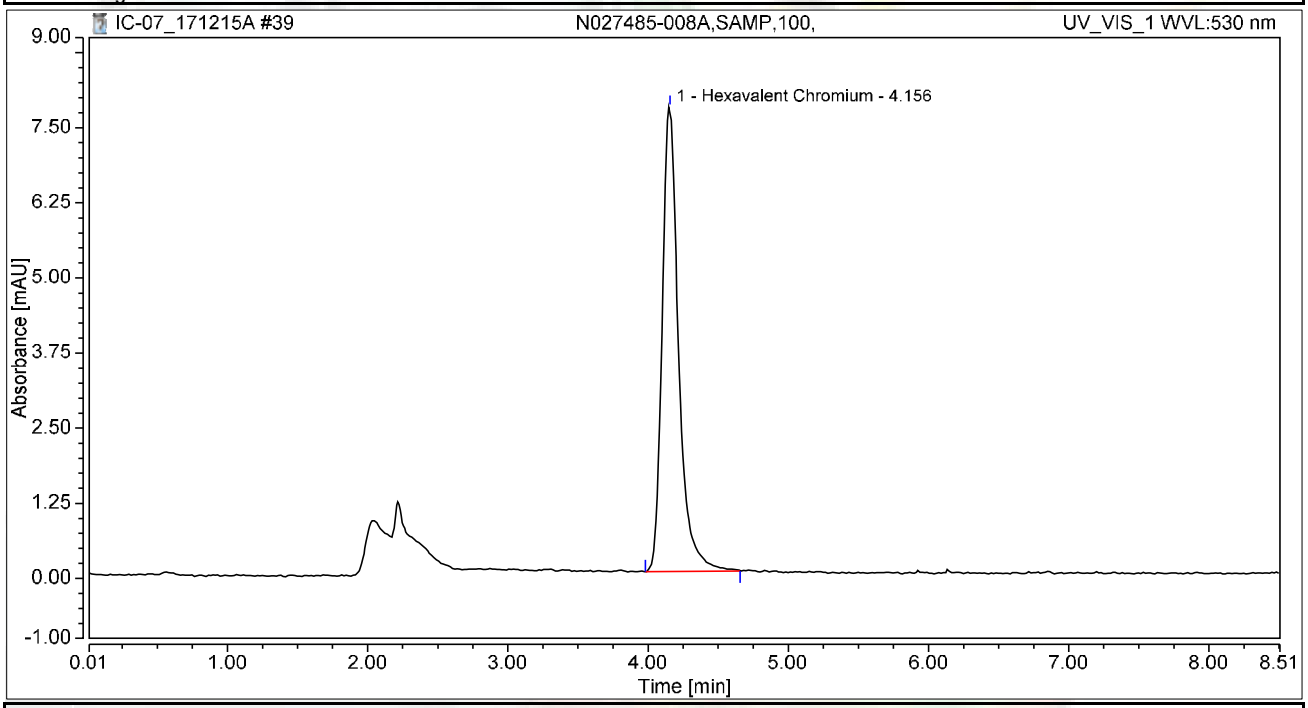
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.748	0.117	2.256	100.00	100.00	n.a.
Total:			**0.117**	**2.256**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-008A,SAMP,100,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

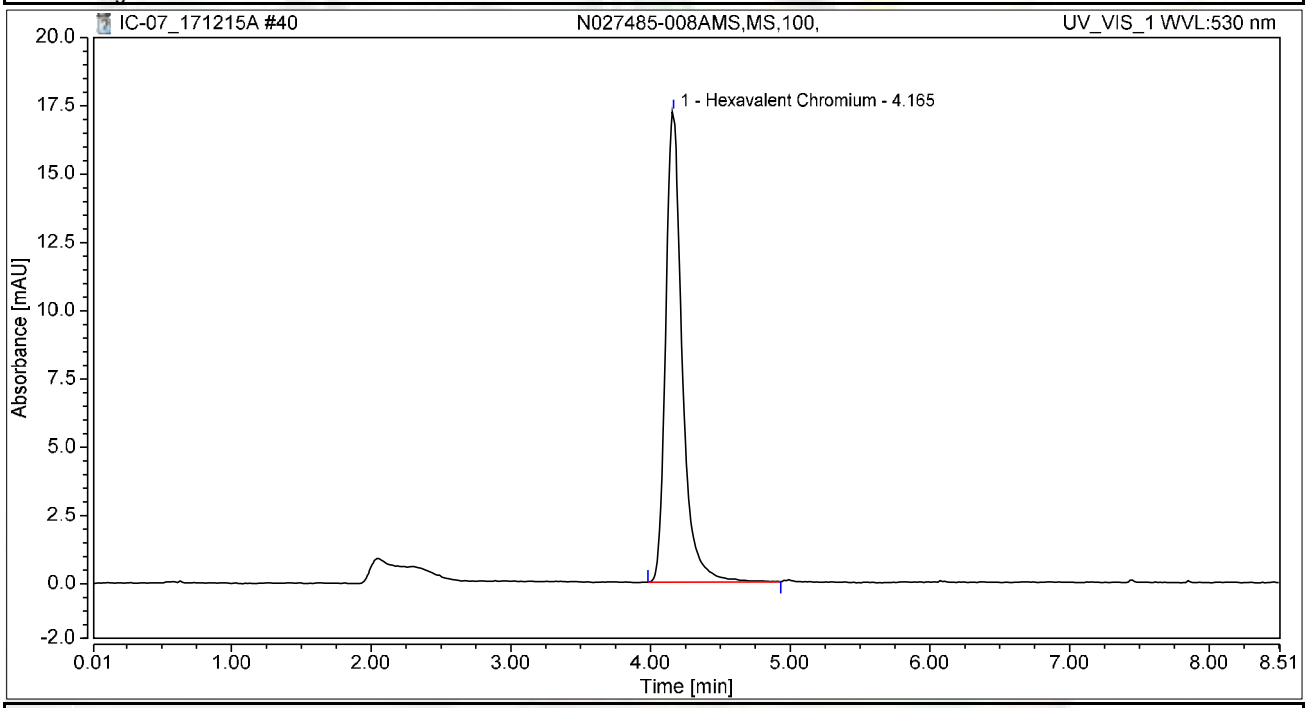
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.052	7.727	100.00	100.00	4.1901
Total:			**1.052**	**7.727**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-008AMS,MS,100,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 13:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

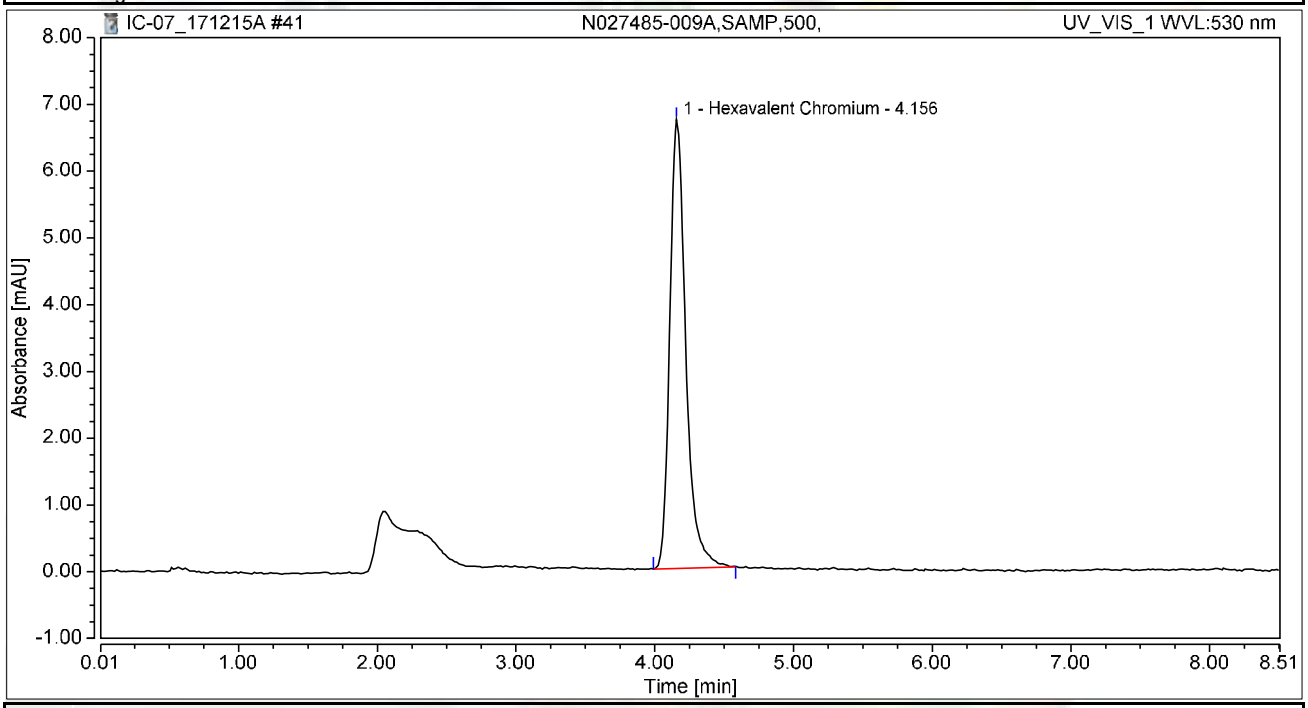
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.358	17.231	100.00	100.00	9.3890
Total:			**2.358**	**17.231**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-009A,SAMP,500,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 13:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

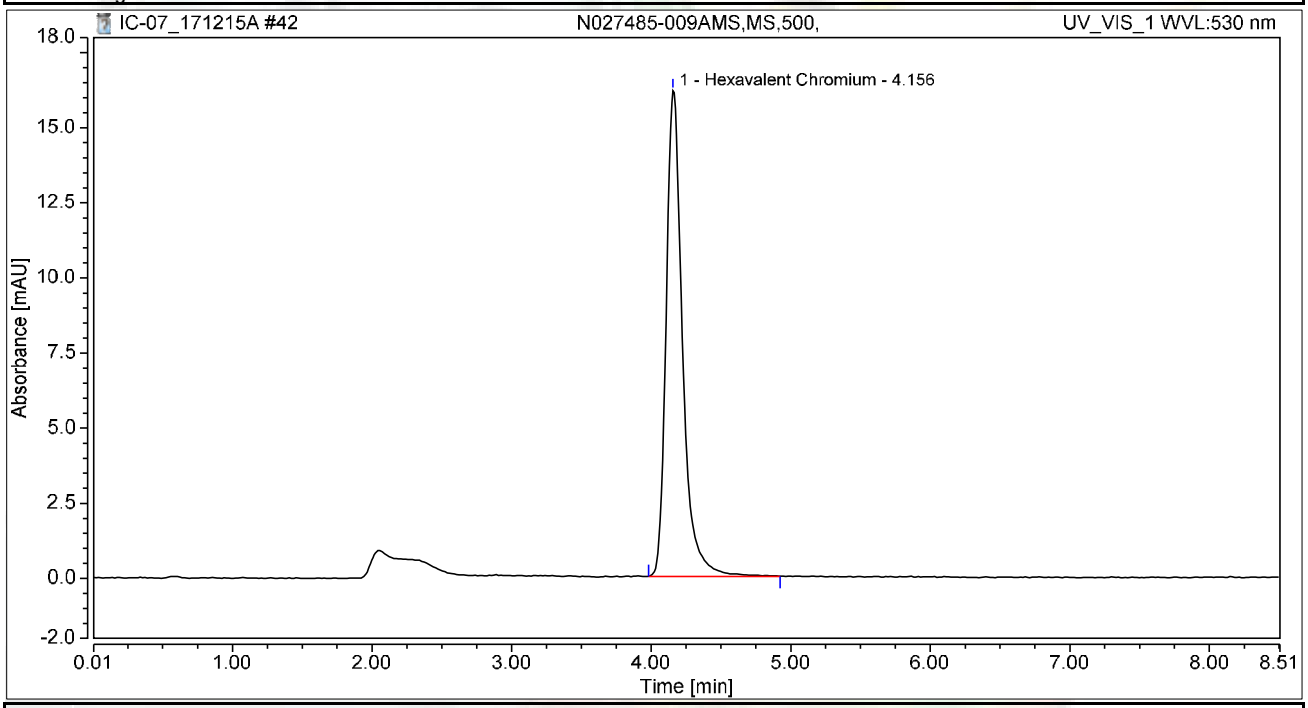
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.902	6.728	100.00	100.00	3.5905
Total:			**0.902**	**6.728**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-009AMS,MS,500,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 13:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

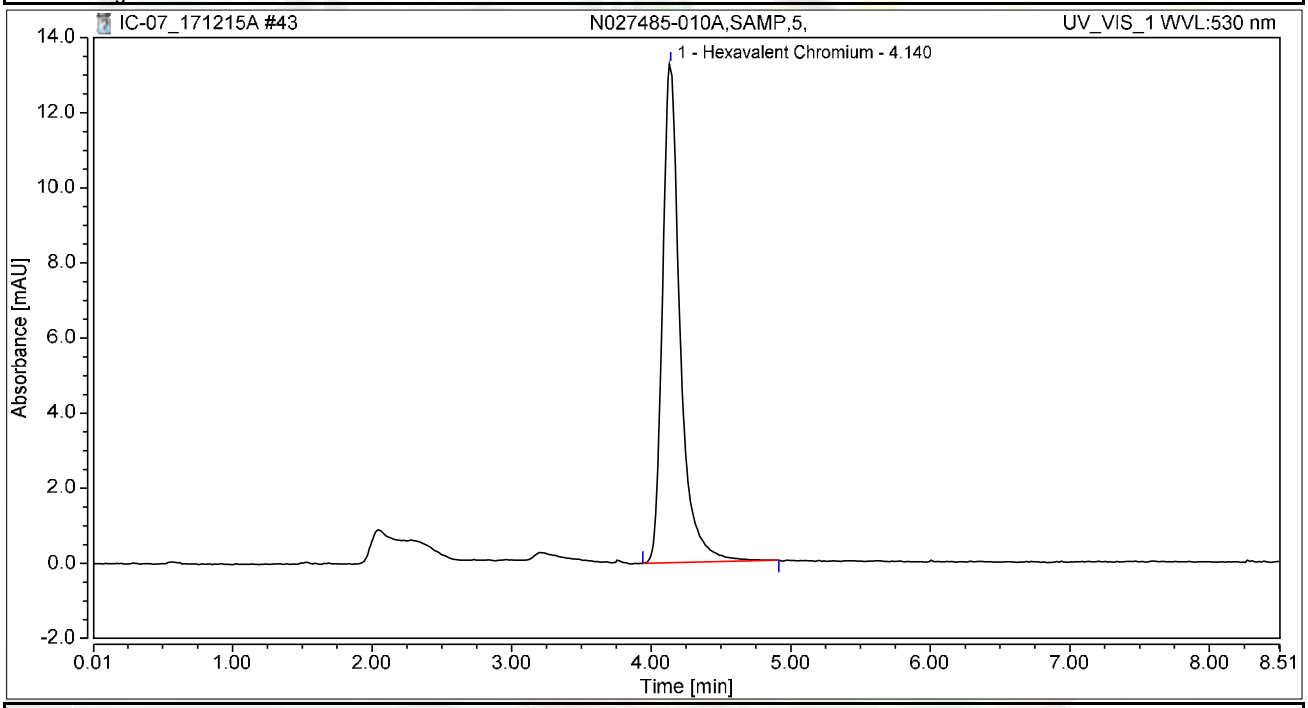
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.206	16.169	100.00	100.00	8.7846
Total:			**2.206**	**16.169**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-010A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 13:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

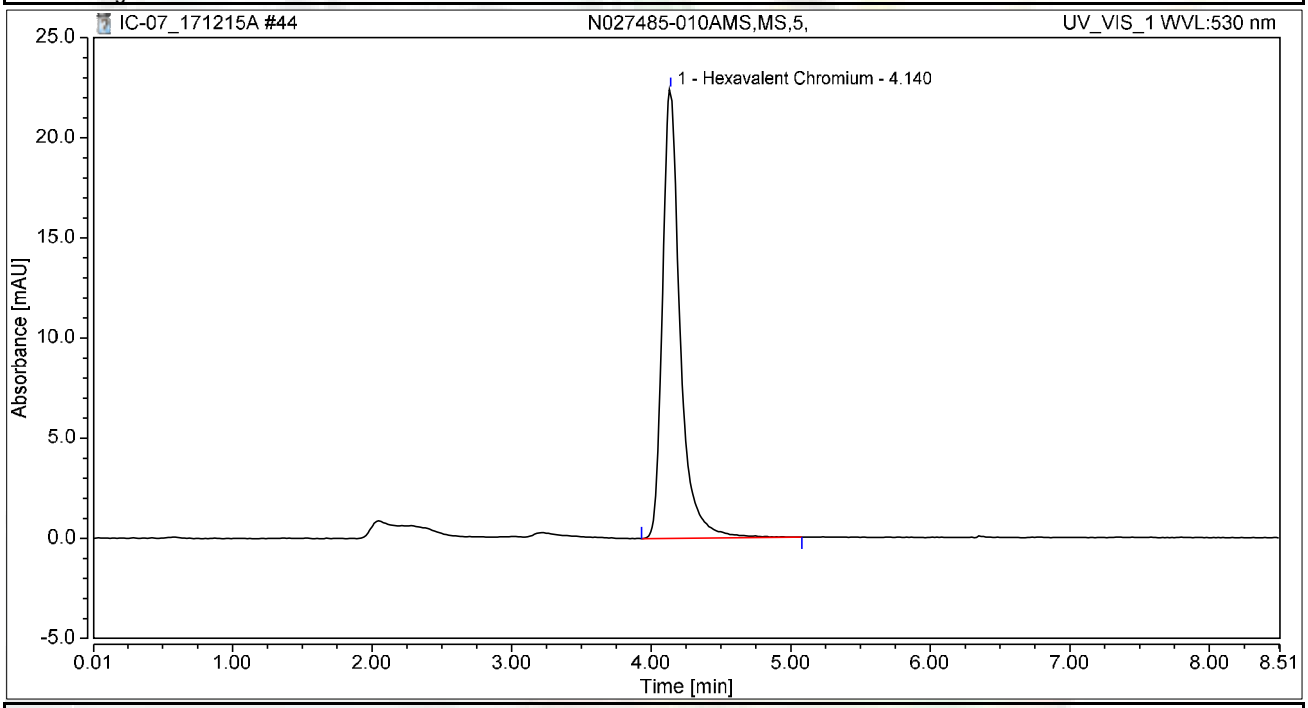
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.951	13.282	100.00	100.00	7.7703
Total:			**1.951**	**13.282**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-010AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 13:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

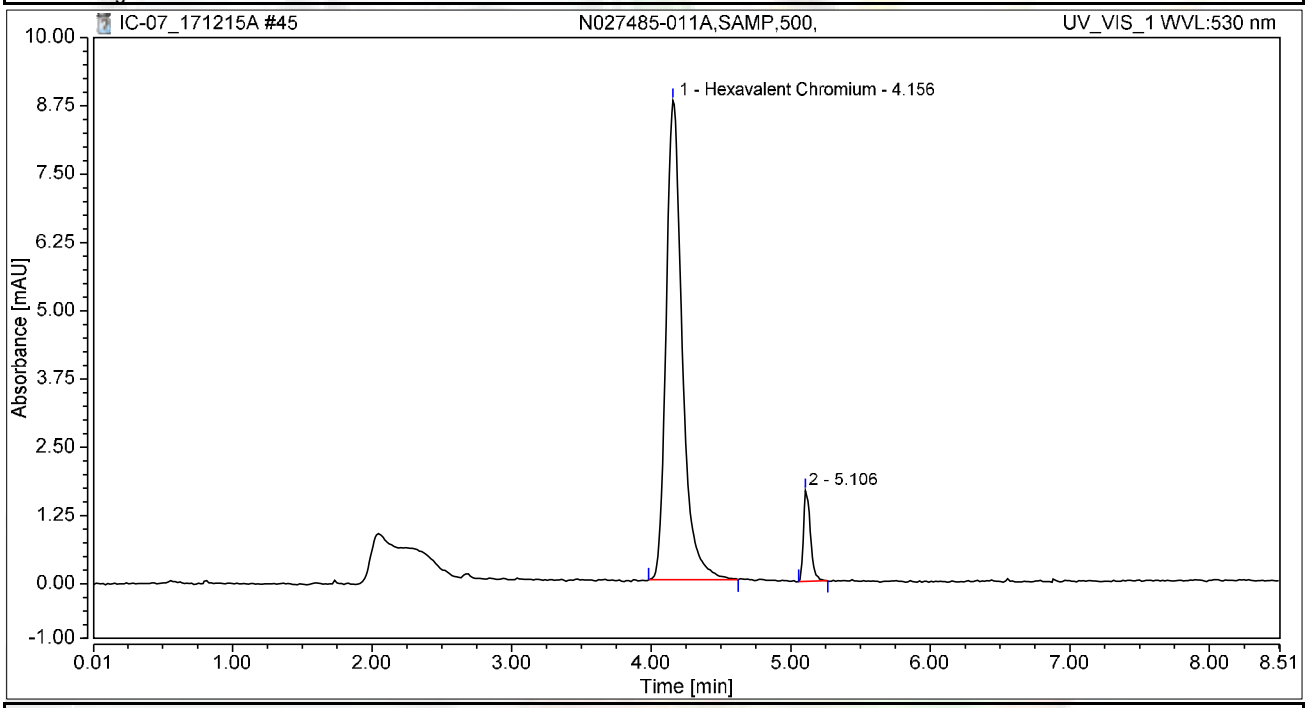
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	3.304	22.412	100.00	100.00	13.1576
Total:			**3.304**	**22.412**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-011A,SAMP,500,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 14:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

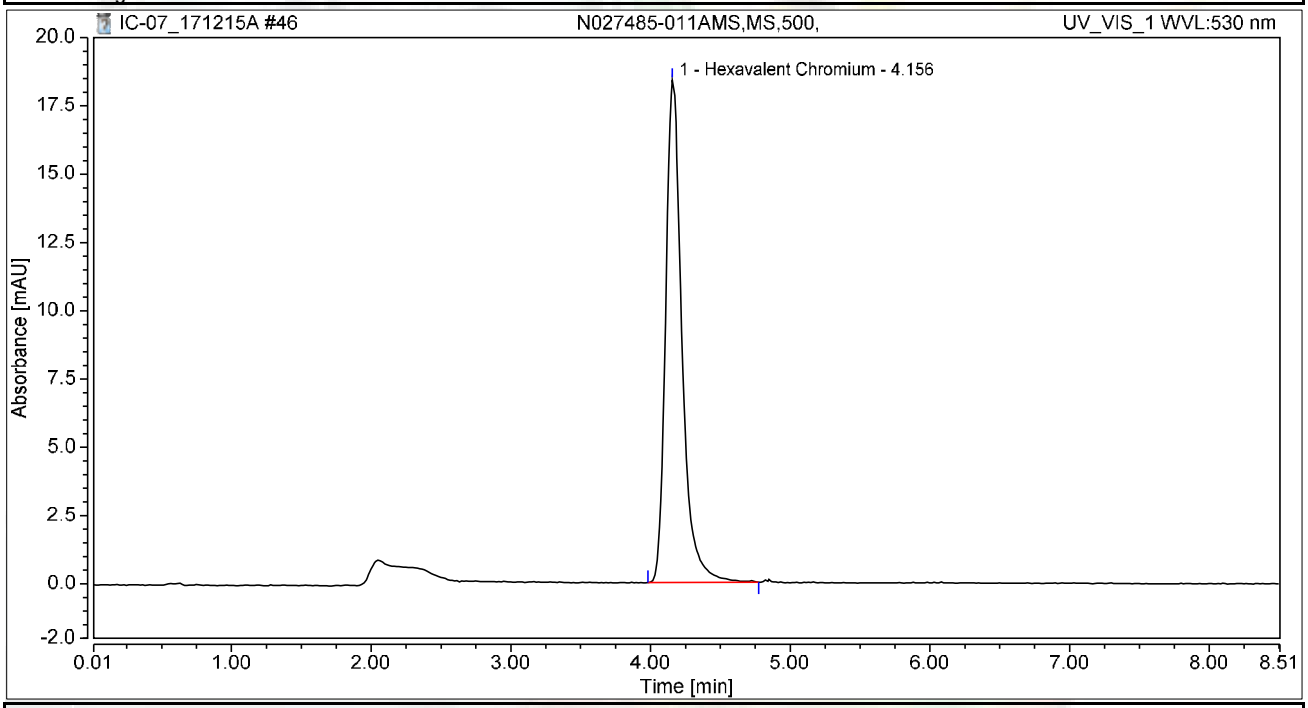
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.176	8.771	92.57	84.09	4.6827
2		5.106	0.094	1.660	7.43	15.91	n.a.
Total:			**1.270**	**10.431**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-011AMS,MS,500,**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 14:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

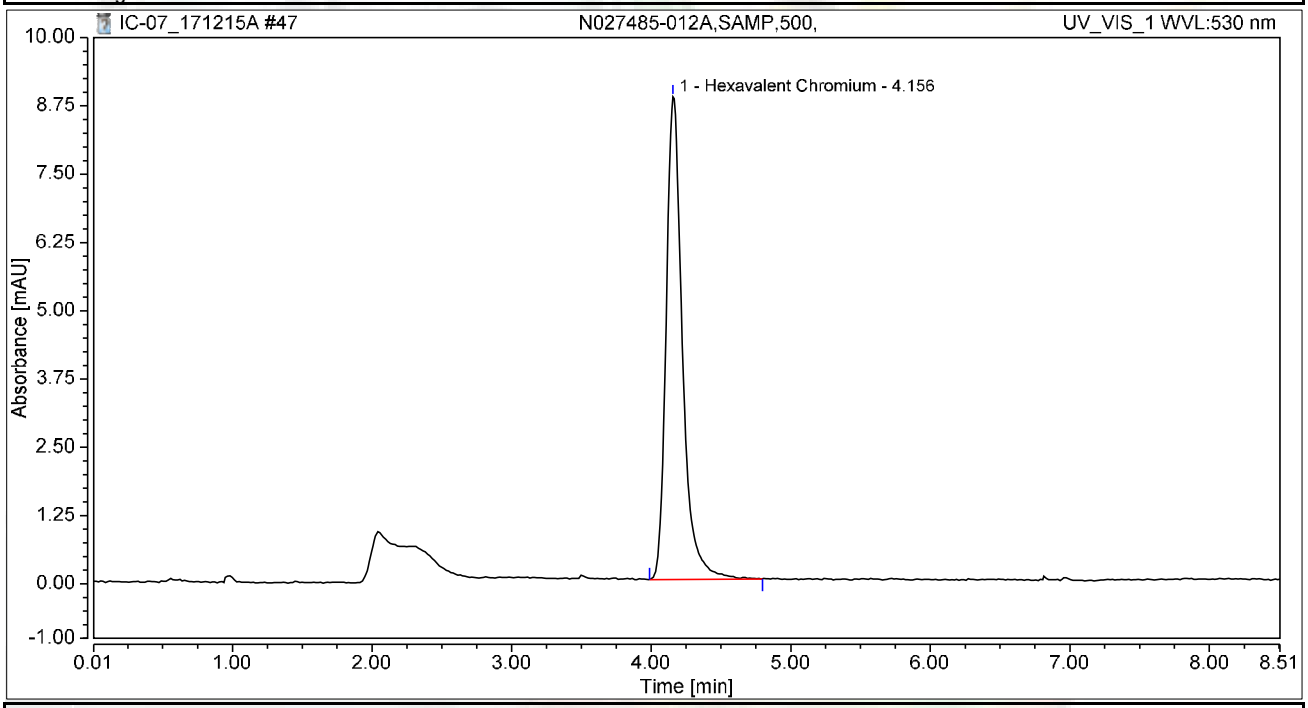
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.487	18.385	100.00	100.00	9.9056
Total:			**2.487**	**18.385**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-012A,SAMP,500,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 14:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

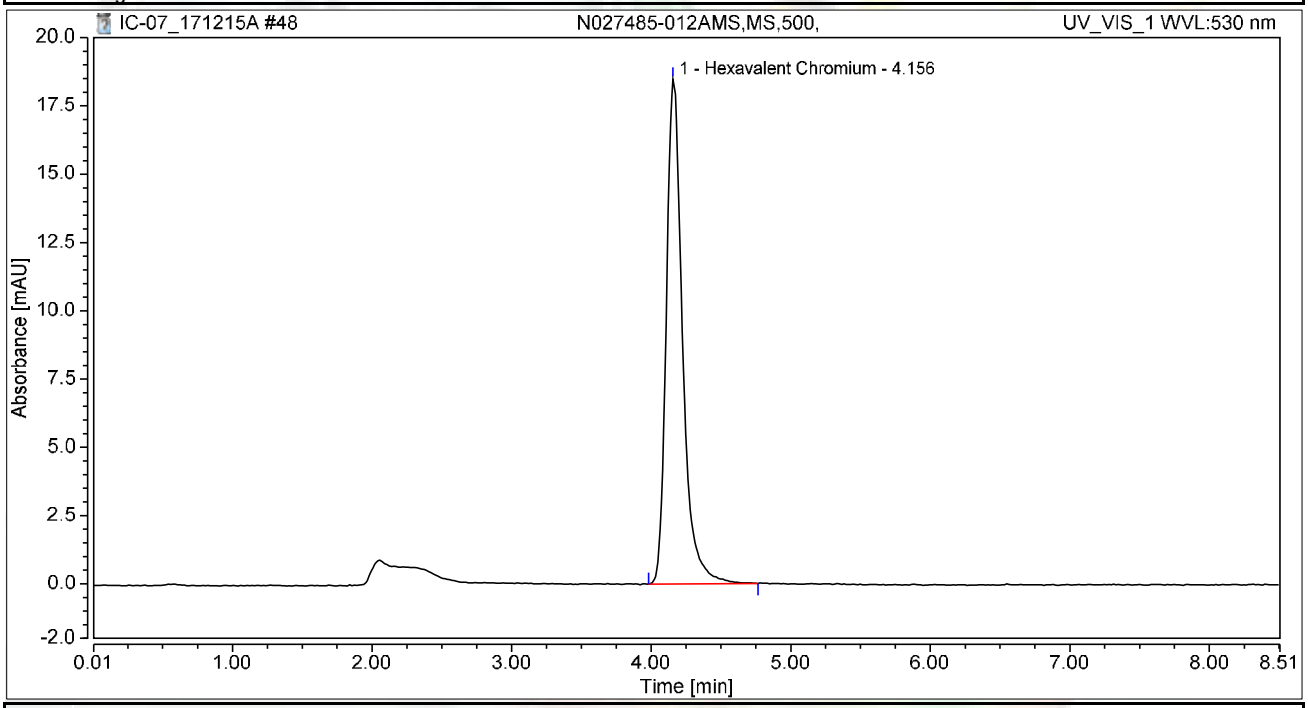
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.199	8.836	100.00	100.00	4.7766
Total:			**1.199**	**8.836**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-012AMS,MS,500,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 14:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

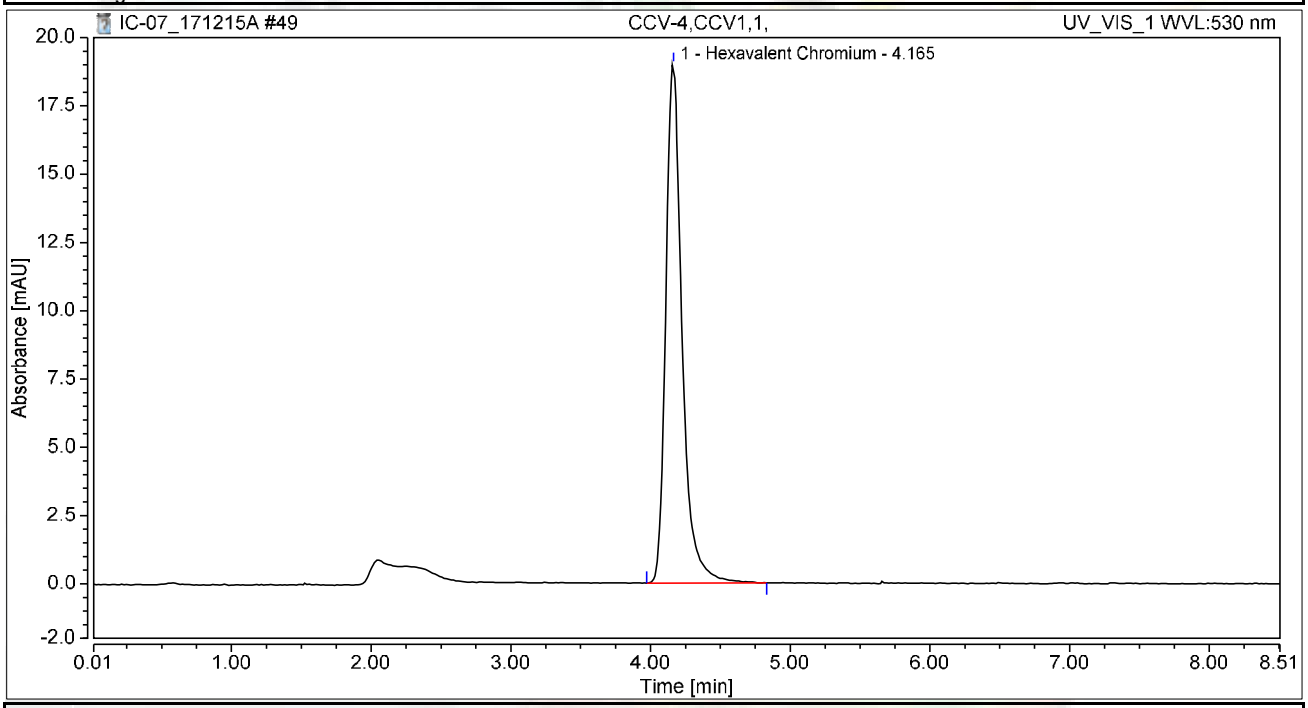
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.503	18.482	100.00	100.00	9.9675
Total:			**2.503**	**18.482**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 14:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

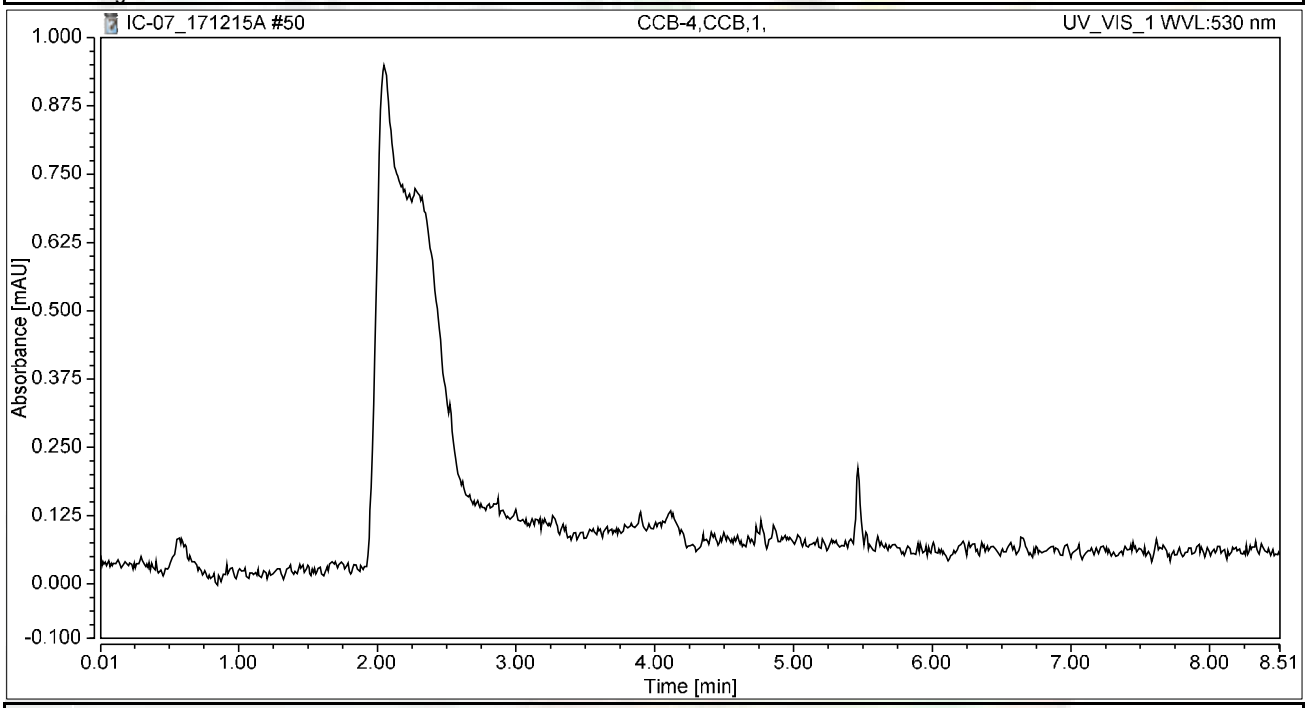
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.569	18.992	100.00	100.00	10.2320
Total:			**2.569**	**18.992**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 14:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

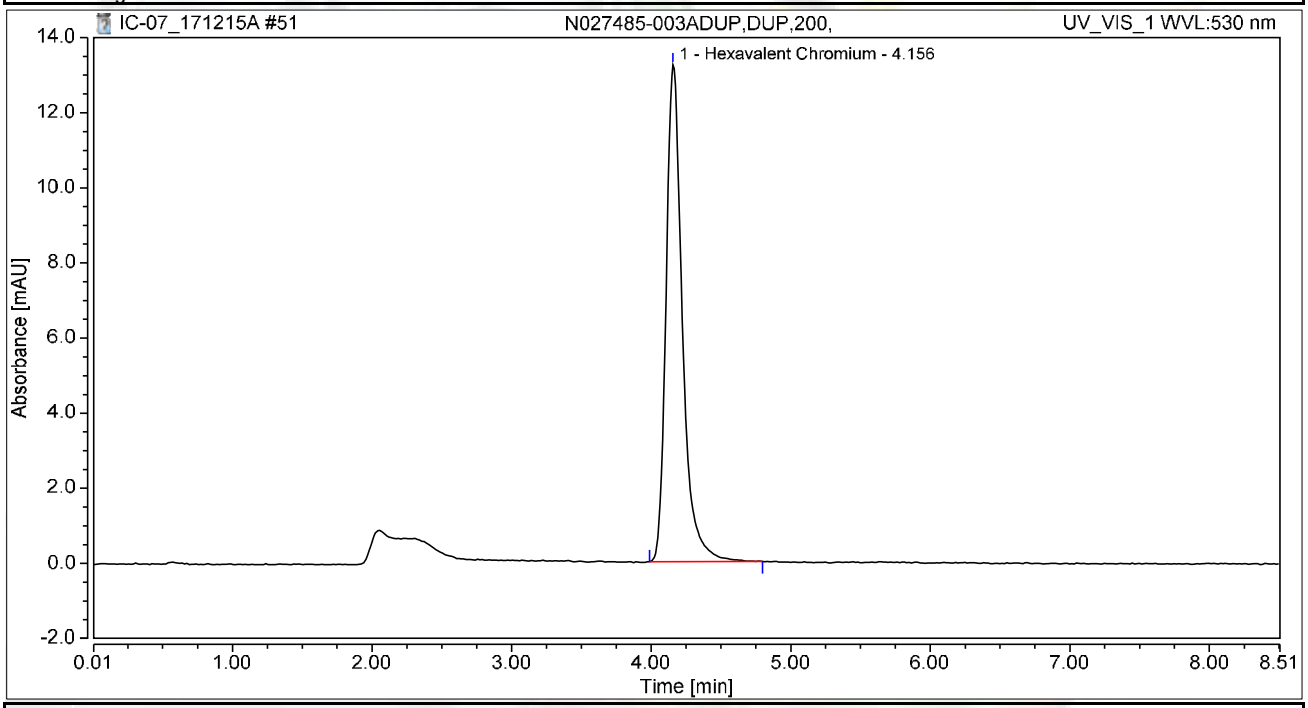
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-003ADUP,DUP,200,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 15:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

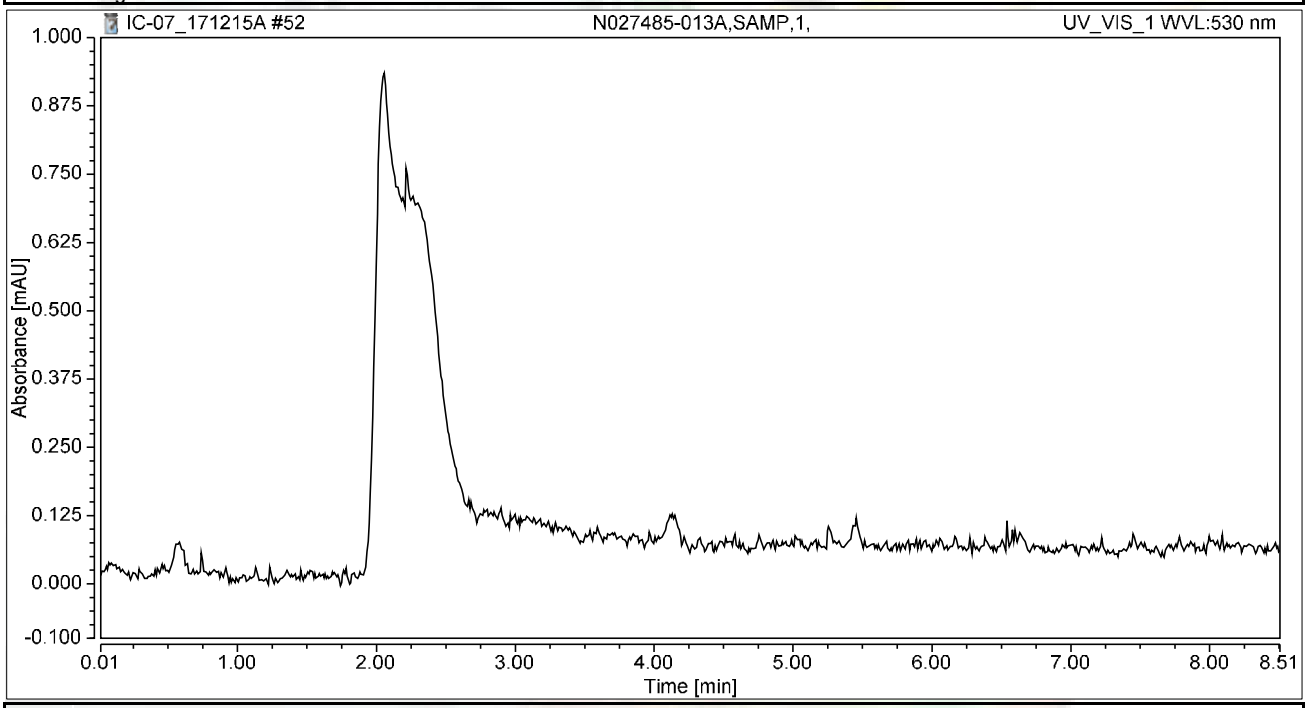
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.796	13.228	100.00	100.00	7.1543
Total:			**1.796**	**13.228**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-013A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 15:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

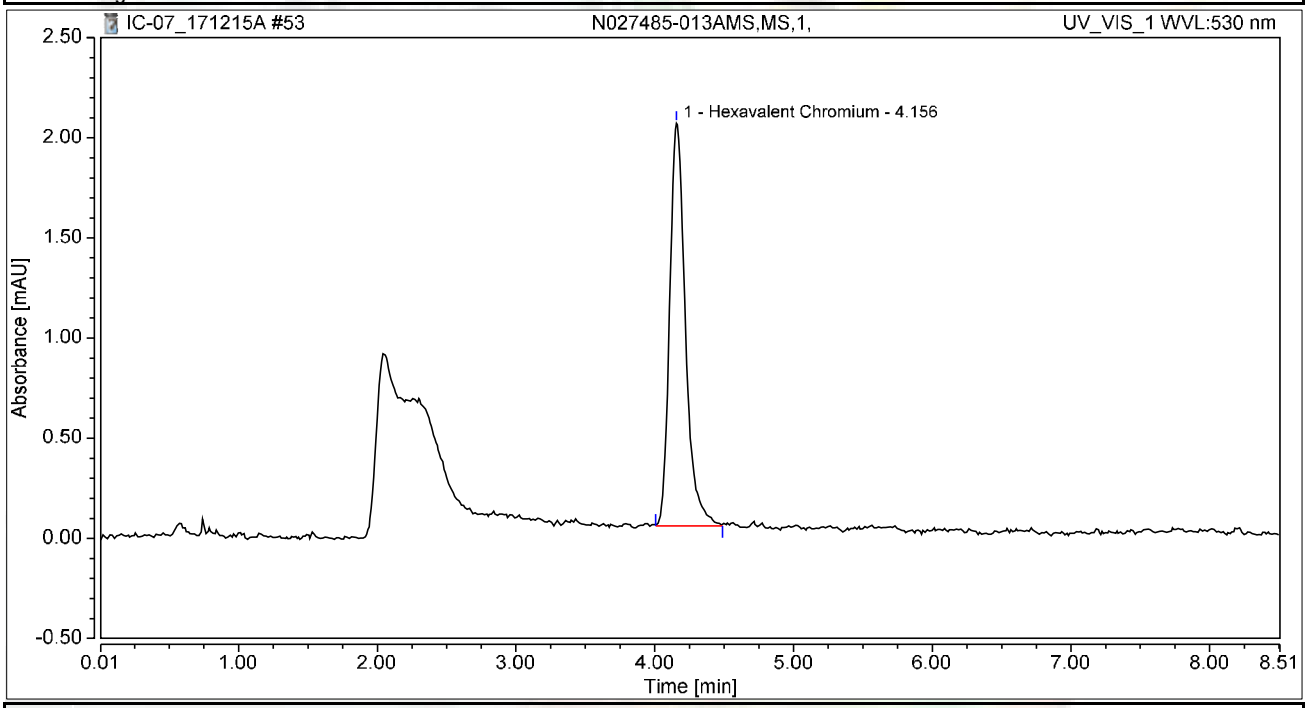
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 15:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

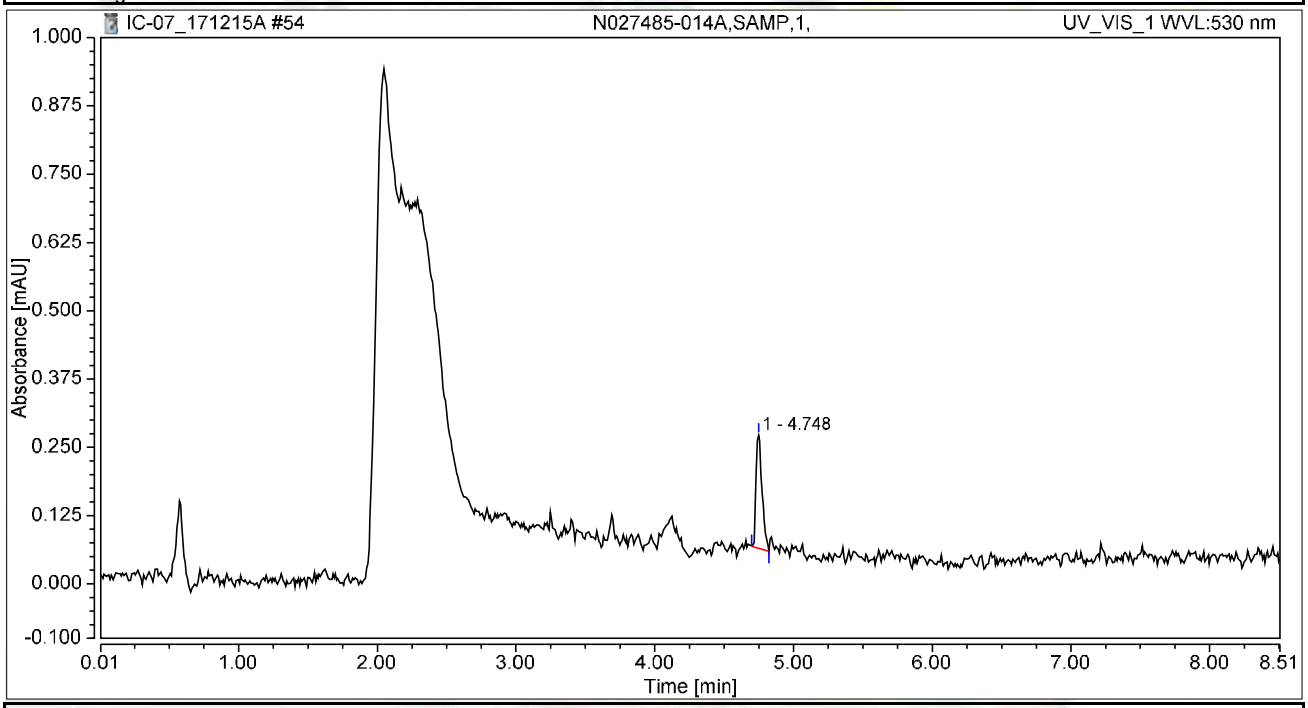
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.265	2.011	100.00	100.00	1.0560
Total:			**0.265**	**2.011**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 15:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

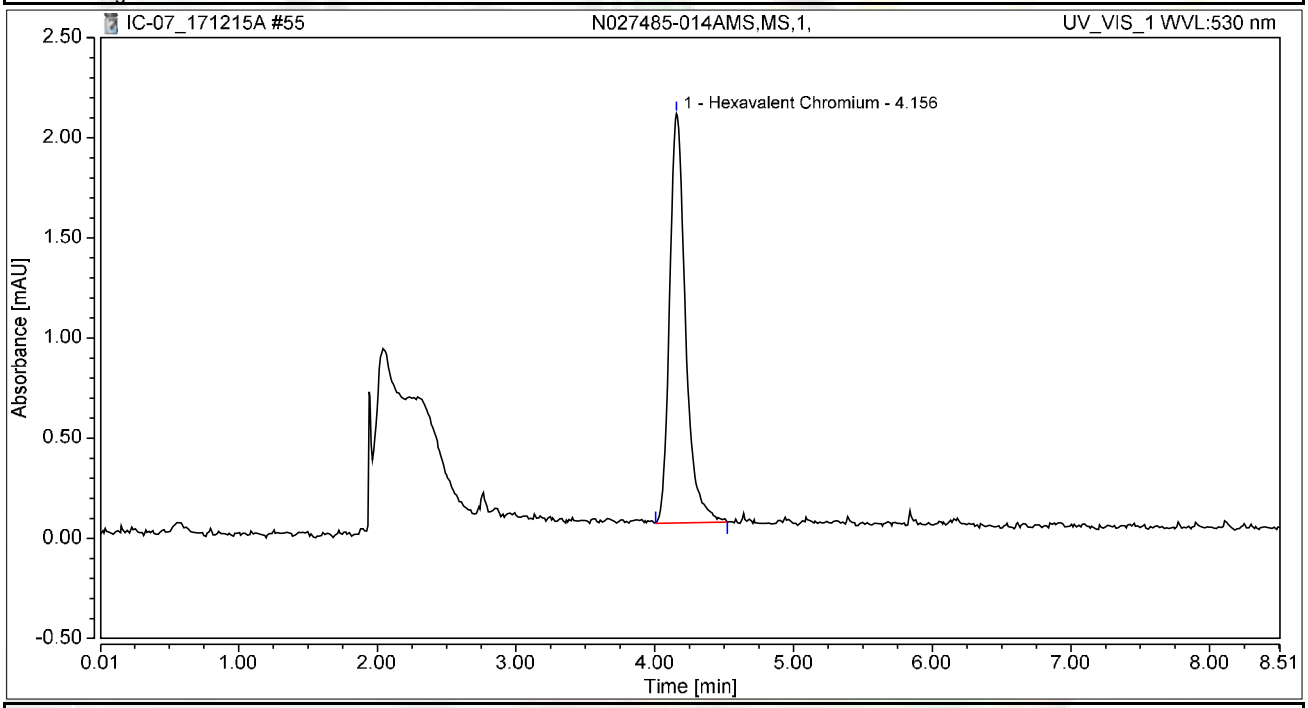
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		4.748	0.010	0.207	100.00	100.00	n.a.
Total:			**0.010**	**0.207**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 15:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

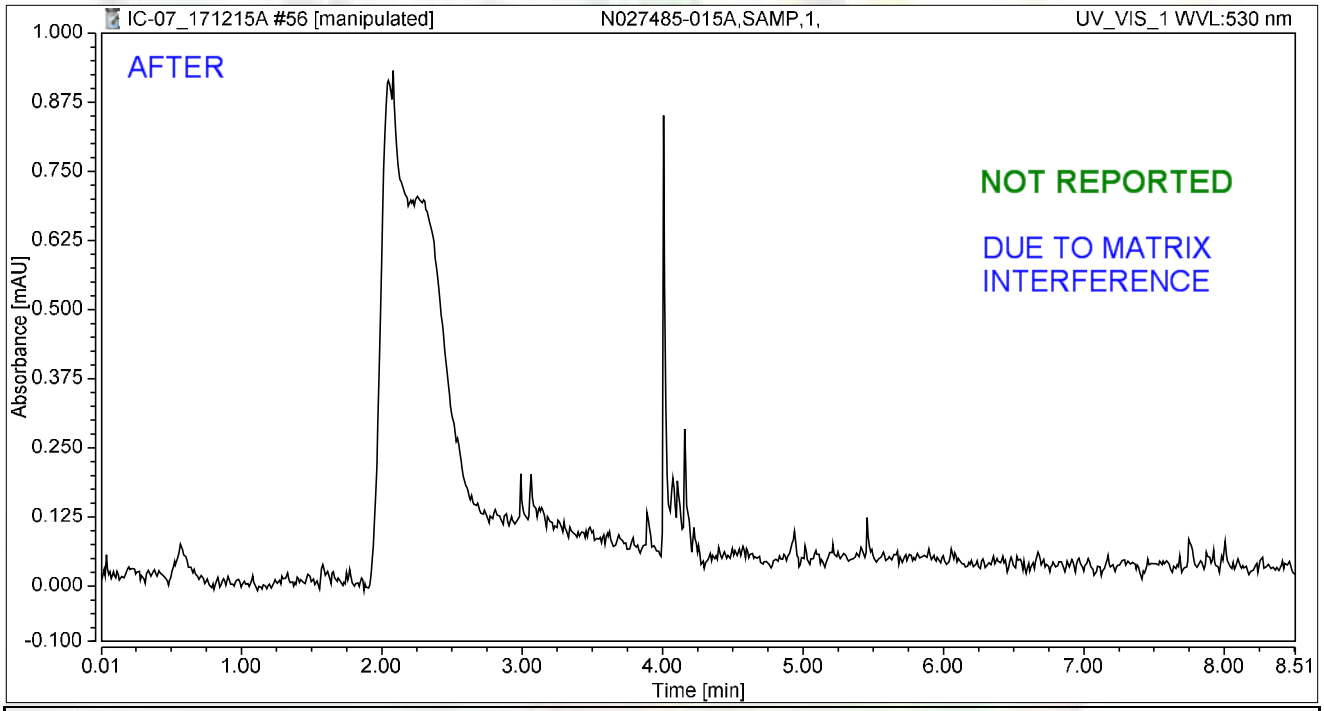
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.273	2.043	100.00	100.00	1.0864
Total:			**0.273**	**2.043**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 15:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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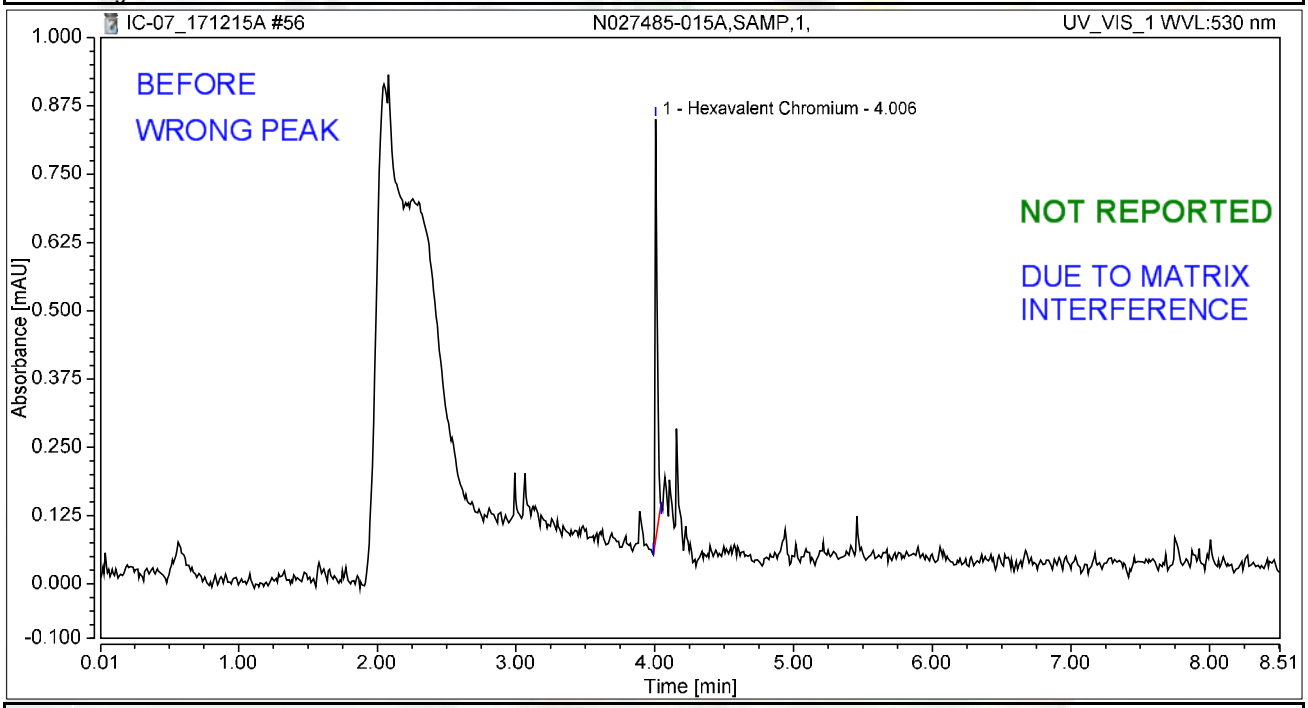
Chromatogram and Results

Injection Details

Injection Name:	**N027485-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 15:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.006	0.013	0.770	100.00	100.00	0.0516
Total:			**0.013**	**0.770**	**100.00**	**100.00**	

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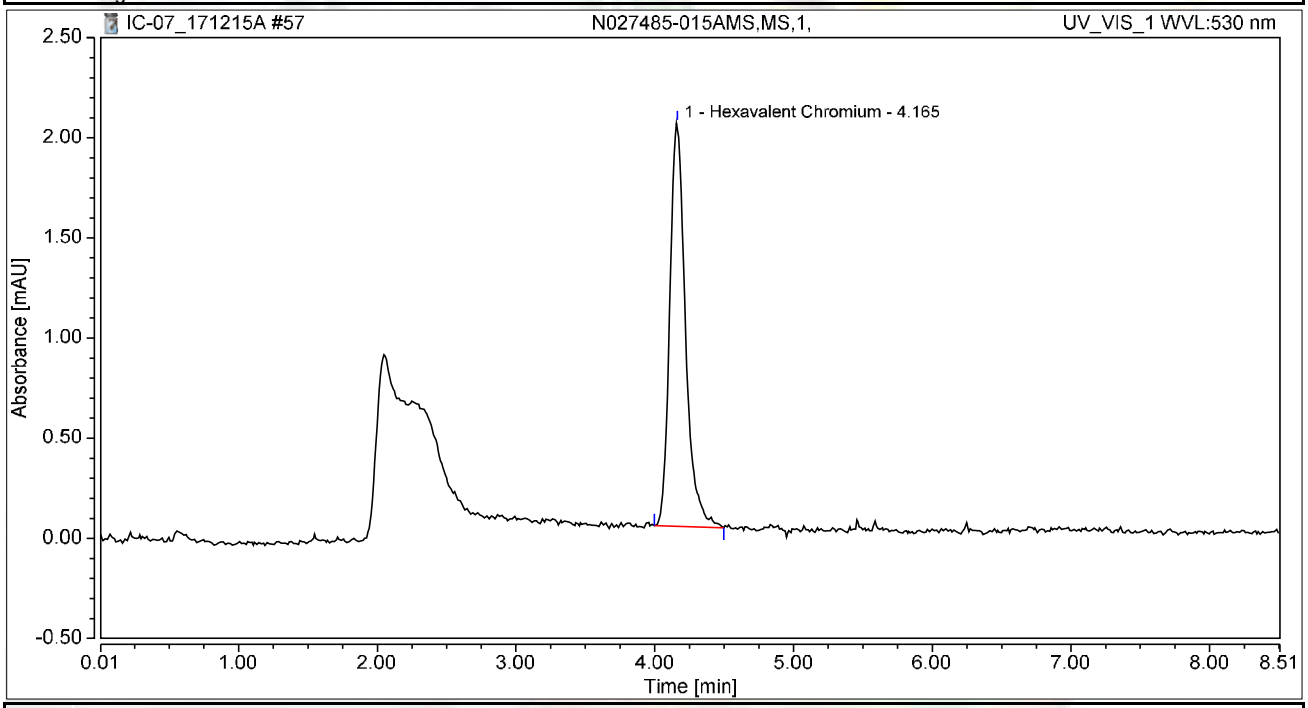
Chromatogram and Results

Injection Details

Injection Name:	**N027485-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 16:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

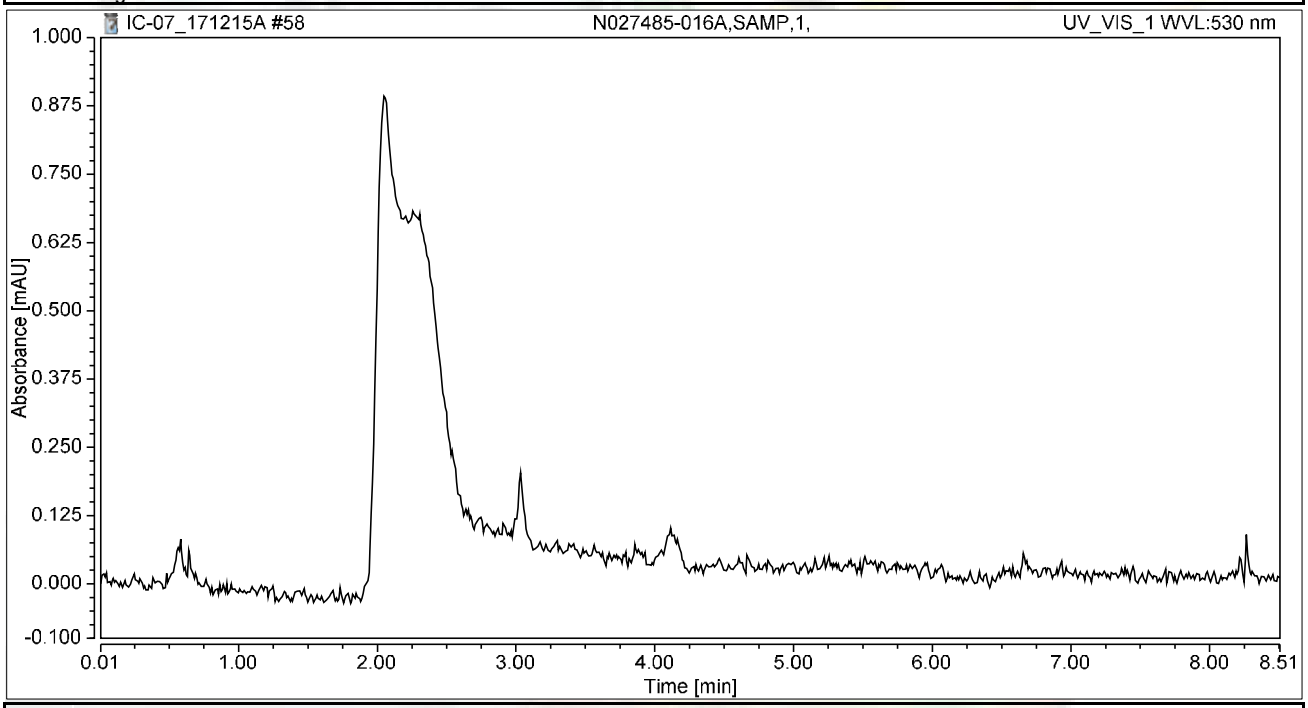
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.265	2.015	100.00	100.00	1.0570
Total:			**0.265**	**2.015**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-016A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 16:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

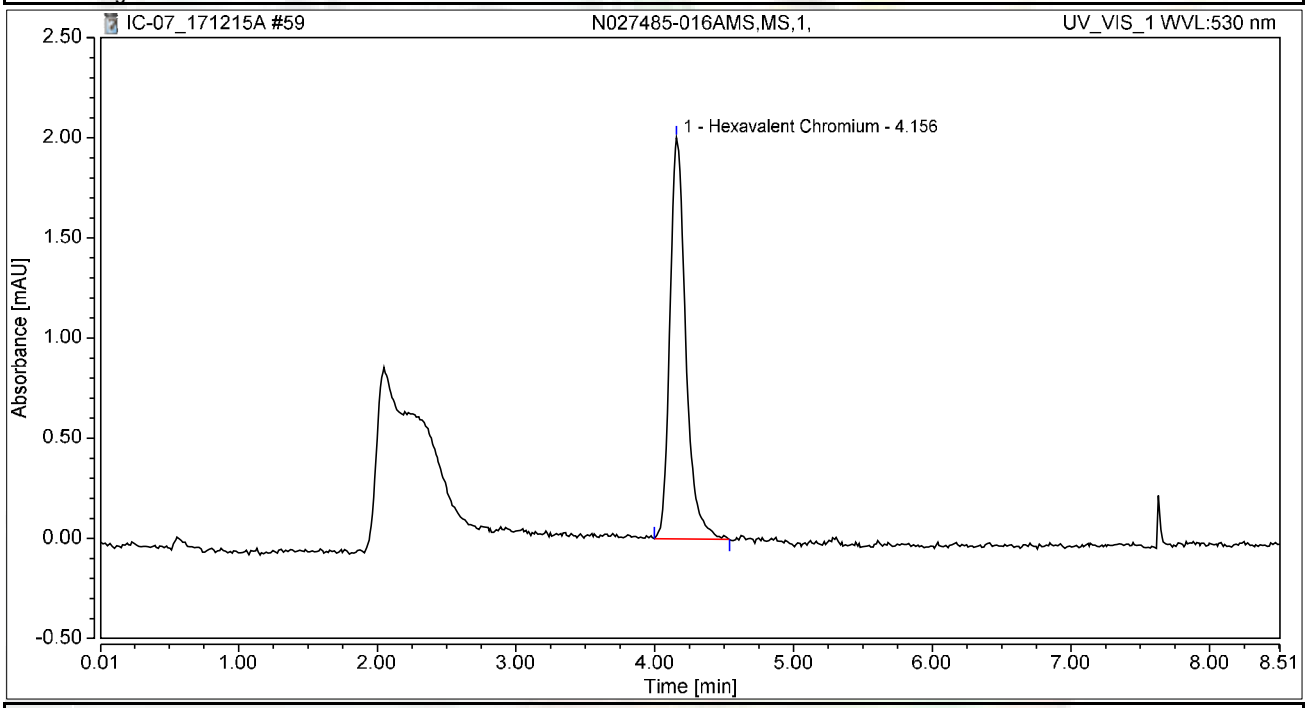
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027485-016AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 16:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

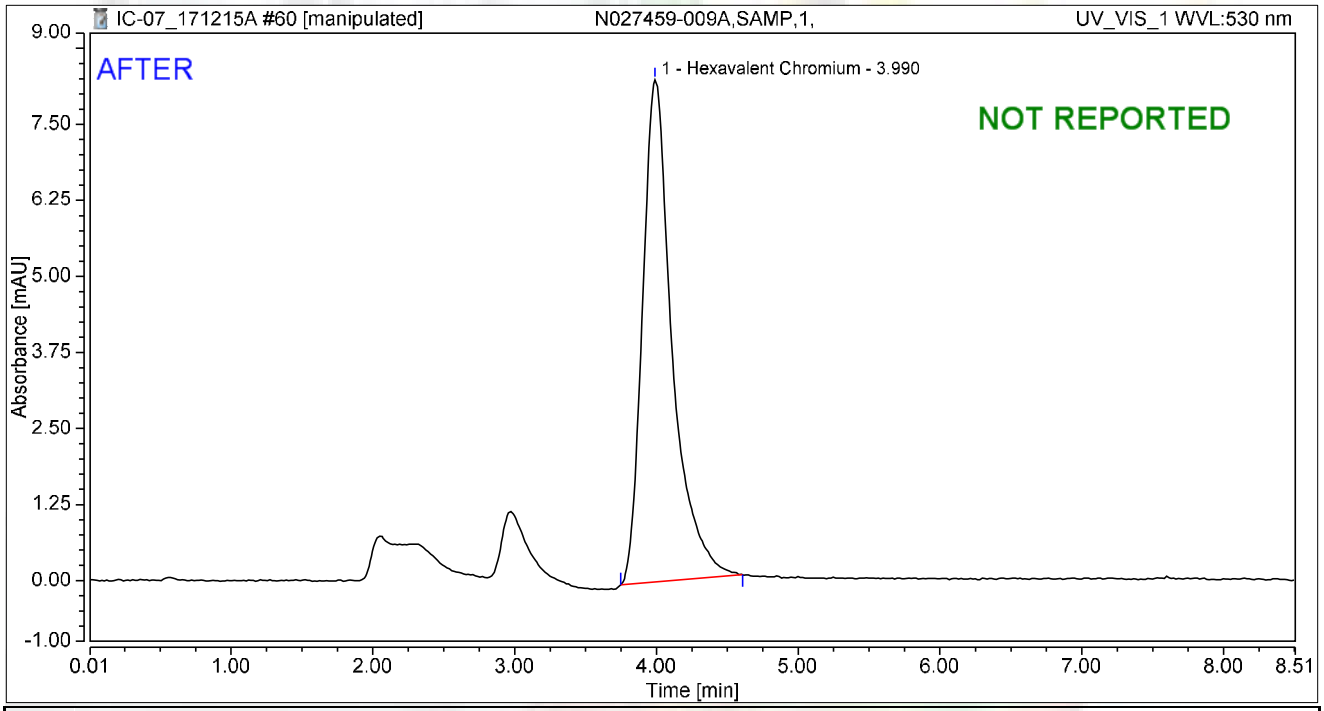
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.267	2.003	100.00	100.00	1.0625
Total:			**0.267**	**2.003**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 16:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.990	2.001	8.257	100.00	100.00	7.9703
Total:			**2.001**	**8.257**	**100.00**	**100.00**	

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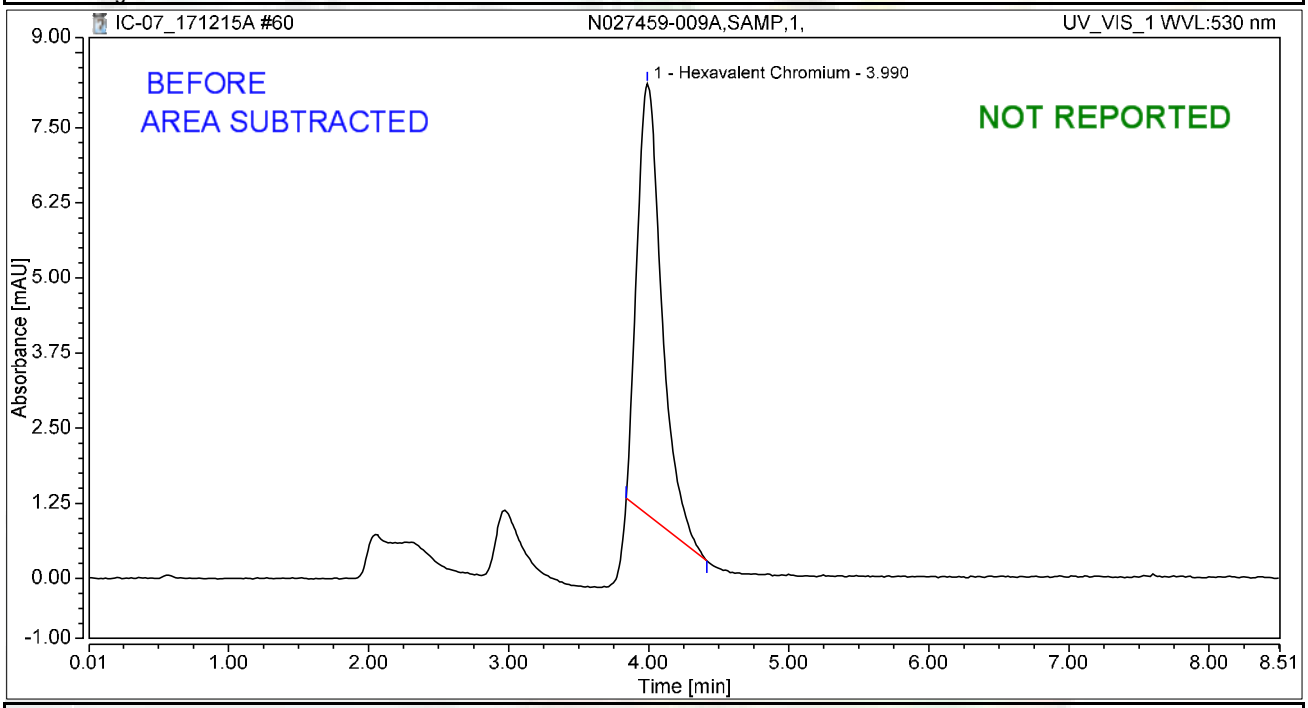
Chromatogram and Results

Injection Details

Injection Name:	**N027459-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 16:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.990	1.476	7.168	100.00	100.00	5.8795
Total:			**1.476**	**7.168**	**100.00**	**100.00**	

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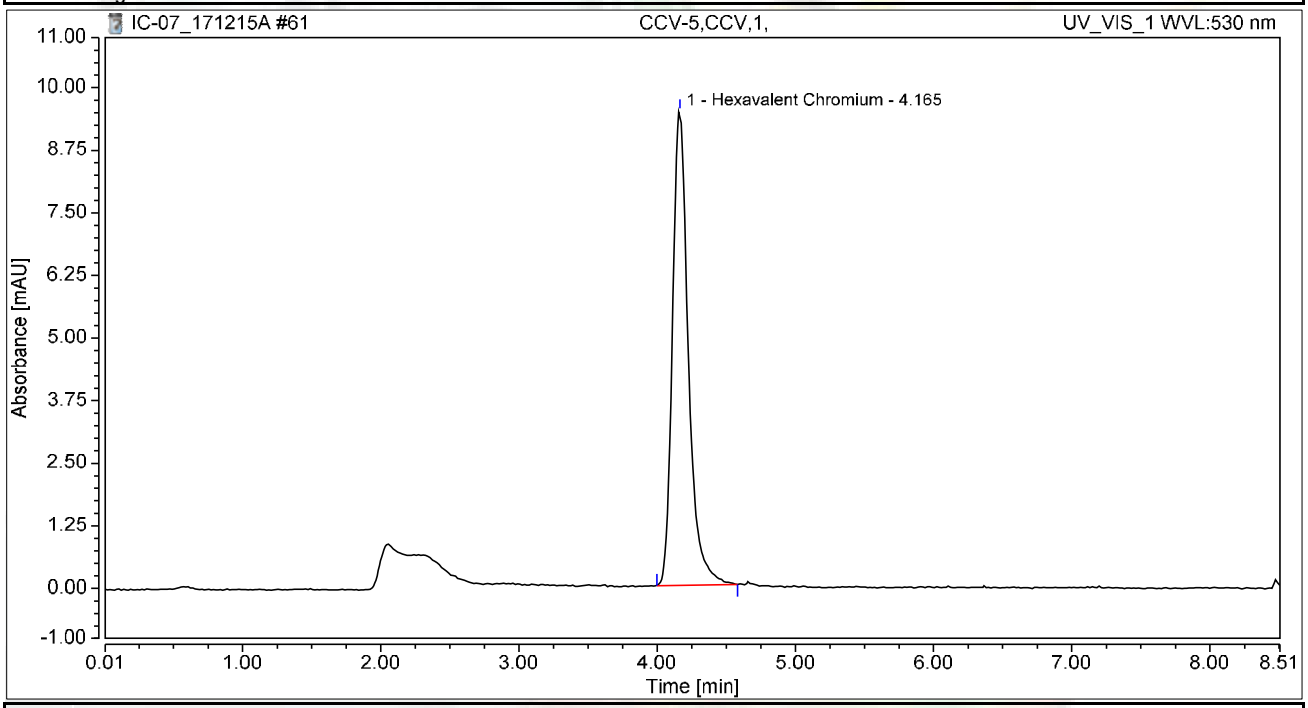
Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 16:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

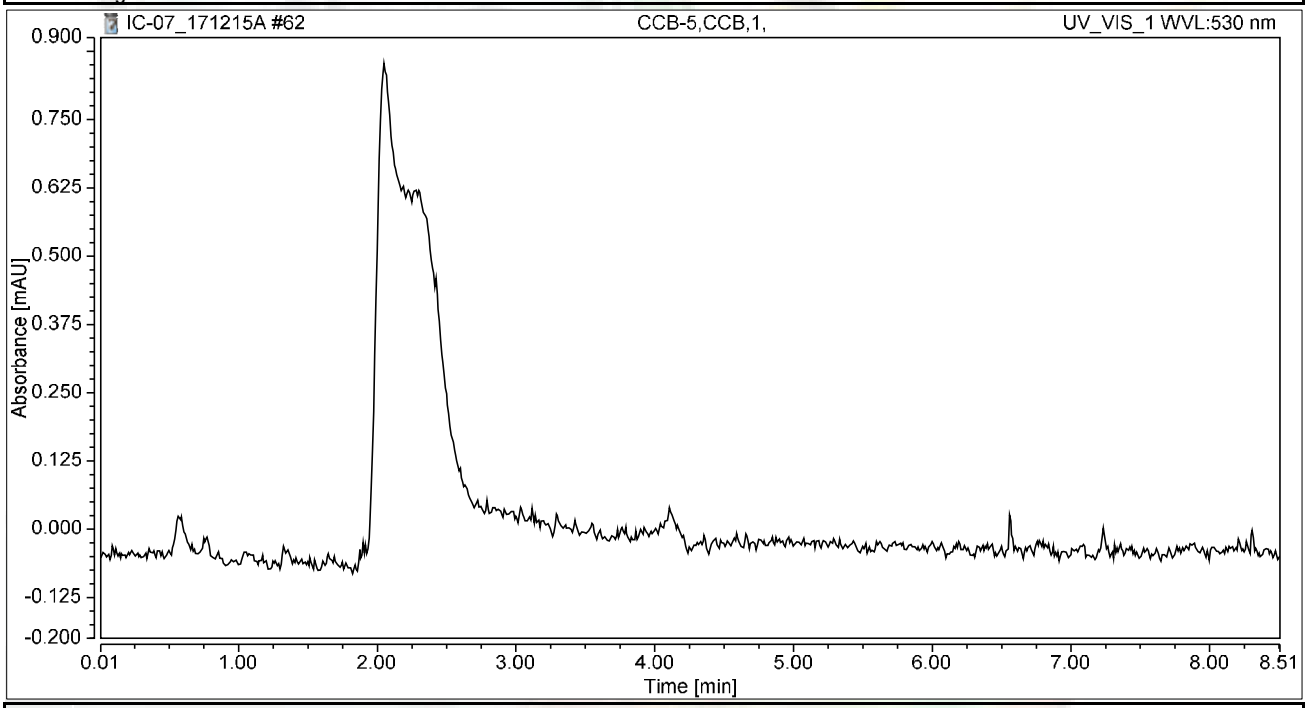
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.268	9.473	100.00	100.00	5.0487
Total:			**1.268**	**9.473**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 16:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

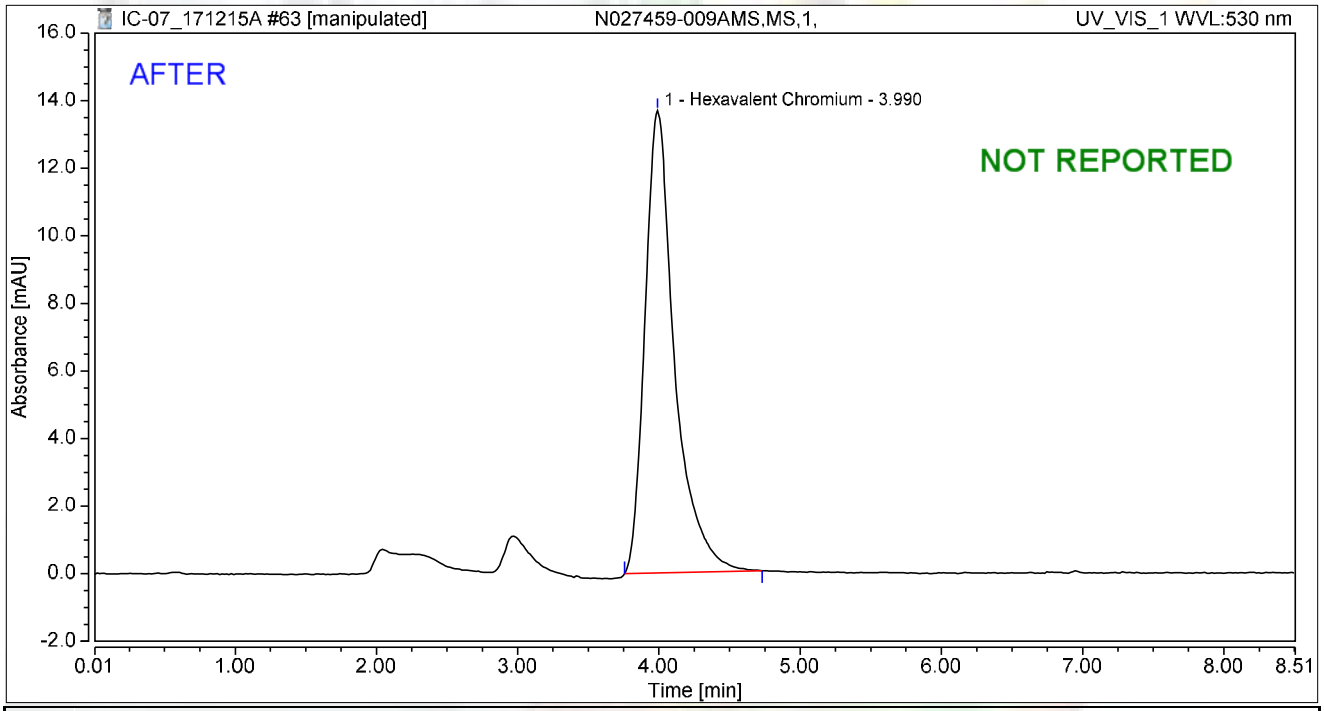
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 17:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.990	3.325	13.681	100.00	100.00	13.2404
Total:			**3.325**	**13.681**	**100.00**	**100.00**	

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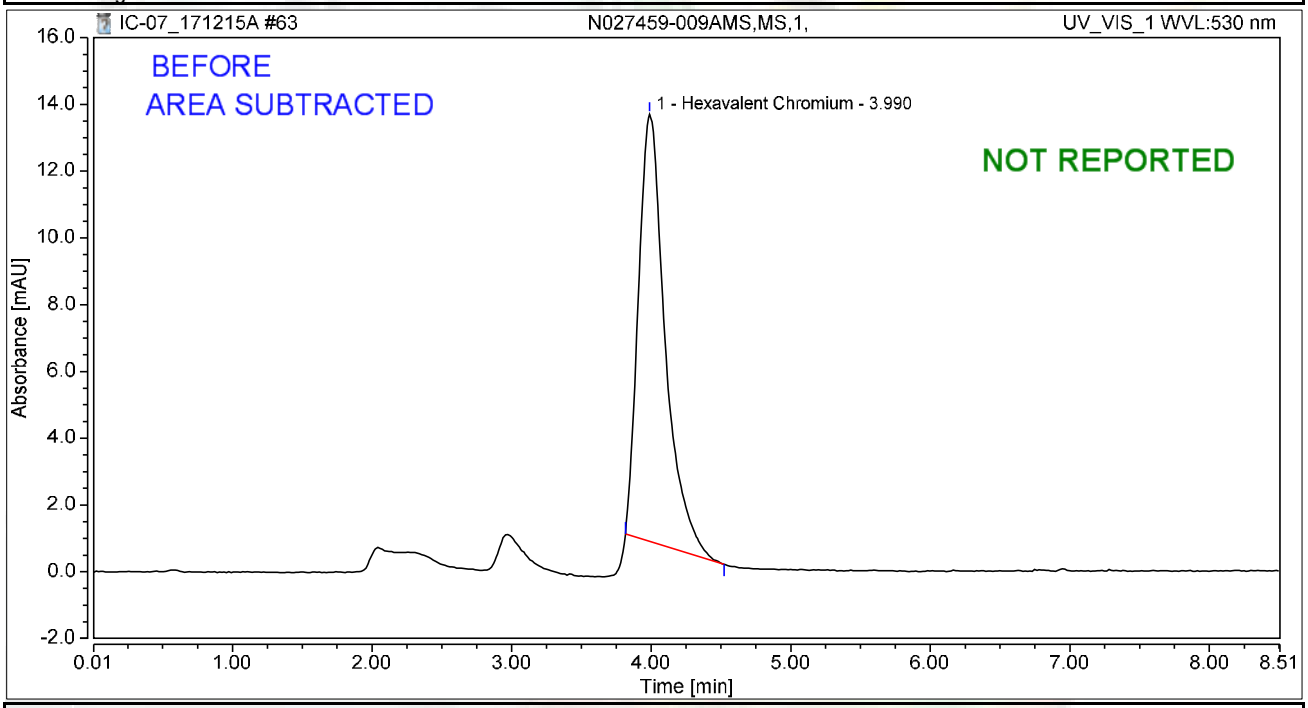
Chromatogram and Results

Injection Details

Injection Name:	**N027459-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 17:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.990	2.837	12.794	100.00	100.00	11.2976
Total:			**2.837**	**12.794**	**100.00**	**100.00**	

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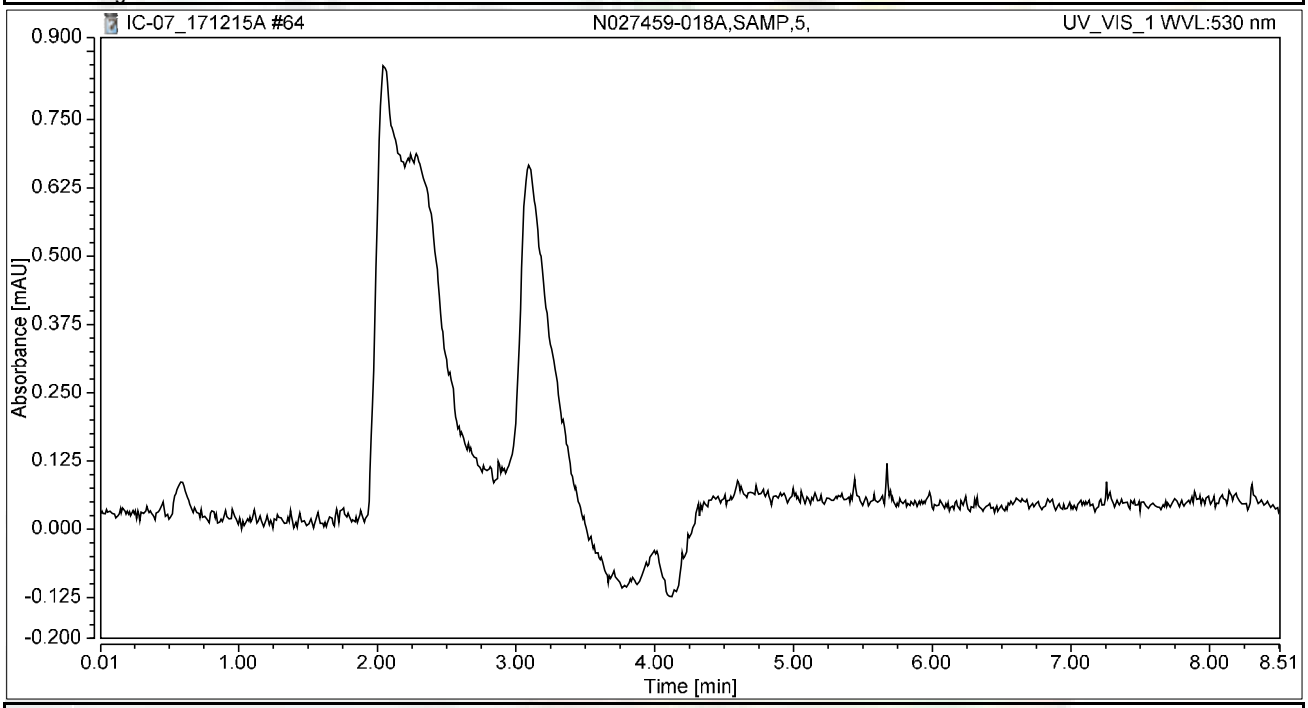
Chromatogram and Results

Injection Details

Injection Name:	**N027459-018A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 17:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

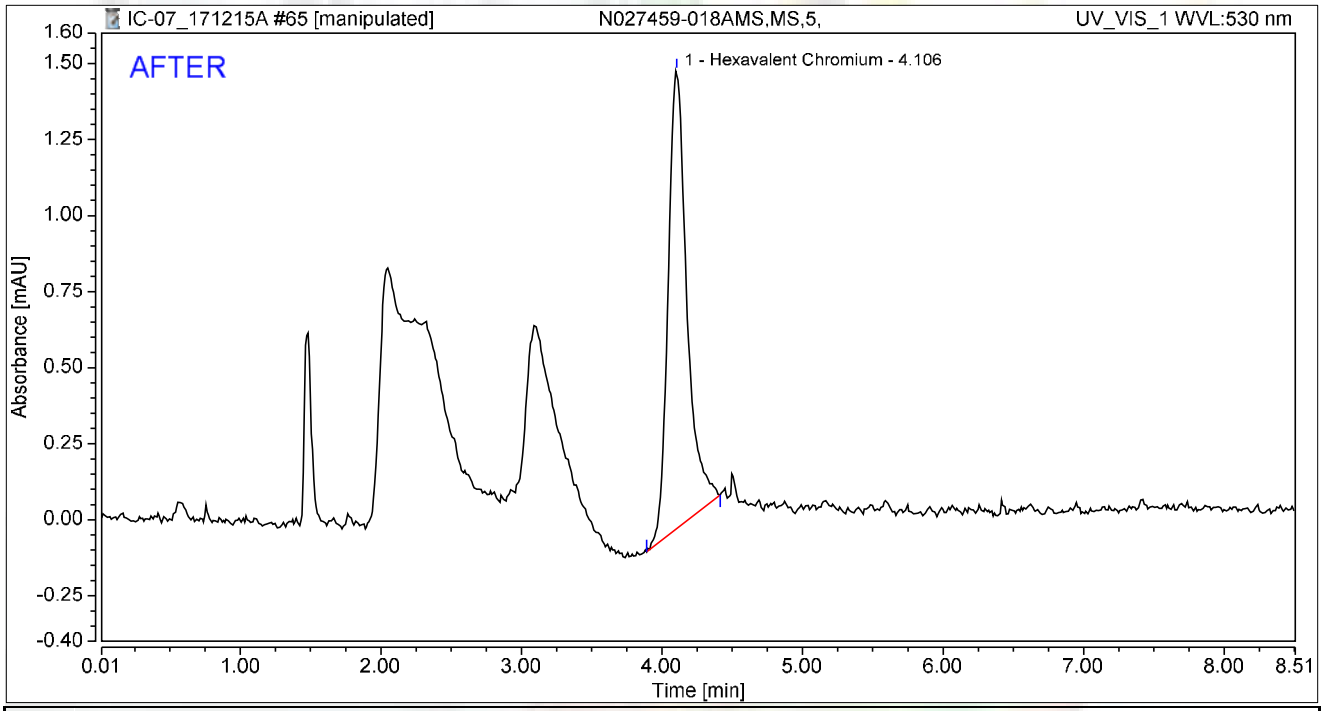
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-018AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 17:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.234	1.505	100.00	100.00	0.9307
Total:			**0.234**	**1.505**	**100.00**	**100.00**	

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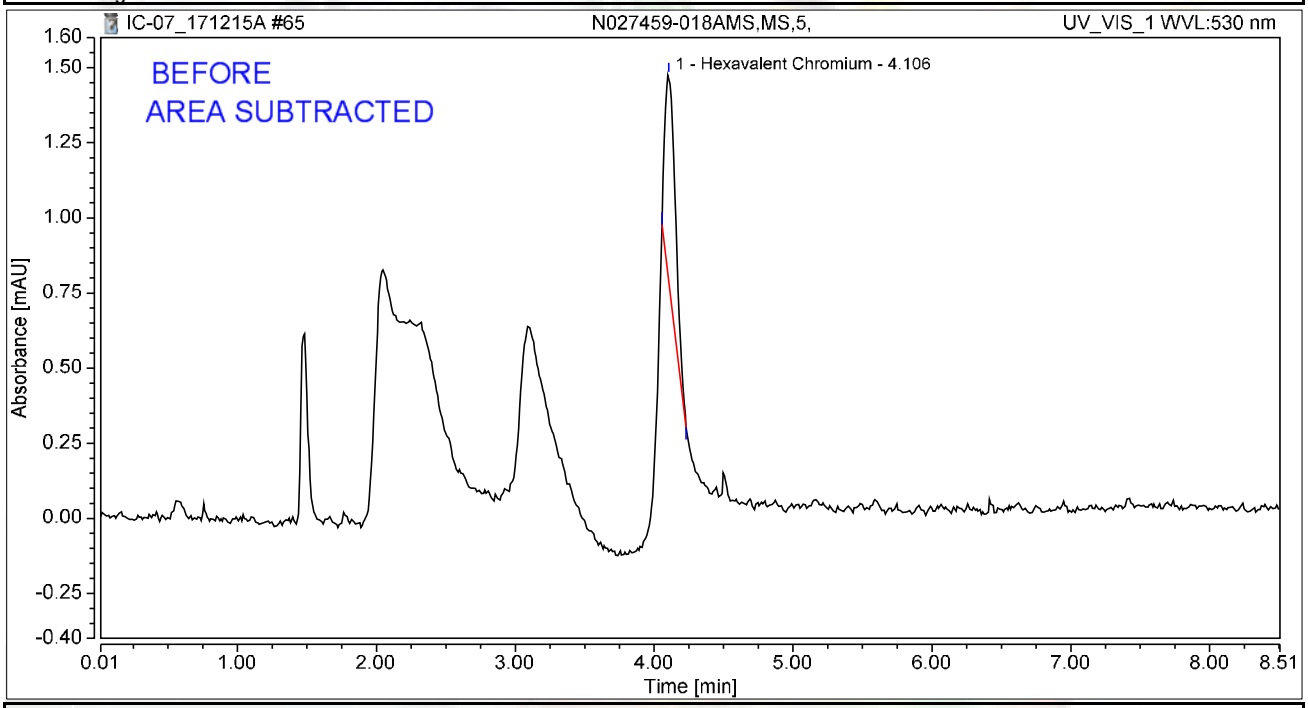
Chromatogram and Results

Injection Details

Injection Name:	**N027459-018AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 17:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.061	0.691	100.00	100.00	0.2437
Total:			**0.061**	**0.691**	**100.00**	**100.00**	

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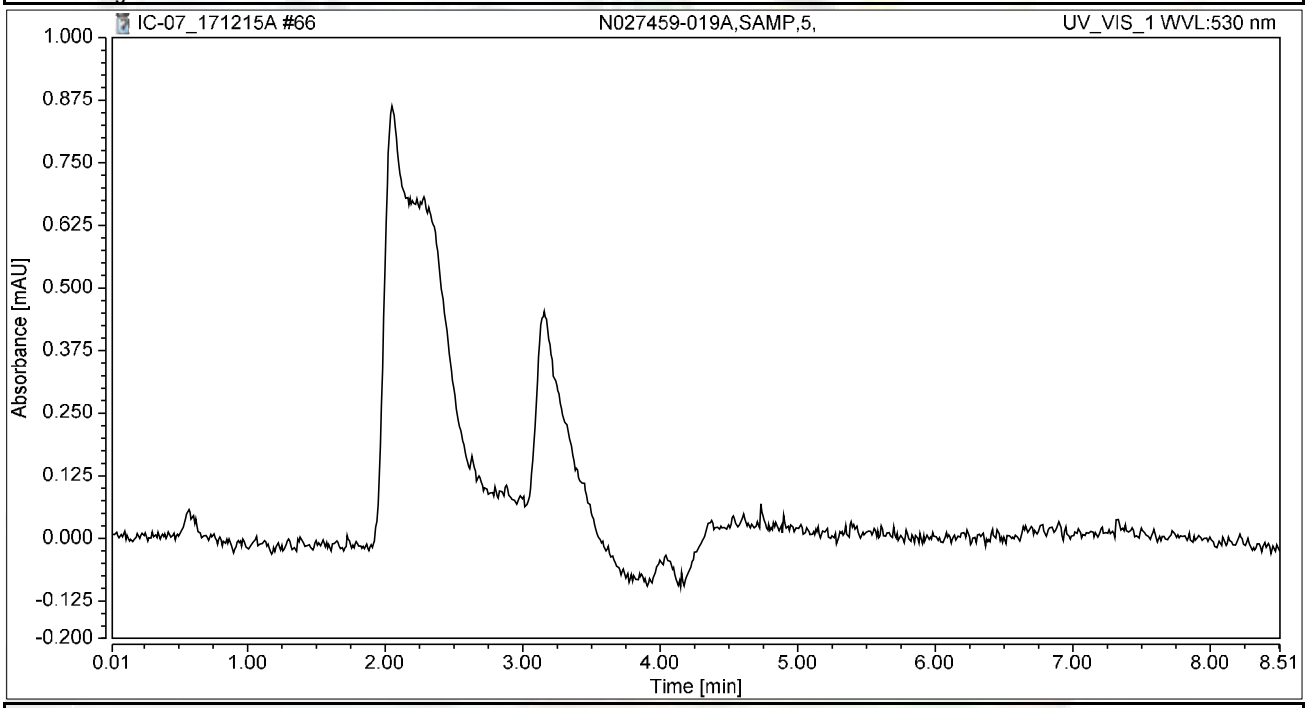
Chromatogram and Results

Injection Details

Injection Name:	**N027459-019A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 17:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

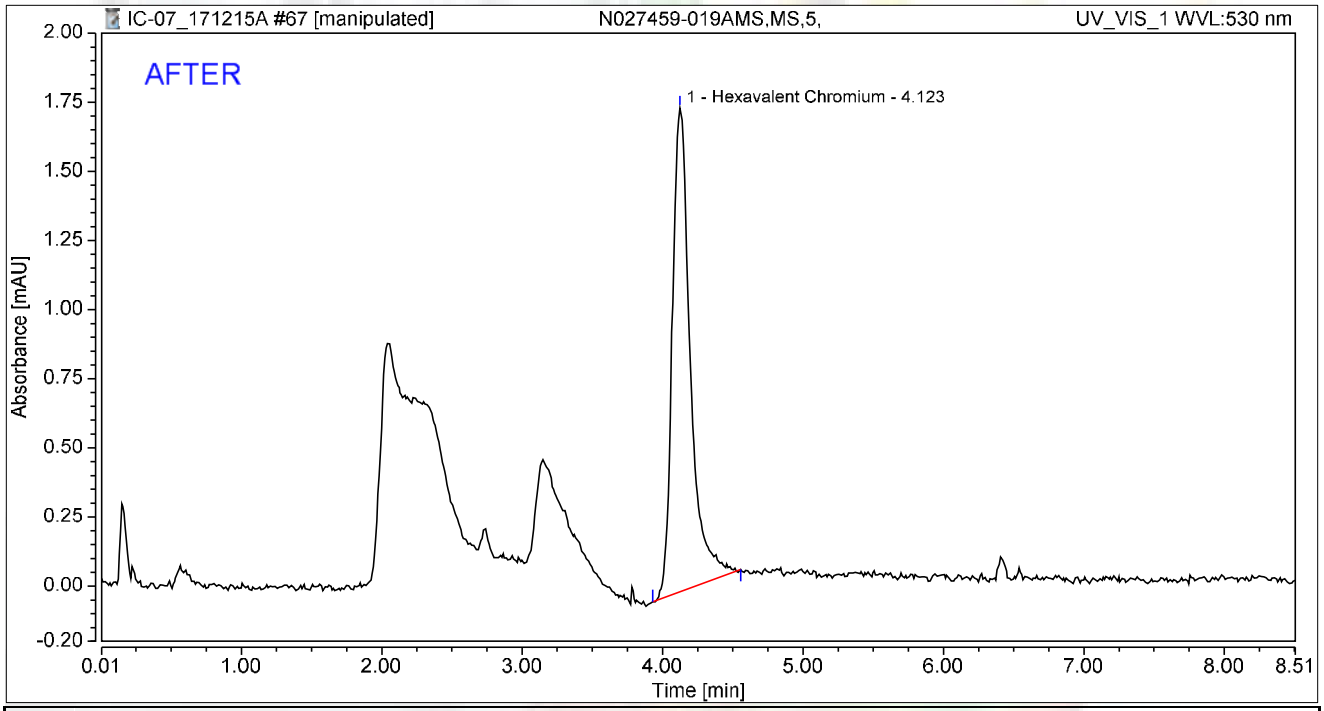
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-019AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 17:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.261	1.750	100.00	100.00	1.0386
Total:			**0.261**	**1.750**	**100.00**	**100.00**	

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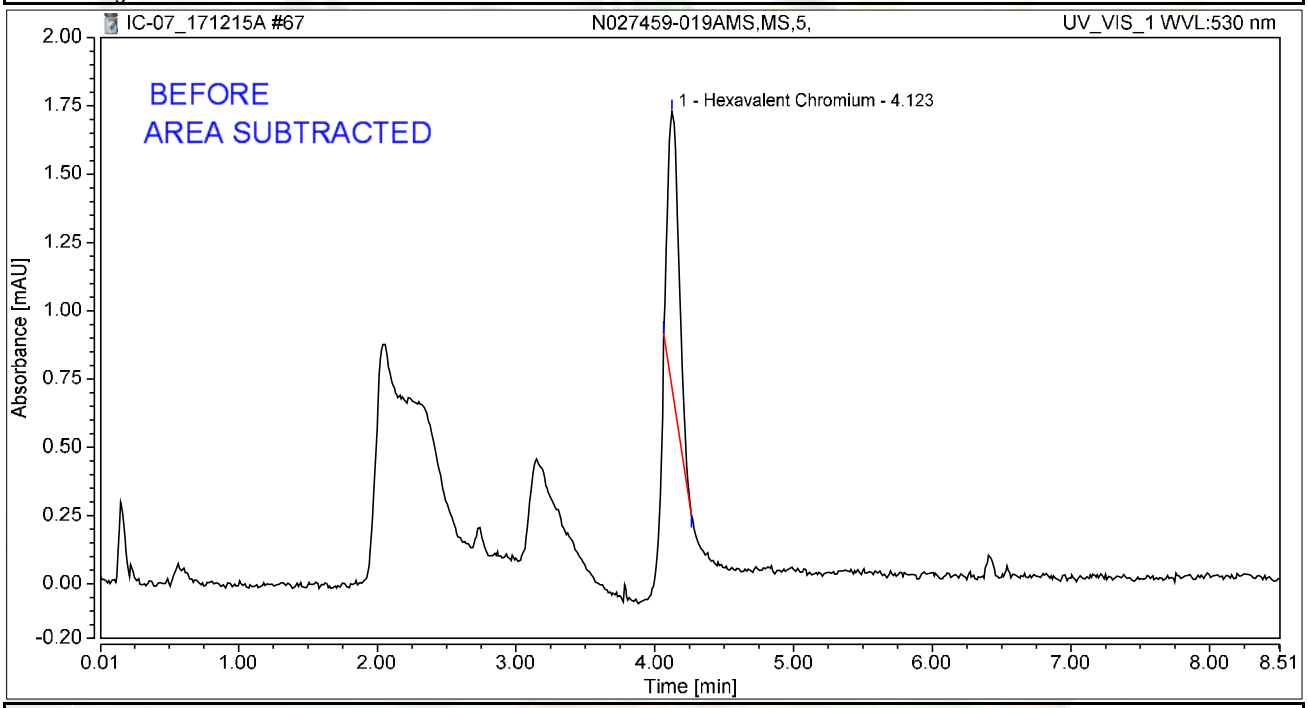
Chromatogram and Results

Injection Details

Injection Name:	**N027459-019AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 17:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.097	1.005	100.00	100.00	0.3878
Total:			**0.097**	**1.005**	**100.00**	**100.00**	

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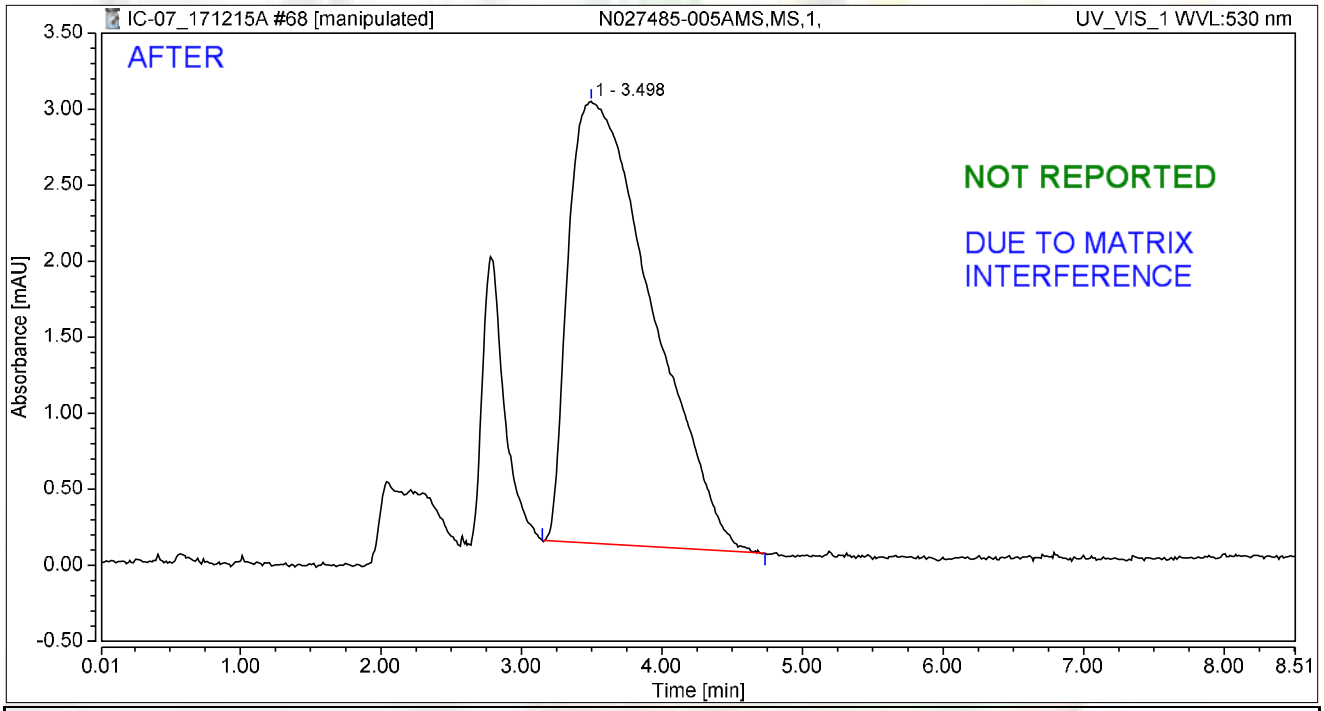
Chromatogram and Results

Injection Details

Injection Name:	**N027485-005AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 17:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.498	2.002	2.906	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**2.002**	**2.906**	**100.00**	**100.00**	

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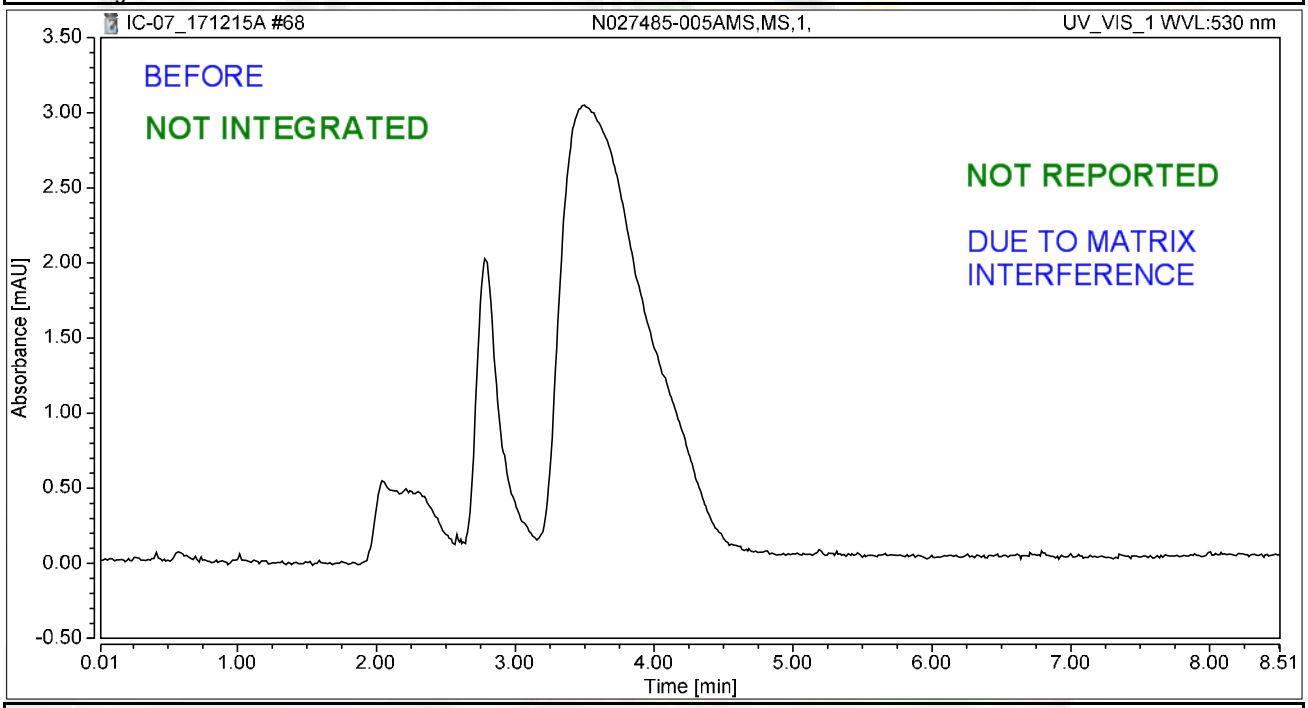
Chromatogram and Results

Injection Details

Injection Name:	**N027485-005AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 17:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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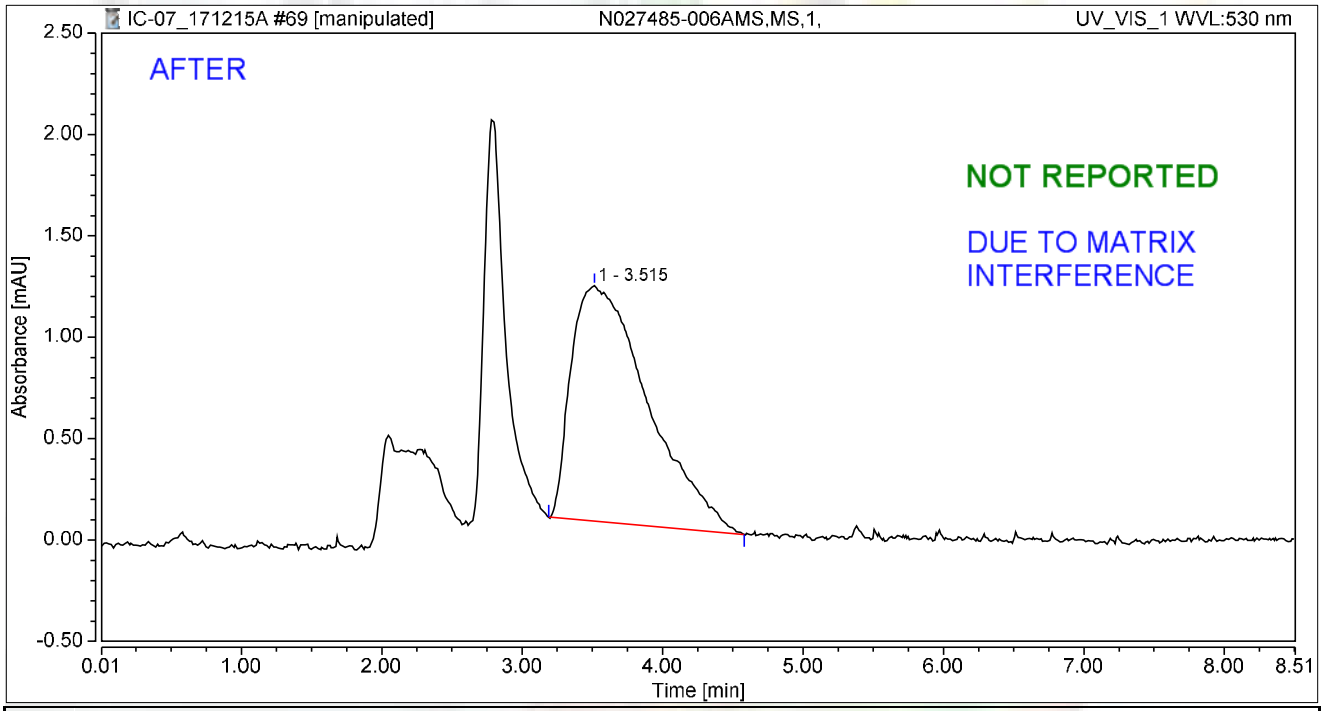
Chromatogram and Results

Injection Details

Injection Name:	**N027485-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 17:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.515	0.738	1.160	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.738**	**1.160**	**100.00**	**100.00**	

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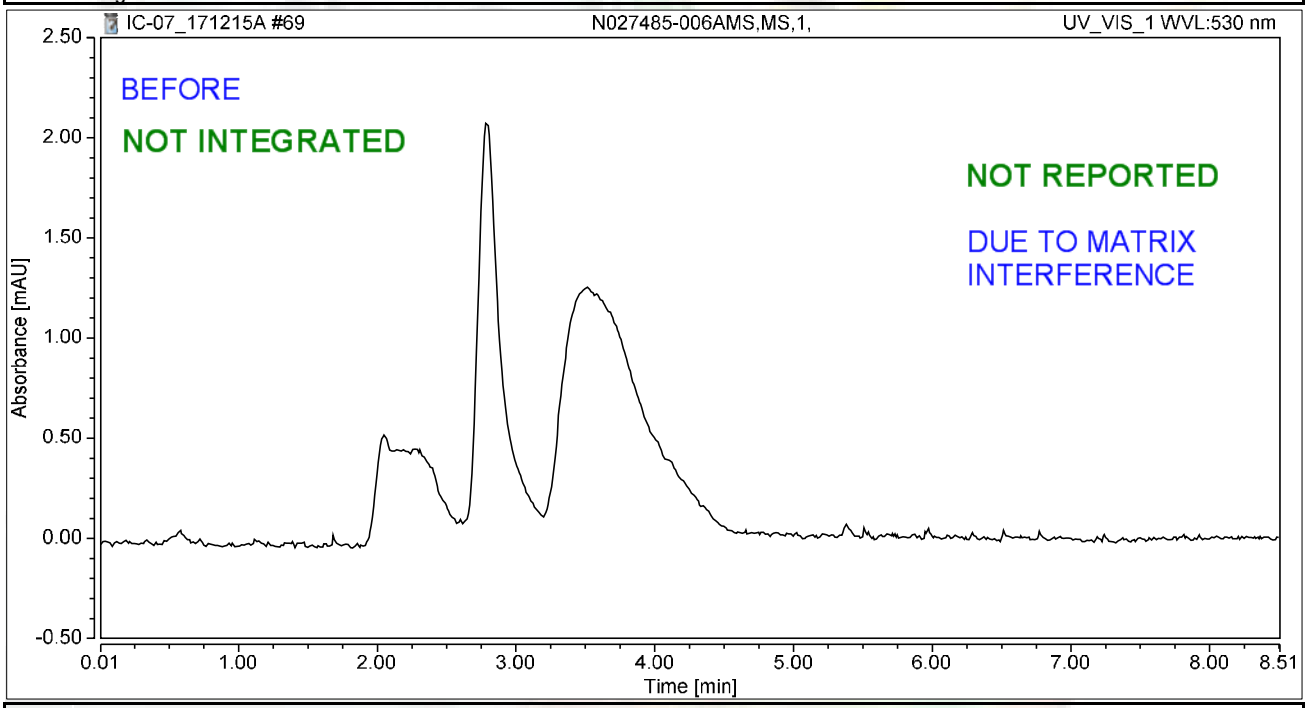
Chromatogram and Results

Injection Details

Injection Name:	**N027485-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 17:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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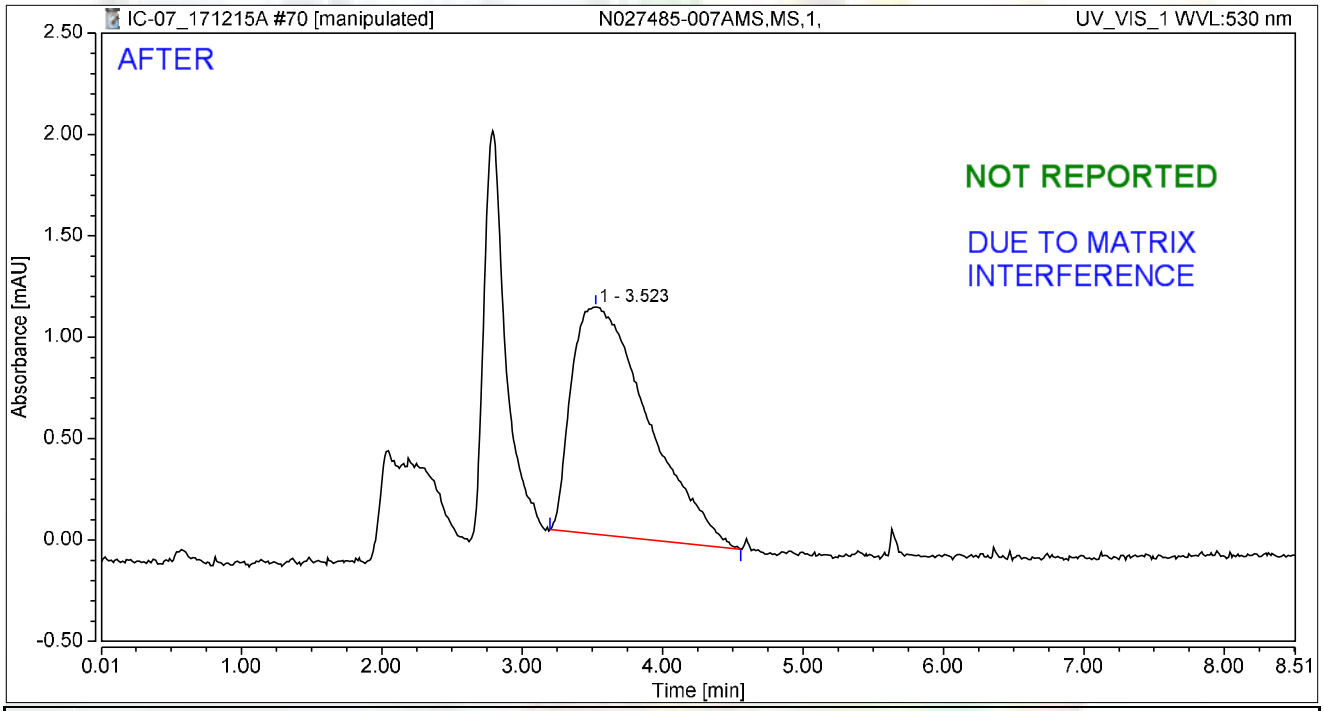
Chromatogram and Results

Injection Details

Injection Name:	**N027485-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 18:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.523	0.713	1.120	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.713**	**1.120**	**100.00**	**100.00**	

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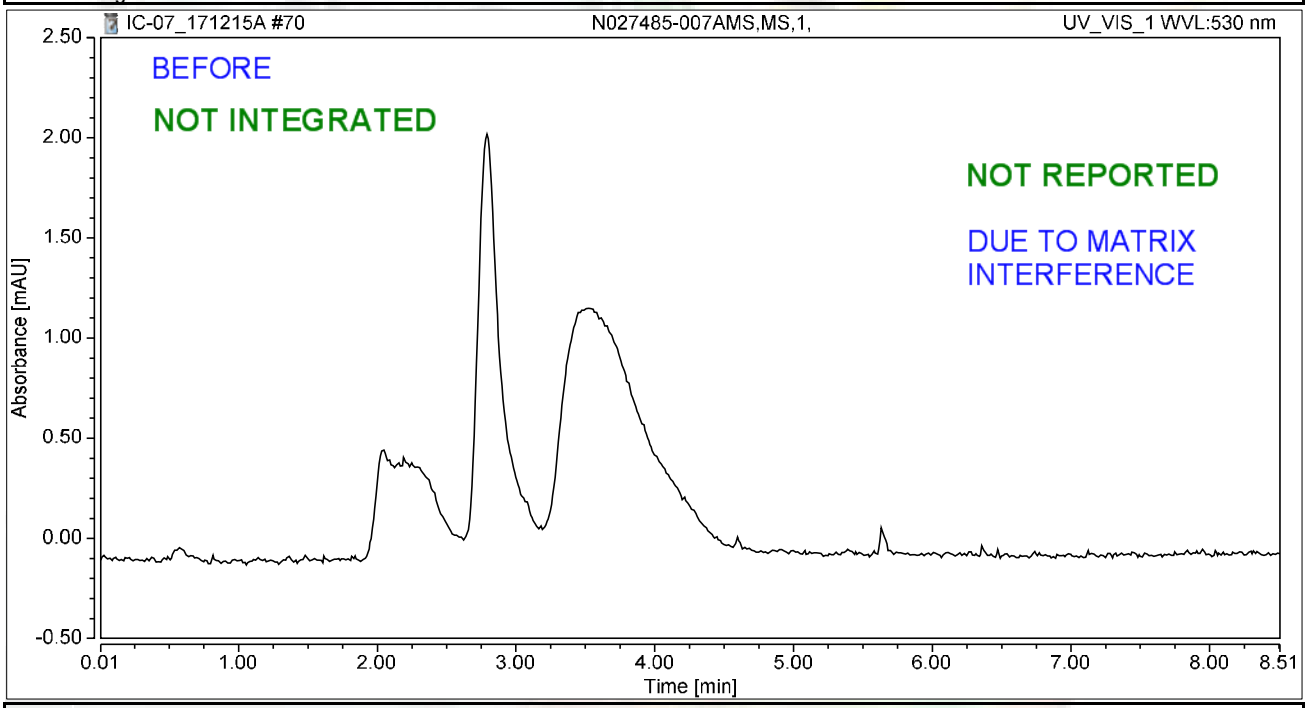
Chromatogram and Results

Injection Details

Injection Name:	**N027485-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 18:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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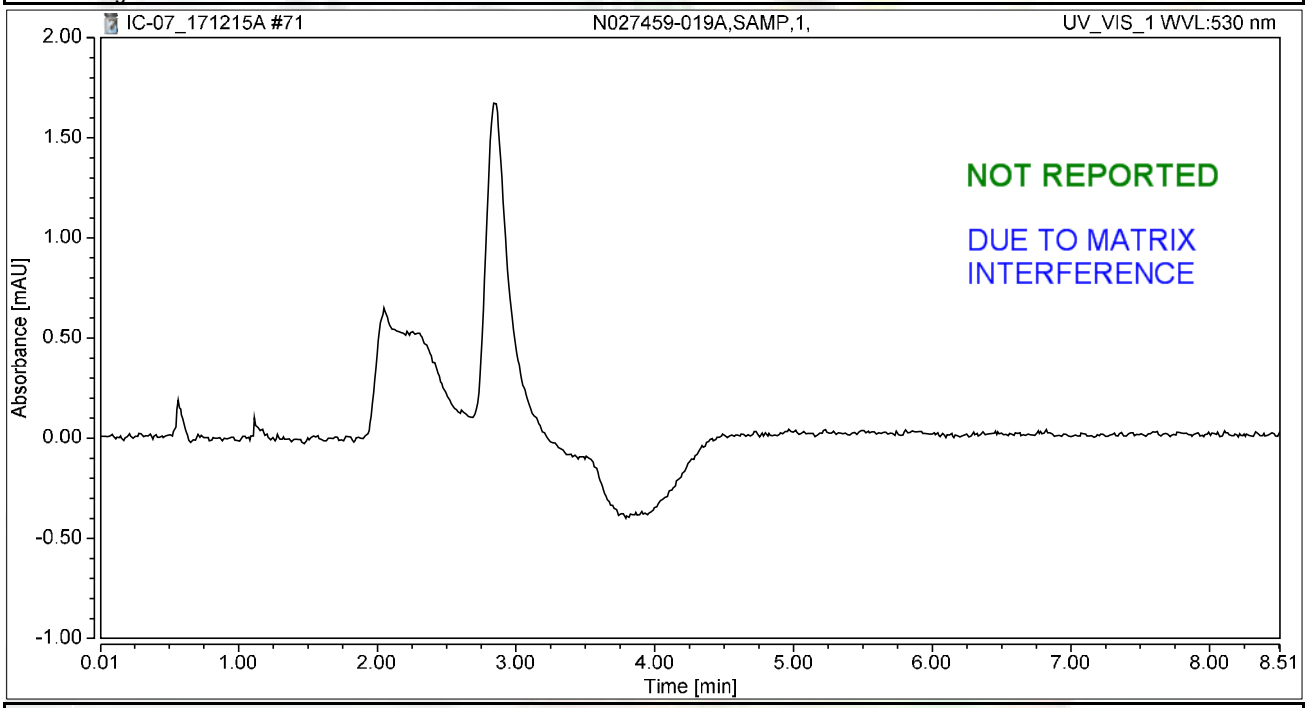
Chromatogram and Results

Injection Details

Injection Name:	**N027459-019A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 18:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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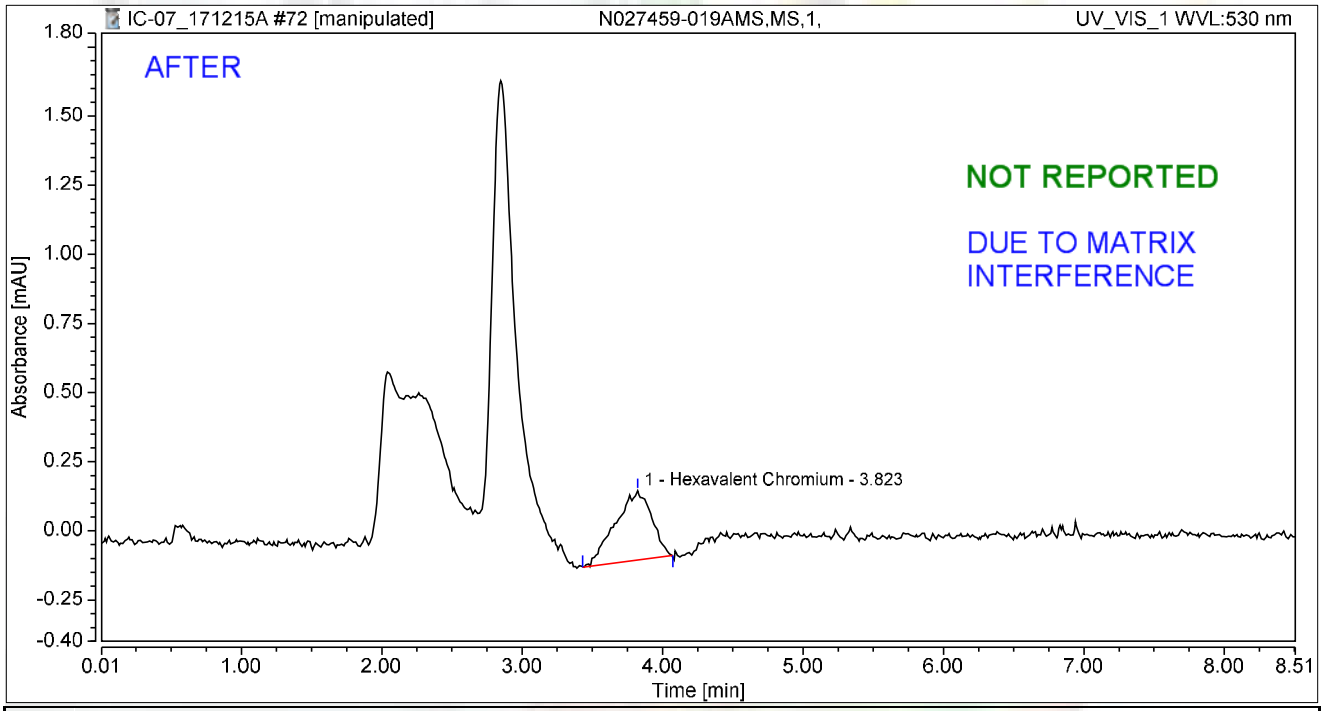
Chromatogram and Results

Injection Details

Injection Name:	**N027459-019AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 18:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.823	0.075	0.250	100.00	100.00	0.2972
Total:			**0.075**	**0.250**	**100.00**	**100.00**	

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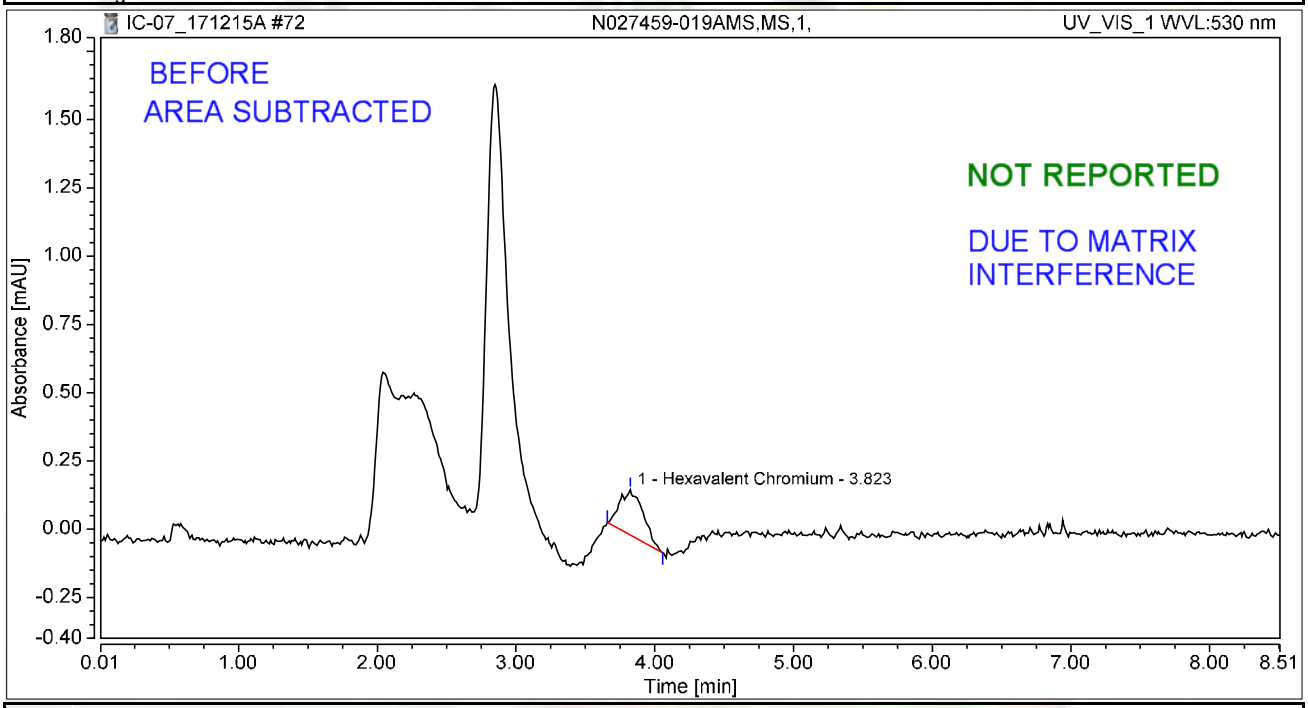
Chromatogram and Results

Injection Details

Injection Name:	**N027459-019AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 18:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.823	0.032	0.165	100.00	100.00	0.1293
Total:			**0.032**	**0.165**	**100.00**	**100.00**	

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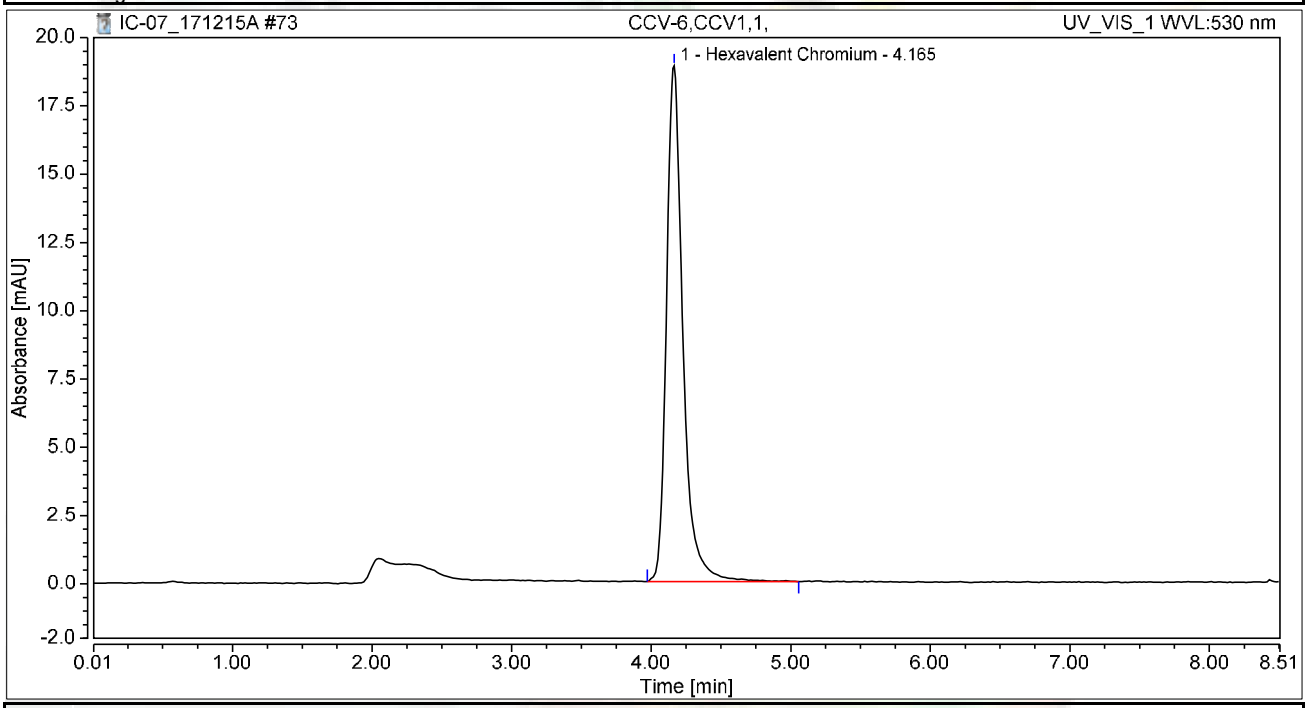
Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 18:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

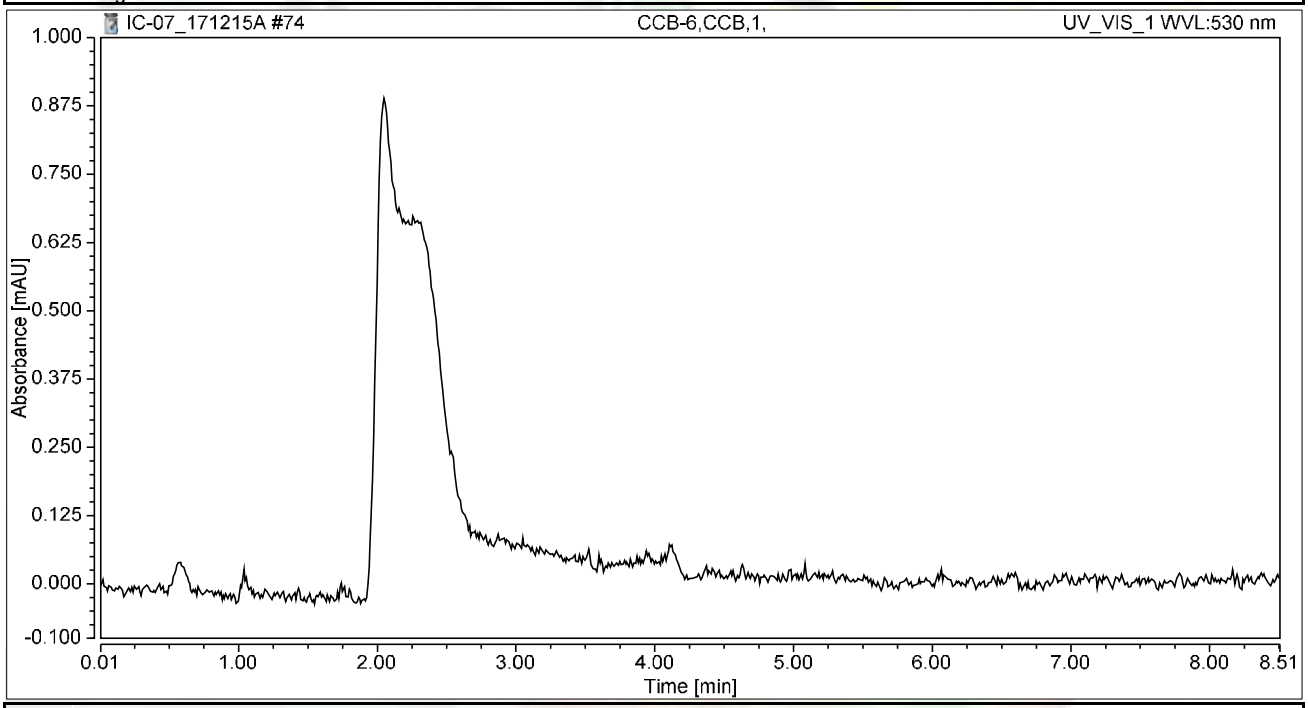
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.580	18.884	100.00	100.00	10.2748
Total:			**2.580**	**18.884**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 18:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

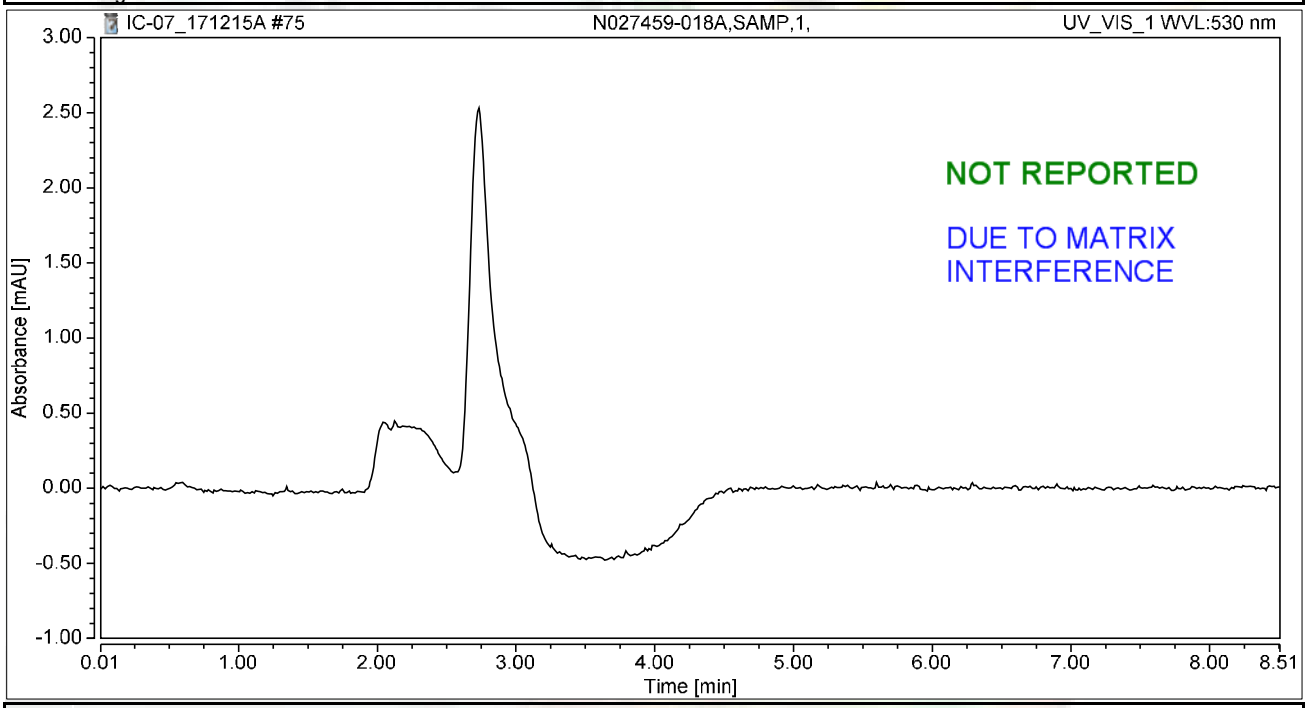
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027459-018A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 18:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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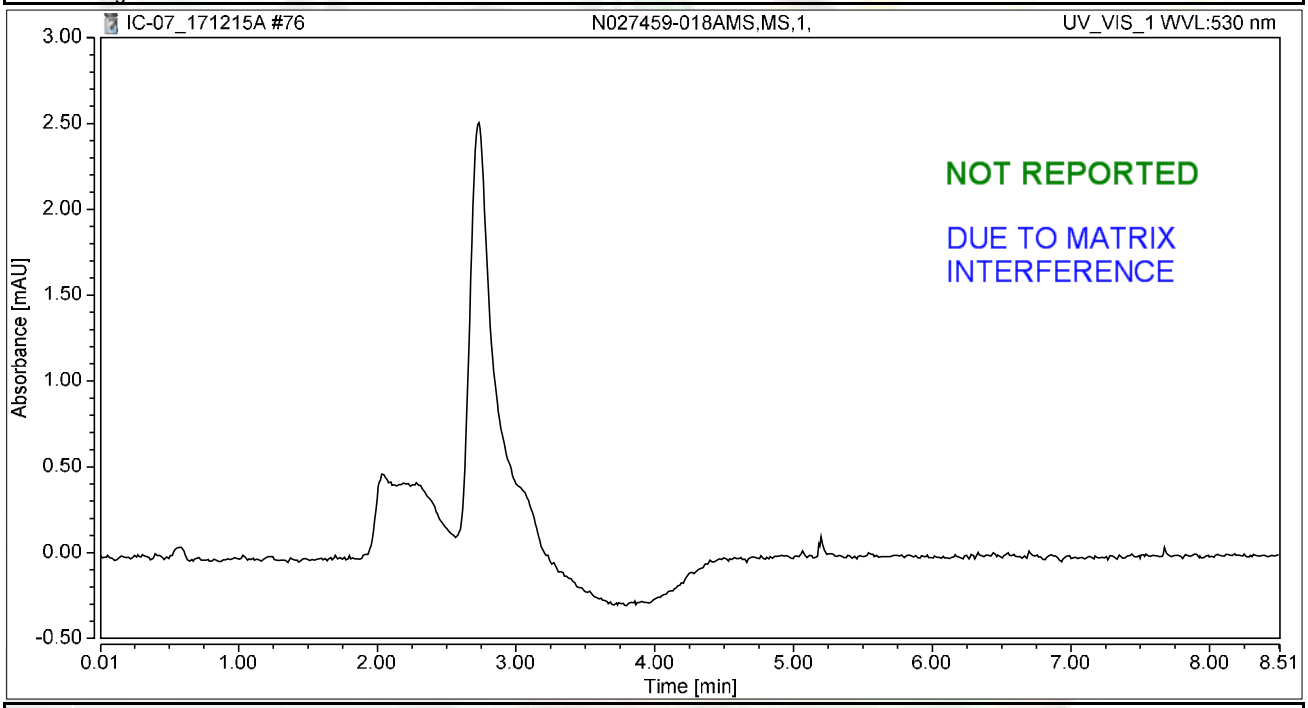
Chromatogram and Results

Injection Details

Injection Name:	**N027459-018AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 19:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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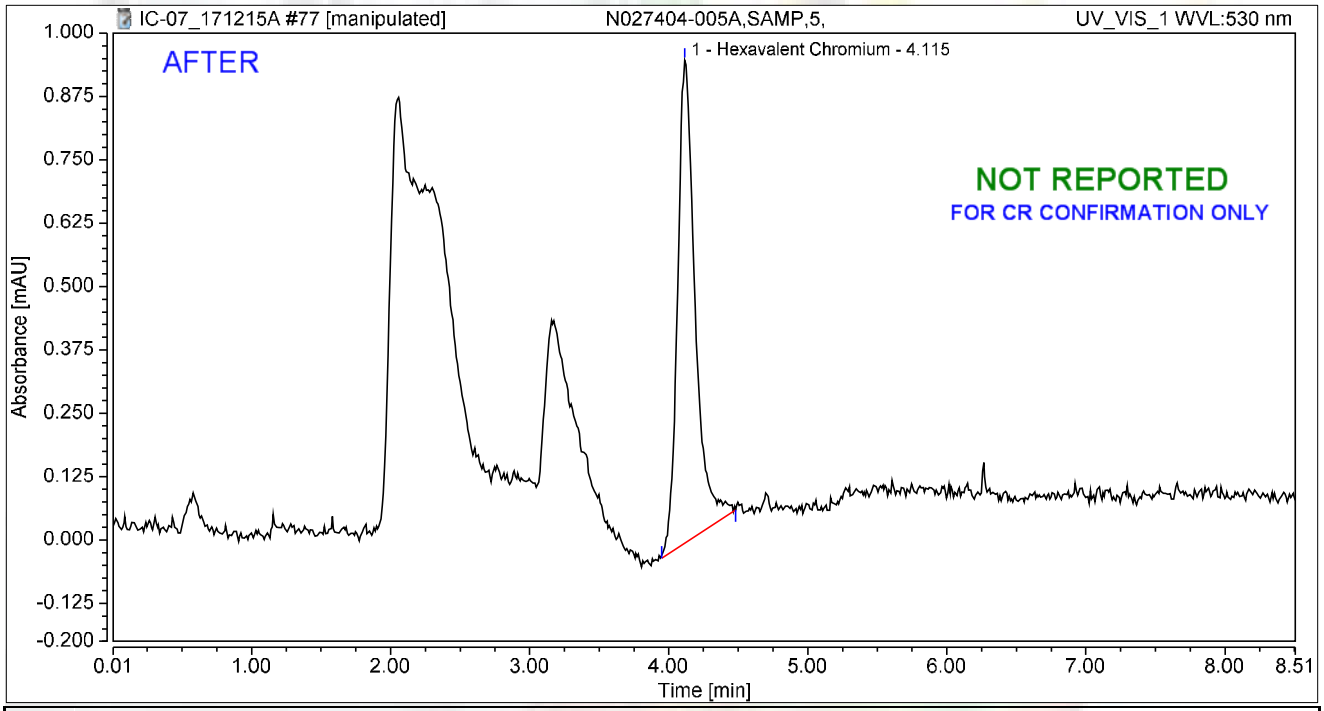
Chromatogram and Results

Injection Details

Injection Name:	**N027404-005A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 19:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.140	0.952	100.00	100.00	0.5558
Total:			**0.140**	**0.952**	**100.00**	**100.00**	

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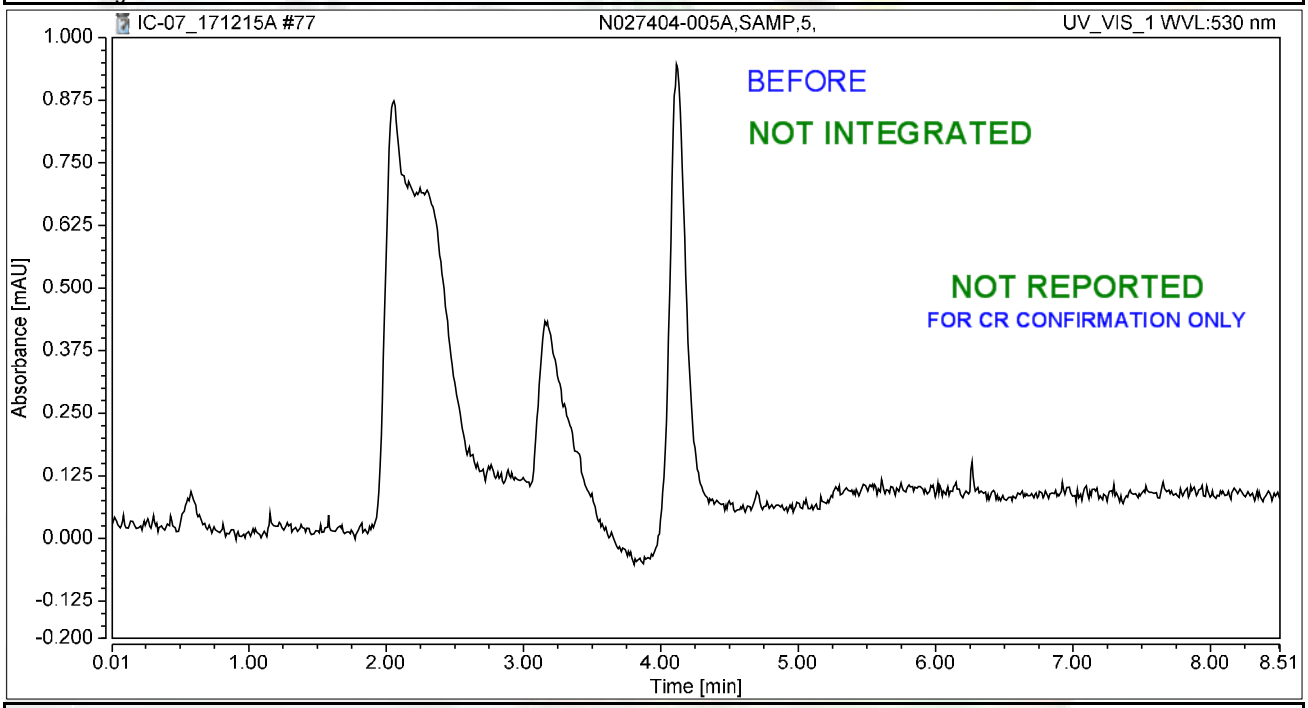
Chromatogram and Results

Injection Details

Injection Name:	**N027404-005A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 19:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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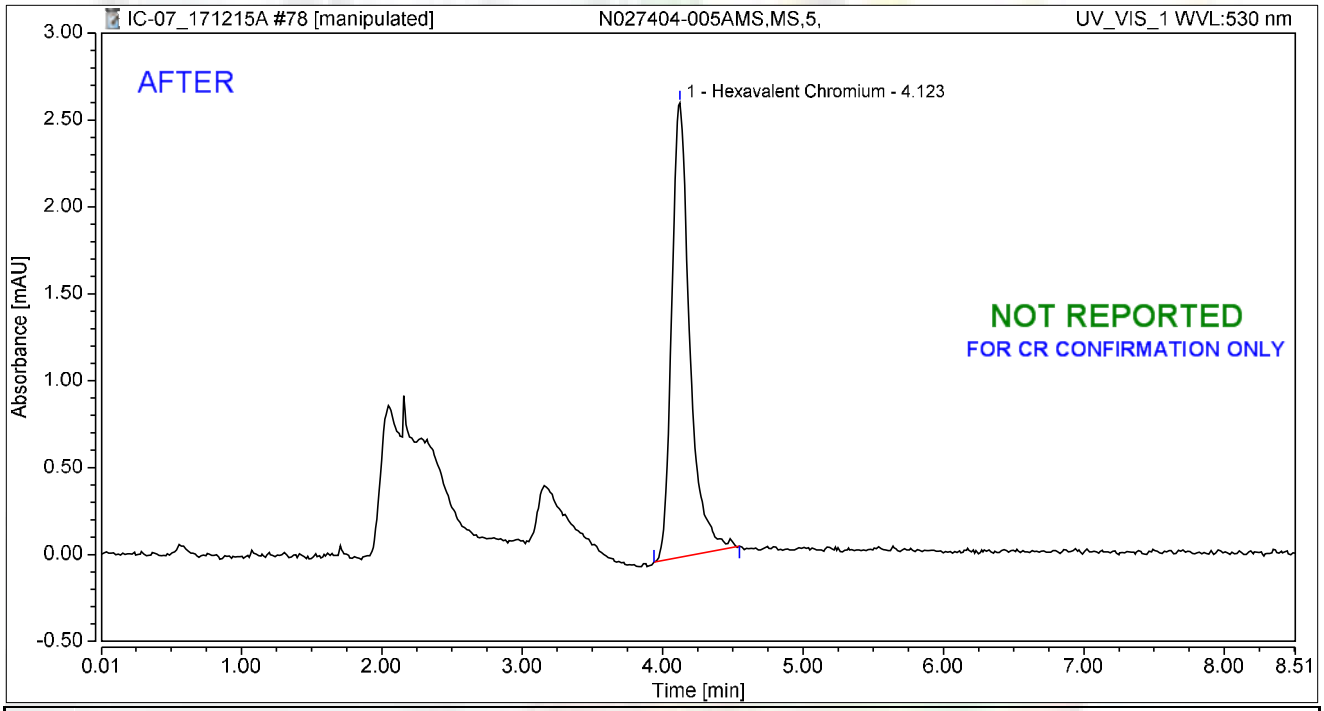
Chromatogram and Results

Injection Details

Injection Name:	**N027404-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 19:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.391	2.614	100.00	100.00	1.5570
Total:			**0.391**	**2.614**	**100.00**	**100.00**	

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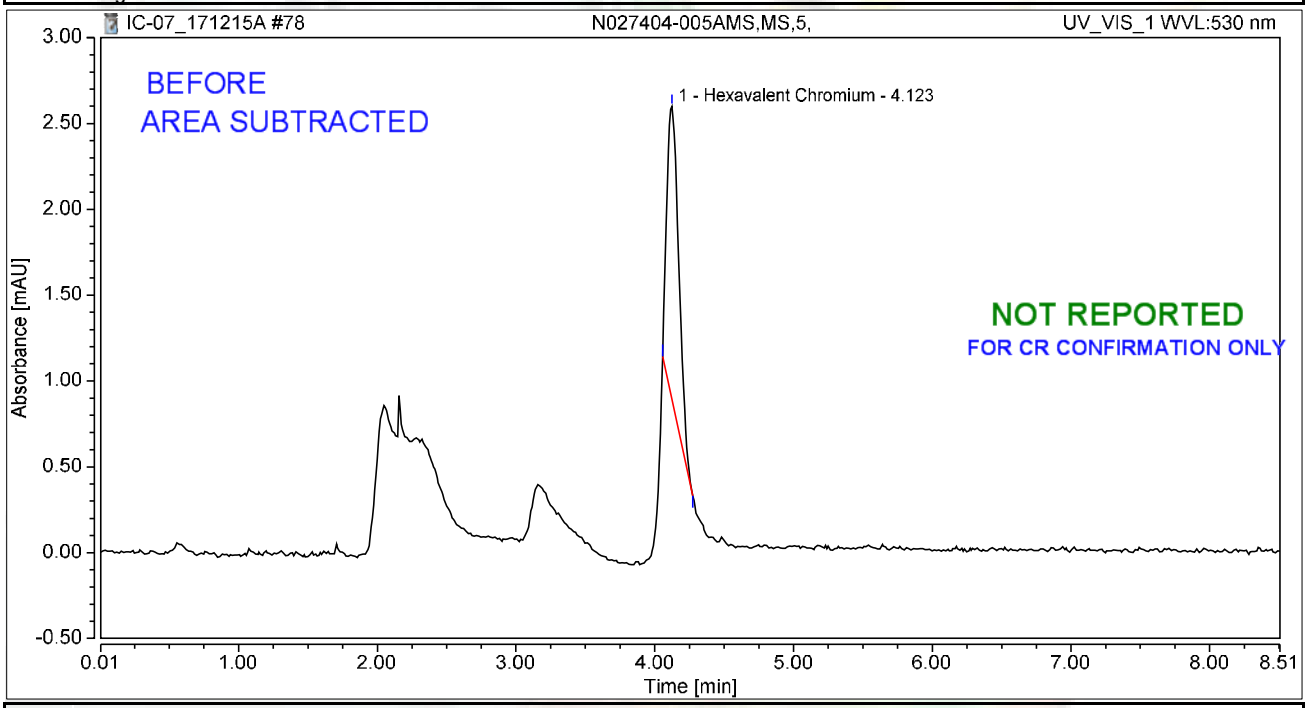
Chromatogram and Results

Injection Details

Injection Name:	**N027404-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 19:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.171	1.704	100.00	100.00	0.6824
Total:			**0.171**	**1.704**	**100.00**	**100.00**	

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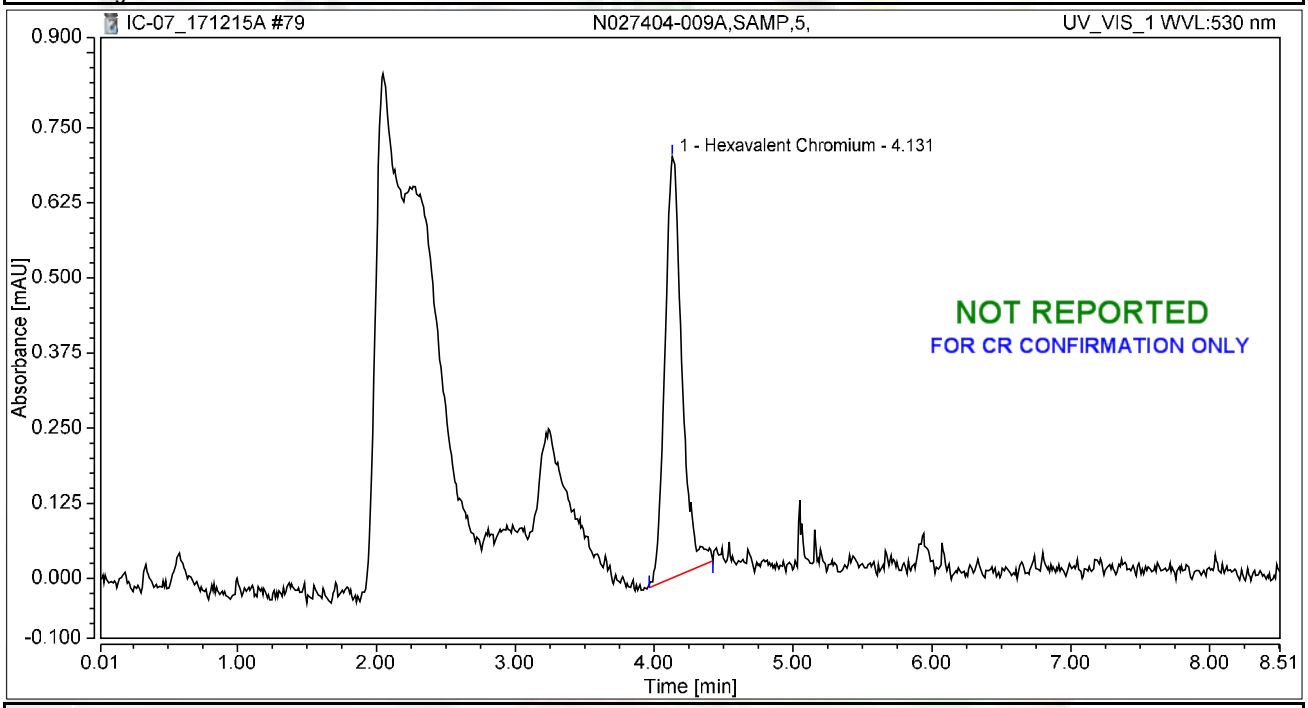
Chromatogram and Results

Injection Details

Injection Name:	**N027404-009A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 19:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.099	0.701	100.00	100.00	0.3954
Total:			**0.099**	**0.701**	**100.00**	**100.00**	

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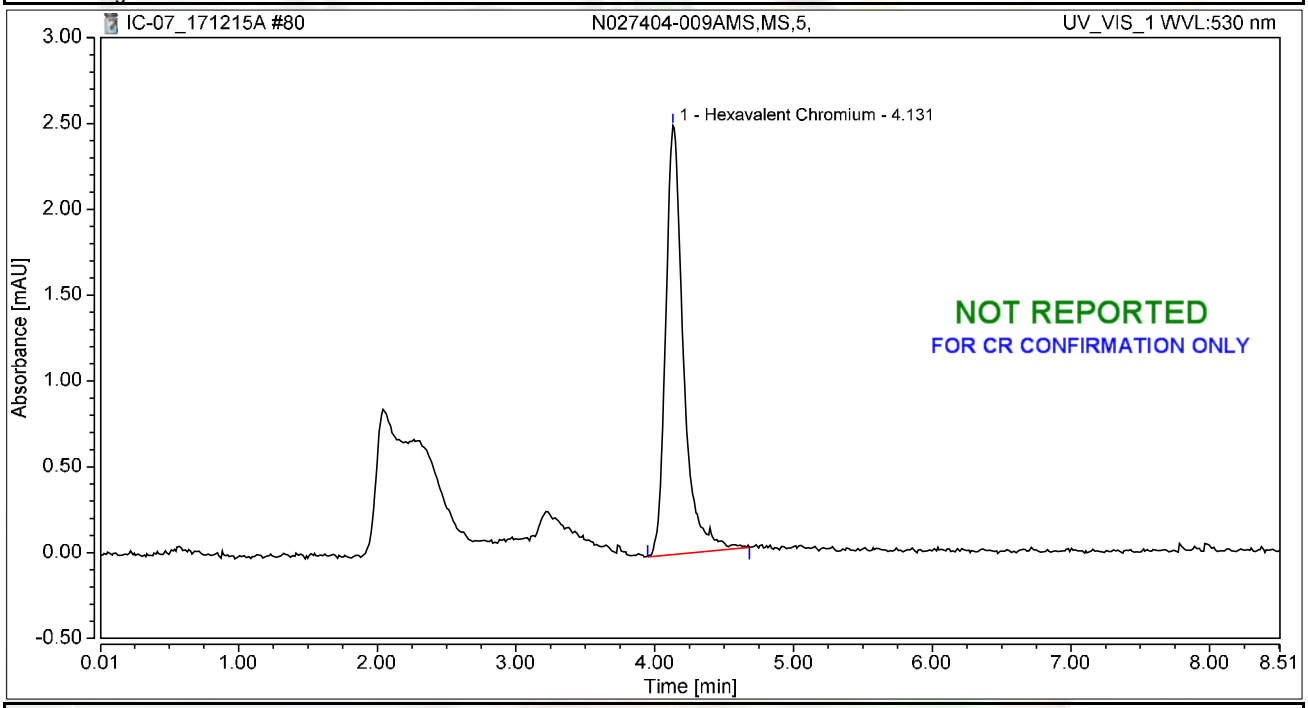
Chromatogram and Results

Injection Details

Injection Name:	**N027404-009AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 19:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.372	2.499	100.00	100.00	1.4826
Total:			**0.372**	**2.499**	**100.00**	**100.00**	

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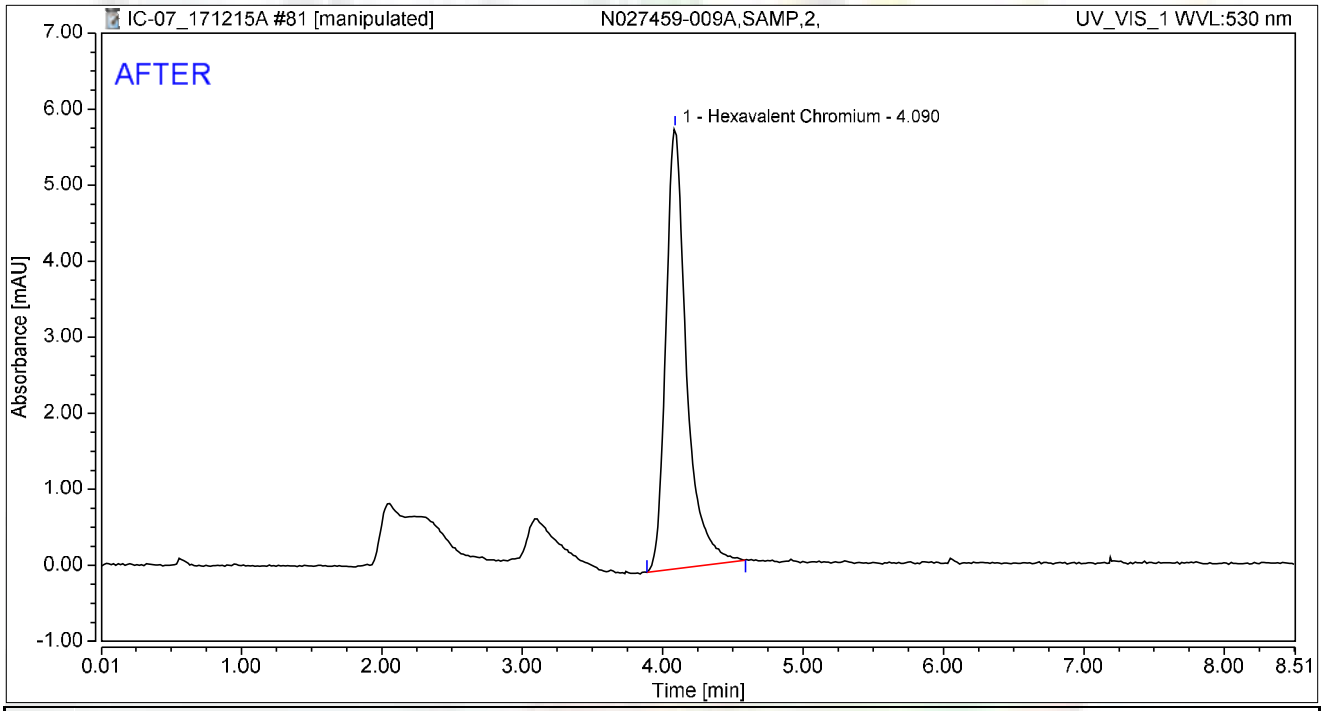
Chromatogram and Results

Injection Details

Injection Name:	**N027459-009A,SAMP,2,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 19:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.988	5.795	100.00	100.00	3.9364
Total:			**0.988**	**5.795**	**100.00**	**100.00**	

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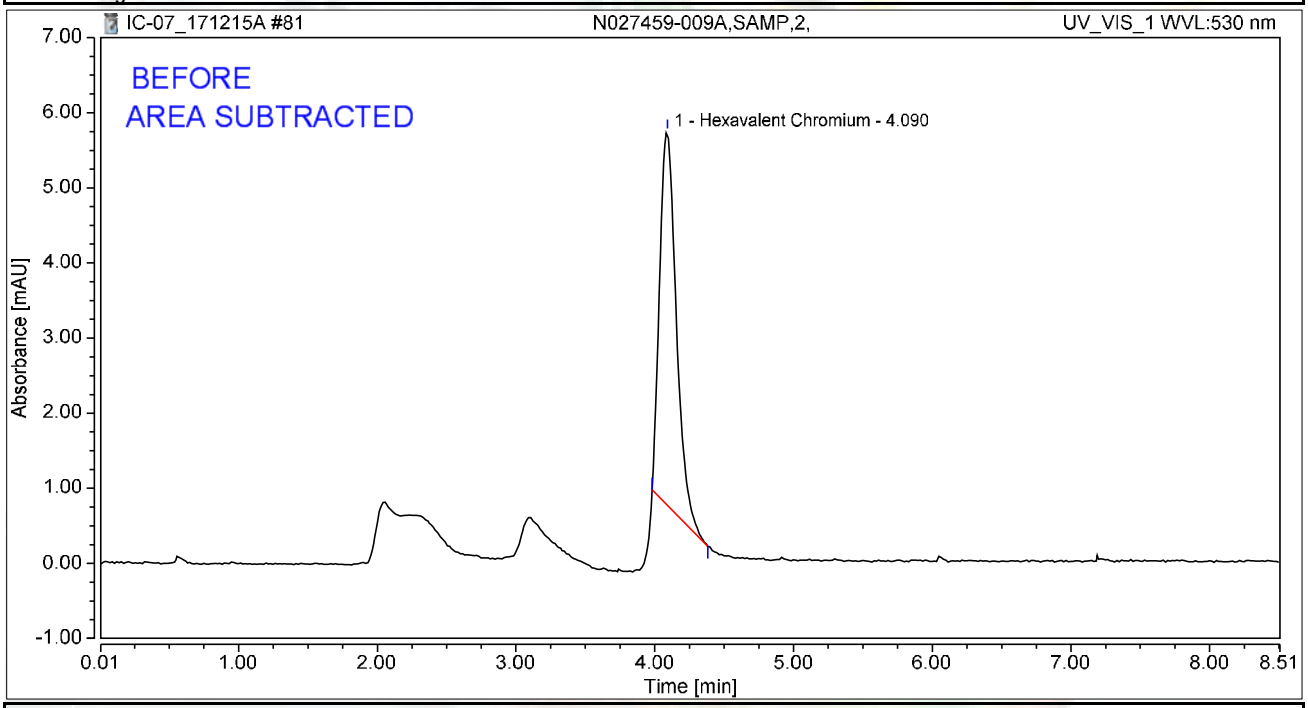
Chromatogram and Results

Injection Details

Injection Name:	**N027459-009A,SAMP,2,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 19:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.694	4.972	100.00	100.00	2.7649
Total:			**0.694**	**4.972**	**100.00**	**100.00**	

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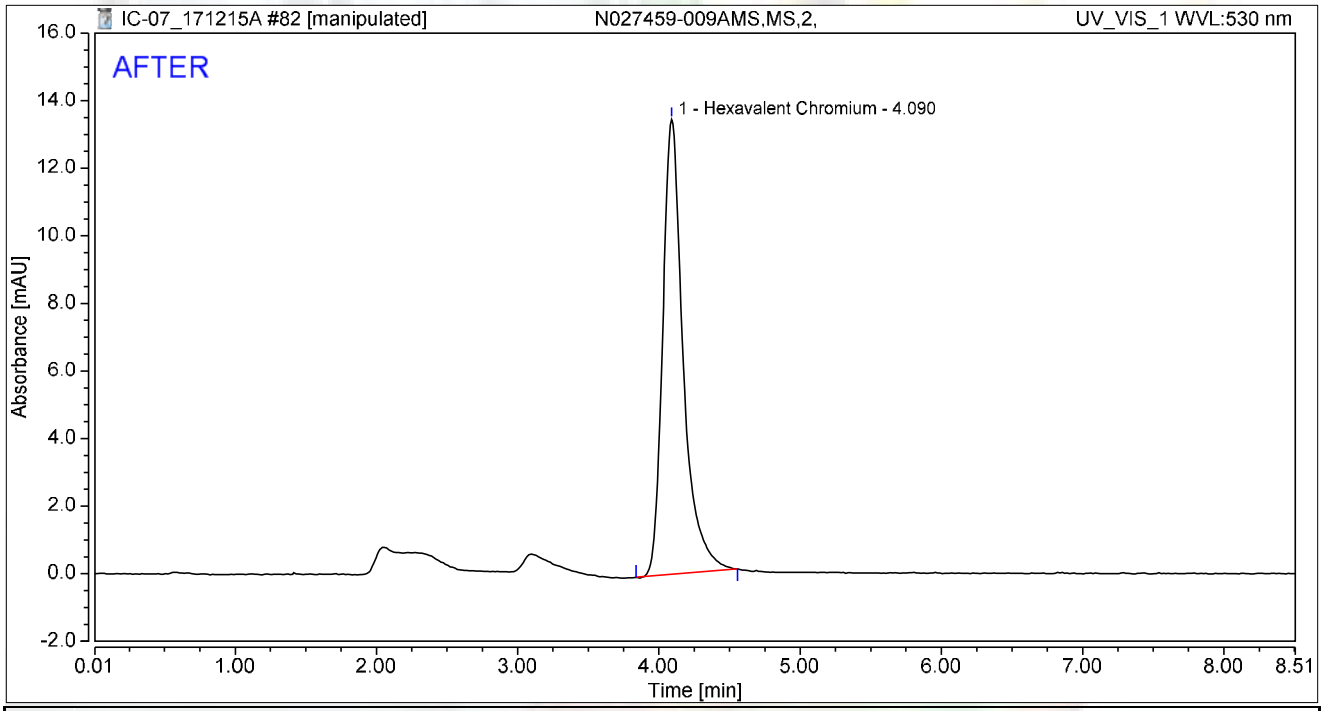
Chromatogram and Results

Injection Details

Injection Name:	**N027459-009AMS,MS,2,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 20:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	2.258	13.454	100.00	100.00	8.9934
Total:			**2.258**	**13.454**	**100.00**	**100.00**	

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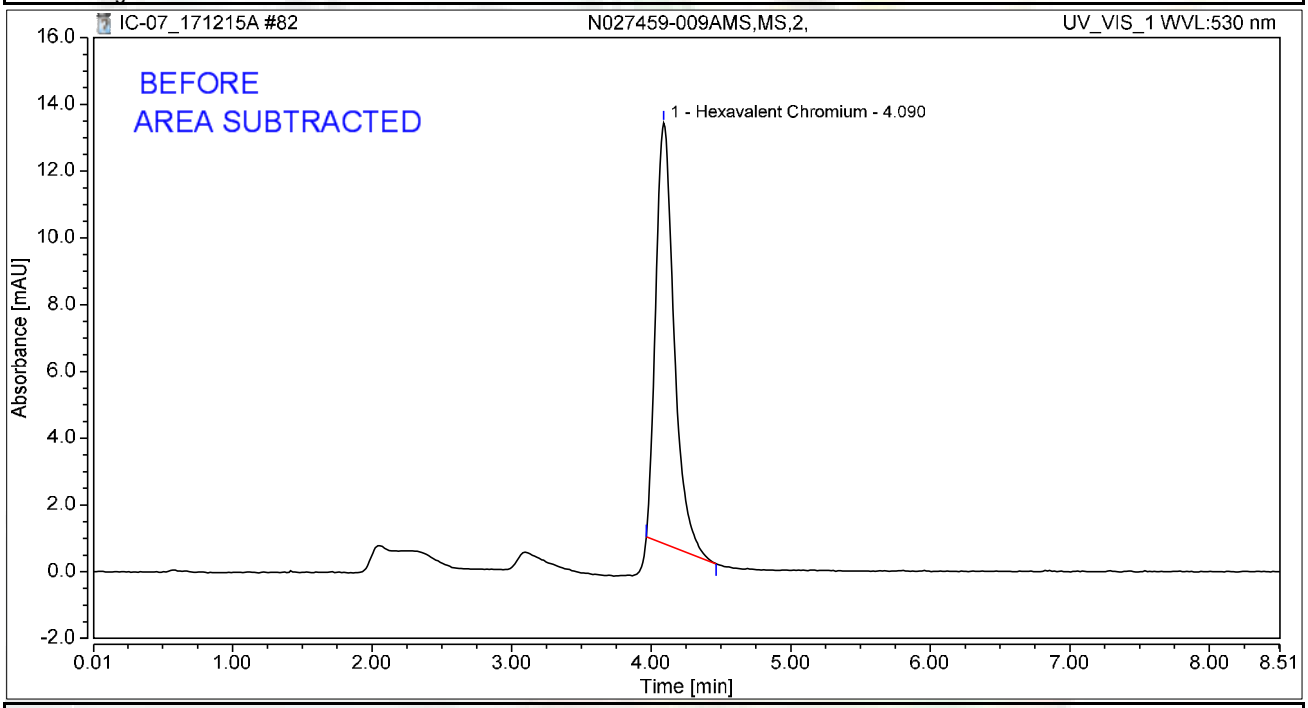
Chromatogram and Results

Injection Details

Injection Name:	**N027459-009AMS,MS,2,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 20:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	1.925	12.592	100.00	100.00	7.6658
Total:			**1.925**	**12.592**	**100.00**	**100.00**	

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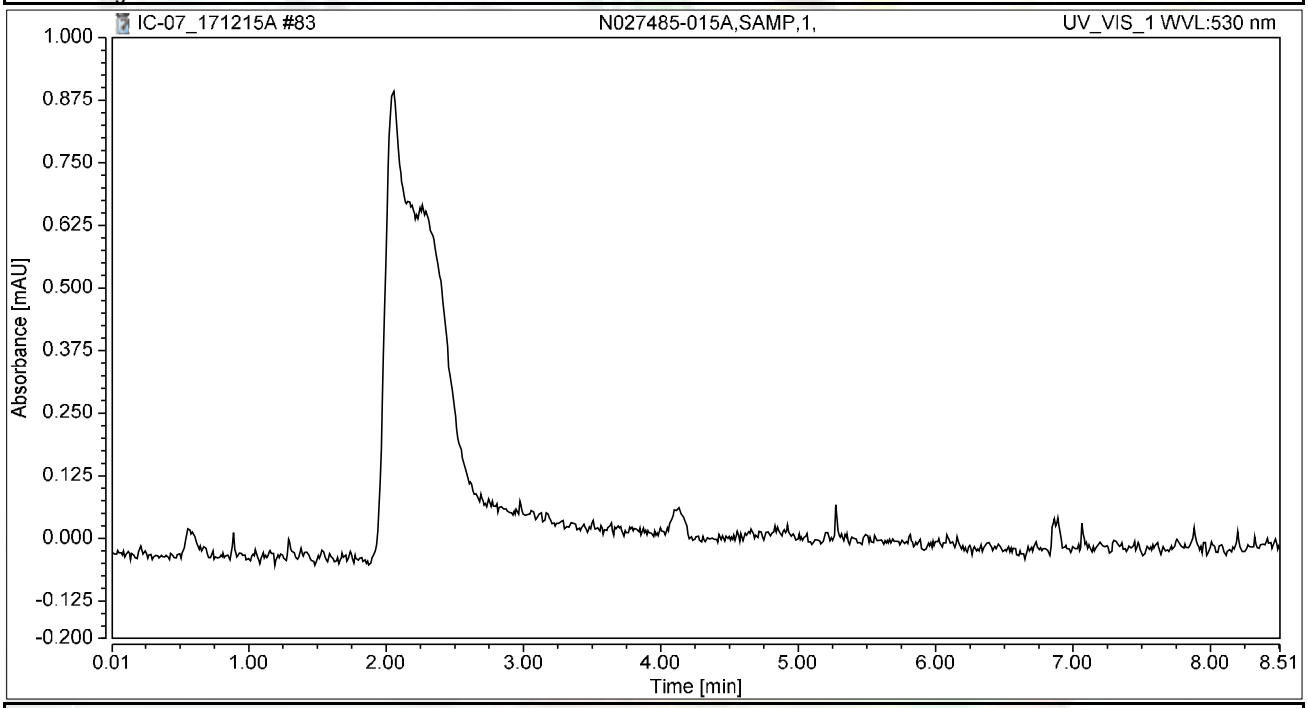
Chromatogram and Results

Injection Details

Injection Name:	**N027485-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 20:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

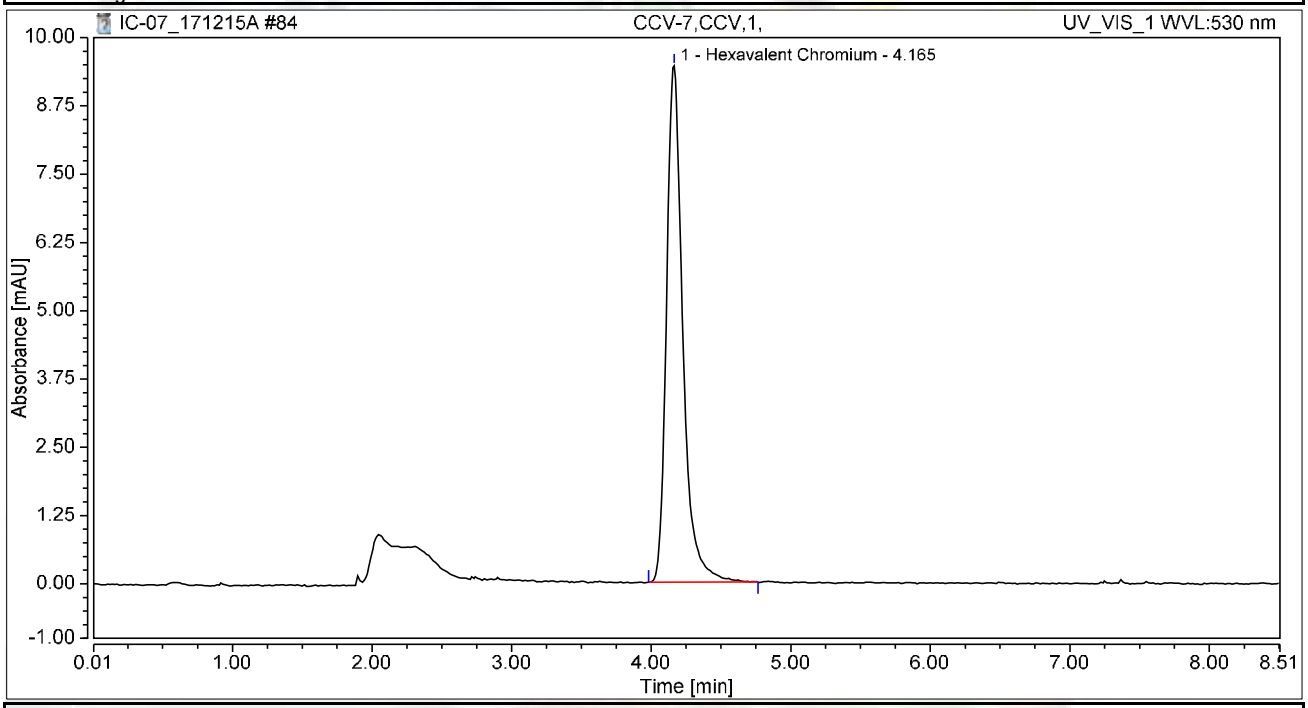
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 20:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

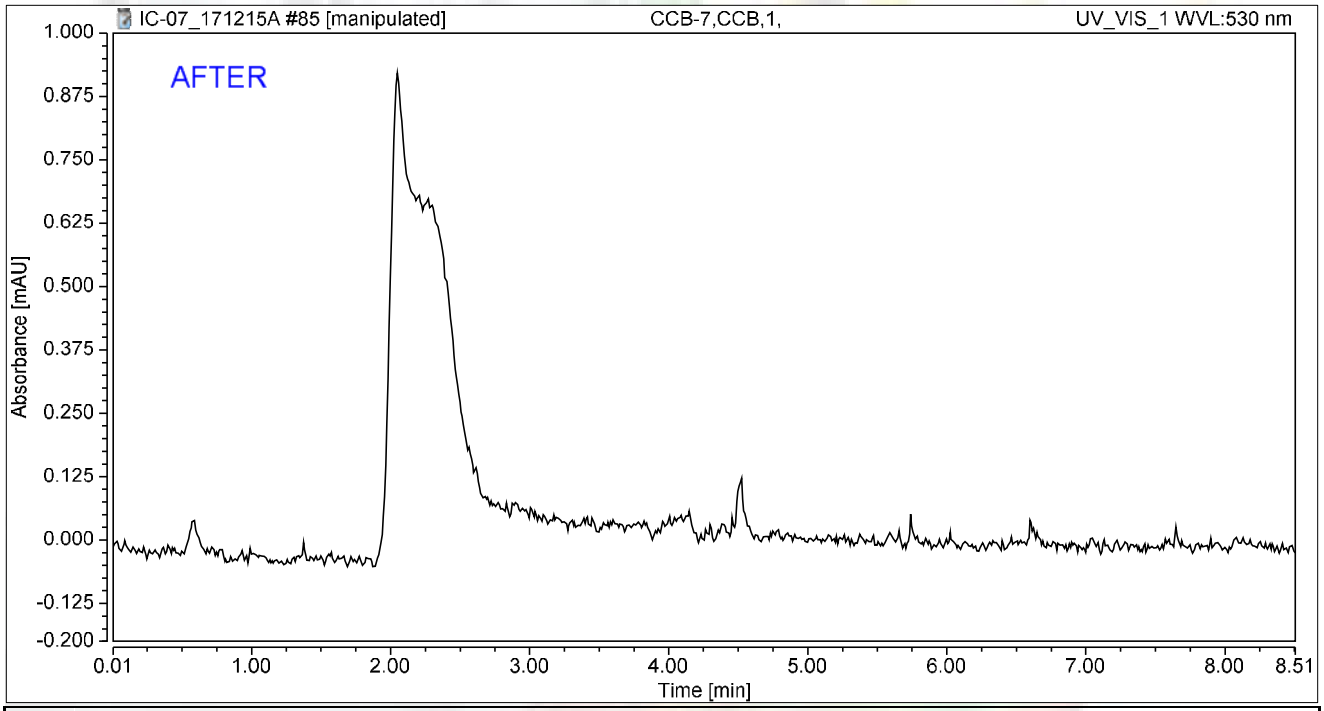
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.280	9.452	100.00	100.00	5.0989
Total:			**1.280**	**9.452**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 20:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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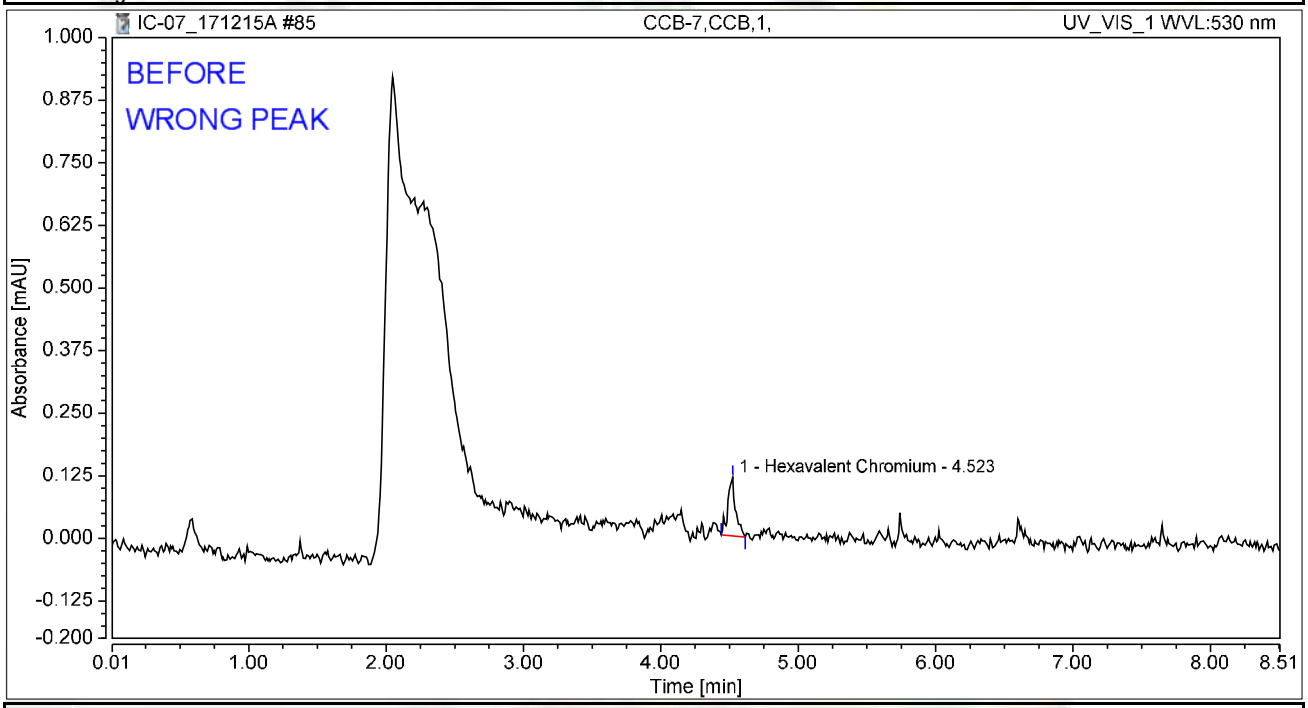
Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/Dec/17 20:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.523	0.008	0.117	100.00	100.00	0.0308
Total:			**0.008**	**0.117**	**100.00**	**100.00**	

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SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R 120856/R120882 **Analyst:** LSR

ASSET #: N027485 **Date Analyzed:** 12/14,12/15/17

Method: EPA 2320

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X			X		
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 12/26/2017

2nd Level Reviewer RLB 01/04/2018 Date:

SAMPLE CALCULATION

Sample ID: **N027485-001D @ pH 7.91**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (11.95 mL)

= **0.02092 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (4.20) (0.02092 N) (1) * 1000

= 87.8640 mg**/L**

Reporting results in two significant figures,

= **88 mg/L** as CaCO3

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C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02092 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (4.20 mL) (0.02092) (1) * 1000

= 87.8640 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 87.8640 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **88mg/L**

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LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.26	50	0.00	0.050	MBLK
LCS-1	8.55	50	0.05	4.85	LCS
N027459-003C	9.47	50	0.35	0.75	SAMP
N027459-004C	10.22	50	1.60	2.10	SAMP
N027459-005C	7.87	50	0.00	2.55	SAMP
N027459-006C	7.68	50	0.00	1.60	SAMP
N027459-007C	7.82	50	0.00	4.55	SAMP
N027459-008E	7.79	50	0.00	6.30	SAMP
N027459-009C	7.53	50	0.00	1.70	SAMP
N027459-010C	7.56	50	0.00	1.70	SAMP
N027459-011C	7.91	50	0.00	2.30	SAMP
N027459-012C	7.85	50	0.00	3.50	SAMP
N027459-013C	7.66	50	0.00	1.55	SAMP
N027459-014C	7.72	50	0.00	2.25	SAMP
N027459-015C	7.78	50	0.00	3.80	SAMP
N027459-016E	7.85	50	0.00	5.70	SAMP
N027459-017E	7.32	50	0.00	4.40	SAMP
N027459-018C	4.75	50	0.00	0.05	SAMP
N027459-019C	8.03	50	0.00	2.00	SAMP
N027485-001D	7.91	50	0.00	4.20	SAMP
N027485-002D	7.52	50	0.00	2.05	SAMP
N027485-003D	7.49	50	0.00	1.90	SAMP
N027459-003CDUP	9.45	50	0.40	0.80	DUP
N027459-017EMS	7.44	50	0.00	9.00	MS
N027459-017EMSD	7.70	50	0.00	9.10	MSD

Standardization:

Spike amt:	**5**	ml
Titrant used:	**11.95**	ml
N H2SO4	**0.02092**	Normal
Date Analyzed:	**12/14/17**	
Time:	**4:15 PM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-161205A**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R171214D**	

Silvia Ramit 12/22/2017

RB 01/04/2018

Date Analyzed:	12/14/17		Reagents:					Standardization:					P = 0
Time Started:	4:15 PM			Sodium Carbonate:		CINV-161205A			Spike amt:	5	mL		P < 1/2 T
Analyzed By:	LSR			Hydrochloric Acid:		0			Titrant used:	11.95	mL		P = 1/2 T
				Sulfuric Acid:		R171214D							P > 1/2 T
									N H2SO4	0.02092	N		P = T

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.26				0.02092	0.00	0.05	0.05	1	0.00	1.05	
LCS-1	50	8.55				0.02092	0.05	4.80	4.85	1	1.05	101.46	
N027459-003C	50	9.47				0.02092	0.35	0.40	0.75	1	7.32	15.69	
N027459-004C	50	10.22				0.02092	1.60	0.50	2.10	1	33.47	43.93	
N027459-005C	50	7.87				0.02092	0.00	2.55	2.55	1	0.00	53.35	
N027459-006C	50	7.68				0.02092	0.00	1.60	1.60	1	0.00	33.47	
N027459-007C	50	7.82				0.02092	0.00	4.55	4.55	1	0.00	95.19	
N027459-008E	50	7.79				0.02092	0.00	6.30	6.30	1	0.00	131.80	
N027459-009C	50	7.53				0.02092	0.00	1.70	1.70	1	0.00	35.56	
N027459-010C	50	7.56				0.02092	0.00	1.70	1.70	1	0.00	35.56	
N027459-011C	50	7.91				0.02092	0.00	2.30	2.30	1	0.00	48.12	
N027459-012C	50	7.85				0.02092	0.00	3.50	3.50	1	0.00	73.22	
N027459-013C	50	7.66				0.02092	0.00	1.55	1.55	1	0.00	32.43	
N027459-014C	50	7.72				0.02092	0.00	2.25	2.25	1	0.00	47.07	
N027459-015C	50	7.78				0.02092	0.00	3.80	3.80	1	0.00	79.50	
N027459-016E	50	7.85				0.02092	0.00	5.70	5.70	1	0.00	119.25	
N027459-017E	50	7.32				0.02092	0.00	4.40	4.40	1	0.00	92.05	
N027459-018C	50	4.75				0.02092	0.00	0.05	0.05	1	0.00	1.05	
N027459-019C	50	8.03				0.02092	0.00	2.00	2.00	1	0.00	41.84	
N027485-001D	50	7.91				0.02092	0.00	4.20	4.20	1	0.00	87.87	
N027485-002D	50	7.52				0.02092	0.00	2.05	2.05	1	0.00	42.89	
N027485-003D	50	7.49				0.02092	0.00	1.90	1.90	1	0.00	39.75	
N027459-003CDU	50	9.45				0.02092	0.40	0.40	0.80	1	8.37	16.74	
N027459-017EMS	50	7.44				0.02092	0.00	9.00	9.00	1	0.00	188.28	
N027459-017EMS	50	7.7				0.02092	0.00	9.10	9.10	1	0.00	190.38	

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RB 01/04/2018

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	12/14/17
Time:	4:15 PM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.05	1.05	1.05		P = 0
LCS-1	0.00	2.09	99.37	101.46	101.46		P < 1/2 T
N027459-003C	0.00	14.64	1.05	15.69	15.69		P < 1/2 T
N027459-004C	23.01	20.92	0.00	43.93	43.93		P > 1/2 T
N027459-005C	0.00	0.00	53.35	53.35	53.35		P = 0
N027459-006C	0.00	0.00	33.47	33.47	33.47		P = 0
N027459-007C	0.00	0.00	95.19	95.19	95.19		P = 0
N027459-008E	0.00	0.00	131.80	131.80	131.80		P = 0
N027459-009C	0.00	0.00	35.56	35.56	35.56		P = 0
N027459-010C	0.00	0.00	35.56	35.56	35.56		P = 0
N027459-011C	0.00	0.00	48.12	48.12	48.12		P = 0
N027459-012C	0.00	0.00	73.22	73.22	73.22		P = 0
N027459-013C	0.00	0.00	32.43	32.43	32.43		P = 0
N027459-014C	0.00	0.00	47.07	47.07	47.07		P = 0
N027459-015C	0.00	0.00	79.50	79.50	79.50		P = 0
N027459-016E	0.00	0.00	119.25	119.25	119.25		P = 0
N027459-017E	0.00	0.00	92.05	92.05	92.05		P = 0
N027459-018C	0.00	0.00	1.05	1.05	1.05		P = 0
N027459-019C	0.00	0.00	41.84	41.84	41.84		P = 0
N027485-001D	0.00	0.00	87.87	87.87	87.87		P = 0
N027485-002D	0.00	0.00	42.89	42.89	42.89		P = 0
N027485-003D	0.00	0.00	39.75	39.75	39.75		P = 0
N027459-003CDUP	0.00	16.74	0.00	16.74	16.74		P = 1/2 T
N027459-017EMS	0.00	0.00	188.28	188.28	188.28		P = 0
N027459-017EMSD	0.00	0.00	190.38	190.38	190.38		P = 0

Sirisha Ramit 12/22/2017

RB 01/04/2018

Alkalinity Preparation and Runlog

Book #6

Matrix: H_2O

Date Extracted: 12/14/17
Time Extracted: 1520
Extracted By: LSN

Date Analyzed: 12/14/17
Time Analyzed: 1615
Analyzed By: LSN

Reagent Lot # / Reagent ID
Sodium Carbonate: CONV 1161205A
Hydrochloric Acid:
Sulfuric Acid: R1712140
Sodium Bicarbonate: CONV 150601A

pH meter Calibration:
SLOPE: 98.7%
pH 7 = 7.03 CONV 170615F
4 - 4.03 170615E
N - 10.01 170823B

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50 mL	10.75	1W ST 171211A	5 mL	0.05N	-	-	12.0	50/50	$NH_2SO_4 = \frac{(2.65 g/L)(5 mL)}{(5)(V\ titrant)}$	= 0.020833333
	#2		10.62				-		11.90			= 0.021008403
1)	MALK	50 mL	5.26	-		-	0.02092	0	0.050	50/50		Ave: 0.020920868
2)	LCS		8.55	MST 171211B	1 mL	0.05N		0.05	4.85			
3)	NO2 7459-3C		9.47					0.35	0.75			
4)	4C		10.32					1.60	2.10			
5)	5C		7.87					0	2.55			
6)	6C		7.68					0	1.60			
7)	7C		7.82					0	4.55			
8)	8E		7.79					0	6.30			
9)	9C		7.53					0	1.70			
10)	10C		7.56					0	1.70		$P = \frac{(V\ pH\ 8.3)(N\ H_2SO_4)(50{,}000)}{VSX}$	
11)	11C		7.91					0	2.30			
12)	12C		7.85					0	3.50			
13)	13C		7.66					0	1.55			
14)	14C		7.72					0	2.25		$T = \frac{(V\ pH\ 4.5)(N\ H_2SO_4)(50{,}000)}{VSX}$	
15)	15C		7.78					0	3.80			
16)	16E		7.85					0	5.70			
17)	17E		7.32					0	4.40			
18)	18C		4.75					0	0.05			
19)	19C		8.03					0	2.00			
20)	NO2 7485-1D		7.91					0	4.20			
MS	2D		7.52					0	2.05			
MSD	3D		7.49					0	1.90			
LCS	NO2 7459-3C DUP		9.45					0	0.80			
	17E MS		7.44	MST 171211B	1 mL	0.05N		0	9.00			
	17E MSD		7.70					0	9.10			

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SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.32	50	0.00	0.050	MBLK
LCS-1	8.88	50	0.10	4.70	LCS
N027485-004D	7.60	50	0.00	3.80	SAMP
N027485-005D	9.28	50	0.65	1.75	SAMP
N027485-006D	10.64	50	3.50	4.15	SAMP
N027485-007D	10.67	50	3.60	4.30	SAMP
N027485-008D	7.47	50	0.00	3.60	SAMP
N027485-009D	8.18	50	0.00	5.35	SAMP
N027485-010D	7.72	50	0.00	1.95	SAMP
N027485-011E	7.68	50	0.00	5.60	SAMP
N027485-012E	7.79	50	0.00	5.75	SAMP
N027523-001C	7.79	50	0.00	3.75	SAMP
N027523-002C	8.17	50	0.00	4.80	SAMP
N027523-003C	8.04	50	0.00	2.90	SAMP
N027523-004C	7.94	50	0.00	4.05	SAMP
N027523-005E	8.01	50	0.00	4.10	SAMP
N027523-006D	7.73	50	0.00	1.65	SAMP
N027523-007D	7.78	50	0.00	1.55	SAMP
N027523-008D	7.62	50	0.00	9.95	SAMP
N027523-009D	6.91	50	0.00	11.90	SAMP
N027523-012D	7.48	50	0.00	41.00	SAMP
N027523-001CDUP	7.86	50	0.00	3.65	DUP
N027485-008DMS	8.05	50	0.00	8.15	MS
N027485-008DMSD	8.05	50	0.00	8.40	MSD

Standardization:

Spike amt:	**5**	ml
Titrant used:	**11.90**	ml
N H2SO4	**0.02101**	Normal

Date Analyzed:	**12/15/17**
Time:	**9:15 AM**
Analyzed By:	**LSR**

Sodium Carbonate:	**CINV-161205A**
Sodium Bicarbonate:	**CINV-150601A**
Sulfuric Acid:	**R171214D**

Silica Ramit 12/26/2017

RLB 01/04/2018

Date Analyzed:	12/15/17		Reagents:					Standardization:					P = 0
Time Started:	9:15 AM			Sodium Carbonate:		CINV-161205A			Spike amt:	5	mL		P < 1/2 T
Analyzed By:	LSR			Hydrochloric Acid:		0			Titrant used:	11.9	mL		P = 1/2 T
				Sulfuric Acid:		R171214D							P > 1/2 T
									N H2SO4	0.02101	N		P = T

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.32				0.02101	0.00	0.05	0.05	1	0.00	1.05	
LCS-1	50	8.88				0.02101	0.10	4.60	4.70	1	2.10	98.74	
N027485-004D	50	7.6				0.02101	0.00	3.80	3.80	1	0.00	79.83	
N027485-005D	50	9.28				0.02101	0.65	1.10	1.75	1	13.66	36.76	
N027485-006D	50	10.64				0.02101	3.50	0.65	4.15	1	73.53	87.18	
N027485-007D	50	10.67				0.02101	3.60	0.70	4.30	1	75.63	90.34	
N027485-008D	50	7.47				0.02101	0.00	3.60	3.60	1	0.00	75.63	
N027485-009D	50	8.18				0.02101	0.00	5.35	5.35	1	0.00	112.39	
N027485-010D	50	7.72				0.02101	0.00	1.95	1.95	1	0.00	40.97	
N027485-011E	50	7.68				0.02101	0.00	5.60	5.60	1	0.00	117.65	
N027485-012E	50	7.79				0.02101	0.00	5.75	5.75	1	0.00	120.80	
N027523-001C	50	7.79				0.02101	0.00	3.75	3.75	1	0.00	78.78	
N027523-002C	50	8.17				0.02101	0.00	4.80	4.80	1	0.00	100.84	
N027523-003C	50	8.04				0.02101	0.00	2.90	2.90	1	0.00	60.92	
N027523-004C	50	7.94				0.02101	0.00	4.05	4.05	1	0.00	85.08	
N027523-005E	50	8.01				0.02101	0.00	4.10	4.10	1	0.00	86.13	
N027523-006D	50	7.73				0.02101	0.00	1.65	1.65	1	0.00	34.66	
N027523-007D	50	7.78				0.02101	0.00	1.55	1.55	1	0.00	32.56	
N027523-008D	50	7.62				0.02101	0.00	9.95	9.95	1	0.00	209.03	
N027523-009D	50	6.91				0.02101	0.00	11.90	11.90	1	0.00	250.00	
N027523-012D	50	7.48				0.02101	0.00	41.00	41.00	1	0.00	861.34	
N027523-001CDU	50	7.86				0.02101	0.00	3.65	3.65	1	0.00	76.68	
N027485-008DMS	50	8.05				0.02101	0.00	8.15	8.15	1	0.00	171.22	
N027485-008DMS	50	8.05				0.02101	0.00	8.40	8.40	1	0.00	176.47	

Silvia Ramit 12/26/2017

RB 01/04/2018

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	12/15/17
Time:	9:15 AM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.05	1.05	1.05		P = 0
LCS-1	0.00	4.20	94.54	98.74	98.74		P < 1/2 T
N027485-004D	0.00	0.00	79.83	79.83	79.83		P = 0
N027485-005D	0.00	27.31	9.45	36.76	36.76		P < 1/2 T
N027485-006D	59.87	27.31	0.00	87.18	87.18		P > 1/2 T
N027485-007D	60.92	29.41	0.00	90.34	90.34		P > 1/2 T
N027485-008D	0.00	0.00	75.63	75.63	75.63		P = 0
N027485-009D	0.00	0.00	112.39	112.39	112.39		P = 0
N027485-010D	0.00	0.00	40.97	40.97	40.97		P = 0
N027485-011E	0.00	0.00	117.65	117.65	117.65		P = 0
N027485-012E	0.00	0.00	120.80	120.80	120.80		P = 0
N027523-001C	0.00	0.00	78.78	78.78	78.78		P = 0
N027523-002C	0.00	0.00	100.84	100.84	100.84		P = 0
N027523-003C	0.00	0.00	60.92	60.92	60.92		P = 0
N027523-004C	0.00	0.00	85.08	85.08	85.08		P = 0
N027523-005E	0.00	0.00	86.13	86.13	86.13		P = 0
N027523-006D	0.00	0.00	34.66	34.66	34.66		P = 0
N027523-007D	0.00	0.00	32.56	32.56	32.56		P = 0
N027523-008D	0.00	0.00	209.03	209.03	209.03		P = 0
N027523-009D	0.00	0.00	250.00	250.00	250.00		P = 0
N027523-012D	0.00	0.00	861.34	861.34	861.34		P = 0
N027523-001CDUP	0.00	0.00	76.68	76.68	76.68		P = 0
N027485-008DMS	0.00	0.00	171.22	171.22	171.22		P = 0
N027485-008DMSD	0.00	0.00	176.47	176.47	176.47		P = 0

Silvia Ramit 12/26/2017

RLB 01/04/2018

Alkalinity Preparation and Runlog

Book #6

Matrix: H_2O

Date Extracted: 12/15/17
Time Extracted:
Extracted By: LSR

Date Analyzed: 12/15/17
Time Analyzed: 915
Analyzed By: LSR

Reagent Lot # / Reagent ID
Sodium Carbonate: CINV161205A
Hydrochloric Acid:
Sulfuric Acid: R171214D
Sodium Bicarbonate: CINV150601A

pH meter Calibration:
SLOPE: 96.7%
pH 7 - 7.03 CINV170615F
4 - 3.98 170615E
10 - 10.01 170822B

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50mL	10.75	IWST171211A	5mL	0.05N	-	-	11.90	50/50	$N_{H_2SO_4} = \frac{(2.65\ g/L)(5\ mL)}{(50)(V\ titrant)} = 0.021008423$	
	#2		10.74				-	-	11.90			
1)	MBUL	50mL	5.32	-	-	-	0.02101	0	0	50/50		
2)	LCS		8.88	IWST171211B	1mL	0.05N		0.10	4.70			
3)	N027485-004D		7.60					0	3.80			
4)	5D		9.28					0.65	1.75			
5)	6D		10.64					3.50	4.15			
6)	7D		10.67					3.60	4.30			
7)	8D		7.47					0	3.60			
8)	9D		8.18					0	5.35			
9)	10D		7.72					0	1.95			
10)	11E		7.68					0	5.60		$P = \frac{(V\ pH\ 8.3)(N\ H_2SO_4)(50,000)}{V_{sx}}$	
11)	12E		7.79					0	5.75			
12)	N027523-1C		7.79					0	3.75			
13)	2C		8.17					0	4.80			
14)	3C		8.04					0	2.90		$T = \frac{(V\ pH\ 4.5)N\ H_2SO_4\ 11/14\ (50,000)}{(V_{sx})}$	
15)	4C		7.94					0	4.05			
16)	5E		8.01					0	4.10			
17)	6D		7.73					0	1.65			
18)	7D		7.78					0	1.55			
19)	8D		7.62					0	9.95			
20)	9D		6.91					0	11.90	12/15		
MS	12D		7.48					0	4.0			
MSD	N027523-1C DUP		7.86					0	3.65			
LCS	N027485-8D MS		8.05	IWST171211B	1mL	0.05N		0	8.15			
	8D MSD		8.05					0	8.40			

Julia Ramit 12/26/2017

RB 01/04/2018

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120937
ASSET #: N027430 / N027485

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/18/2017

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 12/21/2017

2nd Level Reviewer RLB 01/04/2018 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120970
ASSET #: N027485 / N027523

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/19/2017

Method:

[X] EPA 300.0
[ ] EPA 7199

[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

Several samples were diluted due to precipitate formed with eluent.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/21/2017

2nd Level Reviewer: RLB 01/04/2018 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Chloride concentration, in mg/L, in the orignal sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N027485-001D** concentration in mg/L is calculated as follows:

Chloride, mg/L = 4.8771 * 200

= 975.42

Reporting result in two significant values,

Chloride, mg/L = 980

rba 12/24/2017

RLB 01/04/2018

ANALYSIS RUN LOG

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 25
Created: 11/29/2017 9:35:17 AM by IC-05
Last Update: 11/30/2017 12:33:04 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	ICV,ICV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	ICB,ICB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	N027210-002A,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027232-001A,SAMP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027210-002A,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027210-002ADUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027210-002AMS,MS,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027210-002AMSD,MSD,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027232-001AMS,MS,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	N027232-001AMSD,MSD,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	N027232-001ADUP,DUP,2	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished



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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 25
Created: 11/29/2017 9:35:17 AM by IC-05
Last Update: 11/30/2017 12:33:04 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	ICV,ICV,1	11/29/2017 12:22:10 PM	ICV
10	ICB,ICB,1	11/29/2017 12:37:28 PM	ICB
11	MB-H2O,MBLK,1	11/29/2017 12:52:47 PM	METHOD BLANK
12	LCS-H2O,LCS,1	11/29/2017 1:08:05 PM	LCS
13	N027210-002A,SAMP,10	11/29/2017 1:23:23 PM	SAMP,1>10mL
14	N027232-001A,SAMP,2	11/29/2017 1:38:41 PM	SAMP,5>10mL
15	N027210-002A,SAMP,50	11/29/2017 2:44:14 PM	SAMP,0.2>10mL
16	N027210-002ADUP,DUP,50	11/29/2017 2:59:31 PM	DUP,0.2>10mL
17	N027210-002AMS,MS,10	11/29/2017 3:14:50 PM	MS,0.2>10mL
18	N027210-002AMSD,MSD,10	11/29/2017 3:30:07 PM	MSD,0.2>10mL
19	N027232-001AMS,MS,2	11/29/2017 3:45:25 PM	MS,5>10mL
20	N027232-001AMSD,MSD,2	11/29/2017 4:00:43 PM	MSD,5>10mL
21	CCV-1,CCV,1	11/29/2017 4:16:01 PM	CCV
22	CCB-1,CCB,1	11/29/2017 4:31:19 PM	CCB
23	N027232-001ADUP,DUP,2	11/29/2017 4:46:38 PM	DUP,5>10mL
24	CCV-2,CCV,1	11/29/2017 5:01:56 PM	CCV
25	CCB-2,CCB,1	11/29/2017 5:17:14 PM	CCB

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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/18/2017 9:15:01 AM by IC-05
Last Update: 12/18/2017 5:39:47 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
3	Std - 0	Unknown	1000.0	Anions Default	Anions_171129	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171129	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171129	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171129	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171129	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171129	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
14	N027430-012C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
15	N027430-012C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
16	N027430-012CDUP,DUP,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
17	N027430-012CMS,MS,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
18	N027430-012CMSD,MSD,20	Unknown	1000.0	Anions Default	Anions_171129	Finished
19	N027412-001B,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
20	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
21	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
22	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
23	N027413-001B,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
24	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
25	N027414-001B,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
26	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
27	N027416-001B,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
28	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
29	N027417-001B,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
30	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
31	N027414-001B,SAMP,5	Unknown	1000.0	Anions Default	Anions_171129	Finished
32	N027412-001B,SAMP,10000	Unknown	1000.0	Anions Default	Anions_171129	Finished
33	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
34	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
35	N027485-002D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
36	N027485-003D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
37	N027485-005D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
38	N027485-006D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
39	N027485-007D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
40	N027485-001D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
41	N027485-001DDUP,DUP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished

rba 12/21/2017

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/18/2017 9:15:01 AM by IC-05
Last Update: 12/18/2017 5:39:47 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	11/29/2017 9:36:00 AM	BLANK
2	BLANK,BLANK,1	11/29/2017 9:51:18 AM	BLANK
3	Std - 0	11/29/2017 10:06:36 AM	IBLANK
4	Std - 1	11/29/2017 10:38:19 AM	STD-LOW
5	Std - 2	11/29/2017 10:53:37 AM	STD
6	Std - 3	11/29/2017 11:08:55 AM	STD
7	Std - 4	11/29/2017 11:24:13 AM	STD
8	Std - 5	11/29/2017 11:39:31 AM	STD-HIGH
9	BLANK,BLANK,1	12/18/2017 9:15:27 AM	BLANK
10	CCV-1,CCV,1	12/18/2017 9:30:45 AM	CCV
11	CCB-1,CCB,1	12/18/2017 9:46:03 AM	CCB
12	MB-H2O,MBLK,1	12/18/2017 10:01:21 AM	METHOD BLANK
13	LCS-H2O,LCS,1	12/18/2017 10:16:39 AM	LCS
14	N027430-012C,SAMP,10	12/18/2017 10:31:57 AM	SAMP,1>10mL
15	N027430-012C,SAMP,20	12/18/2017 10:49:02 AM	SAMP,0.5>10mL
16	N027430-012CDUP,DUP,20	12/18/2017 11:04:21 AM	DUP,0.5>10mL
17	N027430-012CMS,MS,20	12/18/2017 11:19:38 AM	MS,0.5>10mL
18	N027430-012CMSD,MSD,20	12/18/2017 11:34:56 AM	MSD,0.5>10mL
19	N027412-001B,SAMP,200	12/18/2017 11:50:14 AM	SAMP,0.05>10mL
20	BLANK,BLANK,1	12/18/2017 12:05:32 PM	BLANK
21	CCV-2,CCV,1	12/18/2017 12:20:50 PM	CCV
22	CCB-2,CCB,1	12/18/2017 12:36:08 PM	CCB
23	N027413-001B,SAMP,100	12/18/2017 12:51:25 PM	SAMP,0.1>10mL
24	BLANK,BLANK,1	12/18/2017 1:06:43 PM	BLANK
25	N027414-001B,SAMP,100	12/18/2017 1:22:01 PM	SAMP,0.1>10mL
26	BLANK,BLANK,1	12/18/2017 1:37:19 PM	BLANK
27	N027416-001B,SAMP,200	12/18/2017 1:52:37 PM	SAMP,0.05>10mL
28	BLANK,BLANK,1	12/18/2017 2:07:55 PM	BLANK
29	N027417-001B,SAMP,200	12/18/2017 2:23:12 PM	SAMP,0.05>10mL
30	BLANK,BLANK,1	12/18/2017 2:38:30 PM	BLANK
31	N027414-001B,SAMP,5	12/18/2017 2:53:48 PM	SAMP,2>10mL
32	N027412-001B,SAMP,10000	12/18/2017 3:09:06 PM	SAMP,0.001>10mL
33	CCV-3,CCV,1	12/18/2017 3:24:25 PM	CCV
34	CCB-3,CCB,1	12/18/2017 3:39:43 PM	CCB
35	N027485-002D,SAMP,2000	12/18/2017 3:55:01 PM	SAMP,0.005>10mL
36	N027485-003D,SAMP,2000	12/18/2017 4:10:19 PM	SAMP,0.005>10mL
37	N027485-005D,SAMP,2000	12/18/2017 4:25:37 PM	SAMP,0.005>10mL
38	N027485-006D,SAMP,2000	12/18/2017 4:40:54 PM	SAMP,0.005>10mL
39	N027485-007D,SAMP,2000	12/18/2017 4:56:12 PM	SAMP,0.005>10mL
40	N027485-001D,SAMP,200	12/18/2017 5:11:30 PM	SAMP,0.02>10mL
41	N027485-001DDUP,DUP,200	12/18/2017 5:26:48 PM	SAMP,0.001>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/18/2017 9:15:01 AM by IC-05
Last Update: 12/18/2017 5:39:47 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027485-001DMS,MS,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
43	N027485-001DMSD,MSD,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
44	N027485-001D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
45	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
46	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
47	N027485-001DDUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
48	N027485-001DMS,MS,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
49	N027485-001DMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
50	N027485-011E,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
51	N027485-011EMS,MS,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
52	N027485-011E,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
53	N027485-011EMS,MS,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
54	N027485-004D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
55	N027485-004D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171129	Finished
56	N027485-008D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
57	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
58	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
59	N027485-008D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
60	N027485-009D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
61	N027485-009D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
62	N027485-010D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
63	N027485-010D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
64	N027485-012E,SAMP,200	Unknown	1000.0	Anions Default	Anions_171129	Finished
65	N027485-012E,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
66	N027413-001B,SAMP,10000	Unknown	1000.0	Anions Default	Anions_171129	Finished
67	N027413-001B,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
68	N027416-001B,SAMP,10000	Unknown	1000.0	Anions Default	Anions_171129	Finished
69	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
70	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
71	N027417-001B,SAMP,10000	Unknown	1000.0	Anions Default	Anions_171129	Finished
72	N027485-002D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
73	N027485-003D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
74	N027485-005D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
75	N027485-006D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
76	N027485-007D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
77	N027417-001B,SAMP,500	Unknown	1000.0	Anions Default	Anions_171129	Finished
78	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
79	N027414-001B,SAMP,10	Unknown	1000.0	Anions Default	Anions_171129	Finished
80	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
81	CCV-7,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
82	CCB-7,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/18/2017 9:15:01 AM by IC-05
Last Update: 12/18/2017 5:39:47 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027485-001DMS,MS,200	12/18/2017 5:42:06 PM	MS,0.05>10mL
43	N027485-001DMSD,MSD,200	12/18/2017 5:57:23 PM	MSD,0.05>10mL
44	N027485-001D,SAMP,50	12/18/2017 6:12:41 PM	SAMP,0.2>10mL
45	CCV-4,CCV,1	12/18/2017 6:27:59 PM	CCV
46	CCB-4,CCB,1	12/18/2017 6:43:17 PM	CCB
47	N027485-001DDUP,DUP,50	12/18/2017 6:58:35 PM	DUP,0.2>10mL
48	N027485-001DMS,MS,50	12/18/2017 7:13:53 PM	MS,0.2>10mL
49	N027485-001DMSD,MSD,50	12/18/2017 7:29:11 PM	MSD,0.2>10mL
50	N027485-011E,SAMP,200	12/18/2017 7:44:29 PM	SAMP,0.05>10mL
51	N027485-011EMS,MS,200	12/18/2017 7:59:46 PM	SAMP,0.05>10mL
52	N027485-011E,SAMP,100	12/18/2017 8:15:04 PM	SAMP,0.1>10mL
53	N027485-011EMS,MS,100	12/18/2017 8:30:22 PM	MS,0.1>10mL
54	N027485-004D,SAMP,2000	12/18/2017 8:45:40 PM	SAMP,0.005>10mL
55	N027485-004D,SAMP,50	12/18/2017 9:00:58 PM	SAMP,0.2>10mL
56	N027485-008D,SAMP,200	12/18/2017 9:16:16 PM	SAMP,0.05>10mL
57	CCV-5,CCV,1	12/18/2017 9:31:33 PM	CCV
58	CCB-5,CCB,1	12/18/2017 9:46:51 PM	CCB
59	N027485-008D,SAMP,10	12/18/2017 10:02:09 PM	SAMP,1>10mL
60	N027485-009D,SAMP,500	12/18/2017 10:17:27 PM	SAMP,0.02>10mL
61	N027485-009D,SAMP,100	12/18/2017 10:32:45 PM	SAMP,0.1>10mL
62	N027485-010D,SAMP,1000	12/18/2017 10:48:02 PM	SAMP,0.01>10mL
63	N027485-010D,SAMP,100	12/18/2017 11:03:20 PM	SAMP,0.1>10mL
64	N027485-012E,SAMP,200	12/18/2017 11:18:38 PM	SAMP,0.05>10mL
65	N027485-012E,SAMP,100	12/18/2017 11:33:56 PM	SAMP,0.1>10mL
66	N027413-001B,SAMP,10000	12/18/2017 11:49:14 PM	SAMP,0.001>10mL
67	N027413-001B,SAMP,500	12/19/2017 12:04:31 AM	SAMP,0.05>10mL
68	N027416-001B,SAMP,10000	12/19/2017 12:19:49 AM	SAMP,0.001>10mL
69	CCV-6,CCV,1	12/19/2017 12:35:07 AM	CCV
70	CCB-6,CCB,1	12/19/2017 12:50:25 AM	CCB
71	N027417-001B,SAMP,10000	12/19/2017 1:05:43 AM	SAMP,0.001>10mL
72	N027485-002D,SAMP,100	12/19/2017 1:21:01 AM	SAMP,0.1>10mL
73	N027485-003D,SAMP,100	12/19/2017 1:36:19 AM	SAMP,0.1>10mL
74	N027485-005D,SAMP,100	12/19/2017 1:51:37 AM	SAMP,0.1>10mL
75	N027485-006D,SAMP,100	12/19/2017 2:06:54 AM	SAMP,0.1>10mL
76	N027485-007D,SAMP,100	12/19/2017 2:22:12 AM	SAMP,0.1>10mL
77	N027417-001B,SAMP,500	12/19/2017 2:37:30 AM	SAMP,0.02>10mL
78	BLANK,BLANK,1	12/19/2017 2:52:48 AM	BLANK
79	N027414-001B,SAMP,10	12/19/2017 3:08:06 AM	SAMP,1>10mL
80	BLANK,BLANK,1	12/19/2017 3:23:24 AM	BLANK
81	CCV-7,CCV,1	12/19/2017 3:38:41 AM	CCV
82	CCB-7,CCB,1	12/19/2017 3:53:59 AM	CCB

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/18/2017 9:15:01 AM by IC-05
Last Update: 12/18/2017 5:39:47 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
83	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
84	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
85	N027459-017E,SAMP,100	Unknown	1000.0	Anions Default	Anions_171129	Finished
86	N027459-018C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171129	Finished
87	N027459-019C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
88	N027459-019CDUP,DUP,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
89	N027459-019CMS,MS,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
90	N027459-019CMSD,MSD,1000	Unknown	1000.0	Anions Default	Anions_171129	Finished
91	CCV-8,CCV,1	Unknown	1000.0	Anions Default	Anions_171129	Finished
92	CCB-8,CCB,1	Unknown	1000.0	Anions Default	Anions_171129	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 92
Created: 12/18/2017 9:15:01 AM by IC-05
Last Update: 12/18/2017 5:39:47 PM by IC-05

No.	Name	Inj. Date/Time	Comment
83	LCS-2,LCS,1	12/19/2017 4:09:17 AM	LCS
84	MB-2,MBLK,1	12/19/2017 4:24:35 AM	METHOD BLANK
85	N027459-017E,SAMP,100	12/19/2017 4:39:52 AM	SAMP,0.1>10mL
86	N027459-018C,SAMP,2000	12/19/2017 4:55:10 AM	SAMP,0.005>10mL
87	N027459-019C,SAMP,1000	12/19/2017 5:10:28 AM	SAMP,0.01>10mL
88	N027459-019CDUP,DUP,1000	12/19/2017 5:25:46 AM	DUP,0.01>10mL
89	N027459-019CMS,MS,1000	12/19/2017 5:41:04 AM	MS,0.01>10mL
90	N027459-019CMSD,MSD,1000	12/19/2017 5:56:21 AM	MSD,0.01>10mL
91	CCV-8,CCV,1	12/19/2017 6:11:39 AM	CCV
92	CCB-8,CCB,1	12/19/2017 6:26:57 AM	CCB

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 73
Created: 12/19/2017 9:53:44 AM by IC-05
Last Update: 12/20/2017 8:57:58 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
3	Std - 0	Standard	1000.0	Anions Default	Anions_171219	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171219	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171219	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171219	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171219	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171219	Finished
9	ICV,ICV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
10	ICB,ICB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
11	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
12	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
13	N027459-001E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
14	N027459-002E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
15	N027459-003C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
16	N027459-004C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
17	N027459-005C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
18	N027459-006C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
19	N027459-007C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
20	N027459-008E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
21	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
22	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
23	N027459-001EMS,MS,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
24	N027459-001EMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
25	N027459-008EMS,MS,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
26	N027459-004CDUP,DUP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
27	N027459-009C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
28	N027459-010C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
29	N027459-011C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
30	N027459-012C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
31	N027459-013C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
32	N027459-014C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
33	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
34	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
35	N027459-015C,SAMP,2	Unknown	1000.0	Anions Default	Anions_171219	Finished
36	N027459-016E,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
37	N027459-017E,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
38	N027459-018C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
39	N027459-019C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
40	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
41	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 73
Created: 12/19/2017 9:53:44 AM by IC-05
Last Update: 12/20/2017 8:57:58 AM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	12/19/2017 9:54:19 AM	BLANK
2	BLANK,BLANK,1	12/19/2017 10:09:37 AM	BLANK
3	Std - 0	12/19/2017 10:24:55 AM	IBLANK
4	Std - 1	12/19/2017 10:45:27 AM	STD-LOW
5	Std - 2	12/19/2017 11:00:45 AM	STD
6	Std - 3	12/19/2017 11:16:03 AM	STD
7	Std - 4	12/19/2017 11:31:21 AM	STD
8	Std - 5	12/19/2017 11:46:39 AM	STD-HIGH
9	ICV,ICV,1	12/19/2017 12:03:52 PM	ICV
10	ICB,ICB,1	12/19/2017 12:19:10 PM	ICB
11	MB-H2O,MBLK,1	12/19/2017 12:34:28 PM	METHOD BLANK
12	LCS-H2O,LCS,1	12/19/2017 12:49:45 PM	LCS
13	N027459-001E,SAMP,5	12/19/2017 1:05:03 PM	SAMP,2>10mL
14	N027459-002E,SAMP,5	12/19/2017 1:20:21 PM	SAMP,2>10mL
15	N027459-003C,SAMP,10	12/19/2017 1:35:39 PM	SAMP,1>10mL
16	N027459-004C,SAMP,10	12/19/2017 1:50:57 PM	SAMP,1>10mL
17	N027459-005C,SAMP,5	12/19/2017 2:06:15 PM	SAMP,2>10mL
18	N027459-006C,SAMP,5	12/19/2017 2:21:33 PM	SAMP,2>10mL
19	N027459-007C,SAMP,1	12/19/2017 2:36:51 PM	SAMP,10mL
20	N027459-008E,SAMP,5	12/19/2017 2:52:08 PM	SAMP,2>10mL
21	CCV-1,CCV,1	12/19/2017 3:07:26 PM	CCV
22	CCB-1,CCB,1	12/19/2017 3:22:44 PM	CCB
23	N027459-001EMS,MS,5	12/19/2017 3:38:02 PM	MS,2>10mL
24	N027459-001EMSD,MSD,5	12/19/2017 3:53:20 PM	MSD,2>10mL
25	N027459-008EMS,MS,5	12/19/2017 4:08:38 PM	MS,2>10mL
26	N027459-004CDUP,DUP,10	12/19/2017 4:23:56 PM	DUP,1>10mL
27	N027459-009C,SAMP,5	12/19/2017 4:39:14 PM	SAMP,2>10mL
28	N027459-010C,SAMP,5	12/19/2017 4:54:31 PM	SAMP,2>10mL
29	N027459-011C,SAMP,1	12/19/2017 5:09:49 PM	SAMP,10mL
30	N027459-012C,SAMP,1	12/19/2017 5:25:07 PM	SAMP,10mL
31	N027459-013C,SAMP,5	12/19/2017 5:40:25 PM	SAMP,2>10mL
32	N027459-014C,SAMP,5	12/19/2017 5:55:43 PM	SAMP,2>10mL
33	CCV-2,CCV,1	12/19/2017 6:11:01 PM	CCV
34	CCB-2,CCB,1	12/19/2017 6:26:19 PM	CCB
35	N027459-015C,SAMP,2	12/19/2017 6:41:37 PM	SAMP,5>10mL
36	N027459-016E,SAMP,1	12/19/2017 6:56:54 PM	SAMP,10mL
37	N027459-017E,SAMP,1	12/19/2017 7:12:13 PM	SAMP,10mL
38	N027459-018C,SAMP,10	12/19/2017 7:27:30 PM	SAMP,1>10mL
39	N027459-019C,SAMP,1	12/19/2017 7:42:48 PM	SAMP,10mL
40	LCS-2,LCS,1	12/19/2017 7:58:06 PM	LCS
41	MB-2,MBLK,1	12/19/2017 8:13:24 PM	METHOD BLANK

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 73
Created: 12/19/2017 9:53:44 AM by IC-05
Last Update: 12/20/2017 8:57:58 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027485-008D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
43	N027485-008DMS,MS,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
44	N027485-008DMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
45	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
46	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
47	N027523-001C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
48	N027523-001CMS,MS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
49	N027523-002C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
50	N027523-002CDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
51	N027485-001D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
52	N027485-002D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
53	N027485-003D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
54	N027485-004D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
55	N027485-005D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
56	N027485-006D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
57	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
58	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
59	N027485-007D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
60	N027485-009D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
61	N027485-010D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
62	N027485-011E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
63	N027485-012E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
64	N027523-003C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
65	N027523-004C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
66	N027523-005E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
67	N027523-006D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
68	N027523-007D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
69	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
70	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
71	N027523-008D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
72	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
73	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 73
Created: 12/19/2017 9:53:44 AM by IC-05
Last Update: 12/20/2017 8:57:58 AM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027485-008D,SAMP,5	12/19/2017 8:28:42 PM	SAMP,2>10mL
43	N027485-008DMS,MS,5	12/19/2017 8:43:59 PM	MS,2>10mL
44	N027485-008DMSD,MSD,5	12/19/2017 8:59:17 PM	MSD,2>10mL
45	CCV-3,CCV,1	12/19/2017 9:14:35 PM	CCV
46	CCB-3,CCB,1	12/19/2017 9:29:53 PM	CCB
47	N027523-001C,SAMP,1	12/19/2017 9:45:11 PM	SAMP,10mL
48	N027523-001CMS,MS,1	12/19/2017 10:00:28 PM	MS,10mL
49	N027523-002C,SAMP,1	12/19/2017 10:15:46 PM	SAMP,10mL
50	N027523-002CDUP,DUP,1	12/19/2017 10:31:04 PM	DUP,10mL
51	N027485-001D,SAMP,1	12/19/2017 10:46:22 PM	SAMP,10mL
52	N027485-002D,SAMP,10	12/19/2017 11:01:39 PM	SAMP,1>10mL
53	N027485-003D,SAMP,10	12/19/2017 11:16:57 PM	SAMP,1>10mL
54	N027485-004D,SAMP,5	12/19/2017 11:32:15 PM	SAMP,2>10mL
55	N027485-005D,SAMP,5	12/19/2017 11:47:33 PM	SAMP,2>10mL
56	N027485-006D,SAMP,5	12/20/2017 12:02:51 AM	SAMP,2>10mL
57	CCV-4,CCV,1	12/20/2017 12:18:09 AM	CCV
58	CCB-4,CCB,1	12/20/2017 12:33:27 AM	CCB
59	N027485-007D,SAMP,5	12/20/2017 12:48:44 AM	SAMP,2>10mL
60	N027485-009D,SAMP,1	12/20/2017 1:04:02 AM	SAMP,10mL
61	N027485-010D,SAMP,5	12/20/2017 1:19:20 AM	SAMP,2>10mL
62	N027485-011E,SAMP,5	12/20/2017 1:34:38 AM	SAMP,2>10mL
63	N027485-012E,SAMP,5	12/20/2017 1:49:56 AM	SAMP,2>10mL
64	N027523-003C,SAMP,1	12/20/2017 2:05:14 AM	SAMP,10mL
65	N027523-004C,SAMP,1	12/20/2017 2:20:32 AM	SAMP,10mL
66	N027523-005E,SAMP,5	12/20/2017 2:35:49 AM	SAMP,2>10mL
67	N027523-006D,SAMP,5	12/20/2017 2:51:08 AM	SAMP,2>10mL
68	N027523-007D,SAMP,5	12/20/2017 3:06:26 AM	SAMP,2>10mL
69	CCV-5,CCV,1	12/20/2017 3:21:44 AM	CCV
70	CCB-5,CCB,1	12/20/2017 3:37:02 AM	CCB
71	N027523-008D,SAMP,5	12/20/2017 3:52:19 AM	SAMP,2>10mL
72	CCV-6,CCV,1	12/20/2017 4:07:37 AM	CCV
73	CCB-6,CCB,1	12/20/2017 4:22:55 AM	CCB

INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0532	0.2181	0.4423	1.1375	2.3683	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.



01/04/2018

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 11/29/2017

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0709	0.1410	0.2824	0.7275	1.5389	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.



01/04/2018

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 12/19/2017

Initial Calibration:

Bromide	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.05	0.25	0.5	1.25	2.5	R^2
Area,mAU*min	0.0000	0.0046	0.0160	0.0327	0.0765	0.1579	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814D

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.


01/04/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID: **ICV**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2874439**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.218	0.50	1.250	0	97.4	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID: **CCV**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2874463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.226	0.50	1.250	0	98.1	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID: **CCV**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2874475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.251	0.50	1.250	0	100	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID: **CCV**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2874487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.235	0.50	1.250	0	98.8	90	110				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID: **CCV**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2874499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.225	0.50	1.250	0	98.0	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID: **CCV**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2874502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.273	0.50	1.250	0	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **ICV**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2872517**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.042	0.50	2.000	0	102	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCV**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.886	0.50	2.000	0	94.3	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCV**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.923	0.50	2.000	0	96.1	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCV**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872527**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.907	0.50	2.000	0	95.4	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCV**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872538**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.988	0.50	2.000	0	99.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCV**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872544**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.946	0.50	2.000	0	97.3	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCV**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2872551**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.947	0.50	2.000	0	97.4	90	110				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCV**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2872554**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.953	0.50	2.000	0	97.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV** SampType: **ICV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120937**
Client ID: **ICV** Batch ID: **R120937** TestNo: **EPA 300.0** Analysis Date: **11/29/2017** SeqNo: **2872587**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.936	0.50	4.000	0	98.4	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120937**
Client ID: **CCV** Batch ID: **R120937** TestNo: **EPA 300.0** Analysis Date: **12/18/2017** SeqNo: **2872589**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.882	0.50	4.000	0	97.0	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120937**
Client ID: **CCV** Batch ID: **R120937** TestNo: **EPA 300.0** Analysis Date: **12/18/2017** SeqNo: **2872594**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.917	0.50	4.000	0	97.9	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120937**
Client ID: **CCV** Batch ID: **R120937** TestNo: **EPA 300.0** Analysis Date: **12/18/2017** SeqNo: **2872597**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.917	0.50	4.000	0	97.9	90	110				

Sample ID **CCV-4** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **120937**
Client ID: **CCV** Batch ID: **R120937** TestNo: **EPA 300.0** Analysis Date: **12/18/2017** SeqNo: **2872600**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.922	0.50	4.000	0	98.0	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCV**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872608**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.972	0.50	4.000	0	99.3	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCV**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2872616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.900	0.50	4.000	0	97.5	90	110				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCV**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2872624**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.941	0.50	4.000	0	98.5	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID: **ICB**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2874440**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID: **CCB**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2874464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID: **CCB**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2874476**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID: **CCB**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2874488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID: **CCB**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2874500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID: **CCB**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2874503**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **ICB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2872518**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872524**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872528**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872539**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872545**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2872552**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2872555**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **ICB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **11/29/2017**	SeqNo: **2872588**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872590**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872595**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872598**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872601**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/18/2017**	SeqNo: **2872609**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2872617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **120937**
Client ID: **CCB**	Batch ID: **R120937**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2872625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/18/2017

Sample Name		Retention Time	Evaluation
CCV-1	Chloride	3.737	
CCV-2	Chloride	3.733	
CCV-3	Chloride	3.734	
CCV-4	Chloride	3.720	
CCV-5	Chloride	3.740	
CCV-6	Chloride	3.744	
CCV-7	Chloride	3.743	

Average 3.736

Applied RT Window 3.536 - 3.936

MB-R120937_CL	Chloride	N.A.	N.A.
LCS-R120937_CL	Chloride	3.733	PASS
N027485-002D	Chloride	3.734	PASS
N027485-003D	Chloride	3.733	PASS
N027485-005D	Chloride	3.733	PASS
N027485-006D	Chloride	3.733	PASS
N027485-007D	Chloride	3.730	PASS
N027485-001D	Chloride	3.734	PASS
N027485-001DDUP	Chloride	3.733	PASS
N027485-001DMS	Chloride	3.734	PASS
N027485-001DMSD	Chloride	3.733	PASS
N027485-011E	Chloride	3.740	PASS
N027485-011EMS	Chloride	3.740	PASS
N027485-004D	Chloride	3.740	PASS
N027485-008D	Chloride	3.740	PASS
N027485-009D	Chloride	3.740	PASS
N027485-010D	Chloride	3.740	PASS
N027485-012E	Chloride	3.740	PASS

rba 12/27/2017

RLB 01/04/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/18/2017

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	7.350	
CCV-2	Sulfate	7.347	
CCV-3	Sulfate	7.344	
CCV-4	Sulfate	7.320	
CCV-5	Sulfate	7.357	
CCV-6	Sulfate	7.350	
CCV-7	Sulfate	7.347	

Average 7.345

Applied RT Window 7.145 - 7.545

MB-R120937_SO4	Sulfate	N.A.	N.A.
LCS-R120937_SO4	Sulfate	7.337	PASS
N027485-001D	Sulfate	7.344	PASS
N027485-001DDUP	Sulfate	7.317	PASS
N027485-001DMS	Sulfate	7.347	PASS
N027485-001DMSD	Sulfate	7.350	PASS
N027485-011E	Sulfate	7.347	PASS
N027485-011EMS	Sulfate	7.350	PASS
N027485-004D	Sulfate	7.357	PASS
N027485-008D	Sulfate	7.357	PASS
N027485-009D	Sulfate	7.344	PASS
N027485-010D	Sulfate	7.347	PASS
N027485-012E	Sulfate	7.343	PASS
N027485-002D	Sulfate	7.353	PASS
N027485-003D	Sulfate	7.350	PASS
N027485-005D	Sulfate	7.350	PASS
N027485-006D	Sulfate	7.354	PASS
N027485-007D	Sulfate	7.350	PASS

rba 12/27/2017

RLB 01/04/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/19/2017

Sample Name		Retention Time	Evaluation
ICV	Bromide	5.804	
CCV-2	Bromide	5.810	
CCV-3	Bromide	5.810	
CCV-4	Bromide	5.807	
CCV-5	Bromide	5.807	
CCV-6	Bromide	5.803	
	Average	5.807	
	Applied RT Window	5.607 - 6.007	
LCS-R120970_BR	Bromide	5.810	PASS
MB-R120970_BR	Bromide	N.A.	N.A.
N027485-008D	Bromide	5.823	PASS
N027485-008DMS	Bromide	5.810	PASS
N027485-008DMSD	Bromide	5.810	PASS
N027523-001CMS	Bromide	5.813	PASS
N027523-002CDUP	Bromide	5.803	PASS
N027485-001D	Bromide	5.810	PASS
N027485-002D	Bromide	5.800	PASS
N027485-003D	Bromide	5.797	PASS
N027485-004D	Bromide	5.800	PASS
N027485-005D	Bromide	N.A.	N.A.
N027485-006D	Bromide	N.A.	N.A.
N027485-007D	Bromide	N.A.	N.A.
N027485-009D	Bromide	5.807	PASS
N027485-010D	Bromide	5.803	PASS
N027485-011E	Bromide	5.807	PASS
N027485-012E	Bromide	5.807	PASS

rba 12/27/2017

01/04/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 5/23/2017 ; 5/24/2017; 5/25/2017
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Datafile	170523A D36	170523A D37	170523A D38	170524A D17	170524A D18	170525A D45	170525A D46					
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**MDL**	**LOD**	**PQL**
Fluoride	0.020	0.022	0.021	0.020	0.023	0.026	0.024	0.020	0.0021	**0.0065**	0.020	0.10
Chloride	0.133	0.136	0.136	0.133	0.141	0.133	0.136	0.025	0.0029	**0.0091**	0.020	0.50
Nitrite	0.030	0.028	0.027	0.028	0.028	0.027	0.027	0.020	0.0010	**0.0030**	0.010	0.05
Bromide	0.037	0.042	0.043	0.038	0.040	0.032	0.025	0.040	0.0062	**0.0196**	0.040	0.20
Nitrate	0.035	0.034	0.033	0.033	0.033	0.031	0.030	0.020	0.0016	**0.0050**	0.010	0.05
Phosphate	0.047	0.051	0.049	0.046	0.052	0.047	0.059	0.040	0.0043	**0.0135**	0.030	0.10
Sulfate	0.213	0.199	0.208	0.216	0.199	0.201	0.198	0.050	0.0073	**0.0229**	0.050	0.50

MDL/LOD & PQL Verification 2017

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)** Matrix: **WATER**
Method Number: EPA Method 300.0 Unit: mg/L
Analysis Date(s): 5/26/2017
Analyst: Ria Abes

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0065**	0.020	0.024	0.10	0.0906	**91**
Chloride	**0.0091**	0.020	0.130	0.50	0.5635	**113**
Nitrite	**0.0030**	0.010	0.023	0.05	0.0581	**116**
Bromide	**0.0196**	0.040	0.048	0.20	0.194	**97**
Nitrate	**0.0050**	0.010	0.023	0.05	0.0599	**120**
Phosphate	**0.0135**	0.030	0.043	0.10	0.1111	**111**
Sulfate	**0.0229**	0.050	0.195	0.50	0.6178	**124**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121034 **Analyst:** QBM

ASSET #: N027431, N027459, N027485 **Date Analyzed:** 12/22/2017

Method: **4500_NO3**

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 1/4/2018

2nd Level Reviewer RLB 01/04/2018 Date:

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121037 **Analyst:** QBM

ASSET #: N027485, N027523, N027524, N027546 **Date Analyzed:** 12/22/2017

Method: **4500_NO3**

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 1/4/2018

2nd Level Reviewer  01/04/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N027485-001C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N = 0.4459 * 10
= 4.459 mg/L

Reporting result in two significant figures,

Nitrate/Nitrite-N = 4.5 mg/L

RLB 01/04/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

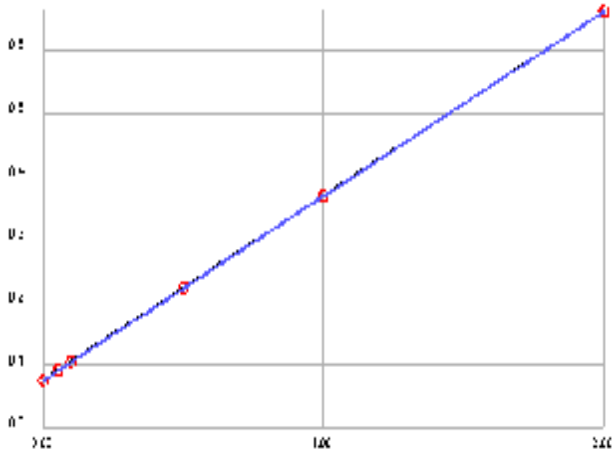
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2922x + 0.0757
Correlation	.999995

Calibrant	Energy	Set	Conc
1	0.0748	0.0000	-0.0031
2	0.0909	0.0500	0.0520
3	0.1050	0.1000	0.1003
4	0.2227	0.5000	0.5031
5	0.3670	1.0000	0.9969
6	0.6603	2.0000	2.0007

Notes:

01/04/2018

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

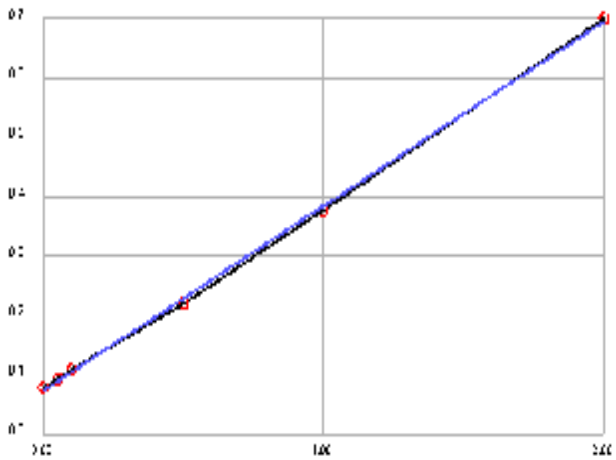
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.31x + 0.0754
Correlation	.99967

Calibrant	Energy	Set	Conc
1	0.0791	0.0000	0.0121
2	0.0937	0.0500	0.0592
3	0.1102	0.1000	0.1124
4	0.2213	0.5000	0.4708
5	0.3786	1.0000	0.9782
6	0.7007	2.0000	2.0173

Notes:

01/04/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **ICV**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877766**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.537	0.050	0.5000	0	107	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **CCV**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877777**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.507	0.050	0.5000	0	101	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **CCV**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.548	0.050	0.5000	0	110	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **CCV**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877800**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.478	0.050	0.5000	0	95.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **ICV**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877834**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.474	0.050	0.5000	0	94.9	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **CCV**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.502	0.050	0.5000	0	100	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **CCV**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.461	0.050	0.5000	0	92.2	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **CCV**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877867**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.457	0.050	0.5000	0	91.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **ICB**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **CCB**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877778**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **CCB**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877789**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121034**
Client ID: **CCB**	Batch ID: **R121034**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877801**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **ICB**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **CCB**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **CCB**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877857**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **CCB**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 12-22-2017 12:36
Time end: 12-22-2017 15:38

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK> NOT REPORTED	14:55:32	-0.0027		0.0749
2	<BLANK> NOT REPORTED	14:56:26	0.0004		0.0758
3	<CAL1>	14:57:27	-0.0031	[0]	0.0748
4	<CAL2>	14:58:23	0.0520	[0.05]	0.0909
5	<CAL3>	14:59:24	0.1003	[0.1]	0.1050
6	<CAL4>	15:00:18	0.5031	[0.5]	0.2227
7	<CAL5>	15:01:14	0.9969	[1]	0.3670
8	<CAL6>	15:02:09	2.0007	[2]	0.6603
9	,BLANK,BLANK,1, NOT REPORTED	15:03:09	0.0503		0.0904
10	,ICV,ICV,1,	15:04:05	0.5370		0.2326
11	,ICB,ICB,1,	15:05:00	0.0096		0.0785
12	,MB-H2O,MBLK,1,	15:06:02	-0.0017		0.0752
13	,LCS-H2O,LCS,1,	15:06:56	0.4963		0.2207
14	,N027431-005D,SAMP,10,	15:07:57	0.9004		0.3388
15	,N027431-005DDUP,DUP,10,	15:08:53	0.9148		0.3430
16	,N027431-006D,SAMP,20,	15:09:47	0.7522		0.2955
17	,N027431-006DMS,MS,20,	15:10:49	1.2546		0.4423
18	,N027431-006DMSD,MSD,20,	15:11:44	1.2392		0.4378
19	,N027459-001D,SAMP,5,	15:12:40	0.4579		0.2095
20	,BLANK, NOT REPORTED	15:13:40	0.0141		0.0798
21	,CCV-1,CCV,1, NOT REPORTED	15:14:36	0.5243		0.2289
22	,CCV-1,CCV,1,	15:15:31	0.5065		0.2237
23	,CCB-1,CCB,1,	15:16:32	0.0055		0.0773
24	,N027459-002D,SAMP,5,	15:17:27	0.5349		0.2320
25	,N027459-008D,SAMP,10	15:18:22	1.2396		0.4379
26	,N027459-013D,SAMP,1,	15:19:24	0.3310		0.1724

RLB 01/04/2018

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N027459-016D,SAMP,10,	15:20:18	0.8255		0.3169
28	,N027459-017D,SAMP,10,	15:21:20	0.8409		0.3214
29	,N027459-019D,SAMP,1,	15:22:15	0.0219		0.0821
30	,N027485-001C,SAMP,10,	15:23:03	0.4459		0.2060
31	,N027485-002C,SAMP,5,	15:23:47	0.7646		0.2991
32	,BLANK, NOT REPORTED	15:24:36	0.0028		0.0765
33	,CCV-2,CCV,1, NOT REPORTED	15:25:18	0.4963		0.2207
34	,CCV-2,CCV,1,	15:26:02	0.5483		0.2359
35	,CCB-2,CCB,1,	15:26:50	-0.0068		0.0737
36	,N027485-003C,SAMP,5,	15:27:33	0.6667		0.2705
37	,N027485-004C,SAMP,10,	15:28:15	0.8696		0.3298
38	,N027485-005C,SAMP,1,	15:29:04	0.0493		0.0901
39	,N027485-006C,SAMP,1,	15:29:46	0.1393		0.1164
40	,N027485-007C,SAMP,1,	15:30:30	0.1482		0.1190
41	,N027485-008C,SAMP,10,	15:31:19	0.9504		0.3534
42	,N027485-009C,SAMP,20,	15:32:01	0.7338		0.2901
43	,N027485-010C,SAMP,1,	15:32:44	1.1852		0.4220
44	,N027485-011D,SAMP,20,	15:33:32	1.0421		0.3802
45	,BLANK, NOT REPORTED	15:34:16	-0.0034		0.0747
46	,CCV-3,CCV,1, NOT REPORTED	15:35:04	0.4689		0.2127
47	,CCV-3,CCV,1,	15:35:47	0.4778		0.2153
48	,CCB-3,CCB,1,	15:36:31	-0.0079		0.0734

RB 01/04/2018

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Time start: 12-22-2017 16:49
Time end: 12-22-2017 19:51

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	19:08:19	0.0088		0.0781
2	<BLANK>	19:09:19	0.0085		0.0780
3	<CAL1>	19:10:14	0.0121	[0]	0.0791
4	<CAL2>	19:11:15	0.0592	[0.05]	0.0937
5	<CAL3>	19:12:11	0.1124	[0.1]	0.1102
6	<CAL4>	19:13:05	0.4708	[0.5]	0.2213
7	<CAL5>	19:14:06	0.9782	[1]	0.3786
8	<CAL6>	19:15:02	2.0173	[2]	0.7007
9	,BLANK,BLANK,1, NOT REPORTED	19:16:02	0.0450		0.0893
10	,ICV,ICV,1,	19:16:57	0.4743		0.2224
11	,ICB,ICB,1,	19:17:53	0.0105		0.0786
12	,MB-H2O,MBLK,1,	19:18:48	0.0150		0.0800
13	,LCS-H2O,LCS,1,	19:19:48	0.4760		0.2229
14	,N027485-012D,SAMP,20,	19:20:44	0.9979		0.3847
15	,N027523-005D,SAMP,5,	19:21:39	0.6869		0.2883
16	,N027523-005DMS,MS,5,	19:22:39	1.2063		0.4493
17	,N027523-005DMSD,MSD,5,	19:23:35	1.1557		0.4336
18	,N027523-008C,SAMP,1,	19:24:37	1.2044		0.4487
19	,N027523-008CDUP,DUP,1,	19:25:32	1.3125		0.4822
20	,BLANK, NOT REPORTED	19:26:26	0.0414		0.0882
21	,CCV-1,CCV,1, NOT REPORTED	19:27:28	0.5050		0.2319
22	,CCV-1,CCV,1,	19:28:23	0.5018		0.2309
23	,CCB-1,CCB,1,	19:29:25	0.0188		0.0812
24	,N027523-009C,SAMP,1,	19:30:19	0.0498		0.0908
25	,N027523-012C,SAMP,1,	19:31:14	0.4573		0.2171
26	,N027524-001C,SAMP,5,	19:32:16	0.6095		0.2643

RLB 01/04/2018

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N027524-002C,SAMP,5,	19:33:10	0.7137		0.2966
28	,N027524-003C,SAMP,5,	19:34:05	0.5166		0.2355
29	,N027524-004C,SAMP,5,	19:35:07	0.5531		0.2468
30	,N027524-005C,SAMP,5,	19:35:49	0.5589		0.2486
31	,N027524-006C,SAMP,5,	19:36:39	0.5353		0.2413
32	,BLANK, NOT REPORTED	19:37:22	0.0101		0.0785
33	,CCV-2,CCV,1,	19:38:10	0.4611		0.2183
34	,CCV-2,CCV,1, NOT REPORTED	19:38:54	0.4472		0.2140
35	,CCB-2,CCB,1,	19:39:36	0.0017		0.0759
36	,N027524-007C,SAMP,5,	19:40:25	0.5202		0.2366
37	,N027524-008C,SAMP,5,	19:41:07	0.4763		0.2230
38	,N027524-009C,SAMP,5,	19:41:51	0.3814		0.1936
39	,N027524-010C,SAMP,5,	19:42:41	0.5160		0.2353
40	,N027524-011C,SAMP,5,	19:43:23	0.5011		0.2307
41	,N027524-012C,SAMP,5,	19:44:06	0.5089		0.2331
42	,N027524-013C,SAMP,5,	19:44:54	0.5389		0.2424
43	,N027546-001C,SAMP,20,	19:45:37	0.7889		0.3199
44	,N027546-002C,SAMP,20,	19:46:19	0.7511		0.3082
45	,BLANK, NOT REPORTED	19:47:09	-0.0008		0.0751
46	,CCV-3,CCV,1,	19:47:51	0.4569		0.2170
47	,CCV-3,CCV,1, NOT REPORTED	19:48:34	0.4363		0.2106
48	,CCB-3,CCB,1,	19:49:23	-0.0128		0.0714

01/04/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 12/22/2017
Time Analyzed: 12:31 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171220B
Color reagent: R171220C
2% Copper Sulfate: R171220A
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027485-012D		8.02							
N027523-005D		7.85							
N027523-008C		8.35							
N027523-009C		7.83							
N027523-012C		6.43							
N027524-001C		7.81							
N027524-002C		8.31							
N027524-003C		8.30							
N027524-004C		7.89							
N027524-005C		8.24							
N027524-006C		8.11							
N027524-007C		7.95							
N027524-008C		8.02							
N027524-009C		7.7							
N027524-010C		8.19							
N027524-011C		7.90							
N027524-012C		7.39							
N027524-013C		6.76							
N027546-001C		8.24							
N027546-002C		7.47							

Advanced Technology Laboratories, Inc.
Book # 1

RLB 01/04/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 12/22/2017
Time Analyzed: 4:44 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171220B
Color reagent: R171220C
2% Copper Sulfate: R171220A
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027485-012D		8.02							
N027523-005D		7.85							
N027523-008C		8.35							
N027523-009C		7.83							
N027523-012C		6.43							
N027524-001C		7.81							
N027524-002C		8.31							
N027524-003C		8.30							
N027524-004C		7.89							
N027524-005C		8.24							
N027524-006C		8.11							
N027524-007C		7.95							
N027524-008C		8.02							
N027524-009C		7.7							
N027524-010C		8.19							
N027524-011C		7.90							
N027524-012C		7.39							
N027524-013C		6.76							
N027546-001C		8.24							
N027546-002C		7.47							

Advanced Technology Laboratories, Inc.
Book # 1

RJB 01/04/2018

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66042
ASSET #: N027485

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/19/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)		X			X	
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of Ca in N027485-001B MS/MSD failed. However LCS passed criteria.
%Rec of Ca in LLCCV2 failed, bias high. However Ca have high concentration, thus reported.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: —

2nd Level Reviewer 01/02/2018 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66042
ASSET #: N027485

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/22/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		X
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		X
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X			X	
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For K & Na run only.
%Rec of Na in N027485-002B PS/MS/MSD & K in PS failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: ~

2nd Level Reviewer [signature] 01/02/2018 Date: ~

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N027485-001B** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.03724 * 1 * (25/25) * 1000

Iron , ug/L = 37.24

Reporting results in two significant figures,

Iron , ug/L = 37

% RSD SUMMARY

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	B	0	0.26	15	PASS
Standard1	ICAL	1	B	0.1	1.13	15	PASS
Standard3	ICAL	1	B	1	1.19	15	PASS
Standard4	ICAL	1	B	2.5	0.29	15	PASS
Standard5	ICAL	1	B	3.75	0.44	15	PASS
Standard6	ICAL	1	B	5	0.45	15	PASS
Standard7	ICAL	1	B	10	0.59	15	PASS
ICV	ICV	1	B	5.1	0.28	15	PASS
ICB	ICB	1	B	0.032	8.5	15	PASS
LLICV	CCV1	1	B	0.11	1.62	20	PASS
ICSA1	ICSA	1	B	0.088	1.47	15	PASS
ICSAB1	ICSAB	1	B	1.17	0.43	15	PASS
CCV1	CCV	1	B	5.077	0.44	15	PASS
CCB1	CCB	1	B	0.041	16.48	15	<PQL
CCB1	CCB	1	B	0.013	11.56	15	PASS
CCV2	CCV	1	B	4.92	0.23	15	PASS
CCB2	CCB	1	B	0.031	17.11	15	<PQL
CCV3	CCV	1	B	5.2	0.21	15	PASS
CCB3	CCB	1	B	0.058	12.023	15	PASS
CCB3	CCB	1	B	0.021	7.91	15	PASS
MB-66042	MBLK	1	B	0.012	11.98	15	PASS
LCS1-66042	LCS	1	B	4.66	0.84	15	PASS
CCV4	CCV	1	B	4.9	0.63	15	PASS
CCB4	CCB	1	B	0.0098	9.57	15	PASS
LLCCV1	CCV2	1	B	0.098	1.19	20	PASS
ICSA2	ICSA	1	B	0.084	1.79	15	PASS
ICSAB2	ICSAB	1	B	1.18	0.47	15	PASS
N027485-001B	SAMP	1	B	0.62	0.13	15	PASS
N027485-001B	SAMP	5	B	0.13	0.97	15	PASS
N027485-001B-PS	PS	1	B	5.38	0.69	15	PASS
N027485-001B-MS1	MS	1	B	5.4	0.41	15	PASS
N027485-001B-MSD1	MSD	1	B	5.44	0.6	15	PASS
N027485-002B	SAMP	1	B	1.53	0.48	15	PASS
N027485-003B	SAMP	1	B	1.43	0.64	15	PASS
N027485-004B	SAMP	1	B	1.65	0.75	15	PASS
N027485-005B	SAMP	1	B	2.46	0.32	15	PASS
N027485-006B	SAMP	1	B	2.34	0.65	15	PASS
CCV5	CCV	1	B	5.13	0.54	15	PASS
CCB5	CCB	1	B	0.031	4.82	15	PASS
N027485-007B	SAMP	1	B	2.27	0.77	15	PASS
N027485-008B	SAMP	1	B	0.17	1.38	15	PASS
N027485-009B	SAMP	1	B	1.16	0.56	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027485-010B	SAMP	1	B	1.023	0.66	15	PASS
N027485-011C	SAMP	1	B	1.023	0.89	15	PASS
N027485-012C	SAMP	1	B	0.99	0.42	15	PASS
N027523-001B	SAMP	1	B	0.3	0.33	15	PASS
N027523-002B	SAMP	1	B	0.31	0.53	15	PASS
N027523-003B	SAMP	1	B	0.22	0.18	15	PASS
N027523-004B	SAMP	1	B	0.21	0.83	15	PASS
CCV6	CCV	1	B	4.93	0.59	15	PASS
CCB6	CCB	1	B	0.036	56.96	15	<PQL
N027523-005C	SAMP	1	B	0.79	4.079	15	PASS
N027523-006C	SAMP	1	B	1.32	0.1	15	PASS
N027523-007C	SAMP	1	B	1.37	0.6	15	PASS
N027523-008B	SAMP	1	B	0.73	0.39	15	PASS
CCV7	CCV	1	B	4.81	0.42	15	PASS
CCB7	CCB	1	B	0.028	6.54	15	PASS
CCV8	CCV	1	B	4.97	0.8	15	PASS
CCB8	CCB	1	B	0.032	9.49	15	PASS
LLCCV2	CCV2	1	B	0.1	3.18	20	PASS
ICSA3	ICSA	1	B	0.086	0.97	15	PASS
ICSAB3	ICSAB	1	B	1.15	0.53	15	PASS
CCV9	CCV	1	B	4.87	0.67	15	PASS
CCB9	CCB	1	B	0.025	10.58	15	PASS
CCV10	CCV	1	B	4.82	0.81	15	PASS
CCB10	CCB	1	B	0.035	8.23	15	PASS
CCV11	CCV	1	B	4.74	0.42	15	PASS
CCB11	CCB	1	B	0.046	7.74	15	PASS
CCB11	CCB	1	B	0.019	5.52	15	PASS
CCV12	CCV	1	B	4.85	0.53	15	PASS
CCB12	CCB	1	B	0.024	7.59	15	PASS
LLCCV3	CCV2	1	B	0.1	3.0087	20	PASS
ICSA4	ICSA	1	B	0.09	1.081	15	PASS
ICSAB4	ICSAB	1	B	1.13	0.64	15	PASS
N027485-002B	SAMP	5	B	0.34	0.22	15	PASS
N027485-003B	SAMP	5	B	0.32	0.25	15	PASS
CCV13	CCV	1	B	4.89	1.000094	15	PASS
CCB13	CCB	1	B	0.031	9.85	15	PASS
N027485-010B	SAMP	5	B	0.25	0.76	15	PASS
CCV14	CCV	1	B	4.96	0.56	15	PASS
CCB14	CCB	1	B	0.027	1.84	15	PASS
CCV15	CCV	1	B	4.83	0.61	15	PASS
CCB15	CCB	1	B	0.029	4.2	15	PASS
CCV16	CCV	1	B	4.8	0.77	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB16	CCB	1	B	0.047	12.42	15	PASS
CCB16	CCB	1	B	0.02	4.068	15	PASS
CCV17	CCV	1	B	5.24	1.23	15	PASS
CCB17	CCB	1	B	0.06	11.74	15	PASS
LLCCV4	CCV2	1	B	0.12	1.54	20	PASS
LLCCV4	CCV2	1	B	0.079	0.74	20	PASS
ICSA5	ICSA	1	B	0.085	1.33	15	PASS
ICSAB5	ICSAB	1	B	1.22	0.32	15	PASS
ICSAB5	ICSAB	1	B	1.022	2.62	15	PASS
CalBlk	IBLK	1	Ca	0	4.61	15	PASS
Standard1	ICAL	1	Ca	0.2	11.24	15	PASS
Standard2	ICAL	1	Ca	1	4.85	15	PASS
Standard3	ICAL	1	Ca	2	2.89	15	PASS
Standard4	ICAL	1	Ca	5	0.84	15	PASS
Standard5	ICAL	1	Ca	7.5	0.92	15	PASS
Standard6	ICAL	1	Ca	10	0.58	15	PASS
Standard7	ICAL	1	Ca	20	0.33	15	PASS
ICV	ICV	1	Ca	10.1	0.16	15	PASS
ICB	ICB	1	Ca	0.025	67.56	15	<PQL
LLICV	CCV1	1	Ca	0.23	11.41	20	PASS
ICSA1	ICSA	1	Ca	506.49	0.09	15	PASS
ICSAB1	ICSAB	1	Ca	555.54	0.11	15	PASS
CCV1	CCV	1	Ca	10.087	0.51	15	PASS
CCB1	CCB	1	Ca	-0.021	131.14	15	<PQL
CCB1	CCB	1	Ca	0.033	27.36	15	<PQL
CCV2	CCV	1	Ca	9.9	0.58	15	PASS
CCB2	CCB	1	Ca	0.0035	666.54	15	<PQL
CCV3	CCV	1	Ca	10.16	0.48	15	PASS
CCB3	CCB	1	Ca	0.00041	7555.71	15	<PQL
CCB3	CCB	1	Ca	0.018	110.92	15	<PQL
MB-66042	MBLK	1	Ca	0.04	46.33	15	<PQL
LCS1-66042	LCS	1	Ca	9.55	1.041	15	PASS
CCV4	CCV	1	Ca	9.88	0.11	15	PASS
CCB4	CCB	1	Ca	0.029	117.34	15	<PQL
LLCCV1	CCV2	1	Ca	0.22	13.79	20	PASS
ICSA2	ICSA	1	Ca	511.76	0.092	15	PASS
ICSAB2	ICSAB	1	Ca	558.43	0.18	15	PASS
N027485-001B	SAMP	1	Ca	99.23	0.15	15	PASS
N027485-001B	SAMP	5	Ca	21.24	0.78	15	PASS
N027485-001B-PS	PS	1	Ca	108.19	0.14	15	PASS
N027485-001B-MS1	MS	1	Ca	114.17	0.47	15	PASS
N027485-001B-MSD1	MSD	1	Ca	114.59	0.17	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027485-002B	SAMP	1	Ca	647.7	0.099	15	PASS
N027485-003B	SAMP	1	Ca	637.56	0.11	15	PASS
N027485-004B	SAMP	1	Ca	302.46	0.36	15	PASS
N027485-005B	SAMP	1	Ca	345.32	0.12	15	PASS
N027485-006B	SAMP	1	Ca	388.7	0.11	15	PASS
CCV5	CCV	1	Ca	10.35	0.77	15	PASS
CCB5	CCB	1	Ca	0.0066	281.14	15	<PQL
N027485-007B	SAMP	1	Ca	385.16	0.15	15	PASS
N027485-008B	SAMP	1	Ca	373.35	0.42	15	PASS
N027485-009B	SAMP	1	Ca	41.69	0.18	15	PASS
N027485-010B	SAMP	1	Ca	472.13	0.07	15	PASS
N027485-011C	SAMP	1	Ca	159	0.39	15	PASS
N027485-012C	SAMP	1	Ca	154.7	0.16	15	PASS
N027523-001B	SAMP	1	Ca	102.2	0.7	15	PASS
N027523-002B	SAMP	1	Ca	27.26	0.96	15	PASS
N027523-003B	SAMP	1	Ca	58.095	0.18	15	PASS
N027523-004B	SAMP	1	Ca	83.54	0.5	15	PASS
CCV6	CCV	1	Ca	10.068	0.64	15	PASS
CCB6	CCB	1	Ca	-0.02	390.28	15	<PQL
N027523-005C	SAMP	1	Ca	125.45	0.12	15	PASS
N027523-006C	SAMP	1	Ca	310.04	0.26	15	PASS
N027523-007C	SAMP	1	Ca	331.86	0.072	15	PASS
N027523-008B	SAMP	1	Ca	161.93	0.058	15	PASS
CCV7	CCV	1	Ca	9.85	0.94	15	PASS
CCB7	CCB	1	Ca	0.031	61.44	15	<PQL
CCV8	CCV	1	Ca	10.064	0.5	15	PASS
CCB8	CCB	1	Ca	0.048	44.45	15	<PQL
LLCCV2	CCV2	1	Ca	0.27	8.72	20	PASS
ICSA3	ICSA	1	Ca	497.08	0.11	15	PASS
ICSAB3	ICSAB	1	Ca	543.69	0.18	15	PASS
CCV9	CCV	1	Ca	10.13	0.85	15	PASS
CCB9	CCB	1	Ca	0.061	16.2	15	<PQL
CCV10	CCV	1	Ca	9.92	0.49	15	PASS
CCB10	CCB	1	Ca	0.063	30.0053	15	<PQL
CCV11	CCV	1	Ca	9.66	0.31	15	PASS
CCB11	CCB	1	Ca	0.049	17.31	15	<PQL
CCB11	CCB	1	Ca	0.053	25.75	15	<PQL
CCV12	CCV	1	Ca	9.88	0.73	15	PASS
CCB12	CCB	1	Ca	0.055	96.22	15	<PQL
LLCCV3	CCV2	1	Ca	0.26	4.53	20	PASS
ICSA4	ICSA	1	Ca	489.73	0.39	15	PASS
ICSAB4	ICSAB	1	Ca	536.67	0.25	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027485-002B	SAMP	5	Ca	126.31	0.39	15	PASS
N027485-003B	SAMP	5	Ca	125.36	0.21	15	PASS
CCV13	CCV	1	Ca	9.81	0.84	15	PASS
CCB13	CCB	1	Ca	0.061	71.21	15	<PQL
N027485-010B	SAMP	5	Ca	96.62	0.39	15	PASS
CCV14	CCV	1	Ca	10.006	0.81	15	PASS
CCB14	CCB	1	Ca	0.021	202	15	<PQL
CCV15	CCV	1	Ca	9.48	0.87	15	PASS
CCB15	CCB	1	Ca	0.038	117.27	15	<PQL
CCV16	CCV	1	Ca	9.47	0.34	15	PASS
CCB16	CCB	1	Ca	0.0024	667.76	15	<PQL
CCB16	CCB	1	Ca	0.044	46.61	15	<PQL
CCV17	CCV	1	Ca	10.46	0.51	15	PASS
CCB17	CCB	1	Ca	-0.019	142.64	15	<PQL
LLCCV4	CCV2	1	Ca	0.27	10.024	20	PASS
LLCCV4	CCV2	1	Ca	0.16	3.77	20	PASS
ICSA5	ICSA	1	Ca	511.39	0.15	15	PASS
ICSAB5	ICSAB	1	Ca	561.62	0.28	15	PASS
ICSAB5	ICSAB	1	Ca	464.82	0.11	15	PASS
CalBlk	IBLK	1	Fe	0	4.28	15	PASS
Standard1	ICAL	1	Fe	0.02	0.87	15	PASS
Standard2	ICAL	1	Fe	0.05	0.44	15	PASS
Standard3	ICAL	1	Fe	2	0.44	15	PASS
Standard4	ICAL	1	Fe	5	0.75	15	PASS
Standard5	ICAL	1	Fe	7.5	0.33	15	PASS
Standard6	ICAL	1	Fe	10	1.027	15	PASS
Standard7	ICAL	1	Fe	20	0.18	15	PASS
ICV	ICV	1	Fe	10.27	0.25	15	PASS
ICB	ICB	1	Fe	0.00026	186.27	15	<PQL
LLICV	CCV1	1	Fe	0.022	2.86	20	PASS
ICSA1	ICSA	1	Fe	179.79	0.53	15	PASS
ICSAB1	ICSAB	1	Fe	187.59	0.075	15	PASS
CCV1	CCV	1	Fe	10.069	0.16	15	PASS
CCB1	CCB	1	Fe	-0.00017	84.95	15	<PQL
CCB1	CCB	1	Fe	0.00077	31.18	15	<PQL
CCV2	CCV	1	Fe	9.77	0.13	15	PASS
CCB2	CCB	1	Fe	0.0002	102.016	15	<PQL
CCV3	CCV	1	Fe	10.41	0.3	15	PASS
CCB3	CCB	1	Fe	-0.00038	191.48	15	<PQL
CCB3	CCB	1	Fe	-0.00056	180.67	15	<PQL
MB-66042	MBLK	1	Fe	-0.00016	824.59	15	<PQL
LCS1-66042	LCS	1	Fe	0.11	0.54	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV4	CCV	1	Fe	9.84	0.095	15	PASS
CCB4	CCB	1	Fe	-0.00024	315.41	15	<PQL
LLCCV1	CCV2	1	Fe	0.023	3.26	20	PASS
ICSA2	ICSA	1	Fe	181.78	0.087	15	PASS
ICSAB2	ICSAB	1	Fe	188.99	0.08	15	PASS
N027485-001B	SAMP	1	Fe	0.037	0.43	15	PASS
N027485-001B	SAMP	5	Fe	0.0063	9.21	15	PASS
N027485-001B-PS	PS	1	Fe	0.14	0.87	15	PASS
N027485-001B-MS1	MS	1	Fe	0.13	0.68	15	PASS
N027485-001B-MSD1	MSD	1	Fe	0.13	0.29	15	PASS
N027485-002B	SAMP	1	Fe	0.0032	18.95	15	<PQL
N027485-003B	SAMP	1	Fe	0.11	0.31	15	PASS
N027485-004B	SAMP	1	Fe	0.0079	3.9	15	PASS
N027485-005B	SAMP	1	Fe	0.013	2.35	15	PASS
N027485-006B	SAMP	1	Fe	0.013	4.51	15	PASS
CCV5	CCV	1	Fe	10.61	0.8	15	PASS
CCB5	CCB	1	Fe	-0.00035	70.82	15	<PQL
N027485-007B	SAMP	1	Fe	0.015	3.65	15	PASS
N027485-008B	SAMP	1	Fe	0.014	3.86	15	PASS
N027485-009B	SAMP	1	Fe	0.016	1.31	15	PASS
N027485-010B	SAMP	1	Fe	0.23	0.51	15	PASS
N027485-011C	SAMP	1	Fe	0.099	0.88	15	PASS
N027485-012C	SAMP	1	Fe	0.11	0.79	15	PASS
N027523-001B	SAMP	1	Fe	0.18	0.4	15	PASS
N027523-002B	SAMP	1	Fe	1.45	0.81	15	PASS
N027523-003B	SAMP	1	Fe	0.03	0.9	15	PASS
N027523-004B	SAMP	1	Fe	0.038	0.85	15	PASS
CCV6	CCV	1	Fe	9.94	0.081	15	PASS
CCB6	CCB	1	Fe	-0.00036	570.094	15	<PQL
N027523-005C	SAMP	1	Fe	0.036	1.28	15	PASS
N027523-006C	SAMP	1	Fe	0.038	1.4	15	PASS
N027523-007C	SAMP	1	Fe	0.017	2.28	15	PASS
N027523-008B	SAMP	1	Fe	0.026	1.1	15	PASS
CCV7	CCV	1	Fe	9.65	0.12	15	PASS
CCB7	CCB	1	Fe	-0.00011	510.0072	15	<PQL
CCV8	CCV	1	Fe	10.27	0.49	15	PASS
CCB8	CCB	1	Fe	0.0003	205.79	15	<PQL
LLCCV2	CCV2	1	Fe	0.023	0.9	20	PASS
ICSA3	ICSA	1	Fe	176.99	0.26	15	PASS
ICSAB3	ICSAB	1	Fe	184.65	0.061	15	PASS
CCV9	CCV	1	Fe	10.19	0.37	15	PASS
CCB9	CCB	1	Fe	0.00067	27.46	15	<PQL

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV10	CCV	1	Fe	10.15	0.17	15	PASS
CCB10	CCB	1	Fe	0.00061	54.82	15	<PQL
CCV11	CCV	1	Fe	9.7	0.18	15	PASS
CCB11	CCB	1	Fe	0.00057	19.74	15	<PQL
CCB11	CCB	1	Fe	0.00089	115.74	15	<PQL
CCV12	CCV	1	Fe	10.18	0.8	15	PASS
CCB12	CCB	1	Fe	0.0005	8.21	15	PASS
LLCCV3	CCV2	1	Fe	0.024	1.89	20	PASS
ICSA4	ICSA	1	Fe	175.82	1.053	15	PASS
ICSAB4	ICSAB	1	Fe	183.95	0.15	15	PASS
N027485-002B	SAMP	5	Fe	0.0013	47.22	15	<PQL
N027485-003B	SAMP	5	Fe	0.026	1.33	15	PASS
CCV13	CCV	1	Fe	10.15	0.56	15	PASS
CCB13	CCB	1	Fe	0.0011	103.41	15	<PQL
N027485-010B	SAMP	5	Fe	0.05	2.24	15	PASS
CCV14	CCV	1	Fe	10.17	0.018	15	PASS
CCB14	CCB	1	Fe	-0.00054	87.53	15	<PQL
CCV15	CCV	1	Fe	9.94	0.59	15	PASS
CCB15	CCB	1	Fe	-0.0011	9.77	15	PASS
CCV16	CCV	1	Fe	9.92	0.5	15	PASS
CCB16	CCB	1	Fe	0.00074	80.4	15	<PQL
CCB16	CCB	1	Fe	-0.0007	36.19	15	<PQL
CCV17	CCV	1	Fe	10.91	0.67	15	PASS
CCB17	CCB	1	Fe	-0.00067	75.16	15	<PQL
LLCCV4	CCV2	1	Fe	0.025	2.86	20	PASS
LLCCV4	CCV2	1	Fe	0.017	5.58	20	PASS
ICSA5	ICSA	1	Fe	187.83	0.26	15	PASS
ICSAB5	ICSAB	1	Fe	196.9	0.18	15	PASS
ICSAB5	ICSAB	1	Fe	200.61	1.075	15	PASS
CalBlk	IBLK	1	Mg	0	3.29	15	PASS
Standard1	ICAL	1	Mg	0.1	0.36	15	PASS
Standard2	ICAL	1	Mg	1	0.34	15	PASS
Standard3	ICAL	1	Mg	2	0.47	15	PASS
Standard4	ICAL	1	Mg	5	0.56	15	PASS
Standard5	ICAL	1	Mg	7.5	0.35	15	PASS
Standard6	ICAL	1	Mg	10	1.06	15	PASS
Standard7	ICAL	1	Mg	20	0.26	15	PASS
ICV	ICV	1	Mg	10.26	0.12	15	PASS
ICB	ICB	1	Mg	-0.00057	102.75	15	<PQL
LLICV	CCV1	1	Mg	0.1	1.00022	20	PASS
ICSA1	ICSA	1	Mg	475.94	0.47	15	PASS
ICSAB1	ICSAB	1	Mg	503.56	0.34	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV1	CCV	1	Mg	10.004	0.13	15	PASS
CCB1	CCB	1	Mg	-0.00046	52.94	15	<PQL
CCB1	CCB	1	Mg	-0.00092	99.41	15	<PQL
CCV2	CCV	1	Mg	9.75	0.24	15	PASS
CCB2	CCB	1	Mg	-0.0016	36.99	15	<PQL
CCV3	CCV	1	Mg	10.39	0.35	15	PASS
CCB3	CCB	1	Mg	-0.00072	141.5	15	<PQL
CCB3	CCB	1	Mg	-0.00061	50.2	15	<PQL
MB-66042	MBLK	1	Mg	0.00027	73.36	15	<PQL
LCS1-66042	LCS	1	Mg	9.36	0.17	15	PASS
CCV4	CCV	1	Mg	9.82	0.3	15	PASS
CCB4	CCB	1	Mg	-0.00072	76.36	15	<PQL
LLCCV1	CCV2	1	Mg	0.11	0.71	20	PASS
ICSA2	ICSA	1	Mg	481.22	0.14	15	PASS
ICSAB2	ICSAB	1	Mg	506.62	0.41	15	PASS
N027485-001B	SAMP	1	Mg	9.13	0.14	15	PASS
N027485-001B	SAMP	5	Mg	2.008	0.24	15	PASS
N027485-001B-PS	PS	1	Mg	18.009	0.057	15	PASS
N027485-001B-MS1	MS	1	Mg	18.44	0.068	15	PASS
N027485-001B-MSD1	MSD	1	Mg	18.53	0.15	15	PASS
N027485-002B	SAMP	1	Mg	26.13	0.22	15	PASS
N027485-003B	SAMP	1	Mg	24.48	0.17	15	PASS
N027485-004B	SAMP	1	Mg	18.7	0.052	15	PASS
N027485-005B	SAMP	1	Mg	1.97	0.059	15	PASS
N027485-006B	SAMP	1	Mg	0.079	0.42	15	PASS
CCV5	CCV	1	Mg	10.57	0.75	15	PASS
CCB5	CCB	1	Mg	-0.00024	141.97	15	<PQL
N027485-007B	SAMP	1	Mg	0.02	2.47	15	PASS
N027485-008B	SAMP	1	Mg	23.15	0.11	15	PASS
N027485-009B	SAMP	1	Mg	7.19	0.14	15	PASS
N027485-010B	SAMP	1	Mg	23.6	0.17	15	PASS
N027485-011C	SAMP	1	Mg	37.026	0.16	15	PASS
N027485-012C	SAMP	1	Mg	35.73	0.24	15	PASS
N027523-001B	SAMP	1	Mg	24.55	0.025	15	PASS
N027523-002B	SAMP	1	Mg	5.3	0.71	15	PASS
N027523-003B	SAMP	1	Mg	8.1	0.19	15	PASS
N027523-004B	SAMP	1	Mg	12.98	0.51	15	PASS
CCV6	CCV	1	Mg	9.88	0.051	15	PASS
CCB6	CCB	1	Mg	0.00095	296.93	15	<PQL
N027523-005C	SAMP	1	Mg	22.03	2.12	15	PASS
N027523-006C	SAMP	1	Mg	19.083	0.2	15	PASS
N027523-007C	SAMP	1	Mg	20.34	0.18	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027523-008B	SAMP	1	Mg	16.027	0.15	15	PASS
CCV7	CCV	1	Mg	9.68	0.057	15	PASS
CCB7	CCB	1	Mg	-0.001	43.7	15	<PQL
CCV8	CCV	1	Mg	10.41	0.51	15	PASS
CCB8	CCB	1	Mg	-0.0014	63.1	15	<PQL
LLCCV2	CCV2	1	Mg	0.1	1.16	20	PASS
ICSA3	ICSA	1	Mg	476.52	0.15	15	PASS
ICSAB3	ICSAB	1	Mg	500.6	0.69	15	PASS
CCV9	CCV	1	Mg	10.32	0.48	15	PASS
CCB9	CCB	1	Mg	-0.0013	70.18	15	<PQL
CCV10	CCV	1	Mg	10.29	0.11	15	PASS
CCB10	CCB	1	Mg	-0.0014	65.99	15	<PQL
CCV11	CCV	1	Mg	9.82	0.36	15	PASS
CCB11	CCB	1	Mg	-0.0014	35.042	15	<PQL
CCB11	CCB	1	Mg	-0.0012	13.65	15	PASS
CCV12	CCV	1	Mg	10.34	0.82	15	PASS
CCB12	CCB	1	Mg	-0.00016	188.32	15	<PQL
LLCCV3	CCV2	1	Mg	0.1	0.81	20	PASS
ICSA4	ICSA	1	Mg	473.9	1.11	15	PASS
ICSAB4	ICSAB	1	Mg	500.15	0.67	15	PASS
N027485-002B	SAMP	5	Mg	5.88	0.22	15	PASS
N027485-003B	SAMP	5	Mg	5.54	0.16	15	PASS
CCV13	CCV	1	Mg	10.32	0.34	15	PASS
CCB13	CCB	1	Mg	0.00036	32.88	15	<PQL
N027485-010B	SAMP	5	Mg	5.52	0.48	15	PASS
CCV14	CCV	1	Mg	10.25	0.18	15	PASS
CCB14	CCB	1	Mg	-0.00055	32.68	15	<PQL
CCV15	CCV	1	Mg	10.007	0.51	15	PASS
CCB15	CCB	1	Mg	-0.00003	276.64	15	<PQL
CCV16	CCV	1	Mg	9.99	0.33	15	PASS
CCB16	CCB	1	Mg	0.00041	25.05	15	<PQL
CCB16	CCB	1	Mg	-0.00009	458.22	15	<PQL
CCV17	CCV	1	Mg	10.98	0.79	15	PASS
CCB17	CCB	1	Mg	-0.00063	95.52	15	<PQL
LLCCV4	CCV2	1	Mg	0.11	0.3	20	PASS
LLCCV4	CCV2	1	Mg	0.081	0.46	20	PASS
ICSA5	ICSA	1	Mg	504.98	0.32	15	PASS
ICSAB5	ICSAB	1	Mg	534.4	0.036	15	PASS
ICSAB5	ICSAB	1	Mg	447.75	1.72	15	PASS

RSD SUMMARY: 171222B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	K	0	6.22	15	PASS
Standard1	ICAL	1	K	0.1	3.98	15	PASS
Standard2	ICAL	1	K	1	0.78	15	PASS
Standard3	ICAL	1	K	5	0.18	15	PASS
Standard4	ICAL	1	K	10	0.12	15	PASS
Standard5	ICAL	1	K	20	0.089	15	PASS
Standard6	ICAL	1	K	40	0.07	15	PASS
ICV	ICV	1	K	10.12	0.14	15	PASS
ICB	ICB	1	K	0.0096	126.36	15	<PQL
ICSA1	ICSA	1	K	-0.00025	2046.69	15	<PQL
ICSAB1	ICSAB	1	K	10.12	0.24	15	PASS
MB-66042	MBLK	1	K	-3175.5	48.78	15	<PQL
LCS2-66042	LCS	1	K	-362.43	1038.3	15	<PQL
MB-66042	MBLK	1	K	-0.0059	215.94	15	<PQL
LCS2-66042	LCS	1	K	19.75	0.05	15	PASS
N027523-001B	SAMP	100	K	0.086	8.13	15	PASS
N027523-002B	SAMP	100	K	0.034	25.58	15	<PQL
N027523-003B	SAMP	100	K	0.067	15.067	15	<PQL
N027523-004B	SAMP	100	K	-573.42	461.2	15	<PQL
N027523-005C	SAMP	100	K	0.075	19.069	15	<PQL
N027523-006C	SAMP	100	K	0.18	1.3	15	PASS
CCV1	CCV	1	K	10.002	0.11	15	PASS
CCB1	CCB	1	K	-0.015	36.95	15	<PQL
N027523-007C	SAMP	100	K	0.18	4.55	15	PASS
N027523-008B	SAMP	100	K	0.15	7.0021	15	PASS
N027523-004B	SAMP	100	K	0.064	7.35	15	PASS
N027485-011C	SAMP	100	K	0.13	6.029	15	PASS
N027485-012C	SAMP	100	K	0.13	4.31	15	PASS
N027485-001B	SAMP	100	K	0.13	2.4	15	PASS
N027485-003B	SAMP	100	K	0.31	1.52	15	PASS
N027485-004B	SAMP	100	K	0.3	3.98	15	PASS
N027485-005B	SAMP	500	K	0.091	7.69	15	PASS
N027485-006B	SAMP	500	K	0.085	10.98	15	PASS
CCV2	CCV	1	K	10.03	0.24	15	PASS
CCB2	CCB	1	K	-0.008	121.53	15	<PQL
N027485-007B	SAMP	500	K	0.093	11.33	15	PASS
N027485-008B	SAMP	10	K	0.96	0.78	15	PASS
N027485-009B	SAMP	100	K	0.078	5.55	15	PASS
N027485-010B	SAMP	100	K	0.22	4.87	15	PASS
N027485-002B	SAMP	5	K	6.59	0.22	15	PASS
N027485-002B	SAMP	25	K	1.29	1.087	15	PASS
N027485-002B-PS	PS	5	K	11.52	0.33	15	PASS

RSD SUMMARY: 171222B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027485-002B-MS2	MS	5	K	11.19	1.051	15	PASS
N027485-002B-MSD2	MSD	5	K	11.22	0.24	15	PASS
CCV3	CCV	1	K	10.3	0.096	15	PASS
CCB3	CCB	1	K	0.022	41.43	15	<PQL
N027485-002B	SAMP	100	K	0.34	0.65	15	PASS
N027485-002B	SAMP	500	K	0.1	1.25	15	PASS
N027485-002B-PS	PS	100	K	0.57	2.23	15	PASS
N027485-002B-MS2	MS	100	K	0.56	2.42	15	PASS
N027485-002B-MSD2	MSD	100	K	0.56	0.86	15	PASS
N027485-011C	SAMP	1	K	12.37	0.12	15	PASS
N027485-012C	SAMP	1	K	11.88	0.26	15	PASS
N027523-005C	SAMP	1	K	6.14	0.32	15	PASS
CCV4	CCV	1	K	10.25	0.15	15	PASS
CCB4	CCB	1	K	0.0053	108.9	15	<PQL
CCV5	CCV	1	K	10.18	0.16	15	PASS
CCB5	CCB	1	K	-0.019	10.49	15	PASS
CCV6	CCV	1	K	10.15	0.21	15	PASS
CCB6	CCB	1	K	-0.014	96.62	15	<PQL
ICSA2	ICSA	1	K	-0.0074	269.95	15	<PQL
ICSAB2	ICSAB	1	K	10.14	0.21	15	PASS
CalBlk	IBLK	1	Na	0	7.1	15	PASS
Standard1	ICAL	1	Na	0.1	2.28	15	PASS
Standard2	ICAL	1	Na	1	0.21	15	PASS
Standard3	ICAL	1	Na	5	0.059	15	PASS
Standard4	ICAL	1	Na	10	0.066	15	PASS
Standard5	ICAL	1	Na	20	0.18	15	PASS
Standard6	ICAL	1	Na	40	0.025	15	PASS
ICV	ICV	1	Na	10.18	0.34	15	PASS
ICB	ICB	1	Na	-0.00074	563.25	15	<PQL
ICSA1	ICSA	1	Na	0.00053	922.43	15	<PQL
ICSAB1	ICSAB	1	Na	10.23	0.16	15	PASS
MB-66042	MBLK	1	Na	-2234.9	46.89	15	<PQL
LCS2-66042	LCS	1	Na	-109.71	2732.037	15	<PQL
MB-66042	MBLK	1	Na	0.00037	656.76	15	<PQL
LCS2-66042	LCS	1	Na	20.54	0.044	15	PASS
N027523-001B	SAMP	100	Na	2.14	0.41	15	PASS
N027523-002B	SAMP	100	Na	2.078	0.23	15	PASS
N027523-003B	SAMP	100	Na	1.97	0.36	15	PASS
N027523-004B	SAMP	100	Na	-322.36	501.63	15	<PQL
N027523-005C	SAMP	100	Na	4.85	0.22	15	PASS
N027523-006C	SAMP	100	Na	22.49	0.079	15	PASS
CCV1	CCV	1	Na	10.11	0.044	15	PASS

RSD SUMMARY: 171222B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB1	CCB	1	Na	-0.0071	35.7	15	<PQL
N027523-007C	SAMP	100	Na	23.6	0.095	15	PASS
N027523-008B	SAMP	100	Na	11.89	0.12	15	PASS
N027523-004B	SAMP	100	Na	1.86	0.14	15	PASS
N027485-011C	SAMP	100	Na	6.22	0.19	15	PASS
N027485-012C	SAMP	100	Na	6.025	0.11	15	PASS
N027485-001B	SAMP	100	Na	6.2	0.2	15	PASS
N027485-003B	SAMP	100	Na	21.53	0.032	15	PASS
N027485-004B	SAMP	100	Na	26.22	0.19	15	PASS
N027485-005B	SAMP	500	Na	8.026	0.13	15	PASS
N027485-006B	SAMP	500	Na	7.63	0.22	15	PASS
CCV2	CCV	1	Na	10.14	0.18	15	PASS
CCB2	CCB	1	Na	-0.0075	38.1	15	<PQL
N027485-007B	SAMP	500	Na	7.66	0.093	15	PASS
N027485-008B	SAMP	10	Na	9.36	0.2	15	PASS
N027485-009B	SAMP	100	Na	14.52	0.16	15	PASS
N027485-010B	SAMP	100	Na	13.019	0.096	15	PASS
N027485-002B	SAMP	5	Na	479.27	1.29	15	PASS
N027485-002B	SAMP	25	Na	96.93	0.1	15	PASS
N027485-002B-PS	PS	5	Na	507.79	0.34	15	PASS
N027485-002B-MS2	MS	5	Na	482.56	1.11	15	PASS
N027485-002B-MSD2	MSD	5	Na	484.34	0.21	15	PASS
CCV3	CCV	1	Na	10.54	0.067	15	PASS
CCB3	CCB	1	Na	0.13	6.26	15	PASS
N027485-002B	SAMP	100	Na	23.35	0.22	15	PASS
N027485-002B	SAMP	500	Na	4.9	0.4	15	PASS
N027485-002B-PS	PS	100	Na	25.37	0.16	15	PASS
N027485-002B-MS2	MS	100	Na	24.52	0.13	15	PASS
N027485-002B-MSD2	MSD	100	Na	24.092	0.3	15	PASS
N027485-011C	SAMP	1	Na	599.76	0.82	15	PASS
N027485-012C	SAMP	1	Na	571.06	0.6	15	PASS
N027523-005C	SAMP	1	Na	456.82	0.53	15	PASS
CCV4	CCV	1	Na	10.47	0.33	15	PASS
CCB4	CCB	1	Na	0.12	3.48	15	PASS
CCV5	CCV	1	Na	10.31	0.018	15	PASS
CCB5	CCB	1	Na	0.044	7.75	15	PASS
CCV6	CCV	1	Na	10.26	0.099	15	PASS
CCB6	CCB	1	Na	0.033	12.15	15	PASS
ICSA2	ICSA	1	Na	0.032	8.66	15	PASS
ICSAB2	ICSAB	1	Na	10.27	0.086	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 171219A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201K/MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201K/-171030G/-171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/19/2017	10:23:34 AM
2	Standard1	ICAL	1	12/19/2017	10:28:24 AM
3	Standard2	ICAL	1	12/19/2017	10:33:45 AM
11	Standard3	ICAL	1	12/19/2017	10:39:04 AM
12	Standard4	ICAL	1	12/19/2017	10:44:25 AM
6	Standard5	ICAL	1	12/19/2017	10:51:46 AM
7	Standard6	ICAL	1	12/19/2017	10:59:06 AM
8	Standard7	ICAL	1	12/19/2017	11:06:41 AM
9	ICV	ICV	1	12/19/2017	11:10:28 AM
1	ICB	ICB	1	12/19/2017	11:21:16 AM
2	LLICV	CCV1	1	12/19/2017	11:26:34 AM
4	ICSA1	ICSA	1	12/19/2017	11:40:02 AM
5	ICSAB1	ICSAB	1	12/19/2017	11:47:34 AM
122	N027429-010B	SAMP	5	12/19/2017	11:55:06 AM
123	N027430-015B	SAMP	5	12/19/2017	12:02:00 PM
108	MB-65991	MBLK	1	12/19/2017	12:08:53 PM
109	LCS1-65991	LCS	1	12/19/2017	12:13:44 PM
110	N027437-001A	SAMP	1	12/19/2017	12:21:07 PM
111	N027437-002A	SAMP	1	12/19/2017	12:26:28 PM
112	N027437-002A	SAMP	5	12/19/2017	12:33:22 PM
113	N027437-002A-PS	PS	1	12/19/2017	12:38:43 PM
114	N027437-002AMS1	MS	1	12/19/2017	12:45:38 PM
115	N027437-002AMSD1	MSD	1	12/19/2017	12:52:31 PM
7	CCV1	CCV	1	12/19/2017	12:59:24 PM
1	CCB1	CCB	1	12/19/2017	01:06:15 PM
1	CCB1	CCB	1	12/19/2017	01:14:21 PM
116	N027437-003C	SAMP	1	12/19/2017	01:19:09 PM
117	N027437-004A	SAMP	1	12/19/2017	01:24:04 PM
118	N027437-005A	SAMP	1	12/19/2017	01:29:27 PM
38	MB-65994	MBLK	1	12/19/2017	01:34:18 PM
39	LCS1-65994	LCS	1	12/19/2017	01:39:09 PM
40	N027459-001C	SAMP	1	12/19/2017	01:46:29 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
41	N027459-001C	SAMP	5	12/19/2017	01:53:19 PM
42	N027459-001C-PS	PS	1	12/19/2017	01:58:11 PM
43	N027459-001C-MS1	MS	1	12/19/2017	02:05:02 PM
44	N027459-001C-MSD1	MSD	1	12/19/2017	02:11:54 PM
7	CCV2	CCV	1	12/19/2017	02:18:46 PM
1	CCB2	CCB	1	12/19/2017	02:25:37 PM
45	N027459-002C	SAMP	1	12/19/2017	02:30:56 PM
46	N027459-003B	SAMP	1	12/19/2017	02:37:46 PM
47	N027459-004B	SAMP	1	12/19/2017	02:44:38 PM
48	N027459-005B	SAMP	1	12/19/2017	02:51:28 PM
49	N027459-006B	SAMP	1	12/19/2017	02:58:20 PM
50	N027459-007B	SAMP	1	12/19/2017	03:05:13 PM
51	N027459-008C	SAMP	1	12/19/2017	03:12:46 PM
52	N027459-009B	SAMP	1	12/19/2017	03:20:08 PM
53	N027459-010B	SAMP	1	12/19/2017	03:26:58 PM
54	N027459-011B	SAMP	1	12/19/2017	03:33:50 PM
7	CCV3	CCV	1	12/19/2017	03:40:40 PM
1	CCB3	CCB	1	12/19/2017	03:48:03 PM
55	N027459-012B	SAMP	1	12/19/2017	03:53:21 PM
1	CCB3	CCB	1	12/19/2017	03:58:33 PM
55	N027459-012B	SAMP	1	12/19/2017	04:03:22 PM
56	N027459-013B	SAMP	1	12/19/2017	04:08:43 PM
57	N027459-014B	SAMP	1	12/19/2017	04:15:34 PM
58	N027459-015B	SAMP	1	12/19/2017	04:22:24 PM
59	N027459-016C	SAMP	1	12/19/2017	04:29:17 PM
60	N027459-017C	SAMP	1	12/19/2017	04:36:09 PM
61	N027459-018B	SAMP	1	12/19/2017	04:43:02 PM
62	N027459-019B	SAMP	1	12/19/2017	04:50:27 PM
63	MB-66042	MBLK	1	12/19/2017	04:57:19 PM
64	LCS1-66042	LCS	1	12/19/2017	05:02:10 PM
7	CCV4	CCV	1	12/19/2017	05:09:31 PM
1	CCB4	CCB	1	12/19/2017	05:34:54 PM
2	LLCCV1	CCV2	1	12/19/2017	05:39:42 PM
4	ICSA2	ICSA	1	12/19/2017	05:45:03 PM
5	ICSAB2	ICSAB	1	12/19/2017	05:52:35 PM
65	N027485-001B	SAMP	1	12/19/2017	06:00:08 PM
66	N027485-001B	SAMP	5	12/19/2017	06:05:00 PM
67	N027485-001B-PS	PS	1	12/19/2017	06:10:22 PM
68	N027485-001B-MS1	MS	1	12/19/2017	06:17:41 PM
69	N027485-001B-MSD1	MSD	1	12/19/2017	06:24:34 PM
70	N027485-002B	SAMP	1	12/19/2017	06:31:26 PM
71	N027485-003B	SAMP	1	12/19/2017	06:38:18 PM
72	N027485-004B	SAMP	1	12/19/2017	06:45:10 PM
73	N027485-005B	SAMP	1	12/19/2017	06:52:03 PM
74	N027485-006B	SAMP	1	12/19/2017	06:58:55 PM
7	CCV5	CCV	1	12/19/2017	07:05:47 PM
1	CCB5	CCB	1	12/19/2017	07:15:36 PM
75	N027485-007B	SAMP	1	12/19/2017	07:20:24 PM
76	N027485-008B	SAMP	1	12/19/2017	07:27:16 PM
77	N027485-009B	SAMP	1	12/19/2017	07:34:47 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
78	N027485-010B	SAMP	1	12/19/2017	07:41:39 PM
79	N027485-011C	SAMP	1	12/19/2017	07:48:31 PM
80	N027485-012C	SAMP	1	12/19/2017	07:55:53 PM
81	N027523-001B	SAMP	1	12/19/2017	08:03:16 PM
82	N027523-002B	SAMP	1	12/19/2017	08:10:40 PM
83	N027523-003B	SAMP	1	12/19/2017	08:16:01 PM
84	N027523-004B	SAMP	1	12/19/2017	08:21:22 PM
7	CCV6	CCV	1	12/19/2017	08:26:44 PM
1	CCB6	CCB	1	12/19/2017	08:33:35 PM
85	N027523-005C	SAMP	1	12/19/2017	08:38:25 PM
86	N027523-006C	SAMP	1	12/19/2017	08:45:18 PM
87	N027523-007C	SAMP	1	12/19/2017	08:52:10 PM
88	N027523-008B	SAMP	1	12/19/2017	08:59:02 PM
14	N027459-003B	SAMP	5	12/19/2017	09:05:54 PM
15	N027459-004B	SAMP	5	12/19/2017	09:12:43 PM
16	N027459-006B	SAMP	5	12/19/2017	09:19:32 PM
17	N027459-018B	SAMP	5	12/19/2017	09:24:22 PM
89	MB-66081	MBLK	1	12/19/2017	09:31:12 PM
90	LCS1-66081	LCS	1	12/19/2017	09:36:14 PM
7	CCV7	CCV	1	12/19/2017	09:43:36 PM
1	CCB7	CCB	1	12/19/2017	09:53:44 PM
91	N027523-009B	SAMP	1	12/19/2017	09:58:31 PM
92	N027523-009B	SAMP	5	12/19/2017	10:05:24 PM
93	N027523-009B-PS	PS	1	12/19/2017	10:12:17 PM
94	N027523-009B-MS1	MS	1	12/19/2017	10:19:10 PM
95	N027523-009B-MSD1	MSD	1	12/19/2017	10:26:03 PM
96	N027523-012B	SAMP	1	12/19/2017	10:32:56 PM
97	N027546-001B	SAMP	1	12/19/2017	10:39:51 PM
98	N027546-002B	SAMP	1	12/19/2017	10:47:14 PM
99	N027546-003B	SAMP	1	12/19/2017	10:54:08 PM
100	N027546-004B	SAMP	1	12/19/2017	11:01:01 PM
7	CCV8	CCV	1	12/19/2017	11:07:54 PM
1	CCB8	CCB	1	12/19/2017	11:15:16 PM
2	LLCCV2	CCV2	1	12/19/2017	11:20:35 PM
4	ICSA3	ICSA	1	12/19/2017	11:25:54 PM
5	ICSAB3	ICSAB	1	12/19/2017	11:33:27 PM
101	N027546-005B	SAMP	1	12/19/2017	11:40:59 PM
102	N027546-006B	SAMP	1	12/19/2017	11:47:52 PM
103	N027546-007B	SAMP	1	12/19/2017	11:55:15 PM
104	N027546-008B	SAMP	1	12/20/2017	12:02:08 AM
105	N027546-009B	SAMP	1	12/20/2017	12:09:00 AM
106	N027546-010B	SAMP	1	12/20/2017	12:15:53 AM
107	MB-66082	MBLK	1	12/20/2017	12:22:46 AM
108	LCS1-66082	LCS	1	12/20/2017	12:27:38 AM
109	N027557-001B	SAMP	1	12/20/2017	12:35:02 AM
110	N027557-001B	SAMP	5	12/20/2017	12:41:54 AM
7	CCV9	CCV	1	12/20/2017	12:46:48 AM
1	CCB9	CCB	1	12/20/2017	12:54:10 AM
111	N027557-001B-PS	PS	1	12/20/2017	12:59:28 AM
112	N027557-001B-MS1	MS	1	12/20/2017	01:06:23 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
113	N027557-001B-MSD1	MSD	1	12/20/2017	01:13:17 AM
114	N027557-002B	SAMP	1	12/20/2017	01:20:11 AM
115	N027557-003B	SAMP	1	12/20/2017	01:27:03 AM
116	N027557-004B	SAMP	1	12/20/2017	01:33:56 AM
117	N027557-005B	SAMP	1	12/20/2017	01:40:49 AM
118	N027557-006B	SAMP	1	12/20/2017	01:47:42 AM
119	N027557-007B	SAMP	1	12/20/2017	01:54:34 AM
120	N027557-008B	SAMP	1	12/20/2017	02:01:28 AM
7	CCV10	CCV	1	12/20/2017	02:06:50 AM
1	CCB10	CCB	1	12/20/2017	02:14:12 AM
121	N027557-009B	SAMP	1	12/20/2017	02:19:30 AM
122	N027557-010B	SAMP	1	12/20/2017	02:26:54 AM
123	MB-66080	MBLK	1	12/20/2017	02:32:17 AM
124	LCS1-66080	LCS	1	12/20/2017	02:37:09 AM
125	N027524-001E	SAMP	1	12/20/2017	02:44:33 AM
126	N027524-001E	SAMP	5	12/20/2017	02:51:26 AM
127	N027524-001E-PS	PS	1	12/20/2017	02:56:47 AM
128	N027524-001E-MS1	MS	1	12/20/2017	03:03:41 AM
129	N027524-001E-MSD1	MSD	1	12/20/2017	03:10:35 AM
130	N027524-002E	SAMP	1	12/20/2017	03:17:29 AM
7	CCV11	CCV	1	12/20/2017	03:24:21 AM
1	CCB11	CCB	1	12/20/2017	03:31:12 AM
131	N027524-003E	SAMP	1	12/20/2017	03:36:30 AM
1	CCB11	CCB	1	12/20/2017	03:47:23 AM
131	N027524-003E	SAMP	1	12/20/2017	03:52:10 AM
132	N027524-004E	SAMP	1	12/20/2017	03:59:04 AM
133	N027524-005E	SAMP	1	12/20/2017	04:05:57 AM
134	N027524-006E	SAMP	1	12/20/2017	04:12:49 AM
135	N027524-007E	SAMP	1	12/20/2017	04:17:42 AM
136	N027524-008E	SAMP	1	12/20/2017	04:22:35 AM
137	N027524-009E	SAMP	1	12/20/2017	04:29:28 AM
138	N027524-010E	SAMP	1	12/20/2017	04:36:21 AM
139	N027524-011E	SAMP	1	12/20/2017	04:43:14 AM
140	N027524-011E-MS1	MS	1	12/20/2017	04:50:07 AM
7	CCV12	CCV	1	12/20/2017	04:57:01 AM
1	CCB12	CCB	1	12/20/2017	05:07:37 AM
2	LLCCV3	CCV2	1	12/20/2017	05:12:57 AM
4	ICSA4	ICSA	1	12/20/2017	05:18:16 AM
5	ICSAB4	ICSAB	1	12/20/2017	05:25:48 AM
141	N027524-012E	SAMP	1	12/20/2017	05:33:21 AM
142	N027524-013E	SAMP	1	12/20/2017	05:40:14 AM
143	N027556-001E	SAMP	1	12/20/2017	05:47:07 AM
144	N027556-002E	SAMP	1	12/20/2017	05:54:00 AM
145	N027556-003E	SAMP	1	12/20/2017	06:00:53 AM
146	N027556-004D	SAMP	1	12/20/2017	06:07:46 AM
147	N027556-005D	SAMP	1	12/20/2017	06:14:39 AM
148	N027556-006E	SAMP	1	12/20/2017	06:21:32 AM
18	N027485-002B	SAMP	5	12/20/2017	06:28:25 AM
19	N027485-003B	SAMP	5	12/20/2017	06:35:15 AM
7	CCV13	CCV	1	12/20/2017	06:42:05 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CCB13	CCB	1	12/20/2017	06:49:25 AM
20	N027485-010B	SAMP	5	12/20/2017	06:54:44 AM
149	N027523-009B	SAMP	25	12/20/2017	07:43:23 AM
150	N027523-009B-PS	PS	5	12/20/2017	07:48:17 AM
151	N027523-009B-MS1	MS	5	12/20/2017	07:55:12 AM
152	N027523-009B-MSD1	MSD	5	12/20/2017	08:02:06 AM
153	N027557-005B	SAMP	5	12/20/2017	08:05:46 AM
154	N027557-007B	SAMP	5	12/20/2017	08:12:39 AM
38	MB-66083	MBLK	1	12/20/2017	08:19:33 AM
39	LCS1-66083	LCS	1	12/20/2017	08:23:38 AM
40	N027524-001F	SAMP	1	12/20/2017	08:29:29 AM
7	CCV14	CCV	1	12/20/2017	08:34:48 AM
1	CCB14	CCB	1	12/20/2017	08:47:22 AM
41	N027524-001F	SAMP	5	12/20/2017	08:51:40 AM
42	N027524-001F-PS	PS	1	12/20/2017	08:56:29 AM
43	N027524-001F-MS1	MS	1	12/20/2017	09:01:50 AM
44	N027524-001F-MSD1	MSD	1	12/20/2017	09:07:11 AM
45	N027524-002F	SAMP	1	12/20/2017	09:12:32 AM
46	N027524-003F	SAMP	1	12/20/2017	09:17:54 AM
47	N027524-004F	SAMP	1	12/20/2017	09:23:15 AM
48	N027524-005F	SAMP	1	12/20/2017	09:28:37 AM
49	N027524-006F	SAMP	1	12/20/2017	09:33:59 AM
50	N027524-007F	SAMP	1	12/20/2017	09:39:21 AM
7	CCV15	CCV	1	12/20/2017	09:50:33 AM
1	CCB15	CCB	1	12/20/2017	10:04:37 AM
51	N027524-008F	SAMP	1	12/20/2017	10:09:24 AM
52	N027524-009F	SAMP	1	12/20/2017	10:14:46 AM
53	N027524-010F	SAMP	1	12/20/2017	10:20:08 AM
54	N027524-011F	SAMP	1	12/20/2017	10:25:39 AM
55	N027524-012F	SAMP	1	12/20/2017	10:31:01 AM
56	N027524-013F	SAMP	1	12/20/2017	10:36:21 AM
57	N027556-001F	SAMP	1	12/20/2017	10:41:41 AM
58	N027556-002F	SAMP	1	12/20/2017	10:47:03 AM
59	N027556-003F	SAMP	1	12/20/2017	10:52:24 AM
60	N027556-006F	SAMP	1	12/20/2017	10:57:45 AM
7	CCV16	CCV	1	12/20/2017	11:03:06 AM
1	CCB16	CCB	1	12/20/2017	11:08:59 AM
1	CCB16	CCB	1	12/20/2017	11:17:02 AM
61	N027556-008E	SAMP	1	12/20/2017	11:20:47 AM
62	N027556-009E	SAMP	1	12/20/2017	11:25:39 AM
63	N027556-010F	SAMP	1	12/20/2017	11:31:31 AM
7	CCV17	CCV	1	12/20/2017	11:40:26 AM
1	CCB17	CCB	1	12/20/2017	11:46:17 AM
2	LLCCV4	CCV2	1	12/20/2017	11:51:05 AM
2	LLCCV4	CCV2	1	12/20/2017	12:04:06 PM
4	ICSA5	ICSA	1	12/20/2017	12:08:54 PM
5	ICSAB5	ICSAB	1	12/20/2017	12:14:57 PM
5	ICSAB5	ICSAB	1	12/20/2017	12:24:11 PM

INJECTION LOG: 171222B

Instrument ID: ICP-02

STANDARD CODE		
Standard1	MWST-170601A,0.025<50mL	MWST-171201R
Standard2	MWST-170601A,0.25<50mL	
Standard3	MWST-170601A,1.25<50mL	
Standard4	MWST-170601A,2.5<50mL	
Standard5	MWST-170601A,5<50mL	
Standard6	MWST-170601A,10<50mL	
ICV	MWST-171030L	
CCV	MWST-170601A,2.5<50mL	MWST-171201R
ICSA/ICSAB	MWST-170601L/MWST-170601B	MWST-171201P/ MWST-171201S
Int. Std. (Sc):	MSST-171009C/B	
PS Spike	MSST-130329D/E	

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/22/2017	03:17:22 PM
26	Standard1	ICAL	1	12/22/2017	03:20:39 PM
27	Standard2	ICAL	1	12/22/2017	03:23:56 PM
28	Standard3	ICAL	1	12/22/2017	03:27:44 PM
29	Standard4	ICAL	1	12/22/2017	03:31:34 PM
30	Standard5	ICAL	1	12/22/2017	03:35:29 PM
31	Standard6	ICAL	1	12/22/2017	03:39:32 PM
32	ICV	ICV	1	12/22/2017	03:42:45 PM
1	ICB	ICB	1	12/22/2017	03:46:40 PM
33	ICSA1	ICSA	1	12/22/2017	03:49:57 PM
34	ICSAB1	ICSAB	1	12/22/2017	03:53:15 PM
38	MB-66042	MBLK	1	12/22/2017	03:57:11 PM
39	LCS2-66042	LCS	1	12/22/2017	04:00:28 PM
38	MB-66042	MBLK	1	12/22/2017	04:03:36 PM
39	LCS2-66042	LCS	1	12/22/2017	04:06:54 PM
51	N027523-001B	SAMP	100	12/22/2017	04:10:58 PM
52	N027523-002B	SAMP	100	12/22/2017	04:14:17 PM
53	N027523-003B	SAMP	100	12/22/2017	04:17:37 PM
54	N027523-004B	SAMP	100	12/22/2017	04:20:55 PM
55	N027523-005C	SAMP	100	12/22/2017	04:24:15 PM
56	N027523-006C	SAMP	100	12/22/2017	04:27:33 PM
8	CCV1	CCV	1	12/22/2017	04:30:52 PM
1	CCB1	CCB	1	12/22/2017	04:34:47 PM
57	N027523-007C	SAMP	100	12/22/2017	04:38:04 PM
58	N027523-008B	SAMP	100	12/22/2017	04:41:22 PM
54	N027523-004B	SAMP	100	12/22/2017	04:44:42 PM
49	N027485-011C	SAMP	100	12/22/2017	04:48:01 PM
50	N027485-012C	SAMP	100	12/22/2017	04:51:21 PM
40	N027485-001B	SAMP	100	12/22/2017	04:55:11 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
41	N027485-003B	SAMP	100	12/22/2017	04:58:28 PM
42	N027485-004B	SAMP	100	12/22/2017	05:02:06 PM
43	N027485-005B	SAMP	500	12/22/2017	05:05:24 PM
44	N027485-006B	SAMP	500	12/22/2017	05:08:44 PM
8	CCV2	CCV	1	12/22/2017	05:12:03 PM
1	CCB2	CCB	1	12/22/2017	05:15:57 PM
157	N027428-001D	SAMP	10	12/22/2017	05:19:56 PM
45	N027485-007B	SAMP	500	12/22/2017	05:23:49 PM
46	N027485-008B	SAMP	10	12/22/2017	05:30:00 PM
47	N027485-009B	SAMP	100	12/22/2017	05:33:51 PM
48	N027485-010B	SAMP	100	12/22/2017	05:37:11 PM
59	N027485-002B	SAMP	5	12/22/2017	05:40:31 PM
60	N027485-002B	SAMP	25	12/22/2017	05:45:59 PM
61	N027485-002B-PS	PS	5	12/22/2017	05:49:51 PM
62	N027485-002B-MS2	MS	5	12/22/2017	05:55:19 PM
63	N027485-002B-MSD2	MSD	5	12/22/2017	06:00:46 PM
8	CCV3	CCV	1	12/22/2017	06:06:13 PM
1	CCB3	CCB	1	12/22/2017	06:10:07 PM
64	N027485-002B	SAMP	100	12/22/2017	06:13:25 PM
65	N027485-002B	SAMP	500	12/22/2017	06:16:45 PM
66	N027485-002B-PS	PS	100	12/22/2017	06:20:05 PM
67	N027485-002B-MS2	MS	100	12/22/2017	06:23:55 PM
68	N027485-002B-MSD2	MSD	100	12/22/2017	06:27:46 PM
69	N027485-011C	SAMP	1	12/22/2017	06:31:06 PM
70	N027485-012C	SAMP	1	12/22/2017	06:36:33 PM
71	N027523-005C	SAMP	1	12/22/2017	06:41:59 PM
72	N027459-019B	SAMP	100	12/22/2017	06:46:54 PM
73	MB-66080	MBLK	1	12/22/2017	06:50:14 PM
8	CCV4	CCV	1	12/22/2017	06:53:35 PM
1	CCB4	CCB	1	12/22/2017	06:57:31 PM
74	LCS2-66080	LCS	1	12/22/2017	07:00:48 PM
75	N027524-001E	SAMP	100	12/22/2017	07:04:53 PM
76	N027524-002E	SAMP	100	12/22/2017	07:08:13 PM
77	N027524-003E	SAMP	100	12/22/2017	07:11:33 PM
78	N027524-004E	SAMP	100	12/22/2017	07:14:53 PM
79	N027524-005E	SAMP	100	12/22/2017	07:18:13 PM
80	N027524-006E	SAMP	100	12/22/2017	07:21:33 PM
81	N027524-007E	SAMP	100	12/22/2017	07:24:54 PM
82	N027524-008E	SAMP	100	12/22/2017	07:28:15 PM
83	N027524-009E	SAMP	100	12/22/2017	07:31:35 PM
8	CCV5	CCV	1	12/22/2017	07:34:56 PM
1	CCB5	CCB	1	12/22/2017	07:38:51 PM
84	N027524-010E	SAMP	100	12/22/2017	07:42:09 PM
85	N027524-011E	SAMP	100	12/22/2017	07:45:29 PM
86	N027524-012E	SAMP	100	12/22/2017	07:48:50 PM
87	N027524-013E	SAMP	100	12/22/2017	07:52:10 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
88	N027556-001E	SAMP	100	12/22/2017	07:55:31 PM
89	N027556-002E	SAMP	100	12/22/2017	07:58:51 PM
90	N027556-003E	SAMP	100	12/22/2017	08:02:11 PM
91	N027556-004D	SAMP	100	12/22/2017	08:05:31 PM
92	N027556-004D	SAMP	100	12/22/2017	08:09:21 PM
93	N027556-006E	SAMP	100	12/22/2017	08:13:13 PM
8	CCV6	CCV	1	12/22/2017	08:16:34 PM
1	CCB6	CCB	1	12/22/2017	08:20:29 PM
33	ICSA2	ICSA	1	12/22/2017	08:23:47 PM
34	ICSAB2	ICSAB	1	12/22/2017	08:27:06 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/13/2017 8:12:07**
Prep End Date: **12/13/2017 3:30:00**
Prep Batch **66042** Prep Code: **3010_W_DISS**

Reviewed/ Date: 01/02/2018
Initials/ Date: for
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-3**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-66042	Aqueous		25	☐	0	0	25	1.000		
LCS2-66042	Aqueous		25	☐	0	0	25	1.000		
MB-66042	Aqueous		25	☐	0	0	25	1.000		
N027485-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-007B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9602	NITRIC ACID
9611	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/13/2017 8:12:07**
Prep End Date: **12/13/2017 3:30:00**
Prep Batch **66042** Prep Code: **3010_W_DISS**

Reviewed/ Date: 01/02/2018
Initials/ Date: for
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-3**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027485-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-011C	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-012C	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-008B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9602	NITRIC ACID
9611	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 171219A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Boron								
CalBlk	12/19/2017	10:23:34 AM	B	249.677	5558	0.00	mg/L	
Standard1	12/19/2017	10:28:24 AM	B	249.677	3689	0.1000	mg/L	
Standard3	12/19/2017	10:39:04 AM	B	249.677	38154	1.000	mg/L	
Standard4	12/19/2017	10:44:25 AM	B	249.677	95676	2.500	mg/L	
Standard5	12/19/2017	10:51:46 AM	B	249.677	146881	3.750	mg/L	
Standard6	12/19/2017	10:59:06 AM	B	249.677	191523	5.000	mg/L	
Standard7	12/19/2017	11:06:41 AM	B	249.677	378948	10.000	mg/L	0.9999
Magnesium								
CalBlk	12/19/2017	10:23:34 AM	Mg	279.079	249	0.00	mg/L	
Standard1	12/19/2017	10:28:24 AM	Mg	279.079	1423	0.1000	mg/L	
Standard2	12/19/2017	10:33:45 AM	Mg	279.079	13161	1.000	mg/L	
Standard3	12/19/2017	10:39:04 AM	Mg	279.079	27739	2.000	mg/L	
Standard4	12/19/2017	10:44:25 AM	Mg	279.079	68479	5.000	mg/L	
Standard5	12/19/2017	10:51:46 AM	Mg	279.079	103673	7.500	mg/L	
Standard6	12/19/2017	10:59:06 AM	Mg	279.079	137290	10.000	mg/L	
Standard7	12/19/2017	11:06:41 AM	Mg	279.079	262216	20.000	mg/L	0.9997
Calcium								
CalBlk	12/19/2017	10:23:34 AM	Ca	227.546	-144	0.00	mg/L	
Standard1	12/19/2017	10:28:24 AM	Ca	227.546	62	0.2000	mg/L	
Standard2	12/19/2017	10:33:45 AM	Ca	227.546	278	1.000	mg/L	
Standard3	12/19/2017	10:39:04 AM	Ca	227.546	591	2.000	mg/L	
Standard4	12/19/2017	10:44:25 AM	Ca	227.546	1444	5.000	mg/L	
Standard5	12/19/2017	10:51:46 AM	Ca	227.546	2153	7.500	mg/L	
Standard6	12/19/2017	10:59:06 AM	Ca	227.546	2875	10.000	mg/L	
Standard7	12/19/2017	11:06:41 AM	Ca	227.546	5631	20.000	mg/L	0.9999
Iron								
CalBlk	12/19/2017	10:23:34 AM	Fe	273.953	-142	0.00	mg/L	
Standard1	12/19/2017	10:28:24 AM	Fe	273.953	491	0.0200	mg/L	
Standard2	12/19/2017	10:33:45 AM	Fe	273.953	1636	0.050	mg/L	
Standard3	12/19/2017	10:39:04 AM	Fe	273.953	44331	2.000	mg/L	
Standard4	12/19/2017	10:44:25 AM	Fe	273.953	109375	5.000	mg/L	
Standard5	12/19/2017	10:51:46 AM	Fe	273.953	165425	7.500	mg/L	
Standard6	12/19/2017	10:59:06 AM	Fe	273.953	218762	10.000	mg/L	
Standard7	12/19/2017	11:06:41 AM	Fe	273.953	417464	20.000	mg/L	0.9997

INITIAL CALIBRATION SUMMARY: 171222B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	12/22/2017	03:17:22 PM	Na	589.594	-138	0.00	mg/L	
Standard1	12/22/2017	03:20:39 PM	Na	589.594	474	0.1000	mg/L	
Standard2	12/22/2017	03:23:56 PM	Na	589.594	3944	1.000	mg/L	
Standard3	12/22/2017	03:27:44 PM	Na	589.594	20031	5.000	mg/L	
Standard4	12/22/2017	03:31:34 PM	Na	589.594	39935	10.000	mg/L	
Standard5	12/22/2017	03:35:29 PM	Na	589.594	78537	20.000	mg/L	
Standard6	12/22/2017	03:39:32 PM	Na	589.594	156629	40.000	mg/L	1.0000
Potassium								
CalBlk	12/22/2017	03:17:22 PM	K	766.451	397	0.00	mg/L	
Standard1	12/22/2017	03:20:39 PM	K	766.451	526	0.1000	mg/L	
Standard2	12/22/2017	03:23:56 PM	K	766.451	4850	1.000	mg/L	
Standard3	12/22/2017	03:27:44 PM	K	766.451	25065	5.000	mg/L	
Standard4	12/22/2017	03:31:34 PM	K	766.451	50113	10.000	mg/L	
Standard5	12/22/2017	03:35:29 PM	K	766.451	98619	20.000	mg/L	
Standard6	12/22/2017	03:39:32 PM	K	766.451	198633	40.000	mg/L	1.0000

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872867**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5099.945	100	5000	0	102	90	110				
Calcium	10101.951	500	10000	0	101	90	110				
Iron	10265.234	20	10000	0	103	90	110				
Magnesium	10256.827	100	10000	0	103	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	107.330	100	100.0	0	107	80	120				
Calcium	225.252	500	200.0	0	113	80	120				
Iron	22.111	20	20.00	0	111	80	120				
Magnesium	101.031	100	100.0	0	101	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5077.114	100	5000	0	102	90	110				
Calcium	10087.496	500	10000	0	101	90	110				
Iron	10068.629	20	10000	0	101	90	110				
Magnesium	10003.649	100	10000	0	100	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4918.676	100	5000	0	98.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9904.520	500	10000	0	99.0	90	110				
Iron	9773.781	20	10000	0	97.7	90	110				
Magnesium	9754.873	100	10000	0	97.5	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5195.547	100	5000	0	104	90	110				
Calcium	10165.050	500	10000	0	102	90	110				
Iron	10413.547	20	10000	0	104	90	110				
Magnesium	10394.623	100	10000	0	104	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4895.955	100	5000	0	97.9	90	110				
Calcium	9876.655	500	10000	0	98.8	90	110				
Iron	9839.064	20	10000	0	98.4	90	110				
Magnesium	9818.277	100	10000	0	98.2	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **ZZZZZZ** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	98.336	100	100.0	0	98.3	70	130				
Calcium	220.353	500	200.0	0	110	70	130				
Iron	22.875	20	20.00	0	114	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	106.753	100	100.0	0	107	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872936**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5129.771	100	5000	0	103	90	110				
Calcium	10352.156	500	10000	0	104	90	110				
Iron	10606.001	20	10000	0	106	90	110				
Magnesium	10567.979	100	10000	0	106	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4927.431	100	5000	0	98.5	90	110				
Calcium	10068.129	500	10000	0	101	90	110				
Iron	9935.813	20	10000	0	99.4	90	110				
Magnesium	9882.452	100	10000	0	98.8	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872960**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4810.929	100	5000	0	96.2	90	110				
Calcium	9847.946	500	10000	0	98.5	90	110				
Iron	9653.480	20	10000	0	96.5	90	110				
Magnesium	9675.889	100	10000	0	96.8	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV8** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872972**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4965.895	100	5000	0	99.3	90	110				
Calcium	10063.850	500	10000	0	101	90	110				
Iron	10273.994	20	10000	0	103	90	110				
Magnesium	10406.273	100	10000	0	104	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **ZZZZZZ** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	103.773	100	100.0	0	104	70	130				
Calcium	266.163	500	200.0	0	133	70	130				S
Iron	23.330	20	20.00	0	117	70	130				
Magnesium	103.517	100	100.0	0	104	70	130				

Sample ID **CCV9** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873638**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4872.771	100	5000	0	97.5	90	110				
Calcium	10125.639	500	10000	0	101	90	110				
Iron	10186.375	20	10000	0	102	90	110				
Magnesium	10324.037	100	10000	0	103	90	110				

Sample ID **CCV10** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873650**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4823.347	100	5000	0	96.5	90	110				
Calcium	9918.903	500	10000	0	99.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Ca on LLCCV2 is biased high however, samples for this analyte are greater than the regular CCV which passed QC criteria.

01/02/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV10** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873650**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10147.604	20	10000	0	101	90	110				
Magnesium	10289.389	100	10000	0	103	90	110				

Sample ID **CCV11** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873662**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4737.324	100	5000	0	94.7	90	110				
Calcium	9659.769	500	10000	0	96.6	90	110				
Iron	9699.493	20	10000	0	97.0	90	110				
Magnesium	9819.285	100	10000	0	98.2	90	110				

Sample ID **CCV12** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873676**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4853.109	100	5000	0	97.1	90	110				
Calcium	9875.510	500	10000	0	98.8	90	110				
Iron	10180.551	20	10000	0	102	90	110				
Magnesium	10344.144	100	10000	0	103	90	110				

Sample ID **LLCCV3** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **ZZZZZZ** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873678**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	100.097	100	100.0	0	100	70	130				
Calcium	258.351	500	200.0	0	129	70	130				
Iron	23.915	20	20.00	0	120	70	130				
Magnesium	103.278	100	100.0	0	103	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV13** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873691**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4892.170	100	5000	0	97.8	90	110				
Calcium	9814.263	500	10000	0	98.1	90	110				
Iron	10150.534	20	10000	0	102	90	110				
Magnesium	10319.095	100	10000	0	103	90	110				

Sample ID **CCV14** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873703**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4956.354	100	5000	0	99.1	90	110				
Calcium	10006.400	500	10000	0	100	90	110				
Iron	10171.821	20	10000	0	102	90	110				
Magnesium	10251.213	100	10000	0	103	90	110				

Sample ID **CCV15** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4827.137	100	5000	0	96.5	90	110				
Calcium	9477.839	500	10000	0	94.8	90	110				
Iron	9936.651	20	10000	0	99.4	90	110				
Magnesium	10006.673	100	10000	0	100	90	110				

Sample ID **CCV16** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4799.843	100	5000	0	96.0	90	110				
Calcium	9474.062	500	10000	0	94.7	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV16**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9916.966	20	10000	0	99.2	90	110				
Magnesium	9990.379	100	10000	0	99.9	90	110				

Sample ID **CCV17**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873733**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5240.337	100	5000	0	105	90	110				
Calcium	10458.405	500	10000	0	105	90	110				
Iron	10912.185	20	10000	0	109	90	110				
Magnesium	10979.376	100	10000	0	110	90	110				

Sample ID **LLCCV4**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	79.427	100	100.0	0	79.4	70	130				
Calcium	164.854	500	200.0	0	82.4	70	130				
Iron	17.487	20	20.00	0	87.4	70	130				
Magnesium	80.638	100	100.0	0	80.6	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **ICV**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10122.399	500	10000	0	101	90	110				
Sodium	10175.198	500	10000	0	102	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCV**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10001.638	500	10000	0	100	90	110				
Sodium	10109.954	500	10000	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCV**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10029.779	500	10000	0	100	90	110				
Sodium	10142.589	500	10000	0	101	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCV**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10301.903	500	10000	0	103	90	110				
Sodium	10542.144	500	10000	0	105	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCV**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10246.328	500	10000	0	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCV**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10466.692	500	10000	0	105	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCV**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10176.776	500	10000	0	102	90	110				
Sodium	10309.898	500	10000	0	103	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCV**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10150.927	500	10000	0	102	90	110				
Sodium	10255.749	500	10000	0	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872868**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	31.928	100									
Calcium	25.289	500									
Iron	0.264	20									
Magnesium	-0.57117	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	13.483	100									
Calcium	33.130	500									
Iron	0.775	20									
Magnesium	-0.917742	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	30.699	100									
Calcium	3.457	500									
Iron	0.203	20									
Magnesium	-1.651536	100									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	21.321	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	17.578	500									
Iron	-0.562511	20									
Magnesium	-0.614019	100									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	9.787	100									
Calcium	29.385	500									
Iron	-0.242624	20									
Magnesium	-0.716168	100									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872937**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	30.912	100									
Calcium	6.563	500									
Iron	-0.349232	20									
Magnesium	-0.244004	100									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	36.370	100									
Calcium	-20.165979	500									
Iron	-0.362088	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	0.953	100									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	28.308	100									
Calcium	31.182	500									
Iron	-0.109383	20									
Magnesium	-1.026871	100									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	31.732	100									
Calcium	48.382	500									
Iron	0.302	20									
Magnesium	-1.353948	100									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873639**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	25.230	100									
Calcium	61.218	500									
Iron	0.666	20									
Magnesium	-1.306078	100									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873651**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	35.337	100									
Calcium	63.322	500									
Iron	0.612	20									
Magnesium	-1.400694	100									

Sample ID **CCB11**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	19.326	100									
Calcium	53.447	500									
Iron	0.887	20									
Magnesium	-1.219422	100									

Sample ID **CCB12**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873677**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	24.142	100									
Calcium	54.893	500									
Iron	0.497	20									
Magnesium	-0.155927	100									

Sample ID **CCB13**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873692**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	30.685	100									
Calcium	60.610	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB13**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873692**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.102	20									
Magnesium	0.364	100									

Sample ID **CCB14**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873704**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	27.482	100									
Calcium	21.048	500									
Iron	-0.54473	20									
Magnesium	-0.548792	100									

Sample ID **CCB15**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873716**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	29.200	100									
Calcium	37.689	500									
Iron	-1.097273	20									
Magnesium	-0.032286	100									

Sample ID **CCB16**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873729**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	20.228	100									
Calcium	43.740	500									
Iron	-0.701584	20									
Magnesium	-0.088455	100									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**CCB17**	SampType:	**CCB**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**120943**
Client ID:	**CCB**	Batch ID:	**R120943**	TestNo:	**EPA 6010B**			Analysis Date:	**12/20/2017**	SeqNo:	**2873734**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	59.735	100									
Calcium	-18.816967	500									
Iron	-0.670956	20									
Magnesium	-0.629145	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **ICB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877885**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9.610	500									
Sodium	-0.744353	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877899**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	-15.196937	500									
Sodium	-7.114299	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	-7.964067	500									
Sodium	-7.508067	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	21.968	500									
Sodium	134.661	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	5.319	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	115.981	500									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	-19.324501	500									
Sodium	44.411	500									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877959**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	-13.882764	500									
Sodium	32.744	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872870**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	498329.453	50	500000	0	99.7	80	120				
Boron	88.100	100									
Calcium	506490.713	500	500000	0	101	80	120				
Iron	179793.677	20	200000	0	89.9	80	120				
Magnesium	475935.929	100	500000	0	95.2	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSAB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	546782.249	50	500000	0	109	80	120				
Boron	1173.352	100	1000	0	117	80	120				
Calcium	555538.618	500	500000	0	111	80	120				
Iron	187588.653	20	200000	0	93.8	80	120				
Magnesium	503556.663	100	500000	0	101	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	505775.123	50	500000	0	101	80	120				
Boron	83.607	100									
Calcium	511760.390	500	500000	0	102	80	120				
Iron	181783.344	20	200000	0	90.9	80	120				
Magnesium	481219.806	100	500000	0	96.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	ICSAB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872925

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	551426.519	50	500000	0	110	80	120				
Boron	1175.249	100	1000	0	118	80	120				
Calcium	558431.588	500	500000	0	112	80	120				
Iron	188992.776	20	200000	0	94.5	80	120				
Magnesium	506616.951	100	500000	0	101	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	ICSA	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872975

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	494366.698	50	500000	0	98.9	80	120				
Boron	85.578	100									
Calcium	497081.940	500	500000	0	99.4	80	120				
Iron	176987.327	20	200000	0	88.5	80	120				
Magnesium	476524.153	100	500000	0	95.3	80	120				

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	ICSAB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/19/2017	SeqNo:	2872976

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	541047.279	50	500000	0	108	80	120				
Boron	1146.351	100	1000	0	115	80	120				
Calcium	543688.104	500	500000	0	109	80	120				
Iron	184653.505	20	200000	0	92.3	80	120				
Magnesium	500595.553	100	500000	0	100	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873679**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	491037.277	50	500000	0	98.2	80	120				
Boron	90.141	100									
Calcium	489727.156	500	500000	0	97.9	80	120				
Iron	175817.995	20	200000	0	87.9	80	120				
Magnesium	473899.027	100	500000	0	94.8	80	120				

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSAB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873680**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	538707.628	50	500000	0	108	80	120				
Boron	1129.484	100	1000	0	113	80	120				
Calcium	536671.907	500	500000	0	107	80	120				
Iron	183946.460	20	200000	0	92.0	80	120				
Magnesium	500154.534	100	500000	0	100	80	120				

Sample ID **ICSA5**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	519089.326	50	500000	0	104	80	120				
Boron	85.383	100									
Calcium	511388.117	500	500000	0	102	80	120				
Iron	187834.978	20	200000	0	93.9	80	120				
Magnesium	504975.878	100	500000	0	101	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB5**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSAB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	473861.160	50	500000	0	94.8	80	120				
Boron	1022.046	100	1000	0	102	80	120				
Calcium	464818.220	500	500000	0	93.0	80	120				
Iron	200609.345	20	200000	0	100	80	120				
Magnesium	447746.521	100	500000	0	89.5	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **ICSA**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	-0.246773	500									
Sodium	0.528	500									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **ICSAB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877887**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10124.730	500	10000	0	101	80	120				
Sodium	10226.982	500	10000	0	102	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **ICSA**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877960**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	-7.390148	500									
Sodium	31.954	500									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **ICSAB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10145.168	500	10000	0	101	80	120				
Sodium	10266.940	500	10000	0	103	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	98.9	65-125	PASS
Standard2	ICAL	1	1.053	105.31	65-125	PASS
Standard3	ICAL	1	1.046	104.59	65-125	PASS
Standard4	ICAL	1	1.074	107.38	65-125	PASS
Standard5	ICAL	1	0.99	98.63	65-125	PASS
Standard6	ICAL	1	0.93	93.39	65-125	PASS
Standard7	ICAL	1	0.95	94.61	65-125	PASS
ICV	ICV	1	0.94	94.18	65-125	PASS
ICB	ICB	1	1.015	101.49	65-125	PASS
LLICV	CCV1	1	1.034	103.35	65-125	PASS
ICSA1	ICSA	1	1.015	101.5	65-125	PASS
ICSAB1	ICSAB	1	0.82	81.74	65-125	PASS
CCV1	CCV	1	0.98	97.92	65-125	PASS
CCB1	CCB	1	1	99.98	65-125	PASS
CCB1	CCB	1	1.031	103.1	65-125	PASS
CCV2	CCV	1	1.03	102.97	65-125	PASS
CCB2	CCB	1	1.042	104.16	65-125	PASS
CCV3	CCV	1	0.98	97.7	65-125	PASS
CCB3	CCB	1	1.042	104.17	65-125	PASS
CCB3	CCB	1	1.022	102.22	65-125	PASS
MB-66042	MBLK	1	1.021	102.07	65-125	PASS
LCS1-66042	LCS	1	0.98	98.5	65-125	PASS
CCV4	CCV	1	1.011	101.06	65-125	PASS
CCB4	CCB	1	1	99.81	65-125	PASS
LLCCV1	CCV2	1	1.033	103.33	65-125	PASS
ICSA2	ICSA	1	1.045	104.52	65-125	PASS
ICSAB2	ICSAB	1	0.84	84.43	65-125	PASS
N027485-001B	SAMP	1	0.95	94.99	65-125	PASS
N027485-001B	SAMP	5	1.0027	100.27	65-125	PASS
N027485-001B-PS	PS	1	0.95	94.99	65-125	PASS
N027485-001B-MS1	MS	1	0.94	94.39	65-125	PASS
N027485-001B-MSD1	MSD	1	0.93	93.43	65-125	PASS
N027485-002B	SAMP	1	0.85	85.47	65-125	PASS
N027485-003B	SAMP	1	0.87	87.11	65-125	PASS
N027485-004B	SAMP	1	0.88	87.91	65-125	PASS
N027485-005B	SAMP	1	0.83	82.79	65-125	PASS
N027485-006B	SAMP	1	0.84	83.7	65-125	PASS
CCV5	CCV	1	0.99	98.91	65-125	PASS
CCB5	CCB	1	1.0069	100.69	65-125	PASS
N027485-007B	SAMP	1	0.84	84.44	65-125	PASS

INTERNAL STANDARD: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N027485-008B	SAMP	1	0.98	98.24	65-125	PASS
N027485-009B	SAMP	1	0.93	93.39	65-125	PASS
N027485-010B	SAMP	1	0.91	91.2	65-125	PASS
N027485-011C	SAMP	1	0.97	96.8	65-125	PASS
N027485-012C	SAMP	1	1.0002	100.02	65-125	PASS
N027523-001B	SAMP	1	1.032	103.2	65-125	PASS
N027523-002B	SAMP	1	1.053	105.34	65-125	PASS
N027523-003B	SAMP	1	1.034	103.4	65-125	PASS
N027523-004B	SAMP	1	1.028	102.76	65-125	PASS
CCV6	CCV	1	1.028	102.84	65-125	PASS
CCB6	CCB	1	1.0096	100.96	65-125	PASS
N027523-005C	SAMP	1	0.95	94.5	65-125	PASS
N027523-006C	SAMP	1	0.92	91.93	65-125	PASS
N027523-007C	SAMP	1	0.89	89.008	65-125	PASS
N027523-008B	SAMP	1	0.97	97.073	65-125	PASS
CCV7	CCV	1	1.037	103.74	65-125	PASS
CCB7	CCB	1	1.037	103.7	65-125	PASS
CCV8	CCV	1	1.072	107.21	65-125	PASS
CCB8	CCB	1	1.094	109.41	65-125	PASS
LLCCV2	CCV2	1	1.15	115.04	65-125	PASS
ICSA3	ICSA	1	1.15	114.65	65-125	PASS
ICSAB3	ICSAB	1	0.9	90.38	65-125	PASS
CCV9	CCV	1	1.075	107.45	65-125	PASS
CCB9	CCB	1	1.085	108.54	65-125	PASS
CCV10	CCV	1	1.088	108.83	65-125	PASS
CCB10	CCB	1	1.11	110.82	65-125	PASS
CCV11	CCV	1	1.11	110.54	65-125	PASS
CCB11	CCB	1	1.095	109.54	65-125	PASS
CCB11	CCB	1	1.1	110.07	65-125	PASS
CCV12	CCV	1	1.079	107.91	65-125	PASS
CCB12	CCB	1	1.11	110.73	65-125	PASS
LLCCV3	CCV2	1	1.17	116.58	65-125	PASS
ICSA4	ICSA	1	1.16	115.81	65-125	PASS
ICSAB4	ICSAB	1	0.91	91.32	65-125	PASS
N027485-002B	SAMP	5	0.98	98.18	65-125	PASS
N027485-003B	SAMP	5	0.99	98.55	65-125	PASS
CCV13	CCV	1	1.073	107.34	65-125	PASS
CCB13	CCB	1	1.097	109.65	65-125	PASS
N027485-010B	SAMP	5	0.99	98.6	65-125	PASS
CCV14	CCV	1	1.074	107.42	65-125	PASS
CCB14	CCB	1	1.048	104.82	65-125	PASS

INTERNAL STANDARD: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCV15	CCV	1	1.029	102.92	65-125	PASS
CCB15	CCB	1	1.038	103.82	65-125	PASS
CCV16	CCV	1	1.033	103.32	65-125	PASS
CCB16	CCB	1	1.042	104.16	65-125	PASS
CCB16	CCB	1	1.043	104.26	65-125	PASS
CCV17	CCV	1	1.023	102.26	65-125	PASS
CCB17	CCB	1	1.012	101.22	65-125	PASS
LLCCV4	CCV2	1	1.12	111.89	65-125	PASS
LLCCV4	CCV2	1	1.047	104.73	65-125	PASS
ICSA5	ICSA	1	1.11	111.01	65-125	PASS
ICSAB5	ICSAB	1	0.88	87.76	65-125	PASS
ICSAB5	ICSAB	1	1.043	104.34	65-125	PASS

INTERNAL STANDARD: 171222B

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.98	98.35	65-125	PASS
Standard2	ICAL	1	0.99	99.36	65-125	PASS
Standard3	ICAL	1	0.97	97.45	65-125	PASS
Standard4	ICAL	1	0.96	96.31	65-125	PASS
Standard5	ICAL	1	0.96	95.89	65-125	PASS
Standard6	ICAL	1	0.94	94.3	65-125	PASS
ICV	ICV	1	0.97	96.98	65-125	PASS
ICB	ICB	1	1.0026	100.26	65-125	PASS
ICSA1	ICSA	1	0.99	99.49	65-125	PASS
ICSAB1	ICSAB	1	0.97	97.081	65-125	PASS
MB-66042	MBLK	1	-0.00006	-0.006	65-125	NR!
LCS2-66042	LCS	1	-0.00004	-0.004	65-125	NR!
MB-66042	MBLK	1	0.99	99.38	65-125	PASS
LCS2-66042	LCS	1	0.99	99.4	65-125	PASS
N027523-001B	SAMP	100	0.98	98.5	65-125	PASS
N027523-002B	SAMP	100	0.98	98.41	65-125	PASS
N027523-003B	SAMP	100	0.98	98.43	65-125	PASS
N027523-004B	SAMP	100	-0.00003	-0.003	65-125	NR!
N027523-005C	SAMP	100	0.96	96.13	65-125	PASS
N027523-006C	SAMP	100	0.96	95.75	65-125	PASS
CCV1	CCV	1	0.97	96.7	65-125	PASS
CCB1	CCB	1	1	99.59	65-125	PASS
N027523-007C	SAMP	100	0.96	95.71	65-125	PASS
N027523-008B	SAMP	100	0.96	96.47	65-125	PASS
N027523-004B	SAMP	100	0.99	98.75	65-125	PASS
N027485-011C	SAMP	100	0.97	96.99	65-125	PASS
N027485-012C	SAMP	100	0.97	97.066	65-125	PASS
N027485-001B	SAMP	100	0.97	96.53	65-125	PASS
N027485-003B	SAMP	100	0.96	95.72	65-125	PASS
N027485-004B	SAMP	100	0.96	95.67	65-125	PASS
N027485-005B	SAMP	500	0.97	96.98	65-125	PASS
N027485-006B	SAMP	500	0.98	97.56	65-125	PASS
CCV2	CCV	1	0.96	96.032	65-125	PASS
CCB2	CCB	1	0.99	99.43	65-125	PASS
N027485-007B	SAMP	500	0.95	95.49	65-125	PASS
N027485-008B	SAMP	10	0.96	95.56	65-125	PASS
N027485-009B	SAMP	100	0.95	94.93	65-125	PASS
N027485-010B	SAMP	100	0.94	94.37	65-125	PASS
N027485-002B	SAMP	5	0.91	90.81	65-125	PASS
N027485-002B	SAMP	25	0.94	93.84	65-125	PASS

INTERNAL STANDARD: 171222B

Instrument ID: ICP-02

Scandium

Sample Name	Type	DF	~~Yttrium~~, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N027485-002B-PS	PS	5	0.92	91.78	65-125	PASS
N027485-002B-MS2	MS	5	0.92	92.13	65-125	PASS
N027485-002B-MSD2	MSD	5	0.92	91.9	65-125	PASS
CCV3	CCV	1	0.95	94.95	65-125	PASS
CCB3	CCB	1	0.98	97.57	65-125	PASS
N027485-002B	SAMP	100	0.96	96.15	65-125	PASS
N027485-002B	SAMP	500	0.97	96.53	65-125	PASS
N027485-002B-PS	PS	100	0.96	96.054	65-125	PASS
N027485-002B-MS2	MS	100	0.96	95.65	65-125	PASS
N027485-002B-MSD2	MSD	100	0.96	95.82	65-125	PASS
N027485-011C	SAMP	1	0.95	95.18	65-125	PASS
N027485-012C	SAMP	1	0.96	96.028	65-125	PASS
N027523-005C	SAMP	1	0.93	92.84	65-125	PASS
CCV4	CCV	1	0.94	93.6	65-125	PASS
CCB4	CCB	1	0.97	97.36	65-125	PASS
CCV5	CCV	1	0.97	96.85	65-125	PASS
CCB5	CCB	1	1.0018	100.18	65-125	PASS
CCV6	CCV	1	0.97	97.19	65-125	PASS
CCB6	CCB	1	1.01	101	65-125	PASS
ICSA2	ICSA	1	1.0071	100.71	65-125	PASS
ICSAB2	ICSAB	1	0.98	98.26	65-125	PASS

01/02/2018

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N027485
Test Method: EPA 6010B
Analysis Date: 12/19/2017 & 12/22/2017

Matrix: Groundwater
Batch No.: 66042

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B & Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027485-001B DT 5X	Boron	ug/L	648.5051	NA	622.2523	4.22%	10
N027485-001B DT 5X	Calcium	ug/L	106215.4	PASS	99232.72	7.04%	10
N027485-001B DT 5X	Iron	ug/L	31.59636	NA	37.24177	15.16%	10
N027485-001B DT 5X	Magnesium	ug/L	10039.93	PASS	9129.987	9.97%	10
N027485-002B DT 25X	Potassium	ug/L	32171.66	PASS	32926.12	2.29%	10
N027485-002B DT 500X	Sodium	ug/L	2450670	PASS	2335082	4.95%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N027485-001B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **66042**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2872928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5382.574	100	5000	622.3	95.2	80	120				
Calcium	108190.658	500	10000	99230	89.6	80	120				
Iron	137.491	20	100.0	37.24	100	80	120				
Magnesium	18008.743	100	10000	9130	88.8	80	120				

Sample ID **N027485-002B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **ZZZZZZ**	Batch ID: **66042**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/22/2017**	SeqNo: **2877919**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	57578.001	2500	20000	32930	123	80	120				S

Sample ID **N027485-002B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **ZZZZZZ**	Batch ID: **66042**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/22/2017**	SeqNo: **2877926**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2536628.154	50000	20000	2335000	1010	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

LOD & PQL VERIFICATION

Analytical Method: EPA 6010B / 200.7 **Matrix:** Water
Date of Analysis: 2/21/2017 **Units:** mg/L
Instrument Name: ICP2
Analyst: MI

Compound	MDL	LOD		PQL		
		Spike	Recovered	Spike	Recovered	% Recovery
Sodium	0.02621	0.10	0.08408	0.5	0.52080	104.2
Potassium	0.03815	0.10	0.13587	0.5	0.48231	96.5
Strontium	0.00545	0.02	0.02459	0.05	0.06052	121.0

Method Detection Limit

Analytical Method: EPA 6010B / 200.7
Digestion Method: EPA 3010A
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: mg/L

Analyte	1	2	3	4	5	6	7	SD	Ave	AMT SPIKED	%RSD	MDL	PQL
Potassium	0.15443	0.16201	0.14301	0.16141	0.16124	0.12965	0.14652	0.01215	0.15118	0.1000	8.0	0.03815	0.5
Sodium	0.11445	0.11459	0.11678	0.11286	0.11394	0.09515	0.10066	0.00835	0.10978	0.1000	7.6	0.02621	0.5
Strontium	0.02939	0.03046	0.0307	0.02962	0.03209	0.02708	0.02772	0.00174	0.02958	0.0250	5.9	0.00545	0.05

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66022
ASSET #: N027485

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 1/2/2018

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)		X			X	
Sample Information						
13. All samples are within linear dynamic range.		X			X	
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X			X	
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X			X	
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of V in LLCCV1 failed, bias low. V for rerun.
%Rec of Cr in LLCCV1 failed, bias high. Cr in N027485-005B, 006B & 007B for rerun.
Cr in N027485-002B, 003B & 004B is over linear range. For further dilution.
%RSD of As & Se in N02485-010B failed >15%. For rerun.
%RSD of As in LCCV1/2 & Se in LLCCV2 failed > 20%. However %Rec of LLCCV1 & 2 passed criteria.
%Rec of Ba & Cu in N027485-001B PS & Cr in N027485-001B PS/MS/MSD failed. However LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: —

2nd Level Reviewer 01/04/2018 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66022
ASSET #: N027485

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 1/3/2018

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For V and Cr in N027485-005B, 006B & 007B rerun only.
For dilution of Cr in N027485-002B , 03B & 004B only.
For As & Se in N027485-010B rerun only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: —

2nd Level Reviewer Penny 01/04/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N027485-001B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 153.484 * 1 * (25/25)

Chromium , ug/L = 153.484

Reporting results in two significant figures,

Chromium , ug/L = 150

% RSD SUMMARY

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	107 Ag [3]				111 Cd [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.054	7.26	15	PASS	0.1	6.53	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.44	1.48	15	PASS	0.49	2.49	15	PASS
Std3-5/50 ppb	ICAL	1	4.81	1.087	15	PASS	5.0048	0.78	15	PASS
Std4-10/100 ppb	ICAL	1	9.77	1.14	15	PASS	10.065	1.73	15	PASS
Std5-20/200 ppb	ICAL	1	19.69	0.96	15	PASS	20.26	0.23	15	PASS
Std6-40/400 ppb	ICAL	1	40.24	4.9	15	PASS	40.29	0.47	15	PASS
Std7-100/1000 ppb	ICAL	1	101.72	0.39	15	PASS	99.82	1.42	15	PASS
Std8-200/2000 ppb	ICAL	1	185.89	2.43	15	PASS	206	3.15	15	PASS
ICV	ICV	1	9.39	0.78	15	PASS	10.16	0.91	15	PASS
ICB	ICB	1	0.14	13.65	15	PASS	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.51	4.54	20	PASS	0.51	0.91	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	18.5	0.19	15	PASS	16.33	0.31	15	PASS
MB-66022	MBLK	1	0.17	13.57	15	PASS	<0.000	N/A	15	<PQL
LCS-66022	LCS	1	9.43	1.49	15	PASS	10.15	1.95	15	PASS
N027485-009B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-009B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-011C	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-011C	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-012C	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-012C	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027546-006B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027546-006B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV1	CCV	1	19.71	1.13	15	PASS	20.25	1.99	15	PASS
CCB1	CCB	1	0.17	14.13	15	PASS	<0.000	N/A	15	<PQL
N027485-001B	SAMP	1	<0.000	N/A	15	<PQL	0.012	134.037	15	<PQL
N027485-001B	SAMP	5	<0.000	N/A	15	<PQL	0.015	70.82	15	<PQL
N027485-001B	SAMP	25	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-001B-PS	PS	1	9.92	0.88	15	PASS	9.72	1.5	15	PASS
N027485-001B-PS	PS	5	2.19	0.94	15	PASS	<0.000	N/A	15	<PQL
N027485-001B-MS	MS	1	9.98	0.35	15	PASS	9.82	0.27	15	PASS
N027485-001B-MS	MS	1	2.2	0.33	15	PASS	<0.000	N/A	15	<PQL
N027485-001B-MSD	MSD	1	9.99	0.7	15	PASS	9.73	0.62	15	PASS
N027485-001B-MSD	MSD	5	2.21	0.78	15	PASS	<0.000	N/A	15	<PQL
N027485-002B	SAMP	1	0.45	2.71	15	PASS	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.4	0.74	15	PASS	20.32	2	15	PASS
CCB2	CCB	1	0.15	14.44	15	PASS	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.51	3.5	20	PASS	0.52	1.73	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	18.6	0.52	15	PASS	16.25	1.61	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	107 Ag [3]				111 Cd [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027485-002B	SAMP	5	0.18	7.64	15	PASS	<0.000	N/A	15	<PQL
N027485-003B	SAMP	1	0.44	2.19	15	PASS	<0.000	N/A	15	<PQL
N027485-003B	SAMP	5	0.11	7.67	15	PASS	<0.000	N/A	15	<PQL
N027485-004B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-004B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-005B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-005B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-006B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-006B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-007B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	19.7	1.15	15	PASS	20.27	0.91	15	PASS
CCB3	CCB	1	0.13	16.65	15	<PQL	<0.000	N/A	15	<PQL
N027485-007B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-008B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-008B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-010B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-010B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-009B	SAMP	25	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-011C	SAMP	25	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-012C	SAMP	25	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.52	1.99	20	PASS	0.54	3.082	20	PASS
CCV4	CCV	1	19.62	1.52	15	PASS	20.53	1.47	15	PASS
CCB4	CCB	1	0.13	19.4	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.51	0.78	20	PASS	0.51	2.27	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	18.82	1.15	15	PASS	16.5	1.0084	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	121 Sb [3]				137 Ba [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	3.25	15	PASS	0.11	10.41	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.49	0.65	15	PASS	0.5	2.062	15	PASS
Std3-5/50 ppb	ICAL	1	4.87	0.05	15	PASS	5.047	0.99	15	PASS
Std4-10/100 ppb	ICAL	1	9.65	1.055	15	PASS	10.2	0.49	15	PASS
Std5-20/200 ppb	ICAL	1	19.49	0.41	15	PASS	20.36	0.65	15	PASS
Std6-40/400 ppb	ICAL	1	38.55	0.74	15	PASS	40.45	1.25	15	PASS
Std7-100/1000 ppb	ICAL	1	100.14	1.052	15	PASS	99.73	1.33	15	PASS
Std8-200/2000 ppb	ICAL	1	200.29	0.59	15	PASS	206.78	2.12	15	PASS
ICV	ICV	1	9.6	0.97	15	PASS	9.96	0.79	15	PASS
ICB	ICB	1	0.095	10.48	15	PASS	0.0044	32.5	15	<PQL
LLICV	CCV1	1	0.57	1.31	20	PASS	1.066	4.16	20	PASS
ICSA1	ICSA	1	0.051	5.55	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.16	0.36	15	PASS	16.52	1.075	15	PASS
MB-66022	MBLK	1	0.039	4.73	15	PASS	0.0057	73.93	15	<PQL
LCS-66022	LCS	1	9.59	1.45	15	PASS	9.87	0.48	15	PASS
N027485-009B	SAMP	1	0.08	3.38	15	PASS	45.62	0.96	15	PASS
N027485-009B	SAMP	5	0.026	6.67	15	PASS	9.77	0.68	15	PASS
N027485-011C	SAMP	1	0.19	2.68	15	PASS	35.94	0.93	15	PASS
N027485-011C	SAMP	5	0.045	1.29	15	PASS	7.45	1.049	15	PASS
N027485-012C	SAMP	1	0.16	5.65	15	PASS	34.73	0.21	15	PASS
N027485-012C	SAMP	5	0.037	7.45	15	PASS	7.15	0.52	15	PASS
N027546-006B	SAMP	1	0.034	11.95	15	PASS	183.61	2.088	15	PASS
N027546-006B	SAMP	5	0.0063	37.64	15	<PQL	34.99	1.38	15	PASS
CCV1	CCV	1	19.13	1.075	15	PASS	20.086	1.24	15	PASS
CCB1	CCB	1	0.031	5.24	15	PASS	0.0077	55.5	15	<PQL
N027485-001B	SAMP	1	0.081	5.74	15	PASS	63.49	1.15	15	PASS
N027485-001B	SAMP	5	0.021	8.65	15	PASS	13.38	0.86	15	PASS
N027485-001B	SAMP	25	0.0055	39.73	15	<PQL	2.076	1.73	15	PASS
N027485-001B-PS	PS	1	10.13	0.82	15	PASS	71.04	0.47	15	PASS
N027485-001B-PS	PS	5	2.16	2.16	15	PASS	11.92	1.21	15	PASS
N027485-001B-MS	MS	1	10.067	0.62	15	PASS	71.28	1.3	15	PASS
N027485-001B-MS	MS	1	2.15	1.58	15	PASS	11.77	0.67	15	PASS
N027485-001B-MSD	MSD	1	10.2	0.57	15	PASS	71.93	0.71	15	PASS
N027485-001B-MSD	MSD	5	2.14	1.23	15	PASS	11.79	1.41	15	PASS
N027485-002B	SAMP	1	0.062	8.06	15	PASS	40.15	0.41	15	PASS
CCV2	CCV	1	19.16	1.43	15	PASS	20.95	0.54	15	PASS
CCB2	CCB	1	0.032	14.23	15	PASS	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.51	0.97	20	PASS	1.056	0.31	20	PASS
ICSA2	ICSA	1	0.02	12.12	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.039	0.78	15	PASS	16.83	0.93	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	121 Sb [3]				137 Ba [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027485-002B	SAMP	5	0.044	9.59	15	PASS	8.29	1.2	15	PASS
N027485-003B	SAMP	1	0.083	1.25	15	PASS	43.42	1.11	15	PASS
N027485-003B	SAMP	5	0.044	39.92	15	<PQL	9.23	0.43	15	PASS
N027485-004B	SAMP	1	0.44	1.96	15	PASS	38.3	0.39	15	PASS
N027485-004B	SAMP	5	0.1	2.43	15	PASS	8.086	2.046	15	PASS
N027485-005B	SAMP	1	0.13	3.11	15	PASS	49.0028	0.79	15	PASS
N027485-005B	SAMP	5	0.046	2.63	15	PASS	9.97	2.32	15	PASS
N027485-006B	SAMP	1	0.21	2.2	15	PASS	51.54	0.85	15	PASS
N027485-006B	SAMP	5	0.064	3.61	15	PASS	10.6	0.67	15	PASS
N027485-007B	SAMP	1	0.2	6.58	15	PASS	54.87	0.7	15	PASS
CCV3	CCV	1	18.72	0.79	15	PASS	20.98	0.74	15	PASS
CCB3	CCB	1	0.053	6.96	15	PASS	<0.000	N/A	15	<PQL
N027485-007B	SAMP	5	0.075	3.5	15	PASS	11.014	0.94	15	PASS
N027485-008B	SAMP	1	0.085	4.43	15	PASS	134.83	0.74	15	PASS
N027485-008B	SAMP	5	0.037	9.59	15	PASS	27.92	0.64	15	PASS
N027485-010B	SAMP	1	0.12	2.92	15	PASS	108.47	0.71	15	PASS
N027485-010B	SAMP	5	0.04	11.53	15	PASS	22.2	1.31	15	PASS
N027485-009B	SAMP	25	0.023	7.84	15	PASS	0.33	8.81	15	PASS
N027485-011C	SAMP	25	0.032	6.54	15	PASS	0.92	1.33	15	PASS
N027485-012C	SAMP	25	0.026	6.49	15	PASS	0.85	2.032	15	PASS
LLCCV2	CCV2	1	0.51	0.98	20	PASS	1.048	1.058	20	PASS
CCV4	CCV	1	19.073	0.79	15	PASS	20.43	0.83	15	PASS
CCB4	CCB	1	0.049	9.3	15	PASS	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.52	1.64	20	PASS	1.027	3.46	20	PASS
ICSA3	ICSA	1	0.0074	26.51	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.75	0.36	15	PASS	17.16	0.51	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	205 Tl [3]				208 Pb [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.094	0.9	15	PASS	0.1	2.49	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.48	2.57	15	PASS	0.5	2.027	15	PASS
Std3-5/50 ppb	ICAL	1	4.92	1.35	15	PASS	5.041	1.18	15	PASS
Std4-10/100 ppb	ICAL	1	9.99	0.13	15	PASS	10.15	0.29	15	PASS
Std5-20/200 ppb	ICAL	1	20.39	0.9	15	PASS	20.083	0.31	15	PASS
Std6-40/400 ppb	ICAL	1	41	1.098	15	PASS	40.54	1.59	15	PASS
Std7-100/1000 ppb	ICAL	1	99.53	1.23	15	PASS	100.31	1.93	15	PASS
Std8-200/2000 ppb	ICAL	1	200.62	1.79	15	PASS	199.72	1.43	15	PASS
ICV	ICV	1	9.92	0.33	15	PASS	10.05	0.16	15	PASS
ICB	ICB	1	0.15	4.68	15	PASS	0.015	12.65	15	PASS
LLICV	CCV1	1	0.52	0.65	20	PASS	1.055	1.7	20	PASS
ICSA1	ICSA	1	0.049	2.75	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	21.1	0.42	15	PASS	20.079	0.35	15	PASS
MB-66022	MBLK	1	0.072	2.089	15	PASS	0.0081	29.31	15	<PQL
LCS-66022	LCS	1	9.9	0.57	15	PASS	9.95	0.33	15	PASS
N027485-009B	SAMP	1	0.054	8.99	15	PASS	<0.000	N/A	15	<PQL
N027485-009B	SAMP	5	0.016	12.16	15	PASS	<0.000	N/A	15	<PQL
N027485-011C	SAMP	1	0.066	5.93	15	PASS	0.031	20.96	15	<PQL
N027485-011C	SAMP	5	0.017	7.85	15	PASS	0.011	37.72	15	<PQL
N027485-012C	SAMP	1	0.073	3.4	15	PASS	0.048	4.074	15	PASS
N027485-012C	SAMP	5	0.016	21.31	15	<PQL	0.016	11.82	15	PASS
N027546-006B	SAMP	1	0.056	24.33	15	<PQL	<0.000	N/A	15	<PQL
N027546-006B	SAMP	5	0.0087	25.65	15	<PQL	<0.000	N/A	15	<PQL
CCV1	CCV	1	20.33	1.2	15	PASS	20.059	0.46	15	PASS
CCB1	CCB	1	0.0056	21.35	15	<PQL	0.006	36.5	15	<PQL
N027485-001B	SAMP	1	0.84	0.75	15	PASS	<0.000	N/A	15	<PQL
N027485-001B	SAMP	5	0.17	1.54	15	PASS	0.0056	48.69	15	<PQL
N027485-001B	SAMP	25	0.033	0.24	15	PASS	<0.000	N/A	15	<PQL
N027485-001B-PS	PS	1	10.67	0.92	15	PASS	10.86	0.97	15	PASS
N027485-001B-PS	PS	5	2.16	1.45	15	PASS	1.62	1.75	15	PASS
N027485-001B-MS	MS	1	10.87	0.22	15	PASS	10.97	0.45	15	PASS
N027485-001B-MS	MS	1	2.18	0.81	15	PASS	1.61	0.48	15	PASS
N027485-001B-MSD	MSD	1	10.83	0.29	15	PASS	10.87	0.74	15	PASS
N027485-001B-MSD	MSD	5	2.19	0.31	15	PASS	1.6	0.47	15	PASS
N027485-002B	SAMP	1	0.72	18.57	15	NR!	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.43	1.9	15	PASS	19.98	1.86	15	PASS
CCB2	CCB	1	0.025	15.072	15	<PQL	0.0019	22.98	15	<PQL
LLCCV1	CCV2	1	0.49	0.76	20	PASS	1.052	1.98	20	PASS
ICSA2	ICSA	1	0.021	5.4	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.98	0.25	15	PASS	20.011	0.17	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	205 Tl [3]				208 Pb [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027485-002B	SAMP	5	0.12	3.35	15	PASS	<0.000	N/A	15	<PQL
N027485-003B	SAMP	1	0.61	2.57	15	PASS	<0.000	N/A	15	<PQL
N027485-003B	SAMP	5	0.13	2.97	15	PASS	<0.000	N/A	15	<PQL
N027485-004B	SAMP	1	0.12	19.59	15	<PQL	<0.000	N/A	15	<PQL
N027485-004B	SAMP	5	0.026	22.7	15	<PQL	<0.000	N/A	15	<PQL
N027485-005B	SAMP	1	0.5	0.76	15	PASS	<0.000	N/A	15	<PQL
N027485-005B	SAMP	5	0.094	3.31	15	PASS	<0.000	N/A	15	<PQL
N027485-006B	SAMP	1	0.24	2.77	15	PASS	<0.000	N/A	15	<PQL
N027485-006B	SAMP	5	0.039	3.61	15	PASS	<0.000	N/A	15	<PQL
N027485-007B	SAMP	1	0.21	2.77	15	PASS	<0.000	N/A	15	<PQL
CCV3	CCV	1	19.76	1.084	15	PASS	20.17	0.92	15	PASS
CCB3	CCB	1	0.0038	46.39	15	<PQL	0.0036	59.27	15	<PQL
N027485-007B	SAMP	5	0.041	3.32	15	PASS	<0.000	N/A	15	<PQL
N027485-008B	SAMP	1	0.062	2.92	15	PASS	<0.000	N/A	15	<PQL
N027485-008B	SAMP	5	0.01	20.1	15	<PQL	<0.000	N/A	15	<PQL
N027485-010B	SAMP	1	0.74	1.17	15	PASS	<0.000	N/A	15	<PQL
N027485-010B	SAMP	5	0.14	4.044	15	PASS	<0.000	N/A	15	<PQL
N027485-009B	SAMP	25	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-011C	SAMP	25	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-012C	SAMP	25	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.52	2.82	20	PASS	1.074	1.11	20	PASS
CCV4	CCV	1	19.44	0.93	15	PASS	19.92	1.51	15	PASS
CCB4	CCB	1	0.0056	37.26	15	<PQL	0.0055	32.52	15	<PQL
LLCCV2	CCV2	1	0.48	1.15	20	PASS	1.053	0.94	20	PASS
ICSA3	ICSA	1	0.071	2.45	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	21.071	0.49	15	PASS	20.12	0.55	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	51 V [2]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.066	41.35	15	<PQL	0.088	7.84	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.44	7.33	15	PASS	0.48	9.46	15	PASS
Std3-5/50 ppb	ICAL	1	5.039	0.84	15	PASS	5.13	1.74	15	PASS
Std4-10/100 ppb	ICAL	1	10.13	0.24	15	PASS	10.16	0.55	15	PASS
Std5-20/200 ppb	ICAL	1	20.42	1.38	15	PASS	20.65	1.6	15	PASS
Std6-40/400 ppb	ICAL	1	40.1	1.51	15	PASS	40.011	1.14	15	PASS
Std7-100/1000 ppb	ICAL	1	100.75	0.92	15	PASS	100.63	0.51	15	PASS
Std8-200/2000 ppb	ICAL	1	199.55	0.18	15	PASS	199.61	0.84	15	PASS
ICV	ICV	1	10.65	0.88	15	PASS	10.28	2.84	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.92	2.45	20	PASS	0.98	2.12	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	21.44	2.39	15	PASS	20.99	1.82	15	PASS
MB-66022	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-66022	LCS	1	10.26	0.76	15	PASS	9.95	1.57	15	PASS
N027485-009B	SAMP	1	16.32	1.11	15	PASS	1857.84	1.32	15	PASS
N027485-009B	SAMP	5	2.99	0.8	15	PASS	402.97	1.11	15	PASS
N027485-011C	SAMP	1	7.69	0.67	15	PASS	2358.79	0.33	15	PASS
N027485-011C	SAMP	5	1.22	2.44	15	PASS	502.029	0.25	15	PASS
N027485-012C	SAMP	1	7.38	0.69	15	PASS	2279.71	0.41	15	PASS
N027485-012C	SAMP	5	1.17	2.4	15	PASS	485.58	1.26	15	PASS
N027546-006B	SAMP	1	2.31	1.47	15	PASS	12.97	0.96	15	PASS
N027546-006B	SAMP	5	0.15	24.33	15	<PQL	3.17	1.15	15	PASS
CCV1	CCV	1	20.48	1.81	15	PASS	21.47	1.45	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.3	4.91	15	PASS
N027485-001B	SAMP	1	3.6	1.36	15	PASS	153.48	0.4	15	PASS
N027485-001B	SAMP	5	0.43	5.48	15	PASS	33.31	0.86	15	PASS
N027485-001B	SAMP	25	<0.000	N/A	15	<PQL	7.15	2.89	15	PASS
N027485-001B-PS	PS	1	13.88	0.49	15	PASS	156.63	0.29	15	PASS
N027485-001B-PS	PS	5	2.67	3.5	15	PASS	34.22	0.81	15	PASS
N027485-001B-MS	MS	1	14.1	0.93	15	PASS	157.98	0.86	15	PASS
N027485-001B-MS	MS	1	2.57	3.33	15	PASS	33.5	1.82	15	PASS
N027485-001B-MSD	MSD	1	13.85	0.82	15	PASS	156.22	0.64	15	PASS
N027485-001B-MSD	MSD	5	2.7	1.74	15	PASS	34.11	1.75	15	PASS
N027485-002B	SAMP	1	1.34	5.27	15	PASS	1587.65	1.96	15	PASS
CCV2	CCV	1	19.81	0.98	15	PASS	20.73	1.029	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.48	5.83	15	PASS
LLCCV1	CCV2	1	0.66	4.031	20	PASS	1.4	2.35	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.47	2.99	15	PASS
ICSAB2	ICSAB	1	20.58	1.15	15	PASS	20.36	1.36	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	51 V [2]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027485-002B	SAMP	5	<0.000	N/A	15	<PQL	357.83	0.76	15	PASS
N027485-003B	SAMP	1	1.51	2.67	15	PASS	1393.31	1.88	15	PASS
N027485-003B	SAMP	5	<0.000	N/A	15	<PQL	302.073	1.31	15	PASS
N027485-004B	SAMP	1	1.8	4.65	15	PASS	3417.5	1.45	15	PASS
N027485-004B	SAMP	5	0.02	106.95	15	<PQL	750.34	1.22	15	PASS
N027485-005B	SAMP	1	14.43	0.89	15	PASS	9.78	1.17	15	PASS
N027485-005B	SAMP	5	2.64	1.3	15	PASS	2.49	0.14	15	PASS
N027485-006B	SAMP	1	47.2	0.74	15	PASS	3.88	3.59	15	PASS
N027485-006B	SAMP	5	9.52	1.64	15	PASS	1.17	4.0076	15	PASS
N027485-007B	SAMP	1	51.16	1.11	15	PASS	4.12	1.47	15	PASS
CCV3	CCV	1	19.71	0.97	15	PASS	20.21	1.8	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.28	12.43	15	PASS
N027485-007B	SAMP	5	10.016	1.18	15	PASS	0.99	0.65	15	PASS
N027485-008B	SAMP	1	0.26	10.91	15	PASS	421.18	0.67	15	PASS
N027485-008B	SAMP	5	<0.000	N/A	15	<PQL	86.2	0.8	15	PASS
N027485-010B	SAMP	1	3.73	3.82	15	PASS	41.11	2.59	15	PASS
N027485-010B	SAMP	5	0.43	4.97	15	PASS	8.79	1.97	15	PASS
N027485-009B	SAMP	25	0.28	4.59	15	PASS	82.5	0.45	15	PASS
N027485-011C	SAMP	25	<0.000	N/A	15	<PQL	104.87	1.083	15	PASS
N027485-012C	SAMP	25	<0.000	N/A	15	<PQL	99.48	1.69	15	PASS
LLCCV2	CCV2	1	1.0023	2.95	20	PASS	1.0054	4.99	20	PASS
CCV4	CCV	1	19.54	1.52	15	PASS	20.2	0.72	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.28	6.74	15	PASS
LLCCV2	CCV2	1	0.61	6.3	20	PASS	1.24	1.75	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.45	1.69	15	PASS	20.27	1.46	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				59 Co [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.09	12.94	15	PASS	0.11	6.052	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.5	2.97	15	PASS	0.51	3.46	15	PASS
Std3-5/50 ppb	ICAL	1	5.21	2.89	15	PASS	5.075	0.18	15	PASS
Std4-10/100 ppb	ICAL	1	10.18	1.2	15	PASS	10.092	0.45	15	PASS
Std5-20/200 ppb	ICAL	1	20.75	1.44	15	PASS	20.46	1.19	15	PASS
Std6-40/400 ppb	ICAL	1	40.18	1.63	15	PASS	39.64	1.3	15	PASS
Std7-100/1000 ppb	ICAL	1	100.92	0.85	15	PASS	99.45	0.78	15	PASS
Std8-200/2000 ppb	ICAL	1	199.42	0.5	15	PASS	200.3	0.45	15	PASS
ICV	ICV	1	101.9	1.84	15	PASS	9.89	2.45	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.0049	19.98	15	<PQL
LLICV	CCV1	1	0.51	2.52	20	PASS	0.52	3.43	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	17.78	0.12	15	PASS	20.4	2.52	15	PASS
MB-66022	MBLK	1	<0.000	N/A	15	<PQL	0.00032	1.18	15	PASS
LCS-66022	LCS	1	99.84	1.38	15	PASS	9.63	2.5	15	PASS
N027485-009B	SAMP	1	2.21	1.56	15	PASS	<0.000	N/A	15	<PQL
N027485-009B	SAMP	5	0.47	1.1	15	PASS	<0.000	N/A	15	<PQL
N027485-011C	SAMP	1	3.58	1.74	15	PASS	0.13	5.55	15	PASS
N027485-011C	SAMP	5	0.78	5.67	15	PASS	0.028	25.96	15	<PQL
N027485-012C	SAMP	1	0.96	4.56	15	PASS	0.18	3.038	15	PASS
N027485-012C	SAMP	5	0.17	6.38	15	PASS	0.036	11.073	15	PASS
N027546-006B	SAMP	1	1.92	2.84	15	PASS	0.17	5.43	15	PASS
N027546-006B	SAMP	5	0.37	11.99	15	PASS	0.04	4.041	15	PASS
CCV1	CCV	1	20.9	1.56	15	PASS	21.057	0.36	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.002	90.35	15	<PQL
N027485-001B	SAMP	1	11.34	0.93	15	PASS	0.021	16.5	15	<PQL
N027485-001B	SAMP	5	2.43	1.25	15	PASS	0.0051	83.23	15	<PQL
N027485-001B	SAMP	25	0.52	8.07	15	PASS	0.0022	70.33	15	<PQL
N027485-001B-PS	PS	1	107.81	0.66	15	PASS	9.16	0.73	15	PASS
N027485-001B-PS	PS	5	23.52	0.3	15	PASS	2.04	0.87	15	PASS
N027485-001B-MS	MS	1	109.14	0.2	15	PASS	9.19	1.35	15	PASS
N027485-001B-MS	MS	1	23.23	2.32	15	PASS	1.99	3.9	15	PASS
N027485-001B-MSD	MSD	1	107.41	0.25	15	PASS	9.045	1.073	15	PASS
N027485-001B-MSD	MSD	5	23.68	1.34	15	PASS	2.0082	2.46	15	PASS
N027485-002B	SAMP	1	1.074	9.49	15	PASS	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.1	1.29	15	PASS	19.82	0.56	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.0015	55.79	15	<PQL
LLCCV1	CCV2	1	0.54	10.18	20	PASS	0.5	4.76	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	17.85	1.25	15	PASS	19.44	0.88	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				59 Co [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027485-002B	SAMP	5	0.22	3.52	15	PASS	<0.000	N/A	15	<PQL
N027485-003B	SAMP	1	5.65	2.51	15	PASS	<0.000	N/A	15	<PQL
N027485-003B	SAMP	5	1.19	5.97	15	PASS	<0.000	N/A	15	<PQL
N027485-004B	SAMP	1	4.12	1.63	15	PASS	<0.000	N/A	15	<PQL
N027485-004B	SAMP	5	0.91	3.21	15	PASS	<0.000	N/A	15	<PQL
N027485-005B	SAMP	1	161.63	1.046	15	PASS	<0.000	N/A	15	<PQL
N027485-005B	SAMP	5	35.96	0.42	15	PASS	<0.000	N/A	15	<PQL
N027485-006B	SAMP	1	5.79	0.51	15	PASS	<0.000	N/A	15	<PQL
N027485-006B	SAMP	5	1.26	0.31	15	PASS	<0.000	N/A	15	<PQL
N027485-007B	SAMP	1	6.94	1.9	15	PASS	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.37	1.62	15	PASS	20.27	2.48	15	PASS
CCB3	CCB	1	0.0054	239.51	15	<PQL	0.0026	8.069	15	PASS
N027485-007B	SAMP	5	1.48	3.37	15	PASS	<0.000	N/A	15	<PQL
N027485-008B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-008B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-010B	SAMP	1	307.3	1.78	15	PASS	0.088	12.3	15	PASS
N027485-010B	SAMP	5	65.096	2.12	15	PASS	0.027	32.3	15	<PQL
N027485-009B	SAMP	25	0.13	8.3	15	PASS	<0.000	N/A	15	<PQL
N027485-011C	SAMP	25	0.19	6.82	15	PASS	0.0073	34.58	15	<PQL
N027485-012C	SAMP	25	0.049	26.19	15	<PQL	0.01	37.24	15	<PQL
LLCCV2	CCV2	1	0.57	7.53	20	PASS	0.55	3.89	20	PASS
CCV4	CCV	1	20.72	1.28	15	PASS	20.034	0.79	15	PASS
CCB4	CCB	1	0.0076	36.7	15	<PQL	0.0016	25.55	15	<PQL
LLCCV2	CCV2	1	0.51	5.51	20	PASS	0.51	3.64	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	18.14	2.31	15	PASS	19.52	0.88	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	60 Ni [2]				63 Cu [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.086	33.12	15	<PQL	0.095	5.45	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.48	9.9	15	PASS	0.48	2.94	15	PASS
Std3-5/50 ppb	ICAL	1	4.98	2.28	15	PASS	4.93	1.23	15	PASS
Std4-10/100 ppb	ICAL	1	9.99	1.62	15	PASS	9.87	1.63	15	PASS
Std5-20/200 ppb	ICAL	1	20.013	1.22	15	PASS	19.71	0.89	15	PASS
Std6-40/400 ppb	ICAL	1	40.52	1.76	15	PASS	39.73	1.23	15	PASS
Std7-100/1000 ppb	ICAL	1	101.26	1.2	15	PASS	98.23	1.5	15	PASS
Std8-200/2000 ppb	ICAL	1	199.27	0.42	15	PASS	200.97	1.0071	15	PASS
ICV	ICV	1	10.35	1.31	15	PASS	10.2	0.99	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.99	5.2	20	PASS	0.95	5.45	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.46	2.98	15	PASS	18.65	2.36	15	PASS
MB-66022	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-66022	LCS	1	10.21	1.99	15	PASS	9.86	1.97	15	PASS
N027485-009B	SAMP	1	1.61	0.92	15	PASS	<0.000	N/A	15	<PQL
N027485-009B	SAMP	5	0.55	11.87	15	PASS	<0.000	N/A	15	<PQL
N027485-011C	SAMP	1	4.89	7.43	15	PASS	<0.000	N/A	15	<PQL
N027485-011C	SAMP	5	1.02	8.19	15	PASS	<0.000	N/A	15	<PQL
N027485-012C	SAMP	1	6.1	1.027	15	PASS	<0.000	N/A	15	<PQL
N027485-012C	SAMP	5	1.28	2.069	15	PASS	<0.000	N/A	15	<PQL
N027546-006B	SAMP	1	6.23	1.7	15	PASS	<0.000	N/A	15	<PQL
N027546-006B	SAMP	5	1.39	3.11	15	PASS	<0.000	N/A	15	<PQL
CCV1	CCV	1	20.64	1.21	15	PASS	20.22	1.71	15	PASS
CCB1	CCB	1	0.12	22.3	15	<PQL	<0.000	N/A	15	<PQL
N027485-001B	SAMP	1	1.33	0.52	15	PASS	<0.000	N/A	15	<PQL
N027485-001B	SAMP	5	0.35	3.34	15	PASS	<0.000	N/A	15	<PQL
N027485-001B	SAMP	25	0.091	24.16	15	<PQL	<0.000	N/A	15	<PQL
N027485-001B-PS	PS	1	11.24	1.57	15	PASS	7.99	1.75	15	PASS
N027485-001B-PS	PS	5	2.37	1.31	15	PASS	1.55	1.3	15	PASS
N027485-001B-MS	MS	1	11.27	0.68	15	PASS	8.25	1.79	15	PASS
N027485-001B-MS	MS	1	2.39	3.35	15	PASS	1.54	0.98	15	PASS
N027485-001B-MSD	MSD	1	11.3	1.025	15	PASS	8.13	0.99	15	PASS
N027485-001B-MSD	MSD	5	2.39	3.94	15	PASS	1.52	0.93	15	PASS
N027485-002B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.041	0.19	15	PASS	19.71	1.065	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.95	3.82	20	PASS	0.94	3.46	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.93	0.98	15	PASS	18.23	0.49	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	60 Ni [2]				63 Cu [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027485-002B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-003B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-003B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-004B	SAMP	1	0.19	22.41	15	<PQL	<0.000	N/A	15	<PQL
N027485-004B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-005B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-005B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-006B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-006B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-007B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	19.96	1.083	15	PASS	19.68	1.05	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-007B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-008B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-008B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-010B	SAMP	1	0.34	9.32	15	PASS	<0.000	N/A	15	<PQL
N027485-010B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-009B	SAMP	25	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-011C	SAMP	25	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-012C	SAMP	25	0.055	49	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	1.032	7.43	20	PASS	2.14	1.48	20	PASS
CCV4	CCV	1	19.64	1.24	15	PASS	20.04	1.25	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.28	12.86	15	PASS
LLCCV2	CCV2	1	0.85	4.92	20	PASS	1.21	2.36	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.58	1.92	15	PASS	18.25	0.69	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	66 Zn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.14	30.7	15	<PQL	0.11	14.87	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.57	5.34	15	PASS	0.51	8.74	15	PASS
Std3-5/50 ppb	ICAL	1	4.96	0.85	15	PASS	4.96	1.2	15	PASS
Std4-10/100 ppb	ICAL	1	9.74	1.082	15	PASS	10.052	1.38	15	PASS
Std5-20/200 ppb	ICAL	1	20.37	1.77	15	PASS	20.041	0.9	15	PASS
Std6-40/400 ppb	ICAL	1	40.76	1.095	15	PASS	40.24	0.33	15	PASS
Std7-100/1000 ppb	ICAL	1	100.67	1.35	15	PASS	100.34	1.054	15	PASS
Std8-200/2000 ppb	ICAL	1	199.49	0.63	15	PASS	199.77	0.87	15	PASS
ICV	ICV	1	102.28	0.91	15	PASS	9.85	2.48	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.022	45.66	15	<PQL
LLICV	CCV1	1	10.61	0.95	20	PASS	0.12	19.93	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	17.54	1.49	15	PASS	20.11	1.11	15	PASS
MB-66022	MBLK	1	<0.000	N/A	15	<PQL	0.015	41.54	15	<PQL
LCS-66022	LCS	1	102.047	1.079	15	PASS	10.068	2.38	15	PASS
N027485-009B	SAMP	1	<0.000	N/A	15	<PQL	37.56	0.47	15	PASS
N027485-009B	SAMP	5	<0.000	N/A	15	<PQL	8.13	2.65	15	PASS
N027485-011C	SAMP	1	4.33	1.96	15	PASS	1.95	2.66	15	PASS
N027485-011C	SAMP	5	1.57	4.51	15	PASS	0.43	13.065	15	PASS
N027485-012C	SAMP	1	2.61	5.43	15	PASS	1.91	7.15	15	PASS
N027485-012C	SAMP	5	0.45	18.11	15	<PQL	0.39	5.56	15	PASS
N027546-006B	SAMP	1	2.32	0.99	15	PASS	0.78	4.72	15	PASS
N027546-006B	SAMP	5	0.36	11.18	15	PASS	0.17	6.47	15	PASS
CCV1	CCV	1	20.27	2.094	15	PASS	19.84	1.99	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0076	123.65	15	<PQL
N027485-001B	SAMP	1	0.2	32.15	15	<PQL	3.88	2.69	15	PASS
N027485-001B	SAMP	5	0.22	47.23	15	<PQL	0.83	0.84	15	PASS
N027485-001B	SAMP	25	0.093	45.17	15	<PQL	0.18	16.8	15	NR!
N027485-001B-PS	PS	1	116.16	0.88	15	PASS	14.42	2.81	15	PASS
N027485-001B-PS	PS	5	26.44	1.12	15	PASS	2.92	5.068	15	PASS
N027485-001B-MS	MS	1	117.98	1.83	15	PASS	14.59	1.24	15	PASS
N027485-001B-MS	MS	1	26.93	1.4	15	PASS	3.0038	7.29	15	PASS
N027485-001B-MSD	MSD	1	115.8	0.35	15	PASS	14.43	0.082	15	PASS
N027485-001B-MSD	MSD	5	27.013	2.52	15	PASS	2.94	4.33	15	PASS
N027485-002B	SAMP	1	<0.000	N/A	15	<PQL	1.91	0.7	15	PASS
CCV2	CCV	1	20.13	0.57	15	PASS	20.31	0.5	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.012	84.62	15	<PQL
LLCCV1	CCV2	1	10.51	1.18	20	PASS	0.1	26.87	20	NR!
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	17.2	1.87	15	PASS	20.58	0.5	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	66 Zn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027485-002B	SAMP	5	<0.000	N/A	15	<PQL	0.47	3.49	15	PASS
N027485-003B	SAMP	1	<0.000	N/A	15	<PQL	2.18	6.62	15	PASS
N027485-003B	SAMP	5	<0.000	N/A	15	<PQL	0.45	10.24	15	PASS
N027485-004B	SAMP	1	<0.000	N/A	15	<PQL	3.77	4.029	15	PASS
N027485-004B	SAMP	5	<0.000	N/A	15	<PQL	0.85	4.0075	15	PASS
N027485-005B	SAMP	1	<0.000	N/A	15	<PQL	10.75	3.2	15	PASS
N027485-005B	SAMP	5	<0.000	N/A	15	<PQL	2.26	3.6	15	PASS
N027485-006B	SAMP	1	<0.000	N/A	15	<PQL	3.79	3.84	15	PASS
N027485-006B	SAMP	5	<0.000	N/A	15	<PQL	0.79	6.0084	15	PASS
N027485-007B	SAMP	1	<0.000	N/A	15	<PQL	3.37	1.82	15	PASS
CCV3	CCV	1	20.3	0.97	15	PASS	20.36	1.6	15	PASS
CCB3	CCB	1	0.026	72.36	15	<PQL	0.02	58.73	15	<PQL
N027485-007B	SAMP	5	<0.000	N/A	15	<PQL	0.65	3.96	15	PASS
N027485-008B	SAMP	1	2.94	2.0043	15	PASS	1.46	1.87	15	PASS
N027485-008B	SAMP	5	0.73	16.82	15	<PQL	0.33	16.86	15	NR!
N027485-010B	SAMP	1	41.037	2.54	15	PASS	2.00038	6.079	15	PASS
N027485-010B	SAMP	5	9.74	1.35	15	PASS	0.36	22.32	15	NR!
N027485-009B	SAMP	25	0.091	96.46	15	<PQL	1.63	0.14	15	PASS
N027485-011C	SAMP	25	0.36	22.13	15	<PQL	0.096	20.67	15	<PQL
N027485-012C	SAMP	25	0.14	32.57	15	<PQL	0.081	22.63	15	<PQL
LLCCV2	CCV2	1	10.8	3.17	20	PASS	0.14	13.54	20	PASS
CCV4	CCV	1	20.65	1.41	15	PASS	20.57	1.14	15	PASS
CCB4	CCB	1	0.027	87.82	15	<PQL	0.0053	212.48	15	<PQL
LLCCV2	CCV2	1	10.63	2.21	20	PASS	0.12	21.2	20	NR!
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	17.086	0.65	15	PASS	20.64	1.78	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				9 Be [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.084	49.29	15	<PQL	0.099	12.91	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.39	46.22	15	<PQL	0.49	2.28	15	PASS
Std3-5/50 ppb	ICAL	1	5.097	0.99	15	PASS	4.97	0.53	15	PASS
Std4-10/100 ppb	ICAL	1	10.24	2.87	15	PASS	9.99	2.27	15	PASS
Std5-20/200 ppb	ICAL	1	20.015	5.16	15	PASS	20.062	0.3	15	PASS
Std6-40/400 ppb	ICAL	1	40.99	3.14	15	PASS	40.47	1.67	15	PASS
Std7-100/1000 ppb	ICAL	1	101.39	0.86	15	PASS	99.8	2.065	15	PASS
Std8-200/2000 ppb	ICAL	1	199.09	1.82	15	PASS	206.29	1.87	15	PASS
ICV	ICV	1	9.94	3.45	15	PASS	9.68	2.45	15	PASS
ICB	ICB	1	0.0072	94.74	15	<PQL	0.016	36.2	15	<PQL
LLICV	CCV1	1	0.53	2.37	20	PASS	0.54	5.0042	20	PASS
ICSA1	ICSA	1	0.0039	475.63	15	<PQL	0.0072	13.92	15	PASS
ICSAB1	ICSAB	1	18.9	5.29	15	PASS	19.055	1.25	15	PASS
MB-66022	MBLK	1	0.01	220.46	15	<PQL	0.0044	52.8	15	<PQL
LCS-66022	LCS	1	9.42	2.84	15	PASS	9.83	1.095	15	PASS
N027485-009B	SAMP	1	24.31	2.72	15	PASS	0.01	58.45	15	<PQL
N027485-009B	SAMP	5	5.67	1.36	15	PASS	0.0034	96.03	15	<PQL
N027485-011C	SAMP	1	40.77	1.89	15	PASS	0.0086	9.25	15	PASS
N027485-011C	SAMP	5	8.58	6.38	15	PASS	0.0034	65.2	15	<PQL
N027485-012C	SAMP	1	39.82	1.21	15	PASS	0.0097	12.61	15	PASS
N027485-012C	SAMP	5	8.073	1.17	15	PASS	<0.000	N/A	15	<PQL
N027546-006B	SAMP	1	1.96	15.42	15	NR!	0.00083	263.98	15	<PQL
N027546-006B	SAMP	5	0.43	8.9	15	PASS	<0.000	N/A	15	<PQL
CCV1	CCV	1	21.048	3.39	15	PASS	20.077	1.13	15	PASS
CCB1	CCB	1	0.028	107.061	15	<PQL	0.0036	114.82	15	<PQL
N027485-001B	SAMP	1	4.85	2.94	15	PASS	0.0014	158.54	15	<PQL
N027485-001B	SAMP	5	1.048	4.2	15	PASS	<0.000	N/A	15	<PQL
N027485-001B	SAMP	25	0.29	33.82	15	<PQL	<0.000	N/A	15	<PQL
N027485-001B-PS	PS	1	13.92	3.37	15	PASS	10.63	1.66	15	PASS
N027485-001B-PS	PS	5	3.097	7.76	15	PASS	2.22	3.5	15	PASS
N027485-001B-MS	MS	1	14.36	7.72	15	PASS	10.77	0.64	15	PASS
N027485-001B-MS	MS	1	3.033	11.52	15	PASS	2.16	3.14	15	PASS
N027485-001B-MSD	MSD	1	13.45	3.03	15	PASS	10.63	0.48	15	PASS
N027485-001B-MSD	MSD	5	3.16	5.54	15	PASS	2.14	0.99	15	PASS
N027485-002B	SAMP	1	2.67	13.055	15	PASS	0.014	34.45	15	<PQL
CCV2	CCV	1	20.68	3.18	15	PASS	20.11	0.94	15	PASS
CCB2	CCB	1	0.017	98.13	15	<PQL	0.0044	69.26	15	<PQL
LLCCV1	CCV2	1	0.51	19.51	20	PASS	0.52	1.83	20	PASS
ICSA2	ICSA	1	0.036	55.23	15	<PQL	0.0037	124.21	15	<PQL
ICSAB2	ICSAB	1	19.019	0.9	15	PASS	19.42	1.45	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				9 Be [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027485-002B	SAMP	5	0.56	10.21	15	PASS	0.0035	108.094	15	<PQL
N027485-003B	SAMP	1	2.54	15.6	15	NR!	0.022	9.34	15	PASS
N027485-003B	SAMP	5	0.49	22.77	15	<PQL	0.0039	38.97	15	<PQL
N027485-004B	SAMP	1	13.67	3.82	15	PASS	0.0083	66.056	15	<PQL
N027485-004B	SAMP	5	2.95	16.34	15	NR!	0.00079	365.16	15	<PQL
N027485-005B	SAMP	1	0.55	36.8	15	NR!	0.02	12.62	15	PASS
N027485-005B	SAMP	5	0.11	41.36	15	<PQL	0.0055	72.75	15	<PQL
N027485-006B	SAMP	1	0.25	11.33	15	PASS	0.021	19.11	15	<PQL
N027485-006B	SAMP	5	0.056	40.38	15	<PQL	0.0027	70.54	15	<PQL
N027485-007B	SAMP	1	0.3	14.31	15	PASS	0.023	30.84	15	<PQL
CCV3	CCV	1	21.75	0.67	15	PASS	21.091	0.099	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.0085	30.098	15	<PQL
N027485-007B	SAMP	5	0.044	140.16	15	<PQL	0.0048	50	15	<PQL
N027485-008B	SAMP	1	3.75	2.31	15	PASS	0.0039	58.13	15	<PQL
N027485-008B	SAMP	5	1.13	12.34	15	PASS	0.0026	82.88	15	<PQL
N027485-010B	SAMP	1	2.35	14.55	15	PASS	0.01	19.72	15	<PQL
N027485-010B	SAMP	5	0.51	18.97	15	NR!	0.0028	140.98	15	<PQL
N027485-009B	SAMP	25	1.22	7.99	15	PASS	<0.000	N/A	15	<PQL
N027485-011C	SAMP	25	1.83	13	15	PASS	<0.000	N/A	15	<PQL
N027485-012C	SAMP	25	1.97	8.85	15	PASS	0.00094	368.76	15	<PQL
LLCCV2	CCV2	1	0.49	25.074	20	<PQL	0.55	5.025	20	PASS
CCV4	CCV	1	21.48	0.18	15	PASS	21.43	0.39	15	PASS
CCB4	CCB	1	0.016	233.047	15	<PQL	0.0017	116.3	15	<PQL
LLCCV2	CCV2	1	0.66	25.77	20	NR!	0.56	5.048	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.0053	14.36	15	PASS
ICSAB3	ICSAB	1	19.69	3.47	15	PASS	20.052	1.39	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	34.89	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.47	2.61	15	PASS
Std3-5/50 ppb	ICAL	1	4.72	1.34	15	PASS
Std4-10/100 ppb	ICAL	1	9.7	1.52	15	PASS
Std5-20/200 ppb	ICAL	1	19.52	1.059	15	PASS
Std6-40/400 ppb	ICAL	1	39.55	1.095	15	PASS
Std7-100/1000 ppb	ICAL	1	98.53	1.29	15	PASS
Std8-200/2000 ppb	ICAL	1	200.89	1.52	15	PASS
ICV	ICV	1	9.71	1.89	15	PASS
ICB	ICB	1	0.19	2.52	15	PASS
LLICV	CCV1	1	0.54	2.95	20	PASS
ICSA1	ICSA	1	0.085	24.13	15	<PQL
ICSAB1	ICSAB	1	21.99	1.74	15	PASS
MB-66022	MBLK	1	0.08	17.29	15	<PQL
LCS-66022	LCS	1	9.77	1.071	15	PASS
N027485-009B	SAMP	1	9.71	2.16	15	PASS
N027485-009B	SAMP	5	1.95	1.84	15	PASS
N027485-011C	SAMP	1	34.31	0.24	15	PASS
N027485-011C	SAMP	5	6.5	1.088	15	PASS
N027485-012C	SAMP	1	33.035	0.67	15	PASS
N027485-012C	SAMP	5	6.39	1.62	15	PASS
N027546-006B	SAMP	1	13.3	0.68	15	PASS
N027546-006B	SAMP	5	2.6	2.96	15	PASS
CCV1	CCV	1	19.24	0.9	15	PASS
CCB1	CCB	1	0.083	4.74	15	PASS
N027485-001B	SAMP	1	71.6	1.53	15	PASS
N027485-001B	SAMP	5	14.18	1.21	15	PASS
N027485-001B	SAMP	25	2.86	3.32	15	PASS
N027485-001B-PS	PS	1	80.45	0.35	15	PASS
N027485-001B-PS	PS	5	16.31	2.37	15	PASS
N027485-001B-MS	MS	1	81.35	1.069	15	PASS
N027485-001B-MS	MS	1	15.9	0.6	15	PASS
N027485-001B-MSD	MSD	1	81.93	0.74	15	PASS
N027485-001B-MSD	MSD	5	15.75	0.88	15	PASS
N027485-002B	SAMP	1	19.57	0.23	15	PASS
CCV2	CCV	1	19.79	2.46	15	PASS
CCB2	CCB	1	0.077	3.34	15	PASS
LLCCV1	CCV2	1	0.54	0.87	20	PASS
ICSA2	ICSA	1	0.045	14.34	15	PASS
ICSAB2	ICSAB	1	22.23	0.73	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N027485-002B	SAMP	5	3.64	1.94	15	PASS
N027485-003B	SAMP	1	22.16	1.033	15	PASS
N027485-003B	SAMP	5	4.16	4.84	15	PASS
N027485-004B	SAMP	1	49.9	1.4	15	PASS
N027485-004B	SAMP	5	9.52	0.62	15	PASS
N027485-005B	SAMP	1	90.71	0.68	15	PASS
N027485-005B	SAMP	5	16.71	0.73	15	PASS
N027485-006B	SAMP	1	91.33	0.52	15	PASS
N027485-006B	SAMP	5	16.76	1.87	15	PASS
N027485-007B	SAMP	1	94.41	0.8	15	PASS
CCV3	CCV	1	19.35	0.035	15	PASS
CCB3	CCB	1	0.099	13.57	15	PASS
N027485-007B	SAMP	5	17.74	1.56	15	PASS
N027485-008B	SAMP	1	2.77	1.22	15	PASS
N027485-008B	SAMP	5	0.53	7.8	15	PASS
N027485-010B	SAMP	1	25.32	1.94	15	PASS
N027485-010B	SAMP	5	4.81	0.74	15	PASS
N027485-009B	SAMP	25	0.38	3.097	15	PASS
N027485-011C	SAMP	25	1.28	0.87	15	PASS
N027485-012C	SAMP	25	1.21	2.93	15	PASS
LLCCV2	CCV2	1	0.49	4.9	20	PASS
CCV4	CCV	1	19.22	0.65	15	PASS
CCB4	CCB	1	0.054	10.79	15	PASS
LLCCV2	CCV2	1	0.52	2.99	20	PASS
ICSA3	ICSA	1	0.02	12.34	15	PASS
ICSAB3	ICSAB	1	22.56	0.86	15	PASS

PERCENT RSD SUMMARY: 180103A

Instrument ID: ICPMS-02

Sample Name	Type	DF	51 V [2]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	9.78	15	PASS	0.1	6.73	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.52	1.24	15	PASS	0.5	6.12	15	PASS
Std3-5/50 ppb	ICAL	1	5	1.32	15	PASS	5.069	2.015	15	PASS
Std4-10/100 ppb	ICAL	1	10.05	0.97	15	PASS	10.14	1.94	15	PASS
Std5-20/200 ppb	ICAL	1	19.6	0.89	15	PASS	19.72	1.1	15	PASS
Std6-40/400 ppb	ICAL	1	38.93	1.62	15	PASS	39.61	1.099	15	PASS
Std7-100/1000 ppb	ICAL	1	99.71	1.81	15	PASS	100.25	1.51	15	PASS
Std8-200/2000 ppb	ICAL	1	200.4	1.35	15	PASS	199.97	1.058	15	PASS
ICV	ICV	1	9.89	1.093	15	PASS	10.082	1.096	15	PASS
ICB	ICB	1	0.0037	155.39	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.035	1.27	20	PASS	1.082	3.59	20	PASS
ICSA1	ICSA	1	0.0049	96.36	15	<PQL	0.068	9.66	15	PASS
ICSAB1	ICSAB	1	20.64	2.11	15	PASS	20.17	2.16	15	PASS
LLICV	CCV1	1	1.048	3.84	20	PASS	1.052	3.28	20	PASS
MB-66022	MBLK	1	0.017	73.57	15	<PQL	0.0068	75.97	15	<PQL
LCS-66022	LCS	1	10.25	0.65	15	PASS	10.29	0.72	15	PASS
N027485-009B	SAMP	1	16.43	0.57	15	PASS	1829.74	1.46	15	PASS
N027485-011C	SAMP	1	8.38	2.27	15	PASS	2449.94	1.23	15	PASS
N027485-012C	SAMP	1	7.94	0.66	15	PASS	2358.49	1.071	15	PASS
N027546-006B	SAMP	1	2.8	3.62	15	PASS	13.24	2.11	15	PASS
CCV1	CCV	1	20.38	2.35	15	PASS	20.56	2.29	15	PASS
CCB1	CCB	1	0.012	29.94	15	<PQL	0.091	5.85	15	PASS
N027485-001B	SAMP	1	4.15	0.57	15	PASS	159.52	1.92	15	PASS
N027485-001B	SAMP	5	0.88	2.2	15	PASS	33.68	1.75	15	PASS
N027485-001B-PS	PS	1	14.29	0.7	15	PASS	163.15	1.21	15	PASS
N027485-001B-MS	MS	1	14.41	3.28	15	PASS	162.58	2.65	15	PASS
N027485-001B-MSD	MSD	1	14.32	0.74	15	PASS	162.5	1.59	15	PASS
N027485-002B	SAMP	25	0.073	18.88	15	<PQL	73.32	1.0042	15	PASS
N027485-003B	SAMP	25	0.097	10.39	15	PASS	62.86	1.5	15	PASS
N027485-004B	SAMP	25	0.1	13.47	15	PASS	164.86	2.11	15	PASS
N027485-005B	SAMP	1	13.37	2.46	15	PASS	7.44	2.043	15	PASS
N027485-006B	SAMP	1	44.65	0.71	15	PASS	2.74	1.32	15	PASS
CCV2	CCV	1	20.7	3.21	15	PASS	20.68	3.039	15	PASS
CCB2	CCB	1	0.0083	120.55	15	<PQL	0.021	38.68	15	<PQL
N027485-007B	SAMP	1	47.38	1.46	15	PASS	3.31	1.99	15	PASS
N027485-010B	SAMP	5	0.88	3.38	15	PASS	8.99	1.56	15	PASS
CCV3	CCV	1	20.63	2.84	15	PASS	20.65	1.84	15	PASS
CCB3	CCB	1	0.0096	47.8	15	<PQL	0.011	47.67	15	<PQL
LLCCV1	CCV2	1	1.076	0.54	20	PASS	1.049	3.052	20	PASS
ICSA2	ICSA	1	0.0069	26.57	15	<PQL	0.08	17.45	15	<PQL

PERCENT RSD SUMMARY: 180103A

Instrument ID: ICPMS-02

Sample Name	Type	DF	51 V [2]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSAB2	ICSAB	1	21.51	1.58	15	PASS	20.81	1.77	15	PASS

PERCENT RSD SUMMARY: 180103A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	22.7	15	NR!	0.12	46.99	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.47	4.36	15	PASS	0.48	24.013	15	<PQL
Std3-5/50 ppb	ICAL	1	4.94	1.022	15	PASS	4.89	5.91	15	PASS
Std4-10/100 ppb	ICAL	1	9.89	2.33	15	PASS	10.019	2.51	15	PASS
Std5-20/200 ppb	ICAL	1	20.052	0.82	15	PASS	20.051	2.46	15	PASS
Std6-40/400 ppb	ICAL	1	40.47	1.49	15	PASS	40.54	2.71	15	PASS
Std7-100/1000 ppb	ICAL	1	100.33	1.29	15	PASS	100.17	2.85	15	PASS
Std8-200/2000 ppb	ICAL	1	199.75	0.75	15	PASS	199.8	2.39	15	PASS
ICV	ICV	1	9.97	0.87	15	PASS	10.16	6.71	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.046	70.68	15	<PQL
LLICV	CCV1	1	0.066	22.74	20	<PQL	0.48	14.91	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0	N/A	15	<PQL
ICSAB1	ICSAB	1	21.15	1.4	15	PASS	19.17	1.083	15	PASS
LLICV	CCV1	1	0.08	13.9	20	PASS	0.53	25.62	20	NR!
MB-66022	MBLK	1	<0.000	N/A	15	<PQL	0.004	173.21	15	<PQL
LCS-66022	LCS	1	9.91	1.87	15	PASS	9.85	7.035	15	PASS
N027485-009B	SAMP	1	38.75	0.61	15	PASS	28.04	2.52	15	PASS
N027485-011C	SAMP	1	2.0037	1.71	15	PASS	44.18	0.39	15	PASS
N027485-012C	SAMP	1	1.91	1.84	15	PASS	42.2	2.049	15	PASS
N027546-006B	SAMP	1	0.74	2.0077	15	PASS	1.98	1.6	15	PASS
CCV1	CCV	1	19.71	2.033	15	PASS	19.89	2.39	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.034	88.41	15	<PQL
N027485-001B	SAMP	1	4.067	0.77	15	PASS	5.1	1.96	15	PASS
N027485-001B	SAMP	5	0.79	1.61	15	PASS	1.068	6.59	15	PASS
N027485-001B-PS	PS	1	14.54	1.61	15	PASS	15.1	5.0071	15	PASS
N027485-001B-MS	MS	1	14.48	0.73	15	PASS	15.12	1.99	15	PASS
N027485-001B-MSD	MSD	1	14.48	2.45	15	PASS	15.43	3.23	15	PASS
N027485-002B	SAMP	25	0.033	5.91	15	PASS	0.11	4.0012	15	PASS
N027485-003B	SAMP	25	0.038	25.54	15	<PQL	0.087	25.48	15	<PQL
N027485-004B	SAMP	25	0.12	18.49	15	NR!	0.61	4.55	15	PASS
N027485-005B	SAMP	1	10.33	2.43	15	PASS	0.42	1.7	15	PASS
N027485-006B	SAMP	1	3.59	2.12	15	PASS	0.25	15.34	15	<PQL
CCV2	CCV	1	19.68	0.28	15	PASS	19.55	4.55	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.042	23.88	15	<PQL
N027485-007B	SAMP	1	2.99	0.51	15	PASS	0.29	10.6	15	PASS
N027485-010B	SAMP	5	0.36	13.23	15	PASS	0.48	11.26	15	PASS
CCV3	CCV	1	19.75	0.99	15	PASS	19.13	2.71	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.04	69.52	15	<PQL
LLCCV1	CCV2	1	0.07	18.58	20	PASS	0.45	7.25	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.0081	173.21	15	<PQL

PERCENT RSD SUMMARY: 180103A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSAB2	ICSAB	1	20.95	0.24	15	PASS	20.23	1.39	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180102B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0102001.D	RINSE	RINSE	1	01/02/18 8:19 PM
B0102002.D	Cal Blank	IBLK	1	01/02/18 8:24 PM
B0102003.D	Std1-0.1/1 ppb	ICAL	1	01/02/18 8:30 PM
B0102004.D	Std2-0.5/5 ppb	ICAL	1	01/02/18 8:36 PM
B0102005.D	Std3-5/50 ppb	ICAL	1	01/02/18 8:42 PM
B0102006.D	Std4-10/100 ppb	ICAL	1	01/02/18 8:47 PM
B0102007.D	Std5-20/200 ppb	ICAL	1	01/02/18 8:53 PM
B0102008.D	Std6-40/400 ppb	ICAL	1	01/02/18 8:59 PM
B0102009.D	Std7-100/1000 ppb	ICAL	1	01/02/18 9:05 PM
B0102010.D	Std8-200/2000 ppb	ICAL	1	01/02/18 9:10 PM
B0102011.D	ICV	ICV	1	01/02/18 9:17 PM
B0102012.D	ICB	ICB	1	01/02/18 9:22 PM
B0102013.D	LLICV	CCV1	1	01/02/18 9:28 PM
B0102014.D	ICSA1	ICSA	1	01/02/18 9:33 PM
B0102015.D	ICSAB1	ICSAB	1	01/02/18 9:38 PM
B0102016.D	MB-66022	MBLK	1	01/02/18 9:46 PM
B0102017.D	LCS-66022	LCS	1	01/02/18 9:52 PM
B0102018.D	N027485-009B	SAMP	1	01/02/18 9:59 PM
B0102019.D	N027485-009B	SAMP	5	01/02/18 10:05 PM
B0102020.D	N027485-011C	SAMP	1	01/02/18 10:11 PM
B0102021.D	N027485-011C	SAMP	5	01/02/18 10:17 PM
B0102022.D	N027485-012C	SAMP	1	01/02/18 10:23 PM
B0102023.D	N027485-012C	SAMP	5	01/02/18 10:28 PM
B0102024.D	N027546-006B	SAMP	1	01/02/18 10:34 PM
B0102025.D	N027546-006B	SAMP	5	01/02/18 10:40 PM
B0102026.D	CCV1	CCV	1	01/02/18 10:46 PM
B0102027.D	CCB1	CCB	1	01/02/18 10:52 PM
B0102028.D	N027485-001B	SAMP	1	01/02/18 10:58 PM
B0102029.D	N027485-001B	SAMP	5	01/02/18 11:03 PM
B0102030.D	N027485-001B	SAMP	25	01/02/18 11:09 PM
B0102031.D	N027485-001B-PS	PS	1	01/02/18 11:15 PM
B0102032.D	N027485-001B-PS	PS	5	01/02/18 11:21 PM
B0102033.D	N027485-001B-MS	MS	1	01/02/18 11:27 PM
B0102034.D	N027485-001B-MS	MS	1	01/02/18 11:33 PM
B0102035.D	N027485-001B-MSD	MSD	1	01/02/18 11:39 PM
B0102036.D	N027485-001B-MSD	MSD	5	01/02/18 11:44 PM
B0102037.D	N027485-002B	SAMP	1	01/02/18 11:50 PM
B0102038.D	CCV2	CCV	1	01/02/18 11:56 PM
B0102039.D	CCB2	CCB	1	01/03/18 12:02 AM
B0102040.D	LLCCV1	CCV2	1	01/03/18 12:08 AM
B0102041.D	ICSA2	ICSA	1	01/03/18 12:13 AM
B0102042.D	ICSAB2	ICSAB	1	01/03/18 12:19 AM

INJECTION LOG: 180102B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0102043.D	N027485-002B	SAMP	5	01/03/18 12:25 AM
B0102044.D	N027485-003B	SAMP	1	01/03/18 12:31 AM
B0102045.D	N027485-003B	SAMP	5	01/03/18 12:37 AM
B0102046.D	N027485-004B	SAMP	1	01/03/18 12:43 AM
B0102047.D	N027485-004B	SAMP	5	01/03/18 12:48 AM
B0102048.D	N027485-005B	SAMP	1	01/03/18 12:54 AM
B0102049.D	N027485-005B	SAMP	5	01/03/18 1:00 AM
B0102050.D	N027485-006B	SAMP	1	01/03/18 1:06 AM
B0102051.D	N027485-006B	SAMP	5	01/03/18 1:12 AM
B0102052.D	N027485-007B	SAMP	1	01/03/18 1:17 AM
B0102053.D	CCV3	CCV	1	01/03/18 1:23 AM
B0102054.D	CCB3	CCB	1	01/03/18 1:29 AM
B0102055.D	N027485-007B	SAMP	5	01/03/18 1:35 AM
B0102056.D	N027485-008B	SAMP	1	01/03/18 1:41 AM
B0102057.D	N027485-008B	SAMP	5	01/03/18 1:47 AM
B0102058.D	N027485-010B	SAMP	1	01/03/18 1:53 AM
B0102059.D	N027485-010B	SAMP	5	01/03/18 1:58 AM
B0102060.D	N027485-009B	SAMP	25	01/03/18 2:04 AM
B0102061.D	N027485-011C	SAMP	25	01/03/18 2:10 AM
B0102062.D	N027485-012C	SAMP	25	01/03/18 2:16 AM
B0102063.D	RINSE	RINSE	1	01/03/18 2:22 AM
B0102064.D	LLCCV2	CCV2	1	01/03/18 2:28 AM
B0102065.D	CCV4	CCV	1	01/03/18 2:33 AM
B0102066.D	CCB4	CCB	1	01/03/18 2:39 AM
B0102067.D	LLCCV2	CCV2	1	01/03/18 2:45 AM
B0102068.D	ICSA3	ICSA	1	01/03/18 2:51 AM
B0102069.D	ICSAB3	ICSAB	1	01/03/18 2:57 AM
B0102070.D	MB-66163	MBLK	1	01/03/18 3:03 AM
B0102071.D	LCS-66163	LCS	1	01/03/18 3:08 AM
B0102072.D	N027615-001A	SAMP	1	01/03/18 3:14 AM
B0102073.D	N027615-001A	SAMP	5	01/03/18 3:20 AM
B0102074.D	N027615-001A-PS	PS	1	01/03/18 3:26 AM
B0102075.D	N027615-001A-MS	MS	1	01/03/18 3:32 AM
B0102076.D	N027615-001A-MSD	MSD	1	01/03/18 3:38 AM
B0102077.D	N027615-002A	SAMP	1	01/03/18 3:43 AM
B0102078.D	N027615-003A	SAMP	1	01/03/18 3:49 AM
B0102079.D	N027615-004A	SAMP	1	01/03/18 3:55 AM
B0102080.D	CCV5	CCV	1	01/03/18 4:01 AM
B0102081.D	CCB5	CCB	1	01/03/18 4:07 AM
B0102082.D	N027615-005A	SAMP	1	01/03/18 4:13 AM
B0102083.D	N027615-006A	SAMP	1	01/03/18 4:19 AM
B0102084.D	N027615-007A	SAMP	1	01/03/18 4:24 AM

INJECTION LOG: 180102B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0102085.D	N027615-008A	SAMP	1	01/03/18 4:30 AM
B0102086.D	N027689-001A	SAMP	1	01/03/18 4:36 AM
B0102087.D	MB-66170	MBLK	1	01/03/18 4:42 AM
B0102088.D	LCS-66170	LCS	1	01/03/18 4:48 AM
B0102089.D	N027662-001E	SAMP	1	01/03/18 4:53 AM
B0102090.D	N027662-001E	SAMP	5	01/03/18 4:59 AM
B0102091.D	N027662-001E-PS	PS	1	01/03/18 5:05 AM
B0102092.D	CCV6	CCV	1	01/03/18 5:11 AM
B0102093.D	CCB6	CCB	1	01/03/18 5:17 AM
B0102094.D	N027662-001E-MS	MS	1	01/03/18 5:23 AM
B0102095.D	N027662-001E-MSD	MSD	1	01/03/18 5:29 AM
B0102096.D	N027663-001E	SAMP	1	01/03/18 5:39 AM
B0102097.D	N027664-001E	SAMP	1	01/03/18 5:45 AM
B0102098.D	N027665-001E	SAMP	1	01/03/18 5:51 AM
B0102099.D	MB-66183	MBLK	1	01/03/18 5:57 AM
B0102100.D	LCS-66183	LCS	1	01/03/18 6:03 AM
B0102101.D	N027701-019A	SAMP	1	01/03/18 6:09 AM
B0102102.D	N027701-019A	SAMP	5	01/03/18 6:14 AM
B0102103.D	N027701-019A-PS	PS	1	01/03/18 6:20 AM
B0102104.D	CCV7	CCV	1	01/03/18 6:26 AM
B0102105.D	CCB7	CCB	1	01/03/18 6:32 AM
B0102106.D	N027701-019A-MS	MS	1	01/03/18 6:38 AM
B0102107.D	N027701-019A-MSD	MSD	1	01/03/18 6:44 AM
B0102108.D	N027701-020A	SAMP	1	01/03/18 6:52 AM
B0102109.D	N027701-021A	SAMP	1	01/03/18 6:58 AM
B0102110.D	N027701-022A	SAMP	1	01/03/18 7:04 AM
B0102111.D	N027701-023A	SAMP	1	01/03/18 7:10 AM
B0102112.D	N027701-024A	SAMP	1	01/03/18 7:15 AM
B0102113.D	N027701-025A	SAMP	1	01/03/18 7:21 AM
B0102114.D	N027701-026A	SAMP	1	01/03/18 7:27 AM
B0102115.D	N027701-027A	SAMP	1	01/03/18 7:32 AM
B0102116.D	CCV8	CCV	1	01/03/18 7:38 AM
B0102117.D	CCB8	CCB	1	01/03/18 7:43 AM
B0102118.D	LLCCV3	CCV2	1	01/03/18 7:49 AM
B0102119.D	ICSA4	ICSA	1	01/03/18 7:55 AM
B0102120.D	ICSAB4	ICSAB	1	01/03/18 8:00 AM
B0102121.D	N027701-028A	SAMP	1	01/03/18 8:06 AM
B0102122.D	N027701-029A	SAMP	1	01/03/18 8:11 AM
B0102123.D	N027701-030A	SAMP	1	01/03/18 8:17 AM
B0102124.D	N027701-031A	SAMP	1	01/03/18 8:22 AM
B0102125.D	N027701-032A	SAMP	1	01/03/18 8:28 AM
B0102126.D	N027701-033A	SAMP	1	01/03/18 8:33 AM

INJECTION LOG: 180102B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0102127.D	N027701-034A	SAMP	1	01/03/18 8:39 AM
B0102128.D	N027701-035A	SAMP	1	01/03/18 8:45 AM
B0102129.D	N027701-036A	SAMP	1	01/03/18 8:50 AM
B0102130.D	N027701-037A	SAMP	1	01/03/18 8:56 AM
B0102131.D	CCV9	CCV	1	01/03/18 9:01 AM
B0102132.D	CCB9	CCB	1	01/03/18 9:07 AM
B0102133.D	N027701-038A	SAMP	1	01/03/18 9:12 AM
B0102134.D	MB-66184	MBLK	1	01/03/18 9:18 AM
B0102135.D	LCS-66184	LCS	1	01/03/18 9:23 AM
B0102136.D	N027701-039A	SAMP	1	01/03/18 9:29 AM
B0102137.D	N027701-039A	SAMP	5	01/03/18 9:35 AM
B0102138.D	N027701-039A-PS	PS	1	01/03/18 9:40 AM
B0102139.D	N027701-039A-MS	MS	1	01/03/18 9:46 AM
B0102140.D	N027701-039A-MSD	MSD	1	01/03/18 9:52 AM
B0102141.D	N027701-040A	SAMP	1	01/03/18 9:57 AM
B0102142.D	N027701-041A	SAMP	1	01/03/18 10:03 AM
B0102143.D	CCV10	CCV	1	01/03/18 10:09 AM
B0102144.D	CCB10	CCB	1	01/03/18 10:14 AM
B0102145.D	N027701-042A	SAMP	1	01/03/18 10:20 AM
B0102146.D	N027767-005A	SAMP	1	01/03/18 10:25 AM
B0102147.D	LCS-66184	LCS	1	01/03/18 10:31 AM
B0102148.D	N027615-001A	SAMP	10	01/03/18 10:37 AM
B0102149.D	N027615-001A	SAMP	50	01/03/18 10:42 AM
B0102150.D	N027615-001A-PS	PS	10	01/03/18 10:48 AM
B0102151.D	N027615-001A-MS	MS	10	01/03/18 10:53 AM
B0102152.D	N027615-001A-MSD	MSD	10	01/03/18 10:59 AM
B0102153.D	CCV11	CCV	1	01/03/18 11:05 AM
B0102154.D	CCB11	CCB	1	01/03/18 11:10 AM
B0102155.D	LLCCV4	CCV2	1	01/03/18 11:16 AM
B0102156.D	ICSA5	ICSA	1	01/03/18 11:21 AM
B0102157.D	ICSAB5	ICSAB	1	01/03/18 11:27 AM

INJECTION LOG: 180103A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0103001.D	RINSE	RINSE	1	01/03/18 2:51 PM
A0103002.D	Cal Blank	IBLK	1	01/03/18 2:58 PM
A0103003.D	Std1-0.1/1 ppb	ICAL	1	01/03/18 3:03 PM
A0103004.D	Std2-0.5/5 ppb	ICAL	1	01/03/18 3:09 PM
A0103005.D	Std3-5/50 ppb	ICAL	1	01/03/18 3:14 PM
A0103006.D	Std4-10/100 ppb	ICAL	1	01/03/18 3:20 PM
A0103007.D	Std5-20/200 ppb	ICAL	1	01/03/18 3:26 PM
A0103008.D	Std6-40/400 ppb	ICAL	1	01/03/18 3:31 PM
A0103009.D	Std7-100/1000 ppb	ICAL	1	01/03/18 3:37 PM
A0103010.D	Std8-200/2000 ppb	ICAL	1	01/03/18 3:43 PM
A0103011.D	ICV	ICV	1	01/03/18 3:48 PM
A0103012.D	ICB	ICB	1	01/03/18 3:54 PM
A0103013.D	LLICV	CCV1	1	01/03/18 3:59 PM
A0103014.D	ICSA1	ICSA	1	01/03/18 4:06 PM
A0103015.D	ICSAB1	ICSAB	1	01/03/18 4:12 PM
A0103016.D	LLICV	CCV1	1	01/03/18 4:17 PM
A0103017.D	N027459-013B	SAMP	1	01/03/18 4:24 PM
A0103018.D	N027459-013A	SAMP	1	01/03/18 4:29 PM
A0103019.D	N027459-015A	SAMP	1	01/03/18 4:34 PM
A0103020.D	N027459-015B	SAMP	1	01/03/18 4:40 PM
A0103021.D	MB-66022	MBLK	1	01/03/18 4:59 PM
A0103022.D	LCS-66022	LCS	1	01/03/18 5:05 PM
A0103023.D	N027485-009B	SAMP	1	01/03/18 5:10 PM
A0103024.D	N027485-011C	SAMP	1	01/03/18 5:16 PM
A0103025.D	N027485-012C	SAMP	1	01/03/18 5:21 PM
A0103026.D	N027546-006B	SAMP	1	01/03/18 5:27 PM
A0103027.D	CCV1	CCV	1	01/03/18 5:32 PM
A0103028.D	CCB1	CCB	1	01/03/18 5:38 PM
A0103029.D	N027485-001B	SAMP	1	01/03/18 5:44 PM
A0103030.D	N027485-001B	SAMP	5	01/03/18 5:50 PM
A0103031.D	N027485-001B-PS	PS	1	01/03/18 5:56 PM
A0103032.D	N027485-001B-MS	MS	1	01/03/18 6:01 PM
A0103033.D	N027485-001B-MSD	MSD	1	01/03/18 6:07 PM
A0103034.D	N027485-002B	SAMP	25	01/03/18 6:12 PM
A0103035.D	N027485-003B	SAMP	25	01/03/18 6:18 PM
A0103036.D	N027485-004B	SAMP	25	01/03/18 6:24 PM
A0103037.D	N027485-005B	SAMP	1	01/03/18 6:29 PM
A0103038.D	N027485-006B	SAMP	1	01/03/18 6:35 PM
A0103039.D	CCV2	CCV	1	01/03/18 6:40 PM
A0103040.D	CCB2	CCB	1	01/03/18 6:46 PM
A0103041.D	N027485-007B	SAMP	1	01/03/18 6:51 PM
A0103042.D	N027485-010B	SAMP	5	01/03/18 6:57 PM

INJECTION LOG: 180103A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0103043.D	CCV3	CCV	1	01/03/18 7:02 PM
A0103044.D	CCB3	CCB	1	01/03/18 7:08 PM
A0103045.D	LLCCV1	CCV2	1	01/03/18 7:14 PM
A0103046.D	ICSA2	ICSA	1	01/03/18 7:20 PM
A0103047.D	ICSAB2	ICSAB	1	01/03/18 7:25 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/14/2017 8:00:00**
Prep End Date: **12/14/2017 1:00:00**
Prep Batch **66022** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 01/04/2018
Initials/ Date: 01/04/2018
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.6**	**02-1**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66022	Aqueous		25	☐	0	0	25	1.000		
MB-66022	Aqueous		25	☐	0	0	25	1.000		
N027485-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-010B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/14/2017 8:00:00**
Prep End Date: **12/14/2017 1:00:00**
Prep Batch **66022** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 01/04/2018
Initials/ Date: 01/04/2018
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.6**	**02-1**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027485-011C	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-012C	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-006B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 2 Jan 2018 10:47:44 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	164242.00	0.00	
24 Mg	658850.00	0.00	
25 Mg	87067.30	0.00	
26 Mg	100137.00	0.00	
59 Co	808018.00	0.00	
115 In	1349420.00	0.00	
206 Pb	386220.00	0.00	
207 Pb	336788.00	0.00	
208 Pb	824151.00	0.00	

RSD (%)

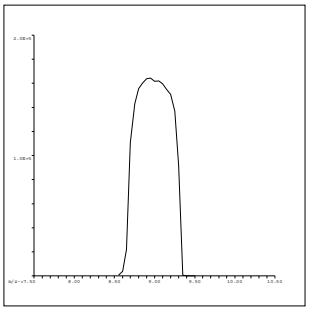
Element	Actual	Required	Flag
9 Be	0.81	5.00	
24 Mg	0.89	5.00	
25 Mg	0.86	5.00	
26 Mg	0.53	5.00	
59 Co	0.30	5.00	
115 In	1.05	5.00	
206 Pb	0.35	5.00	
207 Pb	0.67	5.00	
208 Pb	0.38	5.00	

Ion Ratio

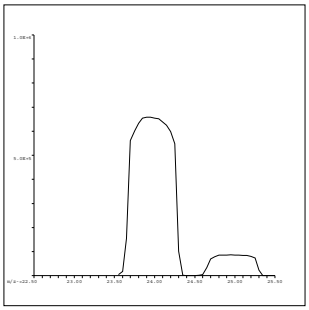
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

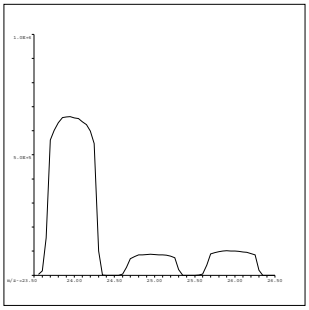
Element	Actual	Required	Flag



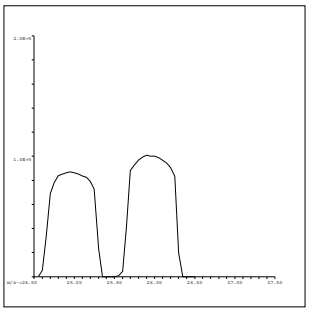
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



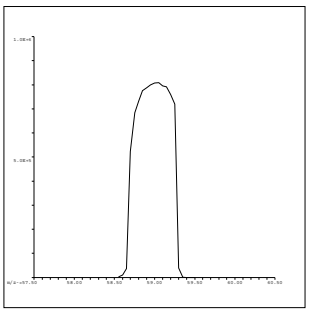
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



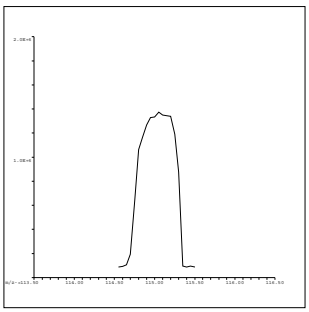
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



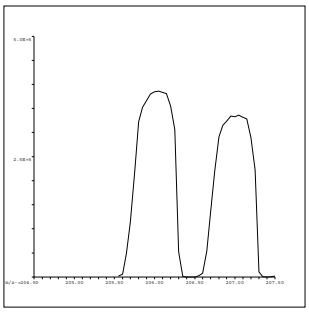
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



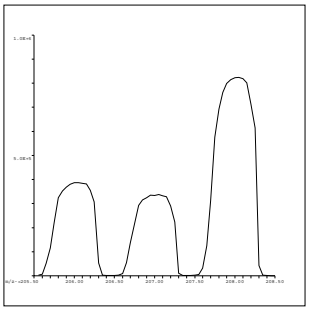
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



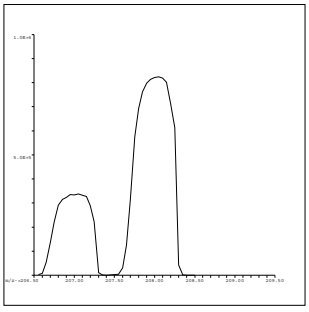
115 In
Mass Calib.
Actual: 115.10
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.05
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.05
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.05
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 3 Jan 2018 02:42:17 pm
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	204220.00	0.00	
24 Mg	732810.00	0.00	
25 Mg	96419.90	0.00	
26 Mg	112226.00	0.00	
59 Co	886097.00	0.00	
115 In	1405100.00	0.00	
206 Pb	374242.00	0.00	
207 Pb	328943.00	0.00	
208 Pb	805763.00	0.00	

RSD (%)

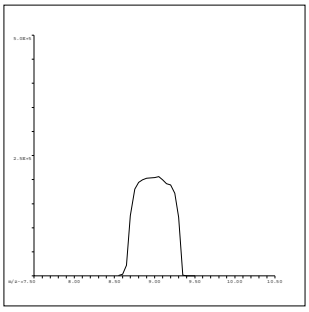
Element	Actual	Required	Flag
9 Be	1.55	5.00	
24 Mg	0.61	5.00	
25 Mg	0.73	5.00	
26 Mg	0.67	5.00	
59 Co	0.67	5.00	
115 In	1.03	5.00	
206 Pb	0.99	5.00	
207 Pb	1.37	5.00	
208 Pb	0.75	5.00	

Ion Ratio

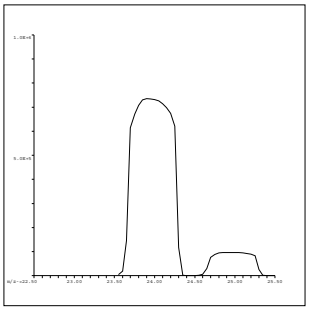
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

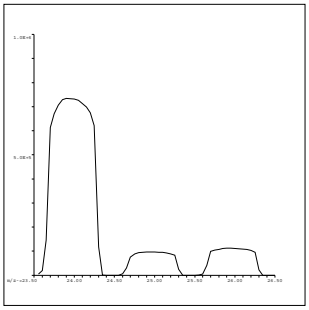
Element	Actual	Required	Flag



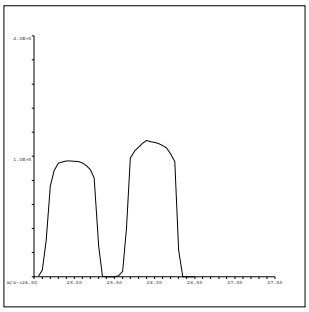
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



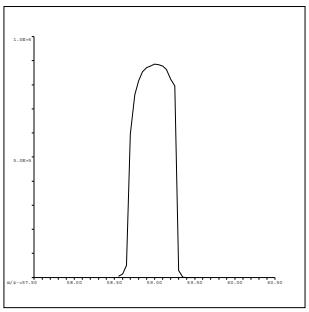
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



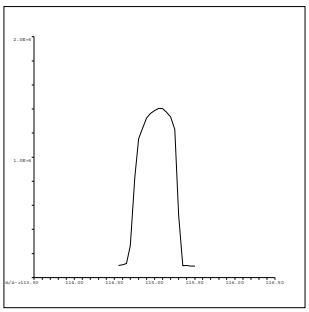
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



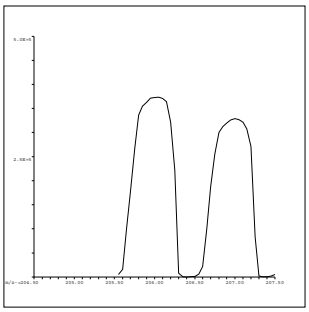
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



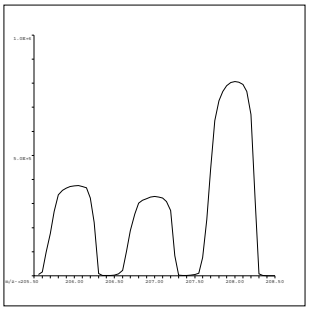
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



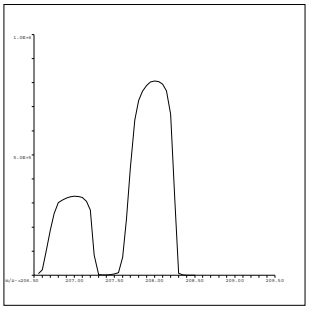
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.05
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180102B

Instrument ID: ICPMS-02

Analyte	Data File	B0102002.D	B0102003.D	B0102004.D	B0102005.D	B0102006.D	B0102007.D	B0102008.D	B0102009.D	B0102010.D	
	Acq. Date-Time	01/02/2018 08:24 PM	01/02/2018 08:30 PM	01/02/2018 08:36 PM	01/02/2018 08:42 PM	01/02/2018 08:47 PM	01/02/2018 08:53 PM	01/02/2018 08:59 PM	01/02/2018 09:05 PM	01/02/2018 09:10 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
6 Li (ISTD) [3]	CPS	1184720		1217043	1242922.6	1244722.1	1236093.4	1214841.6	1214189.9	1231118.4	
9 Be [3]	CPS	28.9		3351.6	34453.4	69313.2	138262.2	274051.1	675300.9	1415661.4	1.0000
45 Sc (ISTD) [2]	CPS	80897.7		83288.4	84719.8	85806.6	84869.9	87563	86766.9	87126.7	
59 Co [2]	CPS	11.9		5697.6	57852.9	116496.2	233600.1	466917.7	1160666.9	2347492.2	1.0000
55 Mn [2]	CPS	131.8		1785.1	17722.6	34913.3	70246.7	140180.7	348751.4	691873.1	1.0000
52 Cr [2]	CPS	937.5		3907	33332.7	65916.2	131442.1	261779.8	650929.7	1295527.7	1.0000
51 V [2]	CPS	2754.8		4906.5	26878.1	51781.9	100257	200302.6	494211.4	980051.7	1.0000
72 Ge (ISTD) [1]	CPS	65197.5		67326.1	69988.1	69723.9	68335.8	69998.5	69846.6	69432.4	
78 Se [1]	CPS	3.3		112.2	1469	2937.1	5620.1	11788.1	29098.1	56791.4	1.0000
72 Ge (ISTD) [2]	CPS	56305.4	57389.6	57952.5	58679.5	59176.9	59008.5	58734.2	59082.2	58642.8	
75 As [2]	CPS	12	80.9	340	3262.1	6651.2	13210.8	26392.5	66171.5	130756.6	1.0000
66 Zn [2]	CPS	260		914.4	5998.2	11610.5	23922.2	47381	117292.9	230468.3	1.0000
63 Cu [2]	CPS	4214.6		8446.4	47339.5	91025.3	176976.4	350531.3	865237.9	1752663.3	0.9999
60 Ni [2]	CPS	966.4		2451	16180.7	31731.8	62367.5	124645	311830	608164.6	1.0000
103 Rh (ISTD) [2]	CPS	1817292.6		1876026.3	1901275.6	1905202.9	1892549.5	1893181.8	1882968.8	1848322.8	
95 Mo [2]	CPS	57.8		2049.1	20249	41669.6	83246.3	168634.5	417775.8	836004.2	1.0000
103 Rh (ISTD) [3]	CPS	3775722.8		3798117.5	3836229.4	3849082.2	3832716.6	3823378.1	3765315.6	3730506.6	
107 Ag [3]	CPS	1118.2		14939.5	154493.9	313768.9	628355.1	1279221.2	3184292.6	5764410.3	0.9999
115 In (ISTD) [3]	CPS	3954056.4		3996528	4038976.4	4086986.9	4057822.3	4104545.1	4064312.4	4037997.7	
121 Sb [3]	CPS	212.2		12764.6	126056.1	252681.9	506482.7	1013070.4	2605721.8	5178084	1.0000
111 Cd [3]	CPS	336.9		3725.1	35183.1	71237.3	142049.3	285380	699516.8	1433943.2	1.0000
159 Tb (ISTD) [3]	CPS	5913717.1		5937076.5	6046709.2	6007765	6027729.7	6074968.8	6048387.6	6082542.3	
137 Ba [3]	CPS	-21.1		4743.7	48628.8	97675.6	195636.4	391665.4	961422.9	2005052.5	1.0000
209 Bi (ISTD) [3]	CPS	3875214.8		3896201.5	3929770.2	3909171.4	3960602.5	3964164.4	3950157.7	3956678.2	
208 Pb [3]	CPS	3145.6		49808.5	479224.6	956824.6	1914532.2	3864634.1	9523293.8	18990041.5	1.0000
205 Tl [3]	CPS	1866.9		35464.3	347349.5	700013.2	1445650.6	2907446.3	7029812.1	14190314.7	0.9999

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 180103A

Instrument ID: ICPMS-02

Analyte	Data File	A0103002.D	A0103003.D	A0103004.D	A0103005.D	A0103006.D	A0103007.D	A0103008.D	A0103009.D	A0103010.D	
	Acq. Date-Time	01/03/2018 02:58 PM	01/03/2018 03:03 PM	01/03/2018 03:09 PM	01/03/2018 03:14 PM	01/03/2018 03:20 PM	01/03/2018 03:26 PM	01/03/2018 03:31 PM	01/03/2018 03:37 PM	01/03/2018 03:43 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	121020.5		114304.6	115716.8	115315.9	118086.5	119408.6	111956.8	111722.2	
52 Cr [2]	CPS	613.1		5130.7	46966.6	93055.8	184731.9	374677.3	888155.2	1767558.3	1.0000
51 V [2]	CPS	281.1		3888.4	35597	71025	141605	284093.8	681763.9	1367404	1.0000
72 Ge (ISTD) [1]	CPS	100990.1		99980.4	99960.6	99535.7	101454.4	101587.8	98664.8	99459.8	
78 Se [1]	CPS	0		153.3	1582.4	3230.5	6590.5	13342.6	32019.3	64364.9	1.0000
72 Ge (ISTD) [2]	CPS	79503.8	79632.3	78610.4	80192.8	79494.8	80206.2	80275.2	77025.3	75788.5	
75 As [2]	CPS	63.6	172.5	525.4	5021.3	9907.1	20206	40748.5	96827.7	189639.2	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **ICV**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2882465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.598	0.50	10.00	0	96.0	90	110				
Arsenic	9.853	0.10	10.00	0	98.5	90	110				
Barium	9.961	1.0	10.00	0	99.6	90	110				
Beryllium	9.681	0.50	10.00	0	96.8	90	110				
Cadmium	10.160	0.50	10.00	0	102	90	110				
Cobalt	9.886	0.50	10.00	0	98.9	90	110				
Copper	10.199	1.0	10.00	0	102	90	110				
Lead	10.050	1.0	10.00	0	101	90	110				
Manganese	101.902	0.50	100.0	0	102	90	110				
Molybdenum	9.708	0.50	10.00	0	97.1	90	110				
Nickel	10.347	1.0	10.00	0	103	90	110				
Selenium	9.938	0.50	10.00	0	99.4	90	110				
Silver	9.386	0.50	10.00	0	93.9	90	110				
Thallium	9.924	0.50	10.00	0	99.2	90	110				
Zinc	102.280	10	100.0	0	102	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **ZZZZZZ**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2882467**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.569	0.50	0.5000	0	114	80	120				
Arsenic	0.116	0.10	0.1000	0	116	80	120				
Barium	1.066	1.0	1.000	0	107	80	120				
Beryllium	0.544	0.50	0.5000	0	109	80	120				
Cadmium	0.509	0.50	0.5000	0	102	80	120				
Cobalt	0.523	0.50	0.5000	0	105	80	120				
Copper	0.950	1.0	1.000	0	95.0	80	120				
Lead	1.055	1.0	1.000	0	106	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **ZZZZZZ**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2882467**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.513	0.50	0.5000	0	103	80	120				
Molybdenum	0.545	0.50	0.5000	0	109	80	120				
Nickel	0.987	1.0	1.000	0	98.7	80	120				
Selenium	0.528	0.50	0.5000	0	106	80	120				
Silver	0.505	0.50	0.5000	0	101	80	120				
Thallium	0.523	0.50	0.5000	0	105	80	120				
Zinc	10.609	10	10.00	0	106	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **CCV**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2882480**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	19.133	0.50	20.00	0	95.7	90	110				
Arsenic	19.841	0.10	20.00	0	99.2	90	110				
Barium	20.086	1.0	20.00	0	100	90	110				
Beryllium	20.077	0.50	20.00	0	100	90	110				
Cadmium	20.252	0.50	20.00	0	101	90	110				
Cobalt	21.057	0.50	20.00	0	105	90	110				
Copper	20.215	1.0	20.00	0	101	90	110				
Lead	20.059	1.0	20.00	0	100	90	110				
Manganese	20.898	0.50	20.00	0	104	90	110				
Molybdenum	19.241	0.50	20.00	0	96.2	90	110				
Nickel	20.644	1.0	20.00	0	103	90	110				
Selenium	21.048	0.50	20.00	0	105	90	110				
Silver	19.713	0.50	20.00	0	98.6	90	110				
Thallium	20.326	0.50	20.00	0	102	90	110				
Zinc	20.275	10	20.00	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **CCV**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2882492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	19.159	0.50	20.00	0	95.8	90	110				
Arsenic	20.313	0.10	20.00	0	102	90	110				
Barium	20.946	1.0	20.00	0	105	90	110				
Beryllium	20.112	0.50	20.00	0	101	90	110				
Cadmium	20.317	0.50	20.00	0	102	90	110				
Cobalt	19.824	0.50	20.00	0	99.1	90	110				
Copper	19.709	1.0	20.00	0	98.5	90	110				
Lead	19.984	1.0	20.00	0	99.9	90	110				
Manganese	20.102	0.50	20.00	0	101	90	110				
Molybdenum	19.786	0.50	20.00	0	98.9	90	110				
Nickel	20.041	1.0	20.00	0	100	90	110				
Selenium	20.679	0.50	20.00	0	103	90	110				
Silver	19.396	0.50	20.00	0	97.0	90	110				
Thallium	20.430	0.50	20.00	0	102	90	110				
Zinc	20.130	10	20.00	0	101	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **ZZZZZZ**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2882494**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.510	0.50	0.5000	0	102	70	130				
Arsenic	0.103	0.10	0.1000	0	103	70	130				
Barium	1.056	1.0	1.000	0	106	70	130				
Beryllium	0.521	0.50	0.5000	0	104	70	130				
Cadmium	0.516	0.50	0.5000	0	103	70	130				
Cobalt	0.501	0.50	0.5000	0	100	70	130				
Copper	0.939	1.0	1.000	0	93.9	70	130				
Lead	1.052	1.0	1.000	0	105	70	130				
Manganese	0.543	0.50	0.5000	0	109	70	130				
Molybdenum	0.545	0.50	0.5000	0	109	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121176
Client ID:	ZZZZZZ	Batch ID:	R121176	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2882494

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	0.949	1.0	1.000	0	94.9	70	130				
Selenium	0.506	0.50	0.5000	0	101	70	130				
Silver	0.506	0.50	0.5000	0	101	70	130				
Thallium	0.494	0.50	0.5000	0	98.8	70	130				
Zinc	10.509	10	10.00	0	105	70	130				

Sample ID	CCV3	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121176
Client ID:	CCV	Batch ID:	R121176	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2882507

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.357	0.10	20.00	0	102	90	110				
Manganese	20.370	0.50	20.00	0	102	90	110				
Molybdenum	19.349	0.50	20.00	0	96.7	90	110				
Selenium	21.753	0.50	20.00	0	109	90	110				

Sample ID	LLCCV2	SampType:	CCV2	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121176
Client ID:	ZZZZZZ	Batch ID:	R121176	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2882517

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.493	0.50	0.5000	0	98.6	70	130				

Sample ID	CCV4	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121176
Client ID:	CCV	Batch ID:	R121176	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2882518

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.570	0.10	20.00	0	103	90	110				
Manganese	20.724	0.50	20.00	0	104	90	110				
Molybdenum	19.221	0.50	20.00	0	96.1	90	110				
Selenium	21.478	0.50	20.00	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Reported analytes bracketed by CCV3/CCB3 to CCV4/CCB4/LLCCV2/ICSA3/ICSAB3 are just As Mn Mo & Se.

01/04/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **ZZZZZZ**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2882520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.118	0.10	0.1000	0	118	70	130				
Manganese	0.513	0.50	0.5000	0	103	70	130				
Molybdenum	0.516	0.50	0.5000	0	103	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **ICV**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883819**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.971	0.10	10.00	0	99.7	90	110				
Selenium	10.163	0.50	10.00	0	102	90	110				
Vanadium	9.885	1.0	10.00	0	98.9	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **ZZZZZZ**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.080	0.10	0.1000	0	80.3	80	120				
Selenium	0.530	0.50	0.5000	0	106	80	120				
Vanadium	1.048	1.0	1.000	0	105	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **CCV**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.709	0.10	20.00	0	98.5	90	110				
Selenium	19.891	0.50	20.00	0	99.5	90	110				
Vanadium	20.380	1.0	20.00	0	102	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **CCV**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883847**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.682	0.10	20.00	0	98.4	90	110				
Selenium	19.555	0.50	20.00	0	97.8	90	110				
Vanadium	20.696	1.0	20.00	0	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	CCV3	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121192
Client ID:	CCV	Batch ID:	R121192	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2883851

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.753	0.10	20.00	0	98.8	90	110				
Selenium	19.132	0.50	20.00	0	95.7	90	110				
Vanadium	20.634	1.0	20.00	0	103	90	110				

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121192
Client ID:	ZZZZZZ	Batch ID:	R121192	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2883853

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.070	0.10	0.1000	0	70.4	70	130				
Selenium	0.454	0.50	0.5000	0	90.8	70	130				
Vanadium	1.076	1.0	1.000	0	108	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICV	SampType:	ICV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121175
Client ID:	ICV	Batch ID:	R121175	TestNo:	EPA 6020			Analysis Date:	1/2/2018	SeqNo:	2882369

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.283	1.0	10.00	0	103	90	110				

Sample ID	LLICV	SampType:	CCV1	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121175
Client ID:	ZZZZZZ	Batch ID:	R121175	TestNo:	EPA 6020			Analysis Date:	1/2/2018	SeqNo:	2882371

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.982	1.0	1.000	0	98.2	80	120				

Sample ID	CCV1	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121175
Client ID:	CCV	Batch ID:	R121175	TestNo:	EPA 6020			Analysis Date:	1/2/2018	SeqNo:	2882384

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.471	1.0	20.00	0	107	90	110				

Sample ID	CCV2	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121175
Client ID:	CCV	Batch ID:	R121175	TestNo:	EPA 6020			Analysis Date:	1/2/2018	SeqNo:	2882396

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.726	1.0	20.00	0	104	90	110				

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121175
Client ID:	ZZZZZZ	Batch ID:	R121175	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2882398

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.400	1.0	1.000	0	140	70	130				S

Cr on LLCCV1 is biased high. Samples reported for this analyte are no lower than the regular CCV concentration. And those affected were reanalyzed.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

01/04/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**CCV3**	SampType:	**CCV**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**121175**	
Client ID:	**CCV**	Batch ID:	**R121175**	TestNo:	**EPA 6020**			Analysis Date:	**1/3/2018**	SeqNo:	**2882411**	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Chromium	20.214	1.0	20.00	0	101	90	110					

Sample ID	**CCV4**	SampType:	**CCV**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**121175**	
Client ID:	**CCV**	Batch ID:	**R121175**	TestNo:	**EPA 6020**			Analysis Date:	**1/3/2018**	SeqNo:	**2882422**	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Chromium	20.202	1.0	20.00	0	101	90	110					

Sample ID	**LLCCV2**	SampType:	**CCV2**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**121175**	
Client ID:	**ZZZZZZ**	Batch ID:	**R121175**	TestNo:	**EPA 6020**			Analysis Date:	**1/3/2018**	SeqNo:	**2882424**	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Chromium	1.239	1.0	1.000	0	124	70	130					

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **ICV**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883782**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.082	1.0	10.00	0	101	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **ZZZZZZ**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.052	1.0	1.000	0	105	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **CCV**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883798**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.564	1.0	20.00	0	103	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **CCV**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883810**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.683	1.0	20.00	0	103	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **CCV**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883814**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.648	1.0	20.00	0	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **ZZZZZZ**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883816**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.049	1.0	1.000	0	105	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **ICB**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2882466**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.095	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.186	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Silver	0.136	0.50									
Thallium	0.146	0.50									
Zinc	ND	10									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **CCB**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2882481**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **CCB**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2882481**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	0.083	0.50									
Nickel	0.121	1.0									
Selenium	0.028	0.50									
Silver	0.170	0.50									
Thallium	ND	0.50									
Zinc	ND	10									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **CCB**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2882493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.032	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.077	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Silver	0.149	0.50									
Thallium	ND	0.50									
Zinc	ND	10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	CCB3	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121176
Client ID:	CCB	Batch ID:	R121176	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2882508

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.099	0.50									
Selenium	ND	0.50									

Sample ID	CCB4	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121176
Client ID:	CCB	Batch ID:	R121176	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2882519

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.054	0.50									
Selenium	ND	0.50									

Reported analytes bracketed by CCV3/CCB3 to CCV4/CCB4/LLCCV2/ICSA3/ICSAB3 are just As Mn Mo & Se.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

01/04/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **ICB**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883820**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Selenium	0.046	0.50									
Vanadium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **CCB**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Selenium	0.034	0.50									
Vanadium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **CCB**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Selenium	0.042	0.50									
Vanadium	ND	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **CCB**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883852**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Selenium	0.040	0.50									
Vanadium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121175**
Client ID: **ICB**	Batch ID: **R121175**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2882370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121175**
Client ID: **CCB**	Batch ID: **R121175**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2882385**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.297	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121175**
Client ID: **CCB**	Batch ID: **R121175**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2882397**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.484	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121175**
Client ID: **CCB**	Batch ID: **R121175**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2882412**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.283	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121175**
Client ID: **CCB**	Batch ID: **R121175**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2882423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.283	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **ICB**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883783**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **CCB**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.091	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **CCB**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883811**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.021	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **CCB**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883815**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121176**
Client ID: **ICSA** Batch ID: **R121176** TestNo: **EPA 6020** Analysis Date: **1/2/2018** SeqNo: **2882468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.051	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.085	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Silver	ND	0.50									
Thallium	0.049	0.50									
Zinc	ND	10									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121176**
Client ID: **ICSAB** Batch ID: **R121176** TestNo: **EPA 6020** Analysis Date: **1/2/2018** SeqNo: **2882469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	20.158	0.50	20.00	0	101	80	120				
Arsenic	20.108	0.10	20.00	0	101	80	120				
Barium	16.516	1.0	20.00	0	82.6	80	120				
Beryllium	19.055	0.50	20.00	0	95.3	80	120				
Cadmium	16.332	0.50	20.00	0	81.7	80	120				
Cobalt	20.403	0.50	20.00	0	102	80	120				
Copper	18.648	1.0	20.00	0	93.2	80	120				
Lead	20.079	1.0	20.00	0	100	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121176
Client ID:	ICSAB	Batch ID:	R121176	TestNo:	EPA 6020			Analysis Date:	1/2/2018	SeqNo:	2882469

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	17.777	0.50	20.00	0	88.9	80	120				
Molybdenum	21.993	0.50	20.00	0	110	80	120				
Nickel	20.456	1.0	20.00	0	102	80	120				
Selenium	18.901	0.50	20.00	0	94.5	80	120				
Silver	18.500	0.50	20.00	0	92.5	80	120				
Thallium	21.103	0.50	20.00	0	106	80	120				
Zinc	17.542	10	20.00	0	87.7	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121176
Client ID:	ICSA	Batch ID:	R121176	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2882495

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.045	0.50									
Nickel	ND	1.0									
Selenium	0.036	0.50									
Silver	ND	0.50									
Thallium	ND	0.50									
Zinc	ND	10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121176
Client ID:	ICSAB	Batch ID:	R121176	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2882496

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	20.039	0.50	20.00	0	100	80	120				
Arsenic	20.582	0.10	20.00	0	103	80	120				
Barium	16.828	1.0	20.00	0	84.1	80	120				
Beryllium	19.422	0.50	20.00	0	97.1	80	120				
Cadmium	16.250	0.50	20.00	0	81.2	80	120				
Cobalt	19.439	0.50	20.00	0	97.2	80	120				
Copper	18.226	1.0	20.00	0	91.1	80	120				
Lead	20.011	1.0	20.00	0	100	80	120				
Manganese	17.849	0.50	20.00	0	89.2	80	120				
Molybdenum	22.232	0.50	20.00	0	111	80	120				
Nickel	19.927	1.0	20.00	0	99.6	80	120				
Selenium	19.019	0.50	20.00	0	95.1	80	120				
Silver	18.602	0.50	20.00	0	93.0	80	120				
Thallium	20.980	0.50	20.00	0	105	80	120				
Zinc	17.198	10	20.00	0	86.0	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121176
Client ID:	ICSA	Batch ID:	R121176	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2882521

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121176
Client ID:	ICSAB	Batch ID:	R121176	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2882522

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.638	0.10	20.00	0	103	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Reported analytes bracketed by CCV3/CCB3 to CCV4/CCB4/LLCCV2/ICSA3/ICSAB3 are just As Mn Mo & Se.

01/04/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **ICSAB**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2882522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	18.141	0.50	20.00	0	90.7	80	120				
Molybdenum	22.556	0.50	20.00	0	113	80	120				
Selenium	19.688	0.50	20.00	0	98.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121192
Client ID:	ICSA	Batch ID:	R121192	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2883822

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Selenium	ND	0.50									
Vanadium	ND	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121192
Client ID:	ICSAB	Batch ID:	R121192	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2883823

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.147	0.10	20.00	0	106	80	120				
Selenium	19.171	0.50	20.00	0	95.9	80	120				
Vanadium	20.640	1.0	20.00	0	103	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121192
Client ID:	ICSA	Batch ID:	R121192	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2883854

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Selenium	ND	0.50									
Vanadium	ND	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121192
Client ID:	ICSAB	Batch ID:	R121192	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2883855

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.948	0.10	20.00	0	105	80	120				
Selenium	20.232	0.50	20.00	0	101	80	120				
Vanadium	21.514	1.0	20.00	0	108	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121175
Client ID:	ICSA	Batch ID:	R121175	TestNo:	EPA 6020			Analysis Date:	1/2/2018	SeqNo:	2882372

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121175
Client ID:	ICSAB	Batch ID:	R121175	TestNo:	EPA 6020			Analysis Date:	1/2/2018	SeqNo:	2882373

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.994	1.0	20.00	0	105	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121175
Client ID:	ICSA	Batch ID:	R121175	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2882399

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.469	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121175
Client ID:	ICSAB	Batch ID:	R121175	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2882400

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.361	1.0	20.00	0	102	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121175
Client ID:	ICSA	Batch ID:	R121175	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2882425

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121175**
Client ID: **ICSAB**	Batch ID: **R121175**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2882426**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.272	1.0	20.00	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121192
Client ID:	ICSA	Batch ID:	R121192	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2883785

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.068	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121192
Client ID:	ICSAB	Batch ID:	R121192	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2883786

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.174	1.0	20.00	0	101	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121192
Client ID:	ICSA	Batch ID:	R121192	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2883817

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.080	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121192
Client ID:	ICSAB	Batch ID:	R121192	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2883818

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.812	1.0	20.00	0	104	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [3]					115 In (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	3775722.8	3775722.8	100	PASS	70-125	3954056.4	3954056.4	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	3808721.3	3775722.8	100.87	PASS	70-125	3980253.4	3954056.4	100.66	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	3798117.5	3775722.8	100.59	PASS	70-125	3996528	3954056.4	101.07	PASS	70-125
Std3-5/50 ppb	ICAL	1	3836229.4	3775722.8	101.6	PASS	70-125	4038976.4	3954056.4	102.15	PASS	70-125
Std4-10/100 ppb	ICAL	1	3849082.2	3775722.8	101.94	PASS	70-125	4086986.9	3954056.4	103.36	PASS	70-125
Std5-20/200 ppb	ICAL	1	3832716.6	3775722.8	101.51	PASS	70-125	4057822.3	3954056.4	102.62	PASS	70-125
Std6-40/400 ppb	ICAL	1	3823378.1	3775722.8	101.26	PASS	70-125	4104545.1	3954056.4	103.81	PASS	70-125
Std7-100/1000 ppb	ICAL	1	3765315.6	3775722.8	99.72	PASS	70-125	4064312.4	3954056.4	102.79	PASS	70-125
Std8-200/2000 ppb	ICAL	1	3730506.6	3775722.8	98.8	PASS	70-125	4037997.7	3954056.4	102.12	PASS	70-125
ICV	ICV	1	3851464.7	3775722.8	102.01	PASS	70-125	4087564	3954056.4	103.38	PASS	70-125
ICB	ICB	1	3813599.1	3775722.8	101	PASS	70-125	4001392.5	3954056.4	101.2	PASS	70-125
LLICV	CCV1	1	3824182.8	3775722.8	101.28	PASS	70-125	4035018.2	3954056.4	102.05	PASS	70-125
ICSA1	ICSA	1	3415749	3775722.8	90.47	PASS	70-125	3680933.6	3954056.4	93.093	PASS	70-125
ICSAB1	ICSAB	1	3442515	3775722.8	91.17	PASS	70-125	3705867.6	3954056.4	93.72	PASS	70-125
MB-66022	MBLK	1	3968470.2	3775722.8	105.1	PASS	70-125	4143308.8	3954056.4	104.79	PASS	70-125
LCS-66022	LCS	1	3912285.4	3775722.8	103.62	PASS	70-125	4146248.4	3954056.4	104.86	PASS	70-125
N027485-009B	SAMP	1	3445970.7	3775722.8	91.27	PASS	70-125	3762248.6	3954056.4	95.15	PASS	70-125
N027485-009B	SAMP	5	3919798.3	3775722.8	103.82	PASS	70-125	4192923.4	3954056.4	106.04	PASS	70-125
N027485-011C	SAMP	1	3622027.8	3775722.8	95.93	PASS	70-125	3934835	3954056.4	99.51	PASS	70-125
N027485-011C	SAMP	5	3901040.9	3775722.8	103.32	PASS	70-125	4216698.4	3954056.4	106.64	PASS	70-125
N027485-012C	SAMP	1	3460093.4	3775722.8	91.64	PASS	70-125	3757767.4	3954056.4	95.036	PASS	70-125
N027485-012C	SAMP	5	3771938.5	3775722.8	99.9	PASS	70-125	4062484.1	3954056.4	102.74	PASS	70-125
N027546-006B	SAMP	1	3652579	3775722.8	96.74	PASS	70-125	3947101.1	3954056.4	99.82	PASS	70-125
N027546-006B	SAMP	5	3583150.6	3775722.8	94.9	PASS	70-125	3823727.3	3954056.4	96.7	PASS	70-125
CCV1	CCV	1	3655334.3	3775722.8	96.81	PASS	70-125	3902864	3954056.4	98.71	PASS	70-125
CCB1	CCB	1	3708503.4	3775722.8	98.22	PASS	70-125	3862621.5	3954056.4	97.69	PASS	70-125
N027485-001B	SAMP	1	3262600.1	3775722.8	86.41	PASS	70-125	3555069.2	3954056.4	89.91	PASS	70-125
N027485-001B	SAMP	5	3444694.1	3775722.8	91.23	PASS	70-125	3732283.9	3954056.4	94.39	PASS	70-125
N027485-001B	SAMP	25	3551442.4	3775722.8	94.06	PASS	70-125	3858371.5	3954056.4	97.58	PASS	70-125
N027485-001B-PS	PS	1	3314982.9	3775722.8	87.8	PASS	70-125	3650039.1	3954056.4	92.31	PASS	70-125
N027485-001B-PS	PS	5	3470656.8	3775722.8	91.92	PASS	70-125	3771151.4	3954056.4	95.37	PASS	70-125
N027485-001B-MS	MS	1	3220829.9	3775722.8	85.3	PASS	70-125	3546822.4	3954056.4	89.7	PASS	70-125
N027485-001B-MS	MS	1	3446011.4	3775722.8	91.27	PASS	70-125	3725193.1	3954056.4	94.21	PASS	70-125
N027485-001B-MSD	MSD	1	3217600.2	3775722.8	85.22	PASS	70-125	3554711.7	3954056.4	89.9	PASS	70-125
N027485-001B-MSD	MSD	5	3480131.3	3775722.8	92.17	PASS	70-125	3803936.7	3954056.4	96.2	PASS	70-125
N027485-002B	SAMP	1	2403664.4	3775722.8	63.66	NR!	70-125	2673388.9	3954056.4	67.61	NR!	70-125
CCV2	CCV	1	4074984.4	3775722.8	107.93	PASS	70-125	4240054.9	3954056.4	107.23	PASS	70-125
CCB2	CCB	1	3890360.5	3775722.8	103.04	PASS	70-125	4048968	3954056.4	102.4	PASS	70-125
LLCCV1	CCV2	1	3655047.1	3775722.8	96.8	PASS	70-125	3893882.7	3954056.4	98.48	PASS	70-125
ICSA2	ICSA	1	3142610.9	3775722.8	83.23	PASS	70-125	3455485.4	3954056.4	87.39	PASS	70-125
ICSAB2	ICSAB	1	3178898.6	3775722.8	84.19	PASS	70-125	3445848.8	3954056.4	87.15	PASS	70-125

INTERNAL STANDARD: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [3]					115 In (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027485-002B	SAMP	5	3081273.8	3775722.8	81.61	PASS	70-125	3381944.9	3954056.4	85.53	PASS	70-125
N027485-003B	SAMP	1	2349692.2	3775722.8	62.23	NR!	70-125	2608102.8	3954056.4	65.96	NR!	70-125
N027485-003B	SAMP	5	3126932	3775722.8	82.82	PASS	70-125	3393884	3954056.4	85.83	PASS	70-125
N027485-004B	SAMP	1	2372491.3	3775722.8	62.84	NR!	70-125	2626862.5	3954056.4	66.43	NR!	70-125
N027485-004B	SAMP	5	3185818	3775722.8	84.38	PASS	70-125	3501922.1	3954056.4	88.57	PASS	70-125
N027485-005B	SAMP	1	2273661.2	3775722.8	60.22	NR!	70-125	2512423.6	3954056.4	63.54	NR!	70-125
N027485-005B	SAMP	5	3031993.3	3775722.8	80.3	PASS	70-125	3319749.8	3954056.4	83.96	PASS	70-125
N027485-006B	SAMP	1	2270607.8	3775722.8	60.14	NR!	70-125	2519357	3954056.4	63.72	NR!	70-125
N027485-006B	SAMP	5	2944557.8	3775722.8	77.99	PASS	70-125	3210945.9	3954056.4	81.21	PASS	70-125
N027485-007B	SAMP	1	2186862.1	3775722.8	57.92	NR!	70-125	2438914.1	3954056.4	61.68	NR!	70-125
CCV3	CCV	1	3642317.5	3775722.8	96.47	PASS	70-125	3850291	3954056.4	97.38	PASS	70-125
CCB3	CCB	1	3571746.4	3775722.8	94.6	PASS	70-125	3757353.2	3954056.4	95.025	PASS	70-125
N027485-007B	SAMP	5	2786810.8	3775722.8	73.81	PASS	70-125	3077351.5	3954056.4	77.83	PASS	70-125
N027485-008B	SAMP	1	2876329	3775722.8	76.18	PASS	70-125	3145802.6	3954056.4	79.56	PASS	70-125
N027485-008B	SAMP	5	3130281.9	3775722.8	82.91	PASS	70-125	3408596.2	3954056.4	86.21	PASS	70-125
N027485-010B	SAMP	1	2356957.6	3775722.8	62.42	NR!	70-125	2601140.9	3954056.4	65.78	NR!	70-125
N027485-010B	SAMP	5	2826907.6	3775722.8	74.87	PASS	70-125	3093314.1	3954056.4	78.23	PASS	70-125
N027485-009B	SAMP	25	3011178.3	3775722.8	79.75	PASS	70-125	3288772.5	3954056.4	83.17	PASS	70-125
N027485-011C	SAMP	25	3068805	3775722.8	81.28	PASS	70-125	3356226.3	3954056.4	84.88	PASS	70-125
N027485-012C	SAMP	25	3072967.6	3775722.8	81.39	PASS	70-125	3360335	3954056.4	84.98	PASS	70-125
LLCCV2	CCV2	1	3050009.3	3775722.8	80.78	PASS	70-125	3297611	3954056.4	83.4	PASS	70-125
CCV4	CCV	1	3235109.6	3775722.8	85.68	PASS	70-125	3431619.1	3954056.4	86.79	PASS	70-125
CCB4	CCB	1	3159489.2	3775722.8	83.68	PASS	70-125	3371879.9	3954056.4	85.28	PASS	70-125
LLCCV2	CCV2	1	3228697	3775722.8	85.51	PASS	70-125	3493522.7	3954056.4	88.35	PASS	70-125
ICSA3	ICSA	1	4126116.5	3775722.8	109.28	PASS	70-125	4573179.4	3954056.4	115.66	PASS	70-125
ICSAB3	ICSAB	1	2763048	3775722.8	73.18	PASS	70-125	3066081.4	3954056.4	77.54	PASS	70-125

INTERNAL STANDARD: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					209 Bi (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	5913717.1	5913717.1	100	PASS	70-125	3875214.8	3875214.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	5979755.8	5913717.1	101.12	PASS	70-125	3907398.6	3875214.8	100.83	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	5937076.5	5913717.1	100.4	PASS	70-125	3896201.5	3875214.8	100.54	PASS	70-125
Std3-5/50 ppb	ICAL	1	6046709.2	5913717.1	102.25	PASS	70-125	3929770.2	3875214.8	101.41	PASS	70-125
Std4-10/100 ppb	ICAL	1	6007765	5913717.1	101.59	PASS	70-125	3909171.4	3875214.8	100.88	PASS	70-125
Std5-20/200 ppb	ICAL	1	6027729.7	5913717.1	101.93	PASS	70-125	3960602.5	3875214.8	102.2	PASS	70-125
Std6-40/400 ppb	ICAL	1	6074968.8	5913717.1	102.73	PASS	70-125	3964164.4	3875214.8	102.3	PASS	70-125
Std7-100/1000 ppb	ICAL	1	6048387.6	5913717.1	102.28	PASS	70-125	3950157.7	3875214.8	101.93	PASS	70-125
Std8-200/2000 ppb	ICAL	1	6082542.3	5913717.1	102.85	PASS	70-125	3956678.2	3875214.8	102.1	PASS	70-125
ICV	ICV	1	6046272.3	5913717.1	102.24	PASS	70-125	3947079.9	3875214.8	101.85	PASS	70-125
ICB	ICB	1	5975990.1	5913717.1	101.05	PASS	70-125	3922633.9	3875214.8	101.22	PASS	70-125
LLICV	CCV1	1	6124964.4	5913717.1	103.57	PASS	70-125	3945297.9	3875214.8	101.81	PASS	70-125
ICSA1	ICSA	1	5687649.1	5913717.1	96.18	PASS	70-125	3267142.8	3875214.8	84.31	PASS	70-125
ICSAB1	ICSAB	1	5675092.4	5913717.1	95.96	PASS	70-125	3291966.3	3875214.8	84.95	PASS	70-125
MB-66022	MBLK	1	6131596	5913717.1	103.68	PASS	70-125	3973110.9	3875214.8	102.53	PASS	70-125
LCS-66022	LCS	1	6225022.5	5913717.1	105.26	PASS	70-125	4034066.8	3875214.8	104.1	PASS	70-125
N027485-009B	SAMP	1	5472994.9	5913717.1	92.55	PASS	70-125	2811878.6	3875214.8	72.56	PASS	70-125
N027485-009B	SAMP	5	6138409.8	5913717.1	103.8	PASS	70-125	3482499	3875214.8	89.87	PASS	70-125
N027485-011C	SAMP	1	5784165.6	5913717.1	97.81	PASS	70-125	3106885.2	3875214.8	80.17	PASS	70-125
N027485-011C	SAMP	5	6134797.7	5913717.1	103.74	PASS	70-125	3559517.1	3875214.8	91.85	PASS	70-125
N027485-012C	SAMP	1	5560599.9	5913717.1	94.029	PASS	70-125	3002213.2	3875214.8	77.47	PASS	70-125
N027485-012C	SAMP	5	5970345.8	5913717.1	100.96	PASS	70-125	3492777.4	3875214.8	90.13	PASS	70-125
N027546-006B	SAMP	1	5870250.9	5913717.1	99.26	PASS	70-125	3254798.8	3875214.8	83.99	PASS	70-125
N027546-006B	SAMP	5	5721425.2	5913717.1	96.75	PASS	70-125	3439089.5	3875214.8	88.75	PASS	70-125
CCV1	CCV	1	5801886.4	5913717.1	98.11	PASS	70-125	3757031.5	3875214.8	96.95	PASS	70-125
CCB1	CCB	1	5765210.1	5913717.1	97.49	PASS	70-125	3732397.7	3875214.8	96.31	PASS	70-125
N027485-001B	SAMP	1	5402879.5	5913717.1	91.36	PASS	70-125	3000170.5	3875214.8	77.42	PASS	70-125
N027485-001B	SAMP	5	5634027.3	5913717.1	95.27	PASS	70-125	3409365.5	3875214.8	87.98	PASS	70-125
N027485-001B	SAMP	25	5740861.4	5913717.1	97.077	PASS	70-125	3664372.6	3875214.8	94.56	PASS	70-125
N027485-001B-PS	PS	1	5550142.3	5913717.1	93.85	PASS	70-125	3091239.6	3875214.8	79.77	PASS	70-125
N027485-001B-PS	PS	5	5652196.2	5913717.1	95.58	PASS	70-125	3429024.9	3875214.8	88.49	PASS	70-125
N027485-001B-MS	MS	1	5393541.1	5913717.1	91.2	PASS	70-125	2961653.2	3875214.8	76.43	PASS	70-125
N027485-001B-MS	MS	1	5658812.6	5913717.1	95.69	PASS	70-125	3401802.4	3875214.8	87.78	PASS	70-125
N027485-001B-MSD	MSD	1	5360215.4	5913717.1	90.64	PASS	70-125	2975377.2	3875214.8	76.78	PASS	70-125
N027485-001B-MSD	MSD	5	5699209.3	5913717.1	96.37	PASS	70-125	3419898	3875214.8	88.25	PASS	70-125
N027485-002B	SAMP	1	4111597.2	5913717.1	69.53	NR!	70-125	2124923.1	3875214.8	54.83	NR!	70-125
CCV2	CCV	1	6067086.2	5913717.1	102.59	PASS	70-125	3869408.8	3875214.8	99.85	PASS	70-125
CCB2	CCB	1	5960556.4	5913717.1	100.79	PASS	70-125	3801653.6	3875214.8	98.1	PASS	70-125
LLCCV1	CCV2	1	5715189.9	5913717.1	96.64	PASS	70-125	3647133.2	3875214.8	94.11	PASS	70-125
ICSA2	ICSA	1	5236403	5913717.1	88.55	PASS	70-125	3019773.9	3875214.8	77.93	PASS	70-125
ICSAB2	ICSAB	1	5264422.5	5913717.1	89.021	PASS	70-125	3039340.5	3875214.8	78.43	PASS	70-125

INTERNAL STANDARD: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					209 Bi (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027485-002B	SAMP	5	5207721.9	5913717.1	88.062	PASS	70-125	2940687.4	3875214.8	75.88	PASS	70-125
N027485-003B	SAMP	1	4049302.8	5913717.1	68.47	NR!	70-125	2073043.2	3875214.8	53.49	NR!	70-125
N027485-003B	SAMP	5	5067001.8	5913717.1	85.68	PASS	70-125	2861773.3	3875214.8	73.85	PASS	70-125
N027485-004B	SAMP	1	3972702.4	5913717.1	67.18	NR!	70-125	2066072.5	3875214.8	53.32	NR!	70-125
N027485-004B	SAMP	5	5132303.5	5913717.1	86.79	PASS	70-125	2880816.2	3875214.8	74.34	PASS	70-125
N027485-005B	SAMP	1	3727966.3	5913717.1	63.039	NR!	70-125	1850134.9	3875214.8	47.74	NR!	70-125
N027485-005B	SAMP	5	4891041.1	5913717.1	82.71	PASS	70-125	2691069.8	3875214.8	69.44	NR!	70-125
N027485-006B	SAMP	1	3779960	5913717.1	63.92	NR!	70-125	1859945.1	3875214.8	48	NR!	70-125
N027485-006B	SAMP	5	4768890.8	5913717.1	80.64	PASS	70-125	2638344.5	3875214.8	68.083	NR!	70-125
N027485-007B	SAMP	1	3637366.9	5913717.1	61.51	NR!	70-125	1798908.1	3875214.8	46.42	NR!	70-125
CCV3	CCV	1	5466808.7	5913717.1	92.44	PASS	70-125	3446836.3	3875214.8	88.95	PASS	70-125
CCB3	CCB	1	5401394.4	5913717.1	91.34	PASS	70-125	3440919.9	3875214.8	88.79	PASS	70-125
N027485-007B	SAMP	5	4654468.7	5913717.1	78.71	PASS	70-125	2589127.2	3875214.8	66.81	NR!	70-125
N027485-008B	SAMP	1	4784799.3	5913717.1	80.91	PASS	70-125	2706802.7	3875214.8	69.85	NR!	70-125
N027485-008B	SAMP	5	5095023.4	5913717.1	86.16	PASS	70-125	3123088.3	3875214.8	80.59	PASS	70-125
N027485-010B	SAMP	1	4009987.3	5913717.1	67.81	NR!	70-125	2148692.3	3875214.8	55.45	NR!	70-125
N027485-010B	SAMP	5	4674254.5	5913717.1	79.041	PASS	70-125	2743157	3875214.8	70.79	PASS	70-125
N027485-009B	SAMP	25	4961442.1	5913717.1	83.9	PASS	70-125	3042830.4	3875214.8	78.52	PASS	70-125
N027485-011C	SAMP	25	4960540.6	5913717.1	83.88	PASS	70-125	3165411.4	3875214.8	81.68	PASS	70-125
N027485-012C	SAMP	25	4988793.1	5913717.1	84.36	PASS	70-125	3207632.5	3875214.8	82.77	PASS	70-125
LLCCV2	CCV2	1	4932040	5913717.1	83.4	PASS	70-125	3216248.4	3875214.8	83	PASS	70-125
CCV4	CCV	1	5067239.5	5913717.1	85.69	PASS	70-125	3332812.1	3875214.8	86.003	PASS	70-125
CCB4	CCB	1	5087328.5	5913717.1	86.026	PASS	70-125	3245156	3875214.8	83.74	PASS	70-125
LLCCV2	CCV2	1	5196193.8	5913717.1	87.87	PASS	70-125	3317138	3875214.8	85.6	PASS	70-125
ICSA3	ICSA	1	7266103.2	5913717.1	122.87	PASS	70-125	4224426.8	3875214.8	109.01	PASS	70-125
ICSAB3	ICSAB	1	4737886	5913717.1	80.12	PASS	70-125	2728650.5	3875214.8	70.41	PASS	70-125

INTERNAL STANDARD: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	80897.7	80897.7	100	PASS	70-125	56305.4	56305.4	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	82706.8	80897.7	102.24	PASS	70-125	57389.6	56305.4	101.93	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	83288.4	80897.7	102.96	PASS	70-125	57952.5	56305.4	102.93	PASS	70-125
Std3-5/50 ppb	ICAL	1	84719.8	80897.7	104.72	PASS	70-125	58679.5	56305.4	104.22	PASS	70-125
Std4-10/100 ppb	ICAL	1	85806.6	80897.7	106.07	PASS	70-125	59176.9	56305.4	105.1	PASS	70-125
Std5-20/200 ppb	ICAL	1	84869.9	80897.7	104.91	PASS	70-125	59008.5	56305.4	104.8	PASS	70-125
Std6-40/400 ppb	ICAL	1	87563	80897.7	108.24	PASS	70-125	58734.2	56305.4	104.31	PASS	70-125
Std7-100/1000 ppb	ICAL	1	86766.9	80897.7	107.26	PASS	70-125	59082.2	56305.4	104.93	PASS	70-125
Std8-200/2000 ppb	ICAL	1	87126.7	80897.7	107.7	PASS	70-125	58642.8	56305.4	104.15	PASS	70-125
ICV	ICV	1	77479.4	80897.7	95.77	PASS	70-125	54271	56305.4	96.39	PASS	70-125
ICB	ICB	1	83460	80897.7	103.17	PASS	70-125	57492	56305.4	102.11	PASS	70-125
LLICV	CCV1	1	84278.7	80897.7	104.18	PASS	70-125	58523.5	56305.4	103.94	PASS	70-125
ICSA1	ICSA	1	83719.4	80897.7	103.49	PASS	70-125	54821.9	56305.4	97.37	PASS	70-125
ICSAB1	ICSAB	1	77064.2	80897.7	95.26	PASS	70-125	51291.4	56305.4	91.095	PASS	70-125
MB-66022	MBLK	1	85726.9	80897.7	105.97	PASS	70-125	58417.6	56305.4	103.75	PASS	70-125
LCS-66022	LCS	1	84538	80897.7	104.5	PASS	70-125	57919.2	56305.4	102.87	PASS	70-125
N027485-009B	SAMP	1	87990	80897.7	108.77	PASS	70-125	52900	56305.4	93.95	PASS	70-125
N027485-009B	SAMP	5	98824.3	80897.7	122.16	PASS	70-125	63111.5	56305.4	112.09	PASS	70-125
N027485-011C	SAMP	1	98206.4	80897.7	121.4	PASS	70-125	60073.6	56305.4	106.69	PASS	70-125
N027485-011C	SAMP	5	97760.6	80897.7	120.84	PASS	70-125	63045.7	56305.4	111.97	PASS	70-125
N027485-012C	SAMP	1	93302.2	80897.7	115.33	PASS	70-125	57368.1	56305.4	101.89	PASS	70-125
N027485-012C	SAMP	5	93929.5	80897.7	116.11	PASS	70-125	61244.4	56305.4	108.77	PASS	70-125
N027546-006B	SAMP	1	93213.7	80897.7	115.22	PASS	70-125	59538.1	56305.4	105.74	PASS	70-125
N027546-006B	SAMP	5	82783.1	80897.7	102.33	PASS	70-125	55816.4	56305.4	99.13	PASS	70-125
CCV1	CCV	1	71979.4	80897.7	88.98	PASS	70-125	50902.7	56305.4	90.4	PASS	70-125
CCB1	CCB	1	76955.5	80897.7	95.13	PASS	70-125	53645.5	56305.4	95.28	PASS	70-125
N027485-001B	SAMP	1	81142	80897.7	100.3	PASS	70-125	51975.7	56305.4	92.31	PASS	70-125
N027485-001B	SAMP	5	81016	80897.7	100.15	PASS	70-125	53745	56305.4	95.45	PASS	70-125
N027485-001B	SAMP	25	79471.1	80897.7	98.24	PASS	70-125	55154.8	56305.4	97.96	PASS	70-125
N027485-001B-PS	PS	1	83848.6	80897.7	103.65	PASS	70-125	52786.1	56305.4	93.75	PASS	70-125
N027485-001B-PS	PS	5	80911.3	80897.7	100.02	PASS	70-125	54210.8	56305.4	96.28	PASS	70-125
N027485-001B-MS	MS	1	80373.3	80897.7	99.35	PASS	70-125	51087.6	56305.4	90.73	PASS	70-125
N027485-001B-MS	MS	1	81509.5	80897.7	100.76	PASS	70-125	53767.1	56305.4	95.49	PASS	70-125
N027485-001B-MSD	MSD	1	81760	80897.7	101.07	PASS	70-125	51828.6	56305.4	92.049	PASS	70-125
N027485-001B-MSD	MSD	5	81411.1	80897.7	100.63	PASS	70-125	54785	56305.4	97.3	PASS	70-125
N027485-002B	SAMP	1	70275.5	80897.7	86.87	PASS	70-125	40624.7	56305.4	72.15	PASS	70-125
CCV2	CCV	1	92712.6	80897.7	114.6	PASS	70-125	62135.5	56305.4	110.35	PASS	70-125
CCB2	CCB	1	87837.2	80897.7	108.58	PASS	70-125	59579.6	56305.4	105.82	PASS	70-125
LLCCV1	CCV2	1	80273.7	80897.7	99.23	PASS	70-125	55165	56305.4	97.97	PASS	70-125
ICSA2	ICSA	1	74708	80897.7	92.35	PASS	70-125	49353.2	56305.4	87.65	PASS	70-125
ICSAB2	ICSAB	1	76525.8	80897.7	94.6	PASS	70-125	49854.8	56305.4	88.54	PASS	70-125

INTERNAL STANDARD: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027485-002B	SAMP	5	73221.2	80897.7	90.51	PASS	70-125	47804.3	56305.4	84.9	PASS	70-125
N027485-003B	SAMP	1	68505.7	80897.7	84.68	PASS	70-125	40328.5	56305.4	71.62	PASS	70-125
N027485-003B	SAMP	5	78865.7	80897.7	97.49	PASS	70-125	50311.7	56305.4	89.36	PASS	70-125
N027485-004B	SAMP	1	67804.1	80897.7	83.81	PASS	70-125	39487.6	56305.4	70.13	PASS	70-125
N027485-004B	SAMP	5	79041	80897.7	97.7	PASS	70-125	50474.5	56305.4	89.64	PASS	70-125
N027485-005B	SAMP	1	63386.8	80897.7	78.35	PASS	70-125	36468.2	56305.4	64.77	NR!	70-125
N027485-005B	SAMP	5	74197.8	80897.7	91.72	PASS	70-125	47392.2	56305.4	84.17	PASS	70-125
N027485-006B	SAMP	1	65333	80897.7	80.76	PASS	70-125	37291.3	56305.4	66.23	NR!	70-125
N027485-006B	SAMP	5	71522.8	80897.7	88.41	PASS	70-125	45593.5	56305.4	80.98	PASS	70-125
N027485-007B	SAMP	1	61141.9	80897.7	75.58	PASS	70-125	34934.9	56305.4	62.045	NR!	70-125
CCV3	CCV	1	76222.5	80897.7	94.22	PASS	70-125	52483.1	56305.4	93.21	PASS	70-125
CCB3	CCB	1	75158.7	80897.7	92.91	PASS	70-125	52419.5	56305.4	93.099	PASS	70-125
N027485-007B	SAMP	5	69909.1	80897.7	86.42	PASS	70-125	44040.4	56305.4	78.22	PASS	70-125
N027485-008B	SAMP	1	68417.8	80897.7	84.57	PASS	70-125	44907.2	56305.4	79.76	PASS	70-125
N027485-008B	SAMP	5	70970.7	80897.7	87.73	PASS	70-125	47788.7	56305.4	84.87	PASS	70-125
N027485-010B	SAMP	1	61747.5	80897.7	76.33	PASS	70-125	37792.5	56305.4	67.12	NR!	70-125
N027485-010B	SAMP	5	66400.8	80897.7	82.08	PASS	70-125	43253.8	56305.4	76.82	PASS	70-125
N027485-009B	SAMP	25	66985.4	80897.7	82.8	PASS	70-125	46067.1	56305.4	81.82	PASS	70-125
N027485-011C	SAMP	25	67464.9	80897.7	83.4	PASS	70-125	46754.5	56305.4	83.037	PASS	70-125
N027485-012C	SAMP	25	68006.1	80897.7	84.064	PASS	70-125	47106.7	56305.4	83.66	PASS	70-125
LLCCV2	CCV2	1	56409.8	80897.7	69.73	NR!	70-125	40420.9	56305.4	71.79	PASS	70-125
CCV4	CCV	1	69088.2	80897.7	85.4	PASS	70-125	47662.7	56305.4	84.65	PASS	70-125
CCB4	CCB	1	67610	80897.7	83.57	PASS	70-125	47224.7	56305.4	83.87	PASS	70-125
LLCCV2	CCV2	1	70101.4	80897.7	86.65	PASS	70-125	47607.1	56305.4	84.55	PASS	70-125
ICSA3	ICSA	1	86091	80897.7	106.42	PASS	70-125	58220.4	56305.4	103.4	PASS	70-125
ICSAB3	ICSAB	1	65804	80897.7	81.34	PASS	70-125	43019.6	56305.4	76.4	PASS	70-125

INTERNAL STANDARD: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					6 Li (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	65197.5	65197.5	100	PASS	70-125	1184720	1184720	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	67194.4	65197.5	103.06	PASS	70-125	1234369.5	1184720	104.19	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	67326.1	65197.5	103.26	PASS	70-125	1217043	1184720	102.73	PASS	70-125
Std3-5/50 ppb	ICAL	1	69988.1	65197.5	107.35	PASS	70-125	1242922.6	1184720	104.91	PASS	70-125
Std4-10/100 ppb	ICAL	1	69723.9	65197.5	106.94	PASS	70-125	1244722.1	1184720	105.07	PASS	70-125
Std5-20/200 ppb	ICAL	1	68335.8	65197.5	104.81	PASS	70-125	1236093.4	1184720	104.34	PASS	70-125
Std6-40/400 ppb	ICAL	1	69998.5	65197.5	107.36	PASS	70-125	1214841.6	1184720	102.54	PASS	70-125
Std7-100/1000 ppb	ICAL	1	69846.6	65197.5	107.13	PASS	70-125	1214189.9	1184720	102.49	PASS	70-125
Std8-200/2000 ppb	ICAL	1	69432.4	65197.5	106.5	PASS	70-125	1231118.4	1184720	103.92	PASS	70-125
ICV	ICV	1	60655.7	65197.5	93.034	PASS	70-125	1272466.9	1184720	107.41	PASS	70-125
ICB	ICB	1	68889.4	65197.5	105.66	PASS	70-125	1221895.3	1184720	103.14	PASS	70-125
LLICV	CCV1	1	70516	65197.5	108.16	PASS	70-125	1228412.7	1184720	103.69	PASS	70-125
ICSA1	ICSA	1	65429.3	65197.5	100.36	PASS	70-125	1223667.2	1184720	103.29	PASS	70-125
ICSAB1	ICSAB	1	57487.5	65197.5	88.17	PASS	70-125	1239628	1184720	104.63	PASS	70-125
MB-66022	MBLK	1	70796.3	65197.5	108.59	PASS	70-125	1290744.4	1184720	108.95	PASS	70-125
LCS-66022	LCS	1	70981.4	65197.5	108.87	PASS	70-125	1263784.6	1184720	106.67	PASS	70-125
N027485-009B	SAMP	1	56972.4	65197.5	87.38	PASS	70-125	894019.2	1184720	75.46	PASS	70-125
N027485-009B	SAMP	5	76523.1	65197.5	117.37	PASS	70-125	1307895.2	1184720	110.4	PASS	70-125
N027485-011C	SAMP	1	70501.3	65197.5	108.13	PASS	70-125	1218049.1	1184720	102.81	PASS	70-125
N027485-011C	SAMP	5	76470.3	65197.5	117.29	PASS	70-125	1350177.6	1184720	113.97	PASS	70-125
N027485-012C	SAMP	1	67732	65197.5	103.89	PASS	70-125	1193552.4	1184720	100.75	PASS	70-125
N027485-012C	SAMP	5	74336.1	65197.5	114.02	PASS	70-125	1291751.8	1184720	109.03	PASS	70-125
N027546-006B	SAMP	1	71200.2	65197.5	109.21	PASS	70-125	1266227.6	1184720	106.88	PASS	70-125
N027546-006B	SAMP	5	69425.8	65197.5	106.49	PASS	70-125	1119836.8	1184720	94.52	PASS	70-125
CCV1	CCV	1	58007.1	65197.5	88.97	PASS	70-125	1108736.8	1184720	93.59	PASS	70-125
CCB1	CCB	1	65760.8	65197.5	100.86	PASS	70-125	1101496.7	1184720	92.98	PASS	70-125
N027485-001B	SAMP	1	60724.7	65197.5	93.14	PASS	70-125	1058025.3	1184720	89.31	PASS	70-125
N027485-001B	SAMP	5	65569	65197.5	100.57	PASS	70-125	1130912.5	1184720	95.46	PASS	70-125
N027485-001B	SAMP	25	66851.6	65197.5	102.54	PASS	70-125	1126947.4	1184720	95.12	PASS	70-125
N027485-001B-PS	PS	1	62083	65197.5	95.22	PASS	70-125	1104695.8	1184720	93.25	PASS	70-125
N027485-001B-PS	PS	5	65770.8	65197.5	100.88	PASS	70-125	1113239.6	1184720	93.97	PASS	70-125
N027485-001B-MS	MS	1	58915.1	65197.5	90.36	PASS	70-125	1080099.3	1184720	91.17	PASS	70-125
N027485-001B-MS	MS	1	65542.1	65197.5	100.53	PASS	70-125	1119277	1184720	94.48	PASS	70-125
N027485-001B-MSD	MSD	1	60047.8	65197.5	92.1	PASS	70-125	1092921	1184720	92.25	PASS	70-125
N027485-001B-MSD	MSD	5	65381.8	65197.5	100.28	PASS	70-125	1126092	1184720	95.051	PASS	70-125
N027485-002B	SAMP	1	45994.4	65197.5	70.55	PASS	70-125	557760.7	1184720	47.08	NR!	70-125
CCV2	CCV	1	72317.2	65197.5	110.92	PASS	70-125	1328893.1	1184720	112.17	PASS	70-125
CCB2	CCB	1	72706.7	65197.5	111.52	PASS	70-125	1242086.3	1184720	104.84	PASS	70-125
LLCCV1	CCV2	1	68424	65197.5	104.95	PASS	70-125	1126602.3	1184720	95.094	PASS	70-125
ICSA2	ICSA	1	60724.7	65197.5	93.14	PASS	70-125	1065580.8	1184720	89.94	PASS	70-125
ICSAB2	ICSAB	1	60142.5	65197.5	92.25	PASS	70-125	1054332.9	1184720	88.99	PASS	70-125

INTERNAL STANDARD: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					6 Li (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027485-002B	SAMP	5	56326.8	65197.5	86.39	PASS	70-125	990643	1184720	83.62	PASS	70-125
N027485-003B	SAMP	1	45050.8	65197.5	69.099	NR!	70-125	547143.9	1184720	46.18	NR!	70-125
N027485-003B	SAMP	5	58095.1	65197.5	89.11	PASS	70-125	1012550.4	1184720	85.47	PASS	70-125
N027485-004B	SAMP	1	45680.3	65197.5	70.064	PASS	70-125	565497	1184720	47.73	NR!	70-125
N027485-004B	SAMP	5	60754.9	65197.5	93.19	PASS	70-125	1007432.1	1184720	85.035	PASS	70-125
N027485-005B	SAMP	1	41892.4	65197.5	64.25	NR!	70-125	371785.5	1184720	31.38	NR!	70-125
N027485-005B	SAMP	5	55932.2	65197.5	85.79	PASS	70-125	889058.4	1184720	75.044	PASS	70-125
N027485-006B	SAMP	1	41645.2	65197.5	63.88	NR!	70-125	374131.2	1184720	31.58	NR!	70-125
N027485-006B	SAMP	5	55389.2	65197.5	84.96	PASS	70-125	842998.7	1184720	71.16	PASS	70-125
N027485-007B	SAMP	1	39690.2	65197.5	60.88	NR!	70-125	358229.4	1184720	30.24	NR!	70-125
CCV3	CCV	1	64307.1	65197.5	98.63	PASS	70-125	987485.8	1184720	83.35	PASS	70-125
CCB3	CCB	1	63219.5	65197.5	96.97	PASS	70-125	975361.6	1184720	82.33	PASS	70-125
N027485-007B	SAMP	5	52584.4	65197.5	80.65	PASS	70-125	807153	1184720	68.13	NR!	70-125
N027485-008B	SAMP	1	54353.7	65197.5	83.37	PASS	70-125	822617.9	1184720	69.44	NR!	70-125
N027485-008B	SAMP	5	57984.9	65197.5	88.94	PASS	70-125	915636.3	1184720	77.29	PASS	70-125
N027485-010B	SAMP	1	44963.9	65197.5	68.97	NR!	70-125	550359.5	1184720	46.45	NR!	70-125
N027485-010B	SAMP	5	52739.2	65197.5	80.89	PASS	70-125	786791.4	1184720	66.41	NR!	70-125
N027485-009B	SAMP	25	55680.2	65197.5	85.4	PASS	70-125	839049.5	1184720	70.82	PASS	70-125
N027485-011C	SAMP	25	56020.3	65197.5	85.92	PASS	70-125	853431.7	1184720	72.037	PASS	70-125
N027485-012C	SAMP	25	56468.5	65197.5	86.61	PASS	70-125	860742	1184720	72.65	PASS	70-125
LLCCV2	CCV2	1	47990.3	65197.5	73.61	PASS	70-125	793016.5	1184720	66.94	NR!	70-125
CCV4	CCV	1	58253.5	65197.5	89.35	PASS	70-125	881428.3	1184720	74.4	PASS	70-125
CCB4	CCB	1	56376.8	65197.5	86.47	PASS	70-125	878309.5	1184720	74.14	PASS	70-125
LLCCV2	CCV2	1	57546.6	65197.5	88.27	PASS	70-125	894591.3	1184720	75.51	PASS	70-125
ICSA3	ICSA	1	66108.7	65197.5	101.4	PASS	70-125	1220087.8	1184720	102.99	PASS	70-125
ICSAB3	ICSAB	1	51084.1	65197.5	78.35	PASS	70-125	829976.9	1184720	70.057	PASS	70-125

INTERNAL STANDARD: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	1817292.6	1817292.6	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	1850066.6	1817292.6	101.8	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	1876026.3	1817292.6	103.23	PASS	70-125
Std3-5/50 ppb	ICAL	1	1901275.6	1817292.6	104.62	PASS	70-125
Std4-10/100 ppb	ICAL	1	1905202.9	1817292.6	104.84	PASS	70-125
Std5-20/200 ppb	ICAL	1	1892549.5	1817292.6	104.14	PASS	70-125
Std6-40/400 ppb	ICAL	1	1893181.8	1817292.6	104.18	PASS	70-125
Std7-100/1000 ppb	ICAL	1	1882968.8	1817292.6	103.61	PASS	70-125
Std8-200/2000 ppb	ICAL	1	1848322.8	1817292.6	101.71	PASS	70-125
ICV	ICV	1	1772719.4	1817292.6	97.55	PASS	70-125
ICB	ICB	1	1855180.4	1817292.6	102.09	PASS	70-125
LLICV	CCV1	1	1892163.1	1817292.6	104.12	PASS	70-125
ICSA1	ICSA	1	1653326.7	1817292.6	90.98	PASS	70-125
ICSAB1	ICSAB	1	1565327.8	1817292.6	86.14	PASS	70-125
MB-66022	MBLK	1	1908894.5	1817292.6	105.04	PASS	70-125
LCS-66022	LCS	1	1883533.3	1817292.6	103.65	PASS	70-125
N027485-009B	SAMP	1	1504358.3	1817292.6	82.78	PASS	70-125
N027485-009B	SAMP	5	1868966.7	1817292.6	102.84	PASS	70-125
N027485-011C	SAMP	1	1701796	1817292.6	93.64	PASS	70-125
N027485-011C	SAMP	5	1881890.5	1817292.6	103.55	PASS	70-125
N027485-012C	SAMP	1	1638703.4	1817292.6	90.17	PASS	70-125
N027485-012C	SAMP	5	1830069.3	1817292.6	100.7	PASS	70-125
N027546-006B	SAMP	1	1722847	1817292.6	94.8	PASS	70-125
N027546-006B	SAMP	5	1688593.2	1817292.6	92.92	PASS	70-125
CCV1	CCV	1	1677140.2	1817292.6	92.29	PASS	70-125
CCB1	CCB	1	1768217	1817292.6	97.3	PASS	70-125
N027485-001B	SAMP	1	1520342.5	1817292.6	83.66	PASS	70-125
N027485-001B	SAMP	5	1648292	1817292.6	90.7	PASS	70-125
N027485-001B	SAMP	25	1725611.3	1817292.6	94.96	PASS	70-125
N027485-001B-PS	PS	1	1560941.2	1817292.6	85.89	PASS	70-125
N027485-001B-PS	PS	5	1645806.2	1817292.6	90.56	PASS	70-125
N027485-001B-MS	MS	1	1494997.3	1817292.6	82.27	PASS	70-125
N027485-001B-MS	MS	1	1664759.6	1817292.6	91.61	PASS	70-125
N027485-001B-MSD	MSD	1	1496888.7	1817292.6	82.37	PASS	70-125
N027485-001B-MSD	MSD	5	1675337.2	1817292.6	92.19	PASS	70-125
N027485-002B	SAMP	1	1106993.3	1817292.6	60.91	NR!	70-125
CCV2	CCV	1	1922301.1	1817292.6	105.78	PASS	70-125
CCB2	CCB	1	1884395.4	1817292.6	103.69	PASS	70-125
LLCCV1	CCV2	1	1800264.7	1817292.6	99.063	PASS	70-125
ICSA2	ICSA	1	1505527	1817292.6	82.84	PASS	70-125
ICSAB2	ICSAB	1	1510517.1	1817292.6	83.12	PASS	70-125

INTERNAL STANDARD: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N027485-002B	SAMP	5	1439631.2	1817292.6	79.22	PASS	70-125
N027485-003B	SAMP	1	1087699	1817292.6	59.85	NR!	70-125
N027485-003B	SAMP	5	1460457.4	1817292.6	80.36	PASS	70-125
N027485-004B	SAMP	1	1086358.1	1817292.6	59.78	NR!	70-125
N027485-004B	SAMP	5	1492105.4	1817292.6	82.11	PASS	70-125
N027485-005B	SAMP	1	986420.6	1817292.6	54.28	NR!	70-125
N027485-005B	SAMP	5	1398738.9	1817292.6	76.97	PASS	70-125
N027485-006B	SAMP	1	1017285.9	1817292.6	55.98	NR!	70-125
N027485-006B	SAMP	5	1341694.8	1817292.6	73.83	PASS	70-125
N027485-007B	SAMP	1	969817.6	1817292.6	53.37	NR!	70-125
CCV3	CCV	1	1714749.6	1817292.6	94.36	PASS	70-125
CCB3	CCB	1	1671494.9	1817292.6	91.98	PASS	70-125
N027485-007B	SAMP	5	1282136.9	1817292.6	70.55	PASS	70-125
N027485-008B	SAMP	1	1333970.2	1817292.6	73.4	PASS	70-125
N027485-008B	SAMP	5	1484191.9	1817292.6	81.67	PASS	70-125
N027485-010B	SAMP	1	1070143.2	1817292.6	58.89	NR!	70-125
N027485-010B	SAMP	5	1291648.1	1817292.6	71.075	PASS	70-125
N027485-009B	SAMP	25	1442910.3	1817292.6	79.4	PASS	70-125
N027485-011C	SAMP	25	1463695.3	1817292.6	80.54	PASS	70-125
N027485-012C	SAMP	25	1476198.1	1817292.6	81.23	PASS	70-125
LLCCV2	CCV2	1	1392906.3	1817292.6	76.65	PASS	70-125
CCV4	CCV	1	1557533	1817292.6	85.71	PASS	70-125
CCB4	CCB	1	1524186.8	1817292.6	83.87	PASS	70-125
LLCCV2	CCV2	1	1552777.3	1817292.6	85.44	PASS	70-125
ICSA3	ICSA	1	1899684.8	1817292.6	104.53	PASS	70-125
ICSAB3	ICSAB	1	1287437.2	1817292.6	70.84	PASS	70-125

INTERNAL STANDARD: 180103A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	121020.5	121020.5	100	PASS	70-125	79503.8	79503.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	114444.1	121020.5	94.57	PASS	70-125	79632.3	79503.8	100.16	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	114304.6	121020.5	94.45	PASS	70-125	78610.4	79503.8	98.88	PASS	70-125
Std3-5/50 ppb	ICAL	1	115716.8	121020.5	95.62	PASS	70-125	80192.8	79503.8	100.87	PASS	70-125
Std4-10/100 ppb	ICAL	1	115315.9	121020.5	95.29	PASS	70-125	79494.8	79503.8	99.99	PASS	70-125
Std5-20/200 ppb	ICAL	1	118086.5	121020.5	97.58	PASS	70-125	80206.2	79503.8	100.88	PASS	70-125
Std6-40/400 ppb	ICAL	1	119408.6	121020.5	98.67	PASS	70-125	80275.2	79503.8	100.97	PASS	70-125
Std7-100/1000 ppb	ICAL	1	111956.8	121020.5	92.51	PASS	70-125	77025.3	79503.8	96.88	PASS	70-125
Std8-200/2000 ppb	ICAL	1	111722.2	121020.5	92.32	PASS	70-125	75788.5	79503.8	95.33	PASS	70-125
ICV	ICV	1	105976.3	121020.5	87.57	PASS	70-125	74261.6	79503.8	93.41	PASS	70-125
ICB	ICB	1	105787.7	121020.5	87.41	PASS	70-125	74705.8	79503.8	93.97	PASS	70-125
LLICV	CCV1	1	104940.8	121020.5	86.71	PASS	70-125	74786.1	79503.8	94.066	PASS	70-125
ICSA1	ICSA	1	110571.8	121020.5	91.37	PASS	70-125	76843.2	79503.8	96.65	PASS	70-125
ICSAB1	ICSAB	1	115894.7	121020.5	95.76	PASS	70-125	77595.7	79503.8	97.6	PASS	70-125
LLICV	CCV1	1	122770.1	121020.5	101.45	PASS	70-125	85747.3	79503.8	107.85	PASS	70-125
MB-66022	MBLK	1	100152.6	121020.5	82.76	PASS	70-125	73391	79503.8	92.31	PASS	70-125
LCS-66022	LCS	1	107528.3	121020.5	88.85	PASS	70-125	77290.9	79503.8	97.22	PASS	70-125
N027485-009B	SAMP	1	103318.3	121020.5	85.37	PASS	70-125	69325.5	79503.8	87.2	PASS	70-125
N027485-011C	SAMP	1	101973	121020.5	84.26	PASS	70-125	71529.5	79503.8	89.97	PASS	70-125
N027485-012C	SAMP	1	100392.5	121020.5	82.95	PASS	70-125	69296.1	79503.8	87.16	PASS	70-125
N027546-006B	SAMP	1	106617.6	121020.5	88.099	PASS	70-125	75296.3	79503.8	94.71	PASS	70-125
CCV1	CCV	1	112531.3	121020.5	92.99	PASS	70-125	80485	79503.8	101.23	PASS	70-125
CCB1	CCB	1	106337.2	121020.5	87.87	PASS	70-125	77360.1	79503.8	97.3	PASS	70-125
N027485-001B	SAMP	1	99984	121020.5	82.62	PASS	70-125	70549.4	79503.8	88.74	PASS	70-125
N027485-001B	SAMP	5	107514	121020.5	88.84	PASS	70-125	76717.6	79503.8	96.5	PASS	70-125
N027485-001B-PS	PS	1	102560.4	121020.5	84.75	PASS	70-125	71940.9	79503.8	90.49	PASS	70-125
N027485-001B-MS	MS	1	101091.2	121020.5	83.53	PASS	70-125	70679.2	79503.8	88.9	PASS	70-125
N027485-001B-MSD	MSD	1	102922.5	121020.5	85.046	PASS	70-125	71397.8	79503.8	89.8	PASS	70-125
N027485-002B	SAMP	25	108271.7	121020.5	89.47	PASS	70-125	78162.7	79503.8	98.31	PASS	70-125
N027485-003B	SAMP	25	107987.6	121020.5	89.23	PASS	70-125	77326.6	79503.8	97.26	PASS	70-125
N027485-004B	SAMP	25	108822.4	121020.5	89.92	PASS	70-125	79463.6	79503.8	99.95	PASS	70-125
N027485-005B	SAMP	1	90005.3	121020.5	74.37	PASS	70-125	58765.3	79503.8	73.92	PASS	70-125
N027485-006B	SAMP	1	90636.9	121020.5	74.89	PASS	70-125	60100.3	79503.8	75.59	PASS	70-125
CCV2	CCV	1	116941.4	121020.5	96.63	PASS	70-125	84315.6	79503.8	106.05	PASS	70-125
CCB2	CCB	1	110898.6	121020.5	91.64	PASS	70-125	80647	79503.8	101.44	PASS	70-125
N027485-007B	SAMP	1	88055.1	121020.5	72.76	PASS	70-125	58018.3	79503.8	72.98	PASS	70-125
N027485-010B	SAMP	5	106929.4	121020.5	88.36	PASS	70-125	76907.9	79503.8	96.73	PASS	70-125
CCV3	CCV	1	112094.4	121020.5	92.62	PASS	70-125	81042.8	79503.8	101.94	PASS	70-125
CCB3	CCB	1	106998.4	121020.5	88.41	PASS	70-125	78788	79503.8	99.1	PASS	70-125
LLCCV1	CCV2	1	101742.6	121020.5	84.071	PASS	70-125	71238.1	79503.8	89.6	PASS	70-125
ICSA2	ICSA	1	98579	121020.5	81.46	PASS	70-125	71290.8	79503.8	89.67	PASS	70-125

INTERNAL STANDARD: 180103A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
ICSAB2	ICSAB	1	108549.9	121020.5	89.7	PASS	70-125	77298.8	79503.8	97.23	PASS	70-125

INTERNAL STANDARD: 180103A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	100990.1	100990.1	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	99892.4	100990.1	98.91	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	99980.4	100990.1	99	PASS	70-125
Std3-5/50 ppb	ICAL	1	99960.6	100990.1	98.98	PASS	70-125
Std4-10/100 ppb	ICAL	1	99535.7	100990.1	98.56	PASS	70-125
Std5-20/200 ppb	ICAL	1	101454.4	100990.1	100.46	PASS	70-125
Std6-40/400 ppb	ICAL	1	101587.8	100990.1	100.59	PASS	70-125
Std7-100/1000 ppb	ICAL	1	98664.8	100990.1	97.7	PASS	70-125
Std8-200/2000 ppb	ICAL	1	99459.8	100990.1	98.48	PASS	70-125
ICV	ICV	1	98375	100990.1	97.41	PASS	70-125
ICB	ICB	1	96128.8	100990.1	95.19	PASS	70-125
LLICV	CCV1	1	95018.5	100990.1	94.087	PASS	70-125
ICSA1	ICSA	1	99957.2	100990.1	98.98	PASS	70-125
ICSAB1	ICSAB	1	101127.4	100990.1	100.14	PASS	70-125
LLICV	CCV1	1	115330.5	100990.1	114.2	PASS	70-125
MB-66022	MBLK	1	84037.7	100990.1	83.21	PASS	70-125
LCS-66022	LCS	1	93883.9	100990.1	92.96	PASS	70-125
N027485-009B	SAMP	1	78410.8	100990.1	77.64	PASS	70-125
N027485-011C	SAMP	1	84281.8	100990.1	83.46	PASS	70-125
N027485-012C	SAMP	1	83508	100990.1	82.69	PASS	70-125
N027546-006B	SAMP	1	90719.3	100990.1	89.83	PASS	70-125
CCV1	CCV	1	96754.6	100990.1	95.81	PASS	70-125
CCB1	CCB	1	92121.9	100990.1	91.22	PASS	70-125
N027485-001B	SAMP	1	86697.7	100990.1	85.85	PASS	70-125
N027485-001B	SAMP	5	95023.8	100990.1	94.092	PASS	70-125
N027485-001B-PS	PS	1	89834.8	100990.1	88.95	PASS	70-125
N027485-001B-MS	MS	1	86341.7	100990.1	85.5	PASS	70-125
N027485-001B-MSD	MSD	1	84995.5	100990.1	84.16	PASS	70-125
N027485-002B	SAMP	25	97057.6	100990.1	96.11	PASS	70-125
N027485-003B	SAMP	25	94432.5	100990.1	93.51	PASS	70-125
N027485-004B	SAMP	25	99312.1	100990.1	98.34	PASS	70-125
N027485-005B	SAMP	1	67700.9	100990.1	67.037	NR!	70-125
N027485-006B	SAMP	1	65465.4	100990.1	64.82	NR!	70-125
CCV2	CCV	1	102889.6	100990.1	101.88	PASS	70-125
CCB2	CCB	1	98275.1	100990.1	97.31	PASS	70-125
N027485-007B	SAMP	1	64498.2	100990.1	63.87	NR!	70-125
N027485-010B	SAMP	5	90841.2	100990.1	89.95	PASS	70-125
CCV3	CCV	1	97708	100990.1	96.75	PASS	70-125
CCB3	CCB	1	94644.7	100990.1	93.72	PASS	70-125
LLCCV1	CCV2	1	77823.7	100990.1	77.061	PASS	70-125
ICSA2	ICSA	1	85784.2	100990.1	84.94	PASS	70-125

INTERNAL STANDARD: 180103A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria
ICSAB2	ICSAB	1	92714.7	100990.1	91.81	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N027485
Test Method: EPA 6020
Analysis Date: 1/2/2018 & 1/3/2018

Matrix: Groundwater
Batch No.: 66022

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to several analytes. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027485-001B DT 5X	Antimony	ug/L	0	NA	0.080783	100.00%	10
N027485-001B DT 5X	Arsenic	ug/L	4.167261	PASS	3.880644	7.39%	10
N027485-001B DT 5X	Barium	ug/L	66.88578	PASS	63.4934	5.34%	10
N027485-001B DT 5X	Beryllium	ug/L	0	NA	0		10
N027485-001B DT 5X	Cadmium	ug/L	0	NA	0		10
N027485-001B DT 5X	Chromium	ug/L	166.5403	PASS	153.4845	8.51%	10
N027485-001B DT 5X	Cobalt	ug/L	0	NA	0		10
N027485-001B DT 5X	Copper	ug/L	0	NA	0		10
N027485-001B DT 5X	Lead	ug/L	0	NA	0		10
N027485-001B DT 5X	Manganese	ug/L	12.14933	NA	11.33695	7.17%	10
N027485-001B DT 5X	Molybdenum	ug/L	70.89813	PASS	71.5957	0.97%	10
N027485-001B DT 5X	Nickel	ug/L	1.761321	NA	1.329626	32.47%	10
N027485-001B DT 5X	Selenium	ug/L	5.237942	NA	4.852845	7.94%	10
N027485-001B DT 5X	Silver	ug/L	0	NA	0		10
N027485-001B DT 5X	Thallium	ug/L	0.852488	NA	0.844473	0.95%	10
N027485-001B DT 5X	Vanadium	ug/L	4.423244	NA	4.151798	6.54%	10
N027485-001B DT 5X	Zinc	ug/L	0	NA	0		10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N027485-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **ZZZZZZ**	Batch ID: **66022**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/2/2018**	SeqNo: **2882485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.129	0.50	10.00	0.08078	100	80	120				
Arsenic	14.416	0.10	10.00	3.881	105	80	120				
Barium	71.040	1.0	10.00	63.49	75.5	80	120				S
Beryllium	10.629	0.50	10.00	0	106	80	120				
Cadmium	9.723	0.50	10.00	0	97.2	80	120				
Cobalt	9.156	0.50	10.00	0	91.6	80	120				
Copper	7.991	1.0	10.00	0	79.9	80	120				S
Lead	10.860	1.0	10.00	0	109	80	120				
Manganese	107.813	0.50	100.0	11.34	96.5	80	120				
Molybdenum	80.454	0.50	10.00	71.60	88.6	80	120				
Nickel	11.239	1.0	10.00	1.330	99.1	80	120				
Selenium	13.923	0.50	10.00	4.853	90.7	80	120				
Silver	9.920	0.50	10.00	0	99.2	80	120				
Thallium	10.668	0.50	10.00	0.8445	98.2	80	120				
Zinc	116.163	10	100.0	0	116	80	120				

Sample ID **N027485-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **ZZZZZZ**	Batch ID: **66022**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/3/2018**	SeqNo: **2883839**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	14.290	1.0	10.00	4.152	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N027485-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121175
Client ID:	ZZZZZZ	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2882389

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	156.633	1.0	10.00	153.5	31.5	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

EPA 7470A
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66041
ASSET #: N027485

Instrument ID: AA-01
Analyst: MG
Date Analyzed: 12/13/2017

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[X] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)			X			
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.			X			
7. Are ICSA and AB within ± 20% of expected value?			X			
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)			X			
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).			X			
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: —

2nd Level Reviewer 01/04/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

WORKORDER NO: N027485
TEST METHOD: EPA 7470
MATRIX: Groundwater

FORMULA:

Calculate the Mercury concentration in ug/L in the sample is as follows:

Mercury, ug/L = A * DF

where:
A = ug/L, instrument calculated concentration
DF = Dilution factor

For Sample **N027485-009B** , the concentration in ug/L is calculated as follows:

Mercury, ug/L = 0.02124 * 1

Mercury, ug/L = 0.02124

Reporting results in two significant figures,

Mercury, ug/L = 0.021

Since reporting limit is 0.20. ug/L,

Mercury, ug/L = ND

% RSD SUMMARY

RSD SUMMARY: 171213WA

Instrument ID: AA-01

Sample Name	Type	DF	Concentration	RSD	Criteria	Comment
Calibration Zero	IBLK	1	0	13.88	20	PASS
Standard #1	ICAL	1	0.2	2.35	20	PASS
Standard #2	ICAL	1	1	0.33	20	PASS
Standard #3	ICAL	1	5	0.14	20	PASS
Standard #4	ICAL	1	10	0.17	20	PASS
Standard #5	ICAL	1	20	1.1	20	PASS
ICV	ICV	1	10.10555	0.48	20	PASS
ICB	ICB	1	0.04148	17.84	20	PASS
CCV1	CCV	1	9.95331	0.29	20	PASS
CCB1	CCB	1	0.07587	7.59	20	PASS
CCV2	CCV	1	10.03659	0.042	20	PASS
CCB2	CCB	1	0.03991	16.24	20	PASS
CCV3	CCV	1	10.43434	2.11	20	PASS
CCB3	CCB	1	0.05895	8.075	20	PASS
CCV4	CCV	1	10.34934	0.33	20	PASS
CCB4	CCB	1	0.08847	4.62	20	PASS
CCV5	CCV	1	10.15653	0.38	20	PASS
CCB5	CCB	1	0.09143	5.35	20	PASS
CCV6	CCV	1	10.15573	0.78	20	PASS
CCB6	CCB	1	0.04195	12.63	20	PASS
CCV7	CCV	1	10.28774	0.51	20	PASS
CCB7	CCB	1	0.05889	14.43	20	PASS
CCV8	CCV	1	9.85498	0.7	20	PASS
CCB8	CCB	1	0.08499	19.48	20	PASS
CCV9	CCV	1	9.71835	0.82	20	PASS
CCB9	CCB	1	0.07447	2.3	20	PASS
CCV10	CCV	1	9.82441	3.0012	20	PASS
CCB10	CCB	1	0.05318	20.2	20	<PQL
CCV11	CCV	1	10.0655	0.42	20	PASS
CCB11	CCB	1	0.06245	22.19	20	<PQL
CCV12	CCV	1	10.23514	0.21	20	PASS
CCB12	CCB	1	0.07235	20.94	20	<PQL
CCV13	CCV	1	10.1285	0.61	20	PASS
CCB13	CCB	1	-0.04632	29.99	20	<PQL
MB-66041	MBLK	1	0.12517	4.9	20	PASS
LCS-66041	LCS	1	4.8812	0.64	20	PASS
N027485-009B-MS	MS	1	4.8018	0.49	20	PASS
N027485-009B-MSD	MSD	1	4.97192	1.55	20	PASS
CCV14	CCV	1	11.08716	1.26	20	PASS
CCB14	CCB	1	0.04901	15	20	PASS
N027485-009B	SAMP	1	0.11011	9.14	20	PASS
CCV14	CCV	1	9.75276	0.21	20	PASS

RSD SUMMARY: 171213WA

Instrument ID: AA-01

Sample Name	Type	DF	Concentration	RSD	Criteria	Comment
CCB14	CCB	1	0.00884	61.2	20	<PQL
N027485-009B	SAMP	1	0.02124	82.53	20	<PQL
N027485-011C	SAMP	1	0.07611	8.067	20	PASS
N027485-012C	SAMP	1	0.06417	2.65	20	PASS
N027524-001E	SAMP	1	0.04071	17.46	20	PASS
N027524-002E	SAMP	1	0.07167	6.95	20	PASS
N027524-003E	SAMP	1	0.03749	31.96	20	<PQL
N027524-004E	SAMP	1	0.06874	11.13	20	PASS
N027524-005E	SAMP	1	0.07845	6.53	20	PASS
N027524-006E	SAMP	1	0.05618	18.64	20	PASS
N027524-007E	SAMP	1	0.11373	3.4	20	PASS
CCV15	CCV	1	9.90536	2.049	20	PASS
CCB15	CCB	1	0.07987	7.45	20	PASS
N027524-008E-MS	MS	1	4.66258	0.81	20	PASS
N027524-008E	SAMP	1	0.10352	4.93	20	PASS
N027524-009E	SAMP	1	0.10002	4.51	20	PASS
N027524-010E	SAMP	1	0.04649	33.53	20	<PQL
N027524-011E	SAMP	1	0.10101	4.099	20	PASS
N027524-012E	SAMP	1	0.10773	2.6	20	PASS
N027524-013E	SAMP	1	-0.08389	14.82	20	PASS
CCV16	CCV	1	9.45311	0.23	20	PASS
CCB16	CCB	1	0.13001	35.84	20	<PQL

ANALYSIS RUN LOG

INJECTION LOG: 171213WA

Instrument ID: AA-01

Sample ID	Type	DF	Date	Time	Comments
Calibration Zero	IBLK	1	12/13/2017	11:47:47	Reported
Standard #1	ICAL	1	12/13/2017	11:50:29	Reported
Standard #2	ICAL	1	12/13/2017	11:53:11	Reported
Standard #3	ICAL	1	12/13/2017	11:55:54	Reported
Standard #4	ICAL	1	12/13/2017	11:58:37	Reported
Standard #5	ICAL	1	12/13/2017	12:01:22	Reported
ICV	ICV	1	12/13/2017	12:04:04	Reported
ICB	ICB	1	12/13/2017	12:06:45	Reported
MB-66034	MBLK	1	12/13/2017	12:09:28	Reported
LCS-66034	LCS	1	12/13/2017	12:12:11	Reported
N027513-001B-MS	MS	1	12/13/2017	12:14:55	Reported
N027513-001B-MSD	MSD	1	12/13/2017	12:17:38	Reported
N027513-001B	SAMP	1	12/13/2017	12:20:19	Reported
N027495-002A	SAMP	1	12/13/2017	12:23:01	Reported
N027495-003A	SAMP	1	12/13/2017	12:25:44	Reported
N027495-004A	SAMP	1	12/13/2017	12:28:28	Reported
N027495-005A	SAMP	1	12/13/2017	12:31:12	Reported
N027495-006A	SAMP	1	12/13/2017	12:33:56	Reported
CCV1	CCV	1	12/13/2017	12:36:39	Reported
CCB1	CCB	1	12/13/2017	12:39:22	Reported
N027495-007A	SAMP	1	12/13/2017	12:42:04	Reported
N027495-008A	SAMP	1	12/13/2017	12:44:46	Reported
N027495-009A	SAMP	1	12/13/2017	12:47:29	Reported
N027495-010A	SAMP	1	12/13/2017	12:50:12	Reported
N027495-011A	SAMP	1	12/13/2017	12:52:56	Reported
N027495-012A	SAMP	1	12/13/2017	12:55:41	Reported
N027495-013A	SAMP	1	12/13/2017	12:58:26	Reported
N027495-014A	SAMP	1	12/13/2017	13:01:10	Reported
N027495-015A	SAMP	1	12/13/2017	13:03:53	Reported
N027495-016A	SAMP	1	12/13/2017	13:06:37	Reported
CCV2	CCV	1	12/13/2017	13:09:20	Reported
CCB2	CCB	1	12/13/2017	13:12:02	Reported
N027495-017A	SAMP	1	12/13/2017	13:14:46	Reported
N027495-018A	SAMP	1	12/13/2017	13:17:31	Reported
N027495-019A	SAMP	1	12/13/2017	13:20:16	Reported
N027495-020A	SAMP	1	12/13/2017	13:23:02	Reported
MB-66035	MBLK	1	12/13/2017	13:25:47	Reported
LCS-66035	LCS	1	12/13/2017	13:28:31	Reported
N027475-001A-MS	MS	1	12/13/2017	13:31:15	Reported
N027475-001A-MSD	MSD	1	12/13/2017	13:34:00	Reported
N027475-001A	SAMP	1	12/13/2017	13:36:45	Reported
N027495-021A	SAMP	1	12/13/2017	13:39:31	Reported

INJECTION LOG: 171213WA

Instrument ID: AA-01

Sample ID	Type	DF	Date	Time	Comments
CCV3	CCV	1	12/13/2017	13:42:15	Reported
CCB3	CCB	1	12/13/2017	13:44:58	Reported
N027495-022A	SAMP	1	12/13/2017	13:47:42	Reported
N027495-023A	SAMP	1	12/13/2017	13:50:28	Reported
N027496-001A	SAMP	1	12/13/2017	13:53:12	Reported
N027496-002A	SAMP	1	12/13/2017	13:55:57	Reported
N027496-003A	SAMP	1	12/13/2017	13:58:42	Reported
N027496-004A	SAMP	1	12/13/2017	14:01:28	Reported
N027496-005A	SAMP	1	12/13/2017	14:04:15	Reported
N027496-006A	SAMP	1	12/13/2017	14:07:02	Reported
N027496-007A	SAMP	1	12/13/2017	14:09:48	Reported
N027496-008A	SAMP	1	12/13/2017	14:12:34	Reported
CCV4	CCV	1	12/13/2017	14:15:17	Reported
CCB4	CCB	1	12/13/2017	14:17:59	Reported
N027496-009A	SAMP	1	12/13/2017	14:20:44	Reported
N027496-010A	SAMP	1	12/13/2017	14:23:30	Reported
N027496-011A	SAMP	1	12/13/2017	14:26:17	Reported
N027496-012A	SAMP	1	12/13/2017	14:29:04	Reported
N027496-013A	SAMP	1	12/13/2017	14:31:53	Reported
N027496-014A	SAMP	1	12/13/2017	14:34:40	Reported
N027496-015A	SAMP	1	12/13/2017	14:37:25	Reported
N027496-016A	SAMP	1	12/13/2017	14:40:12	Reported
MB-66036	MBLK	1	12/13/2017	14:42:58	Reported
LCS-66036	LCS	1	12/13/2017	14:45:46	Reported
CCV5	CCV	1	12/13/2017	14:48:31	Reported
CCB5	CCB	1	12/13/2017	14:51:13	Reported
LCSD-66036	LCSD	1	12/13/2017	14:53:58	Reported
N027496-017A	SAMP	1	12/13/2017	14:56:47	Reported
N027496-018A	SAMP	1	12/13/2017	14:59:35	Reported
N027496-019A	SAMP	1	12/13/2017	15:02:21	Reported
N027496-020A	SAMP	1	12/13/2017	15:05:08	Reported
N027496-021A	SAMP	1	12/13/2017	15:07:55	Reported
N027496-022A	SAMP	1	12/13/2017	15:10:43	Reported
N027496-023A	SAMP	1	12/13/2017	15:13:32	Reported
N027496-024A	SAMP	1	12/13/2017	15:16:21	Reported
N027496-025A	SAMP	1	12/13/2017	15:19:10	Reported
CCV6	CCV	1	12/13/2017	15:21:54	Reported
CCB6	CCB	1	12/13/2017	15:24:36	Reported
N027496-026A	SAMP	1	12/13/2017	15:27:21	Reported
N027496-027A	SAMP	1	12/13/2017	15:30:09	Reported
N027496-028A	SAMP	1	12/13/2017	15:32:57	Reported
N027496-029A	SAMP	1	12/13/2017	15:35:46	Reported

INJECTION LOG: 171213WA

Instrument ID: AA-01

Sample ID	Type	DF	Date	Time	Comments
N027496-030A	SAMP	1	12/13/2017	15:38:36	Reported
N027496-031A	SAMP	1	12/13/2017	15:41:26	Reported
N027496-032A	SAMP	1	12/13/2017	15:44:15	Reported
N027496-033A	SAMP	1	12/13/2017	15:47:03	Reported
N027496-034A	SAMP	1	12/13/2017	15:49:51	Reported
N027497-001A	SAMP	1	12/13/2017	15:52:40	Reported
CCV7	CCV	1	12/13/2017	15:55:26	Reported
CCB7	CCB	1	12/13/2017	15:58:08	Reported
N027497-002A	SAMP	1	12/13/2017	16:00:54	Reported
MB-66038	MBLK	1	12/13/2017	16:17:37	Reported
LCS-66038	LCS	1	12/13/2017	16:20:27	Reported
LCSD-66038	LCSD	1	12/13/2017	16:23:17	Reported
N027497-003A	SAMP	1	12/13/2017	16:26:05	Reported
N027497-004A	SAMP	1	12/13/2017	16:28:54	Reported
N027497-005A	SAMP	1	12/13/2017	16:31:44	Reported
N027497-006A	SAMP	1	12/13/2017	16:34:34	Reported
N027497-007A	SAMP	1	12/13/2017	16:37:25	Reported
N027497-008A	SAMP	1	12/13/2017	16:40:16	Reported
CCV8	CCV	1	12/13/2017	16:43:03	Reported
CCB8	CCB	1	12/13/2017	16:45:45	Reported
N027497-009A	SAMP	1	12/13/2017	16:48:28	Reported
N027497-010A	SAMP	1	12/13/2017	16:51:11	Reported
N027497-011A	SAMP	1	12/13/2017	16:53:55	Reported
N027497-012A	SAMP	1	12/13/2017	16:56:38	Reported
N027497-013A	SAMP	1	12/13/2017	16:59:19	Reported
N027497-014A	SAMP	1	12/13/2017	17:02:01	Reported
N027497-015A	SAMP	1	12/13/2017	17:04:44	Reported
N027497-016A	SAMP	1	12/13/2017	17:07:28	Reported
N027497-017A	SAMP	1	12/13/2017	17:10:12	Reported
N027498-001A	SAMP	1	12/13/2017	17:12:56	Reported
CCV9	CCV	1	12/13/2017	17:15:40	Reported
CCB9	CCB	1	12/13/2017	17:18:22	Reported
N027498-002A	SAMP	1	12/13/2017	17:21:04	Reported
N027498-003A	SAMP	1	12/13/2017	17:23:46	Reported
N027498-004A	SAMP	1	12/13/2017	17:26:29	Reported
N027498-005A	SAMP	1	12/13/2017	17:29:12	Reported
MB-66039	MBLK	1	12/13/2017	17:31:56	Reported
LCS-66039	LCS	1	12/13/2017	17:34:41	Reported
LCSD-66039	LCSD	1	12/13/2017	17:37:26	Reported
N027498-006A	SAMP	1	12/13/2017	17:40:10	Reported
N027498-007A	SAMP	1	12/13/2017	17:42:53	Reported
N027498-008A	SAMP	1	12/13/2017	17:45:37	Reported

INJECTION LOG: 171213WA

Instrument ID: AA-01

Sample ID	Type	DF	Date	Time	Comments
CCV10	CCV	1	12/13/2017	17:48:20	Reported
CCB10	CCB	1	12/13/2017	17:51:02	Reported
N027498-009A	SAMP	1	12/13/2017	17:53:46	Reported
N027498-010A	SAMP	1	12/13/2017	17:56:31	Reported
N027498-011A	SAMP	1	12/13/2017	17:59:16	Reported
N027499-001A	SAMP	1	12/13/2017	18:02:02	Reported
N027499-002A	SAMP	1	12/13/2017	18:04:47	Reported
N027499-003A	SAMP	1	12/13/2017	18:07:31	Reported
N027499-004A	SAMP	1	12/13/2017	18:10:15	Reported
N027499-005A	SAMP	1	12/13/2017	18:13:00	Reported
N027499-006A	SAMP	1	12/13/2017	18:15:45	Reported
N027499-007A	SAMP	1	12/13/2017	18:18:31	Reported
CCV11	CCV	1	12/13/2017	18:24:42	Reported
CCB11	CCB	1	12/13/2017	18:27:24	Reported
N027499-008A	SAMP	1	12/13/2017	18:30:09	Reported
N027499-009A	SAMP	1	12/13/2017	18:32:54	Reported
N027499-010A	SAMP	1	12/13/2017	18:35:38	Reported
N027499-011A	SAMP	1	12/13/2017	18:38:23	Reported
N027499-012A	SAMP	1	12/13/2017	18:41:09	Reported
N027499-013A	SAMP	1	12/13/2017	18:43:55	Reported
N027499-014A	SAMP	1	12/13/2017	18:46:41	Reported
MB-66040	MBLK	1	12/13/2017	18:49:29	Reported
LCS-66040	LCS	1	12/13/2017	18:52:15	Reported
LCSD-66040	LCSD	1	12/13/2017	18:55:00	Reported
CCV12	CCV	1	12/13/2017	18:57:44	Reported
CCB12	CCB	1	12/13/2017	19:00:26	Reported
N027499-015A	SAMP	1	12/13/2017	19:03:10	Reported
N027499-016A	SAMP	1	12/13/2017	19:05:56	Reported
N027499-017A	SAMP	1	12/13/2017	19:08:43	Reported
N027499-018A	SAMP	1	12/13/2017	19:11:31	Reported
N027499-019A	SAMP	1	12/13/2017	19:14:19	Reported
N027499-020A	SAMP	1	12/13/2017	19:17:06	Reported
N027499-021A	SAMP	1	12/13/2017	19:19:52	Reported
N027499-022A	SAMP	1	12/13/2017	19:22:38	Reported
N027499-023A	SAMP	1	12/13/2017	19:25:25	Reported
N027499-024A	SAMP	1	12/13/2017	19:28:12	Reported
CCV13	CCV	1	12/13/2017	19:30:57	Reported
CCB13	CCB	1	12/13/2017	19:33:39	Reported
N027499-025A	SAMP	1	12/13/2017	19:36:25	Reported
N027499-026A	SAMP	1	12/13/2017	19:39:13	Reported
N027499-027A	SAMP	1	12/13/2017	19:42:01	Reported
N027499-028A	SAMP	1	12/13/2017	19:44:47	Reported

INJECTION LOG: 171213WA

Instrument ID: AA-01

Sample ID	Type	DF	Date	Time	Comments
N027499-029A	SAMP	1	12/13/2017	19:47:34	Reported
N027499-030A	SAMP	1	12/13/2017	19:50:22	Reported
MB-66041	MBLK	1	12/13/2017	19:53:10	Reported
LCS-66041	LCS	1	12/13/2017	19:55:58	Reported
N027485-009B-MS	MS	1	12/13/2017	19:58:48	Reported
N027485-009B-MSD	MSD	1	12/13/2017	20:01:36	Reported
CCV14	CCV	1	12/13/2017	20:04:20	Not Reported
CCB14	CCB	1	12/13/2017	20:07:02	Not Reported
N027485-009B	SAMP	1	12/13/2017	20:09:47	Not Reported
CCV14	CCV	1	12/13/2017	20:15:33	Reported
CCB14	CCB	1	12/13/2017	20:18:15	Reported
N027485-009B	SAMP	1	12/13/2017	20:21:00	Reported
N027485-011C	SAMP	1	12/13/2017	20:23:48	Reported
N027485-012C	SAMP	1	12/13/2017	20:26:36	Reported
N027524-001E	SAMP	1	12/13/2017	20:29:25	Reported
N027524-002E	SAMP	1	12/13/2017	20:32:15	Reported
N027524-003E	SAMP	1	12/13/2017	20:35:05	Reported
N027524-004E	SAMP	1	12/13/2017	20:37:54	Reported
N027524-005E	SAMP	1	12/13/2017	20:40:41	Reported
N027524-006E	SAMP	1	12/13/2017	20:43:30	Reported
N027524-007E	SAMP	1	12/13/2017	20:46:19	Reported
CCV15	CCV	1	12/13/2017	20:49:04	Reported
CCB15	CCB	1	12/13/2017	20:51:46	Reported
N027524-008E-MS	MS	1	12/13/2017	20:54:33	Reported
N027524-008E	SAMP	1	12/13/2017	20:57:23	Reported
N027524-009E	SAMP	1	12/13/2017	21:00:13	Reported
N027524-010E	SAMP	1	12/13/2017	21:03:03	Reported
N027524-011E	SAMP	1	12/13/2017	21:05:51	Reported
N027524-012E	SAMP	1	12/13/2017	21:08:40	Reported
N027524-013E	SAMP	1	12/13/2017	21:11:30	Reported
CCV16	CCV	1	12/13/2017	21:14:16	Reported
CCB16	CCB	1	12/13/2017	21:16:58	Reported

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/13/2017 8:10:34**
Prep End Date: **12/13/2017 5:00:00**
Prep Batch **66041** Prep Code: **7470_PR_DIS**

Reviewed/ Date: 01/04/2018
Initials/ Date: for
Technician: **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**Db-2-2**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66041	Aqueous		25	☐	0	0	50	2.000		
MB-66041	Aqueous		25	☐	0	0	50	2.000		
N027485-009B	Groundwater	<2	25	☐	0	0	50	2.000		
N027485-009B-MS	Groundwater	<2	25	☐	0	0	50	2.000		
N027485-009B-MS	Groundwater	<2	25	☐	0	0	50	2.000		
N027485-011C	Groundwater	<2	25	☐	0	0	50	2.000		
N027485-012C	Groundwater	<2	25	☐	0	0	50	2.000		
N027524-001E	Groundwater	<2	25	☐	0	0	50	2.000		
N027524-002E	Groundwater	<2	25	☐	0	0	50	2.000		
N027524-003E	Groundwater	<2	25	☐	0	0	50	2.000		
N027524-004E	Groundwater	<2	25	☐	0	0	50	2.000		
N027524-005E	Groundwater	<2	25	☐	0	0	50	2.000		
N027524-006E	Groundwater	<2	25	☐	0	0	50	2.000		
N027524-007E	Groundwater	<2	25	☐	0	0	50	2.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8541	Potassium Persulfate
8755	POTASSIUM PERMANGANATE
9306	SODIUM CHLORIDE
9307	HYDROXYGLAMINE HCl
9465	sulfuric acid
9602	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171211	500 ppb Hg ICAL/CCV	ICAL/CCV	0.25
2MWST-171211	500 ppb Hg ICV/LCS/LCSD/MS/MSD	ICV/LCS/MS/M	0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/13/2017 8:10:34**
Prep End Date: **12/13/2017 5:00:00**
Prep Batch **66041** Prep Code: **7470_PR_DIS**

Reviewed/ Date: 01/04/2018
Initials/ Date: for
Technician: **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**Db-2-2**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027524-008E	Groundwater	<2	25	☐	0	0	50	2.000		
N027524-008E-MS	Groundwater	<2	25	☐	0	0	50	2.000		
N027524-009E	Groundwater	<2	25	☐	0	0	50	2.000		
N027524-010E	Groundwater	<2	25	☐	0	0	50	2.000		
N027524-011E	Groundwater	<2	25	☐	0	0	50	2.000		
N027524-012E	Groundwater	<2	25	☐	0	0	50	2.000		
N027524-013E	Groundwater	<2	25	☐	0	0	50	2.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8541	Potassium Persulfate
8755	POTASSIUM PERMANGANATE
9306	SODIUM CHLORIDE
9307	HYDROXYGLAMINE HCl
9465	sulfuric acid
9602	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171211	500 ppb Hg ICAL/CCV	ICAL/CCV	0.25
2MWST-171211	500 ppb Hg ICV/LCS/LCSD/MS/MSD	ICV/LCS/MS/M	0.25

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 171213WA

Instrument ID: AA-01

	Stock	Working
Standard Concentration:	1,000 PPM	500 PPB
ICAL Standard:	2MSST-160906C	2MWST-171211A

Comments:

Calibration Acceptance Criteria: > 0.995 Correlation

Sample ID	Date	Time	Concentration	Units	Ave Absorbance	Comments	R
Calibration Zero	12/13/2017	11:47:47	0	PPB	43.69314	Reported	
Standard #1	12/13/2017	11:50:29	0.2	PPB	181.43894	Reported	
Standard #2	12/13/2017	11:53:11	1	PPB	626.45914	Reported	
Standard #3	12/13/2017	11:55:54	5	PPB	2941.54331	Reported	
Standard #4	12/13/2017	11:58:37	10	PPB	5654.04013	Reported	
Standard #5	12/13/2017	12:01:22	20	PPB	11571.57094	Reported	1.000

* Please note that the instrument printout for the 'Average Absorbance' were represented in three significant figures. The exact values are represented in the ICAL Summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID **ICV**	SampType: **ICV**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120796**
Client ID: **ICV**	Batch ID: **R120796**	TestNo: **EPA 7470A**		Analysis Date: **12/13/2017**	SeqNo: **2863787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.106	0.20	10.00	0	101	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120796**
Client ID: **CCV**	Batch ID: **R120796**	TestNo: **EPA 7470A**		Analysis Date: **12/13/2017**	SeqNo: **2863799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	9.953	0.20	10.00	0	99.5	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120796**
Client ID: **CCV**	Batch ID: **R120796**	TestNo: **EPA 7470A**		Analysis Date: **12/13/2017**	SeqNo: **2863811**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.037	0.20	10.00	0	100	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120796**
Client ID: **CCV**	Batch ID: **R120796**	TestNo: **EPA 7470A**		Analysis Date: **12/13/2017**	SeqNo: **2863823**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.434	0.20	10.00	0	104	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120796**
Client ID: **CCV**	Batch ID: **R120796**	TestNo: **EPA 7470A**		Analysis Date: **12/13/2017**	SeqNo: **2863835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.349	0.20	10.00	0	103	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID	CCV5	SampType:	CCV	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120796
Client ID:	CCV	Batch ID:	R120796	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863847

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.157	0.20	10.00	0	102	90	110				

Sample ID	CCV6	SampType:	CCV	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120796
Client ID:	CCV	Batch ID:	R120796	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863859

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.156	0.20	10.00	0	102	90	110				

Sample ID	CCV7	SampType:	CCV	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120796
Client ID:	CCV	Batch ID:	R120796	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863871

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.288	0.20	10.00	0	103	90	110				

Sample ID	CCV8	SampType:	CCV	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120796
Client ID:	CCV	Batch ID:	R120796	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863883

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	9.855	0.20	10.00	0	98.5	90	110				

Sample ID	CCV9	SampType:	CCV	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120796
Client ID:	CCV	Batch ID:	R120796	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863895

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	9.718	0.20	10.00	0	97.2	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID	CCV10	SampType:	CCV	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120796
Client ID:	CCV	Batch ID:	R120796	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863907

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	9.824	0.20	10.00	0	98.2	90	110				

Sample ID	CCV11	SampType:	CCV	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120796
Client ID:	CCV	Batch ID:	R120796	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863919

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.066	0.20	10.00	0	101	90	110				

Sample ID	CCV12	SampType:	CCV	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120796
Client ID:	CCV	Batch ID:	R120796	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863931

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.235	0.20	10.00	0	102	90	110				

Sample ID	CCV13	SampType:	CCV	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120796
Client ID:	CCV	Batch ID:	R120796	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863943

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.129	0.20	10.00	0	101	90	110				

Sample ID	CCV14	SampType:	CCV	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120796
Client ID:	CCV	Batch ID:	R120796	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863958

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	9.753	0.20	10.00	0	97.5	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID	CCV15	SampType:	CCV	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120796
Client ID:	CCV	Batch ID:	R120796	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863970

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	9.905	0.20	10.00	0	99.1	90	110				

Sample ID	CCV16	SampType:	CCV	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120796
Client ID:	CCV	Batch ID:	R120796	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863979

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	9.453	0.20	10.00	0	94.5	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID **ICB**	SampType: **ICB**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120796**
Client ID: **ICB**	Batch ID: **R120796**	TestNo: **EPA 7470A**		Analysis Date: **12/13/2017**	SeqNo: **2863788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.041	0.20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120796**
Client ID: **CCB**	Batch ID: **R120796**	TestNo: **EPA 7470A**		Analysis Date: **12/13/2017**	SeqNo: **2863800**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.076	0.20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120796**
Client ID: **CCB**	Batch ID: **R120796**	TestNo: **EPA 7470A**		Analysis Date: **12/13/2017**	SeqNo: **2863812**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.040	0.20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120796**
Client ID: **CCB**	Batch ID: **R120796**	TestNo: **EPA 7470A**		Analysis Date: **12/13/2017**	SeqNo: **2863824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.059	0.20									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120796**
Client ID: **CCB**	Batch ID: **R120796**	TestNo: **EPA 7470A**		Analysis Date: **12/13/2017**	SeqNo: **2863836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.088	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID	CCB5	SampType:	CCB	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120796
Client ID:	CCB	Batch ID:	R120796	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863848

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.091	0.20									

Sample ID	CCB6	SampType:	CCB	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120796
Client ID:	CCB	Batch ID:	R120796	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863860

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.042	0.20									

Sample ID	CCB7	SampType:	CCB	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120796
Client ID:	CCB	Batch ID:	R120796	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863872

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.059	0.20									

Sample ID	CCB8	SampType:	CCB	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120796
Client ID:	CCB	Batch ID:	R120796	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863884

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.085	0.20									

Sample ID	CCB9	SampType:	CCB	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120796
Client ID:	CCB	Batch ID:	R120796	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863896

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.074	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID	CCB10	SampType:	CCB	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120796
Client ID:	CCB	Batch ID:	R120796	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863908

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.053	0.20									

Sample ID	CCB11	SampType:	CCB	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120796
Client ID:	CCB	Batch ID:	R120796	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863920

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.062	0.20									

Sample ID	CCB12	SampType:	CCB	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120796
Client ID:	CCB	Batch ID:	R120796	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863932

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.072	0.20									

Sample ID	CCB13	SampType:	CCB	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120796
Client ID:	CCB	Batch ID:	R120796	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863944

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	-0.04632	0.20									

Sample ID	CCB14	SampType:	CCB	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120796
Client ID:	CCB	Batch ID:	R120796	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863959

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.009	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027485
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID	CCB15	SampType:	CCB	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120796
Client ID:	CCB	Batch ID:	R120796	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863971

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.080	0.20									

Sample ID	CCB16	SampType:	CCB	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:		RunNo:	120796
Client ID:	CCB	Batch ID:	R120796	TestNo:	EPA 7470A			Analysis Date:	12/13/2017	SeqNo:	2863980

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.130	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limits

Method Name:	Mercury
Method Number:	EPA Method 7470/245.1
Date of Analysis:	4/5/2016
Analyst:	Claire Ignacio/ Amy Mata
Matrix:	Water
Spike Concentration:	0.2 ug/L

Compound	#1	#2	#3	#4	#5	#6	#7	SD	MDL	LOD	PQL
Mercury, ug/L	0.29	0.30	0.29	0.24	0.30	0.24	0.30	0.028	0.0870	0.10	0.20

LOD: **0.10 ug/L**
LOQ: **0.20 ug/L**

LOD Verification @ 0.10 ug/L

Spike Amount: ug/L	0.100
Actual Amount: ug/L	0.130
% Recovery:	**130%**

LOQ Verification @ 0.20 ug/L

Spike Amount: ug/L	0.200
Actual Amount: ug/L	0.210
% Recovery:	**105%**

January 05, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027523

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 12, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburdi for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Subcontracted Analyses:

Oxygen/Deuterium was subcontracted to Zymax- Pittsburg,PA.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (14 ug/L) and hexavalent chromium (11 ug/L) for sample N027523-001 (MW-15-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (21 ug/L) and hexavalent chromium (11 ug/L) for sample N027523-002 (MW-16-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (2.6 ug/L) and hexavalent chromium (1.2 ug/L) for sample N027523-008 (MW-63-065-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (1.5 ug/L) and hexavalent chromium (0 ug/L) for sample N027523-009 (MW-71-035-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Dilution was necessary for samples N027523-009 and -012 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 300.0:

Dilution was necessary for some samples due to precipitation upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N027485-001B-MS1 and N027485-001B-MSD1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N027485-002B-MS2, N027485-002B-MSD2, N027523-009B-MS1, N027523-009B-MSD1, N027523-012B-MS2 and N027523-012B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N027523-006, -009 and -012 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Because the results for total dissolved chromium (14 ug/L) and hexavalent chromium (11 ug/L) for sample N027523-001 (MW-15-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 15 and 11 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (21 ug/L) and hexavalent chromium (11 ug/L) for sample N027523-002 (MW-16-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 21 and 16 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (2.6 ug/L) and hexavalent chromium (1.2 ug/L) for sample N027523-008 (MW-63-065-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 2.6 and 1.4 ug/L, respectively. Since these

data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (1.5 ug/L) and hexavalent chromium (0 ug/L) for sample N027523-009 (MW-71-035-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.2 and 1.4 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

ASSET Laboratories

Date: *05-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027523
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027523-001A	MW-15-Q417	Groundwater	12/12/2017 1:40:00 PM	12/12/2017	1/5/2018
N027523-001B	MW-15-Q417	Groundwater	12/12/2017 1:40:00 PM	12/12/2017	1/5/2018
N027523-001C	MW-15-Q417	Groundwater	12/12/2017 1:40:00 PM	12/12/2017	1/5/2018
N027523-002A	MW-16-Q417	Groundwater	12/12/2017 12:30:00 PM	12/12/2017	1/5/2018
N027523-002B	MW-16-Q417	Groundwater	12/12/2017 12:30:00 PM	12/12/2017	1/5/2018
N027523-002C	MW-16-Q417	Groundwater	12/12/2017 12:30:00 PM	12/12/2017	1/5/2018
N027523-003A	MW-17-Q417	Groundwater	12/12/2017 11:26:00 AM	12/12/2017	1/5/2018
N027523-003B	MW-17-Q417	Groundwater	12/12/2017 11:26:00 AM	12/12/2017	1/5/2018
N027523-003C	MW-17-Q417	Groundwater	12/12/2017 11:26:00 AM	12/12/2017	1/5/2018
N027523-004A	MW-18-Q417	Groundwater	12/12/2017 10:38:00 AM	12/12/2017	1/5/2018
N027523-004B	MW-18-Q417	Groundwater	12/12/2017 10:38:00 AM	12/12/2017	1/5/2018
N027523-004C	MW-18-Q417	Groundwater	12/12/2017 10:38:00 AM	12/12/2017	1/5/2018
N027523-005A	MW-31-060-Q417	Groundwater	12/12/2017 3:04:00 PM	12/12/2017	1/5/2018
N027523-005B	MW-31-060-Q417	Groundwater	12/12/2017 3:04:00 PM	12/12/2017	1/5/2018
N027523-005C	MW-31-060-Q417	Groundwater	12/12/2017 3:04:00 PM	12/12/2017	1/5/2018
N027523-005D	MW-31-060-Q417	Groundwater	12/12/2017 3:04:00 PM	12/12/2017	1/5/2018
N027523-005E	MW-31-060-Q417	Groundwater	12/12/2017 3:04:00 PM	12/12/2017	1/5/2018
N027523-006A	MW-31-135-Q417	Groundwater	12/12/2017 2:28:00 PM	12/12/2017	1/5/2018
N027523-006B	MW-31-135-Q417	Groundwater	12/12/2017 2:28:00 PM	12/12/2017	1/5/2018
N027523-006C	MW-31-135-Q417	Groundwater	12/12/2017 2:28:00 PM	12/12/2017	1/5/2018
N027523-006D	MW-31-135-Q417	Groundwater	12/12/2017 2:28:00 PM	12/12/2017	1/5/2018
N027523-007A	MW-909-Q417	Groundwater	12/12/2017 2:38:00 PM	12/12/2017	1/5/2018
N027523-007B	MW-909-Q417	Groundwater	12/12/2017 2:38:00 PM	12/12/2017	1/5/2018
N027523-007C	MW-909-Q417	Groundwater	12/12/2017 2:38:00 PM	12/12/2017	1/5/2018
N027523-007D	MW-909-Q417	Groundwater	12/12/2017 2:38:00 PM	12/12/2017	1/5/2018
N027523-008A	MW-63-065-Q417	Groundwater	12/12/2017 9:44:00 AM	12/12/2017	1/5/2018
N027523-008B	MW-63-065-Q417	Groundwater	12/12/2017 9:44:00 AM	12/12/2017	1/5/2018
N027523-008C	MW-63-065-Q417	Groundwater	12/12/2017 9:44:00 AM	12/12/2017	1/5/2018
N027523-008D	MW-63-065-Q417	Groundwater	12/12/2017 9:44:00 AM	12/12/2017	1/5/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027523
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027523-009A	MW-71-035-Q417	Groundwater	12/12/2017 3:30:00 PM	12/12/2017	1/5/2018
N027523-009B	MW-71-035-Q417	Groundwater	12/12/2017 3:30:00 PM	12/12/2017	1/5/2018
N027523-009C	MW-71-035-Q417	Groundwater	12/12/2017 3:30:00 PM	12/12/2017	1/5/2018
N027523-009D	MW-71-035-Q417	Groundwater	12/12/2017 3:30:00 PM	12/12/2017	1/5/2018
N027523-010A	MW-735-Q417	Groundwater	12/12/2017 3:15:00 PM	12/12/2017	1/5/2018
N027523-011A	MW-21-EB-Q417	Groundwater	12/12/2017 8:35:00 AM	12/12/2017	1/5/2018
N027523-012A	MW-21-Q417	Groundwater	12/12/2017 8:25:00 AM	12/12/2017	1/5/2018
N027523-012B	MW-21-Q417	Groundwater	12/12/2017 8:25:00 AM	12/12/2017	1/5/2018
N027523-012C	MW-21-Q417	Groundwater	12/12/2017 8:25:00 AM	12/12/2017	1/5/2018
N027523-012D	MW-21-Q417	Groundwater	12/12/2017 8:25:00 AM	12/12/2017	1/5/2018
N027523-013A	MW-733-Q417	Groundwater	12/12/2017 4:00:00 PM	12/12/2017	1/5/2018
N027523-014A	MW-734-Q417	Groundwater	12/12/2017 3:50:00 PM	12/12/2017	1/5/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-15-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 1:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171213H**	QC Batch: **R120857**			PrepDate			Analyst: **LR**
Specific Conductance	1600	0.10	0.10		umhos/cm	1	12/13/2017 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-16-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 12:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171213H**	QC Batch: **R120857**			PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	12/13/2017 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-17-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 11:26:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171213H**	QC Batch: **R120857**			PrepDate			Analyst: **LR**
Specific Conductance	1200	0.10	0.10		umhos/cm	1	12/13/2017 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-18-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 10:38:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171213H**	QC Batch: **R120857**			PrepDate			Analyst: **LR**
Specific Conductance	1300	0.10	0.10		umhos/cm	1	12/13/2017 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-31-060-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 3:04:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171213H**	QC Batch: **R120857**			PrepDate			Analyst: **LR**
Specific Conductance	2900	0.10	0.10		umhos/cm	1	12/13/2017 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-31-135-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 2:28:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171213H**	QC Batch: **R120857**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	12/13/2017 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 2:38:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171213H**	QC Batch: **R120857**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	12/13/2017 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171213H**	QC Batch: **R120857**			PrepDate			Analyst: **LR**
Specific Conductance	5800	0.10	0.10		umhos/cm	1	12/13/2017 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-71-035-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171213H**	QC Batch: **R120857**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	12/13/2017 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 8:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171213H**	QC Batch: **R120857**			PrepDate			Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	12/13/2017 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N027523-009DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120857
Client ID:	ZZZZZZ	Batch ID:	R120857	TestNo:	EPA 120.1			Analysis Date:	12/13/2017	SeqNo:	2868306

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	15210.000	0.10						15160	0.329	10	

Sample ID	N027524-009DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120857
Client ID:	ZZZZZZ	Batch ID:	R120857	TestNo:	EPA 120.1			Analysis Date:	12/13/2017	SeqNo:	2868317

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7750.000	0.10						7790	0.515	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-15-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 1:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171215F**	QC Batch: **66096**				PrepDate	**12/15/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1000	10	10		mg/L	1	12/15/2017 01:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-16-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 12:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171215F**	QC Batch: **66096**				PrepDate	**12/15/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	620	10	10		mg/L	1	12/15/2017 01:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-17-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 11:26:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171218C**	QC Batch: **66110**				PrepDate	**12/18/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	810	10	10		mg/L	1	12/18/2017 01:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-18-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 10:38:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171218C**	QC Batch: **66110**				PrepDate	**12/18/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	830	10	10		mg/L	1	12/18/2017 01:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-31-060-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 3:04:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171218C**	QC Batch: **66110**				PrepDate	**12/18/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1800	20	20		mg/L	1	12/18/2017 01:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-31-135-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 2:28:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171218C**	QC Batch: **66110**				PrepDate	**12/18/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	6800	100	100		mg/L	1	12/18/2017 01:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 2:38:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171218C**	QC Batch: **66110**				PrepDate	**12/18/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	6700	100	100		mg/L	1	12/18/2017 01:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171218C**	QC Batch: **66110**			PrepDate	**12/18/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3700	50	50		mg/L	1	12/18/2017 01:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-71-035-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171218C**	QC Batch: **66110**			PrepDate	**12/18/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	11000	100	100		mg/L	1	12/18/2017 01:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 8:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171218C**	QC Batch: **66110**				PrepDate	**12/18/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	9800	100	100		mg/L	1	12/18/2017 01:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66096**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/15/2017**	RunNo: **120881**
Client ID: **LCSW**	Batch ID: **66096**	TestNo: **SM2540C**		Analysis Date: **12/15/2017**	SeqNo: **2869294**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	954.000	10	1000	0	95.4	80	120				

Sample ID **MB-66096**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/15/2017**	RunNo: **120881**
Client ID: **PBW**	Batch ID: **66096**	TestNo: **SM2540C**		Analysis Date: **12/15/2017**	SeqNo: **2869295**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N027527-008DDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/15/2017**	RunNo: **120881**
Client ID: **ZZZZZZ**	Batch ID: **66096**	TestNo: **SM2540C**		Analysis Date: **12/15/2017**	SeqNo: **2869306**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	28850.000	500						27550	4.61	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66110** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/18/2017** RunNo: **120947**
Client ID: **LCSW** Batch ID: **66110** TestNo: **SM2540C** Analysis Date: **12/18/2017** SeqNo: **2873063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	945.000	10	1000	0	94.5	80	120				

Sample ID **MB-66110** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/18/2017** RunNo: **120947**
Client ID: **PBW** Batch ID: **66110** TestNo: **SM2540C** Analysis Date: **12/18/2017** SeqNo: **2873064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N027523-009DDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **12/18/2017** RunNo: **120947**
Client ID: **ZZZZZZ** Batch ID: **66110** TestNo: **SM2540C** Analysis Date: **12/18/2017** SeqNo: **2873072**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	10210.000	100						10720	4.87	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-001

Client Sample ID: MW-15-Q417
Collection Date: 12/12/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A** QC Batch: **R120931**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	11	0.17	1.0		µg/L	5	12/18/2017 11:39 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180103D** QC Batch: **66061**				PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	14	0.019	1.0		µg/L	1	1/4/2018 02:57 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-002

Client Sample ID: MW-16-Q417
Collection Date: 12/12/2017 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A** QC Batch: **R120931**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	11	0.066	0.40		µg/L	2	12/18/2017 11:58 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180103D** QC Batch: **66061**				PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	21	0.019	1.0		µg/L	1	1/4/2018 04:14 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-003

Client Sample ID: MW-17-Q417
Collection Date: 12/12/2017 11:26:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A** QC Batch: **R120931**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	11	0.066	0.40		µg/L	2	12/18/2017 12:17 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180103D** QC Batch: **66061**				PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	12	0.019	1.0		µg/L	1	1/4/2018 04:26 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-18-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 10:38:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A** QC Batch: **R120931**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	20	0.17	1.0		µg/L	5	12/18/2017 12:36 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180103D** QC Batch: **66061**				PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	23	0.019	1.0		µg/L	1	1/4/2018 04:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-31-060-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 3:04:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A**	QC Batch: **R120931**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	390	3.3	20		µg/L	100	12/18/2017 12:54 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180103D**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	410	0.096	5.0		µg/L	5	1/4/2018 04:53 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-006

Client Sample ID: MW-31-135-Q417
Collection Date: 12/12/2017 2:28:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A** QC Batch: **R120931**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	13	0.17	1.0		µg/L	5	12/18/2017 01:32 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180103D** QC Batch: **66061**				PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	13	0.019	1.0		µg/L	1	1/4/2018 04:59 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 2:38:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A** QC Batch: **R120931**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	13	0.17	1.0		µg/L	5	12/18/2017 01:51 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180103D** QC Batch: **66061**				PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	13	0.019	1.0		µg/L	1	1/4/2018 05:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-008

Client Sample ID: MW-63-065-Q417
Collection Date: 12/12/2017 9:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A** QC Batch: **R120931**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	1.2	0.033	0.20		µg/L	1	12/18/2017 02:10 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180103D** QC Batch: **66061**				PrepDate **12/18/2017**			Analyst: **CEI**
Chromium	2.6	0.019	1.0		µg/L	1	1/4/2018 05:32 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-71-035-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_171218A**	QC Batch: **R120931**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/18/2017 02:29 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103D**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	1.5	0.019	1.0		µg/L	1	1/4/2018 05:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-735-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 3:15:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A**	QC Batch: **R120931**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/18/2017 03:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-EB-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 8:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A**	QC Batch: **R120931**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/18/2017 03:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-012

Client Sample ID: MW-21-Q417
Collection Date: 12/12/2017 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A** QC Batch: **R120931**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	2.3	0.17	1.0		µg/L	5	12/18/2017 05:41 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180103D** QC Batch: **66061**				PrepDate **12/18/2017**			Analyst: **CEI**
Chromium	2.7	0.019	1.0		µg/L	1	1/4/2018 05:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-733-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A**	QC Batch: **R120931**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/18/2017 04:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-734-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 3:50:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A**	QC Batch: **R120931**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/18/2017 04:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R120931**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **PBW**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R120931**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **LCSW**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.093	0.20	5.000	0	102	90	110				

Sample ID **N027523-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	16.118	1.0	5.000	11.23	97.7	90	110				

Sample ID **N027523-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872177**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	20.847	0.40	10.00	10.62	102	90	110				

Sample ID **N027523-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	21.646	0.40	10.00	11.31	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027523-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	46.384	1.0	25.00	20.46	104	90	110				

Sample ID **N027523-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872183**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	897.850	20	500.0	392.2	101	90	110				

Sample ID **N027523-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872187**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	18.067	1.0	5.000	12.93	103	90	110				

Sample ID **N027523-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872189**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	17.961	1.0	5.000	12.98	99.7	90	110				

Sample ID **N027523-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872191**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.230	0.20	1.000	1.172	106	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027523-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872193**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.653	1.0	5.000	0	93.1	90	110				

Sample ID **N027523-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.055	0.20	1.000	0	105	90	110				

Sample ID **N027523-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.030	0.20	1.000	0	103	90	110				

Sample ID **N027523-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.056	0.20	1.000	0	106	90	110				

Sample ID **N027523-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872203**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.033	0.20	1.000	0	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027523-003AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120931
Client ID:	ZZZZZZ	Batch ID:	R120931	TestNo:	EPA 218.6			Analysis Date:	12/18/2017	SeqNo:	2872204

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	21.513	0.40	10.00	11.31	102	90	110	21.65	0.615	20	

Sample ID	N027523-005ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120931
Client ID:	ZZZZZZ	Batch ID:	R120931	TestNo:	EPA 218.6			Analysis Date:	12/18/2017	SeqNo:	2872205

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	389.230	20						392.2	0.763	20	

Sample ID	N027523-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120931
Client ID:	ZZZZZZ	Batch ID:	R120931	TestNo:	EPA 218.6			Analysis Date:	12/18/2017	SeqNo:	2872209

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.322	1.0	5.000	2.327	99.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66061	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/18/2017	RunNo:	121203
Client ID:	PBW	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884393

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66061	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121203
Client ID:	LCSW	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884396

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.088	1.0	10.00	0	101	85	115				

Sample ID	N027523-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/18/2017	RunNo:	121203
Client ID:	ZZZZZZ	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884402

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	24.181	1.0	10.00	14.08	101	75	125				

Sample ID	N027523-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/18/2017	RunNo:	121203
Client ID:	ZZZZZZ	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884404

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	23.924	1.0	10.00	14.08	98.4	75	125	24.18	1.07	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-15-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 1:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	79	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-16-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 12:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	100	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-17-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 11:26:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	61	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-18-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 10:38:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	85	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-31-060-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 3:04:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	86	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-31-135-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 2:28:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	35	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 2:38:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	33	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	210	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-71-035-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	250	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 8:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	860	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R120882**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120882**
Client ID: **LCSW**	Batch ID: **R120882**	TestNo: **SM 2320 B**		Analysis Date: **12/15/2017**	SeqNo: **2869307**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	98.739	5.0	100.0	0	98.7	85	115				

Sample ID **MB-R120882**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120882**
Client ID: **PBW**	Batch ID: **R120882**	TestNo: **SM 2320 B**		Analysis Date: **12/15/2017**	SeqNo: **2869308**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N027485-008DMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120882**
Client ID: **ZZZZZZ**	Batch ID: **R120882**	TestNo: **SM 2320 B**		Analysis Date: **12/15/2017**	SeqNo: **2869314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	171.218	5.0	100.0	75.63	95.6	75	125				

Sample ID **N027485-008DMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120882**
Client ID: **ZZZZZZ**	Batch ID: **R120882**	TestNo: **SM 2320 B**		Analysis Date: **12/15/2017**	SeqNo: **2869315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	176.471	5.0	100.0	75.63	101	75	125	171.2	3.02	20	

Sample ID **N027523-001CDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120882**
Client ID: **ZZZZZZ**	Batch ID: **R120882**	TestNo: **SM 2320 B**		Analysis Date: **12/15/2017**	SeqNo: **2869321**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	76.681	5.0						78.78	2.70	30	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-001

Client Sample ID: MW-15-Q417
Collection Date: 12/12/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/19/2017 09:45 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Chloride	440	0.91	50		mg/L	100	12/20/2017 04:50 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Sulfate	140	0.46	10		mg/L	20	12/20/2017 05:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-002

Client Sample ID: MW-16-Q417
Collection Date: 12/12/2017 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/19/2017 10:15 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Chloride	160	0.46	25		mg/L	50	12/20/2017 02:48 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Sulfate	170	1.1	25		mg/L	50	12/20/2017 02:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-003

Client Sample ID: MW-17-Q417
Collection Date: 12/12/2017 11:26:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/20/2017 02:05 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Chloride	150	0.46	25		mg/L	50	12/20/2017 03:03 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Sulfate	310	1.1	25		mg/L	50	12/20/2017 03:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-004

Client Sample ID: MW-18-Q417
Collection Date: 12/12/2017 10:38:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/20/2017 02:20 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Chloride	330	0.91	50		mg/L	100	12/20/2017 05:21 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Sulfate	96	0.23	5.0		mg/L	10	12/20/2017 05:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-005

Client Sample ID: MW-31-060-Q417
Collection Date: 12/12/2017 3:04:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/20/2017 02:35 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Chloride	840	1.8	100		mg/L	200	12/20/2017 05:51 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Sulfate	210	0.46	10		mg/L	20	12/20/2017 06:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-006

Client Sample ID: MW-31-135-Q417
Collection Date: 12/12/2017 2:28:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/20/2017 02:51 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Chloride	3800	9.1	500		mg/L	1000	12/20/2017 06:53 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Sulfate	500	1.1	25		mg/L	50	12/20/2017 07:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-007

Client Sample ID: MW-909-Q417
Collection Date: 12/12/2017 2:38:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/20/2017 03:06 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Chloride	3700	9.1	500		mg/L	1000	12/20/2017 07:23 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Sulfate	490	1.1	25		mg/L	50	12/20/2017 07:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-008

Client Sample ID: MW-63-065-Q417
Collection Date: 12/12/2017 9:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/20/2017 03:52 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Chloride	1700	4.6	250		mg/L	500	12/20/2017 07:54 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Sulfate	560	1.1	25		mg/L	50	12/20/2017 08:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-009

Client Sample ID: MW-71-035-Q417
Collection Date: 12/12/2017 3:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Bromide	ND	0.20	5.0		mg/L	10	12/20/2017 01:47 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Chloride	5600	18	1000		mg/L	2000	12/20/2017 08:40 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Sulfate	1300	2.3	50		mg/L	100	12/20/2017 08:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-012

Client Sample ID: MW-21-Q417
Collection Date: 12/12/2017 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Bromide	ND	0.20	5.0		mg/L	10	12/20/2017 01:31 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Chloride	3300	9.1	500		mg/L	1000	12/20/2017 09:10 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Sulfate	2600	4.6	100		mg/L	200	12/20/2017 09:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	LCS-R120970_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120970
Client ID:	LCSW	Batch ID:	R120970	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874470

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.223	0.50	1.250	0	97.8	90	110				

Sample ID	MB-R120970_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120970
Client ID:	PBW	Batch ID:	R120970	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874471

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	N027485-008DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120970
Client ID:	ZZZZZZ	Batch ID:	R120970	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874473

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	6.983	2.5	6.250	0.3850	106	80	120				

Sample ID	N027485-008DMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120970
Client ID:	ZZZZZZ	Batch ID:	R120970	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874474

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	7.017	2.5	6.250	0.3850	106	80	120	6.983	0.486	20	

Sample ID	N027523-001CMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120970
Client ID:	ZZZZZZ	Batch ID:	R120970	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874478

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.565	0.50	1.250	0.2819	103	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	N027523-002CDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120970
Client ID:	ZZZZZZ	Batch ID:	R120970	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874480

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.084	0.50						0.1061	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	MB-R121006_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	PBW	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2875942

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	LCS-R121006_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	LCSW	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2875943

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.230	0.50	1.250	0	98.4	90	110				

Sample ID	N027523-012DDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	ZZZZZZ	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2875948

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	3.307	5.0						4.181	0	20	

Sample ID	N027523-012DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	ZZZZZZ	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2875949

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	15.445	5.0	12.50	4.181	90.1	80	120				

Sample ID	N027523-012DMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	ZZZZZZ	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2875950

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	16.966	5.0	12.50	4.181	102	80	120	15.44	9.39	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R121006_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	PBW	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876114

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R121006_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	LCSW	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876115

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.026	0.50	2.000	0	101	90	110				

Sample ID	N027523-003CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	ZZZZZZ	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876123

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	150.450	25						151.4	0.623	20	

Sample ID	N027523-003CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	ZZZZZZ	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876124

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	253.325	25	100.0	151.4	102	80	120				

Sample ID	N027523-003CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	ZZZZZZ	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876125

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	249.320	25	100.0	151.4	97.9	80	120	253.3	1.59	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N027523-002CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	ZZZZZZ	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876126

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	259.600	25	100.0	163.0	96.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R121006_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	PBW	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876145

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R121006_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	LCSW	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876146

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.971	0.50	4.000	0	99.3	90	110				

Sample ID	N027523-003CDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	ZZZZZZ	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876155

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	311.460	25						311.9	0.149	20	

Sample ID	N027523-003CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	ZZZZZZ	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876156

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	507.895	25	200.0	311.9	98.0	80	120				

Sample ID	N027523-003CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	ZZZZZZ	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876157

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	507.545	25	200.0	311.9	97.8	80	120	507.9	0.0689	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N027523-002CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	ZZZZZZ	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876158

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	365.575	25	200.0	173.6	96.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-31-060-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 3:04:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222D**	QC Batch: **R121037**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	3.4	0.11	0.25		mg/L	5	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222D**	QC Batch: **R121037**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.2	0.022	0.050		mg/L	1	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-71-035-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222D**	QC Batch: **R121037**		PrepDate			Analyst: **QBM**	
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 8:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222D**	QC Batch: **R121037**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.46	0.022	0.050		mg/L	1	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R121037	**MBLK**	**4500N03F_W**	**mg/L**		**121037**
Client ID: **PBW**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-R121037	**LCS**	**4500N03F_W**	**mg/L**		**121037**
Client ID: **LCSW**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877837**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.476	0.050	0.5000	0	95.2	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027523-005DMS	**MS**	**4500N03F_W**	**mg/L**		**121037**
Client ID: **ZZZZZZ**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877840**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.032	0.25	2.500	3.434	104	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027523-005DMSD	**MSD**	**4500N03F_W**	**mg/L**		**121037**
Client ID: **ZZZZZZ**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.779	0.25	2.500	3.434	93.8	75	125	6.032	4.28	20	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027523-008CDUP	**DUP**	**4500N03F_W**	**mg/L**		**121037**
Client ID: **ZZZZZZ**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877843**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.313	0.050						1.204	8.59	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-001

Client Sample ID: MW-15-Q417
Collection Date: 12/12/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**	Analyst: **CEI**	
Boron	300	38	100		ug/L	1	12/19/2017 08:03 PM
Calcium	100000	28	500		ug/L	1	12/19/2017 08:03 PM
Iron	180	1.8	20		ug/L	1	12/19/2017 08:03 PM
Magnesium	25000	4.4	100		ug/L	1	12/19/2017 08:03 PM
Sodium	210000	2600	50000		ug/L	100	12/22/2017 04:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-002

Client Sample ID: MW-16-Q417
Collection Date: 12/12/2017 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	310	38	100		ug/L	1	12/19/2017 08:10 PM
Calcium	27000	28	500		ug/L	1	12/19/2017 08:10 PM
Iron	1400	1.8	20		ug/L	1	12/19/2017 08:10 PM
Magnesium	5300	4.4	100		ug/L	1	12/19/2017 08:10 PM
Sodium	210000	2600	50000		ug/L	100	12/22/2017 04:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-003

Client Sample ID: MW-17-Q417
Collection Date: 12/12/2017 11:26:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	220	38	100		ug/L	1	12/19/2017 08:16 PM
Calcium	58000	28	500		ug/L	1	12/19/2017 08:16 PM
Iron	30	1.8	20		ug/L	1	12/19/2017 08:16 PM
Magnesium	8100	4.4	100		ug/L	1	12/19/2017 08:16 PM
Sodium	200000	2600	50000		ug/L	100	12/22/2017 04:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-004

Client Sample ID: MW-18-Q417
Collection Date: 12/12/2017 10:38:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**	Analyst: **CEI**	
Boron	210	38	100		ug/L	1	12/19/2017 08:21 PM
Calcium	84000	28	500		ug/L	1	12/19/2017 08:21 PM
Iron	38	1.8	20		ug/L	1	12/19/2017 08:21 PM
Magnesium	13000	4.4	100		ug/L	1	12/19/2017 08:21 PM
Sodium	190000	2600	50000		ug/L	100	12/22/2017 04:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-005

Client Sample ID: MW-31-060-Q417
Collection Date: 12/12/2017 3:04:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	790	38	100		ug/L	1	12/19/2017 08:38 PM
Calcium	130000	28	500		ug/L	1	12/19/2017 08:38 PM
Iron	36	1.8	20		ug/L	1	12/19/2017 08:38 PM
Magnesium	22000	4.4	100		ug/L	1	12/19/2017 08:38 PM
Potassium	6100	38	500		ug/L	1	12/22/2017 06:41 PM
Sodium	490000	2600	50000		ug/L	100	12/22/2017 04:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-31-135-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 2:28:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	1300	38	100		ug/L	1	12/19/2017 08:45 PM
Calcium	310000	28	500		ug/L	1	12/19/2017 08:45 PM
Iron	38	1.8	20		ug/L	1	12/19/2017 08:45 PM
Magnesium	19000	4.4	100		ug/L	1	12/19/2017 08:45 PM
Sodium	2200000	2600	50000		ug/L	100	12/22/2017 04:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-007

Client Sample ID: MW-909-Q417
Collection Date: 12/12/2017 2:38:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	1400	38	100		ug/L	1	12/19/2017 08:52 PM
Calcium	330000	28	500		ug/L	1	12/19/2017 08:52 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 08:52 PM
Magnesium	20000	4.4	100		ug/L	1	12/19/2017 08:52 PM
Sodium	2400000	2600	50000		ug/L	100	12/22/2017 04:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-008

Client Sample ID: MW-63-065-Q417
Collection Date: 12/12/2017 9:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	730	38	100		ug/L	1	12/19/2017 08:59 PM
Calcium	160000	28	500		ug/L	1	12/19/2017 08:59 PM
Iron	26	1.8	20		ug/L	1	12/19/2017 08:59 PM
Magnesium	16000	4.4	100		ug/L	1	12/19/2017 08:59 PM
Sodium	1200000	2600	50000		ug/L	100	12/22/2017 04:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-009

Client Sample ID: MW-71-035-Q417
Collection Date: 12/12/2017 3:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66081**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	2600	38	100		ug/L	1	12/19/2017 09:58 PM
Calcium	890000	140	2500		ug/L	5	12/19/2017 10:05 PM
Iron	1300	1.8	20		ug/L	1	12/19/2017 09:58 PM
Magnesium	74000	4.4	100		ug/L	1	12/19/2017 09:58 PM
Sodium	3100000	2600	50000		ug/L	100	1/3/2018 07:52 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-012

Client Sample ID: MW-21-Q417
Collection Date: 12/12/2017 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66081**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	4900	38	100		ug/L	1	12/19/2017 10:32 PM
Calcium	260000	28	500		ug/L	1	12/19/2017 10:32 PM
Iron	39	1.8	20		ug/L	1	12/19/2017 10:32 PM
Magnesium	87000	4.4	100		ug/L	1	12/19/2017 10:32 PM
Sodium	3300000	2600	50000		ug/L	100	1/3/2018 07:56 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-66042** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/13/2017** RunNo: **120943**
Client ID: **PBW** Batch ID: **66042** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2017** SeqNo: **2872919**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	39.668	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-66042** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/13/2017** RunNo: **120943**
Client ID: **LCSW** Batch ID: **66042** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2017** SeqNo: **2872920**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4658.382	100	5000	0	93.2	85	115				
Calcium	9550.427	500	10000	0	95.5	85	115				
Iron	111.284	20	100.0	0	111	85	115				
Magnesium	9359.822	100	10000	0	93.6	85	115				

Sample ID **N027485-001B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/13/2017** RunNo: **120943**
Client ID: **ZZZZZZ** Batch ID: **66042** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2017** SeqNo: **2872929**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5401.750	100	5000	622.3	95.6	75	125				
Calcium	114168.705	500	10000	99230	149	75	125				S
Iron	130.704	20	100.0	37.24	93.5	75	125				
Magnesium	18441.376	100	10000	9130	93.1	75	125				

Sample ID **N027485-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/13/2017** RunNo: **120943**
Client ID: **ZZZZZZ** Batch ID: **66042** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2017** SeqNo: **2872930**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5435.339	100	5000	622.3	96.3	75	125	5402	0.620	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027485-001B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	120943
Client ID:	ZZZZZZ	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2872930

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	114588.712	500	10000	99230	154	75	125	114200	0.367	20	S
Iron	132.205	20	100.0	37.24	95.0	75	125	130.7	1.14	20	
Magnesium	18529.658	100	10000	9130	94.0	75	125	18440	0.478	20	

Sample ID	MB-66042	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	121039
Client ID:	PBW	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2877890

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	ND	500									
Sodium	ND	500									

Sample ID	LCS2-66042	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	121039
Client ID:	LCSW	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2877891

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	19753.474	500	20000	0	98.8	85	115				
Sodium	20542.580	500	20000	0	103	85	115				

Sample ID	N027485-002B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	121039
Client ID:	ZZZZZZ	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2877920

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	55943.272	2500	20000	32930	115	75	125				

Sample ID	N027485-002B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	121039
Client ID:	ZZZZZZ	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2877921

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	56100.259	2500	20000	32930	116	75	125	55940	0.280	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027485-002B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	121039
Client ID:	ZZZZZZ	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2877927

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2452204.526	50000	20000	2335000	586	75	125				S

Sample ID	N027485-002B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	121039
Client ID:	ZZZZZZ	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2877928

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2409150.832	50000	20000	2335000	370	75	125	2452000	1.77	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-66081	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	120943
Client ID:	PBW	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2872958

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	58.456	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID	LCS1-66081	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	120943
Client ID:	LCSW	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2872959

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4574.030	100	5000	0	91.5	85	115				
Calcium	9346.317	500	10000	0	93.5	85	115				
Iron	101.514	20	100.0	0	102	85	115				
Magnesium	9234.344	100	10000	0	92.3	85	115				

Sample ID	N027523-009B-MS1	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	120943
Client ID:	ZZZZZZ	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2872965

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	7484.210	100	5000	2571	98.3	75	125				
Iron	1481.359	20	100.0	1284	197	75	125				S
Magnesium	83845.823	100	10000	73870	99.8	75	125				

Sample ID	N027523-009B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	120943
Client ID:	ZZZZZZ	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2872966

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	7521.074	100	5000	2571	99.0	75	125	7484	0.491	20	
Iron	1482.823	20	100.0	1284	198	75	125	1481	0.0988	20	S
Magnesium	84110.485	100	10000	73870	102	75	125	83850	0.315	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027523-009B-MS1	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	120943		
Client ID:	ZZZZZZ	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2873696		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Calcium	979282.613	2500	10000	887400	919	75	125				S		

Sample ID	N027523-009B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	120943		
Client ID:	ZZZZZZ	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2873697		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Calcium	980455.201	2500	10000	887400	931	75	125	979300	0.120	20	S		

Sample ID	MB-66081	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	121185		
Client ID:	PBW	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883306		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Sodium	ND	500											

Sample ID	LCS2-66081	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	121185		
Client ID:	LCSW	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883307		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Sodium	20372.380	500	20000	0	102	85	115						

Sample ID	N027523-012B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	121185		
Client ID:	ZZZZZZ	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883325		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Sodium	3477083.040	50000	20000	3330000	734	75	125	3484000	0.189	20	S		

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027523-012B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	121185
Client ID:	ZZZZZZ	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883326

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3483647.513	50000	20000	3330000	767	75	125				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-001

Client Sample ID: MW-15-Q417
Collection Date: 12/12/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**	Analyst: **CEI**	
Manganese	8.3	0.056	0.50		µg/L	1	1/4/2018 02:57 AM
Molybdenum	14	0.039	0.50		µg/L	1	1/4/2018 02:57 AM
Selenium	3.5	0.028	0.50		µg/L	1	1/4/2018 02:57 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-002

Client Sample ID: MW-16-Q417
Collection Date: 12/12/2017 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**	Analyst: **CEI**	
Manganese	33	0.056	0.50		µg/L	1	1/4/2018 04:14 AM
Molybdenum	17	0.039	0.50		µg/L	1	1/4/2018 04:14 AM
Selenium	2.3	0.028	0.50		µg/L	1	1/4/2018 04:14 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-003

Client Sample ID: MW-17-Q417
Collection Date: 12/12/2017 11:26:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Manganese	0.92	0.056	0.50		µg/L	1	1/4/2018 04:26 AM
Molybdenum	17	0.039	0.50		µg/L	1	1/4/2018 04:26 AM
Selenium	8.0	0.028	0.50		µg/L	1	1/4/2018 04:26 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-004

Client Sample ID: MW-18-Q417
Collection Date: 12/12/2017 10:38:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180104A**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Manganese	0.62	0.056	0.50		µg/L	1	1/4/2018 01:23 PM
Molybdenum	5.9	0.039	0.50		µg/L	1	1/4/2018 04:37 AM
Selenium	4.0	0.028	0.50		µg/L	1	1/4/2018 01:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-005

Client Sample ID: MW-31-060-Q417
Collection Date: 12/12/2017 3:04:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**	Analyst: **CEI**	
Arsenic	1.1	0.025	0.10		µg/L	1	1/4/2018 04:48 AM
Manganese	ND	0.056	0.50		µg/L	1	1/4/2018 04:48 AM
Molybdenum	14	0.039	0.50		µg/L	1	1/4/2018 04:48 AM
Selenium	2.6	0.028	0.50		µg/L	1	1/4/2018 04:48 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-006

Client Sample ID: MW-31-135-Q417
Collection Date: 12/12/2017 2:28:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Arsenic	3.5	0.025	0.10		µg/L	1	1/4/2018 04:59 AM
Manganese	1.5	0.056	0.50		µg/L	1	1/4/2018 04:59 AM
Molybdenum	26	0.19	2.5		µg/L	5	1/4/2018 05:04 AM
Selenium	0.85	0.028	0.50		µg/L	1	1/4/2018 01:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-007

Client Sample ID: MW-909-Q417
Collection Date: 12/12/2017 2:38:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Arsenic	3.6	0.025	0.10		µg/L	1	1/4/2018 05:21 AM
Manganese	1.5	0.056	0.50		µg/L	1	1/4/2018 05:21 AM
Molybdenum	26	0.039	0.50		µg/L	1	1/4/2018 05:21 AM
Selenium	0.74	0.028	0.50		µg/L	1	1/4/2018 02:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**				PrepDate	**12/18/2017**	Analyst: **CEI**
Arsenic	1.5	0.025	0.10		µg/L	1	1/4/2018 05:32 AM
Manganese	1.3	0.056	0.50		µg/L	1	1/4/2018 05:32 AM
Molybdenum	18	0.039	0.50		µg/L	1	1/4/2018 05:32 AM
Selenium	1.0	0.028	0.50		µg/L	1	1/4/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-009

Client Sample ID: MW-71-035-Q417
Collection Date: 12/12/2017 3:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**	Analyst: **CEI**	
Arsenic	2.5	0.025	0.10		µg/L	1	1/4/2018 05:43 AM
Manganese	2200	1.4	12		µg/L	25	1/4/2018 02:15 PM
Molybdenum	15	0.19	2.5		µg/L	5	1/4/2018 05:49 AM
Selenium	ND	0.14	2.5		µg/L	5	1/4/2018 05:49 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 8:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**				PrepDate	**12/18/2017**	Analyst: **CEI**
Manganese	11	0.056	0.50		µg/L	1	1/4/2018 05:55 AM
Molybdenum	76	0.19	2.5		µg/L	5	1/4/2018 06:00 AM
Selenium	47	0.028	0.50		µg/L	1	1/4/2018 05:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66061**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/18/2017**	RunNo: **121204**
Client ID: **PBW**	Batch ID: **66061**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2884524**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-66061**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/14/2017**	RunNo: **121204**
Client ID: **LCSW**	Batch ID: **66061**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2884527**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.805	0.10	10.00	0	98.0	85	115				
Manganese	103.318	0.50	100.0	0	103	85	115				
Molybdenum	9.782	0.50	10.00	0	97.8	85	115				
Selenium	10.243	0.50	10.00	0	102	85	115				

Sample ID **N027523-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/18/2017**	RunNo: **121204**
Client ID: **ZZZZZZ**	Batch ID: **66061**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2884533**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.220	0.10	10.00	1.644	106	75	125				
Manganese	110.872	0.50	100.0	8.293	103	75	125				
Molybdenum	25.666	0.50	10.00	14.02	116	75	125				
Selenium	13.800	0.50	10.00	3.503	103	75	125				

Sample ID **N027523-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/18/2017**	RunNo: **121204**
Client ID: **ZZZZZZ**	Batch ID: **66061**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2884535**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.997	0.10	10.00	1.644	104	75	125	12.22	1.83	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027523-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/18/2017	RunNo:	121204
Client ID:	ZZZZZZ	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884535

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	110.182	0.50	100.0	8.293	102	75	125	110.9	0.624	20	
Molybdenum	25.638	0.50	10.00	14.02	116	75	125	25.67	0.109	20	
Selenium	14.112	0.50	10.00	3.503	106	75	125	13.80	2.23	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Page 1 of 2

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker	RWQCB ✓	1. Chilled
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec	CalTrans	2. Headspace
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	Others ✓	LEVEL III	3. Container Intact
Title: Geologist II	Phone: 916-786-3302 Fax:		Specify: RWQCB	LEVEL IV	4. Seal Present
Signature: Date: 12/12/2017	Sampled By: Gantt Jeffers		Global ID:	Regulatory	5. IR number 2
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*			Specify State:	6. Method of Cooling: Ice
Project Name: PG&E Topock - GMP	Signature: Date: 12/12/2017				Sample Temp: 3.2C / 2.6C
Project Number: RC000753.801B					Courier: Tracking No.:

Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Oxygen and Deuterium Stable Isotopes SFIRM (250 mL poly)	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) Potassium; HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3 (500 mL poly)	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 (500 mL poly)	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3 (500 mL poly)	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3 (500 mL poly)	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo; Se); HNO3 (500 mL poly)	Mercury, Dissolved (EPA 7470A); HNO3 (500 mL poly)	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4 (250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM2540C) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027523-01	MW-15-Q417	12/12/2017	13:40		X					X						X			X	X	X	X	E	3	P	BN	
2	-02	MW-16-Q417	12/12/2017	12:30			X				X						X			X	X	X	X	E	4	P	BN	
3	-03	MW-17-Q417	12/12/2017	11:26			X				X						X			X	X	X	X	E	4	P	BN	
4	-04	MW-18-Q417	12/12/2017	10:38		X					X						X			X	X	X	X	E	3	P	BN	
5	-05	MW-31-060-Q417	12/12/2017	15:04		X		X	X	X	X								X	X	X	X	X	E	5	P	BNS	
6	-06	MW-31-135-Q417	12/12/2017	14:28		X		X	X		X									X	X	X	X	E	4	P	BN	
7	-07	MW-909-Q417	12/12/2017	14:38		X		X	X		X									X	X	X	X	E	4	P	BN	
8	-08	MW-63-065-Q417	12/12/2017	9:44		X			X		X								X	X	X	X	X	E	4	P	BNS	
9	-09	MW-71-035-Q417	12/12/2017	15:30		X			X		X								X	X	X	X	X	E	4	P	BNS	
10	-10	MW-735-Q417	12/12/2017	15:15		X																		E	1	P	B	

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
Gantt Jeffers	12.12.17 1636	Ping Wang	12/12/17 1636
Ping Wang	12/12/17 1853	Ping Wang	12/12/17 1853
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_4$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B = (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
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California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition: 1. Chilled Y ✓ N; 2. Headspace; 3. Container Intact; 4. Seal Present; 5. IR number 2; 6. Method of Cooling: Ice
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	
Title: Geologist II	Phone: 916-786-3302 Fax:		Sample Temp: 2.1 °C
Signature: Date: 12/12/2017	Sampled By: Gantt Jeffers		Courier:
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*		Tracking No.:
Project Name: PG&E Topock - GMP	Signature: Date: 12/12/2017		
Project Number: RC000753.801B			

Matrix: Ground; Sediment x; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3 500 mL poly	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) 1 liter poly	Specific Conductance (EPA 120.1) 1 liter poly	Total Dissolved Solids (SM2540C) 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027523-11	MW-21-EB-Q417	12/12/2017	8:35		X																	E	1	P	B	
2	-12	MW-21-Q417	12/12/2017	8:25			X				X						X		X	X	X	X	E	5	P	BNS	
3	-13	MW-733-Q417	12/12/2017	16:00		X																	E	1	P	B	
4	-14	MW-734-Q417	12/12/2017	15:50		X																	E	1	P	B	
5																											
6																											
7																											
8																											
9																											
10																											

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
G. Jeffers	12.12.17 1636	Ping Wang	12/12/17 1636
Ping Wang	12/12/17 1853	Ping Wang	12/12/17 1853

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
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7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B = (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/12/2017	Workorder:	N027523
Rep sample Temp (Deg C):	3.2/2.6/2.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	N/A	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 12/21/2017

Reviewed By: 12/22/2017

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (760) 781 3338
FAX: (805) 544-8226
Acct #:

Field Sampler: Signed

14-Dec-17

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**OXY_DEUT**		
N027523-005B / MW-31-060-Q417	Groundwater	12/12/2017 3:04:00 PM	8OZP	1		
N027523-006B / MW-31-135-Q417	Groundwater	12/12/2017 2:28:00 PM	8OZP	1		
N027523-007B / MW-909-Q417	Groundwater	12/12/2017 2:38:00 PM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N27523A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Oxygen and Deuterium Stable Isotopes SFIRM. EDD Requirement Labspec7 edata.

Fedex #: 771000116324

		Date/Time			Date/Time
Relinquished by:		12/14/2017 16:00	**Received by:**		
Relinquished by:			**Received by:**		

ASSET Laboratories

WORK ORDER Summary

13-Dec-17

WorkOrder: N027523

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/12/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027523-001A	MW-15-Q417	12/12/2017 1:40:00 PM	12/27/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-001B			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027523-001C			12/27/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/27/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/27/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/27/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027523-002A	MW-16-Q417	12/12/2017 12:30:00 PM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-002B			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027523-002C			12/27/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/27/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/27/2017			Total Dissolved Solids Prep	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

13-Dec-17

WorkOrder: N027523

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/12/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027523-002C	MW-16-Q417	12/12/2017 12:30:00 PM	12/27/2017	Groundwater	SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027523-003A	MW-17-Q417	12/12/2017 11:26:00 AM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-003B			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027523-003C			12/27/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/27/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/27/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/27/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027523-004A	MW-18-Q417	12/12/2017 10:38:00 AM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-004B			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

13-Dec-17

WorkOrder: N027523

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/12/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027523-004B	MW-18-Q417	12/12/2017 10:38:00 AM	12/27/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027523-004C			12/27/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/27/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/27/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/27/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027523-005A	MW-31-060-Q417	12/12/2017 3:04:00 PM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-005B			12/27/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027523-005C			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027523-005D			12/27/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027523-005E			12/27/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/27/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/27/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/27/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

13-Dec-17

WorkOrder: N027523

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/12/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027523-005E	MW-31-060-Q417	12/12/2017 3:04:00 PM	12/27/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027523-006A	MW-31-135-Q417	12/12/2017 2:28:00 PM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-006B			12/27/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027523-006C			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027523-006D			12/27/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/27/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/27/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/27/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027523-007A	MW-909-Q417	12/12/2017 2:38:00 PM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-007B			12/27/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027523-007C			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

13-Dec-17

WorkOrder: N027523

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/12/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027523-007D	MW-909-Q417	12/12/2017 2:38:00 PM	12/27/2017	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/27/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/27/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/27/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027523-008A	MW-63-065-Q417	12/12/2017 9:44:00 AM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-008B			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027523-008C			12/27/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027523-008D			12/27/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/27/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/27/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/27/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027523-009A	MW-71-035-Q417	12/12/2017 3:30:00 PM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

13-Dec-17

WorkOrder: N027523

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/12/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027523-009B	MW-71-035-Q417	12/12/2017 3:30:00 PM	12/27/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027523-009C			12/27/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027523-009D			12/27/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/27/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/27/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/27/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027523-010A	MW-735-Q417	12/12/2017 3:15:00 PM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-011A	MW-21-EB-Q417	12/12/2017 8:35:00 AM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-012A	MW-21-Q417	12/12/2017 8:25:00 AM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-012B			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

13-Dec-17

WorkOrder: N027523

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/12/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027523-012C	MW-21-Q417	12/12/2017 8:25:00 AM	12/27/2017	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027523-012D			12/27/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/27/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/27/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/27/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027523-013A	MW-733-Q417	12/12/2017 4:00:00 PM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-014A	MW-734-Q417	12/12/2017 3:50:00 PM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-015A	FOLDER	12/27/2017	12/27/2017		EDD	RWQCB	☐	☐	☐	LAB
			12/27/2017		Folder	Folder	☐	☐	☐	LAB
			12/27/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP

Project No.: RC000753.801B

ASSET Laboratories Work Order:

N027523

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

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January 05, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027523

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 12, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburdi for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027523

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Subcontracted Analyses:

Oxygen/Deuterium was subcontracted to Zymax- Pittsburg,PA.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (14 ug/L) and hexavalent chromium (11 ug/L) for sample N027523-001 (MW-15-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (21 ug/L) and hexavalent chromium (11 ug/L) for sample N027523-002 (MW-16-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (2.6 ug/L) and hexavalent chromium (1.2 ug/L) for sample N027523-008 (MW-63-065-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (1.5 ug/L) and hexavalent chromium (0 ug/L) for sample N027523-009 (MW-71-035-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Dilution was necessary for samples N027523-009 and -012 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 300.0:

Dilution was necessary for some samples due to precipitation upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N027485-001B-MS1 and N027485-001B-MSD1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N027485-002B-MS2, N027485-002B-MSD2, N027523-009B-MS1, N027523-009B-MSD1, N027523-012B-MS2 and N027523-012B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N027523-006, -009 and -012 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Because the results for total dissolved chromium (14 ug/L) and hexavalent chromium (11 ug/L) for sample N027523-001 (MW-15-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 15 and 11 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (21 ug/L) and hexavalent chromium (11 ug/L) for sample N027523-002 (MW-16-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 21 and 16 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (2.6 ug/L) and hexavalent chromium (1.2 ug/L) for sample N027523-008 (MW-63-065-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 2.6 and 1.4 ug/L, respectively. Since these

data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (1.5 ug/L) and hexavalent chromium (0 ug/L) for sample N027523-009 (MW-71-035-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.2 and 1.4 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

ASSET Laboratories

Date: *05-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027523
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027523-001A	MW-15-Q417	Groundwater	12/12/2017 1:40:00 PM	12/12/2017	1/5/2018
N027523-001B	MW-15-Q417	Groundwater	12/12/2017 1:40:00 PM	12/12/2017	1/5/2018
N027523-001C	MW-15-Q417	Groundwater	12/12/2017 1:40:00 PM	12/12/2017	1/5/2018
N027523-002A	MW-16-Q417	Groundwater	12/12/2017 12:30:00 PM	12/12/2017	1/5/2018
N027523-002B	MW-16-Q417	Groundwater	12/12/2017 12:30:00 PM	12/12/2017	1/5/2018
N027523-002C	MW-16-Q417	Groundwater	12/12/2017 12:30:00 PM	12/12/2017	1/5/2018
N027523-003A	MW-17-Q417	Groundwater	12/12/2017 11:26:00 AM	12/12/2017	1/5/2018
N027523-003B	MW-17-Q417	Groundwater	12/12/2017 11:26:00 AM	12/12/2017	1/5/2018
N027523-003C	MW-17-Q417	Groundwater	12/12/2017 11:26:00 AM	12/12/2017	1/5/2018
N027523-004A	MW-18-Q417	Groundwater	12/12/2017 10:38:00 AM	12/12/2017	1/5/2018
N027523-004B	MW-18-Q417	Groundwater	12/12/2017 10:38:00 AM	12/12/2017	1/5/2018
N027523-004C	MW-18-Q417	Groundwater	12/12/2017 10:38:00 AM	12/12/2017	1/5/2018
N027523-005A	MW-31-060-Q417	Groundwater	12/12/2017 3:04:00 PM	12/12/2017	1/5/2018
N027523-005B	MW-31-060-Q417	Groundwater	12/12/2017 3:04:00 PM	12/12/2017	1/5/2018
N027523-005C	MW-31-060-Q417	Groundwater	12/12/2017 3:04:00 PM	12/12/2017	1/5/2018
N027523-005D	MW-31-060-Q417	Groundwater	12/12/2017 3:04:00 PM	12/12/2017	1/5/2018
N027523-005E	MW-31-060-Q417	Groundwater	12/12/2017 3:04:00 PM	12/12/2017	1/5/2018
N027523-006A	MW-31-135-Q417	Groundwater	12/12/2017 2:28:00 PM	12/12/2017	1/5/2018
N027523-006B	MW-31-135-Q417	Groundwater	12/12/2017 2:28:00 PM	12/12/2017	1/5/2018
N027523-006C	MW-31-135-Q417	Groundwater	12/12/2017 2:28:00 PM	12/12/2017	1/5/2018
N027523-006D	MW-31-135-Q417	Groundwater	12/12/2017 2:28:00 PM	12/12/2017	1/5/2018
N027523-007A	MW-909-Q417	Groundwater	12/12/2017 2:38:00 PM	12/12/2017	1/5/2018
N027523-007B	MW-909-Q417	Groundwater	12/12/2017 2:38:00 PM	12/12/2017	1/5/2018
N027523-007C	MW-909-Q417	Groundwater	12/12/2017 2:38:00 PM	12/12/2017	1/5/2018
N027523-007D	MW-909-Q417	Groundwater	12/12/2017 2:38:00 PM	12/12/2017	1/5/2018
N027523-008A	MW-63-065-Q417	Groundwater	12/12/2017 9:44:00 AM	12/12/2017	1/5/2018
N027523-008B	MW-63-065-Q417	Groundwater	12/12/2017 9:44:00 AM	12/12/2017	1/5/2018
N027523-008C	MW-63-065-Q417	Groundwater	12/12/2017 9:44:00 AM	12/12/2017	1/5/2018
N027523-008D	MW-63-065-Q417	Groundwater	12/12/2017 9:44:00 AM	12/12/2017	1/5/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027523
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027523-009A	MW-71-035-Q417	Groundwater	12/12/2017 3:30:00 PM	12/12/2017	1/5/2018
N027523-009B	MW-71-035-Q417	Groundwater	12/12/2017 3:30:00 PM	12/12/2017	1/5/2018
N027523-009C	MW-71-035-Q417	Groundwater	12/12/2017 3:30:00 PM	12/12/2017	1/5/2018
N027523-009D	MW-71-035-Q417	Groundwater	12/12/2017 3:30:00 PM	12/12/2017	1/5/2018
N027523-010A	MW-735-Q417	Groundwater	12/12/2017 3:15:00 PM	12/12/2017	1/5/2018
N027523-011A	MW-21-EB-Q417	Groundwater	12/12/2017 8:35:00 AM	12/12/2017	1/5/2018
N027523-012A	MW-21-Q417	Groundwater	12/12/2017 8:25:00 AM	12/12/2017	1/5/2018
N027523-012B	MW-21-Q417	Groundwater	12/12/2017 8:25:00 AM	12/12/2017	1/5/2018
N027523-012C	MW-21-Q417	Groundwater	12/12/2017 8:25:00 AM	12/12/2017	1/5/2018
N027523-012D	MW-21-Q417	Groundwater	12/12/2017 8:25:00 AM	12/12/2017	1/5/2018
N027523-013A	MW-733-Q417	Groundwater	12/12/2017 4:00:00 PM	12/12/2017	1/5/2018
N027523-014A	MW-734-Q417	Groundwater	12/12/2017 3:50:00 PM	12/12/2017	1/5/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-15-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 1:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171213H**	QC Batch: **R120857**			PrepDate			Analyst: **LR**
Specific Conductance	1600	0.10	0.10		umhos/cm	1	12/13/2017 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-16-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 12:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171213H**	QC Batch: **R120857**			PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	12/13/2017 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-003

Client Sample ID: MW-17-Q417
Collection Date: 12/12/2017 11:26:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171213H**	QC Batch: **R120857**			PrepDate			Analyst: **LR**
Specific Conductance	1200	0.10	0.10		umhos/cm	1	12/13/2017 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-004

Client Sample ID: MW-18-Q417
Collection Date: 12/12/2017 10:38:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171213H**	QC Batch: **R120857**			PrepDate			Analyst: **LR**
Specific Conductance	1300	0.10	0.10		umhos/cm	1	12/13/2017 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-31-060-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 3:04:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171213H**	QC Batch: **R120857**			PrepDate			Analyst: **LR**
Specific Conductance	2900	0.10	0.10		umhos/cm	1	12/13/2017 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-31-135-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 2:28:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171213H**	QC Batch: **R120857**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	12/13/2017 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 2:38:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171213H**	QC Batch: **R120857**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	12/13/2017 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171213H**	QC Batch: **R120857**			PrepDate			Analyst: **LR**
Specific Conductance	5800	0.10	0.10		umhos/cm	1	12/13/2017 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-009

Client Sample ID: MW-71-035-Q417
Collection Date: 12/12/2017 3:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171213H**	QC Batch: **R120857**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	12/13/2017 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-012

Client Sample ID: MW-21-Q417
Collection Date: 12/12/2017 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171213H**	QC Batch: **R120857**			PrepDate			Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	12/13/2017 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N027523-009DDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **120857**
Client ID: **ZZZZZZ**	Batch ID: **R120857**	TestNo: **EPA 120.1**		Analysis Date: **12/13/2017**	SeqNo: **2868306**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	15210.000	0.10						15160	0.329	10	

Sample ID **N027524-009DDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **120857**
Client ID: **ZZZZZZ**	Batch ID: **R120857**	TestNo: **EPA 120.1**		Analysis Date: **12/13/2017**	SeqNo: **2868317**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7750.000	0.10						7790	0.515	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-001

Client Sample ID: MW-15-Q417
Collection Date: 12/12/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171215F**	QC Batch: **66096**				PrepDate	**12/15/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1000	10	10		mg/L	1	12/15/2017 01:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-16-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 12:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171215F**	QC Batch: **66096**				PrepDate	**12/15/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	620	10	10		mg/L	1	12/15/2017 01:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-17-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 11:26:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171218C**	QC Batch: **66110**				PrepDate	**12/18/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	810	10	10		mg/L	1	12/18/2017 01:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-18-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 10:38:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171218C**	QC Batch: **66110**			PrepDate	**12/18/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	830	10	10		mg/L	1	12/18/2017 01:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-31-060-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 3:04:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171218C**	QC Batch: **66110**				PrepDate	**12/18/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1800	20	20		mg/L	1	12/18/2017 01:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-31-135-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 2:28:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171218C**	QC Batch: **66110**				PrepDate	**12/18/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	6800	100	100		mg/L	1	12/18/2017 01:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 2:38:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171218C**	QC Batch: **66110**				PrepDate	**12/18/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	6700	100	100		mg/L	1	12/18/2017 01:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171218C**	QC Batch: **66110**			PrepDate	**12/18/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3700	50	50		mg/L	1	12/18/2017 01:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-71-035-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171218C**	QC Batch: **66110**			PrepDate	**12/18/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	11000	100	100		mg/L	1	12/18/2017 01:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 8:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171218C**	QC Batch: **66110**				PrepDate	**12/18/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	9800	100	100		mg/L	1	12/18/2017 01:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66096**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/15/2017**	RunNo: **120881**
Client ID: **LCSW**	Batch ID: **66096**	TestNo: **SM2540C**		Analysis Date: **12/15/2017**	SeqNo: **2869294**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	954.000	10	1000	0	95.4	80	120				

Sample ID **MB-66096**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/15/2017**	RunNo: **120881**
Client ID: **PBW**	Batch ID: **66096**	TestNo: **SM2540C**		Analysis Date: **12/15/2017**	SeqNo: **2869295**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N027527-008DDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/15/2017**	RunNo: **120881**
Client ID: **ZZZZZZ**	Batch ID: **66096**	TestNo: **SM2540C**		Analysis Date: **12/15/2017**	SeqNo: **2869306**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	28850.000	500						27550	4.61	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-66110	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/18/2017	RunNo:	120947
Client ID:	LCSW	Batch ID:	66110	TestNo:	SM2540C			Analysis Date:	12/18/2017	SeqNo:	2873063

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	945.000	10	1000	0	94.5	80	120				

Sample ID	MB-66110	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/18/2017	RunNo:	120947
Client ID:	PBW	Batch ID:	66110	TestNo:	SM2540C			Analysis Date:	12/18/2017	SeqNo:	2873064

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N027523-009DDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/18/2017	RunNo:	120947
Client ID:	ZZZZZZ	Batch ID:	66110	TestNo:	SM2540C			Analysis Date:	12/18/2017	SeqNo:	2873072

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	10210.000	100						10720	4.87	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-001

Client Sample ID: MW-15-Q417
Collection Date: 12/12/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A** QC Batch: **R120931**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	11	0.17	1.0		µg/L	5	12/18/2017 11:39 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180103D** QC Batch: **66061**				PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	14	0.019	1.0		µg/L	1	1/4/2018 02:57 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-002

Client Sample ID: MW-16-Q417
Collection Date: 12/12/2017 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A** QC Batch: **R120931**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	11	0.066	0.40		µg/L	2	12/18/2017 11:58 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180103D** QC Batch: **66061**				PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	21	0.019	1.0		µg/L	1	1/4/2018 04:14 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-003

Client Sample ID: MW-17-Q417
Collection Date: 12/12/2017 11:26:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A** QC Batch: **R120931**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	11	0.066	0.40		µg/L	2	12/18/2017 12:17 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180103D** QC Batch: **66061**				PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	12	0.019	1.0		µg/L	1	1/4/2018 04:26 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-004

Client Sample ID: MW-18-Q417
Collection Date: 12/12/2017 10:38:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A** QC Batch: **R120931**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	20	0.17	1.0		µg/L	5	12/18/2017 12:36 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180103D** QC Batch: **66061**				PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	23	0.019	1.0		µg/L	1	1/4/2018 04:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-005

Client Sample ID: MW-31-060-Q417
Collection Date: 12/12/2017 3:04:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A**	QC Batch: **R120931**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	390	3.3	20		µg/L	100	12/18/2017 12:54 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180103D**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	410	0.096	5.0		µg/L	5	1/4/2018 04:53 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-006

Client Sample ID: MW-31-135-Q417
Collection Date: 12/12/2017 2:28:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A** QC Batch: **R120931**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	13	0.17	1.0		µg/L	5	12/18/2017 01:32 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180103D** QC Batch: **66061**				PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	13	0.019	1.0		µg/L	1	1/4/2018 04:59 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-007

Client Sample ID: MW-909-Q417
Collection Date: 12/12/2017 2:38:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A** QC Batch: **R120931**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	13	0.17	1.0		µg/L	5	12/18/2017 01:51 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180103D** QC Batch: **66061**				PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	13	0.019	1.0		µg/L	1	1/4/2018 05:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-008

Client Sample ID: MW-63-065-Q417
Collection Date: 12/12/2017 9:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A** QC Batch: **R120931**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	1.2	0.033	0.20		µg/L	1	12/18/2017 02:10 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180103D** QC Batch: **66061**				PrepDate **12/18/2017**			Analyst: **CEI**
Chromium	2.6	0.019	1.0		µg/L	1	1/4/2018 05:32 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-009

Client Sample ID: MW-71-035-Q417
Collection Date: 12/12/2017 3:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A**	QC Batch: **R120931**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/18/2017 02:29 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180103D**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	1.5	0.019	1.0		µg/L	1	1/4/2018 05:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-735-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 3:15:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A**	QC Batch: **R120931**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/18/2017 03:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-EB-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 8:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A**	QC Batch: **R120931**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/18/2017 03:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-012

Client Sample ID: MW-21-Q417
Collection Date: 12/12/2017 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A** QC Batch: **R120931**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	2.3	0.17	1.0		µg/L	5	12/18/2017 05:41 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180103D** QC Batch: **66061**				PrepDate **12/18/2017**			Analyst: **CEI**
Chromium	2.7	0.019	1.0		µg/L	1	1/4/2018 05:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-733-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A**	QC Batch: **R120931**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/18/2017 04:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-734-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 3:50:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171218A**	QC Batch: **R120931**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/18/2017 04:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R120931**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **PBW**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R120931**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **LCSW**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.093	0.20	5.000	0	102	90	110				

Sample ID **N027523-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	16.118	1.0	5.000	11.23	97.7	90	110				

Sample ID **N027523-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872177**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	20.847	0.40	10.00	10.62	102	90	110				

Sample ID **N027523-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	21.646	0.40	10.00	11.31	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027523-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120931**
Client ID: **ZZZZZZ** Batch ID: **R120931** TestNo: **EPA 218.6** Analysis Date: **12/18/2017** SeqNo: **2872181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	46.384	1.0	25.00	20.46	104	90	110				

Sample ID **N027523-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120931**
Client ID: **ZZZZZZ** Batch ID: **R120931** TestNo: **EPA 218.6** Analysis Date: **12/18/2017** SeqNo: **2872183**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	897.850	20	500.0	392.2	101	90	110				

Sample ID **N027523-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120931**
Client ID: **ZZZZZZ** Batch ID: **R120931** TestNo: **EPA 218.6** Analysis Date: **12/18/2017** SeqNo: **2872187**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	18.067	1.0	5.000	12.93	103	90	110				

Sample ID **N027523-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120931**
Client ID: **ZZZZZZ** Batch ID: **R120931** TestNo: **EPA 218.6** Analysis Date: **12/18/2017** SeqNo: **2872189**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	17.961	1.0	5.000	12.98	99.7	90	110				

Sample ID **N027523-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120931**
Client ID: **ZZZZZZ** Batch ID: **R120931** TestNo: **EPA 218.6** Analysis Date: **12/18/2017** SeqNo: **2872191**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.230	0.20	1.000	1.172	106	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027523-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872193**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.653	1.0	5.000	0	93.1	90	110				

Sample ID **N027523-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.055	0.20	1.000	0	105	90	110				

Sample ID **N027523-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.030	0.20	1.000	0	103	90	110				

Sample ID **N027523-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.056	0.20	1.000	0	106	90	110				

Sample ID **N027523-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872203**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.033	0.20	1.000	0	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027523-003AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120931
Client ID:	ZZZZZZ	Batch ID:	R120931	TestNo:	EPA 218.6			Analysis Date:	12/18/2017	SeqNo:	2872204

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	21.513	0.40	10.00	11.31	102	90	110	21.65	0.615	20	

Sample ID	N027523-005ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120931
Client ID:	ZZZZZZ	Batch ID:	R120931	TestNo:	EPA 218.6			Analysis Date:	12/18/2017	SeqNo:	2872205

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	389.230	20						392.2	0.763	20	

Sample ID	N027523-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120931
Client ID:	ZZZZZZ	Batch ID:	R120931	TestNo:	EPA 218.6			Analysis Date:	12/18/2017	SeqNo:	2872209

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.322	1.0	5.000	2.327	99.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66061	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/18/2017	RunNo:	121203
Client ID:	PBW	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884393

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66061	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121203
Client ID:	LCSW	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884396

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.088	1.0	10.00	0	101	85	115				

Sample ID	N027523-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/18/2017	RunNo:	121203
Client ID:	ZZZZZZ	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884402

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	24.181	1.0	10.00	14.08	101	75	125				

Sample ID	N027523-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/18/2017	RunNo:	121203
Client ID:	ZZZZZZ	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884404

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	23.924	1.0	10.00	14.08	98.4	75	125	24.18	1.07	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-001

Client Sample ID: MW-15-Q417
Collection Date: 12/12/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	79	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-16-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 12:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	100	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-17-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 11:26:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	61	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-18-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 10:38:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	85	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-31-060-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 3:04:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	86	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-31-135-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 2:28:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	35	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 2:38:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	33	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	210	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-71-035-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	250	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-012

Client Sample ID: MW-21-Q417
Collection Date: 12/12/2017 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171215G**	QC Batch: **R120882**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	860	1.2	5.0		mg/L	1	12/15/2017 09:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R120882**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120882**
Client ID: **LCSW**	Batch ID: **R120882**	TestNo: **SM 2320 B**		Analysis Date: **12/15/2017**	SeqNo: **2869307**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	98.739	5.0	100.0	0	98.7	85	115				

Sample ID **MB-R120882**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120882**
Client ID: **PBW**	Batch ID: **R120882**	TestNo: **SM 2320 B**		Analysis Date: **12/15/2017**	SeqNo: **2869308**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N027485-008DMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120882**
Client ID: **ZZZZZZ**	Batch ID: **R120882**	TestNo: **SM 2320 B**		Analysis Date: **12/15/2017**	SeqNo: **2869314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	171.218	5.0	100.0	75.63	95.6	75	125				

Sample ID **N027485-008DMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120882**
Client ID: **ZZZZZZ**	Batch ID: **R120882**	TestNo: **SM 2320 B**		Analysis Date: **12/15/2017**	SeqNo: **2869315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	176.471	5.0	100.0	75.63	101	75	125	171.2	3.02	20	

Sample ID **N027523-001CDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **120882**
Client ID: **ZZZZZZ**	Batch ID: **R120882**	TestNo: **SM 2320 B**		Analysis Date: **12/15/2017**	SeqNo: **2869321**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	76.681	5.0						78.78	2.70	30	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-001

Client Sample ID: MW-15-Q417
Collection Date: 12/12/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/19/2017 09:45 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Chloride	440	0.91	50		mg/L	100	12/20/2017 04:50 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Sulfate	140	0.46	10		mg/L	20	12/20/2017 05:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-002

Client Sample ID: MW-16-Q417
Collection Date: 12/12/2017 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/19/2017 10:15 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Chloride	160	0.46	25		mg/L	50	12/20/2017 02:48 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Sulfate	170	1.1	25		mg/L	50	12/20/2017 02:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-003

Client Sample ID: MW-17-Q417
Collection Date: 12/12/2017 11:26:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**			PrepDate				Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/20/2017 02:05 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**			PrepDate				Analyst: **RAB**
Chloride	150	0.46	25		mg/L	50	12/20/2017 03:03 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**			PrepDate				Analyst: **RAB**
Sulfate	310	1.1	25		mg/L	50	12/20/2017 03:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-004

Client Sample ID: MW-18-Q417
Collection Date: 12/12/2017 10:38:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/20/2017 02:20 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Chloride	330	0.91	50		mg/L	100	12/20/2017 05:21 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Sulfate	96	0.23	5.0		mg/L	10	12/20/2017 05:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-005

Client Sample ID: MW-31-060-Q417
Collection Date: 12/12/2017 3:04:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/20/2017 02:35 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Chloride	840	1.8	100		mg/L	200	12/20/2017 05:51 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Sulfate	210	0.46	10		mg/L	20	12/20/2017 06:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-006

Client Sample ID: MW-31-135-Q417
Collection Date: 12/12/2017 2:28:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/20/2017 02:51 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Chloride	3800	9.1	500		mg/L	1000	12/20/2017 06:53 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Sulfate	500	1.1	25		mg/L	50	12/20/2017 07:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-007

Client Sample ID: MW-909-Q417
Collection Date: 12/12/2017 2:38:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/20/2017 03:06 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Chloride	3700	9.1	500		mg/L	1000	12/20/2017 07:23 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Sulfate	490	1.1	25		mg/L	50	12/20/2017 07:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-008

Client Sample ID: MW-63-065-Q417
Collection Date: 12/12/2017 9:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171219B** QC Batch: **R120970**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/20/2017 03:52 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Chloride	1700	4.6	250		mg/L	500	12/20/2017 07:54 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Sulfate	560	1.1	25		mg/L	50	12/20/2017 08:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-009

Client Sample ID: MW-71-035-Q417
Collection Date: 12/12/2017 3:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Bromide	ND	0.20	5.0		mg/L	10	12/20/2017 01:47 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Chloride	5600	18	1000		mg/L	2000	12/20/2017 08:40 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Sulfate	1300	2.3	50		mg/L	100	12/20/2017 08:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-012

Client Sample ID: MW-21-Q417
Collection Date: 12/12/2017 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Bromide	ND	0.20	5.0		mg/L	10	12/20/2017 01:31 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Chloride	3300	9.1	500		mg/L	1000	12/20/2017 09:10 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220A** QC Batch: **R121006**				PrepDate			Analyst: **RAB**
Sulfate	2600	4.6	100		mg/L	200	12/20/2017 09:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	**LCS-R120970_BR**	SampType: **LCS**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID:	**LCSW**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2874470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.223	0.50	1.250	0	97.8	90	110				

Sample ID	**MB-R120970_BR**	SampType: **MBLK**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID:	**PBW**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2874471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**N027485-008DMS**	SampType: **MS**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID:	**ZZZZZZ**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2874473**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	6.983	2.5	6.250	0.3850	106	80	120				

Sample ID	**N027485-008DMSD**	SampType: **MSD**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID:	**ZZZZZZ**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2874474**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	7.017	2.5	6.250	0.3850	106	80	120	6.983	0.486	20	

Sample ID	**N027523-001CMS**	SampType: **MS**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID:	**ZZZZZZ**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2874478**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.565	0.50	1.250	0.2819	103	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	N027523-002CDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	120970
Client ID:	ZZZZZZ	Batch ID:	R120970	TestNo:	EPA 300.0			Analysis Date:	12/19/2017	SeqNo:	2874480

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.084	0.50						0.1061	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	MB-R121006_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	PBW	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2875942

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	LCS-R121006_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	LCSW	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2875943

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.230	0.50	1.250	0	98.4	90	110				

Sample ID	N027523-012DDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	ZZZZZZ	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2875948

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	3.307	5.0						4.181	0	20	

Sample ID	N027523-012DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	ZZZZZZ	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2875949

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	15.445	5.0	12.50	4.181	90.1	80	120				

Sample ID	N027523-012DMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	ZZZZZZ	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2875950

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	16.966	5.0	12.50	4.181	102	80	120	15.44	9.39	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R121006_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	PBW	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876114

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R121006_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	LCSW	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876115

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.026	0.50	2.000	0	101	90	110				

Sample ID	N027523-003CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	ZZZZZZ	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876123

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	150.450	25						151.4	0.623	20	

Sample ID	N027523-003CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	ZZZZZZ	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876124

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	253.325	25	100.0	151.4	102	80	120				

Sample ID	N027523-003CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	ZZZZZZ	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876125

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	249.320	25	100.0	151.4	97.9	80	120	253.3	1.59	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N027523-002CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	ZZZZZZ	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876126

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	259.600	25	100.0	163.0	96.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R121006_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	PBW	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876145

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R121006_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	LCSW	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876146

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.971	0.50	4.000	0	99.3	90	110				

Sample ID	N027523-003CDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	ZZZZZZ	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876155

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	311.460	25						311.9	0.149	20	

Sample ID	N027523-003CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	ZZZZZZ	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876156

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	507.895	25	200.0	311.9	98.0	80	120				

Sample ID	N027523-003CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	ZZZZZZ	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876157

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	507.545	25	200.0	311.9	97.8	80	120	507.9	0.0689	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N027523-002CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121006
Client ID:	ZZZZZZ	Batch ID:	R121006	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876158

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	365.575	25	200.0	173.6	96.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-005

Client Sample ID: MW-31-060-Q417
Collection Date: 12/12/2017 3:04:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222D**	QC Batch: **R121037**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	3.4	0.11	0.25		mg/L	5	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222D**	QC Batch: **R121037**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.2	0.022	0.050		mg/L	1	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-71-035-Q417
Lab Order:	N027523	**Collection Date:**	12/12/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027523-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222D**	QC Batch: **R121037**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-012

Client Sample ID: MW-21-Q417
Collection Date: 12/12/2017 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222D**	QC Batch: **R121037**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.46	0.022	0.050		mg/L	1	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R121037	**MBLK**	**4500N03F_W**	**mg/L**		**121037**
Client ID: **PBW**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-R121037	**LCS**	**4500N03F_W**	**mg/L**		**121037**
Client ID: **LCSW**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877837**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.476	0.050	0.5000	0	95.2	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027523-005DMS	**MS**	**4500N03F_W**	**mg/L**		**121037**
Client ID: **ZZZZZZ**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877840**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.032	0.25	2.500	3.434	104	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027523-005DMSD	**MSD**	**4500N03F_W**	**mg/L**		**121037**
Client ID: **ZZZZZZ**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.779	0.25	2.500	3.434	93.8	75	125	6.032	4.28	20	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027523-008CDUP	**DUP**	**4500N03F_W**	**mg/L**		**121037**
Client ID: **ZZZZZZ**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877843**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.313	0.050						1.204	8.59	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-001

Client Sample ID: MW-15-Q417
Collection Date: 12/12/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	300	38	100		ug/L	1	12/19/2017 08:03 PM
Calcium	100000	28	500		ug/L	1	12/19/2017 08:03 PM
Iron	180	1.8	20		ug/L	1	12/19/2017 08:03 PM
Magnesium	25000	4.4	100		ug/L	1	12/19/2017 08:03 PM
Sodium	210000	2600	50000		ug/L	100	12/22/2017 04:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-002

Client Sample ID: MW-16-Q417
Collection Date: 12/12/2017 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	310	38	100		ug/L	1	12/19/2017 08:10 PM
Calcium	27000	28	500		ug/L	1	12/19/2017 08:10 PM
Iron	1400	1.8	20		ug/L	1	12/19/2017 08:10 PM
Magnesium	5300	4.4	100		ug/L	1	12/19/2017 08:10 PM
Sodium	210000	2600	50000		ug/L	100	12/22/2017 04:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-003

Client Sample ID: MW-17-Q417
Collection Date: 12/12/2017 11:26:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	220	38	100		ug/L	1	12/19/2017 08:16 PM
Calcium	58000	28	500		ug/L	1	12/19/2017 08:16 PM
Iron	30	1.8	20		ug/L	1	12/19/2017 08:16 PM
Magnesium	8100	4.4	100		ug/L	1	12/19/2017 08:16 PM
Sodium	200000	2600	50000		ug/L	100	12/22/2017 04:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-004

Client Sample ID: MW-18-Q417
Collection Date: 12/12/2017 10:38:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	210	38	100		ug/L	1	12/19/2017 08:21 PM
Calcium	84000	28	500		ug/L	1	12/19/2017 08:21 PM
Iron	38	1.8	20		ug/L	1	12/19/2017 08:21 PM
Magnesium	13000	4.4	100		ug/L	1	12/19/2017 08:21 PM
Sodium	190000	2600	50000		ug/L	100	12/22/2017 04:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-005

Client Sample ID: MW-31-060-Q417
Collection Date: 12/12/2017 3:04:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	790	38	100		ug/L	1	12/19/2017 08:38 PM
Calcium	130000	28	500		ug/L	1	12/19/2017 08:38 PM
Iron	36	1.8	20		ug/L	1	12/19/2017 08:38 PM
Magnesium	22000	4.4	100		ug/L	1	12/19/2017 08:38 PM
Potassium	6100	38	500		ug/L	1	12/22/2017 06:41 PM
Sodium	490000	2600	50000		ug/L	100	12/22/2017 04:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-006

Client Sample ID: MW-31-135-Q417
Collection Date: 12/12/2017 2:28:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	1300	38	100		ug/L	1	12/19/2017 08:45 PM
Calcium	310000	28	500		ug/L	1	12/19/2017 08:45 PM
Iron	38	1.8	20		ug/L	1	12/19/2017 08:45 PM
Magnesium	19000	4.4	100		ug/L	1	12/19/2017 08:45 PM
Sodium	2200000	2600	50000		ug/L	100	12/22/2017 04:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-007

Client Sample ID: MW-909-Q417
Collection Date: 12/12/2017 2:38:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	1400	38	100		ug/L	1	12/19/2017 08:52 PM
Calcium	330000	28	500		ug/L	1	12/19/2017 08:52 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 08:52 PM
Magnesium	20000	4.4	100		ug/L	1	12/19/2017 08:52 PM
Sodium	2400000	2600	50000		ug/L	100	12/22/2017 04:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-008

Client Sample ID: MW-63-065-Q417
Collection Date: 12/12/2017 9:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66042**			PrepDate	**12/13/2017**		Analyst: **CEI**
Boron	730	38	100		ug/L	1	12/19/2017 08:59 PM
Calcium	160000	28	500		ug/L	1	12/19/2017 08:59 PM
Iron	26	1.8	20		ug/L	1	12/19/2017 08:59 PM
Magnesium	16000	4.4	100		ug/L	1	12/19/2017 08:59 PM
Sodium	1200000	2600	50000		ug/L	100	12/22/2017 04:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-009

Client Sample ID: MW-71-035-Q417
Collection Date: 12/12/2017 3:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66081**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	2600	38	100		ug/L	1	12/19/2017 09:58 PM
Calcium	890000	140	2500		ug/L	5	12/19/2017 10:05 PM
Iron	1300	1.8	20		ug/L	1	12/19/2017 09:58 PM
Magnesium	74000	4.4	100		ug/L	1	12/19/2017 09:58 PM
Sodium	3100000	2600	50000		ug/L	100	1/3/2018 07:52 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-012

Client Sample ID: MW-21-Q417
Collection Date: 12/12/2017 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66081**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	4900	38	100		ug/L	1	12/19/2017 10:32 PM
Calcium	260000	28	500		ug/L	1	12/19/2017 10:32 PM
Iron	39	1.8	20		ug/L	1	12/19/2017 10:32 PM
Magnesium	87000	4.4	100		ug/L	1	12/19/2017 10:32 PM
Sodium	3300000	2600	50000		ug/L	100	1/3/2018 07:56 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-66042** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/13/2017** RunNo: **120943**
Client ID: **PBW** Batch ID: **66042** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2017** SeqNo: **2872919**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	39.668	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-66042** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/13/2017** RunNo: **120943**
Client ID: **LCSW** Batch ID: **66042** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2017** SeqNo: **2872920**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4658.382	100	5000	0	93.2	85	115				
Calcium	9550.427	500	10000	0	95.5	85	115				
Iron	111.284	20	100.0	0	111	85	115				
Magnesium	9359.822	100	10000	0	93.6	85	115				

Sample ID **N027485-001B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/13/2017** RunNo: **120943**
Client ID: **ZZZZZZ** Batch ID: **66042** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2017** SeqNo: **2872929**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5401.750	100	5000	622.3	95.6	75	125				
Calcium	114168.705	500	10000	99230	149	75	125				S
Iron	130.704	20	100.0	37.24	93.5	75	125				
Magnesium	18441.376	100	10000	9130	93.1	75	125				

Sample ID **N027485-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/13/2017** RunNo: **120943**
Client ID: **ZZZZZZ** Batch ID: **66042** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2017** SeqNo: **2872930**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5435.339	100	5000	622.3	96.3	75	125	5402	0.620	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027485-001B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	120943		
Client ID:	ZZZZZZ	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2872930		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	114588.712	500	10000	99230	154	75	125	114200	0.367	20	S
Iron	132.205	20	100.0	37.24	95.0	75	125	130.7	1.14	20	
Magnesium	18529.658	100	10000	9130	94.0	75	125	18440	0.478	20	

Sample ID	MB-66042	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	121039		
Client ID:	PBW	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2877890		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	ND	500									
Sodium	ND	500									

Sample ID	LCS2-66042	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	121039		
Client ID:	LCSW	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2877891		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	19753.474	500	20000	0	98.8	85	115				
Sodium	20542.580	500	20000	0	103	85	115				

Sample ID	N027485-002B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	121039		
Client ID:	ZZZZZZ	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2877920		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	55943.272	2500	20000	32930	115	75	125				

Sample ID	N027485-002B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	121039		
Client ID:	ZZZZZZ	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2877921		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	56100.259	2500	20000	32930	116	75	125	55940	0.280	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027485-002B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	121039
Client ID:	ZZZZZZ	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2877927

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2452204.526	50000	20000	2335000	586	75	125				S

Sample ID	N027485-002B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/13/2017	RunNo:	121039
Client ID:	ZZZZZZ	Batch ID:	66042	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/22/2017	SeqNo:	2877928

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2409150.832	50000	20000	2335000	370	75	125	2452000	1.77	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-66081** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/15/2017** RunNo: **120943**
Client ID: **PBW** Batch ID: **66081** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2017** SeqNo: **2872958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	58.456	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-66081** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/15/2017** RunNo: **120943**
Client ID: **LCSW** Batch ID: **66081** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2017** SeqNo: **2872959**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4574.030	100	5000	0	91.5	85	115				
Calcium	9346.317	500	10000	0	93.5	85	115				
Iron	101.514	20	100.0	0	102	85	115				
Magnesium	9234.344	100	10000	0	92.3	85	115				

Sample ID **N027523-009B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/15/2017** RunNo: **120943**
Client ID: **ZZZZZZ** Batch ID: **66081** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2017** SeqNo: **2872965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	7484.210	100	5000	2571	98.3	75	125				
Iron	1481.359	20	100.0	1284	197	75	125				S
Magnesium	83845.823	100	10000	73870	99.8	75	125				

Sample ID **N027523-009B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **12/15/2017** RunNo: **120943**
Client ID: **ZZZZZZ** Batch ID: **66081** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **12/19/2017** SeqNo: **2872966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	7521.074	100	5000	2571	99.0	75	125	7484	0.491	20	
Iron	1482.823	20	100.0	1284	198	75	125	1481	0.0988	20	S
Magnesium	84110.485	100	10000	73870	102	75	125	83850	0.315	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027523-009B-MS1	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	120943		
Client ID:	ZZZZZZ	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2873696		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Calcium	979282.613	2500	10000	887400	919	75	125				S		

Sample ID	N027523-009B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	120943		
Client ID:	ZZZZZZ	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2873697		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Calcium	980455.201	2500	10000	887400	931	75	125	979300	0.120	20	S		

Sample ID	MB-66081	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	121185		
Client ID:	PBW	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883306		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Sodium	ND	500											

Sample ID	LCS2-66081	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	121185		
Client ID:	LCSW	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883307		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Sodium	20372.380	500	20000	0	102	85	115						

Sample ID	N027523-012B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	121185		
Client ID:	ZZZZZZ	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883325		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Sodium	3477083.040	50000	20000	3330000	734	75	125	3484000	0.189	20	S		

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027523-012B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	121185
Client ID:	ZZZZZZ	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883326

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3483647.513	50000	20000	3330000	767	75	125				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-001

Client Sample ID: MW-15-Q417
Collection Date: 12/12/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**	Analyst: **CEI**	
Manganese	8.3	0.056	0.50		µg/L	1	1/4/2018 02:57 AM
Molybdenum	14	0.039	0.50		µg/L	1	1/4/2018 02:57 AM
Selenium	3.5	0.028	0.50		µg/L	1	1/4/2018 02:57 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-002

Client Sample ID: MW-16-Q417
Collection Date: 12/12/2017 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**	Analyst: **CEI**	
Manganese	33	0.056	0.50		µg/L	1	1/4/2018 04:14 AM
Molybdenum	17	0.039	0.50		µg/L	1	1/4/2018 04:14 AM
Selenium	2.3	0.028	0.50		µg/L	1	1/4/2018 04:14 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-003

Client Sample ID: MW-17-Q417
Collection Date: 12/12/2017 11:26:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**	Analyst: **CEI**	
Manganese	0.92	0.056	0.50		µg/L	1	1/4/2018 04:26 AM
Molybdenum	17	0.039	0.50		µg/L	1	1/4/2018 04:26 AM
Selenium	8.0	0.028	0.50		µg/L	1	1/4/2018 04:26 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-004

Client Sample ID: MW-18-Q417
Collection Date: 12/12/2017 10:38:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180104A**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Manganese	0.62	0.056	0.50		µg/L	1	1/4/2018 01:23 PM
Molybdenum	5.9	0.039	0.50		µg/L	1	1/4/2018 04:37 AM
Selenium	4.0	0.028	0.50		µg/L	1	1/4/2018 01:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-005

Client Sample ID: MW-31-060-Q417
Collection Date: 12/12/2017 3:04:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**	Analyst: **CEI**	
Arsenic	1.1	0.025	0.10		µg/L	1	1/4/2018 04:48 AM
Manganese	ND	0.056	0.50		µg/L	1	1/4/2018 04:48 AM
Molybdenum	14	0.039	0.50		µg/L	1	1/4/2018 04:48 AM
Selenium	2.6	0.028	0.50		µg/L	1	1/4/2018 04:48 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-006

Client Sample ID: MW-31-135-Q417
Collection Date: 12/12/2017 2:28:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Arsenic	3.5	0.025	0.10		µg/L	1	1/4/2018 04:59 AM
Manganese	1.5	0.056	0.50		µg/L	1	1/4/2018 04:59 AM
Molybdenum	26	0.19	2.5		µg/L	5	1/4/2018 05:04 AM
Selenium	0.85	0.028	0.50		µg/L	1	1/4/2018 01:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-007

Client Sample ID: MW-909-Q417
Collection Date: 12/12/2017 2:38:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**	Analyst: **CEI**	
Arsenic	3.6	0.025	0.10		µg/L	1	1/4/2018 05:21 AM
Manganese	1.5	0.056	0.50		µg/L	1	1/4/2018 05:21 AM
Molybdenum	26	0.039	0.50		µg/L	1	1/4/2018 05:21 AM
Selenium	0.74	0.028	0.50		µg/L	1	1/4/2018 02:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-008

Client Sample ID: MW-63-065-Q417
Collection Date: 12/12/2017 9:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Arsenic	1.5	0.025	0.10		µg/L	1	1/4/2018 05:32 AM
Manganese	1.3	0.056	0.50		µg/L	1	1/4/2018 05:32 AM
Molybdenum	18	0.039	0.50		µg/L	1	1/4/2018 05:32 AM
Selenium	1.0	0.028	0.50		µg/L	1	1/4/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-009

Client Sample ID: MW-71-035-Q417
Collection Date: 12/12/2017 3:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Arsenic	2.5	0.025	0.10		µg/L	1	1/4/2018 05:43 AM
Manganese	2200	1.4	12		µg/L	25	1/4/2018 02:15 PM
Molybdenum	15	0.19	2.5		µg/L	5	1/4/2018 05:49 AM
Selenium	ND	0.14	2.5		µg/L	5	1/4/2018 05:49 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027523
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027523-012

Client Sample ID: MW-21-Q417
Collection Date: 12/12/2017 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**	Analyst: **CEI**	
Manganese	11	0.056	0.50		µg/L	1	1/4/2018 05:55 AM
Molybdenum	76	0.19	2.5		µg/L	5	1/4/2018 06:00 AM
Selenium	47	0.028	0.50		µg/L	1	1/4/2018 05:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66061**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/18/2017**	RunNo: **121204**
Client ID: **PBW**	Batch ID: **66061**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2884524**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-66061**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/14/2017**	RunNo: **121204**
Client ID: **LCSW**	Batch ID: **66061**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2884527**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.805	0.10	10.00	0	98.0	85	115				
Manganese	103.318	0.50	100.0	0	103	85	115				
Molybdenum	9.782	0.50	10.00	0	97.8	85	115				
Selenium	10.243	0.50	10.00	0	102	85	115				

Sample ID **N027523-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/18/2017**	RunNo: **121204**
Client ID: **ZZZZZZ**	Batch ID: **66061**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2884533**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.220	0.10	10.00	1.644	106	75	125				
Manganese	110.872	0.50	100.0	8.293	103	75	125				
Molybdenum	25.666	0.50	10.00	14.02	116	75	125				
Selenium	13.800	0.50	10.00	3.503	103	75	125				

Sample ID **N027523-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/18/2017**	RunNo: **121204**
Client ID: **ZZZZZZ**	Batch ID: **66061**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2884535**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.997	0.10	10.00	1.644	104	75	125	12.22	1.83	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027523-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/18/2017	RunNo:	121204
Client ID:	ZZZZZZ	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884535

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	110.182	0.50	100.0	8.293	102	75	125	110.9	0.624	20	
Molybdenum	25.638	0.50	10.00	14.02	116	75	125	25.67	0.109	20	
Selenium	14.112	0.50	10.00	3.503	106	75	125	13.80	2.23	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition: 1. Chilled; 2. Headspace; 3. Container Intact; 4. Seal Present; 5. IR number 2; 6. Method of Cooling: ice
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Sample Temp: 3.2C / 2.6C
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	
Title: Geologist II	Phone: 916-786-3302 Fax:		
Signature: Date: 12/12/2017	Sampled By: Gantt Jeffers		
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*		
Project Name: PG&E Topock - GMP	Signature: Date: 12/12/2017		
Project Number: RC000753.801B			

Matrix: Ground; Sediment x; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3 500 mL poly	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo; Se); HNO3 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) 1 liter poly	Specific Conductance (EPA 120.1) 1 liter poly	Total Dissolved Solids (SM2540C) 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027523-01	MW-15-Q417	12/12/2017	13:40		X					X					X			X	X	X	X	E	3	P	BN	
2	-02	MW-16-Q417	12/12/2017	12:30			X				X					X			X	X	X	X	E	4	P	BN	
3	-03	MW-17-Q417	12/12/2017	11:26			X				X					X			X	X	X	X	E	4	P	BN	
4	-04	MW-18-Q417	12/12/2017	10:38		X					X					X			X	X	X	X	E	3	P	BN	
5	-05	MW-31-060-Q417	12/12/2017	15:04		X		X	X	X	X							X	X	X	X	X	E	5	P	BNS	
6	-06	MW-31-135-Q417	12/12/2017	14:28		X		X	X		X								X	X	X	X	E	4	P	BN	
7	-07	MW-909-Q417	12/12/2017	14:38		X		X	X		X								X	X	X	X	E	4	P	BN	
8	-08	MW-63-065-Q417	12/12/2017	9:44		X			X		X							X	X	X	X	X	E	4	P	BNS	
9	-09	MW-71-035-Q417	12/12/2017	15:30		X			X		X							X	X	X	X	X	E	4	P	BNS	
10	-10	MW-735-Q417	12/12/2017	15:15		X																	E	1	P	B	

Courier:
Tracking No.:

Relinquished by (Signature and Printed Name): G. Jeffers	Date/Time: 12.12.17 1636	Relinquished by (Signature and Printed Name):	Date/Time: 12/12/17 1636
Relinquished by (Signature and Printed Name):	Date/Time: 12/12/17 1853	Relinquished by (Signature and Printed Name):	Date/Time: 12/12/17 1853
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_4$	
Others/Specify:	B = (NH4)2SO4/NH4OH		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition: 1. Chilled Y ✓; 2. Headspace; 3. Container Intact; 4. Seal Present; 5. IR number 2; 6. Method of Cooling: Ice
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	
Title: Geologist II	Phone: 916-786-3302 Fax:		Sample Temp: 3.1 °C
Signature: Date: 12/12/2017	Sampled By: Gantt Jeffers	Matrix: Ground x Sediment; Potable Soil; NPDES Other Solid; Surface	Courier:
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*		Tracking No.:
Project Name: PG&E Topock - GMP	Signature: Date: 12/12/2017		
Project Number: RC000753.801B			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM; 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3; 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4; 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0); 1 liter poly	Specific Conductance (EPA 120.1); 1 liter poly	Total Dissolved Solids (SM2540C); 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B); 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027523-11	MW-21-EB-Q417	12/12/2017	8:35		X																E	1	P	B	
2	-12	MW-21-Q417	12/12/2017	8:25			X				X						X		X	X	X	X	X	E	5	P	BNS	
3	-13	MW-733-Q417	12/12/2017	16:00		X																		E	1	P	B	
4	-14	MW-734-Q417	12/12/2017	15:50		X																		E	1	P	B	
5																												
6																												
7																												
8																												
9																												
10																												

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
G. Jeffers	12.12.17 1636	Ping Wang	12/12/17 1636
Ping Wang	12/12/17 1853	Ping Wang	12/12/17 1853

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
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4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B = (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/12/2017	Workorder:	N027523
Rep sample Temp (Deg C):	3.2/2.6/2.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	N/A	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 12/21/2017

Reviewed By: 12/22/2017

ASSET Laboratories

WORK ORDER Summary

13-Dec-17

WorkOrder: N027523

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/12/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027523-001A	MW-15-Q417	12/12/2017 1:40:00 PM	12/27/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-001B			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027523-001C			12/27/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/27/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/27/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/27/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027523-002A	MW-16-Q417	12/12/2017 12:30:00 PM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-002B			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027523-002C			12/27/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/27/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/27/2017			Total Dissolved Solids Prep	☐	☐	☐	WW

WORK ORDER Summary

13-Dec-17

WorkOrder: N027523

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/12/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027523-002C	MW-16-Q417	12/12/2017 12:30:00 PM	12/27/2017	Groundwater	SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027523-003A	MW-17-Q417	12/12/2017 11:26:00 AM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-003B			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027523-003C			12/27/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/27/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/27/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/27/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027523-004A	MW-18-Q417	12/12/2017 10:38:00 AM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-004B			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

WORK ORDER Summary

13-Dec-17

WorkOrder: N027523

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/12/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027523-004B	MW-18-Q417	12/12/2017 10:38:00 AM	12/27/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027523-004C			12/27/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/27/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/27/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/27/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027523-005A	MW-31-060-Q417	12/12/2017 3:04:00 PM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-005B			12/27/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027523-005C			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027523-005D			12/27/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027523-005E			12/27/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/27/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/27/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/27/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

WORK ORDER Summary

13-Dec-17

WorkOrder: N027523

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/12/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027523-005E	MW-31-060-Q417	12/12/2017 3:04:00 PM	12/27/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027523-006A	MW-31-135-Q417	12/12/2017 2:28:00 PM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-006B			12/27/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027523-006C			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027523-006D			12/27/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/27/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/27/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/27/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027523-007A	MW-909-Q417	12/12/2017 2:38:00 PM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-007B			12/27/2017		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☐	☐	☑	SUB
N027523-007C			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

WORK ORDER Summary

13-Dec-17

WorkOrder: N027523

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/12/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027523-007D	MW-909-Q417	12/12/2017 2:38:00 PM	12/27/2017	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/27/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/27/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/27/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027523-008A	MW-63-065-Q417	12/12/2017 9:44:00 AM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-008B			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027523-008C			12/27/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027523-008D			12/27/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/27/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/27/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/27/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027523-009A	MW-71-035-Q417	12/12/2017 3:30:00 PM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

WORK ORDER Summary

13-Dec-17

WorkOrder: N027523

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/12/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027523-009B	MW-71-035-Q417	12/12/2017 3:30:00 PM	12/27/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027523-009C			12/27/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027523-009D			12/27/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/27/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/27/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/27/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027523-010A	MW-735-Q417	12/12/2017 3:15:00 PM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-011A	MW-21-EB-Q417	12/12/2017 8:35:00 AM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-012A	MW-21-Q417	12/12/2017 8:25:00 AM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-012B			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/27/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/27/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

WORK ORDER Summary

13-Dec-17

WorkOrder: N027523

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/12/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027523-012C	MW-21-Q417	12/12/2017 8:25:00 AM	12/27/2017	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027523-012D			12/27/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/27/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/27/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/27/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/27/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027523-013A	MW-733-Q417	12/12/2017 4:00:00 PM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-014A	MW-734-Q417	12/12/2017 3:50:00 PM	12/27/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027523-015A	FOLDER	12/27/2017	12/27/2017		EDD	RWQCB	☐	☐	☐	LAB
			12/27/2017		Folder	Folder	☐	☐	☐	LAB
			12/27/2017		Folder	Folder	☐	☐	☐	LAB

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Zymax
220 William Pitt Way
Pittsburgh, PA 15238

TEL: (760) 781 3338
FAX: (805) 544-8226
Acct #:

Field Sampler: Signed

14-Dec-17

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**OXY_DEUT**		
N027523-005B / MW-31-060-Q417	Groundwater	12/12/2017 3:04:00 PM	8OZP	1		
N027523-006B / MW-31-135-Q417	Groundwater	12/12/2017 2:28:00 PM	8OZP	1		
N027523-007B / MW-909-Q417	Groundwater	12/12/2017 2:38:00 PM	8OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N27523A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Oxygen and Deuterium Stable Isotopes SFIRM. EDD Requirement Labspec7 edata.

Fedex #: 771000116324

		Date/Time			Date/Time
Relinquished by:		12/14/2017 16:00	**Received by:**		
Relinquished by:			**Received by:**		

List of Analysts

ASSET Laboratories Work Order: N027523

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6010B_Dissolved, EPA 6020_Dissolved
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	EPA 120.1, SM 2540C, SM 2320 B

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R0120857 **Analyst:** LSR

ASSET #: N027523 **Date Analyzed:** 12/13/2017

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Silia Ramit Date: 12/26/2017

2nd Level Reviewer: RB 01/05/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 12/12/17 1730

Analyst: LSR CONT'D

Standard	Std ID	Reading	Comments
9.43 uS/cm	CINV-170187A	9.58 @ 21.9°C	% Rec: (90-110%)
1410	170822C	1423 @ 21.7°C	
9986	170187B	10220 @ 21.6°C	
99842	171121B	101500 @ 21.6°C	

	Sample ID	Matrix	Reading	Comments
1	NO27485-011E	H2O	3800 @ 20.3°C	
2	11EDUP		3810 @ 20.0°C	
3	12E		3810 @ 20.0°C	
4				
5				
6				
7				
8	1413 uS/cm	CINV-170615G	1464 @ 21.6°C	
9	10000	170822F	10390 @ 21.5°C	
10	99672	170831B	104200 @ 21.5°C	
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: 12/13/17 1430

Analyst: LSR

Julia Ramit 12/22/2017

RB 01/05/2018

Standard	Std ID	Reading	Comments
9.43 uS/cm	CINV-170187A	955 @ 23.2°C	% Rec: (90-110%)
1410	170822C	1418 @ 22.9°C	
9986	170187B	9960 @ 22.9°C	
99847	171121B	99800 @ 22.6°C	

	Sample ID	Matrix	Reading	Comments
1	NO27523-001C	H2O	1633 @ 22.8°C	
2	2C		1031 @ 21.9°C	
3	3C		1179 @ 20.9°C	1413 CINV 170615G
4	4C		1332 @ 20.9°C	= 1435 @ 23.5°C
5	5E		2930 @ 20.9°C	10000 CINV 170822F
6	6D		11050 @ 20.9°C	= 9970 @ 23.1°C
7	7D		11020 @ 20.7°C	99672 CINV 170831B
8	8D		5780 @ 20.4°C	= 96500 @ 22.9°C
9	9D		15760 @ 20.4°C	
10	9D DUP		15210 @ 20.1°C	
Dup	12D		13630 @ 20.1°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66096/66110 **Analyst:** LSR

ASSET #: N027523 **Date Analyzed:** 12/15,12/18/17

Method: EPA 160.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Silvia Ramit Date: 12/26/2017

2nd Level Reviewer RB 01/05/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N027523-001C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(70.8494 - 70.7453)*1000000}{100}$$

= 1041 mg/L

Reporting result in two significant figures,

TDS = 1000 mg/L

Silvia Ramit 12/26/2017

RLB 01/05/2018

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/15/2017 1:20:38**
Prep End Date:

Reviewed/ Date: RLB 01/05/2018

Initials/ Date: Lilia Ramit 12/26/2017

Prep Batch **66096** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66096	Water	INITIAL	100	☐	0	0	100	1.000		
MB-66096	Water		100	☐	0	0	100	1.000		
N027523-001C	Groundwater	1633	100	☐	0	0	100	1.000		
N027523-002C	Groundwater	1031	100	☐	0	0	100	1.000		
N027527-001D	Groundwater	37500	100 /2	☐	0	0	100	1.000		
N027527-002D	Groundwater	37700	100 /2	☐	0	0	100	1.000		
N027527-003D	Groundwater	26700	100 /5	☐	0	0	100	1.000		
N027527-004D	Groundwater	25000	100 /5	☐	0	0	100	1.000		
N027527-005D	Groundwater	24800	100 /5	☐	0	0	100	1.000		
N027527-006D	Groundwater	25000	100 /5	☐	0	0	100	1.000		
N027527-007D	Groundwater	35700	100 /2	☐	0	0	100	1.000		
N027527-008D	Groundwater	36600	100 /2	☐	0	0	100	1.000		

1 SD DUP 1 /2

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9667

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/15/2017 1:20:38**
Prep End Date: **12/16/2017 10:30:0**

Reviewed/ Date: RLB 01/05/2018
Initials/ Date: Lilia Ramit 12/26/2017

Prep Batch **66096** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66096	Water		100	☐	0	0	100	1.000		
MB-66096	Water		100	☐	0	0	100	1.000		
N027523-001C	Groundwater		100	☐	0	0	100	1.000		
N027523-002C	Groundwater		100	☐	0	0	100	1.000		
N027527-001D	Groundwater		2	☐	0	0	100	50.000		
N027527-002D	Groundwater		2	☐	0	0	100	50.000		
N027527-003D	Groundwater		5	☐	0	0	100	20.000		
N027527-004D	Groundwater		5	☐	0	0	100	20.000		
N027527-005D	Groundwater		5	☐	0	0	100	20.000		
N027527-006D	Groundwater		5	☐	0	0	100	20.000		
N027527-007D	Groundwater		2	☐	0	0	100	50.000		
N027527-008D	Groundwater		2	☐	0	0	100	50.000		
N027527-008D-DU	Groundwater		2	☐	0	0	100	50.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9667	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171211C	1000 ppm NaCL	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/18/2017 1:11:42**
Prep End Date:

Reviewed/ Date: RB 01/05/2018

Initials/ Date: Lilia Ramit 12/26/2017

Prep Batch **66110** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66110	Water		100	☐	0	0	100	1.000		
MB-66110	Water		100	☐	0	0	100	1.000		
N027523-003C	Groundwater	1179	100	☐	0	0	100	1.000		
N027523-004C	Groundwater	1331	100	☐	0	0	100	1.000		
N027523-005E	Groundwater	2930	100 /50	☐	0	0	100	1.000		
N027523-006D	Groundwater	11050	100 /10	☐	0	0	100	1.000		
N027523-007D	Groundwater	11020	100 /10	☐	0	0	100	1.000		
N027523-008D	Groundwater	5780	100 /20	☐	0	0	100	1.000		
N027523-009D	Groundwater	15160	100 /10	☐	0	0	100	1.000		
N027523-009D-DU	Groundwater	!	100 /10	☐	0	0	100	1.000		
N027523-012D	Groundwater	13630	100 /10	☐	0	0	100	1.000		
N027524-001D	Groundwater	6930	100 /20	☐	0	0	100	1.000		
N027524-002D	Groundwater	7280	100 /20	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

96.7

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/18/2017 1:11:42**
Prep End Date: **12/19/2017 11:50:0**
Reviewed/ Date: RLB 01/05/2018
Initials/ Date: Lilia Ramit 12/26/2017

Prep Batch **66110** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**
Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66110	Water		100	☐	0	0	100	1.000		
MB-66110	Water		100	☐	0	0	100	1.000		
N027523-003C	Groundwater		100	☐	0	0	100	1.000		
N027523-004C	Groundwater		100	☐	0	0	100	1.000		
N027523-005E	Groundwater		50	☐	0	0	100	2.000		
N027523-006D	Groundwater		10	☐	0	0	100	10.000		
N027523-007D	Groundwater		10	☐	0	0	100	10.000		
N027523-008D	Groundwater		20	☐	0	0	100	5.000		
N027523-009D	Groundwater		10	☐	0	0	100	10.000		
N027523-009D-DU	Groundwater		10	☐	0	0	100	10.000		
N027523-012D	Groundwater		10	☐	0	0	100	10.000		
N027524-001D	Groundwater		20	☐	0	0	100	5.000		
N027524-002D	Groundwater		20	☐	0	0	100	5.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9667	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171218A	1000 ppm NaCl	LCS	100

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/15/17 BW EE	MB 66096	100	68.1945 68.1943	68.1944 68.1944	
IX	LCS 66096	100	76.5978 76.5977	76.6930 76.6931	
KK	N027523-001C	100	70.7449 70.7453 8	70.8492 70.8494	
AA	2C	100	68.3888 68.3888 8	68.4501 68.4503	
C	N027527-001D	2	50.3712 50.3709	50.4247 50.4248	
T	2D	2	46.0444 46.0441	46.1005 46.1009	
M	3D	5	49.0616 49.0613	49.1574 49.1571	
IL	4D	5	49.3561 49.3559	49.4533 49.4532	
XX	5D	5	49.6364 49.6363	49.7317 49.7316	
S	6D	5	45.7298 45.7299	45.8275 45.8273	

Julia Ramit 12/26/2017

ASSET Laboratories Logbook#8

01/05/2018

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/15/17 15	N027527-0070	2	48.8871 48.8871	48.9436 48.9440	
15	SD	2	61.5234 61.5237	61.5789 61.5788	12/15
1K	SD DUP	2	62.4223 62.4227	62.4802 62.4804	
Julia Ramit 12/26/2017 RB 01/05/2018			Closing wt: 49.9998 12/16/17 @ 1030		

ASSET Laboratories Logbook#8

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
- A = weight in grams of dish + residue after drying
- B = weight of dish in grams
- PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
12/16/2017									
MB-66096	100	68.1943	68.1944	1	1	1			MBLK
LCS-66096	100	76.5977	76.6931	954	1	954			LCS
N027523-001C	100	70.7453	70.8494	1041	1	1041	1633	0.637	SAMP
N027523-002C	100	68.3888	68.4503	615	1	615	1031	0.597	SAMP
N027527-001D	2	50.3709	50.4248	539	50	26950	37500	0.719	SAMP
N027527-002D	2	46.0441	46.1009	568	50	28400	37700	0.753	SAMP
N027527-003D	5	49.0613	49.1571	958	20	19160	25100	0.763	SAMP
N027527-004D	5	49.3559	49.4532	973	20	19460	25000	0.778	SAMP
N027527-005D	5	49.6363	49.7316	953	20	19060	24800	0.769	SAMP
N027527-006D	5	45.7299	45.8273	974	20	19480	25000	0.779	SAMP
N027527-007D	2	48.8871	48.944	569	50	28450	35900	0.792	SAMP
N027527-008D	2	61.5237	61.5788	551	50	27550	36600	0.753	SAMP
N027527-008DDUP	2	62.4227	62.4804	577	50	28850	36600	0.788	DUP

Julia Ramit 12/26/2017

RB 01/05/2018

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/18/17 1311 LH	MB 66110	100	76.1814 76.1816	76.1819 76.1818	
LK	LCS 66110	100	76.5623 76.5626	76.6569 76.6571	
DD	NO27523-003C	100	71.6155 71.6159	71.6969 71.6969	
CC	4C	100	70.0671 70.0675	70.1511 70.1508	
LL	5E	50	68.9866 68.9869	69.0781 69.0785	
A	6D	10	59.1198 59.1199	59.1882 59.1882	
IF	7D	10	60.6218 60.6219	60.6890 60.6887	
IX	8D	20	76.5872 76.5875	76.6610 76.6608	
IJ	9D	10	61.5224 61.5226	61.6380 61.6298	
IK	9D DUP	10	62.4180 62.4181	62.5199 62.5202	

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt (g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/18/17 15	N0275230120	10	48.8863 48.8867	48.9846 48.9848	
EE	N0275240010	20	68.1912 68.1912	68.2730 68.2728	
FF	20	20	68.2073 68.2069	68.2855 68.2852	
Julia Ramit		12/26/2017			

ASSET Laboratories

Logbook#8

RB 01/05/2018

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
12/19/2017									
MB-66110	100	76.1816	76.1818	2	1	2			MBLK
LCS-66110	100	76.5626	76.6571	945	1	945			LCS
N027523-003C	100	71.6159	71.6969	810	1	810	1179	0.687	SAMP
N027523-004C	100	70.0675	70.1508	833	1	833	1332	0.625	SAMP
N027523-005E	50	68.9869	69.0785	916	2	1832	2930	0.625	SAMP
N027523-006D	10	59.1199	59.1882	683	10	6830	11050	0.618	SAMP
N027523-007D	10	60.6219	60.6887	668	10	6680	11020	0.606	SAMP
N027523-008D	20	76.5875	76.6608	733	5	3665	5780	0.634	SAMP
N027523-009D	10	61.5226	61.6298	1072	10	10720	15160	0.707	SAMP
N027523-009DDUP	10	62.4181	62.5202	1021	10	10210	15160	0.673	DUP
N027523-012D	10	48.8867	48.9848	981	10	9810	13630	0.720	SAMP
N027524-001D	20	68.1912	68.2728	816	5	4080	6930	0.589	SAMP
N027524-002D	20	68.2069	68.2852	783	5	3915	7280	0.538	SAMP

Julia Ramit 12/26/2017

RB 01/05/2018

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120931
ASSET #: N027523

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 12/18/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?		X			X	
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?		X			X	
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?	X			X		
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments: Dilution was necessary for N027523-009A and -012A due to matrix interference.

N027523-001A = 11 ug/L ; N027523-001B (6020) = 14 ug/L **N027523-002A = 11 ug/L ; N027523-002B (6020) = 21 ug/L**
N027523-008A = 1.2 ug/L ; N027523-008B (6020) = 2.6 ug/L **N027523-009A = <1.0 ug/L ; N027523-009B (6020) = 1.5 ug/L**
MS protocol performed. Recovery within criteria.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 12/24/2017

2nd Level Reviewer RLB 01/05/2018 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N027523-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 2.2469 * 5$$

$$Cr^{+6}, \mu g/L = 11.23$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 11}$$

rba 12/24/2017

RLB 01/05/2018

ANALYSIS RUN LOG

INJECTION LOG: 171128A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/28/17 10:57 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/28/17 11:08 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/28/17 11:17 AM	Reported
13	MB-R120468	MBLK	1	Hexavalent Chromium	11/28/17 11:27 AM	Reported
14	LCS-R120468	LCS	1	Hexavalent Chromium	11/28/17 11:36 AM	Reported
15	N027215-001A	SAMP	1	Hexavalent Chromium	11/28/17 11:47 AM	Reported
16	N027215-002A	SAMP	1	Hexavalent Chromium	11/28/17 11:59 AM	Reported
17	N027215-003A	SAMP	1	Hexavalent Chromium	11/28/17 12:08 PM	Reported
18	N027215-004A	SAMP	1	Hexavalent Chromium	11/28/17 12:18 PM	Reported
19	N027215-005A	SAMP	1	Hexavalent Chromium	11/28/17 12:27 PM	Reported
20	N027215-002ADUP	DUP	1	Hexavalent Chromium	11/28/17 12:37 PM	Reported
21	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 12:46 PM	Not Reported
22	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 12:56 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	11/28/17 1:05 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/28/17 1:14 PM	Reported
25	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:04 PM	Not Reported
26	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:16 PM	Not Reported
27	N027215-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:29 PM	Reported
28	N027215-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:41 PM	Reported
29	CCV-2	CCV	1	Hexavalent Chromium	11/28/17 2:50 PM	Reported
30	CCB-2	CCB	1	Hexavalent Chromium	11/28/17 3:00 PM	Reported



Injection Log Summary

Sequence Details

Name:	**IC-07_171128A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**28/Nov/17 15:47:35**
No. of Injections:	**33**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		11/28/2017 10:57	Finished	ICV @5ppb, IWST-171002A
11	PQL@0.2ppb,CCV2,1	12	1000	Unknown		11/28/2017 11:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		11/28/2017 11:17	Finished	ICB R171114C
13	MB-H2O,MBLK,1	14	1000	Unknown		11/28/2017 11:27	Finished	MB R171114C
14	LCS-H2O,LCS,1	15	1000	Unknown		11/28/2017 11:36	Finished	LCS, IWST-171002B
15	N027215-001A,SAMP	17	1000	Unknown		11/28/2017 11:47	Finished	SAMP,10mL
16	N027215-002A,SAMP	18	1000	Unknown		11/28/2017 11:59	Finished	SAMP,10mL
17	N027215-003A,SAMP	19	1000	Unknown		11/28/2017 12:08	Finished	SAMP,10mL
18	N027215-004A,SAMP	20	1000	Unknown		11/28/2017 12:18	Finished	SAMP,10mL
19	N027215-005A,SAMP	21	1000	Unknown		11/28/2017 12:27	Finished	SAMP,10mL
20	N027215-002ADUP,D	22	1000	Unknown		11/28/2017 12:37	Finished	DUP,10mL
21	N027157-001AMS,MS	23	1000	Unknown		11/28/2017 12:46	Finished	MS (5ppb), IWST-171002B,10
22	N027157-001AMSD,M	24	1000	Unknown		11/28/2017 12:56	Finished	MSD (5ppb), IWST-171002B,1(
23	CCV-1,CCV1,1,	25	1000	Unknown		11/28/2017 13:05	Finished	CCV @10ppb, IWST-171002A
24	CCB-1,CCB,1,	26	1000	Unknown		11/28/2017 13:14	Finished	CCB R171031A
25	N027157-001AMS,MS	28	1000	Unknown		11/28/2017 14:04	Finished	MS (5ppb), IWST-171002B,10
26	N027157-001AMSD,M	29	1000	Unknown		11/28/2017 14:16	Finished	MSD (5ppb), IWST-171002B,1(
27	N027215-001AMS,MS	31	1000	Unknown		11/28/2017 14:29	Finished	MS (5ppb), IWST-171002B,10
28	N027215-001AMSD,M	32	1000	Unknown		11/28/2017 14:41	Finished	MSD (5ppb), IWST-171002B,1(
29	CCV-2,CCV,1,	33	1000	Unknown		11/28/2017 14:50	Finished	CCV @5ppb, IWST-171002A
30	CCB-2,CCB,1,	34	1000	Unknown		11/28/2017 15:00	Finished	CCB R171031A
31	SHUTDOWN	35	1000	Unknown		11/28/2017 15:09	Finished	
32	Eluent: R171128A	36	1000	Unknown		n.a.	Finished	Eluent
33	PCR: R171128B	37	1000	Unknown		n.a.	Finished	Post-Column Reagent

rba 11/29/2017

INJECTION LOG: 171218A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/18/17 8:57 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/18/17 9:07 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/18/17 9:17 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/18/17 9:26 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/18/17 9:36 AM	Reported
15	MB-R120931	MBLK	1	Hexavalent Chromium	12/18/17 9:45 AM	Reported
16	LCS-R120931	LCS	1	Hexavalent Chromium	12/18/17 9:55 AM	Reported
17	N027321-008A	SAMP	1	Hexavalent Chromium	12/18/17 10:04 AM	Not Reported
18	N027321-008AMS	MS	1	Hexavalent Chromium	12/18/17 10:14 AM	Not Reported
19	N027359-002A	SAMP	1	Hexavalent Chromium	12/18/17 10:23 AM	Not Reported
20	N027359-002AMS	MS	1	Hexavalent Chromium	12/18/17 10:33 AM	Not Reported
21	N027359-003A	SAMP	1	Hexavalent Chromium	12/18/17 10:42 AM	Not Reported
22	N027359-003AMS	MS	1	Hexavalent Chromium	12/18/17 10:51 AM	Not Reported
23	N027359-006A	SAMP	1	Hexavalent Chromium	12/18/17 11:01 AM	Not Reported
24	N027359-006AMS	MS	1	Hexavalent Chromium	12/18/17 11:10 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/18/17 11:20 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/18/17 11:29 AM	Reported
27	N027523-001A	SAMP	5	Hexavalent Chromium	12/18/17 11:39 AM	Reported
28	N027523-001AMS	MS	5	Hexavalent Chromium	12/18/17 11:48 AM	Reported
29	N027523-002A	SAMP	2	Hexavalent Chromium	12/18/17 11:58 AM	Reported
30	N027523-002AMS	MS	2	Hexavalent Chromium	12/18/17 12:07 PM	Reported
31	N027523-003A	SAMP	2	Hexavalent Chromium	12/18/17 12:17 PM	Reported
32	N027523-003AMS	MS	2	Hexavalent Chromium	12/18/17 12:26 PM	Reported
33	N027523-004A	SAMP	5	Hexavalent Chromium	12/18/17 12:36 PM	Reported
34	N027523-004AMS	MS	5	Hexavalent Chromium	12/18/17 12:45 PM	Reported
35	N027523-005A	SAMP	100	Hexavalent Chromium	12/18/17 12:54 PM	Reported
36	N027523-005AMS	MS	100	Hexavalent Chromium	12/18/17 1:04 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/18/17 1:13 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/18/17 1:23 PM	Reported
39	N027523-006A	SAMP	5	Hexavalent Chromium	12/18/17 1:32 PM	Reported
40	N027523-006AMS	MS	5	Hexavalent Chromium	12/18/17 1:42 PM	Reported
41	N027523-007A	SAMP	5	Hexavalent Chromium	12/18/17 1:51 PM	Reported
42	N027523-007AMS	MS	5	Hexavalent Chromium	12/18/17 2:01 PM	Reported

INJECTION LOG: 171218A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027523-008A	SAMP	1	Hexavalent Chromium	12/18/17 2:10 PM	Reported
44	N027523-008AMS	MS	1	Hexavalent Chromium	12/18/17 2:20 PM	Reported
45	N027523-009A	SAMP	5	Hexavalent Chromium	12/18/17 2:29 PM	Reported
46	N027523-009AMS	MS	5	Hexavalent Chromium	12/18/17 2:39 PM	Reported
47	N027523-012A	SAMP	1	Hexavalent Chromium	12/18/17 2:48 PM	Not Reported
48	N027523-012AMS	MS	1	Hexavalent Chromium	12/18/17 2:57 PM	Not Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/18/17 3:07 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/18/17 3:17 PM	Reported
51	N027523-010A	SAMP	1	Hexavalent Chromium	12/18/17 3:26 PM	Reported
52	N027523-010AMS	MS	1	Hexavalent Chromium	12/18/17 3:35 PM	Reported
53	N027523-011A	SAMP	1	Hexavalent Chromium	12/18/17 3:45 PM	Reported
54	N027523-011AMS	MS	1	Hexavalent Chromium	12/18/17 3:54 PM	Reported
55	N027523-013A	SAMP	1	Hexavalent Chromium	12/18/17 4:04 PM	Reported
56	N027523-013AMS	MS	1	Hexavalent Chromium	12/18/17 4:13 PM	Reported
57	N027523-014A	SAMP	1	Hexavalent Chromium	12/18/17 4:23 PM	Reported
58	N027523-014AMS	MS	1	Hexavalent Chromium	12/18/17 4:32 PM	Reported
59	N027523-003AMSD	MSD	2	Hexavalent Chromium	12/18/17 4:42 PM	Reported
60	N027523-005ADUP	DUP	100	Hexavalent Chromium	12/18/17 4:54 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/18/17 5:03 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/18/17 5:13 PM	Reported
63	N027523-009A	SAMP	1	Hexavalent Chromium	12/18/17 5:22 PM	Not Reported
64	N027523-009AMS	MS	1	Hexavalent Chromium	12/18/17 5:32 PM	Not Reported
65	N027523-012A	SAMP	5	Hexavalent Chromium	12/18/17 5:41 PM	Reported
66	N027523-012AMS	MS	5	Hexavalent Chromium	12/18/17 5:50 PM	Reported
67	LCS-R120932	ICAL	1	Hexavalent Chromium	12/18/17 6:00 PM	Reported
68	MB-R120932	MBLK	1	Hexavalent Chromium	12/18/17 6:09 PM	Reported
69	N027583-002A	SAMP	1	Hexavalent Chromium	12/18/17 6:19 PM	Reported
70	N027583-002ADUP	DUP	1	Hexavalent Chromium	12/18/17 6:28 PM	Reported
71	N027583-002AMS	MS	1	Hexavalent Chromium	12/18/17 6:38 PM	Reported
72	N027583-002AMSD	MSD	1	Hexavalent Chromium	12/18/17 6:47 PM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	12/18/17 6:57 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	12/18/17 7:06 PM	Reported
75	N027583-001A	SAMP	1	Hexavalent Chromium	12/18/17 7:16 PM	Reported
76	N027583-001AMS	MS	1	Hexavalent Chromium	12/18/17 7:25 PM	Reported
77	N027583-003A	SAMP	1	Hexavalent Chromium	12/18/17 7:35 PM	Reported
78	N027583-003AMS	MS	1	Hexavalent Chromium	12/18/17 7:44 PM	Reported
79	N027583-004A	SAMP	1	Hexavalent Chromium	12/18/17 7:53 PM	Reported
80	N027583-004AMS	MS	1	Hexavalent Chromium	12/18/17 8:03 PM	Reported
81	N027583-005A	SAMP	1	Hexavalent Chromium	12/18/17 8:12 PM	Reported
82	N027583-005AMS	MS	1	Hexavalent Chromium	12/18/17 8:22 PM	Reported
83	N027583-006A	SAMP	1	Hexavalent Chromium	12/18/17 8:31 PM	Reported
84	N027583-006AMS	MS	1	Hexavalent Chromium	12/18/17 8:41 PM	Reported

INJECTION LOG: 171218A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	12/18/17 8:50 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	12/18/17 9:00 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171218A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**19/Dec/17 14:37:16**
No. of Injections:	**89**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/18/2017 08:57	Finished	BLANK
11	BLANK	2	1000	Unknown		12/18/2017 09:07	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/18/2017 09:17	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/18/2017 09:26	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/18/2017 09:36	Finished	CCB R171129A
15	MB-H2O,MBLK,1	6	1000	Unknown		12/18/2017 09:45	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/18/2017 09:55	Finished	LCS, IWST-171002B
17	N027321-008A,SAMP	8	1000	Unknown		12/18/2017 10:04	Finished	SAMP,10mL
18	N027321-008AMS,MS	9	1000	Unknown		12/18/2017 10:14	Finished	MS (1ppb), IWST-171002B,10
19	N027359-002A,SAMP	10	1000	Unknown		12/18/2017 10:23	Finished	SAMP,10mL
20	N027359-002AMS,MS	11	1000	Unknown		12/18/2017 10:33	Finished	MS (1ppb), IWST-171002B,10
21	N027359-003A,SAMP	12	1000	Unknown		12/18/2017 10:42	Finished	SAMP,10mL
22	N027359-003AMS,MS	13	1000	Unknown		12/18/2017 10:51	Finished	MS (1ppb), IWST-171002B,10
23	N027359-006A,SAMP	14	1000	Unknown		12/18/2017 11:01	Finished	SAMP,10mL
24	N027359-006AMS,MS	15	1000	Unknown		12/18/2017 11:10	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	16	1000	Unknown		12/18/2017 11:20	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	17	1000	Unknown		12/18/2017 11:29	Finished	CCB R171129A
27	N027523-001A,SAMP	18	1000	Unknown		12/18/2017 11:39	Finished	SAMP,2>10mL
28	N027523-001AMS,MS	19	1000	Unknown		12/18/2017 11:48	Finished	MS (1ppb), IWST-171002B,2>1
29	N027523-002A,SAMP	20	1000	Unknown		12/18/2017 11:58	Finished	SAMP,5>10mL
30	N027523-002AMS,MS	21	1000	Unknown		12/18/2017 12:07	Finished	MS (5ppb), IWST-171002B,5>1
31	N027523-003A,SAMP	22	1000	Unknown		12/18/2017 12:17	Finished	SAMP,5>10mL
32	N027523-003AMS,MS	23	1000	Unknown		12/18/2017 12:26	Finished	MS (5ppb), IWST-171002B,5>1
33	N027523-004A,SAMP	24	1000	Unknown		12/18/2017 12:36	Finished	SAMP,2>10mL
34	N027523-004AMS,MS	25	1000	Unknown		12/18/2017 12:45	Finished	MS (5ppb), IWST-171002B,2>1
35	N027523-005A,SAMP	26	1000	Unknown		12/18/2017 12:54	Finished	SAMP,0.1>10mL
36	N027523-005AMS,MS	27	1000	Unknown		12/18/2017 13:04	Finished	MS (5ppb), IWST-171002B,0.1
37	CCV-3,CCV,1,	28	1000	Unknown		12/18/2017 13:13	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	29	1000	Unknown		12/18/2017 13:23	Finished	CCB R171129A
39	N027523-006A,SAMP	30	1000	Unknown		12/18/2017 13:32	Finished	SAMP,2>10mL
40	N027523-006AMS,MS	31	1000	Unknown		12/18/2017 13:42	Finished	MS (5ppb), IWST-171002B,2>1
41	N027523-007A,SAMP	32	1000	Unknown		12/18/2017 13:51	Finished	SAMP,2>10mL
42	N027523-007AMS,MS	33	1000	Unknown		12/18/2017 14:01	Finished	MS (5ppb), IWST-171002B,2>1
43	N027523-008A,SAMP	34	1000	Unknown		12/18/2017 14:10	Finished	SAMP,10mL
44	N027523-008AMS,MS	35	1000	Unknown		12/18/2017 14:20	Finished	MS (1ppb), IWST-171002B,10
45	N027523-009A,SAMP	36	1000	Unknown		12/18/2017 14:29	Finished	SAMP,2>10mL
46	N027523-009AMS,MS	37	1000	Unknown		12/18/2017 14:39	Finished	MS (1ppb), IWST-171002B,2>1
47	N027523-012A,SAMP	38	1000	Unknown		12/18/2017 14:48	Finished	SAMP,10mL
48	N027523-012AMS,MS	39	1000	Unknown		12/18/2017 14:57	Finished	MS (1ppb), IWST-171002B,10
49	CCV-4,CCV1,1,	40	1000	Unknown		12/18/2017 15:07	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	41	1000	Unknown		12/18/2017 15:17	Finished	CCB R171129A
51	N027523-010A,SAMP	42	1000	Unknown		12/18/2017 15:26	Finished	SAMP,10mL
52	N027523-010AMS,MS	43	1000	Unknown		12/18/2017 15:35	Finished	MS (1ppb), IWST-171002B,10
53	N027523-011A,SAMP	44	1000	Unknown		12/18/2017 15:45	Finished	SAMP,10mL
54	N027523-011AMS,MS	45	1000	Unknown		12/18/2017 15:54	Finished	MS (1ppb), IWST-171002B,10
55	N027523-013A,SAMP	46	1000	Unknown		12/18/2017 16:04	Finished	SAMP,10mL
56	N027523-013AMS,MS	47	1000	Unknown		12/18/2017 16:13	Finished	MS (1ppb), IWST-171002B,10
57	N027523-014A,SAMP	48	1000	Unknown		12/18/2017 16:23	Finished	SAMP,10mL
58	N027523-014AMS,MS	49	1000	Unknown		12/18/2017 16:32	Finished	MS (1ppb), IWST-171002B,10
59	N027523-003AMSD,M	1	1000	Unknown		12/18/2017 16:42	Finished	MSD (5ppb), IWST-171002B,5
60	N027523-005ADUP,D	2	1000	Unknown		12/18/2017 16:54	Finished	DUP,0.1>10mL

61	CCV-5,CCV,1,	3	1000	Unknown		12/18/2017 17:03	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	4	1000	Unknown		12/18/2017 17:13	Finished	CCB R171129A
63	N027523-009A,SAMF	5	1000	Unknown		12/18/2017 17:22	Finished	SAMP,10mL
64	N027523-009AMS,MS	6	1000	Unknown		12/18/2017 17:32	Finished	MS (1ppb), IWST-171002B,10
65	N027523-012A,SAMF	7	1000	Unknown		12/18/2017 17:41	Finished	SAMP,2>10mL
66	N027523-012AMS,MS	8	1000	Unknown		12/18/2017 17:50	Finished	MS (1ppb), IWST-171002B,2>1
67	LCS-2,LCS,1	9	1000	Unknown		12/18/2017 18:00	Finished	LCS, IWST-171002B
68	MB-2,MBLK,1	10	1000	Unknown		12/18/2017 18:09	Finished	MB R171129A
69	N027583-002A,SAMF	11	1000	Unknown		12/18/2017 18:19	Finished	SAMP,10mL
70	N027583-002ADUP,D	12	1000	Unknown		12/18/2017 18:28	Finished	DUP,10mL
71	N027583-002AMS,MS	13	1000	Unknown		12/18/2017 18:38	Finished	MS (1ppb), IWST-171002B,10
72	N027583-002AMSD,M	14	1000	Unknown		12/18/2017 18:47	Finished	MSD (1ppb), IWST-171002B,1(
73	CCV-6,CCV1,1,	15	1000	Unknown		12/18/2017 18:57	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	16	1000	Unknown		12/18/2017 19:06	Finished	CCB R171129A
75	N027583-001A,SAMF	17	1000	Unknown		12/18/2017 19:16	Finished	SAMP,10mL
76	N027583-001AMS,MS	18	1000	Unknown		12/18/2017 19:25	Finished	MS (1ppb), IWST-171002B,10
77	N027583-003A,SAMF	19	1000	Unknown		12/18/2017 19:35	Finished	SAMP,10mL
78	N027583-003AMS,MS	20	1000	Unknown		12/18/2017 19:44	Finished	MS (1ppb), IWST-171002B,10
79	N027583-004A,SAMF	21	1000	Unknown		12/18/2017 19:53	Finished	SAMP,10mL
80	N027583-004AMS,MS	22	1000	Unknown		12/18/2017 20:03	Finished	MS (1ppb), IWST-171002B,10
81	N027583-005A,SAMF	23	1000	Unknown		12/18/2017 20:12	Finished	SAMP,10mL
82	N027583-005AMS,MS	24	1000	Unknown		12/18/2017 20:22	Finished	MS (1ppb), IWST-171002B,10
83	N027583-006A,SAMF	25	1000	Unknown		12/18/2017 20:31	Finished	SAMP,10mL
84	N027583-006AMS,MS	26	1000	Unknown		12/18/2017 20:41	Finished	MS (1ppb), IWST-171002B,10
85	CCV-7,CCV,1,	27	1000	Unknown		12/18/2017 20:50	Finished	CCV @5ppb, IWST-171002A
86	CCB-7,CCB,1,	28	1000	Unknown		12/18/2017 21:00	Finished	CCB R171129A
87	SHUTDOWN	29	1000	Unknown		12/18/2017 21:09	Finished	
88	Eluent: R171214A	30	1000	Unknown		n.a.	Finished	Eluent
89	PCR: R171214B	31	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 12/13/17
Time Prepared: 1310H
Prepared By: MC

Slope: 97.8%
pH 4: 4.00 at 25.0C
7: 7.02 at 25.0C
10: 10.02 at 25.0C
LCS: 6.98

Reagent ID:
Sulfuric Acid: ~~7465~~ 9665
Diphenylcarbazide: CINV-170620A
NH4OH + NH4SO4 eluent: ~~B171213~~ M71214A
NH4OH + NH4SO4 buffer: M71129A

6N NaOH: M70509A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	ND27451-17A	9.24	9.35	250 mL	250 mL	2 drops	M71129A
2)	18A	9.32	—				
3)	19A	9.45	—				
4)	20A	9.52	—				
5)	ND27518-1D	9.18	9.34			3 drops	
6)	ND27485-1A	9.34	—				
7)	2A	9.41	—				
8)	3A	9.45	—				
9)	4A	9.35	—				
10)	5A	9.52	—				
11)	6A	9.59	—				
12)	7A	9.61	—				
13)	8A	9.36	—				
14)	9A	9.41	—				
15) MC	10A	9.32 10	—				
	11A	9.25	9.30			1 drop	

Sample Preparation

Date Prepared: 12/13/17
Time Prepared: 1310H
Prepared By: MC

Reagent ID:
Sulfuric Acid: ~~7465~~ 9665
Diphenylcarbazide: CINV-170620A
NH4OH + NH4SO4 eluent: B171213 → M71214A
NH4OH + NH4SO4 buffer: B171129A

6N NaOH: M70509A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	ND27485-12A	9.17	9.36	250 mL	250 mL	3 drops	R171129A
2)	13A	9.49	—				
3)	14A	9.45	—				
4)	15A	9.45	—				
5)	16A	9.41	—				
6)	ND27523-1A	9.55	—				
7)	2A	9.47	—				
8)	2A	9.46	—				1/2
9)	3A	9.51	—				2/2
10)	3A	9.51	—				1/2
11)	4A	9.42	—				2/2
12)	5A	9.46	—				
13)	6A	9.48	—				
14)	7A	9.50	—				
15)	8A	9.20	9.34			3 drops ← 3 drops	
	9A	8.90	9.34			6 drops ← 6 drops	MC

Logbook No. 13

jba 12/24/2017

RB 01/05/2018

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 12/13/17
Time Prepared: 1310H
Prepared By: MC

Reagent ID:
Sulfuric Acid: ~~9465~~ 9665
Diphenylcarbazide: CINV-170620A
NH4OH + NH4SO4 eluent: ~~B171212B~~ 1L171214A / M171219A
NH4OH + NH4SO4 buffer: B171129A

6N NaOH: M170809A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	NO 27523-10A	9.61	—	250 mL	250 mL		R171129A
2)	11A	9.58	—				
3)	12A	8.67	9.33			10 drops	1/2
4)	13A	8.70	9.32			10 drops	2/2
5)	13A	9.55	—				
6)	14A	9.54	—				
7)	NO 27524-1A	9.46	—				
8)	-2A	9.47	—				
9)	3A	9.45	—				
10)	4A	9.46	—				
11)	5A	9.49	—				
12)	6A	9.47	—				
13)	7A	9.44	—				
14)	8A	9.38	—				
15)	9A	9.28	9.37			1 drop	
	10A	9.44	—				

Sample Preparation

Date Prepared: 12/13/17
Time Prepared: 1310H
Prepared By: MC

Reagent ID:
Sulfuric Acid: ~~9465~~ 9665
Diphenylcarbazide: CINV-170620A
NH4OH + NH4SO4 eluent: ~~B171212B~~ / M171219A
NH4OH + NH4SO4 buffer: B171129A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	NO 27524-11A	9.36	—	250 mL	250 mL		R171129A
2)	12A	9.38	—				
3)	13A	9.31	—				
4)							
5)							
6)							
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 13

rba 12/24/2017

ASSET LABORATORIES
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01/05/2018
85 of 100
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV
ORELAP/NELAP Cert 4046
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INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 11/28/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0529	0.2484	1.2584	2.5328	3.7596	5.0155	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-171002A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 01/05/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ICV**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2872156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.092	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2872157**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.185	0.20	0.2000	0	92.6	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **CCV**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872159**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.012	0.20	5.000	0	100	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872160**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.198	0.20	0.2000	0	99.2	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872172**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.039	0.20	10.00	0	100	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **CCV**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872184**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.058	0.20	5.000	0	101	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.983	0.20	10.00	0	99.8	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **CCV**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872206**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.029	0.20	5.000	0	101	95	105				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ZZZZZZ**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872210**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.076	0.20	10.00	0	101	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **ICB**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2872158**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **CCB**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **CCB**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **CCB**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872185**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **CCB**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **CCB**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872207**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120931**
Client ID: **CCB**	Batch ID: **R120931**	TestNo: **EPA 218.6**		Analysis Date: **12/18/2017**	SeqNo: **2872211**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/18/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.156	
CCV-4	4.165	
CCV-5	4.156	
CCV-6	4.165	
CCV-7	4.165	
Average	4.162	
Actual RT Window	4.082 - 4.242	
Applied RT Window	3.962 - 4.362	
MB-R120931	N.A.	N.A.
LCS-R120931	4.165	PASS
N027321-008A	4.123	PASS
N027321-008AMS	4.148	PASS
N027359-002A	4.015	PASS
N027359-002AMS	4.040	PASS
N027359-003A	4.040	PASS
N027359-003AMS	4.040	PASS
N027359-006A	4.048	PASS
N027359-006AMS	4.048	PASS
N027523-001A	4.156	PASS
N027523-001AMS	4.156	PASS
N027523-002A	4.156	PASS
N027523-002AMS	4.156	PASS
N027523-003A	4.148	PASS
N027523-003AMS	4.148	PASS
N027523-004A	4.156	PASS
N027523-004AMS	4.156	PASS
N027523-005A	4.165	PASS
N027523-005AMS	4.165	PASS
N027523-006A	4.131	PASS
N027523-006AMS	4.131	PASS

RB 01/05/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/18/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.156	
CCV-4	4.165	
CCV-5	4.156	
CCV-6	4.165	
CCV-7	4.165	
Average	4.162	
Actual RT Window	4.082 - 4.242	
Applied RT Window	3.962 - 4.362	
N027523-007A	4.131	PASS
N027523-007AMS	4.123	PASS
N027523-008A	4.065	PASS
N027523-008AMS	4.065	PASS
N027523-009A	N.A.	N.A.
N027523-009AMS	4.106	PASS
N027523-012A	3.856	FAIL
N027523-012AMS	3.856	FAIL
N027523-010A	N.A.	N.A.
N027523-010AMS	4.165	PASS
N027523-011A	N.A.	N.A.
N027523-011AMS	4.165	PASS
N027523-013A	N.A.	N.A.
N027523-013AMS	4.156	PASS
N027523-014A	N.A.	N.A.
N027523-014AMS	4.165	PASS
N027523-003AMSD	4.156	PASS
N027523-005ADUP	4.165	PASS
N027523-009A	N.A.	N.A.
N027523-009AMS	N.A.	N.A.
N027523-012A	4.115	PASS
N027523-012AMS	4.123	PASS



01/05/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/18/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.156	
CCV-4	4.165	
CCV-5	4.156	
CCV-6	4.165	
CCV-7	4.165	
Average	4.162	
Actual RT Window	4.082 - 4.242	
Applied RT Window	3.962 - 4.362	
LCS-R120932_LCS	4.165	PASS
MB-R120932	N.A.	N.A.
N027583-002A	4.015	PASS
N027583-002ADUP	4.040	PASS
N027583-002AMS	4.040	PASS
N027583-002AMSD	4.040	PASS
N027583-001A	4.031	PASS
N027583-001AMS	4.040	PASS
N027583-003A	4.040	PASS
N027583-003AMS	4.040	PASS
N027583-004A	N.A.	N.A.
N027583-004AMS	4.165	PASS
N027583-005A	N.A.	N.A.
N027583-005AMS	4.165	PASS
N027583-006A	N.A.	N.A.
N027583-006AMS	4.165	PASS

 01/05/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 Unit: ug/L
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

MDL/LOD & PQL Verification 2017

Method Name: **Hexavalent Chromium by IC**
Method Number: EPA Method 218.6
Analysis Date(s): 5/31/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: µg/L

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.103

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.194	**97**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 171128A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/28/17 10:57 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/28/17 11:08 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/28/17 11:17 AM	Reported
13	MB-R120468	MBLK	1	Hexavalent Chromium	11/28/17 11:27 AM	Reported
14	LCS-R120468	LCS	1	Hexavalent Chromium	11/28/17 11:36 AM	Reported
15	N027215-001A	SAMP	1	Hexavalent Chromium	11/28/17 11:47 AM	Reported
16	N027215-002A	SAMP	1	Hexavalent Chromium	11/28/17 11:59 AM	Reported
17	N027215-003A	SAMP	1	Hexavalent Chromium	11/28/17 12:08 PM	Reported
18	N027215-004A	SAMP	1	Hexavalent Chromium	11/28/17 12:18 PM	Reported
19	N027215-005A	SAMP	1	Hexavalent Chromium	11/28/17 12:27 PM	Reported
20	N027215-002ADUP	DUP	1	Hexavalent Chromium	11/28/17 12:37 PM	Reported
21	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 12:46 PM	Not Reported
22	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 12:56 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	11/28/17 1:05 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/28/17 1:14 PM	Reported
25	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:04 PM	Not Reported
26	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:16 PM	Not Reported
27	N027215-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:29 PM	Reported
28	N027215-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:41 PM	Reported
29	CCV-2	CCV	1	Hexavalent Chromium	11/28/17 2:50 PM	Reported
30	CCB-2	CCB	1	Hexavalent Chromium	11/28/17 3:00 PM	Reported

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Injection Log Summary

Sequence Details

Name:	**IC-07_171128A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**28/Nov/17 15:47:35**
No. of Injections:	**33**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		11/28/2017 10:57	Finished	ICV @5ppb, IWST-171002A
11	PQL@0.2ppb,CCV2,	12	1000	Unknown		11/28/2017 11:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		11/28/2017 11:17	Finished	ICB R171114C
13	MB-H2O,MBLK,1	14	1000	Unknown		11/28/2017 11:27	Finished	MB R171114C
14	LCS-H2O,LCS,1	15	1000	Unknown		11/28/2017 11:36	Finished	LCS, IWST-171002B
15	N027215-001A,SAMP	17	1000	Unknown		11/28/2017 11:47	Finished	SAMP,10mL
16	N027215-002A,SAMP	18	1000	Unknown		11/28/2017 11:59	Finished	SAMP,10mL
17	N027215-003A,SAMP	19	1000	Unknown		11/28/2017 12:08	Finished	SAMP,10mL
18	N027215-004A,SAMP	20	1000	Unknown		11/28/2017 12:18	Finished	SAMP,10mL
19	N027215-005A,SAMP	21	1000	Unknown		11/28/2017 12:27	Finished	SAMP,10mL
20	N027215-002ADUP,D	22	1000	Unknown		11/28/2017 12:37	Finished	DUP,10mL
21	N027157-001AMS,MS	23	1000	Unknown		11/28/2017 12:46	Finished	MS (5ppb), IWST-171002B,10
22	N027157-001AMSD,M	24	1000	Unknown		11/28/2017 12:56	Finished	MSD (5ppb), IWST-171002B,1
23	CCV-1,CCV1,1,	25	1000	Unknown		11/28/2017 13:05	Finished	CCV @10ppb, IWST-171002A
24	CCB-1,CCB,1,	26	1000	Unknown		11/28/2017 13:14	Finished	CCB R171031A
25	N027157-001AMS,MS	28	1000	Unknown		11/28/2017 14:04	Finished	MS (5ppb), IWST-171002B,10
26	N027157-001AMSD,M	29	1000	Unknown		11/28/2017 14:16	Finished	MSD (5ppb), IWST-171002B,1
27	N027215-001AMS,MS	31	1000	Unknown		11/28/2017 14:29	Finished	MS (5ppb), IWST-171002B,10
28	N027215-001AMSD,M	32	1000	Unknown		11/28/2017 14:41	Finished	MSD (5ppb), IWST-171002B,1
29	CCV-2,CCV,1,	33	1000	Unknown		11/28/2017 14:50	Finished	CCV @5ppb, IWST-171002A
30	CCB-2,CCB,1,	34	1000	Unknown		11/28/2017 15:00	Finished	CCB R171031A
31	SHUTDOWN	35	1000	Unknown		11/28/2017 15:09	Finished	
32	Eluent: R171128A	36	1000	Unknown		n.a.	Finished	Eluent
33	PCR: R171128B	37	1000	Unknown		n.a.	Finished	Post-Column Reagent

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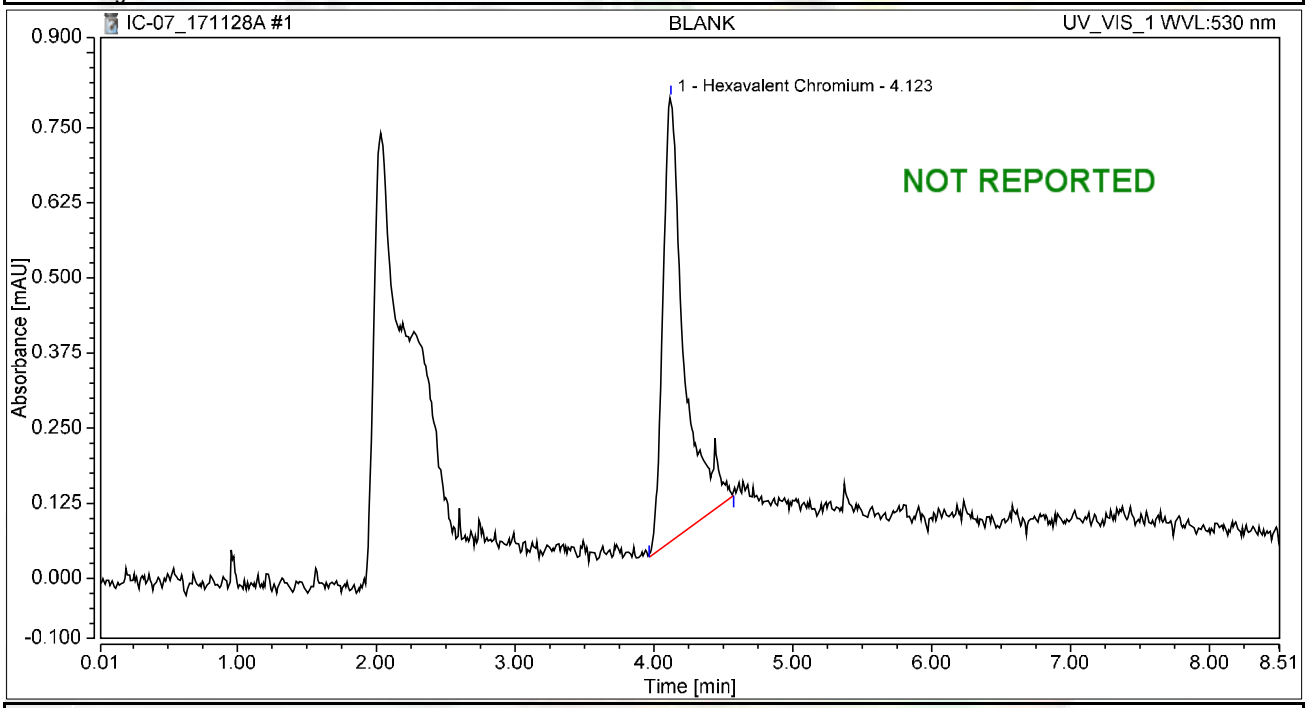
Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

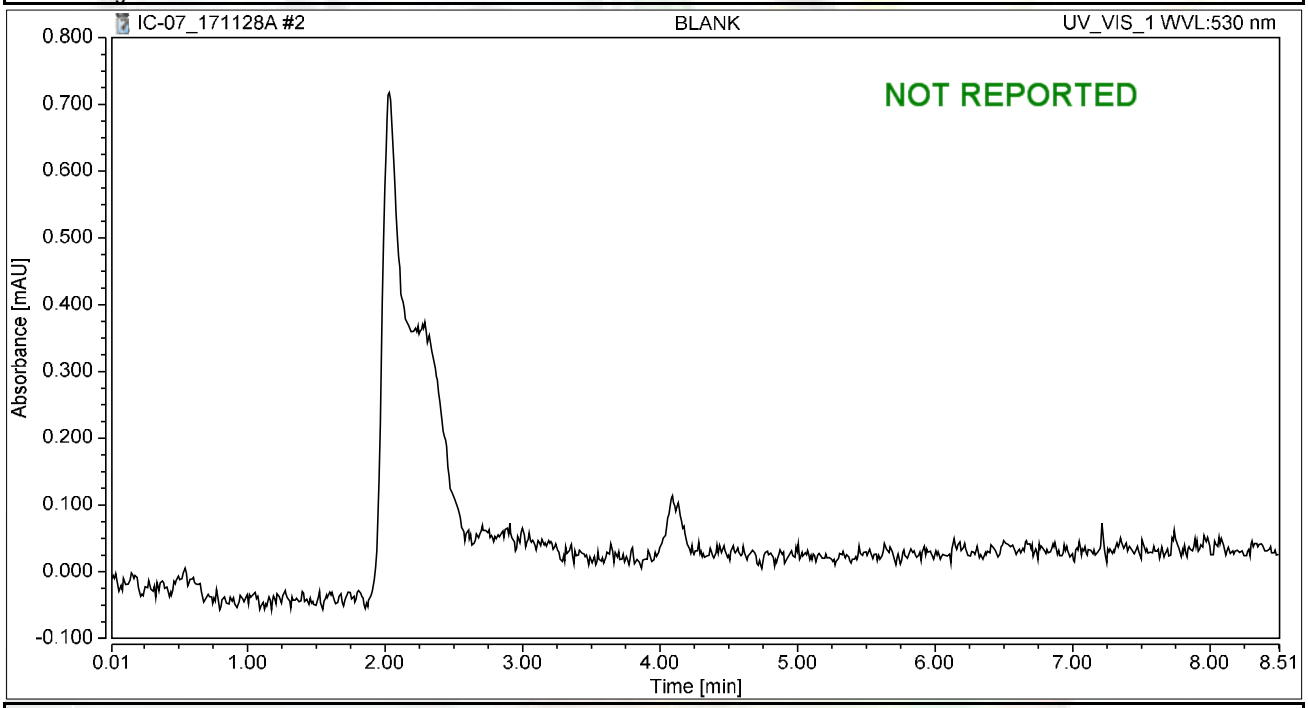
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.130	0.738	100.00	100.00	0.5193
Total:			**0.130**	**0.738**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

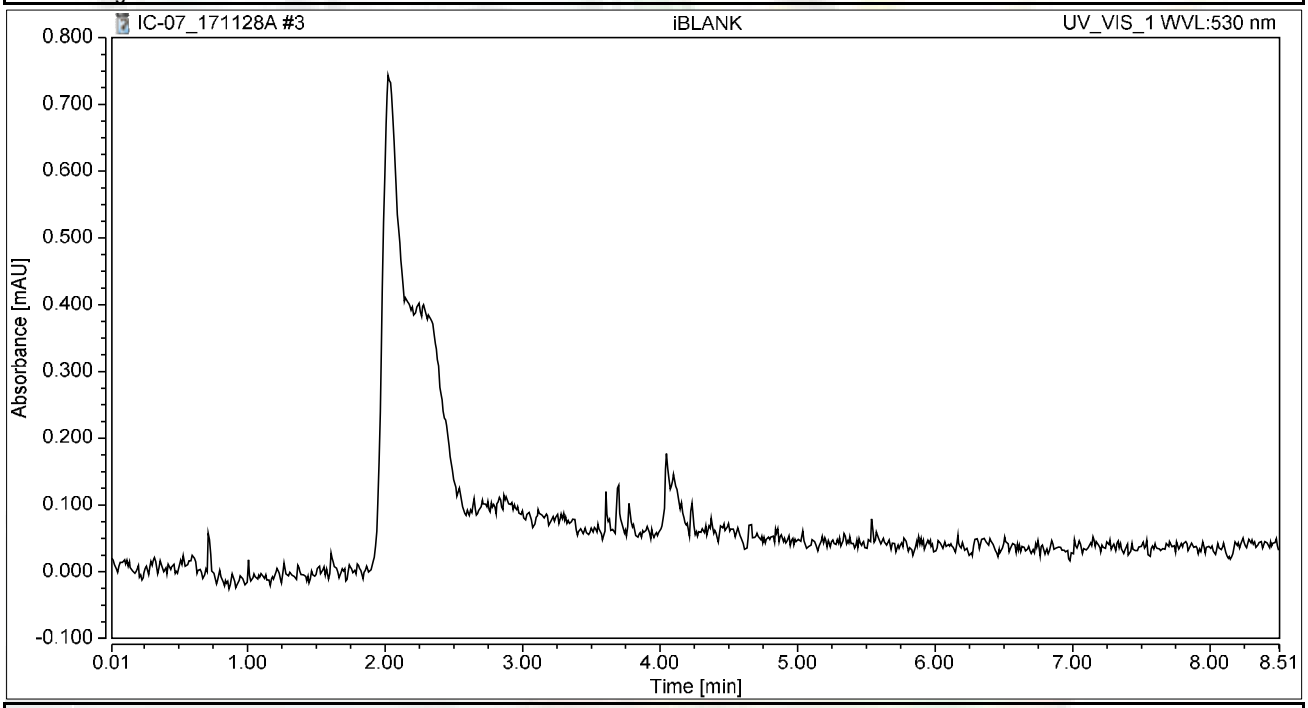
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

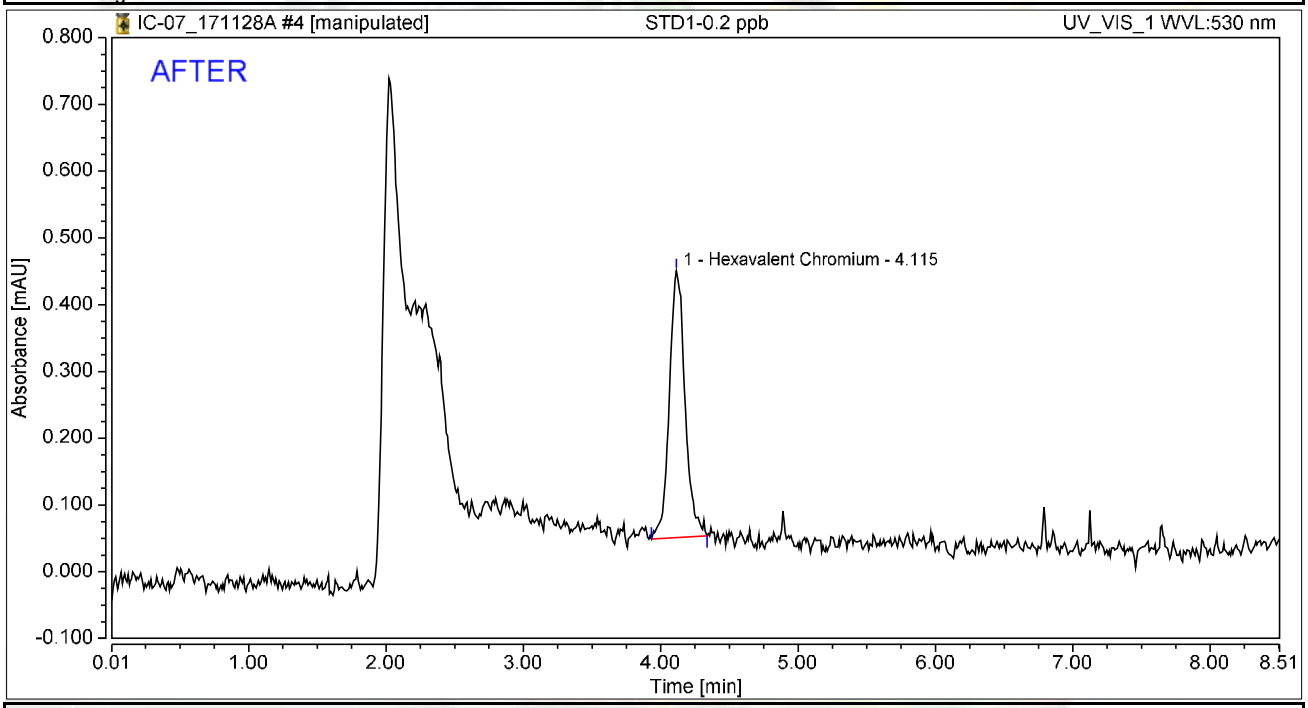
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.053	0.400	100.00	100.00	0.2108
Total:			**0.053**	**0.400**	**100.00**	**100.00**	

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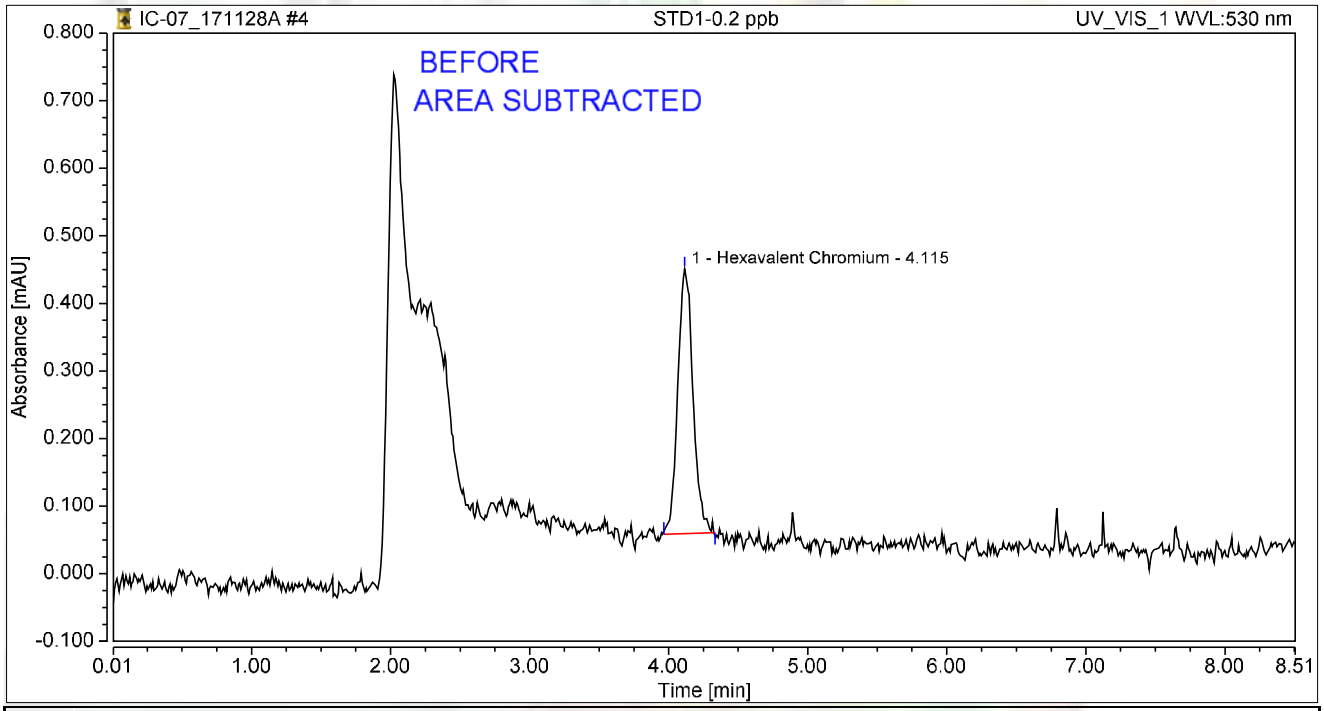
Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.050	0.391	100.00	100.00	0.1957
Total:			**0.050**	**0.391**	**100.00**	**100.00**	

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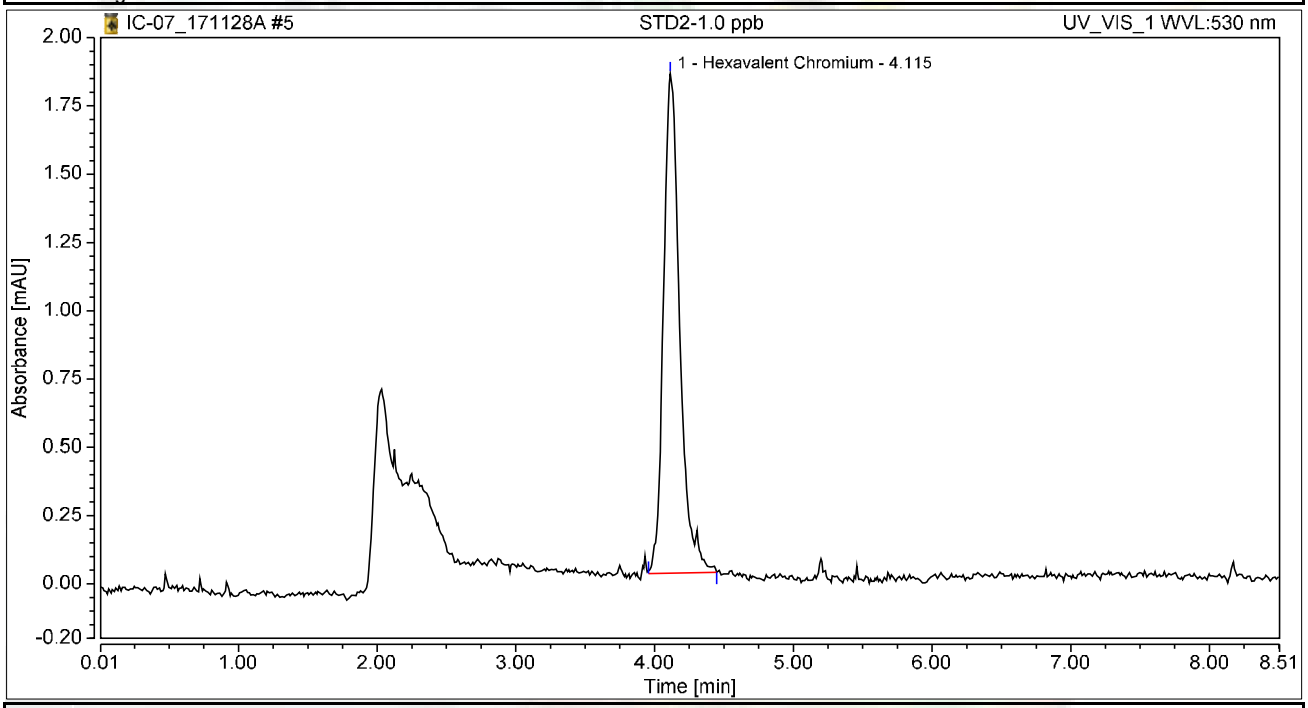
Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

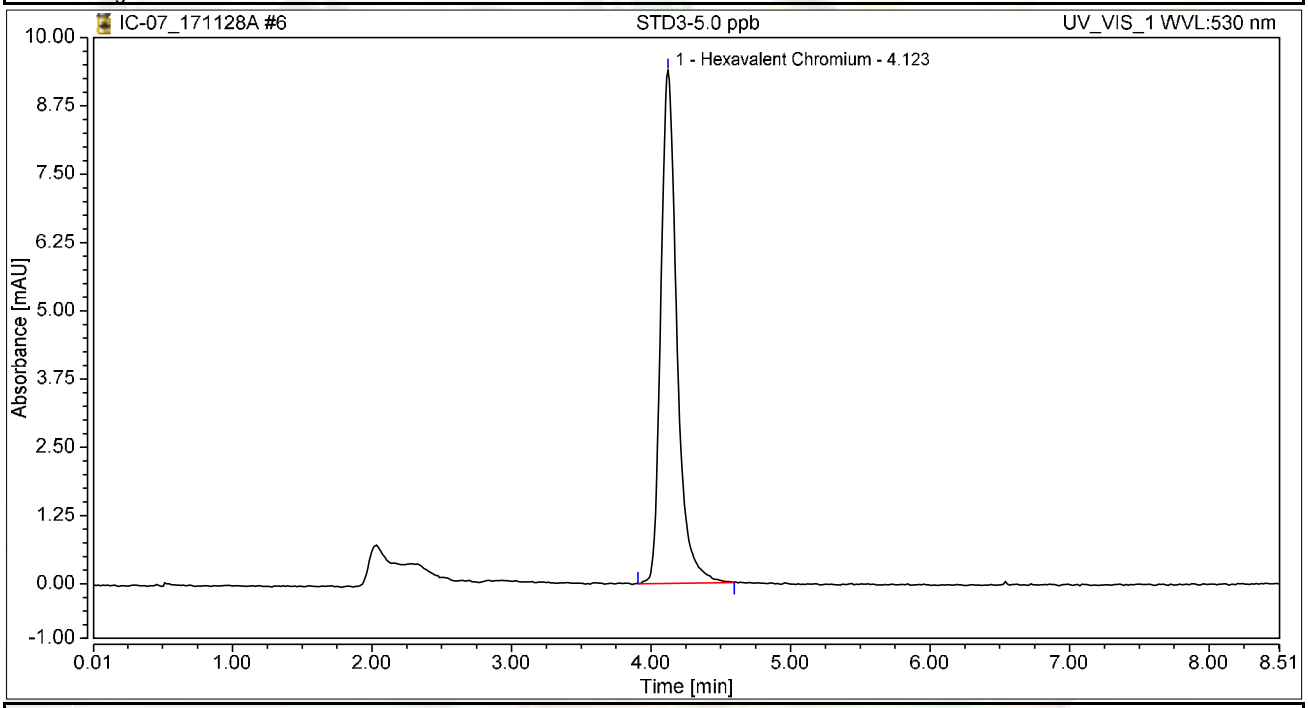
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.248	1.827	100.00	100.00	0.9892
Total:			**0.248**	**1.827**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

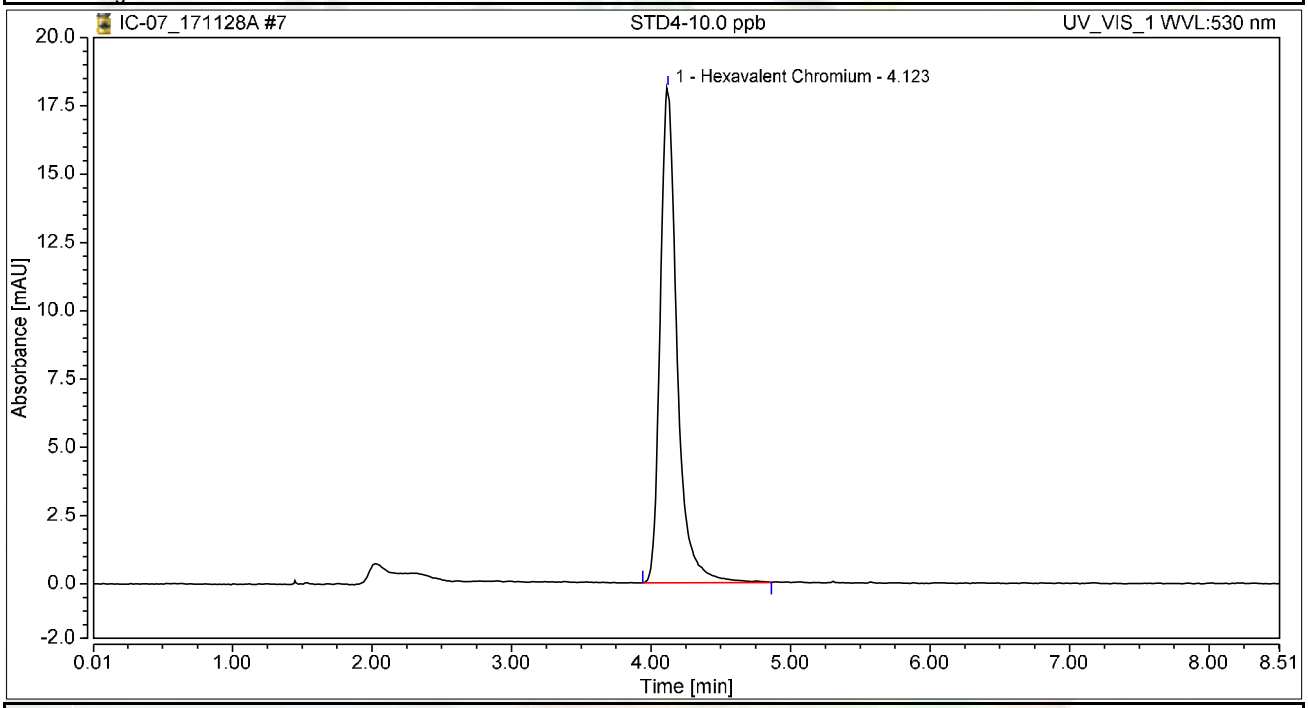
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.258	9.388	100.00	100.00	5.0118
Total:			**1.258**	**9.388**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

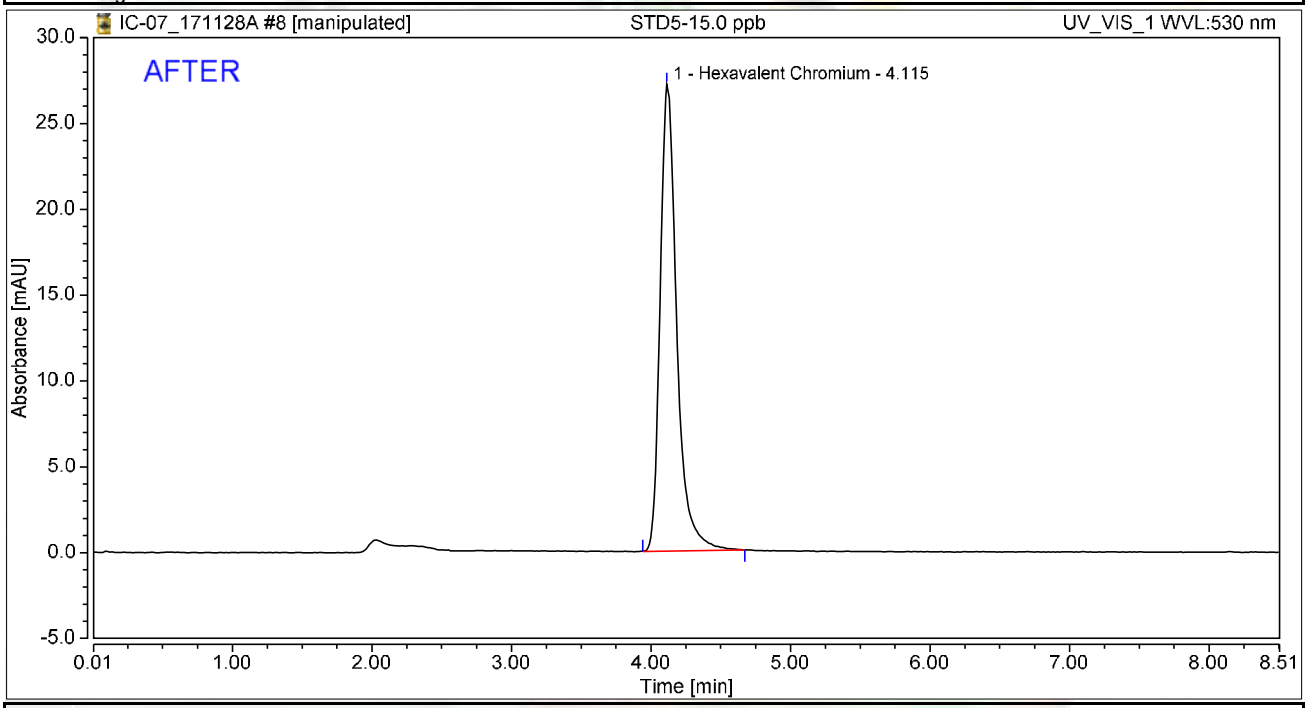
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	2.533	18.115	100.00	100.00	10.0869
Total:			**2.533**	**18.115**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	3.760	27.183	100.00	100.00	14.9728
Total:			**3.760**	**27.183**	**100.00**	**100.00**	

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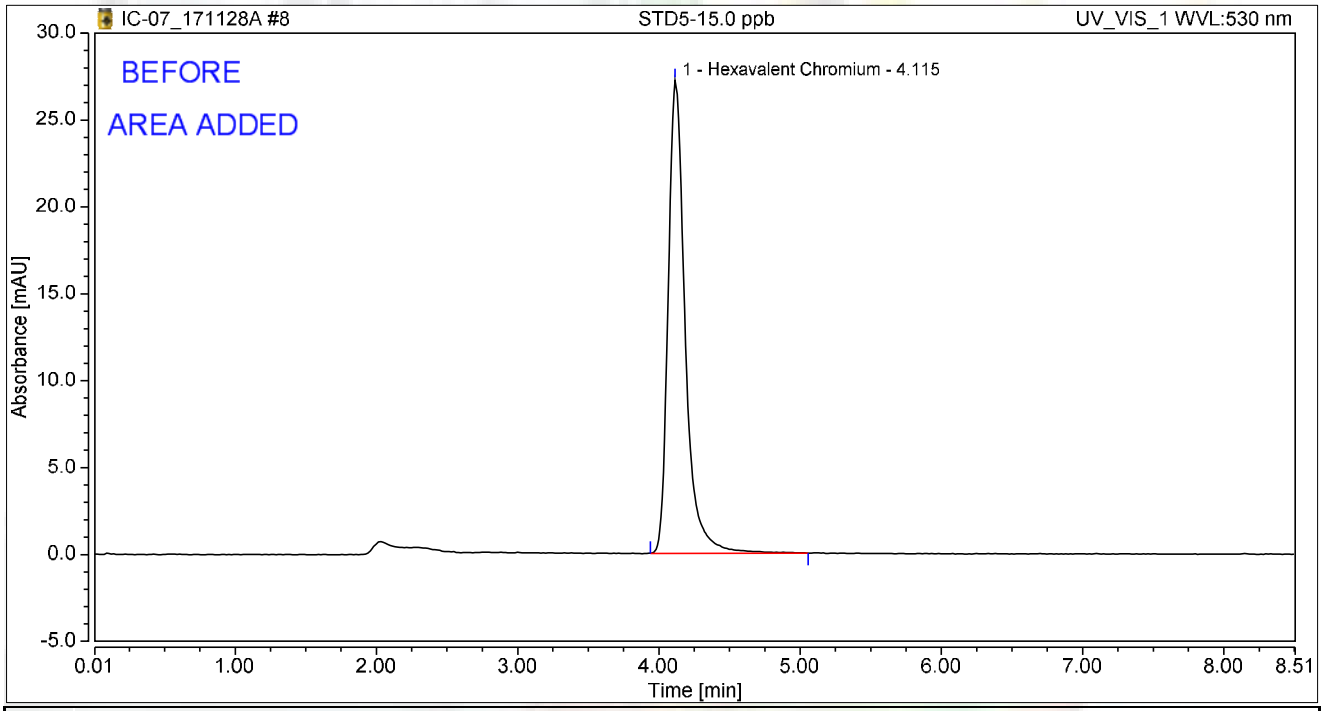
Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	3.807	27.204	100.00	100.00	14.9839
Total:			**3.807**	**27.204**	**100.00**	**100.00**	

rba 11/29/2017

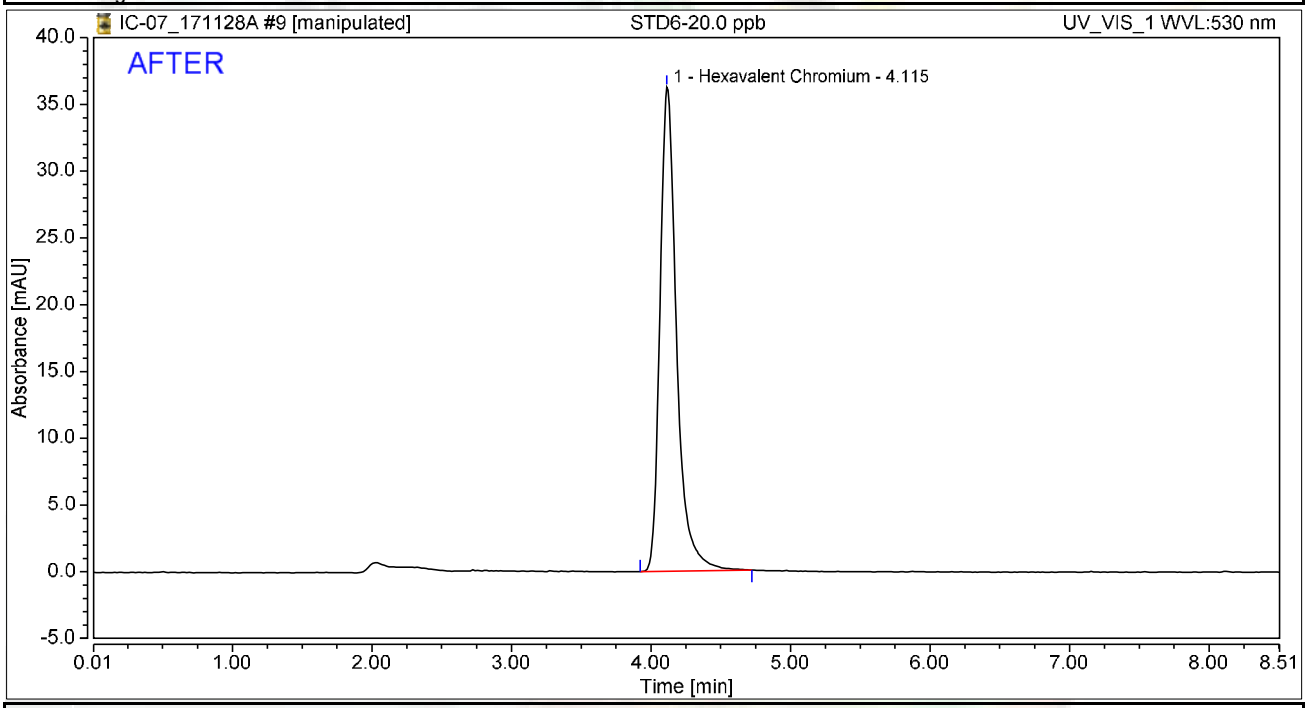
RB 12/11/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	5.015	36.251	100.00	100.00	19.9744
Total:			**5.015**	**36.251**	**100.00**	**100.00**	

rba 11/29/2017

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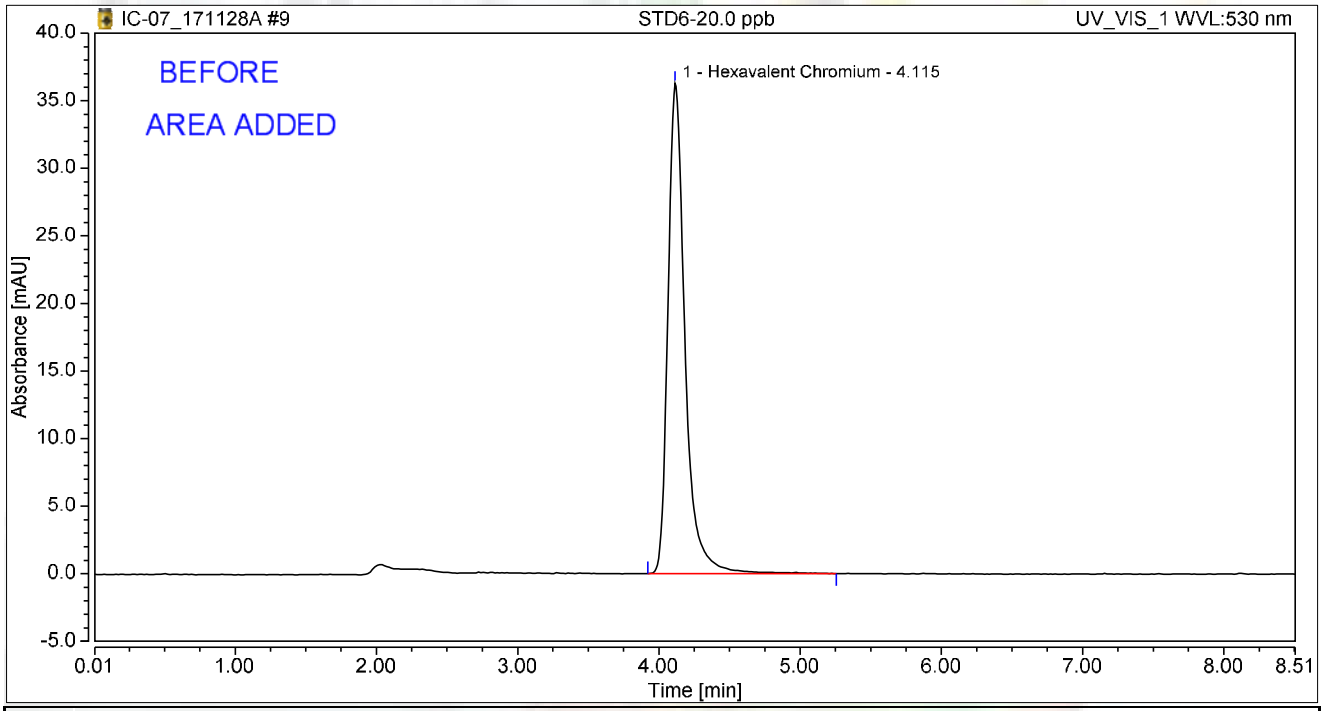
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	5.092	36.279	100.00	100.00	20.0407
Total:			**5.092**	**36.279**	**100.00**	**100.00**	

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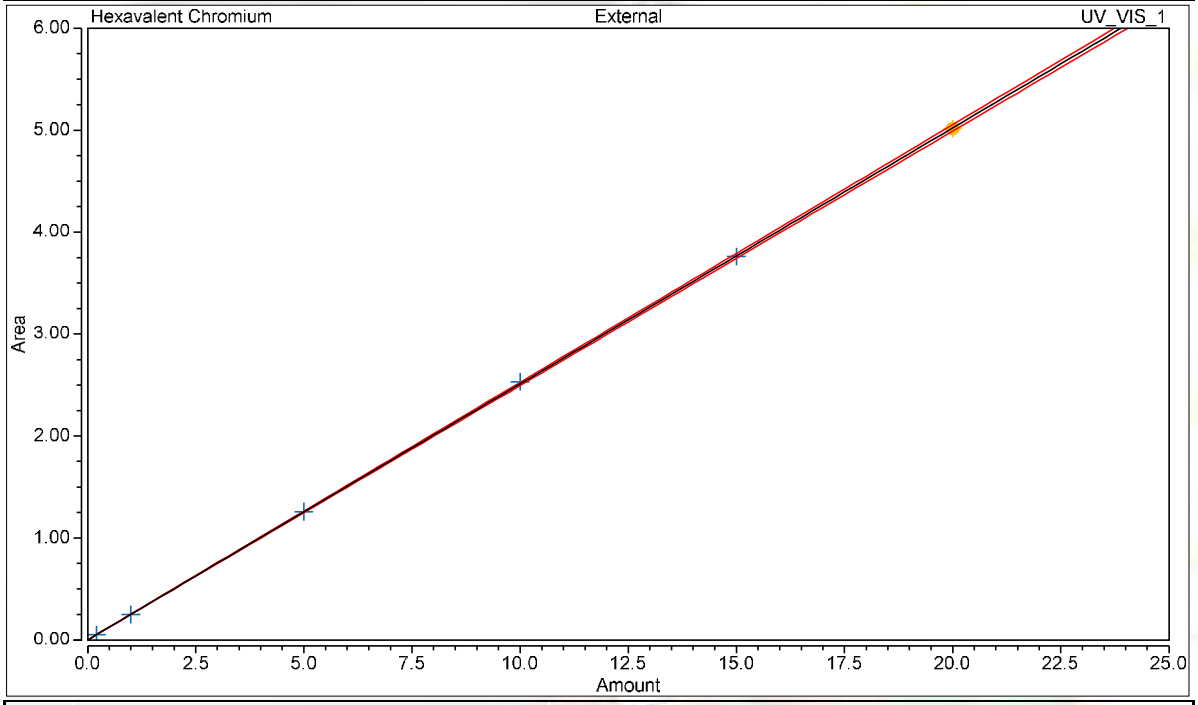
Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2511
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99997

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

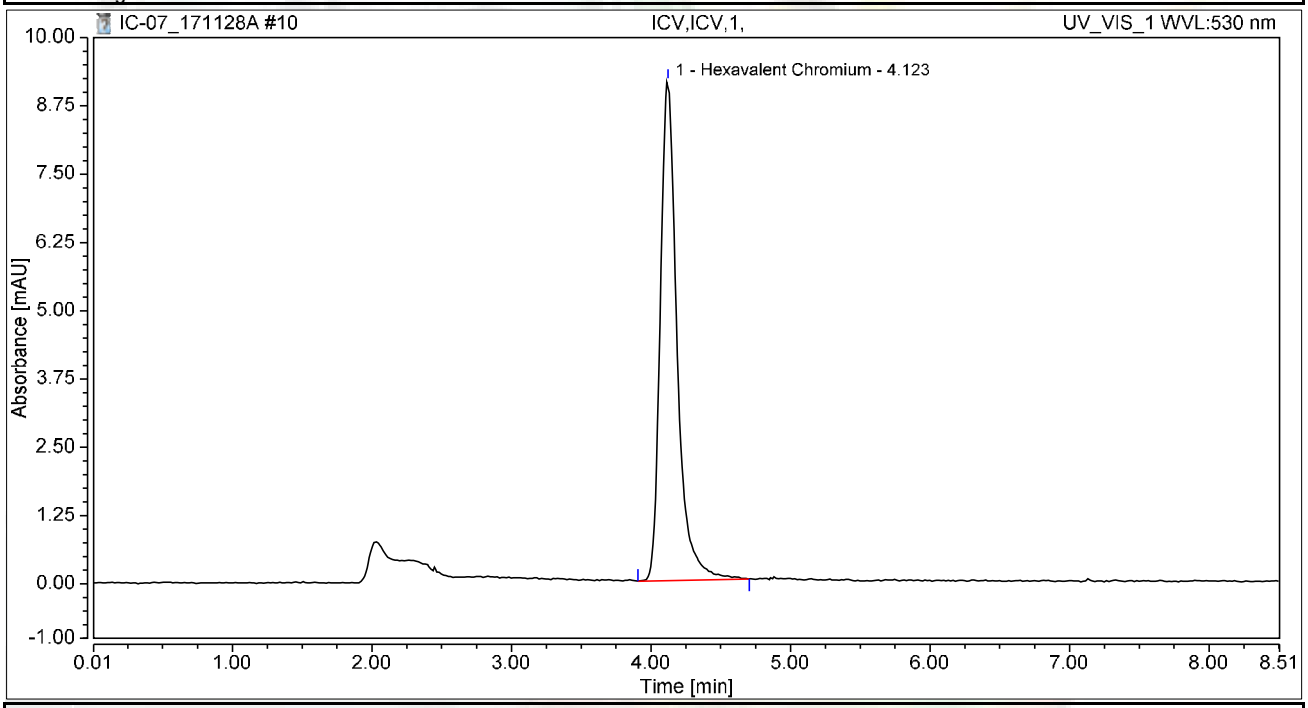
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0529	0.053	0.400
5	STD2-1.0 ppb	02	1.0000	0.2484	0.248	1.827
6	STD3-5.0 ppb	03	5.0000	1.2584	1.258	9.388
7	STD4-10.0 ppb	04	10.0000	2.5328	2.533	18.115
8	STD5-15.0 ppb	05	15.0000	3.7596	3.760	27.183
9	STD6-20.0 ppb	06	20.0000	5.0155	5.015	36.251

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

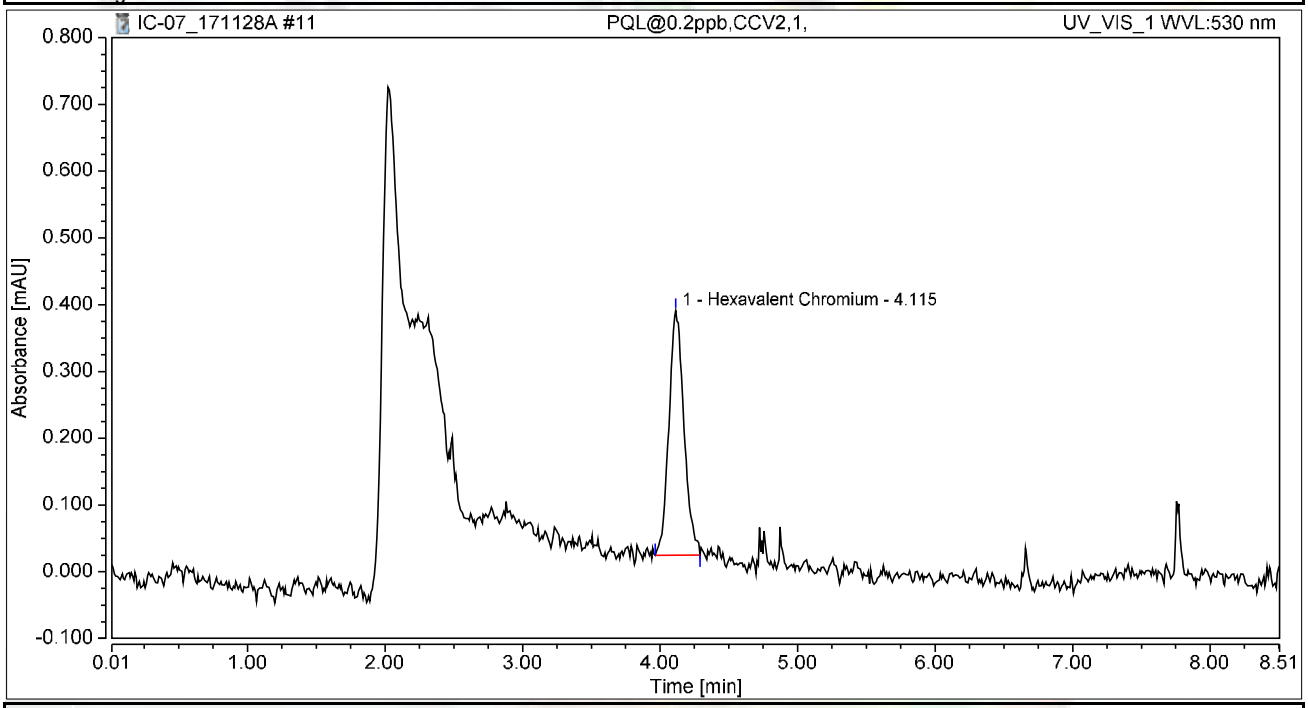
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.279	9.143	100.00	100.00	5.0922
Total:			**1.279**	**9.143**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

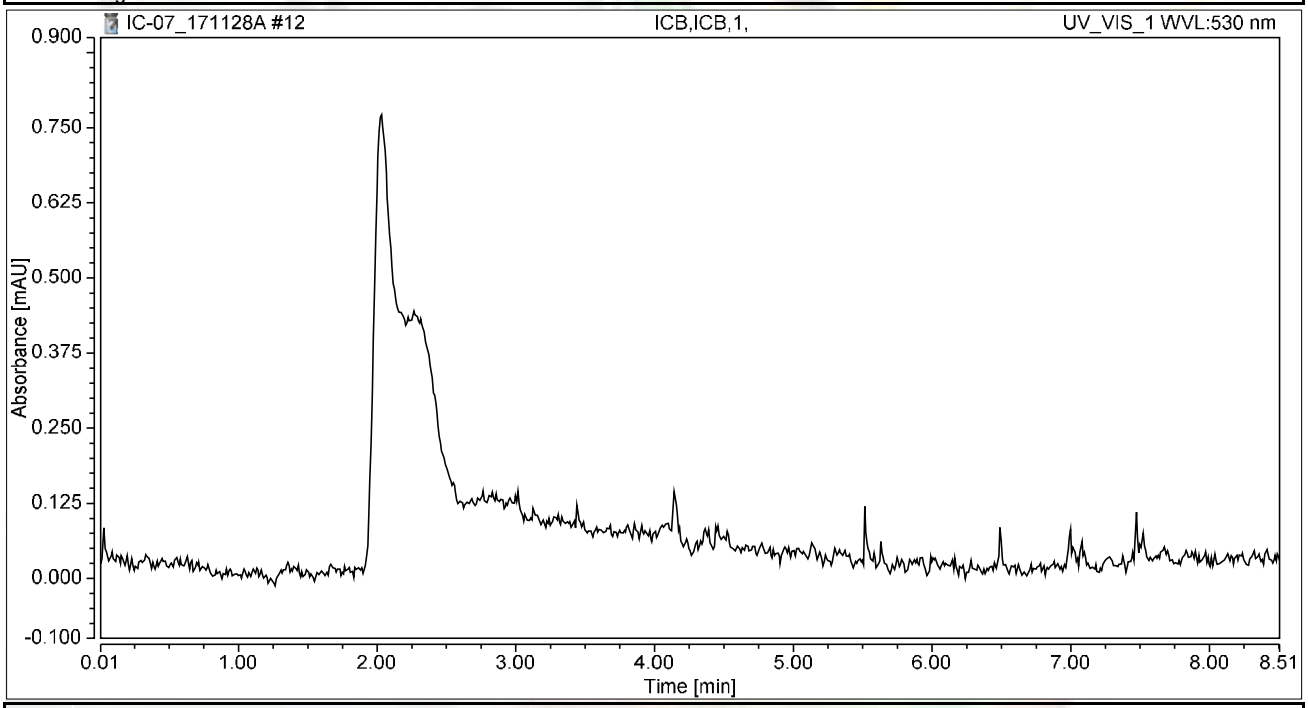
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.046	0.367	100.00	100.00	0.1851
Total:			**0.046**	**0.367**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 171218A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/18/17 8:57 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/18/17 9:07 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/18/17 9:17 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/18/17 9:26 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/18/17 9:36 AM	Reported
15	MB-R120931	MBLK	1	Hexavalent Chromium	12/18/17 9:45 AM	Reported
16	LCS-R120931	LCS	1	Hexavalent Chromium	12/18/17 9:55 AM	Reported
17	N027321-008A	SAMP	1	Hexavalent Chromium	12/18/17 10:04 AM	Not Reported
18	N027321-008AMS	MS	1	Hexavalent Chromium	12/18/17 10:14 AM	Not Reported
19	N027359-002A	SAMP	1	Hexavalent Chromium	12/18/17 10:23 AM	Not Reported
20	N027359-002AMS	MS	1	Hexavalent Chromium	12/18/17 10:33 AM	Not Reported
21	N027359-003A	SAMP	1	Hexavalent Chromium	12/18/17 10:42 AM	Not Reported
22	N027359-003AMS	MS	1	Hexavalent Chromium	12/18/17 10:51 AM	Not Reported
23	N027359-006A	SAMP	1	Hexavalent Chromium	12/18/17 11:01 AM	Not Reported
24	N027359-006AMS	MS	1	Hexavalent Chromium	12/18/17 11:10 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/18/17 11:20 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/18/17 11:29 AM	Reported
27	N027523-001A	SAMP	5	Hexavalent Chromium	12/18/17 11:39 AM	Reported
28	N027523-001AMS	MS	5	Hexavalent Chromium	12/18/17 11:48 AM	Reported
29	N027523-002A	SAMP	2	Hexavalent Chromium	12/18/17 11:58 AM	Reported
30	N027523-002AMS	MS	2	Hexavalent Chromium	12/18/17 12:07 PM	Reported
31	N027523-003A	SAMP	2	Hexavalent Chromium	12/18/17 12:17 PM	Reported
32	N027523-003AMS	MS	2	Hexavalent Chromium	12/18/17 12:26 PM	Reported
33	N027523-004A	SAMP	5	Hexavalent Chromium	12/18/17 12:36 PM	Reported
34	N027523-004AMS	MS	5	Hexavalent Chromium	12/18/17 12:45 PM	Reported
35	N027523-005A	SAMP	100	Hexavalent Chromium	12/18/17 12:54 PM	Reported
36	N027523-005AMS	MS	100	Hexavalent Chromium	12/18/17 1:04 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/18/17 1:13 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/18/17 1:23 PM	Reported
39	N027523-006A	SAMP	5	Hexavalent Chromium	12/18/17 1:32 PM	Reported
40	N027523-006AMS	MS	5	Hexavalent Chromium	12/18/17 1:42 PM	Reported
41	N027523-007A	SAMP	5	Hexavalent Chromium	12/18/17 1:51 PM	Reported
42	N027523-007AMS	MS	5	Hexavalent Chromium	12/18/17 2:01 PM	Reported

INJECTION LOG: 171218A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027523-008A	SAMP	1	Hexavalent Chromium	12/18/17 2:10 PM	Reported
44	N027523-008AMS	MS	1	Hexavalent Chromium	12/18/17 2:20 PM	Reported
45	N027523-009A	SAMP	5	Hexavalent Chromium	12/18/17 2:29 PM	Reported
46	N027523-009AMS	MS	5	Hexavalent Chromium	12/18/17 2:39 PM	Reported
47	N027523-012A	SAMP	1	Hexavalent Chromium	12/18/17 2:48 PM	Not Reported
48	N027523-012AMS	MS	1	Hexavalent Chromium	12/18/17 2:57 PM	Not Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/18/17 3:07 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/18/17 3:17 PM	Reported
51	N027523-010A	SAMP	1	Hexavalent Chromium	12/18/17 3:26 PM	Reported
52	N027523-010AMS	MS	1	Hexavalent Chromium	12/18/17 3:35 PM	Reported
53	N027523-011A	SAMP	1	Hexavalent Chromium	12/18/17 3:45 PM	Reported
54	N027523-011AMS	MS	1	Hexavalent Chromium	12/18/17 3:54 PM	Reported
55	N027523-013A	SAMP	1	Hexavalent Chromium	12/18/17 4:04 PM	Reported
56	N027523-013AMS	MS	1	Hexavalent Chromium	12/18/17 4:13 PM	Reported
57	N027523-014A	SAMP	1	Hexavalent Chromium	12/18/17 4:23 PM	Reported
58	N027523-014AMS	MS	1	Hexavalent Chromium	12/18/17 4:32 PM	Reported
59	N027523-003AMSD	MSD	2	Hexavalent Chromium	12/18/17 4:42 PM	Reported
60	N027523-005ADUP	DUP	100	Hexavalent Chromium	12/18/17 4:54 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/18/17 5:03 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/18/17 5:13 PM	Reported
63	N027523-009A	SAMP	1	Hexavalent Chromium	12/18/17 5:22 PM	Not Reported
64	N027523-009AMS	MS	1	Hexavalent Chromium	12/18/17 5:32 PM	Not Reported
65	N027523-012A	SAMP	5	Hexavalent Chromium	12/18/17 5:41 PM	Reported
66	N027523-012AMS	MS	5	Hexavalent Chromium	12/18/17 5:50 PM	Reported
67	LCS-R120932	ICAL	1	Hexavalent Chromium	12/18/17 6:00 PM	Reported
68	MB-R120932	MBLK	1	Hexavalent Chromium	12/18/17 6:09 PM	Reported
69	N027583-002A	SAMP	1	Hexavalent Chromium	12/18/17 6:19 PM	Reported
70	N027583-002ADUP	DUP	1	Hexavalent Chromium	12/18/17 6:28 PM	Reported
71	N027583-002AMS	MS	1	Hexavalent Chromium	12/18/17 6:38 PM	Reported
72	N027583-002AMSD	MSD	1	Hexavalent Chromium	12/18/17 6:47 PM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	12/18/17 6:57 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	12/18/17 7:06 PM	Reported
75	N027583-001A	SAMP	1	Hexavalent Chromium	12/18/17 7:16 PM	Reported
76	N027583-001AMS	MS	1	Hexavalent Chromium	12/18/17 7:25 PM	Reported
77	N027583-003A	SAMP	1	Hexavalent Chromium	12/18/17 7:35 PM	Reported
78	N027583-003AMS	MS	1	Hexavalent Chromium	12/18/17 7:44 PM	Reported
79	N027583-004A	SAMP	1	Hexavalent Chromium	12/18/17 7:53 PM	Reported
80	N027583-004AMS	MS	1	Hexavalent Chromium	12/18/17 8:03 PM	Reported
81	N027583-005A	SAMP	1	Hexavalent Chromium	12/18/17 8:12 PM	Reported
82	N027583-005AMS	MS	1	Hexavalent Chromium	12/18/17 8:22 PM	Reported
83	N027583-006A	SAMP	1	Hexavalent Chromium	12/18/17 8:31 PM	Reported
84	N027583-006AMS	MS	1	Hexavalent Chromium	12/18/17 8:41 PM	Reported

INJECTION LOG: 171218A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	12/18/17 8:50 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	12/18/17 9:00 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171218A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**19/Dec/17 14:37:16**
No. of Injections:	**89**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/18/2017 08:57	Finished	BLANK
11	BLANK	2	1000	Unknown		12/18/2017 09:07	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/18/2017 09:17	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/18/2017 09:26	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/18/2017 09:36	Finished	CCB R171129A
15	MB-H2O,MBLK,1	6	1000	Unknown		12/18/2017 09:45	Finished	MB R171129A
16	LCS-H2O,LCS,1	7	1000	Unknown		12/18/2017 09:55	Finished	LCS, IWST-171002B
17	N027321-008A,SAMP	8	1000	Unknown		12/18/2017 10:04	Finished	SAMP,10mL
18	N027321-008AMS,MS	9	1000	Unknown		12/18/2017 10:14	Finished	MS (1ppb), IWST-171002B,10
19	N027359-002A,SAMP	10	1000	Unknown		12/18/2017 10:23	Finished	SAMP,10mL
20	N027359-002AMS,MS	11	1000	Unknown		12/18/2017 10:33	Finished	MS (1ppb), IWST-171002B,10
21	N027359-003A,SAMP	12	1000	Unknown		12/18/2017 10:42	Finished	SAMP,10mL
22	N027359-003AMS,MS	13	1000	Unknown		12/18/2017 10:51	Finished	MS (1ppb), IWST-171002B,10
23	N027359-006A,SAMP	14	1000	Unknown		12/18/2017 11:01	Finished	SAMP,10mL
24	N027359-006AMS,MS	15	1000	Unknown		12/18/2017 11:10	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	16	1000	Unknown		12/18/2017 11:20	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	17	1000	Unknown		12/18/2017 11:29	Finished	CCB R171129A
27	N027523-001A,SAMP	18	1000	Unknown		12/18/2017 11:39	Finished	SAMP,2>10mL
28	N027523-001AMS,MS	19	1000	Unknown		12/18/2017 11:48	Finished	MS (1ppb), IWST-171002B,2>1
29	N027523-002A,SAMP	20	1000	Unknown		12/18/2017 11:58	Finished	SAMP,5>10mL
30	N027523-002AMS,MS	21	1000	Unknown		12/18/2017 12:07	Finished	MS (5ppb), IWST-171002B,5>1
31	N027523-003A,SAMP	22	1000	Unknown		12/18/2017 12:17	Finished	SAMP,5>10mL
32	N027523-003AMS,MS	23	1000	Unknown		12/18/2017 12:26	Finished	MS (5ppb), IWST-171002B,5>1
33	N027523-004A,SAMP	24	1000	Unknown		12/18/2017 12:36	Finished	SAMP,2>10mL
34	N027523-004AMS,MS	25	1000	Unknown		12/18/2017 12:45	Finished	MS (5ppb), IWST-171002B,2>1
35	N027523-005A,SAMP	26	1000	Unknown		12/18/2017 12:54	Finished	SAMP,0.1>10mL
36	N027523-005AMS,MS	27	1000	Unknown		12/18/2017 13:04	Finished	MS (5ppb), IWST-171002B,0.1
37	CCV-3,CCV,1,	28	1000	Unknown		12/18/2017 13:13	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	29	1000	Unknown		12/18/2017 13:23	Finished	CCB R171129A
39	N027523-006A,SAMP	30	1000	Unknown		12/18/2017 13:32	Finished	SAMP,2>10mL
40	N027523-006AMS,MS	31	1000	Unknown		12/18/2017 13:42	Finished	MS (5ppb), IWST-171002B,2>1
41	N027523-007A,SAMP	32	1000	Unknown		12/18/2017 13:51	Finished	SAMP,2>10mL
42	N027523-007AMS,MS	33	1000	Unknown		12/18/2017 14:01	Finished	MS (5ppb), IWST-171002B,2>1
43	N027523-008A,SAMP	34	1000	Unknown		12/18/2017 14:10	Finished	SAMP,10mL
44	N027523-008AMS,MS	35	1000	Unknown		12/18/2017 14:20	Finished	MS (1ppb), IWST-171002B,10
45	N027523-009A,SAMP	36	1000	Unknown		12/18/2017 14:29	Finished	SAMP,2>10mL
46	N027523-009AMS,MS	37	1000	Unknown		12/18/2017 14:39	Finished	MS (1ppb), IWST-171002B,2>1
47	N027523-012A,SAMP	38	1000	Unknown		12/18/2017 14:48	Finished	SAMP,10mL
48	N027523-012AMS,MS	39	1000	Unknown		12/18/2017 14:57	Finished	MS (1ppb), IWST-171002B,10
49	CCV-4,CCV1,1,	40	1000	Unknown		12/18/2017 15:07	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	41	1000	Unknown		12/18/2017 15:17	Finished	CCB R171129A
51	N027523-010A,SAMP	42	1000	Unknown		12/18/2017 15:26	Finished	SAMP,10mL
52	N027523-010AMS,MS	43	1000	Unknown		12/18/2017 15:35	Finished	MS (1ppb), IWST-171002B,10
53	N027523-011A,SAMP	44	1000	Unknown		12/18/2017 15:45	Finished	SAMP,10mL
54	N027523-011AMS,MS	45	1000	Unknown		12/18/2017 15:54	Finished	MS (1ppb), IWST-171002B,10
55	N027523-013A,SAMP	46	1000	Unknown		12/18/2017 16:04	Finished	SAMP,10mL
56	N027523-013AMS,MS	47	1000	Unknown		12/18/2017 16:13	Finished	MS (1ppb), IWST-171002B,10
57	N027523-014A,SAMP	48	1000	Unknown		12/18/2017 16:23	Finished	SAMP,10mL
58	N027523-014AMS,MS	49	1000	Unknown		12/18/2017 16:32	Finished	MS (1ppb), IWST-171002B,10
59	N027523-003AMSD,M	1	1000	Unknown		12/18/2017 16:42	Finished	MSD (5ppb), IWST-171002B,5>
60	N027523-005ADUP,D	2	1000	Unknown		12/18/2017 16:54	Finished	DUP,0.1>10mL

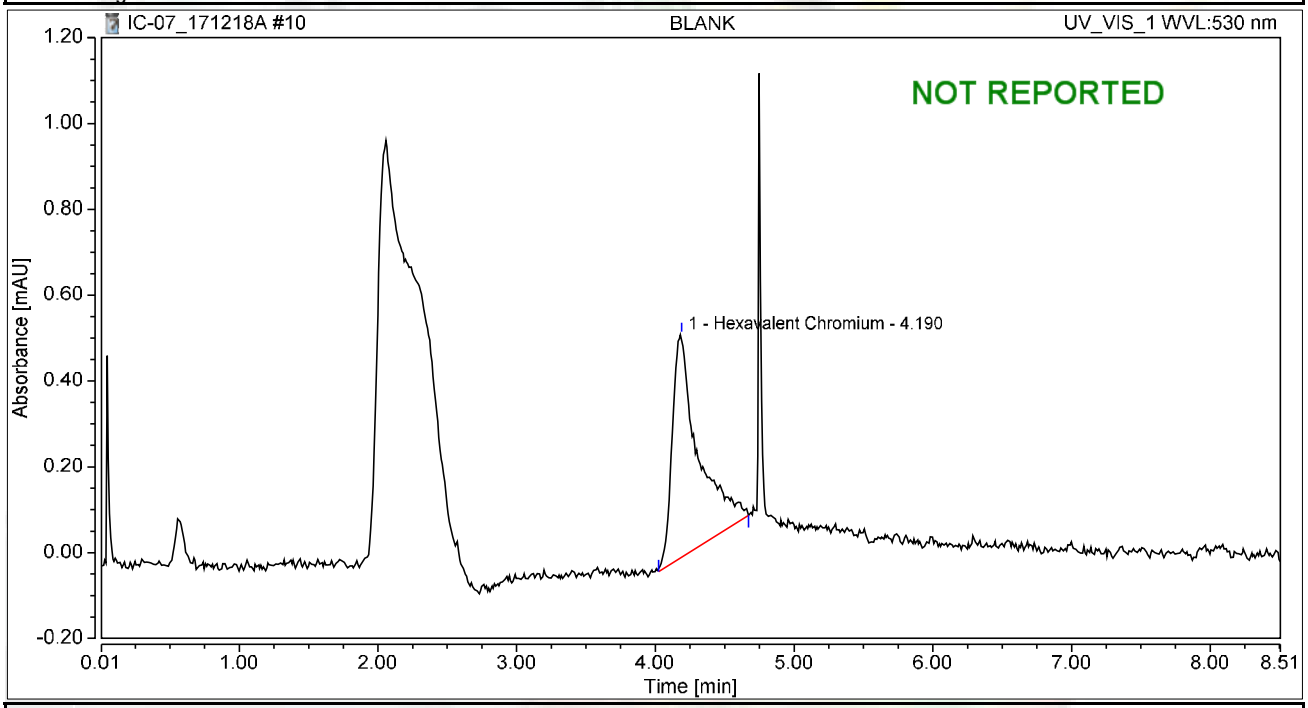
61	CCV-5,CCV,1,	3	1000	Unknown		12/18/2017 17:03	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	4	1000	Unknown		12/18/2017 17:13	Finished	CCB R171129A
63	N027523-009A,SAMF	5	1000	Unknown		12/18/2017 17:22	Finished	SAMP,10mL
64	N027523-009AMS,MS	6	1000	Unknown		12/18/2017 17:32	Finished	MS (1ppb), IWST-171002B,10
65	N027523-012A,SAMF	7	1000	Unknown		12/18/2017 17:41	Finished	SAMP,2>10mL
66	N027523-012AMS,MS	8	1000	Unknown		12/18/2017 17:50	Finished	MS (1ppb), IWST-171002B,2>1
67	LCS-2,LCS,1	9	1000	Unknown		12/18/2017 18:00	Finished	LCS, IWST-171002B
68	MB-2,MBLK,1	10	1000	Unknown		12/18/2017 18:09	Finished	MB R171129A
69	N027583-002A,SAMF	11	1000	Unknown		12/18/2017 18:19	Finished	SAMP,10mL
70	N027583-002ADUP,D	12	1000	Unknown		12/18/2017 18:28	Finished	DUP,10mL
71	N027583-002AMS,MS	13	1000	Unknown		12/18/2017 18:38	Finished	MS (1ppb), IWST-171002B,10
72	N027583-002AMSD,M	14	1000	Unknown		12/18/2017 18:47	Finished	MSD (1ppb), IWST-171002B,1(
73	CCV-6,CCV1,1,	15	1000	Unknown		12/18/2017 18:57	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	16	1000	Unknown		12/18/2017 19:06	Finished	CCB R171129A
75	N027583-001A,SAMF	17	1000	Unknown		12/18/2017 19:16	Finished	SAMP,10mL
76	N027583-001AMS,MS	18	1000	Unknown		12/18/2017 19:25	Finished	MS (1ppb), IWST-171002B,10
77	N027583-003A,SAMF	19	1000	Unknown		12/18/2017 19:35	Finished	SAMP,10mL
78	N027583-003AMS,MS	20	1000	Unknown		12/18/2017 19:44	Finished	MS (1ppb), IWST-171002B,10
79	N027583-004A,SAMF	21	1000	Unknown		12/18/2017 19:53	Finished	SAMP,10mL
80	N027583-004AMS,MS	22	1000	Unknown		12/18/2017 20:03	Finished	MS (1ppb), IWST-171002B,10
81	N027583-005A,SAMF	23	1000	Unknown		12/18/2017 20:12	Finished	SAMP,10mL
82	N027583-005AMS,MS	24	1000	Unknown		12/18/2017 20:22	Finished	MS (1ppb), IWST-171002B,10
83	N027583-006A,SAMF	25	1000	Unknown		12/18/2017 20:31	Finished	SAMP,10mL
84	N027583-006AMS,MS	26	1000	Unknown		12/18/2017 20:41	Finished	MS (1ppb), IWST-171002B,10
85	CCV-7,CCV,1,	27	1000	Unknown		12/18/2017 20:50	Finished	CCV @5ppb, IWST-171002A
86	CCB-7,CCB,1,	28	1000	Unknown		12/18/2017 21:00	Finished	CCB R171129A
87	SHUTDOWN	29	1000	Unknown		12/18/2017 21:09	Finished	
88	Eluent: R171214A	30	1000	Unknown		n.a.	Finished	Eluent
89	PCR: R171214B	31	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 08:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

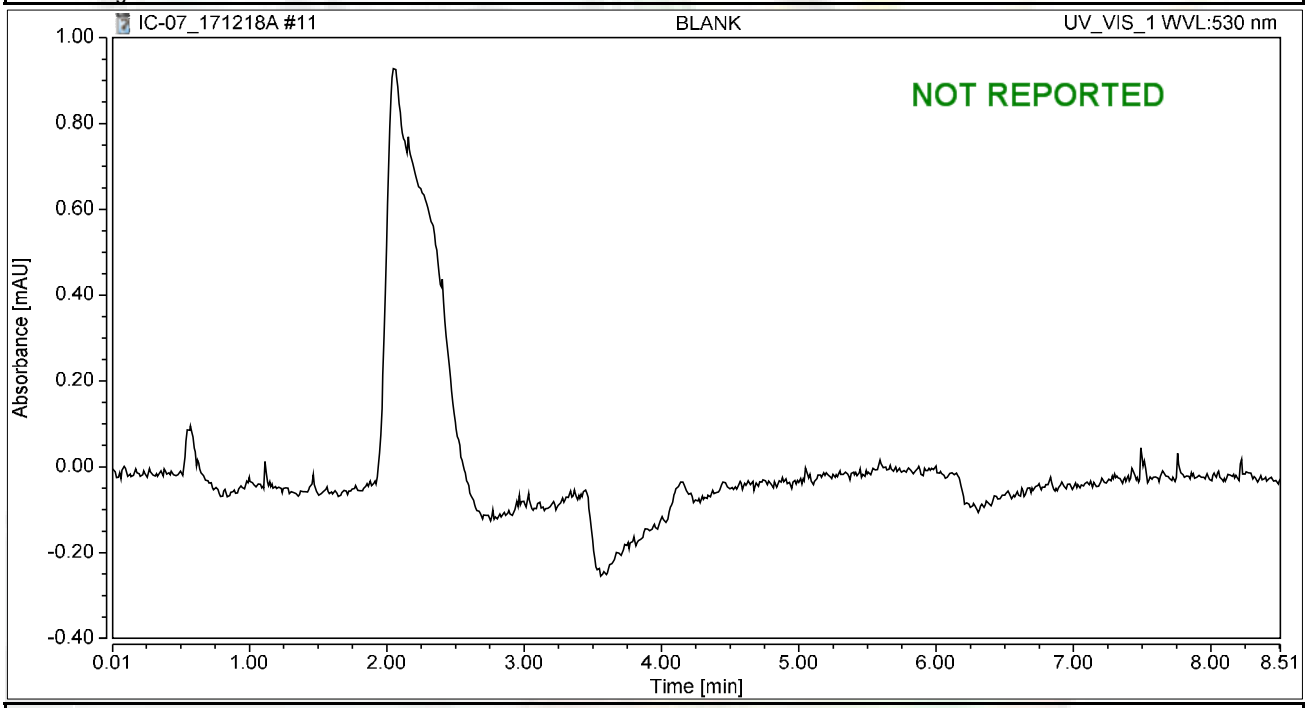
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.114	0.519	100.00	100.00	0.4534
Total:			**0.114**	**0.519**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 09:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

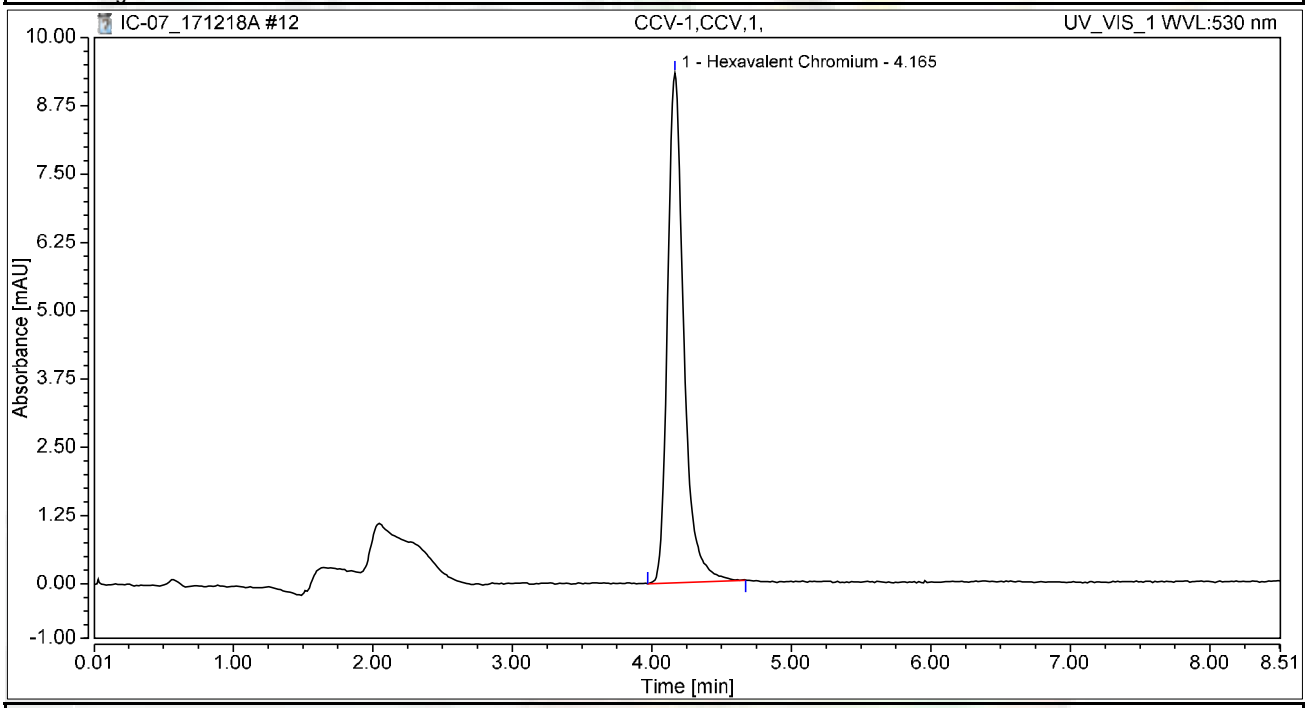
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 09:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

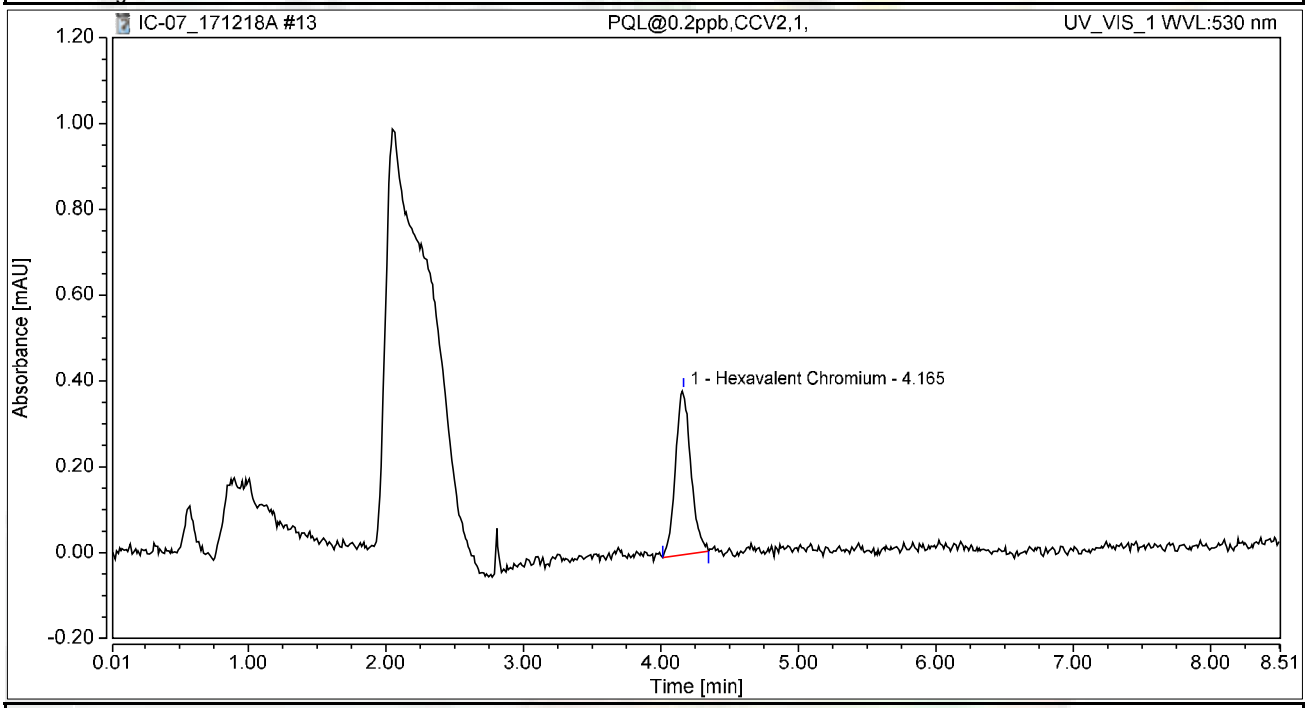
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.259	9.335	100.00	100.00	5.0124
Total:			**1.259**	**9.335**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 09:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

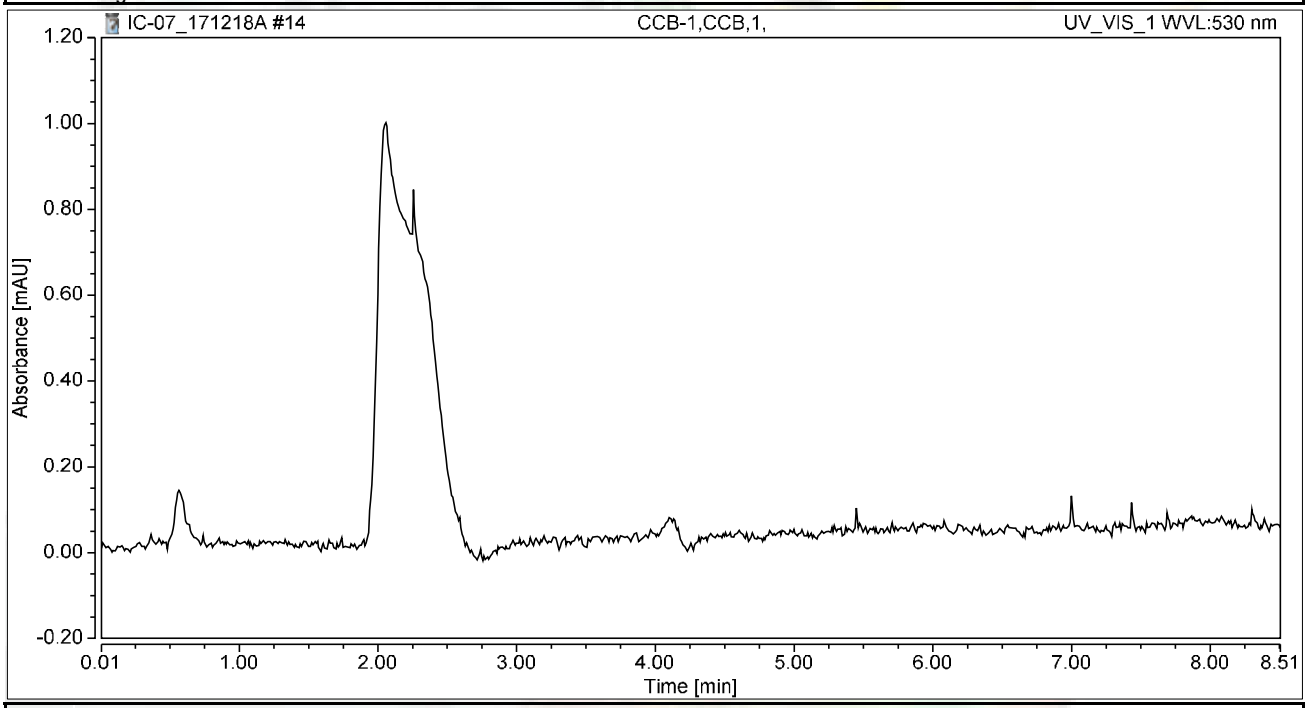
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.050	0.384	100.00	100.00	0.1984
Total:			**0.050**	**0.384**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 09:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

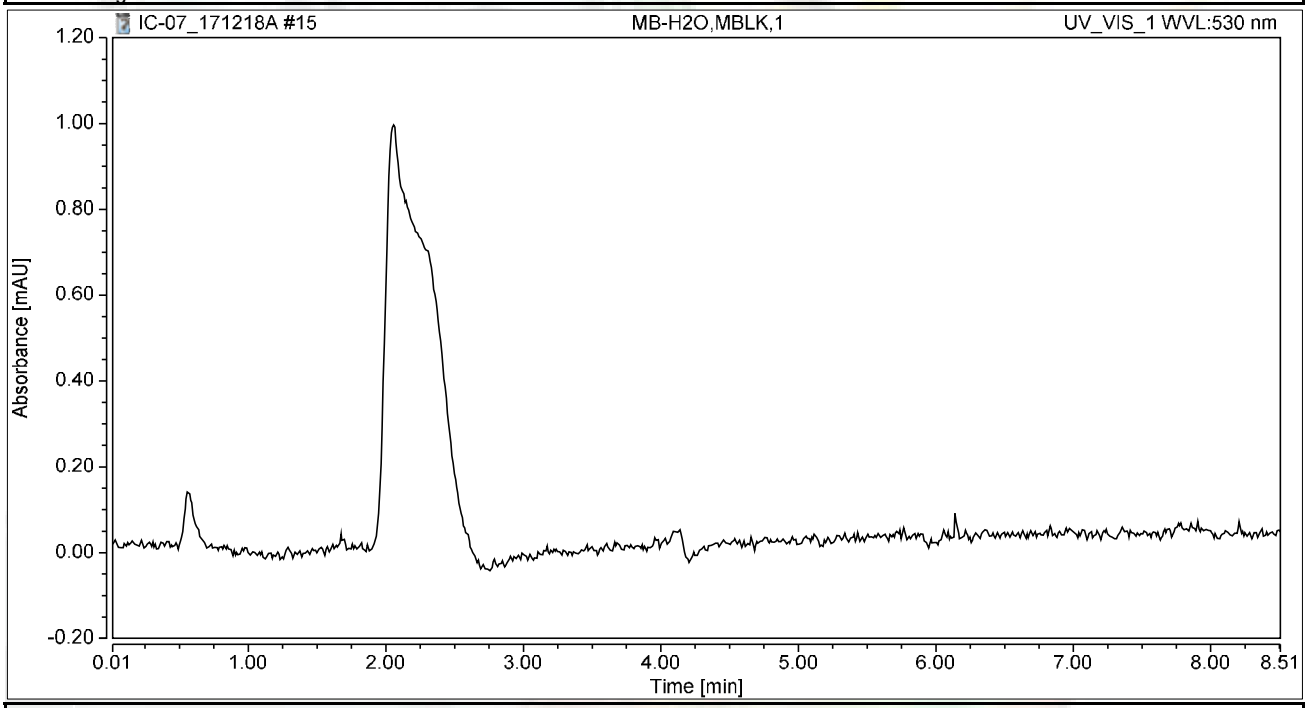
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 09:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

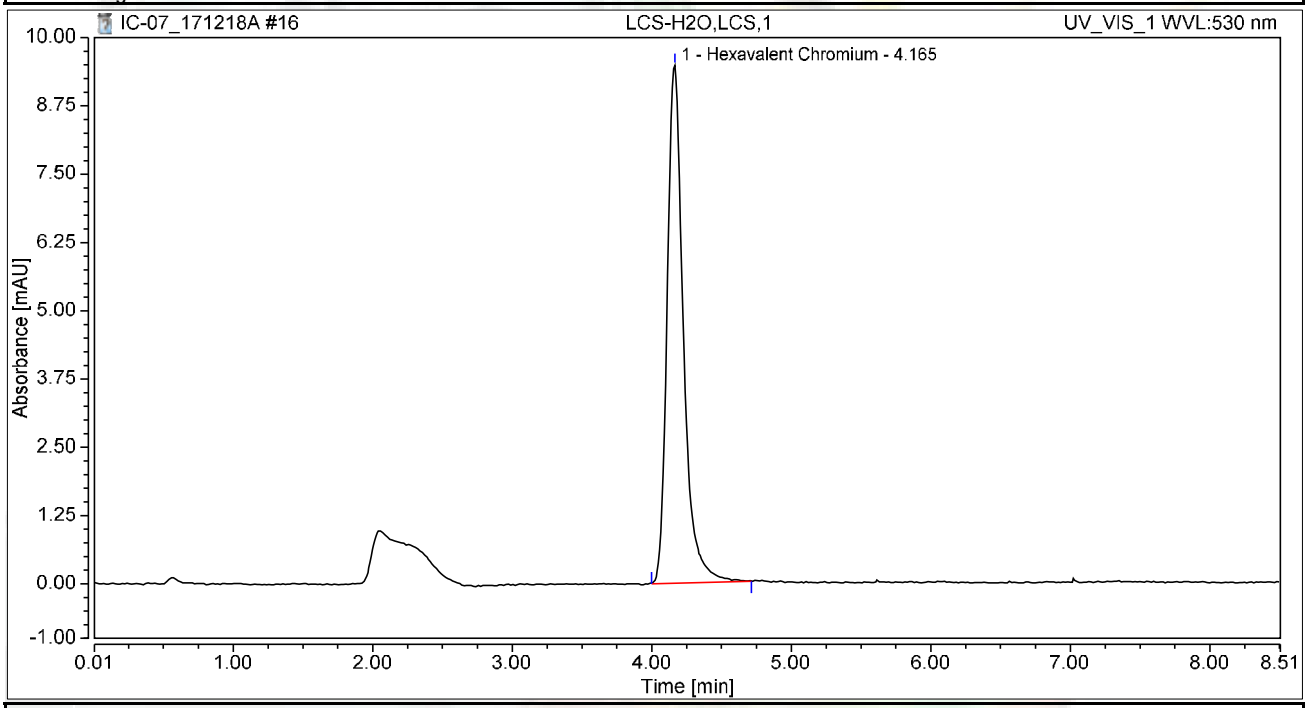
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 09:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

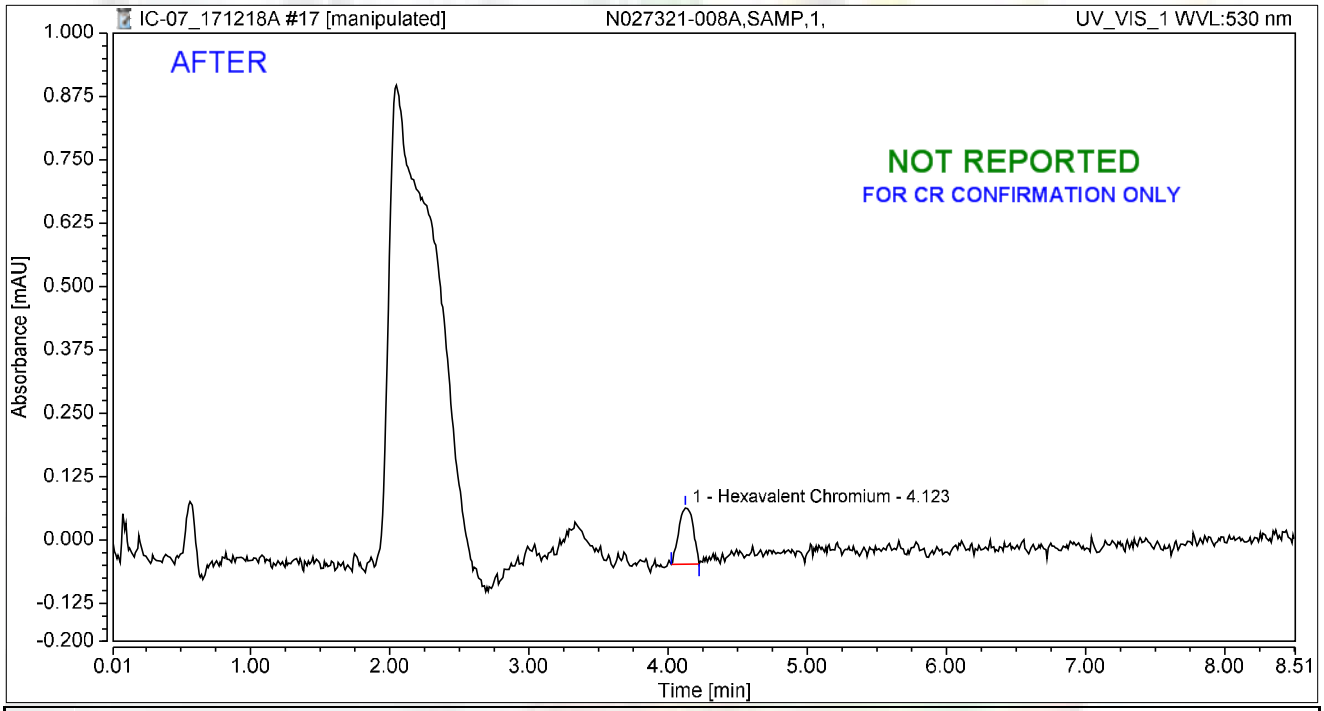
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.279	9.478	100.00	100.00	5.0929
Total:			**1.279**	**9.478**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027321-008A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 10:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.013	0.111	100.00	100.00	0.0522
Total:			**0.013**	**0.111**	**100.00**	**100.00**	

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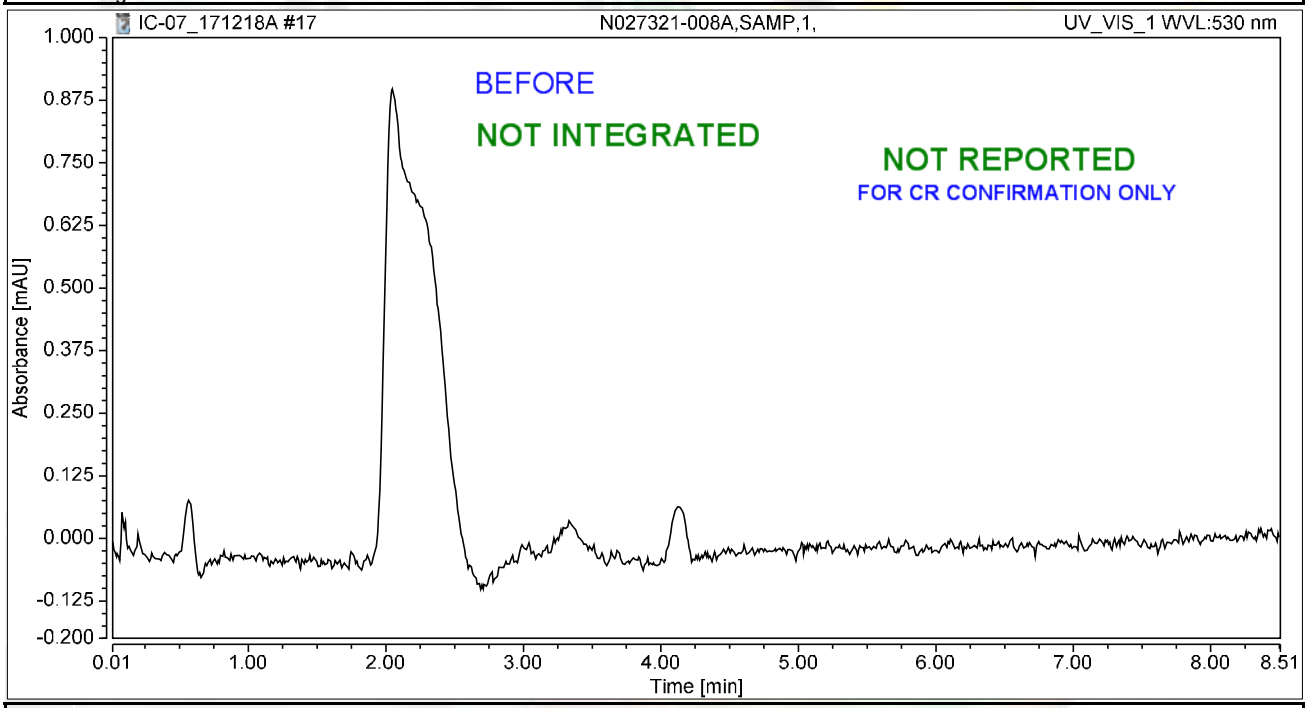
Chromatogram and Results

Injection Details

Injection Name:	**N027321-008A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 10:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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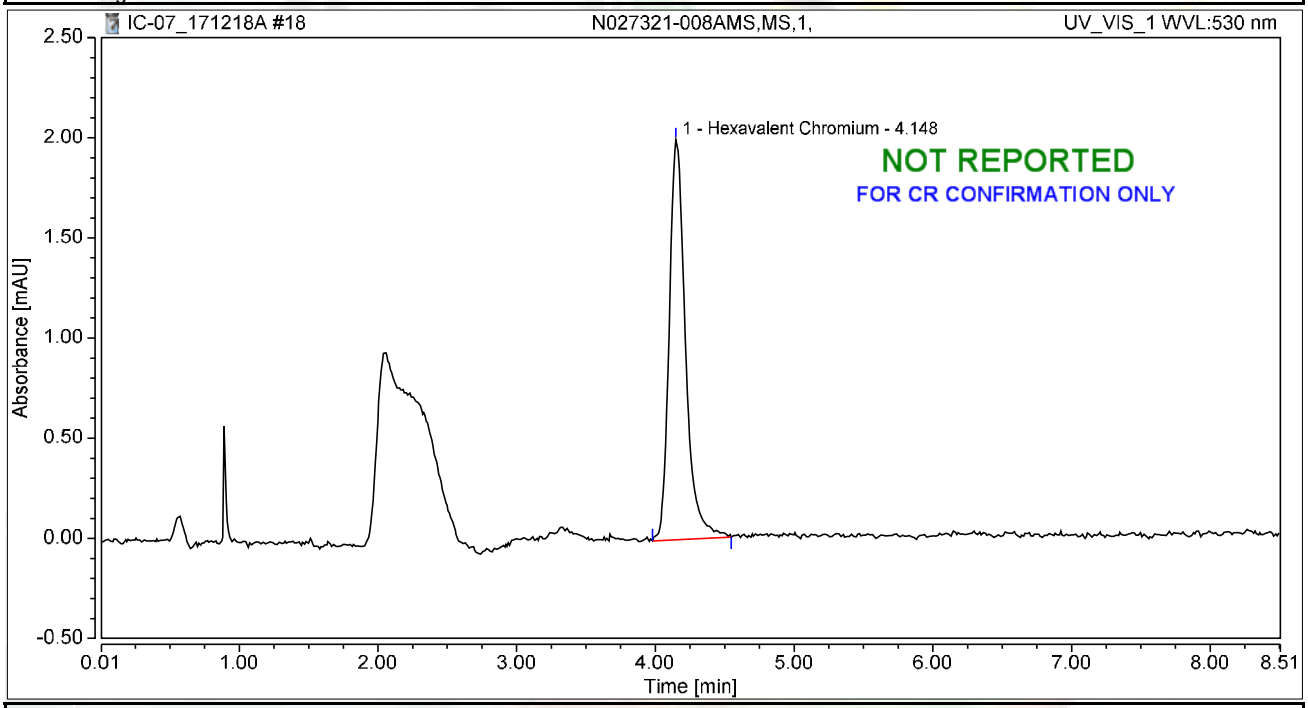
Chromatogram and Results

Injection Details

Injection Name:	**N027321-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 10:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.272	1.997	100.00	100.00	1.0828
Total:			**0.272**	**1.997**	**100.00**	**100.00**	

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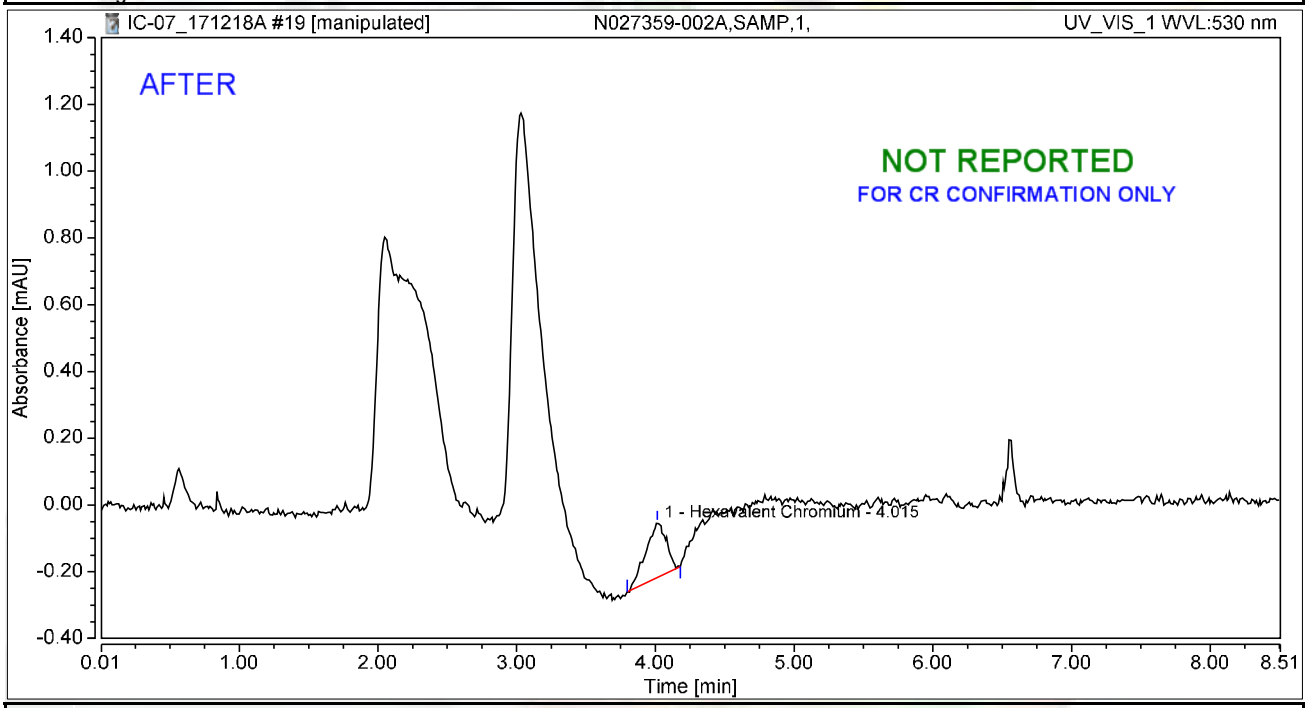
Chromatogram and Results

Injection Details

Injection Name:	**N027359-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 10:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.015	0.028	0.164	100.00	100.00	0.1116
Total:			**0.028**	**0.164**	**100.00**	**100.00**	

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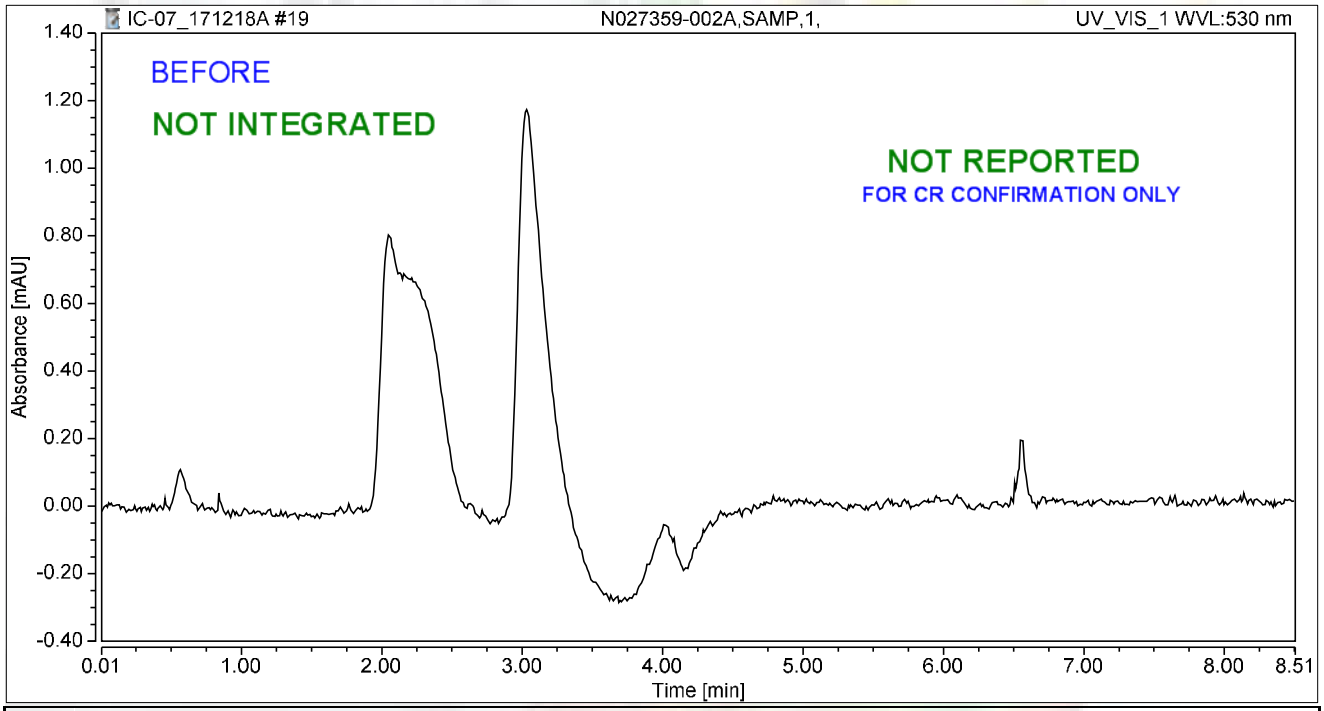
Chromatogram and Results

Injection Details

Injection Name:	**N027359-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 10:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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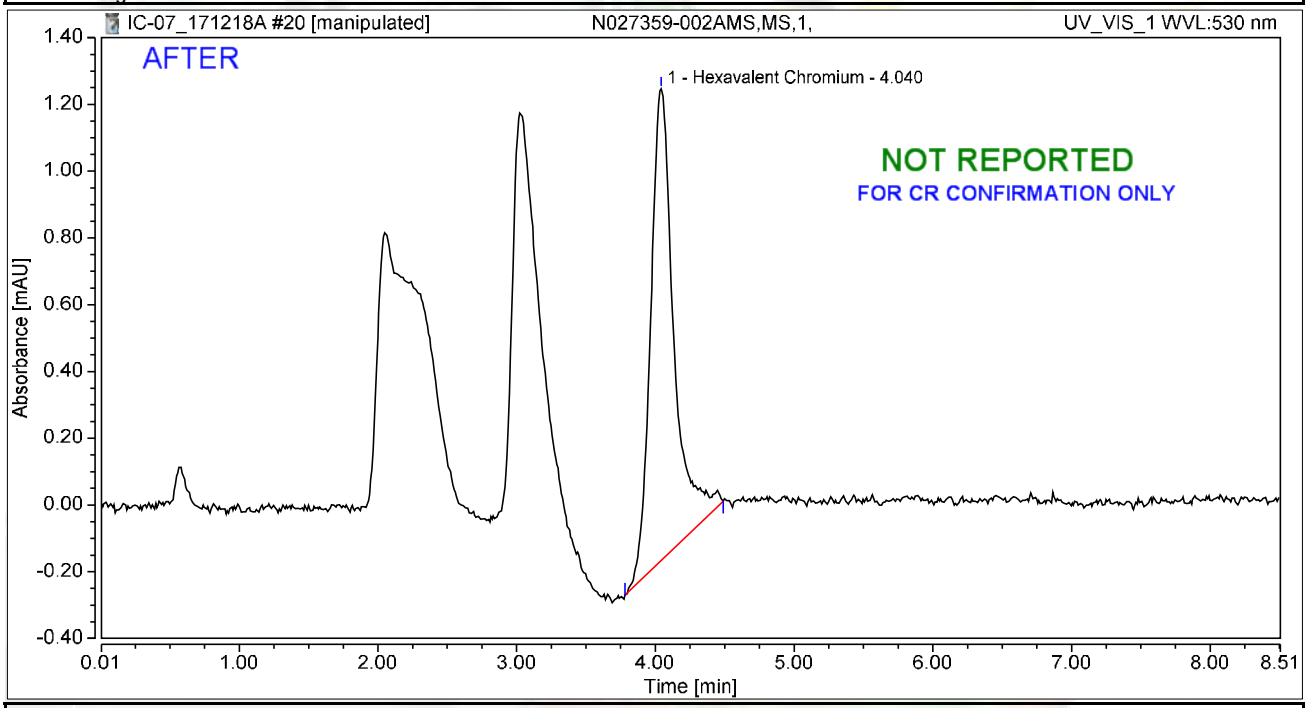
Chromatogram and Results

Injection Details

Injection Name:	**N027359-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.040	0.276	1.414	100.00	100.00	1.0996
Total:			**0.276**	**1.414**	**100.00**	**100.00**	

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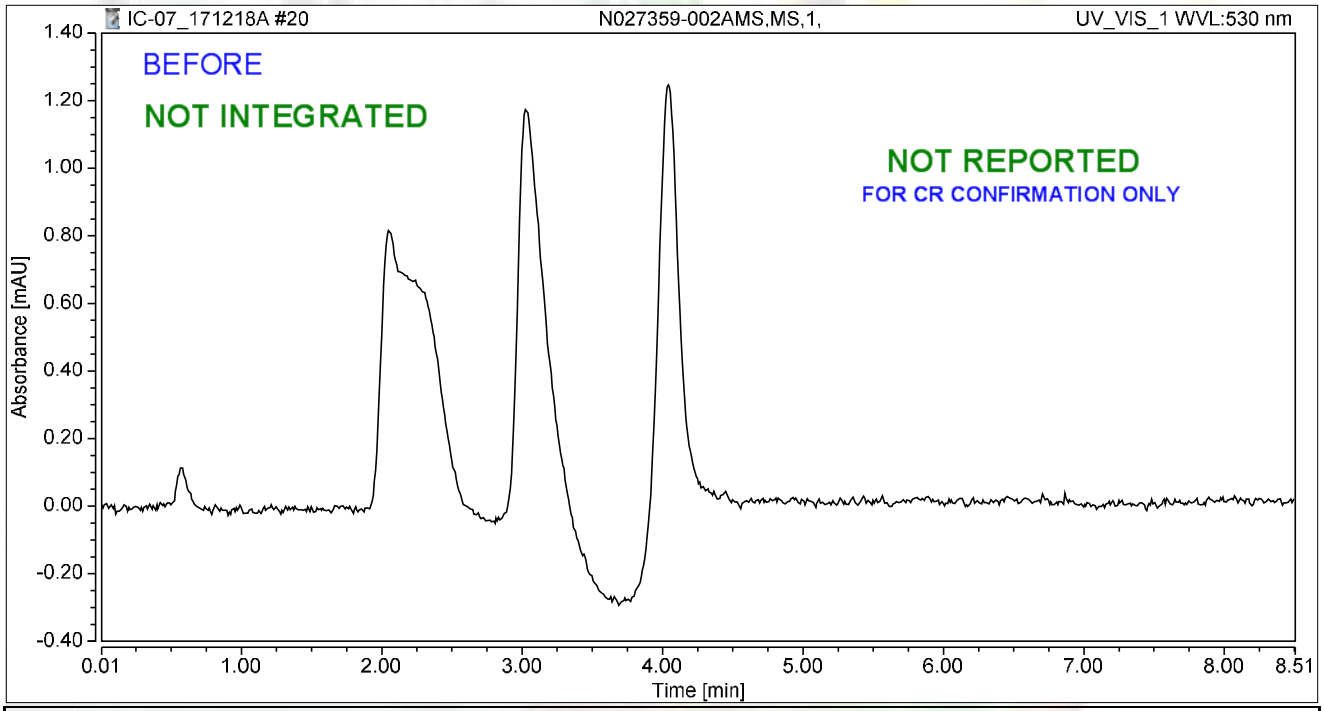
Chromatogram and Results

Injection Details

Injection Name:	**N027359-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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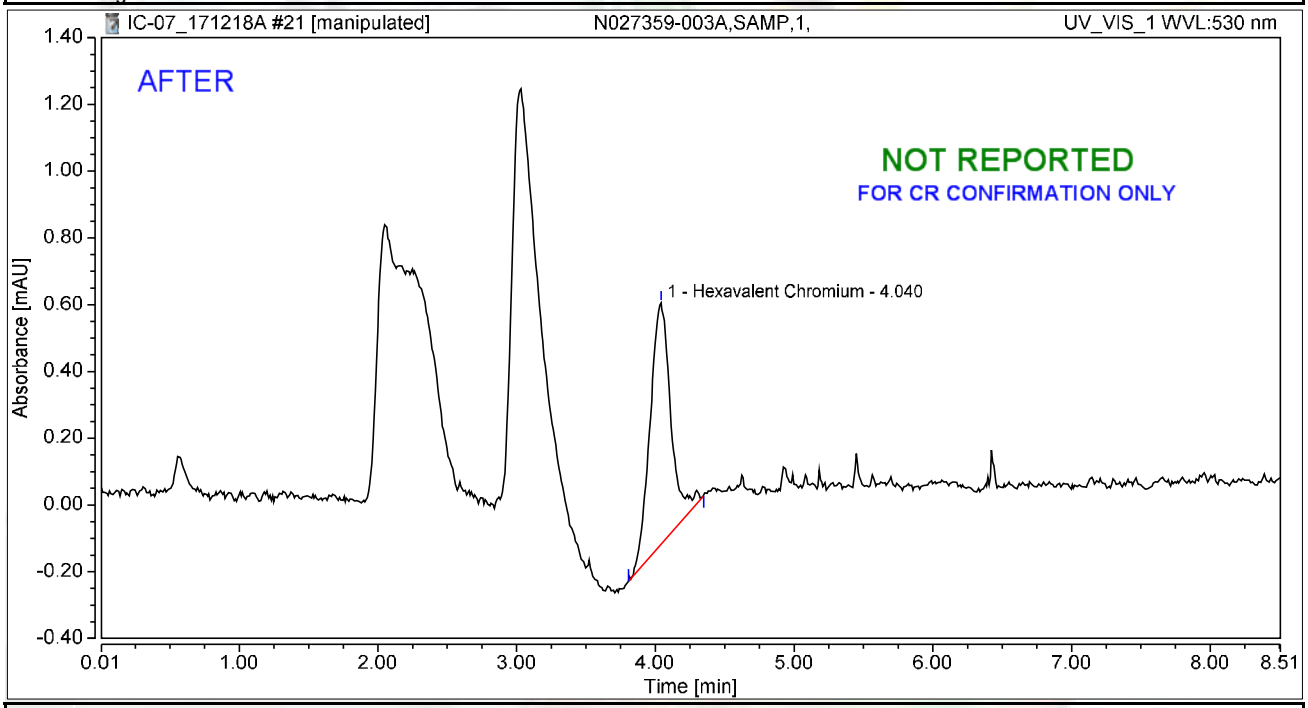
Chromatogram and Results

Injection Details

Injection Name:	**N027359-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 10:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.040	0.126	0.723	100.00	100.00	0.4999
Total:			**0.126**	**0.723**	**100.00**	**100.00**	

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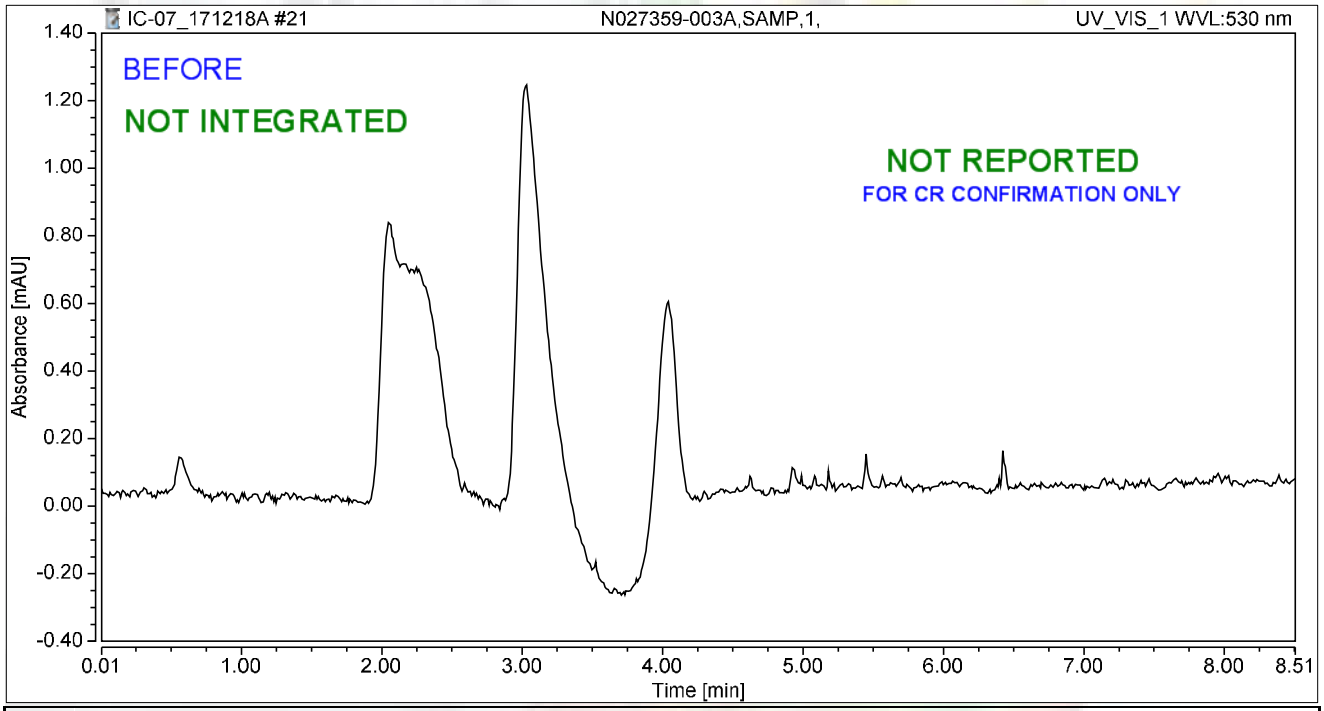
Chromatogram and Results

Injection Details

Injection Name:	**N027359-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 10:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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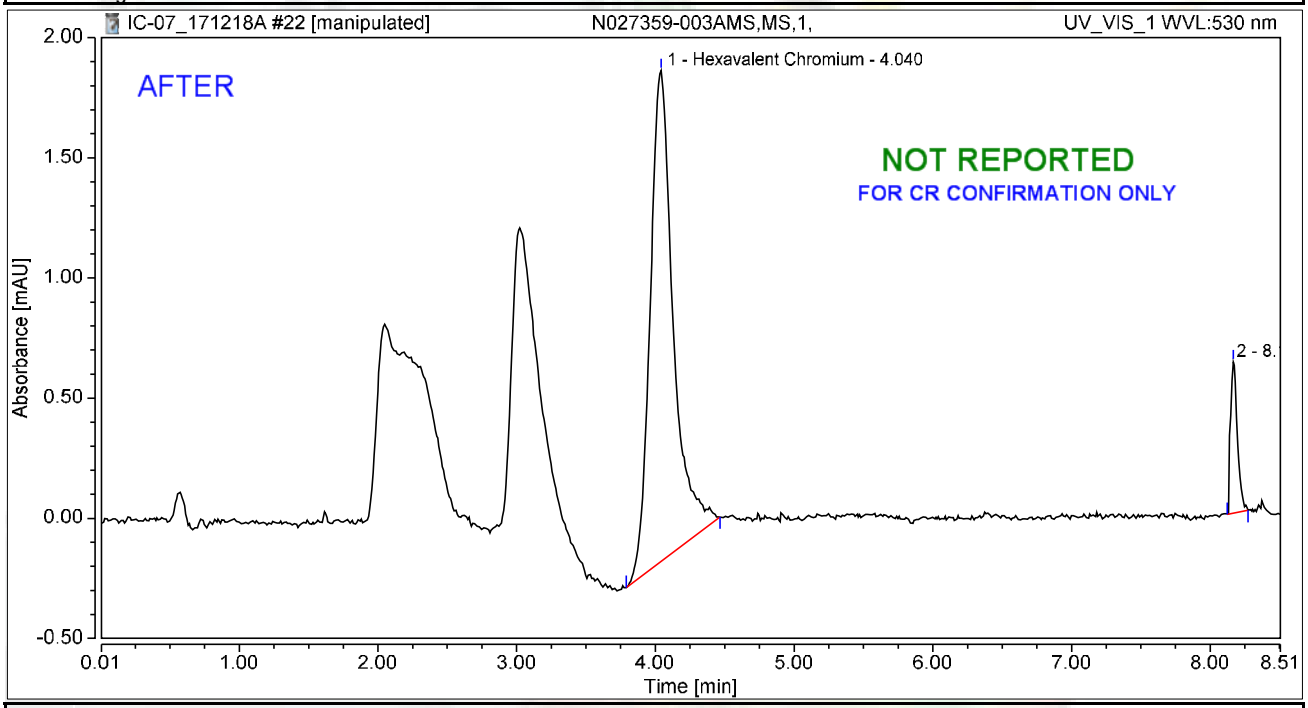
Chromatogram and Results

Injection Details

Injection Name:	**N027359-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 10:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.040	0.395	2.042	91.56	76.41	1.5740
2		8.165	0.036	0.630	8.44	23.59	n.a.
Total:			**0.432**	**2.672**	**100.00**	**100.00**	

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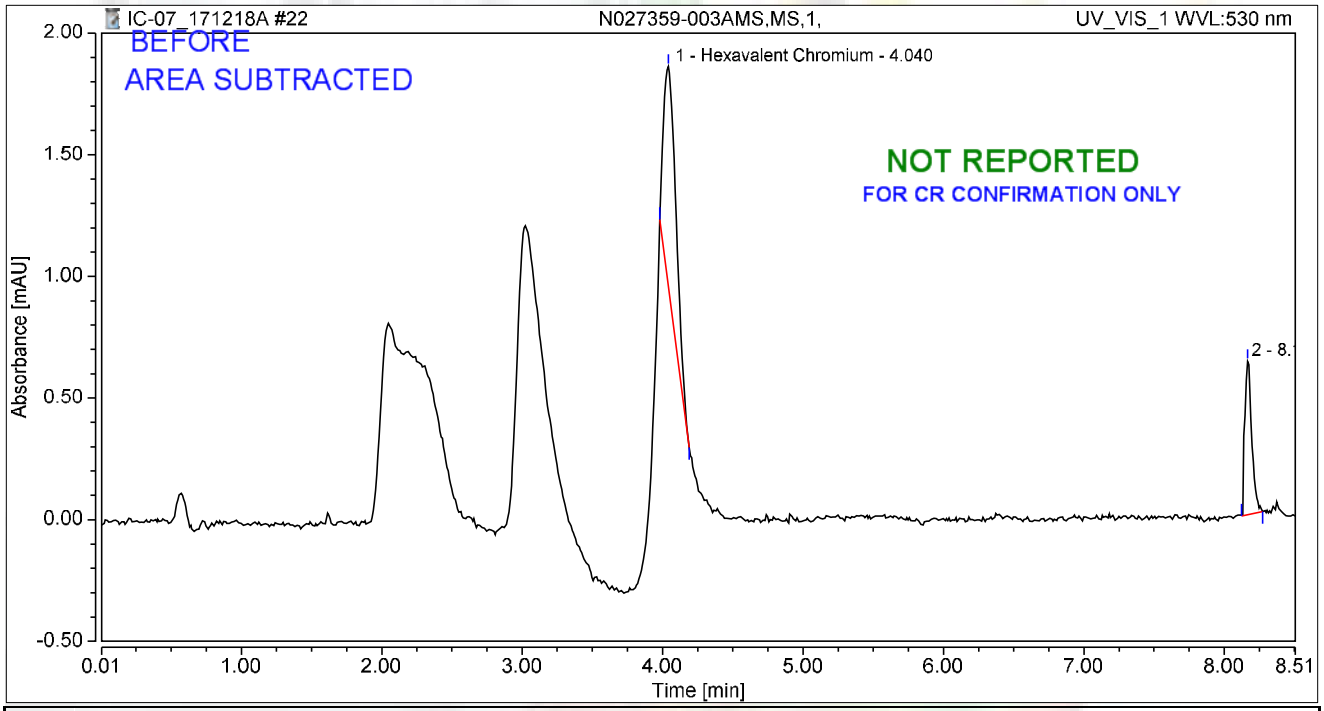
Chromatogram and Results

Injection Details

Injection Name:	**N027359-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 10:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.040	0.092	0.891	71.69	58.55	0.3675
2		8.165	0.036	0.630	28.31	41.45	n.a.
Total:			**0.129**	**1.521**	**100.00**	**100.00**	

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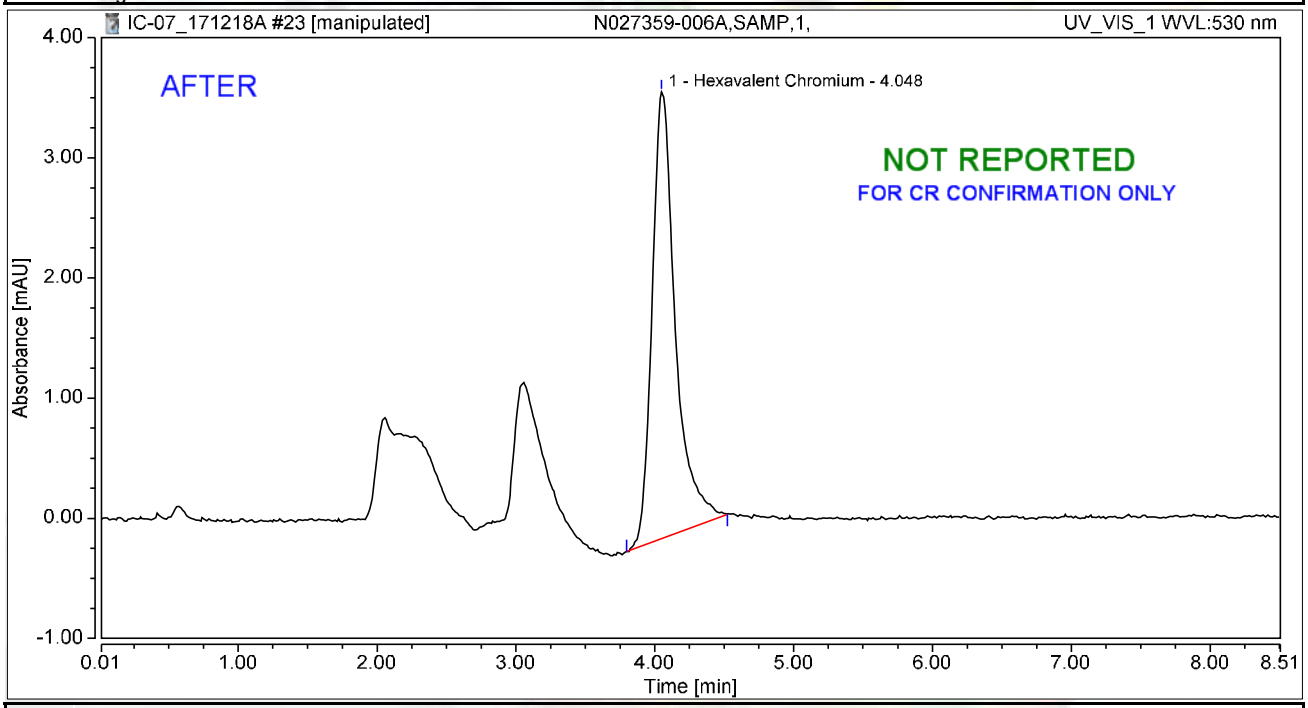
Chromatogram and Results

Injection Details

Injection Name:	**N027359-006A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.048	0.724	3.719	100.00	100.00	2.8819
Total:			**0.724**	**3.719**	**100.00**	**100.00**	

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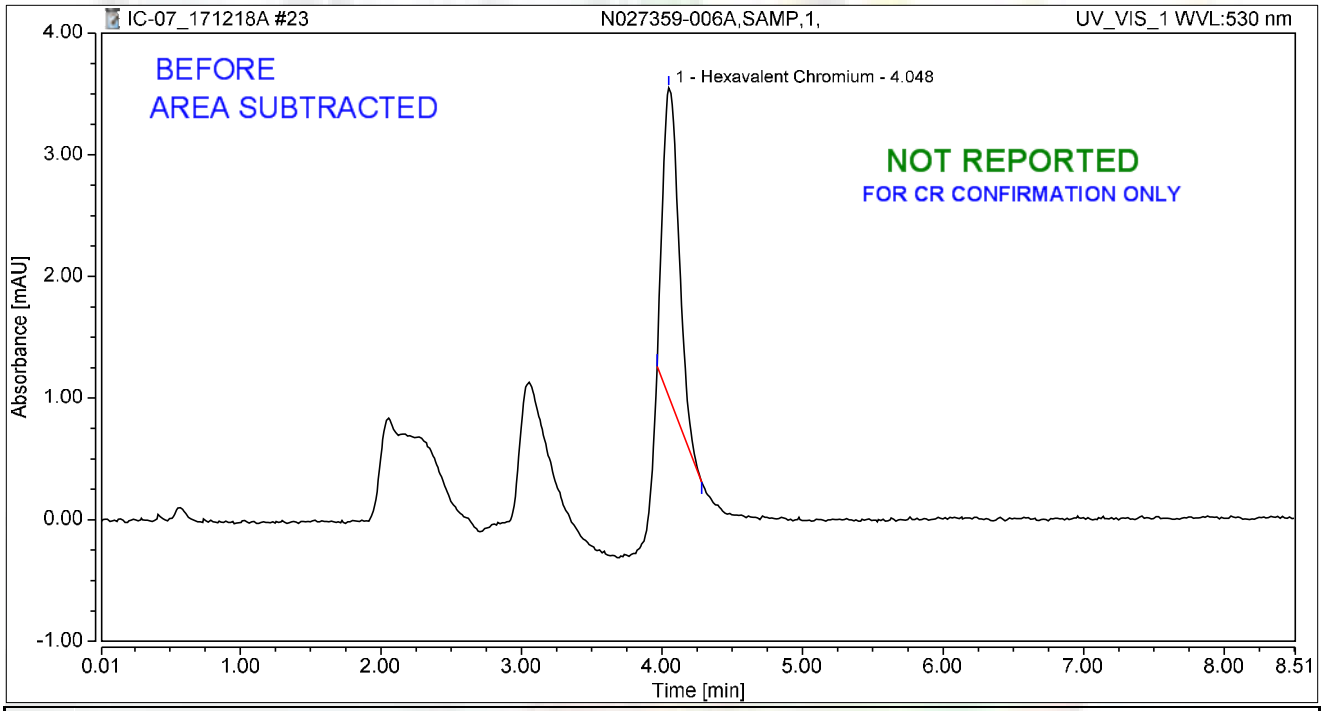
Chromatogram and Results

Injection Details

Injection Name:	**N027359-006A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.048	0.343	2.538	100.00	100.00	1.3673
Total:			**0.343**	**2.538**	**100.00**	**100.00**	

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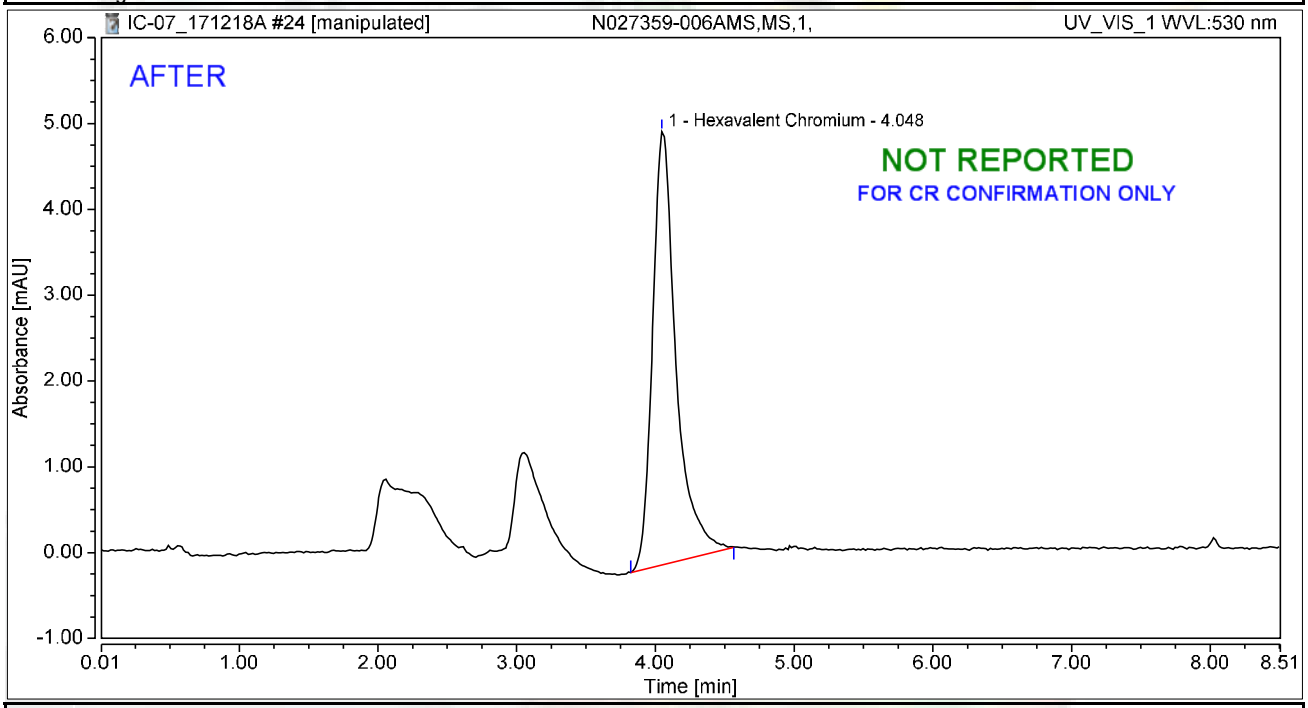
Chromatogram and Results

Injection Details

Injection Name:	**N027359-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.048	0.990	5.049	100.00	100.00	3.9441
Total:			**0.990**	**5.049**	**100.00**	**100.00**	

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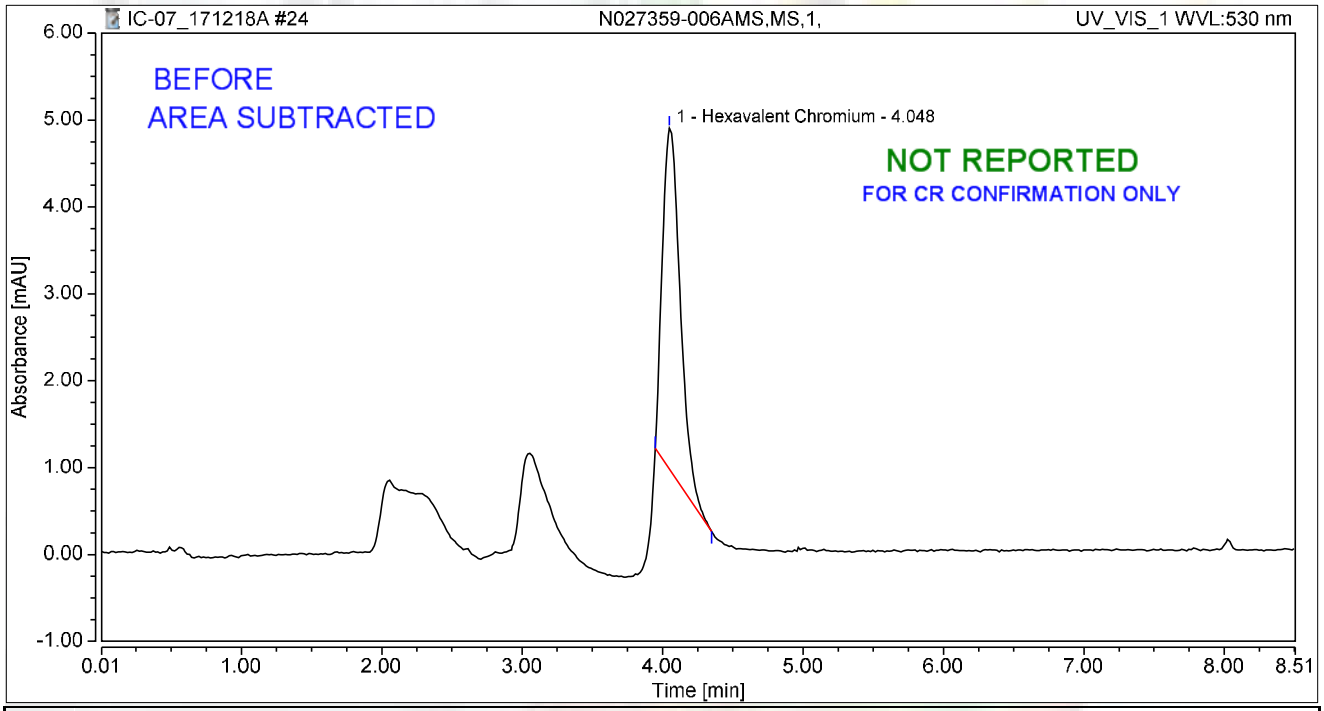
Chromatogram and Results

Injection Details

Injection Name:	**N027359-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.048	0.584	3.925	100.00	100.00	2.3254
Total:			**0.584**	**3.925**	**100.00**	**100.00**	

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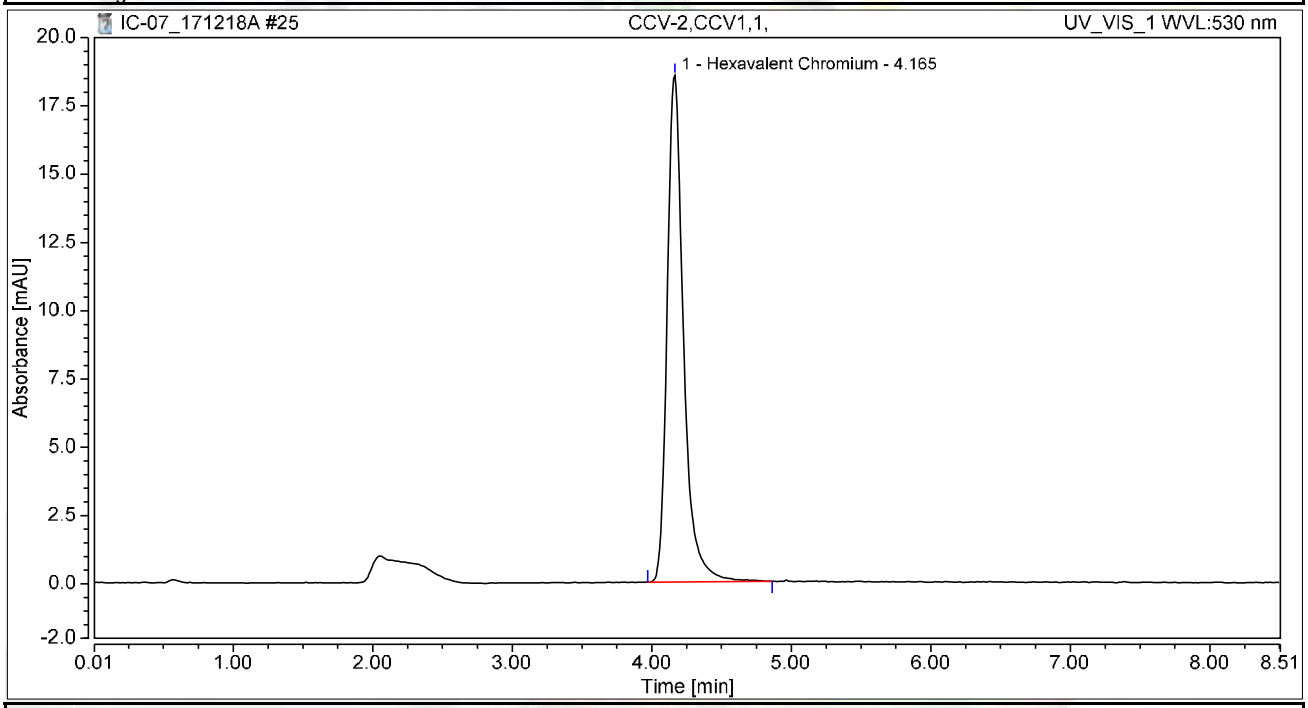
Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 11:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

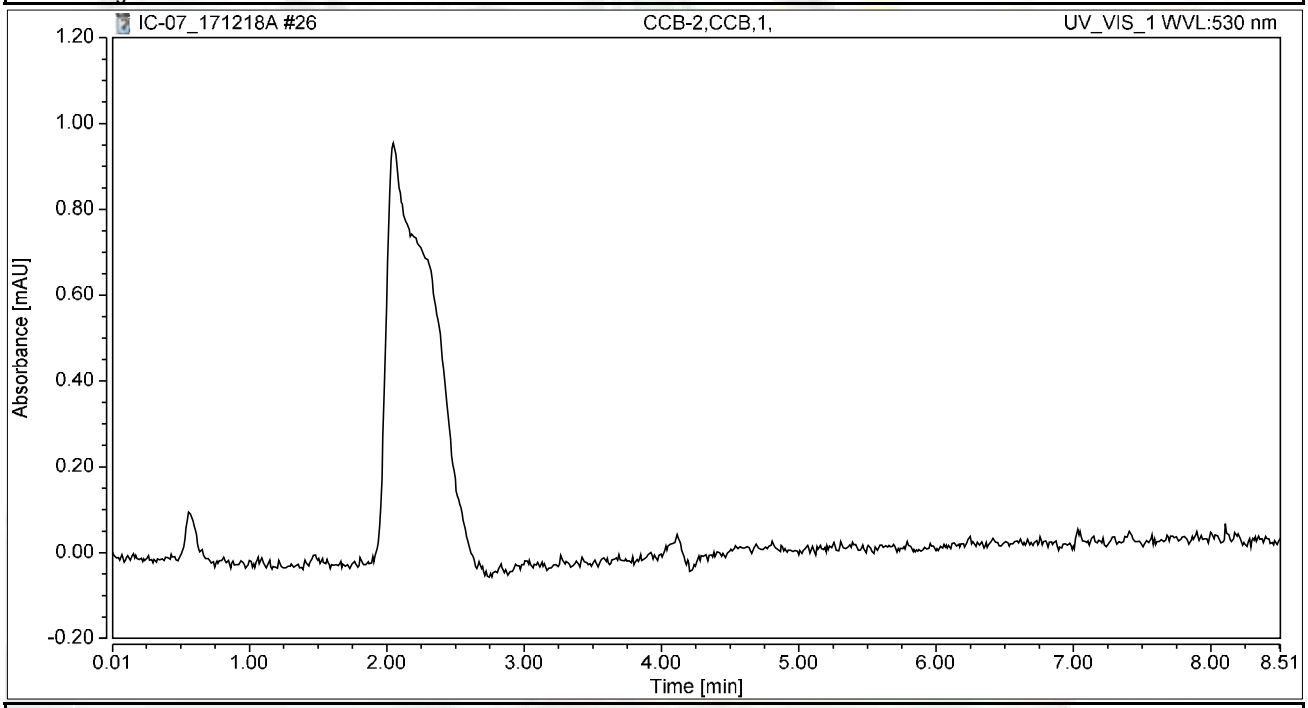
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.521	18.553	100.00	100.00	10.0385
Total:			**2.521**	**18.553**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 11:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

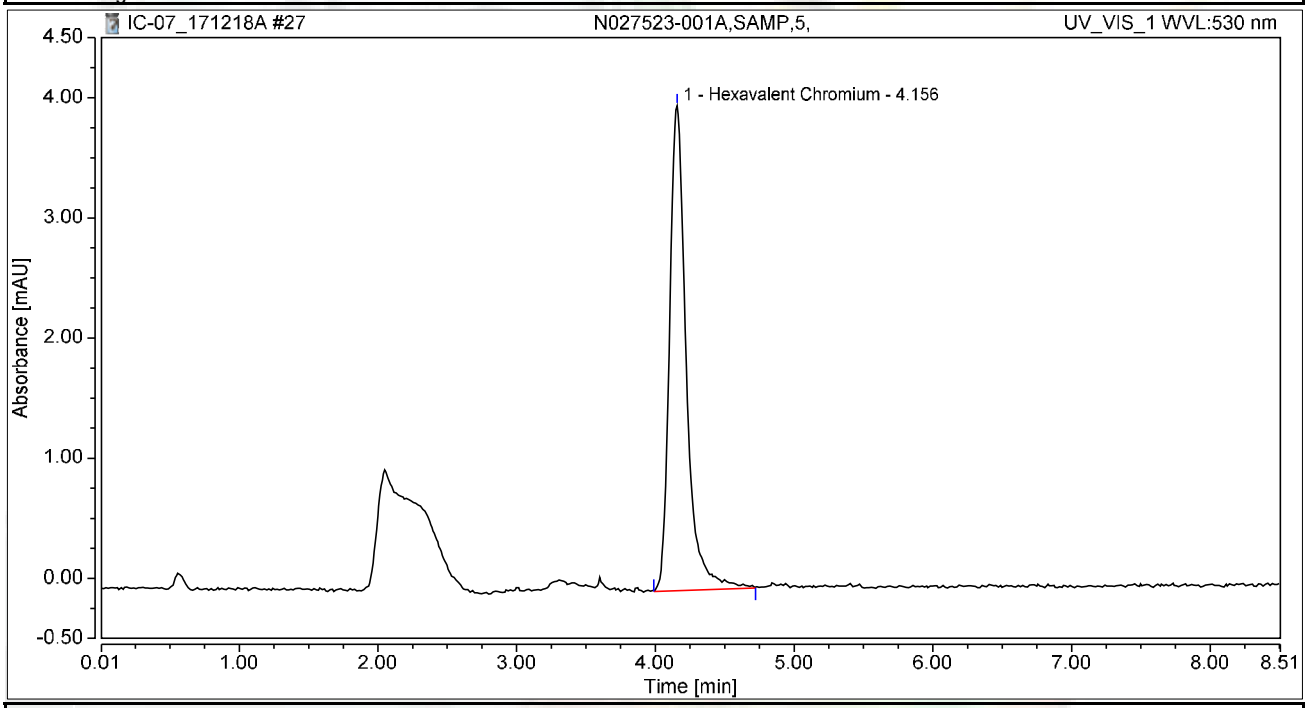
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-001A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 11:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

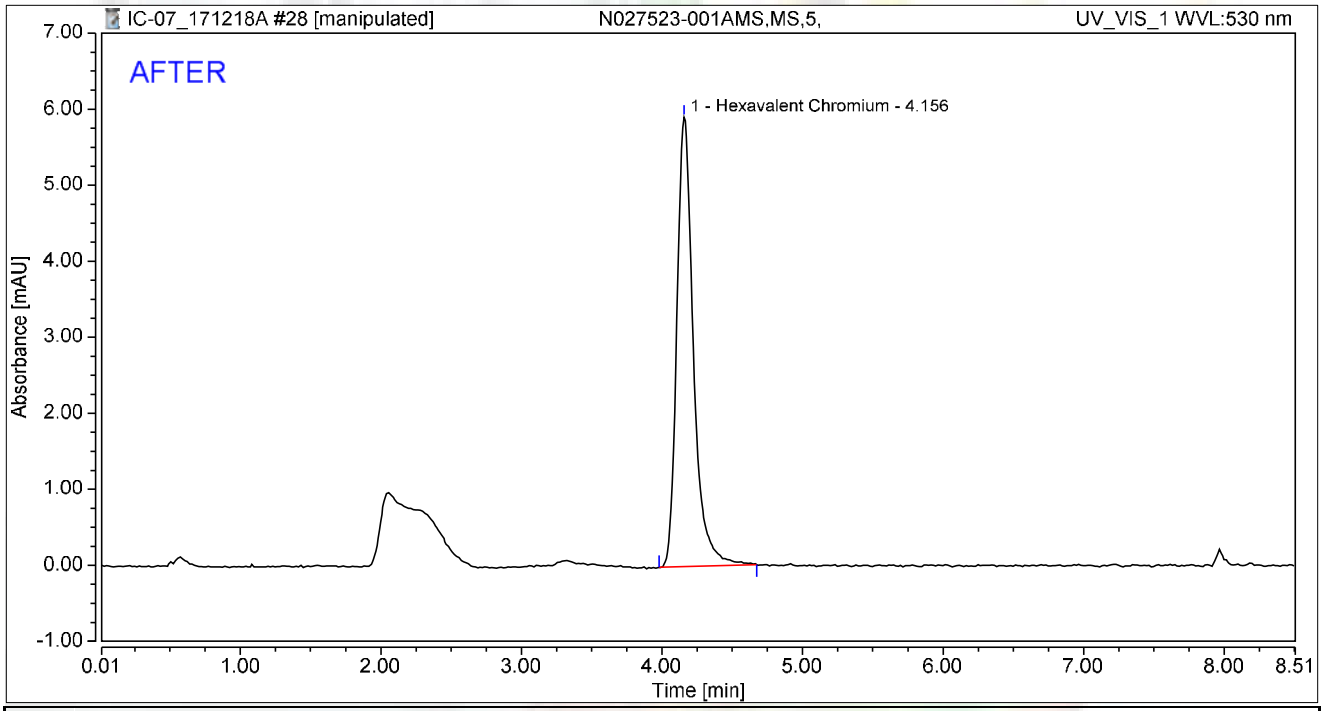
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.564	4.035	100.00	100.00	2.2469
Total:			**0.564**	**4.035**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-001AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 11:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.809	5.911	100.00	100.00	3.2235
Total:			**0.809**	**5.911**	**100.00**	**100.00**	

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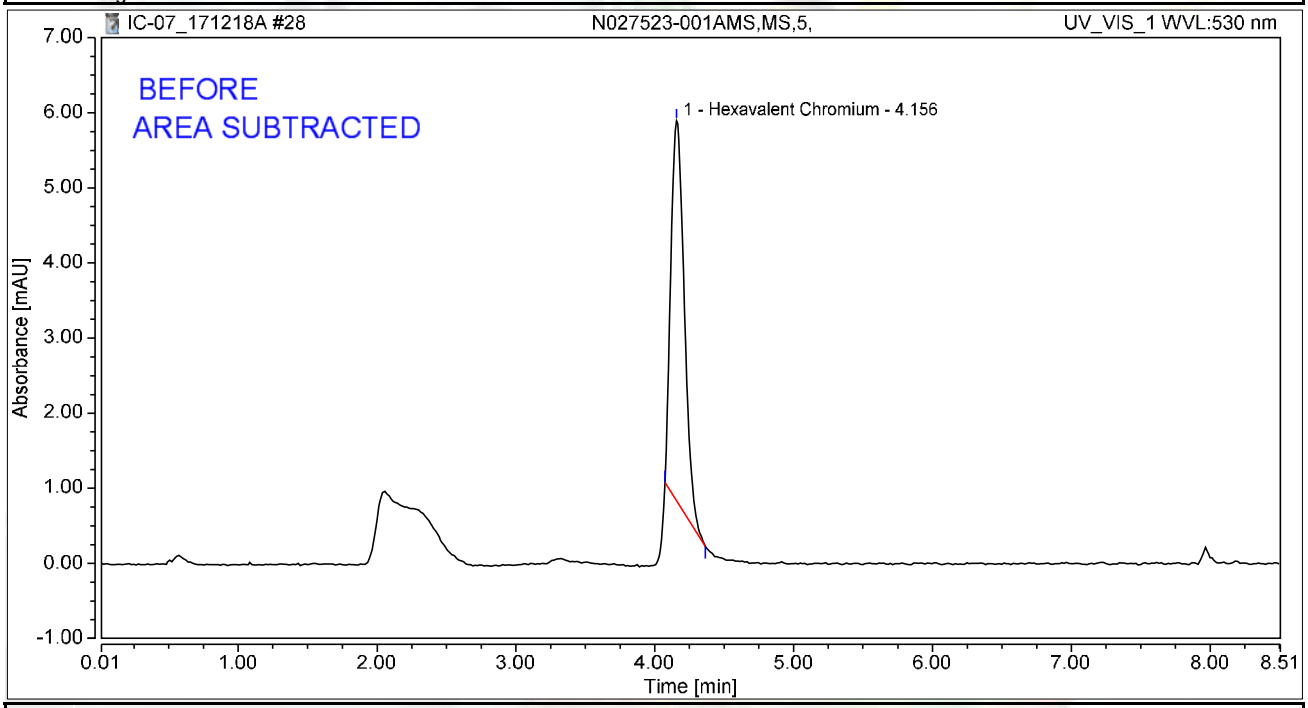
Chromatogram and Results

Injection Details

Injection Name:	**N027523-001AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 11:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.572	5.059	100.00	100.00	2.2766
Total:			**0.572**	**5.059**	**100.00**	**100.00**	

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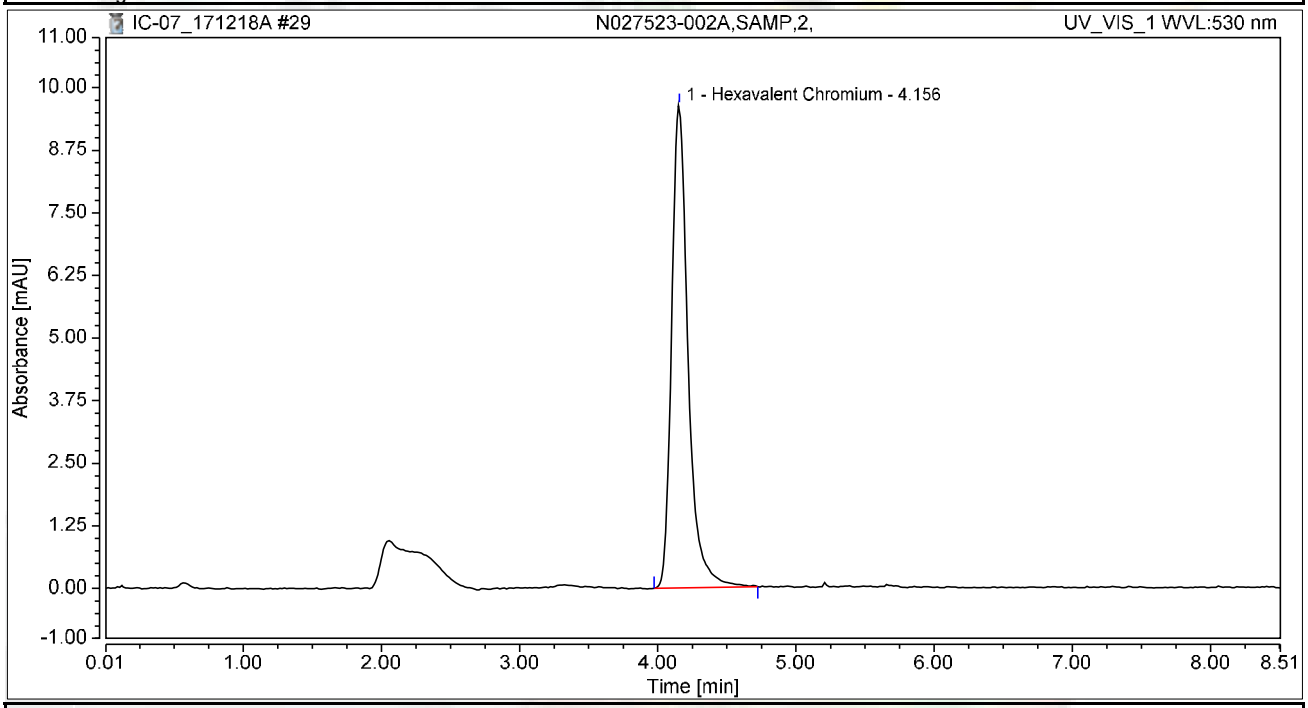
Chromatogram and Results

Injection Details

Injection Name:	**N027523-002A,SAMP,2,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 11:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

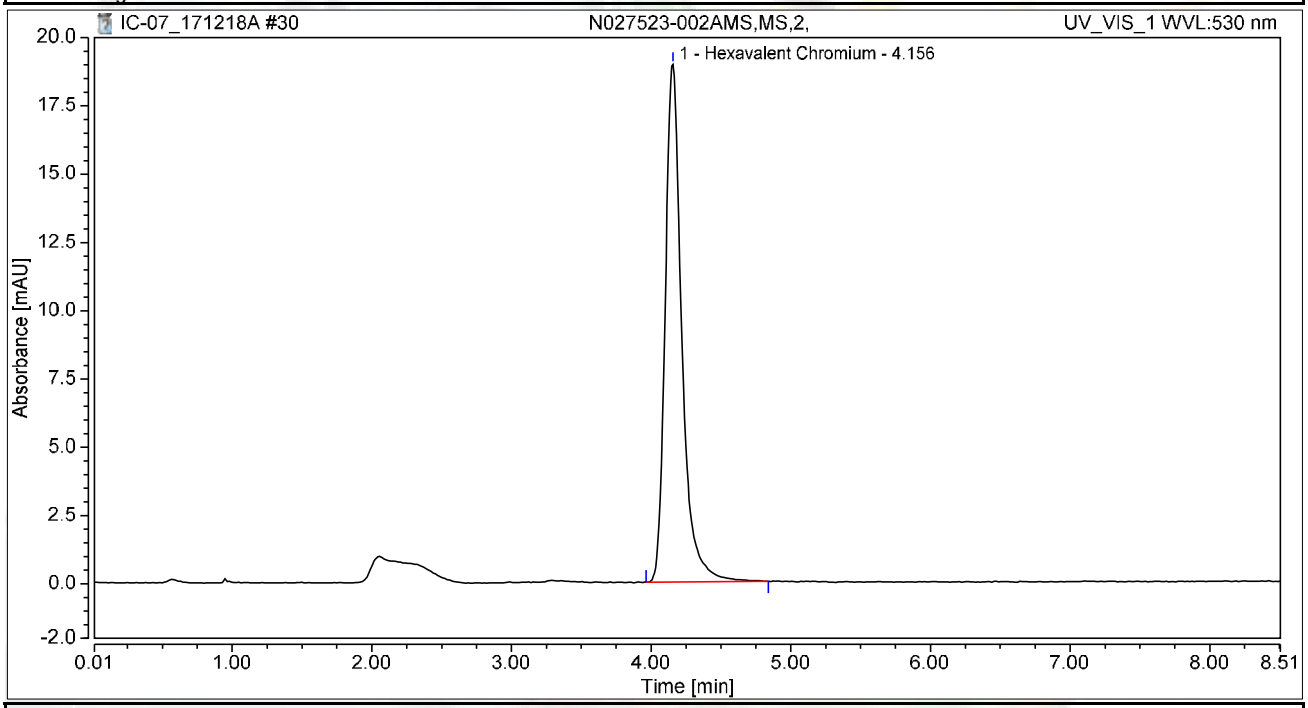
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.334	9.638	100.00	100.00	5.3119
Total:			**1.334**	**9.638**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-002AMS,MS,2,**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 12:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

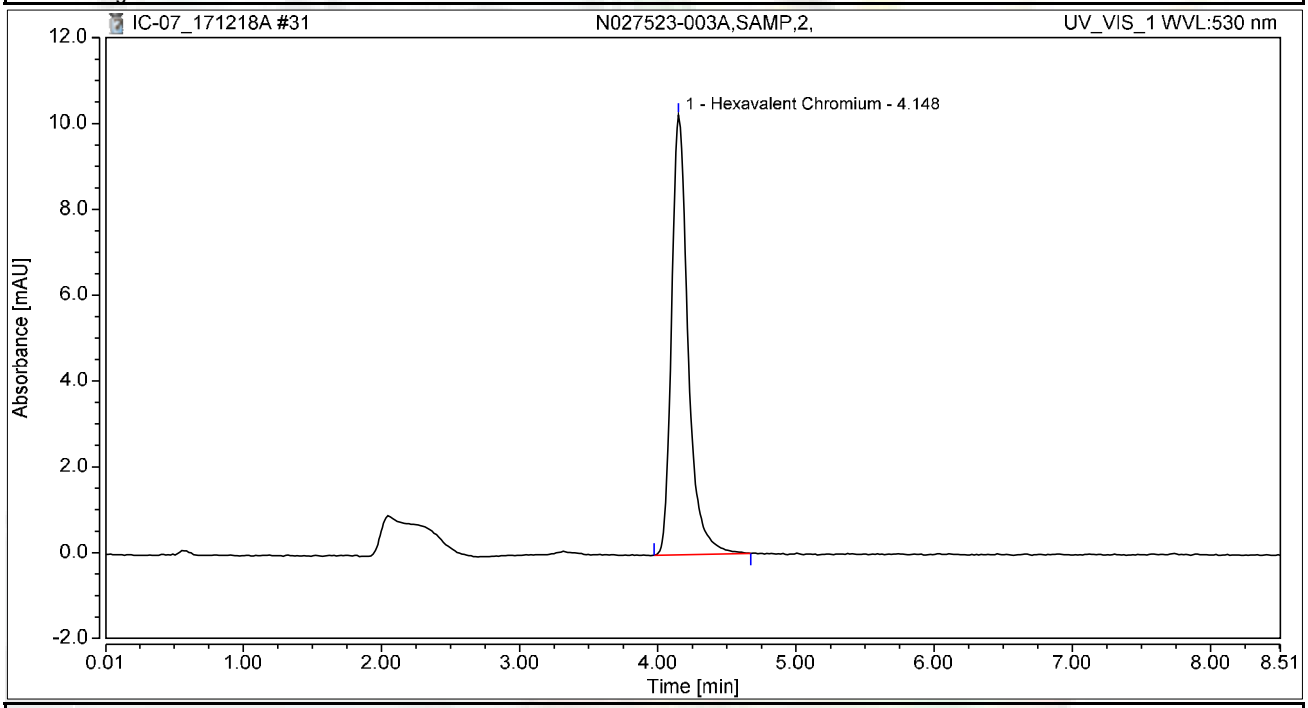
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.617	18.959	100.00	100.00	10.4235
Total:			**2.617**	**18.959**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-003A,SAMP,2,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 12:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

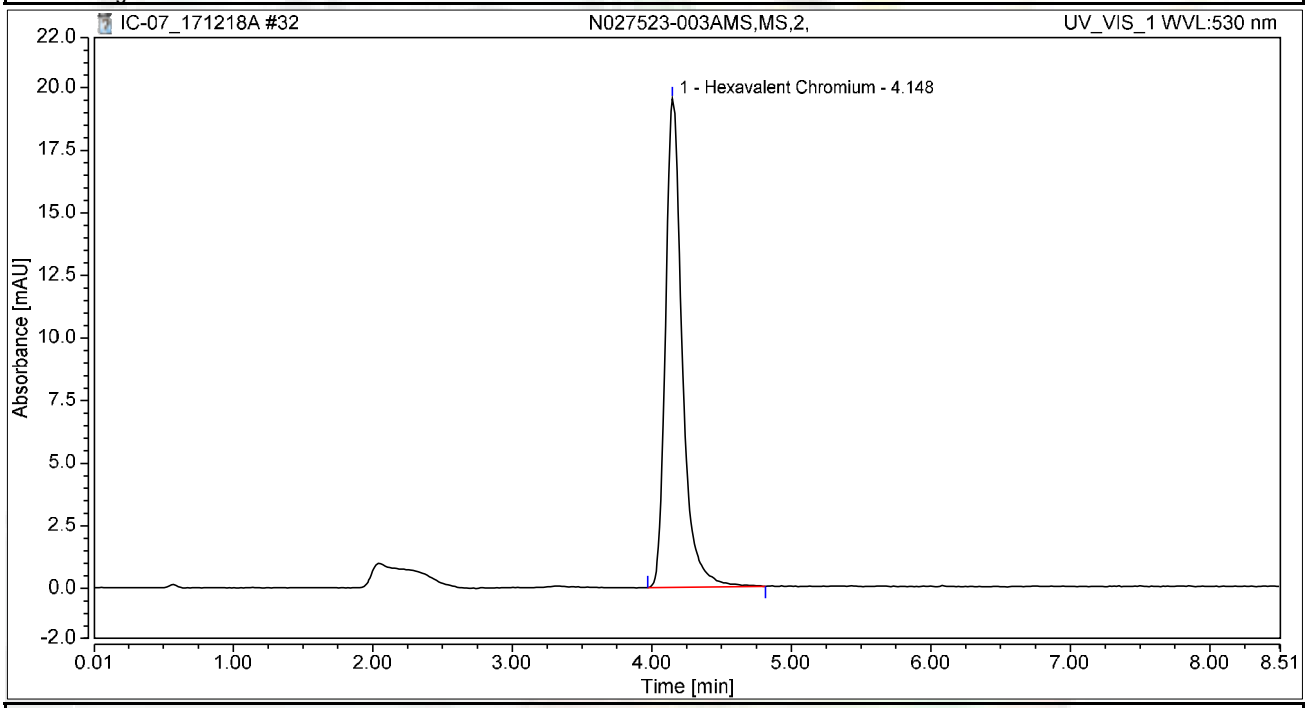
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.420	10.246	100.00	100.00	5.6567
Total:			**1.420**	**10.246**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-003AMS,MS,2,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 12:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

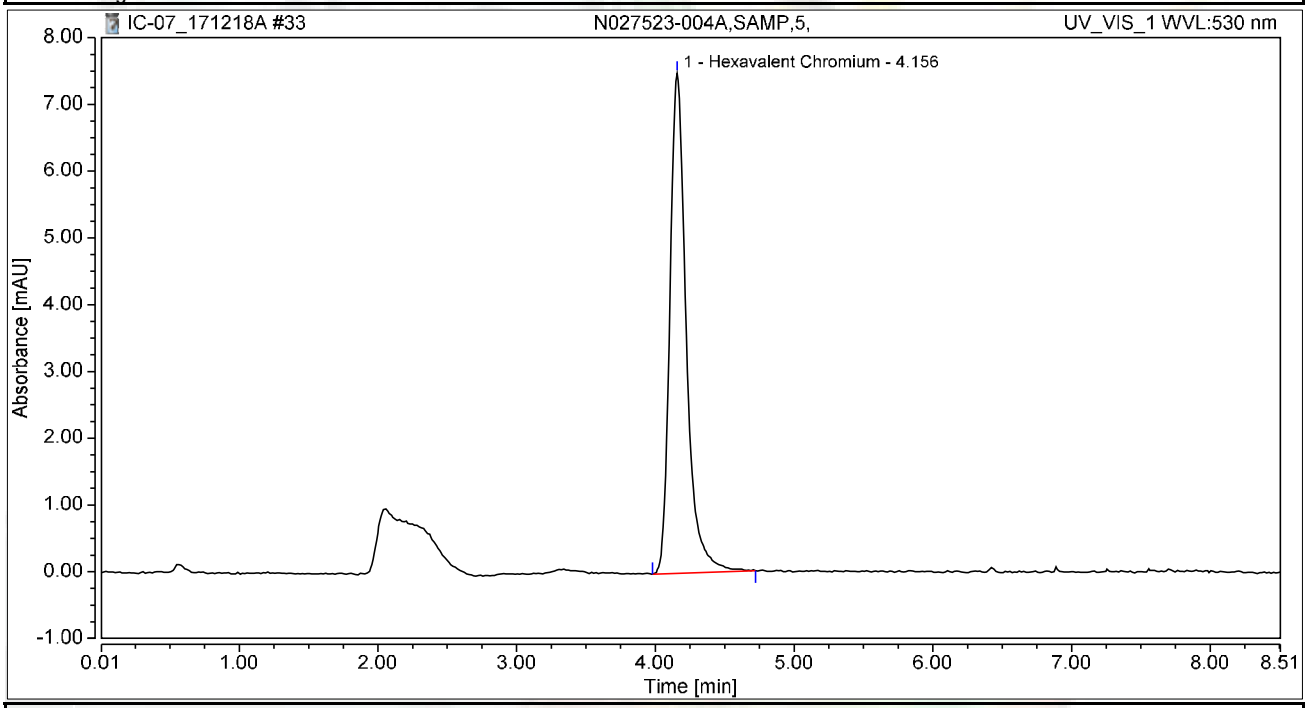
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.718	19.524	100.00	100.00	10.8229
Total:			**2.718**	**19.524**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 12:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

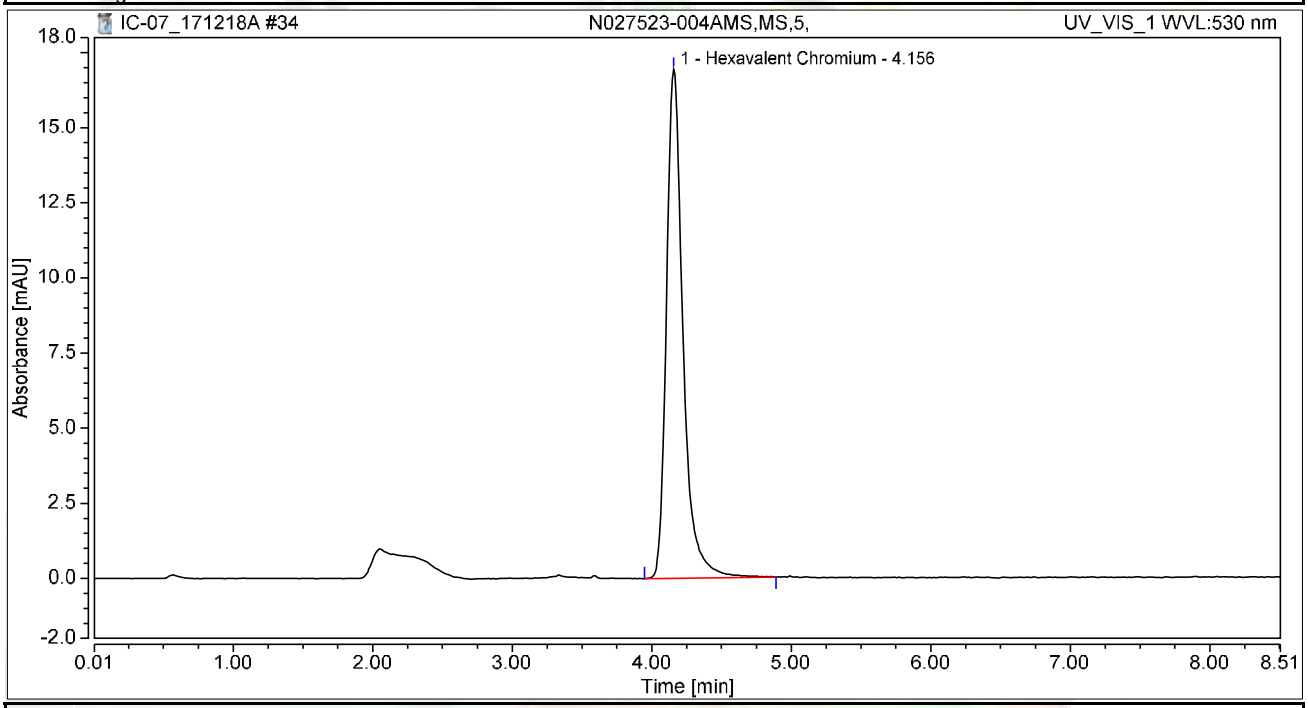
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.027	7.492	100.00	100.00	4.0913
Total:			**1.027**	**7.492**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 12:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

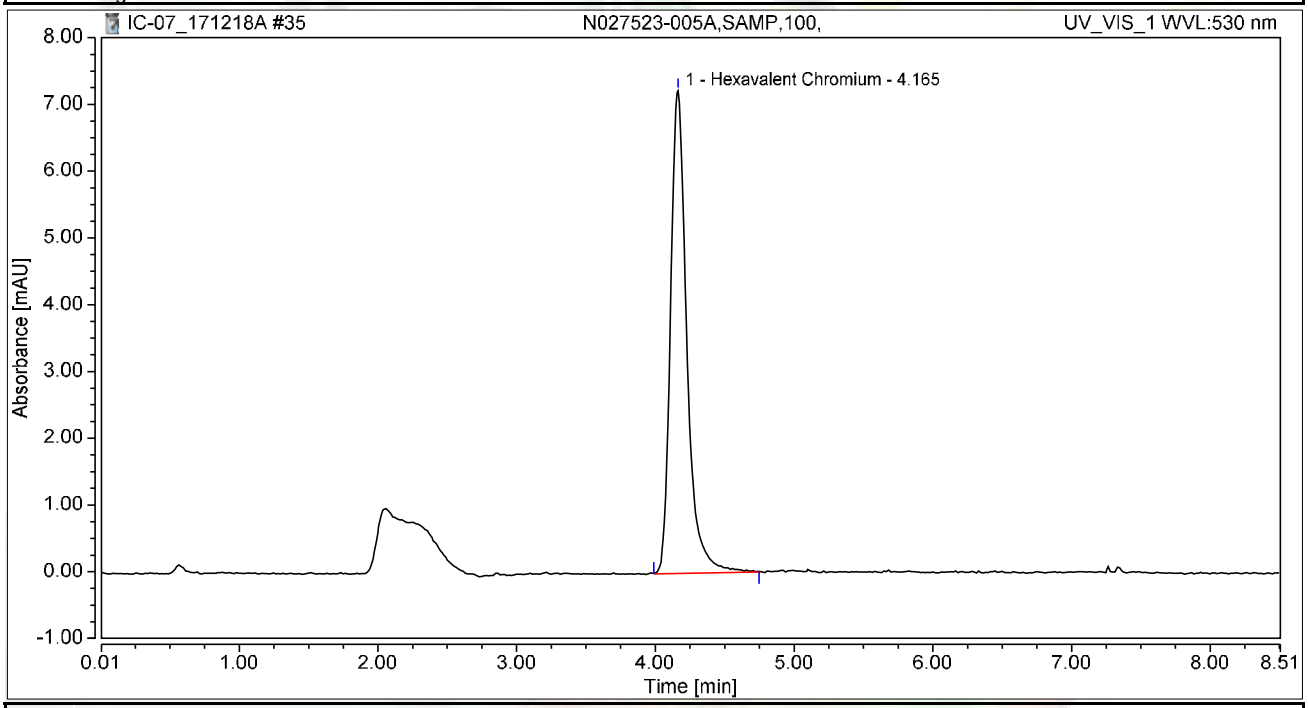
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.329	16.944	100.00	100.00	9.2767
Total:			**2.329**	**16.944**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-005A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 12:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

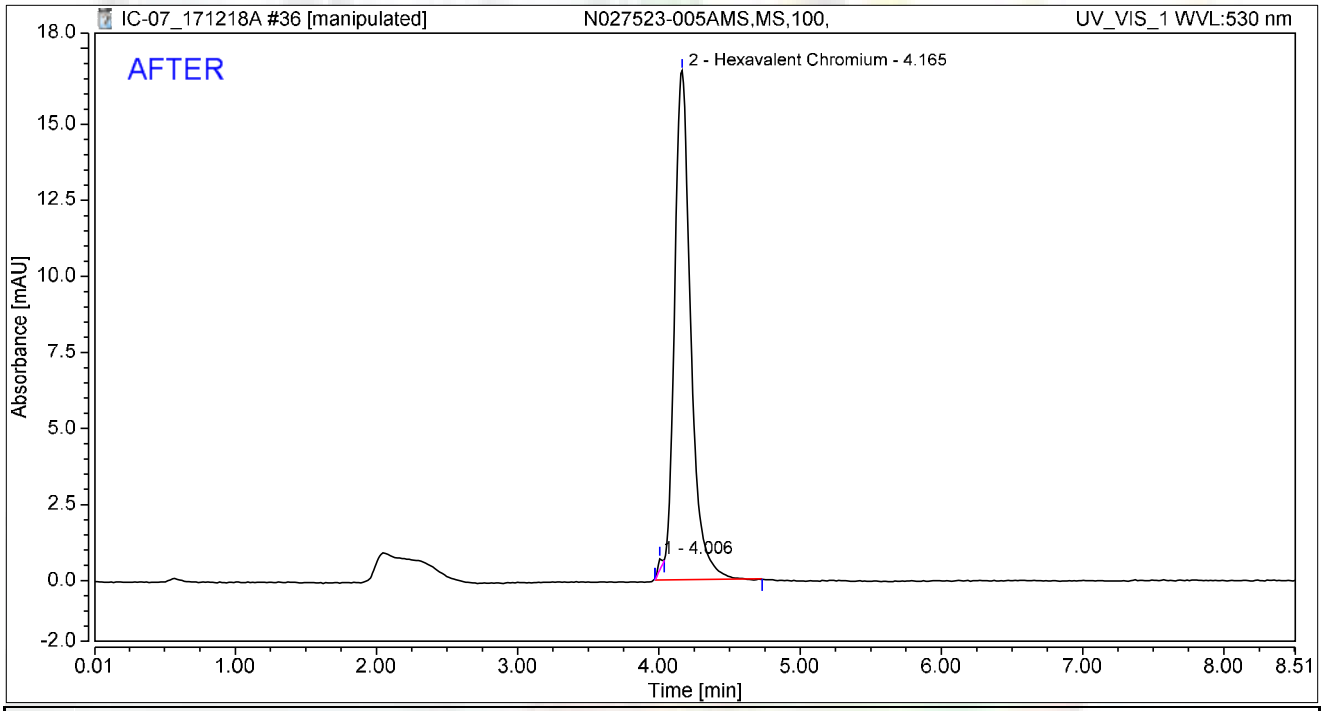
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.985	7.232	100.00	100.00	3.9221
Total:			**0.985**	**7.232**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-005AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 13:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		4.006	0.011	0.368	0.49	2.15	n.a.
2	Hexavalent Chromium	4.165	2.254	16.733	99.51	97.85	8.9785
Total:			**2.266**	**17.102**	**100.00**	**100.00**	

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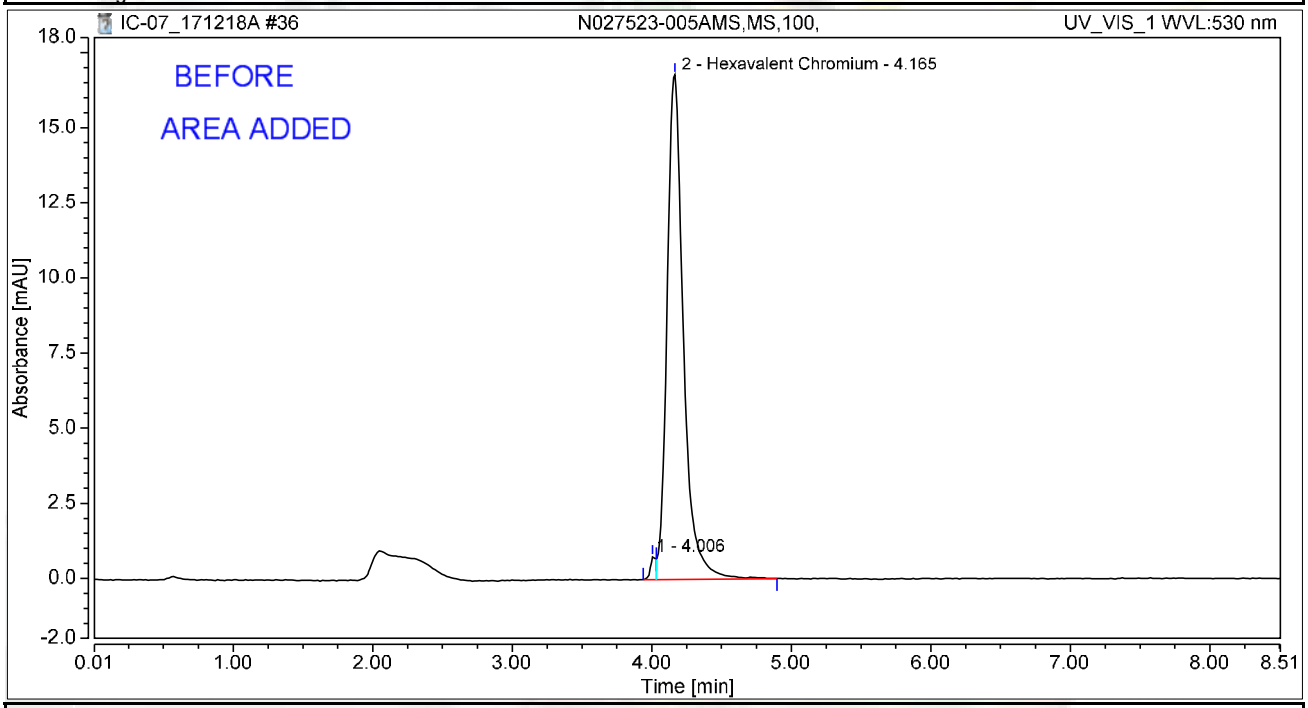
Chromatogram and Results

Injection Details

Injection Name:	**N027523-005AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 13:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		4.006	0.032	0.757	1.40	4.31	n.a.
2	Hexavalent Chromium	4.165	2.287	16.795	98.60	95.69	9.1066
Total:			**2.319**	**17.552**	**100.00**	**100.00**	

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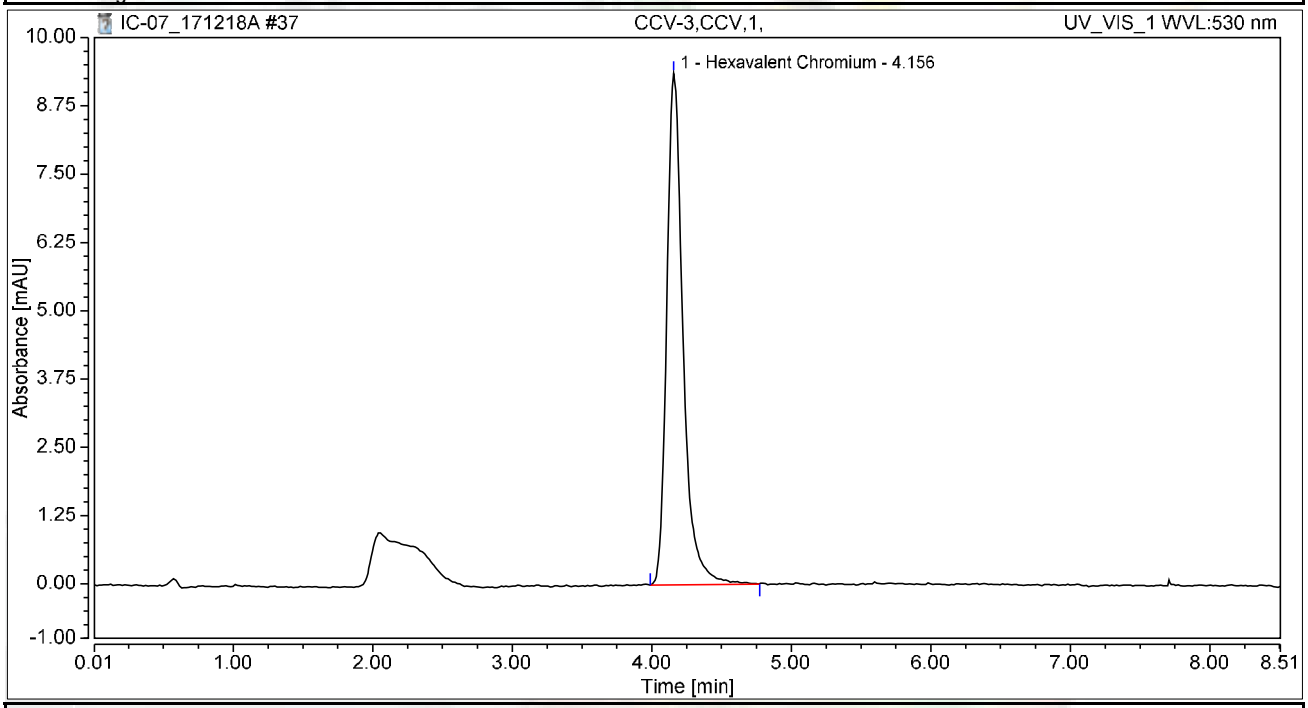
Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 13:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

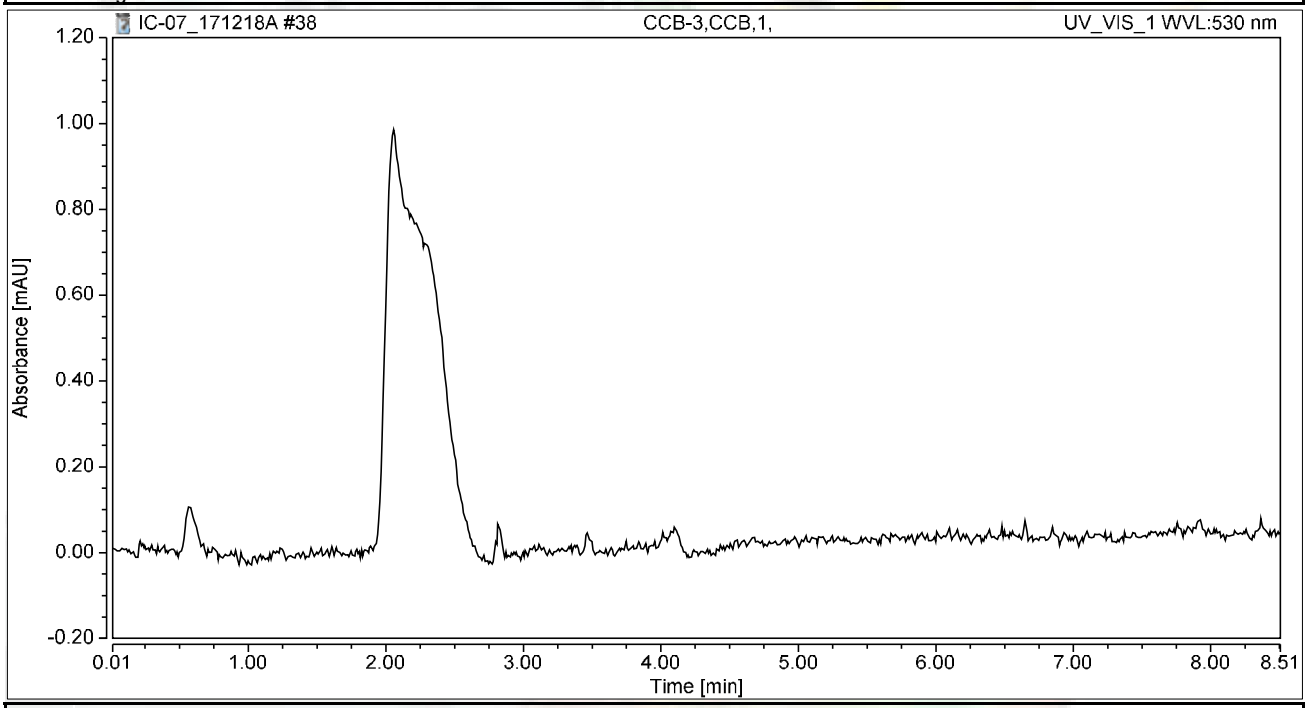
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.270	9.366	100.00	100.00	5.0582
Total:			**1.270**	**9.366**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 13:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

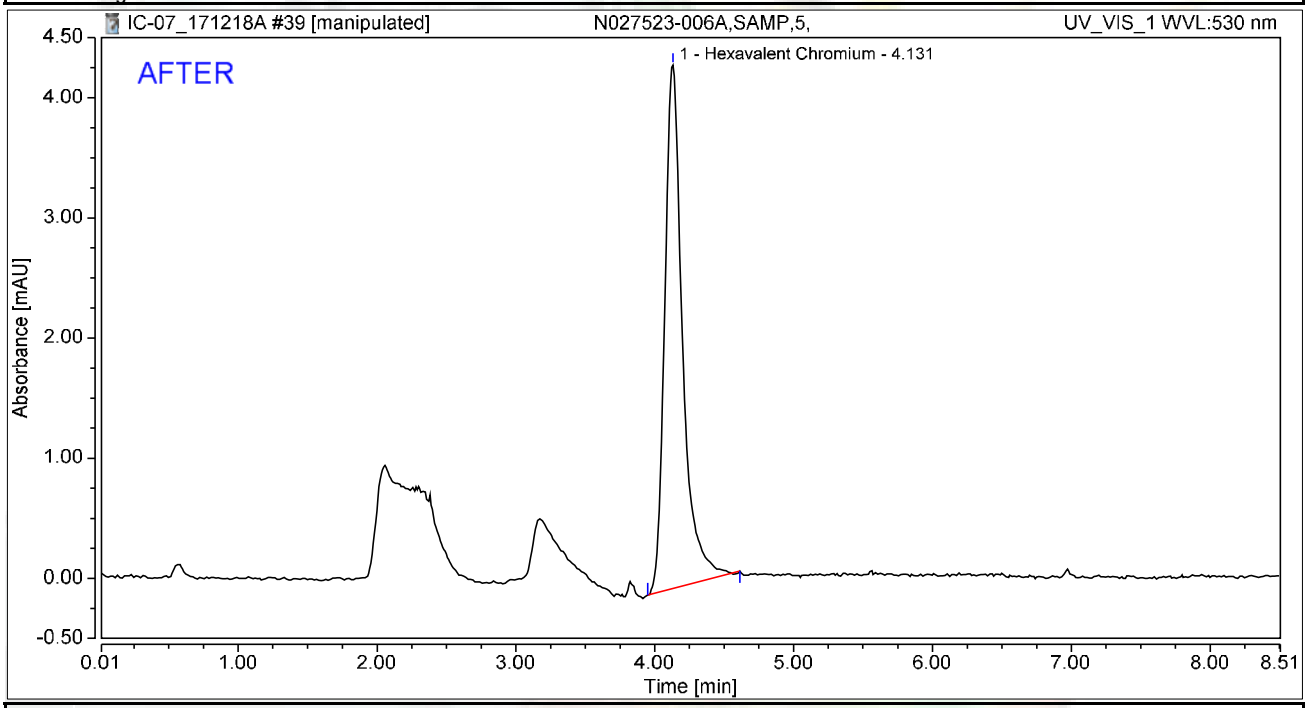
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-006A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 13:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.649	4.356	100.00	100.00	2.5856
Total:			**0.649**	**4.356**	**100.00**	**100.00**	

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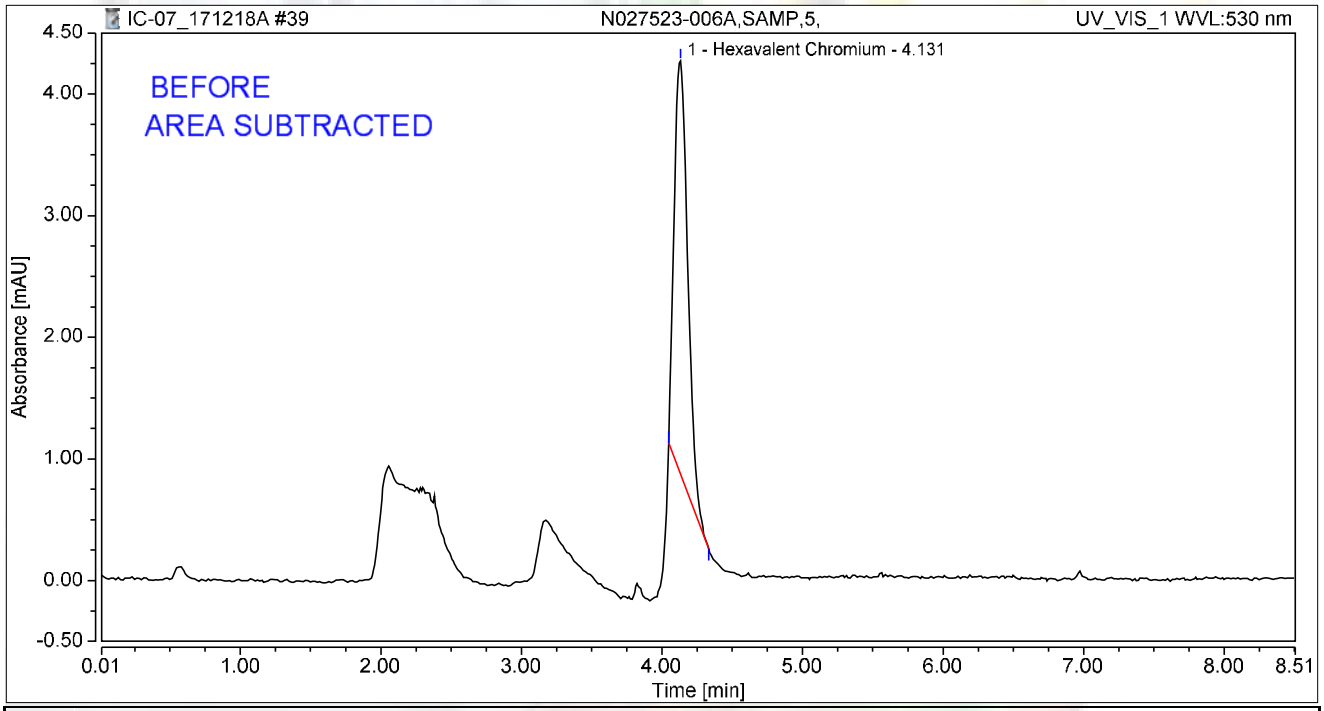
Chromatogram and Results

Injection Details

Injection Name:	**N027523-006A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 13:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.381	3.395	100.00	100.00	1.5162
Total:			**0.381**	**3.395**	**100.00**	**100.00**	

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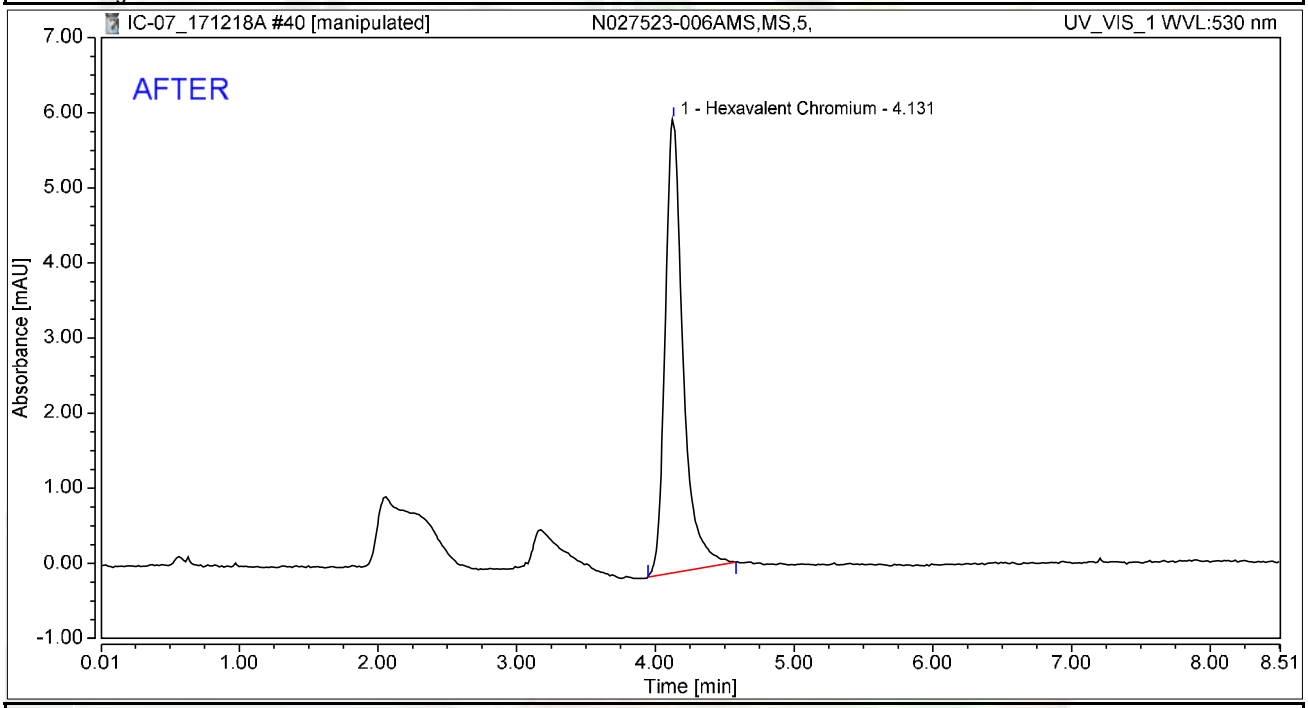
Chromatogram and Results

Injection Details

Injection Name:	**N027523-006AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 13:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.907	6.035	100.00	100.00	3.6133
Total:			**0.907**	**6.035**	**100.00**	**100.00**	

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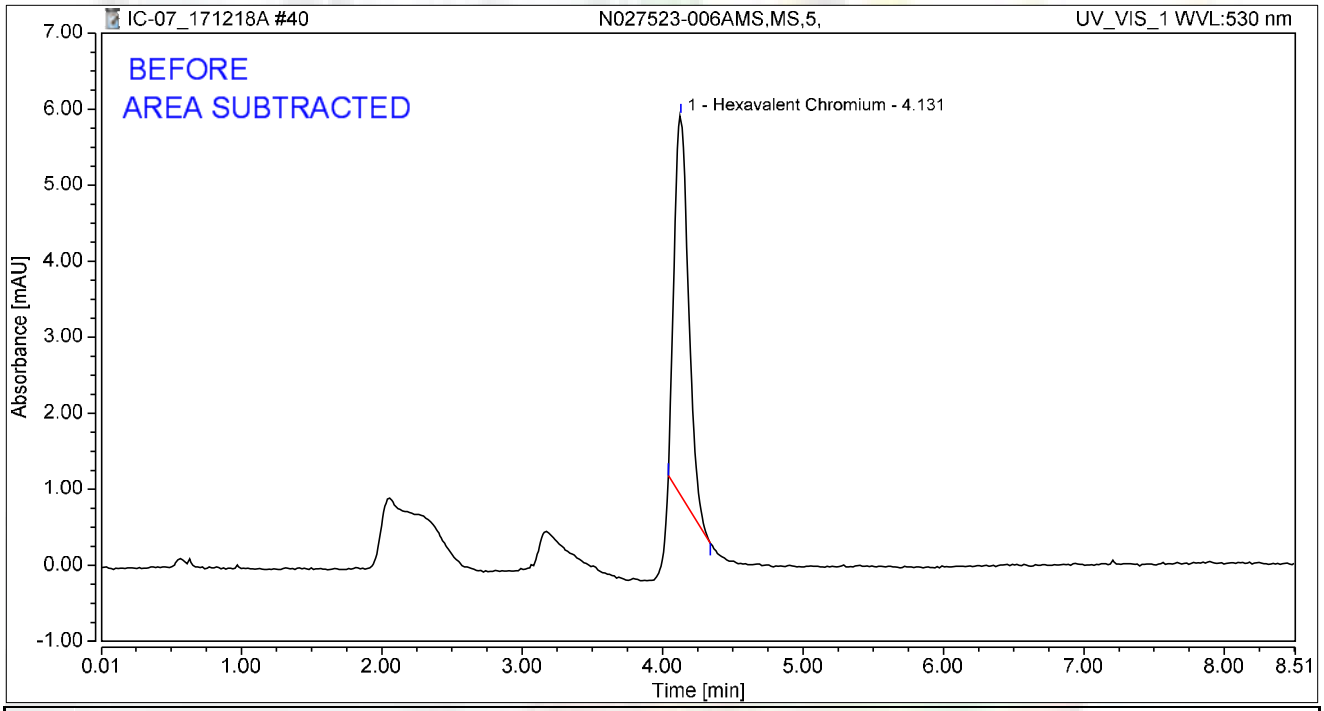
Chromatogram and Results

Injection Details

Injection Name:	**N027523-006AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 13:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.594	5.001	100.00	100.00	2.3647
Total:			**0.594**	**5.001**	**100.00**	**100.00**	

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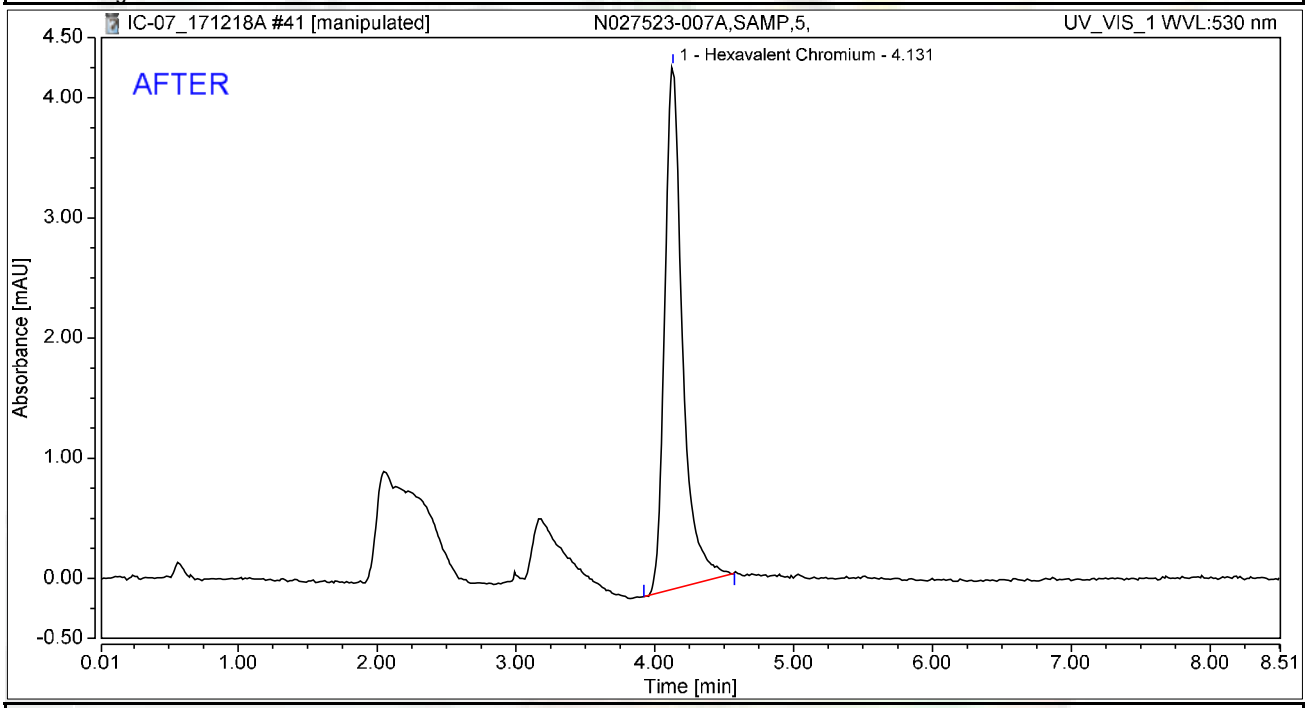
Chromatogram and Results

Injection Details

Injection Name:	**N027523-007A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 13:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.652	4.354	100.00	100.00	2.5951
Total:			**0.652**	**4.354**	**100.00**	**100.00**	

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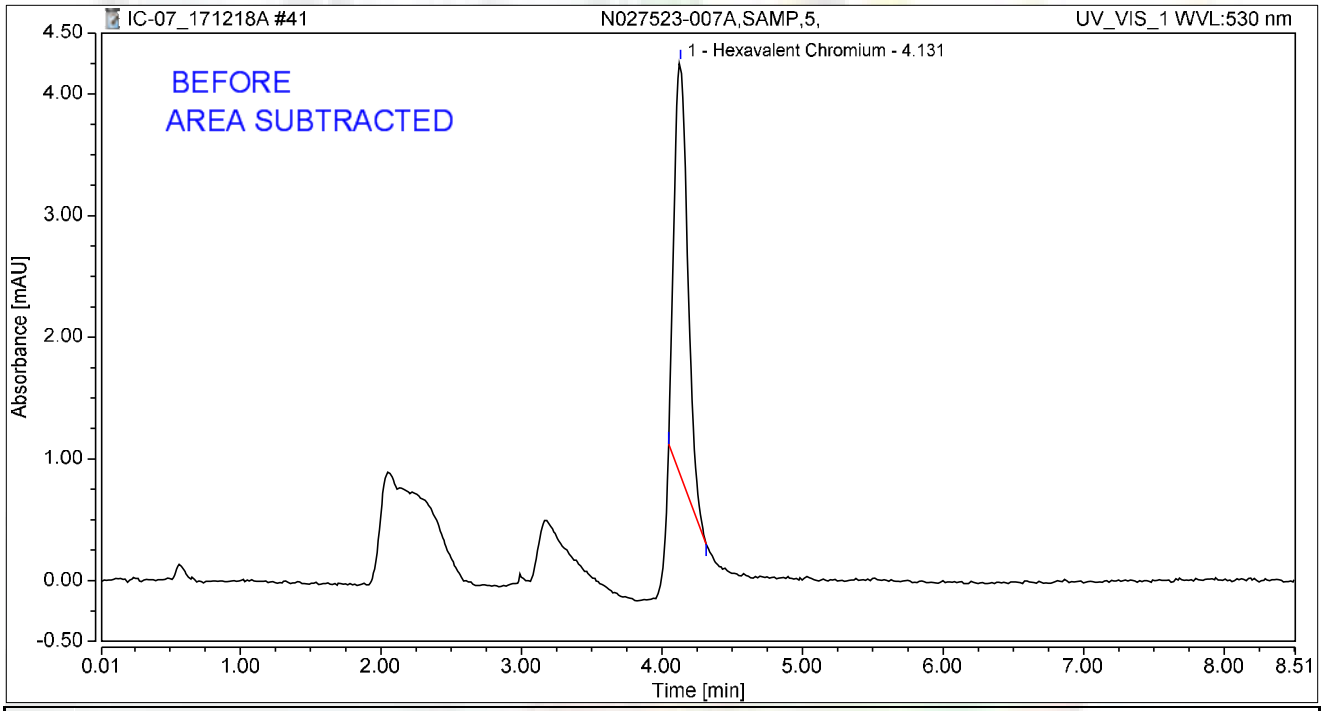
Chromatogram and Results

Injection Details

Injection Name:	**N027523-007A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 13:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.383	3.400	100.00	100.00	1.5246
Total:			**0.383**	**3.400**	**100.00**	**100.00**	

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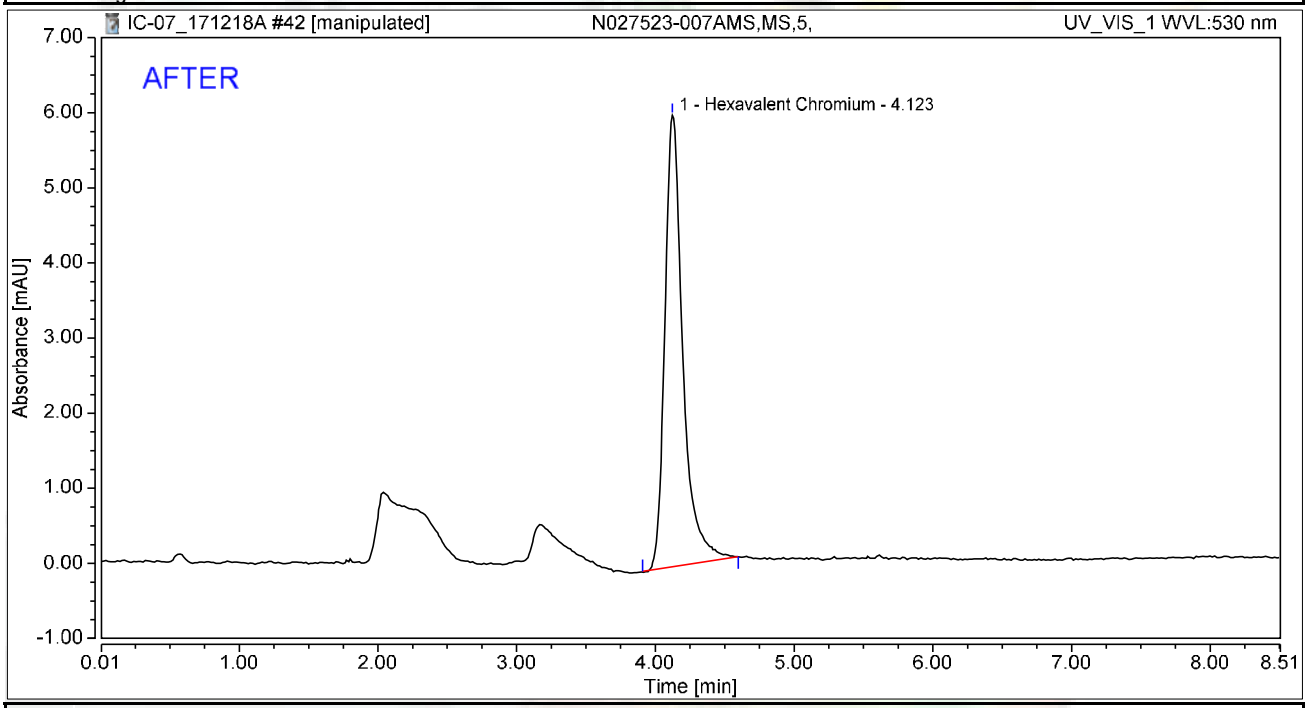
Chromatogram and Results

Injection Details

Injection Name:	**N027523-007AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 14:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.902	6.010	100.00	100.00	3.5922
Total:			**0.902**	**6.010**	**100.00**	**100.00**	

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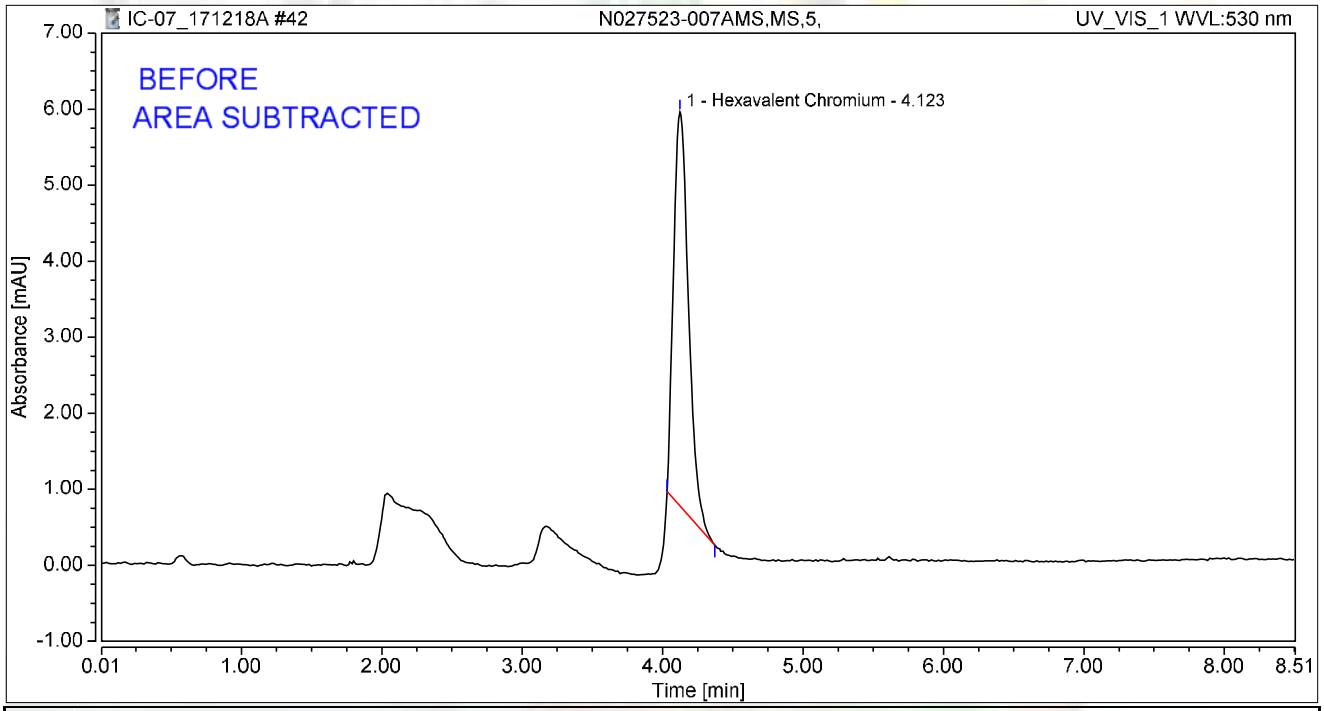
Chromatogram and Results

Injection Details

Injection Name:	**N027523-007AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 14:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.641	5.181	100.00	100.00	2.5525
Total:			**0.641**	**5.181**	**100.00**	**100.00**	

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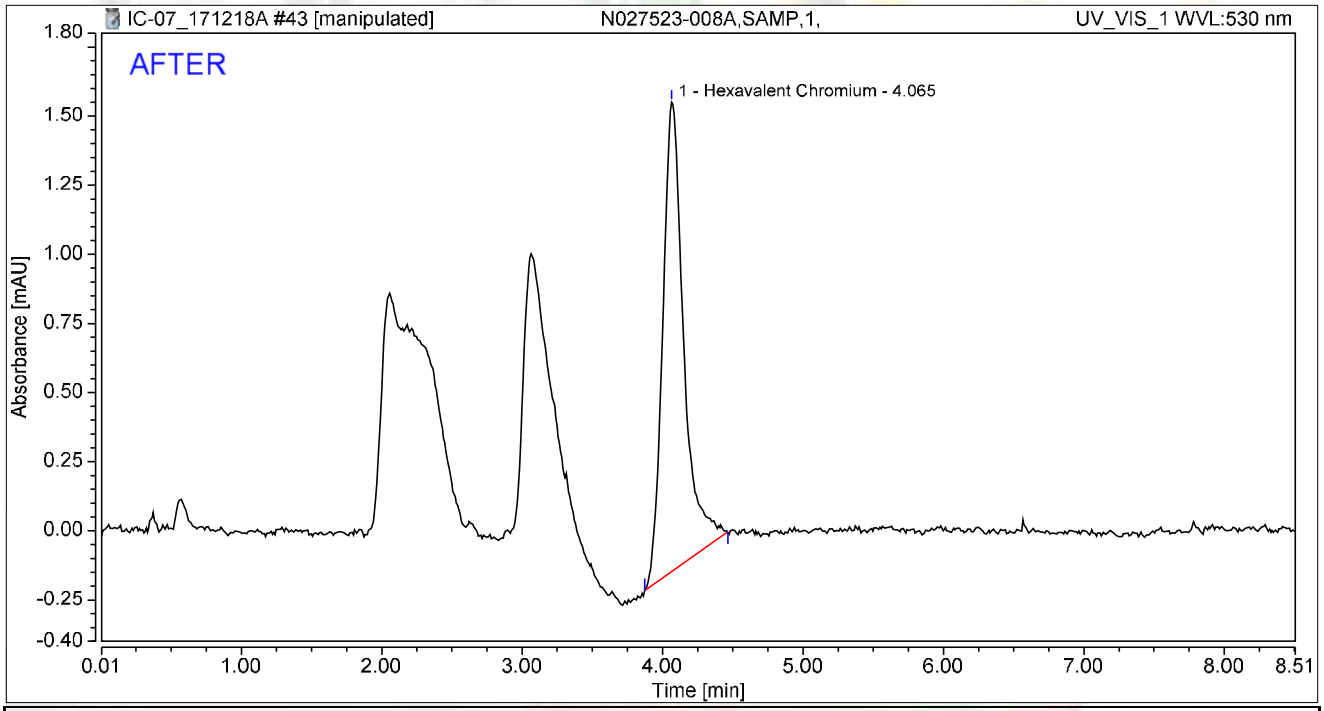
Chromatogram and Results

Injection Details

Injection Name:	**N027523-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 14:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.294	1.698	100.00	100.00	1.1721
Total:			**0.294**	**1.698**	**100.00**	**100.00**	

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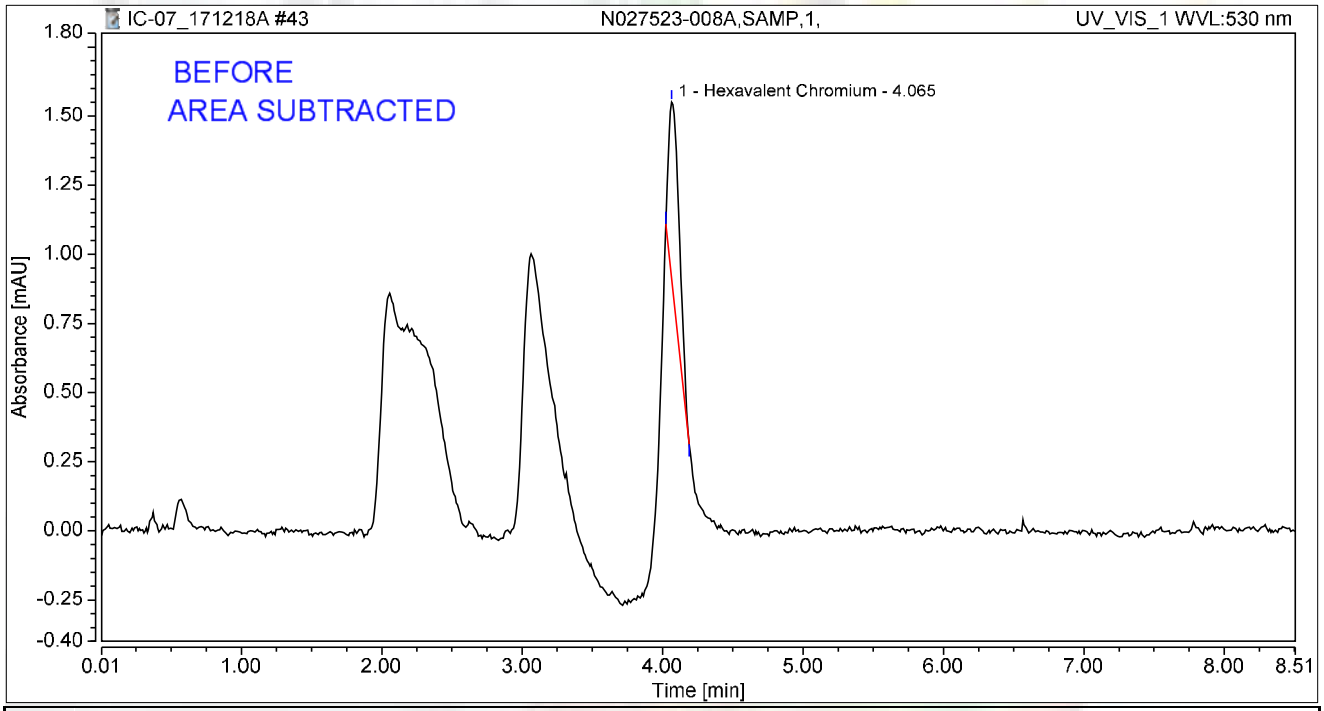
Chromatogram and Results

Injection Details

Injection Name:	**N027523-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 14:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.061	0.640	100.00	100.00	0.2415
Total:			**0.061**	**0.640**	**100.00**	**100.00**	

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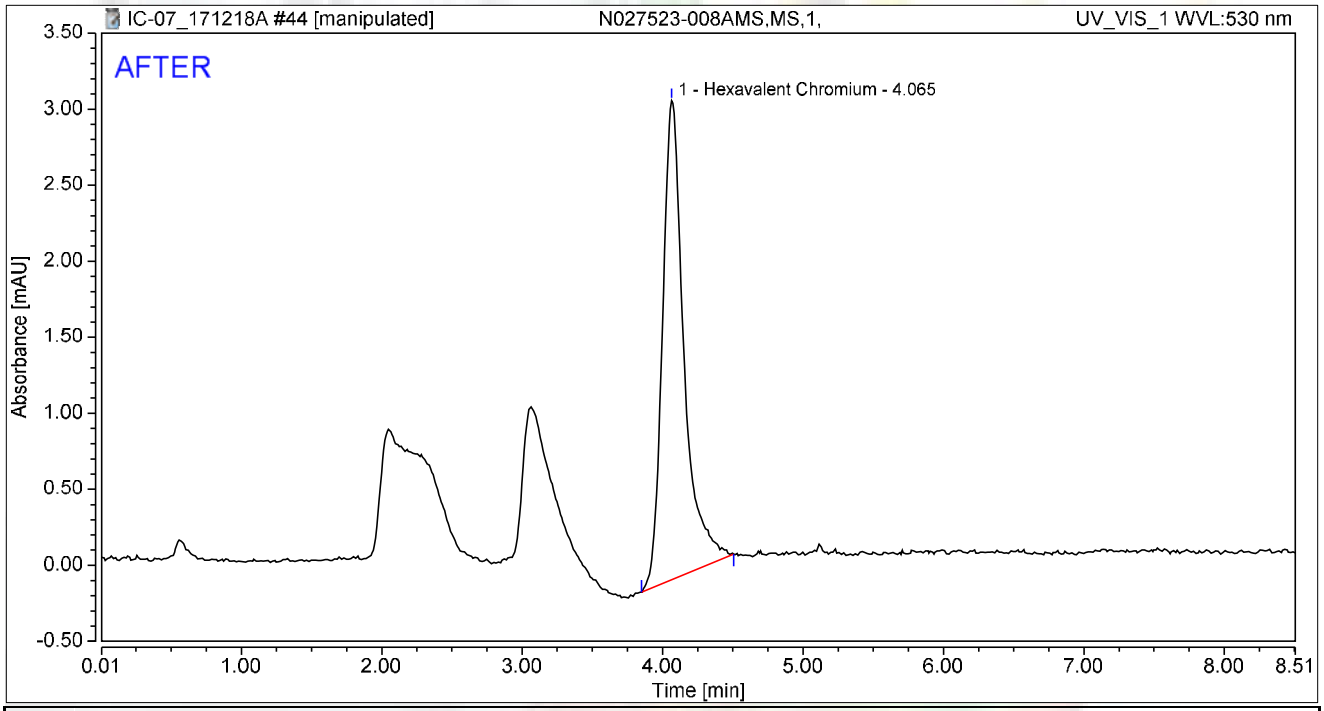
Chromatogram and Results

Injection Details

Injection Name:	**N027523-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 14:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.560	3.149	100.00	100.00	2.2297
Total:			**0.560**	**3.149**	**100.00**	**100.00**	

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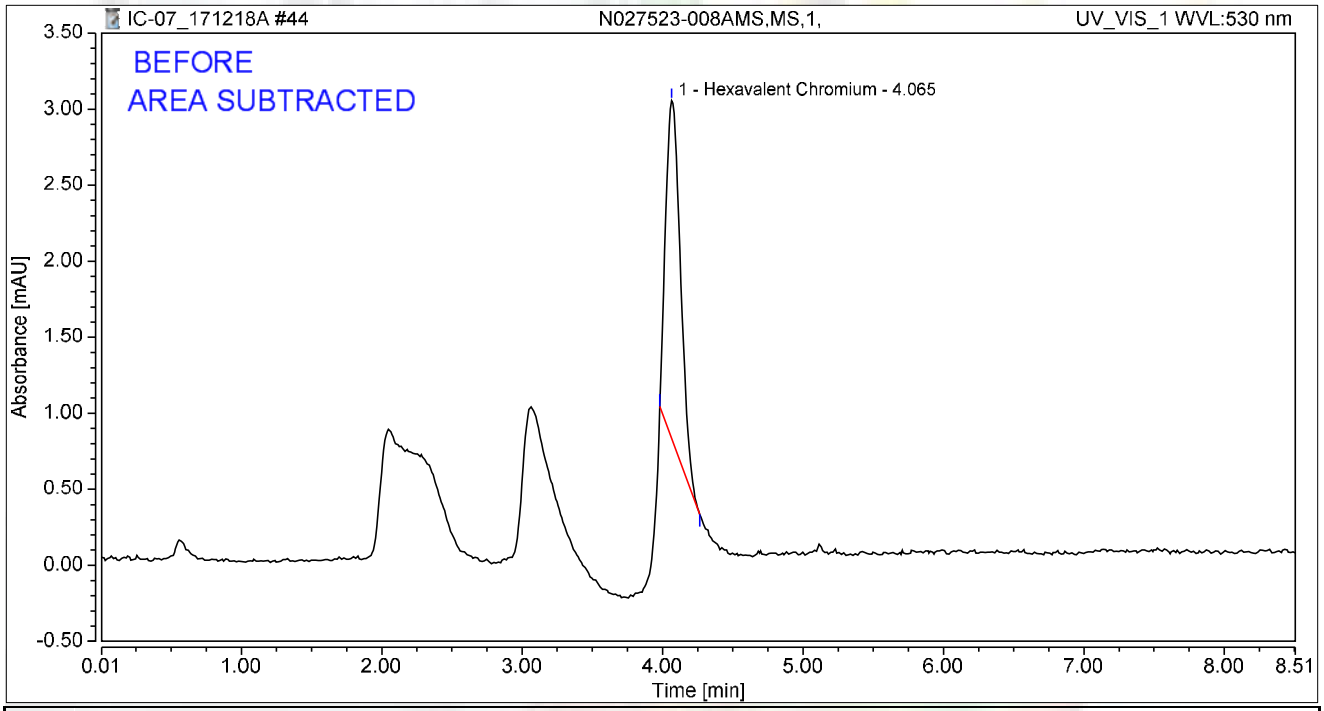
Chromatogram and Results

Injection Details

Injection Name:	**N027523-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 14:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.274	2.219	100.00	100.00	1.0908
Total:			**0.274**	**2.219**	**100.00**	**100.00**	

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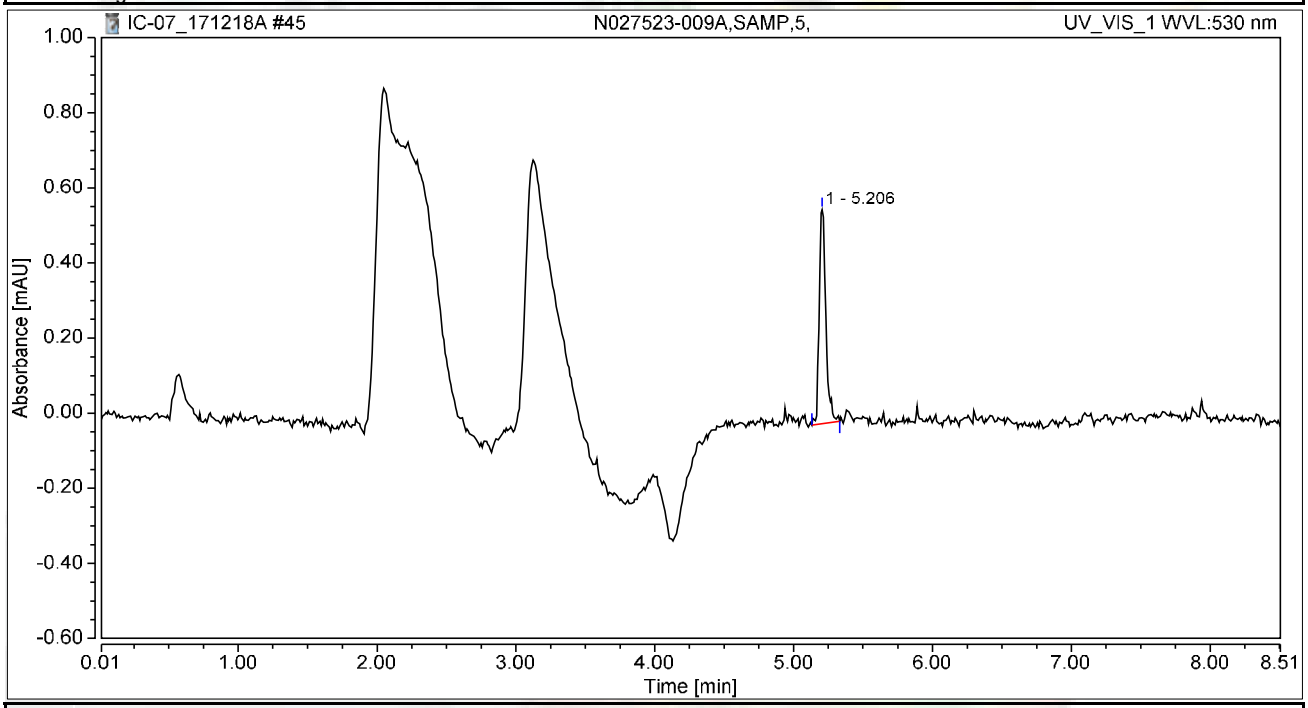
Chromatogram and Results

Injection Details

Injection Name:	**N027523-009A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 14:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

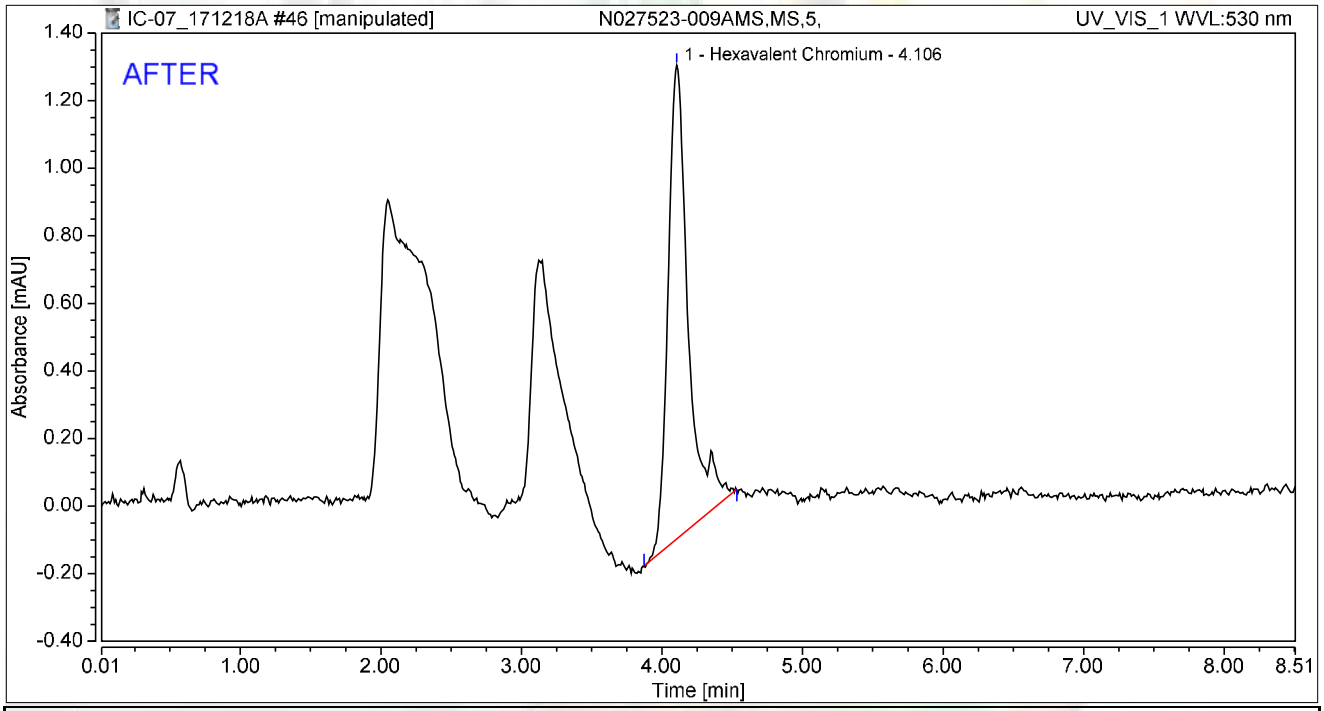
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		5.206	0.032	0.570	100.00	100.00	n.a.
Total:			**0.032**	**0.570**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-009AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 14:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.234	1.400	100.00	100.00	0.9306
Total:			**0.234**	**1.400**	**100.00**	**100.00**	

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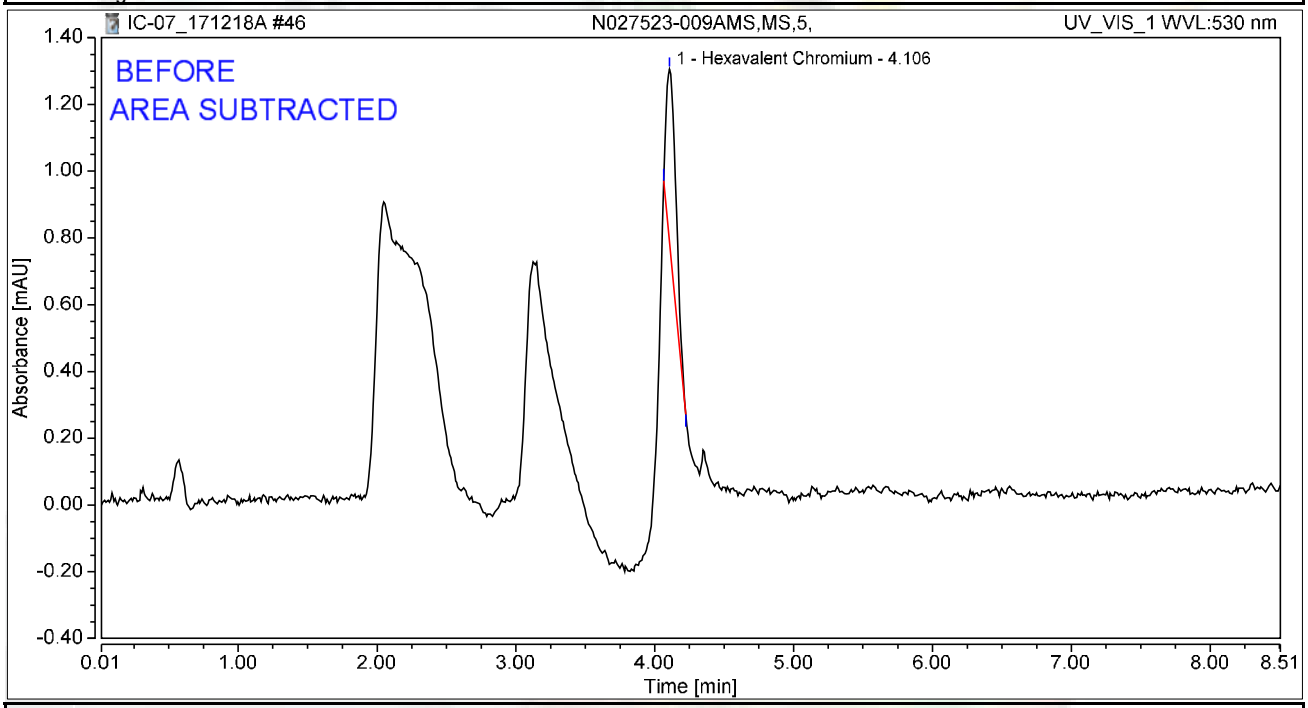
Chromatogram and Results

Injection Details

Injection Name:	**N027523-009AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 14:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.044	0.518	100.00	100.00	0.1742
Total:			**0.044**	**0.518**	**100.00**	**100.00**	

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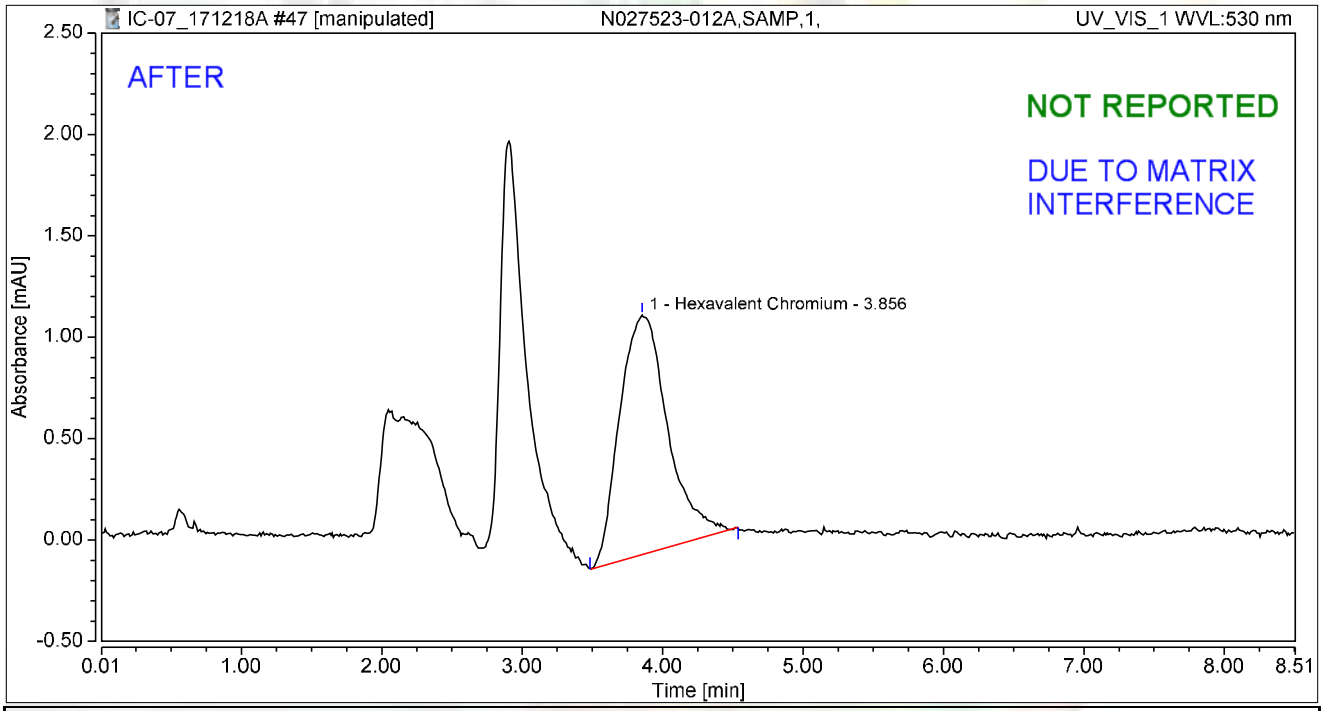
Chromatogram and Results

Injection Details

Injection Name:	**N027523-012A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 14:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.856	0.467	1.180	100.00	100.00	1.8606
Total:			**0.467**	**1.180**	**100.00**	**100.00**	

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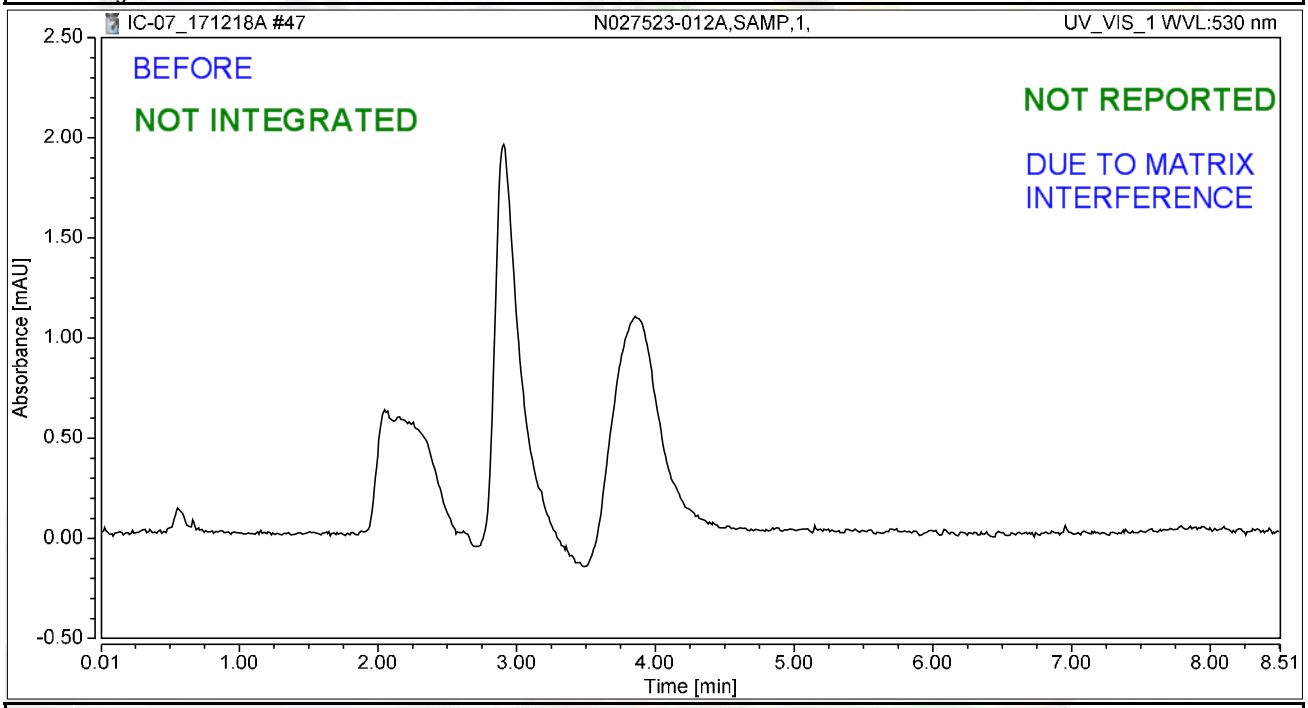
Chromatogram and Results

Injection Details

Injection Name:	**N027523-012A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 14:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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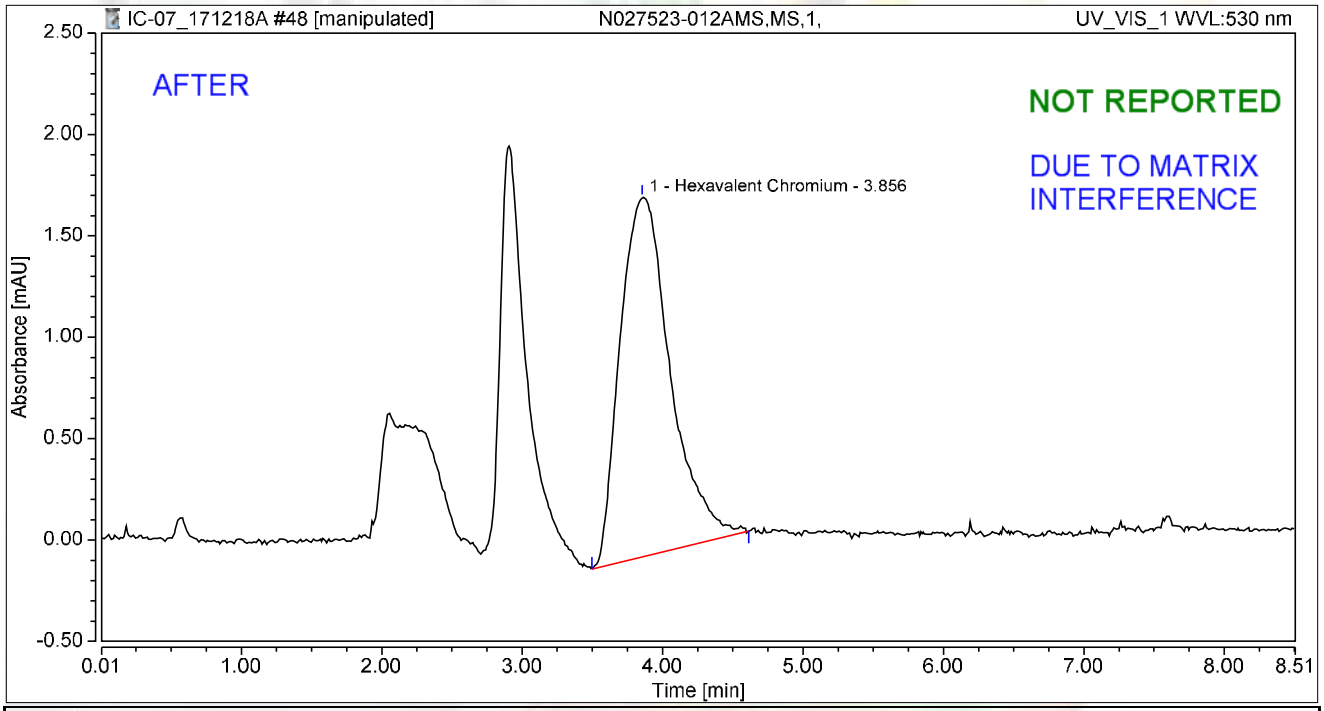
Chromatogram and Results

Injection Details

Injection Name:	**N027523-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 14:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.856	0.736	1.774	100.00	100.00	2.9298
Total:			**0.736**	**1.774**	**100.00**	**100.00**	

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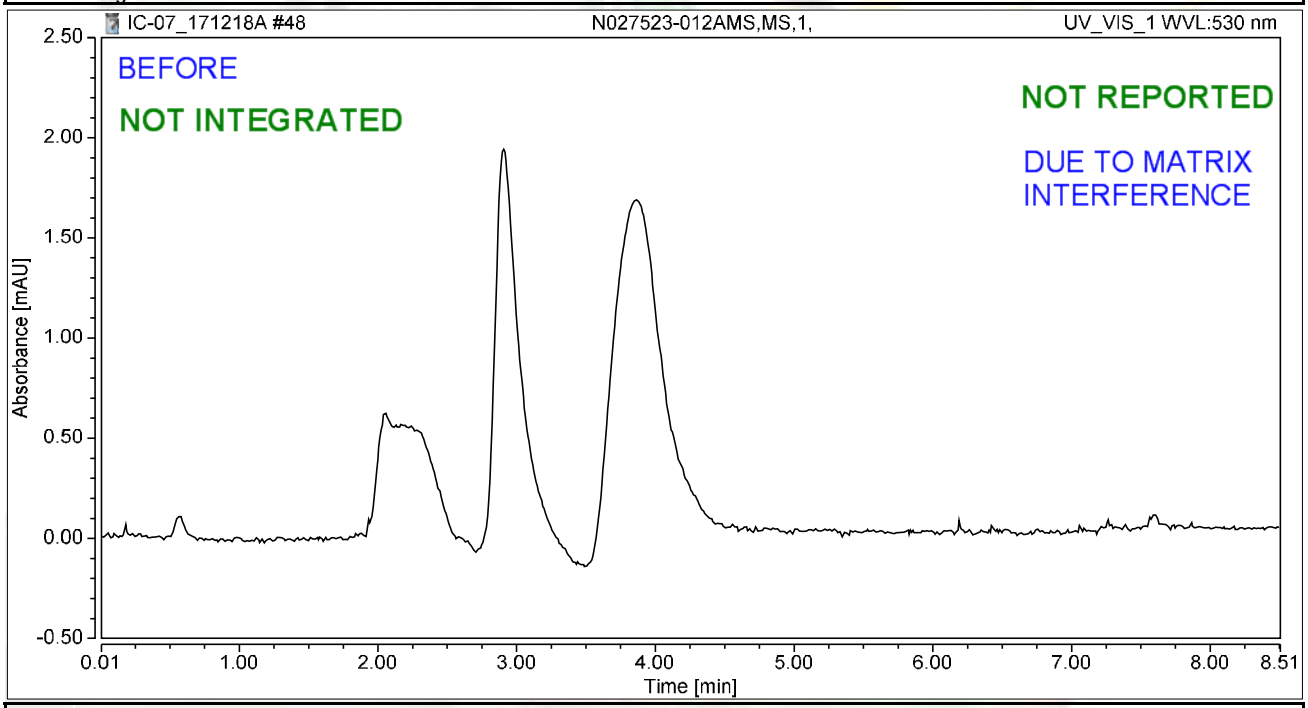
Chromatogram and Results

Injection Details

Injection Name:	**N027523-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 14:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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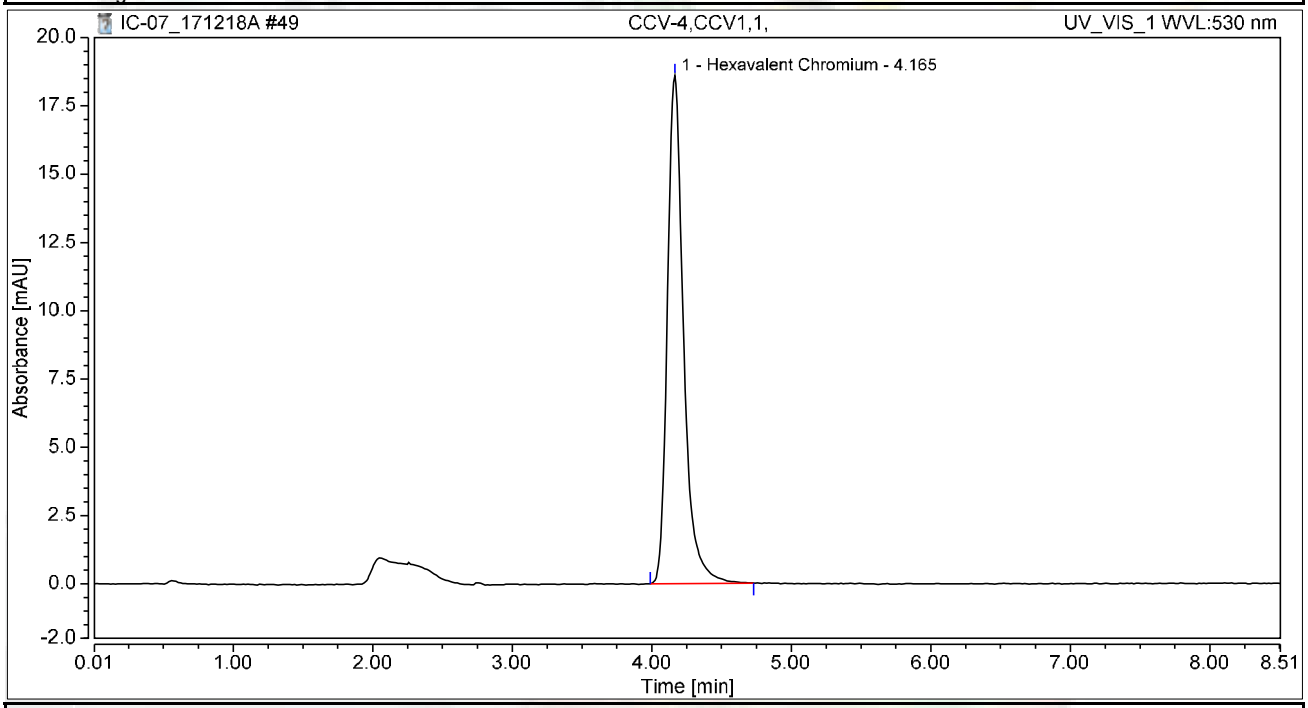
Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 15:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

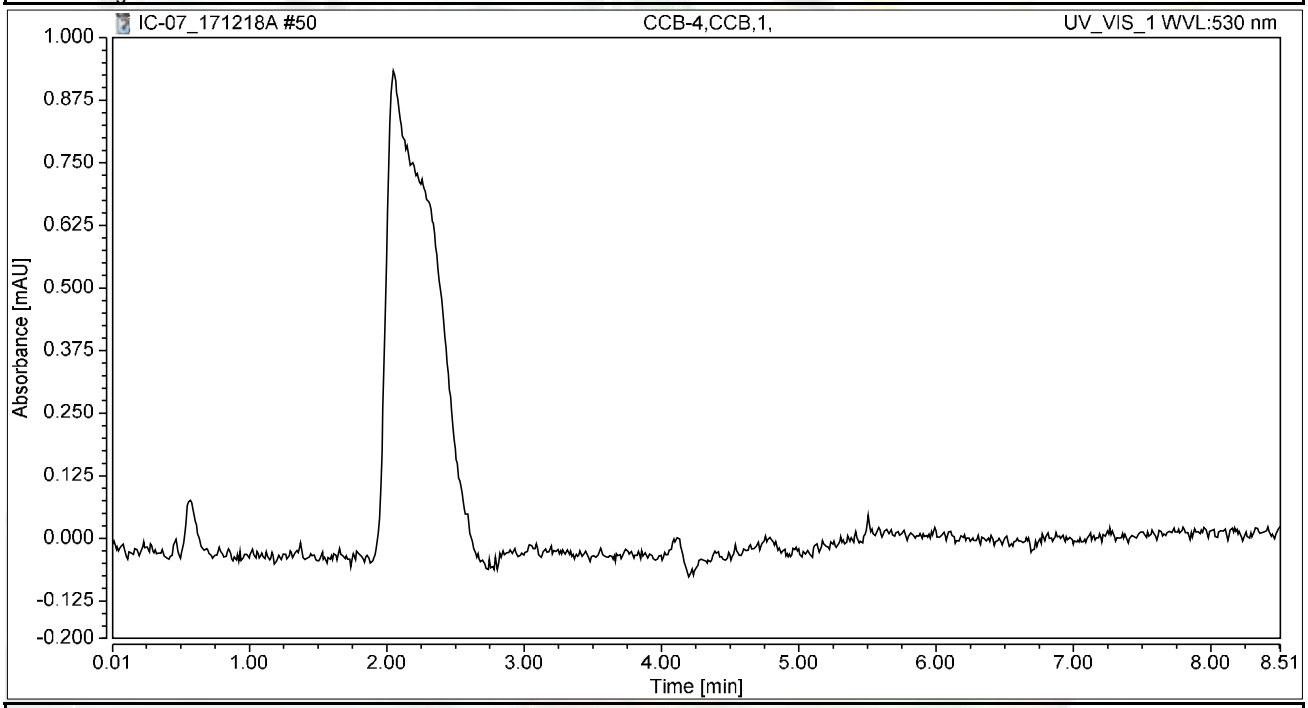
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.507	18.603	100.00	100.00	9.9829
Total:			**2.507**	**18.603**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 15:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

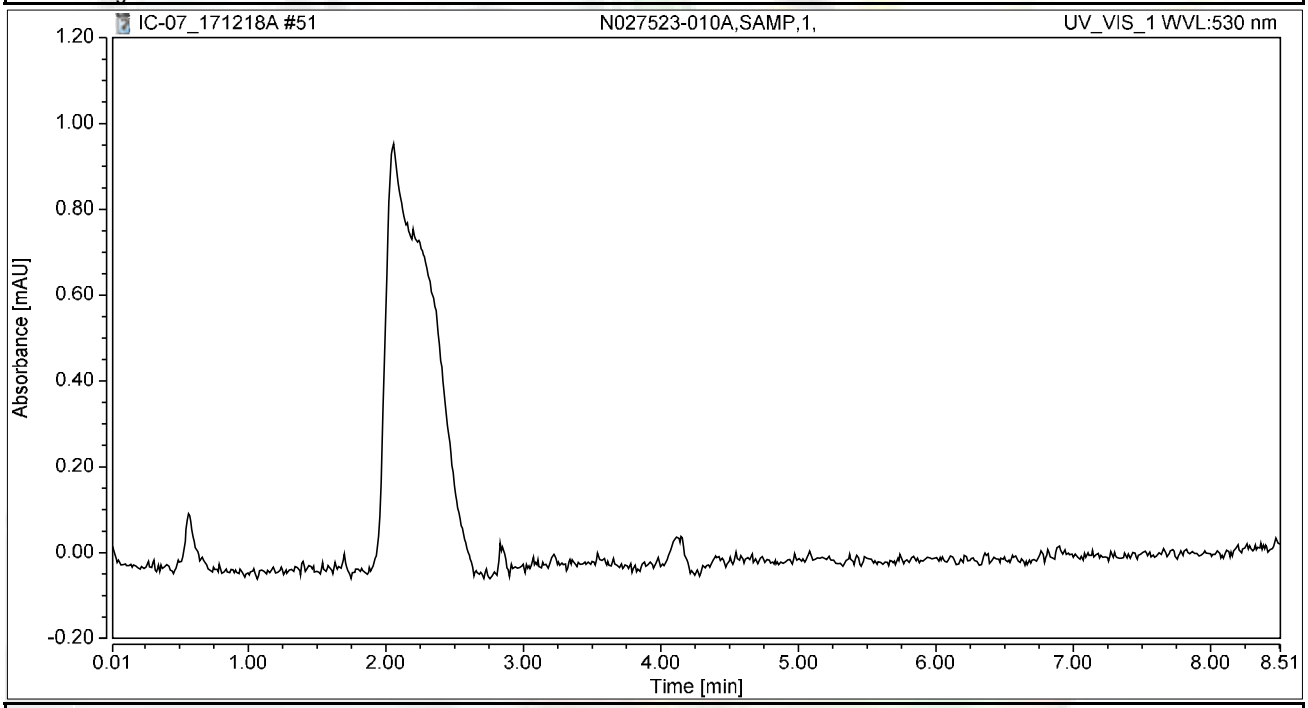
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-010A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 15:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

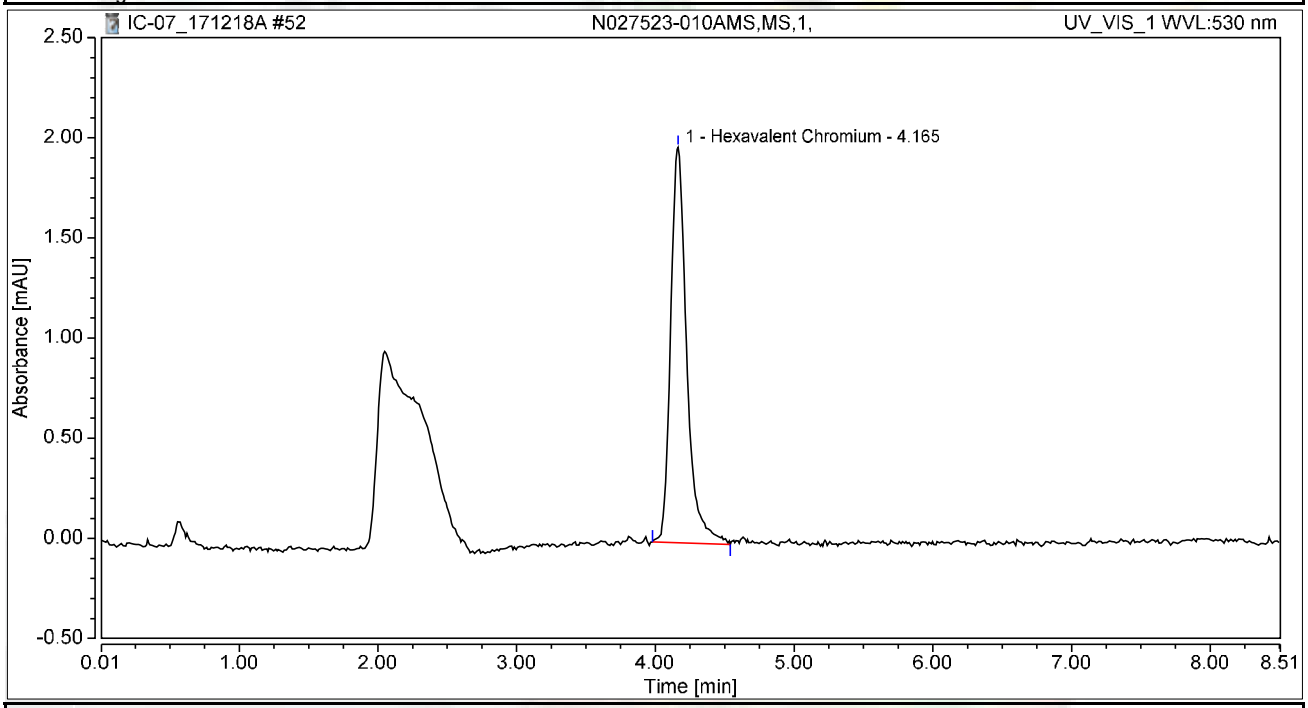
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-010AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 15:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

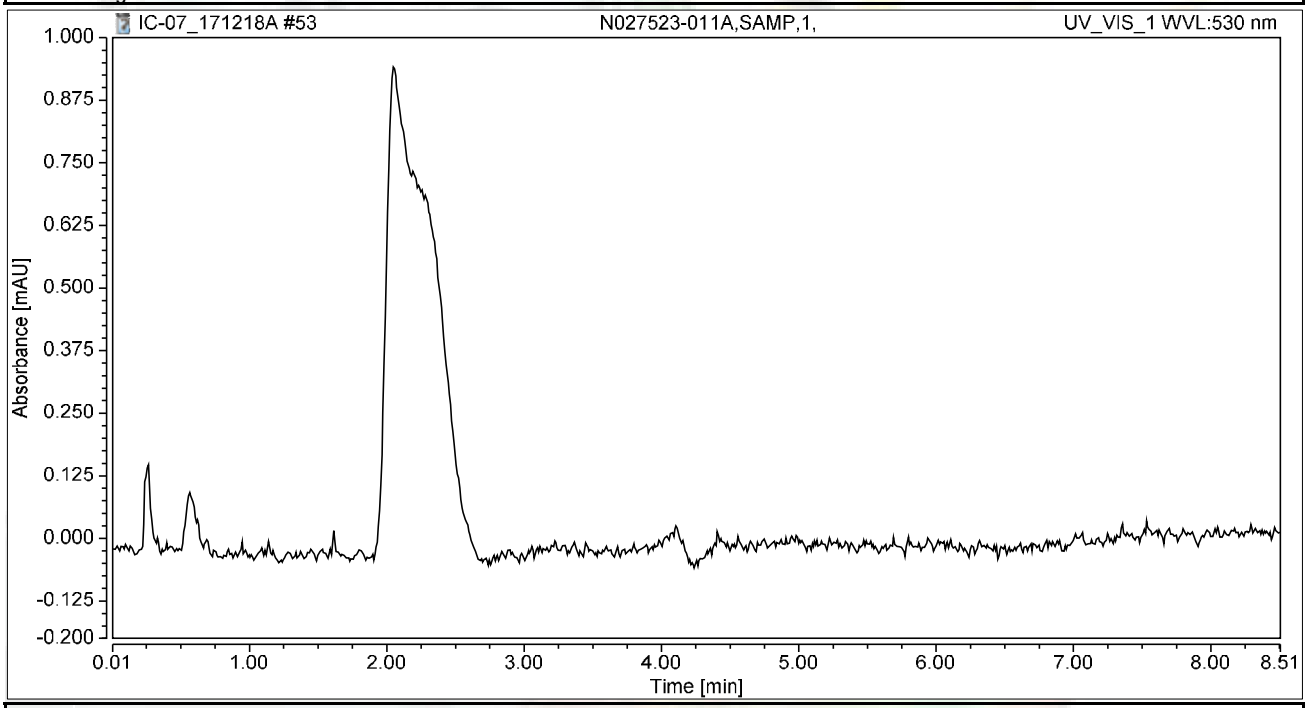
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.265	1.974	100.00	100.00	1.0546
Total:			**0.265**	**1.974**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 15:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

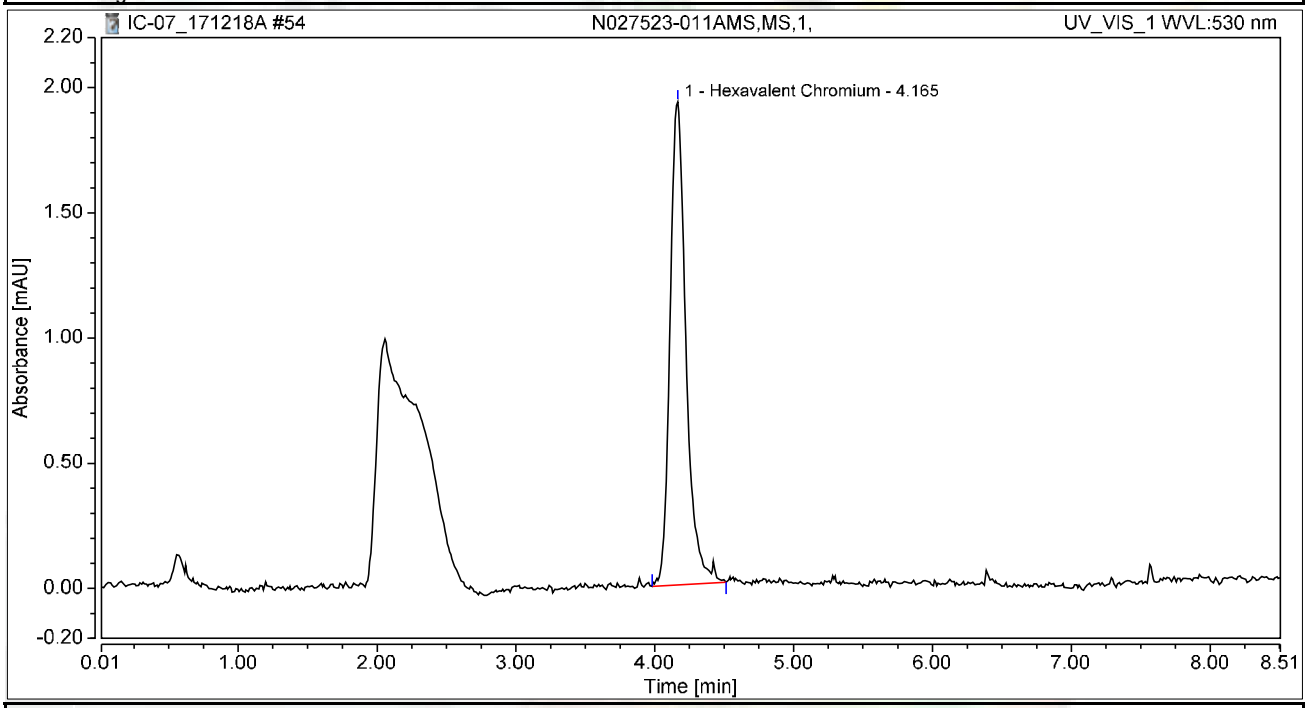
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-011AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 15:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

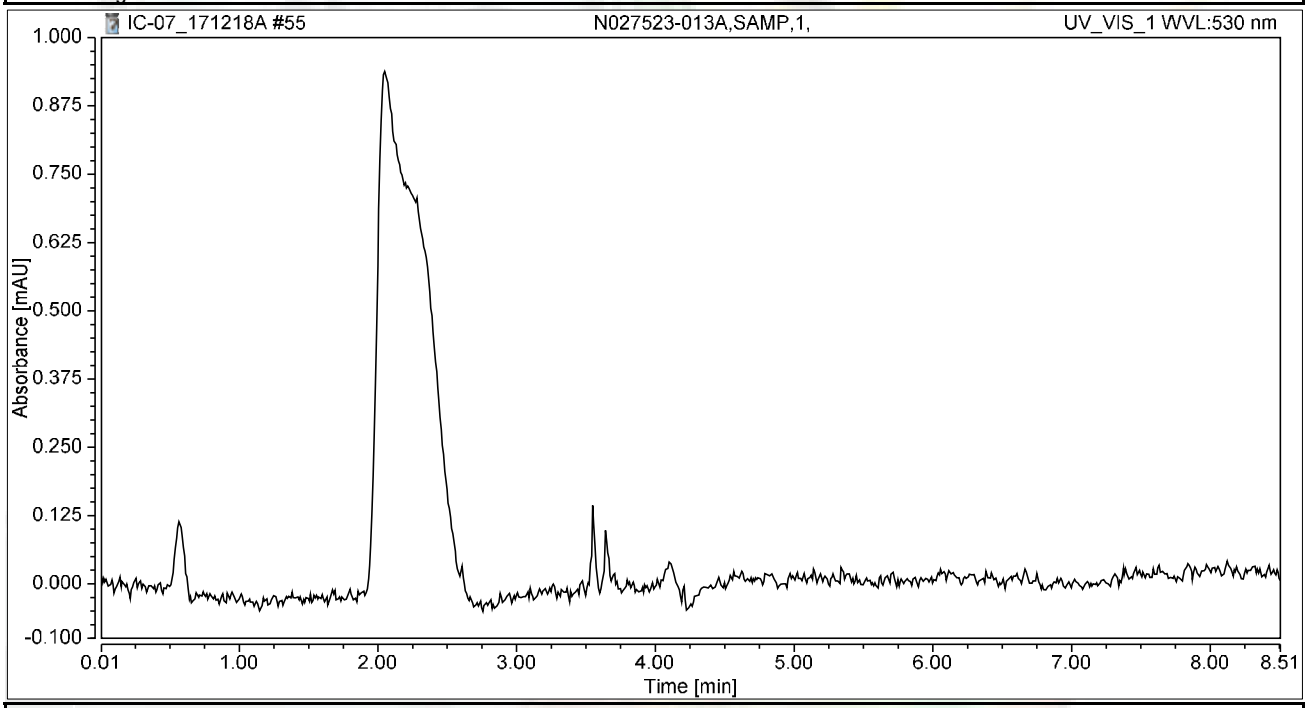
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.259	1.929	100.00	100.00	1.0298
Total:			**0.259**	**1.929**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-013A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 16:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

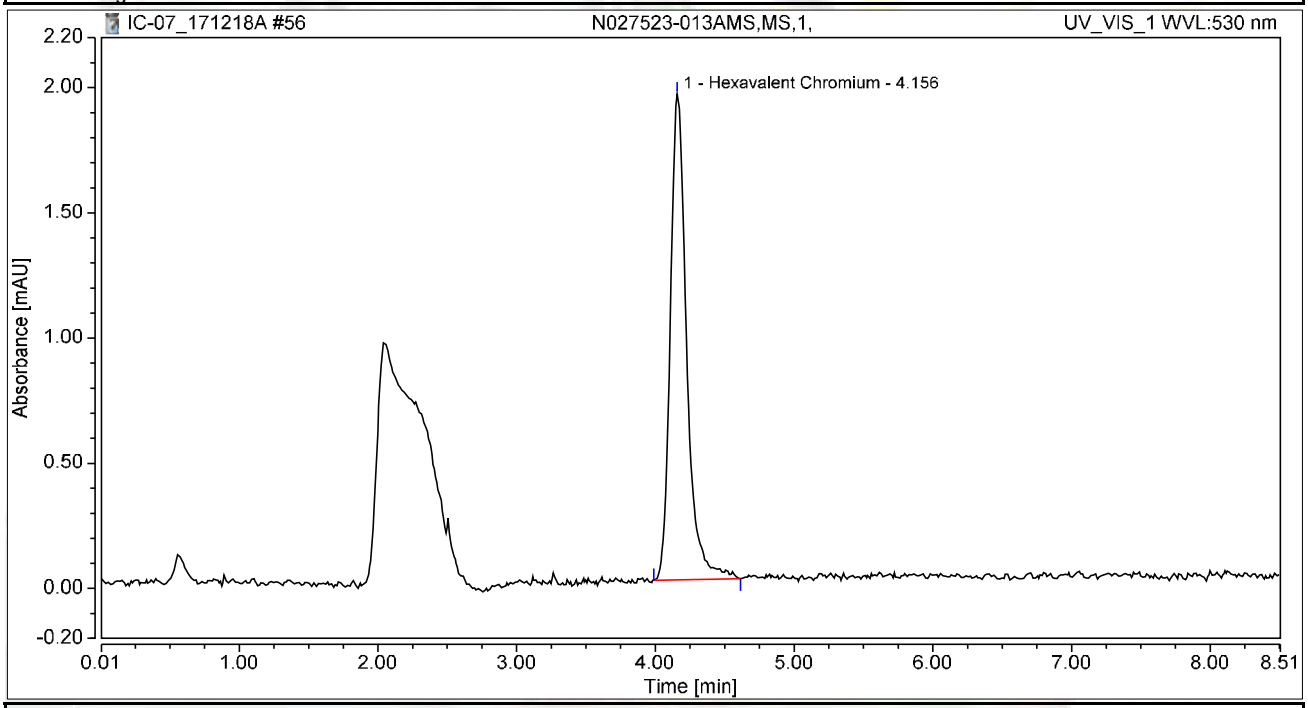
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 16:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

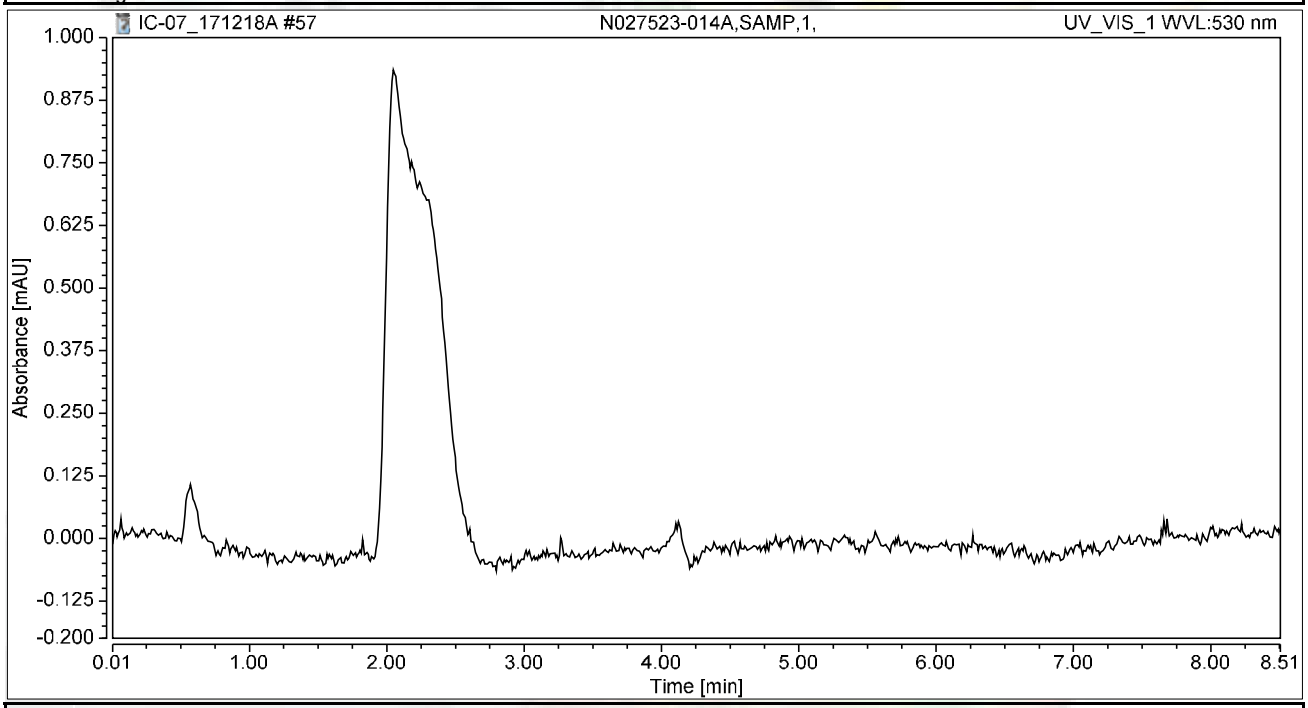
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.265	1.941	100.00	100.00	1.0564
Total:			**0.265**	**1.941**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 16:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

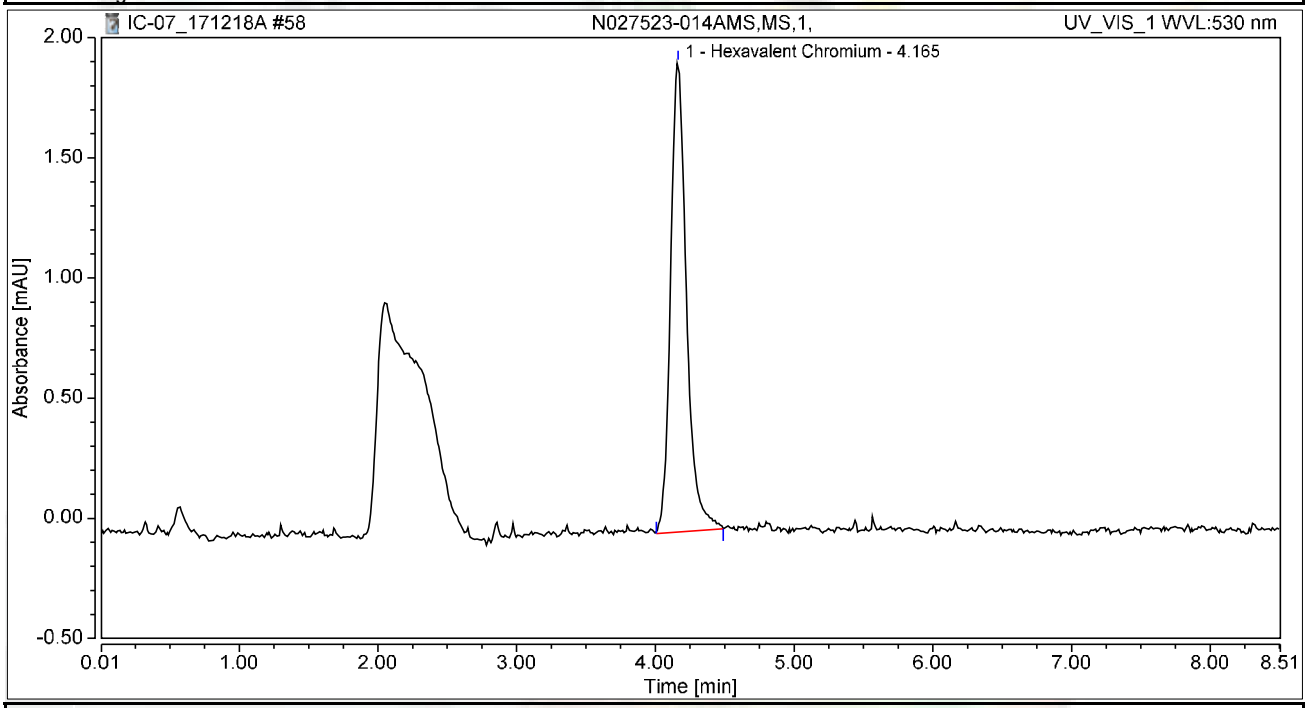
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**49**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 16:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

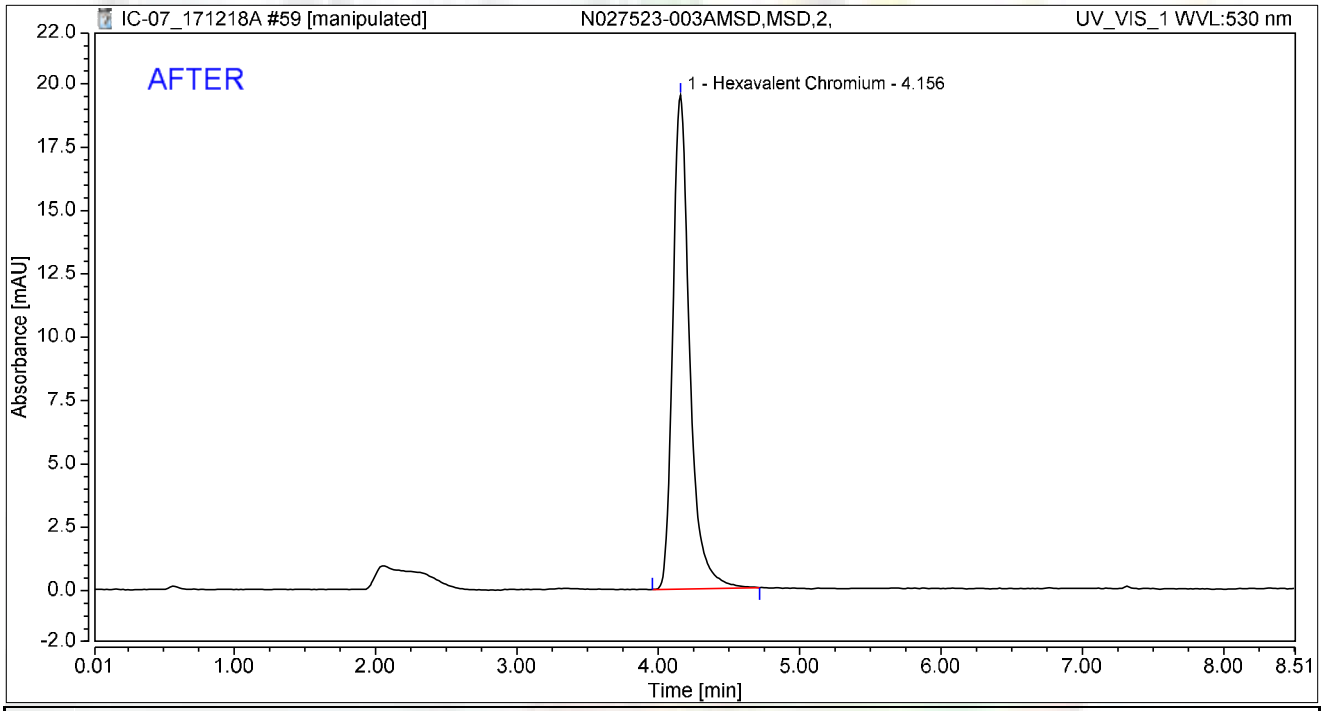
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.259	1.953	100.00	100.00	1.0333
Total:			**0.259**	**1.953**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-003AMSD,MSD,2,**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 16:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.701	19.489	100.00	100.00	10.7565
Total:			**2.701**	**19.489**	**100.00**	**100.00**	

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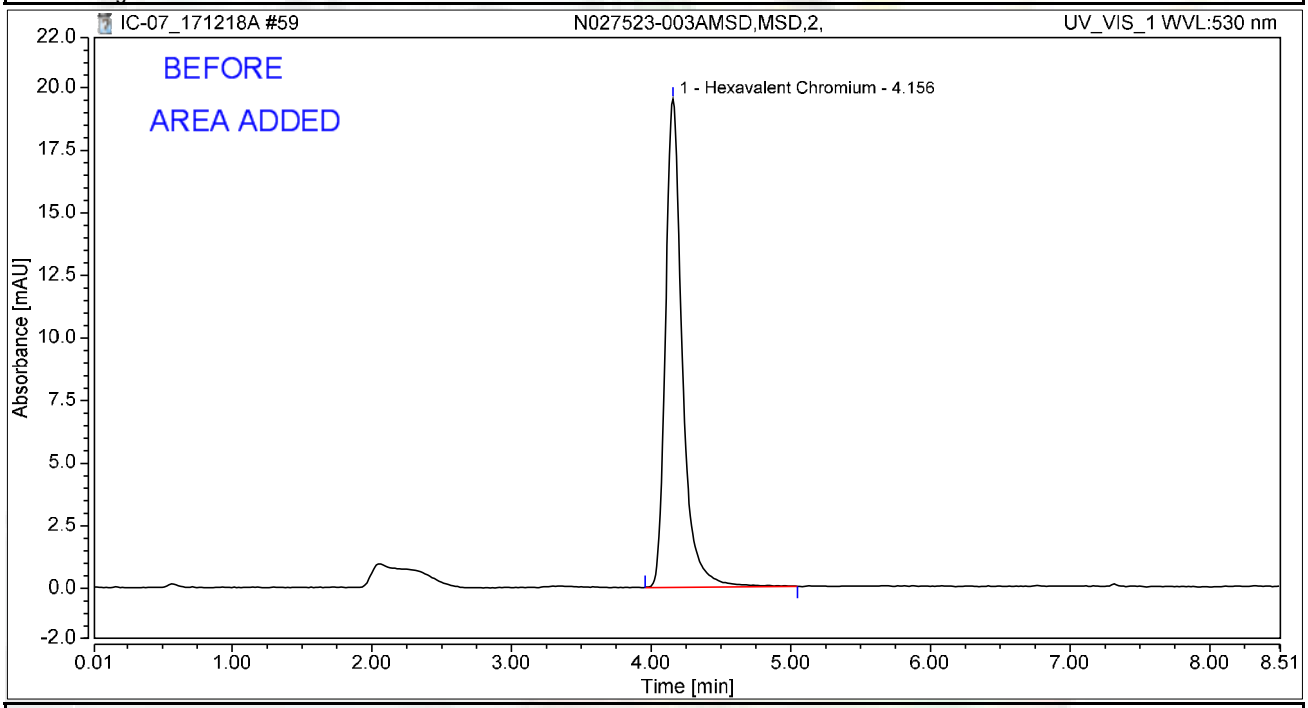
Chromatogram and Results

Injection Details

Injection Name:	**N027523-003AMSD,MSD,2,**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 16:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.732	19.503	100.00	100.00	10.8803
Total:			**2.732**	**19.503**	**100.00**	**100.00**	

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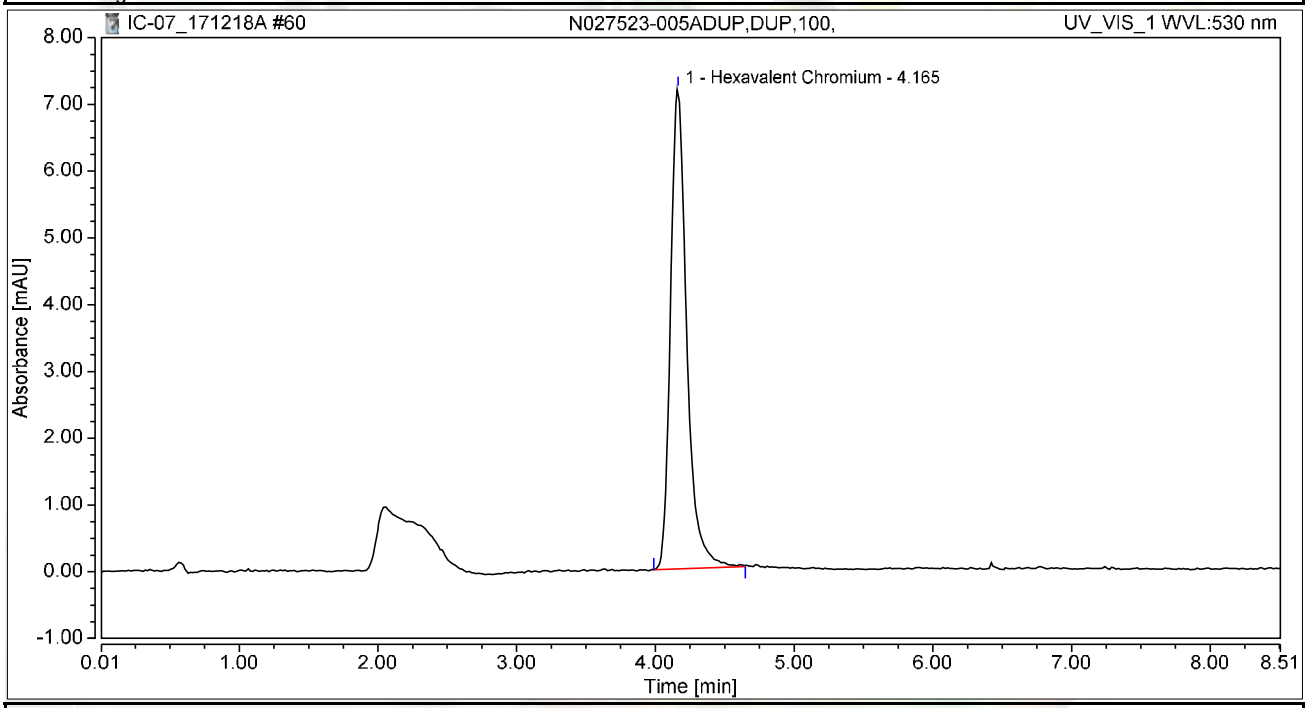
Chromatogram and Results

Injection Details

Injection Name:	**N027523-005ADUP,DUP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 16:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

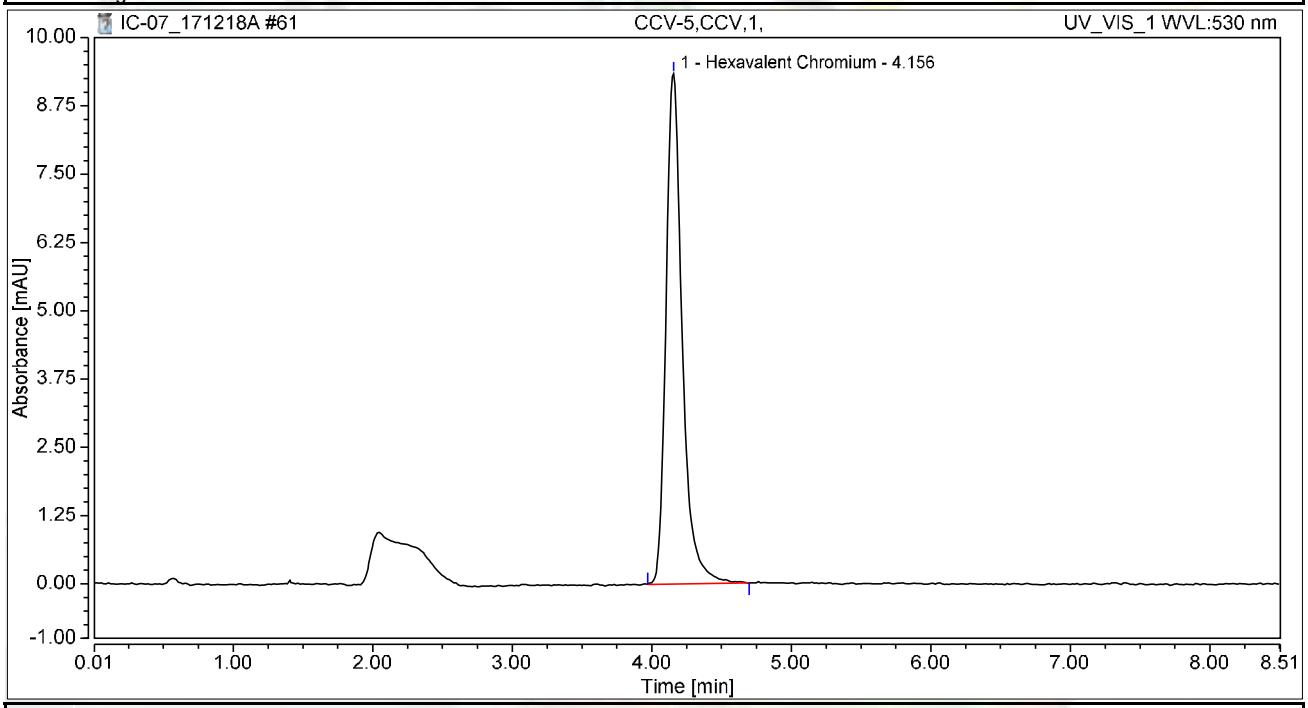
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.977	7.199	100.00	100.00	3.8923
Total:			**0.977**	**7.199**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 17:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

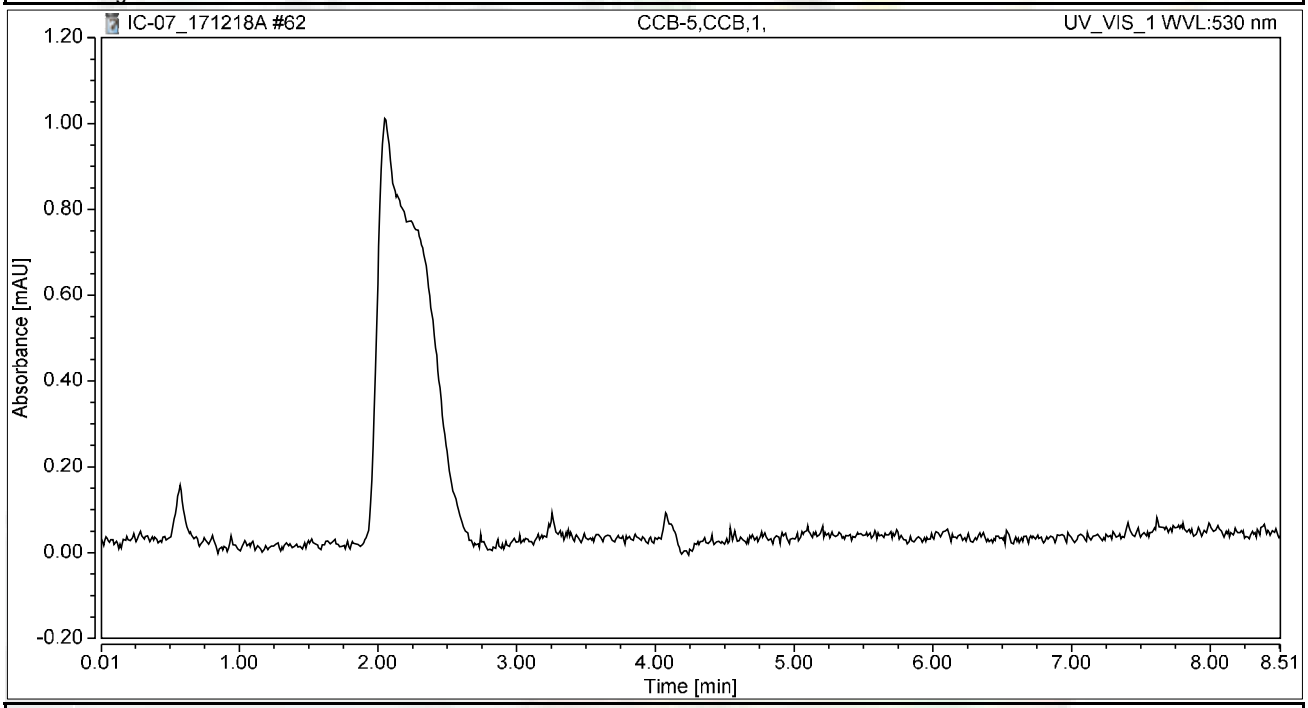
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.263	9.344	100.00	100.00	5.0285
Total:			**1.263**	**9.344**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 17:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

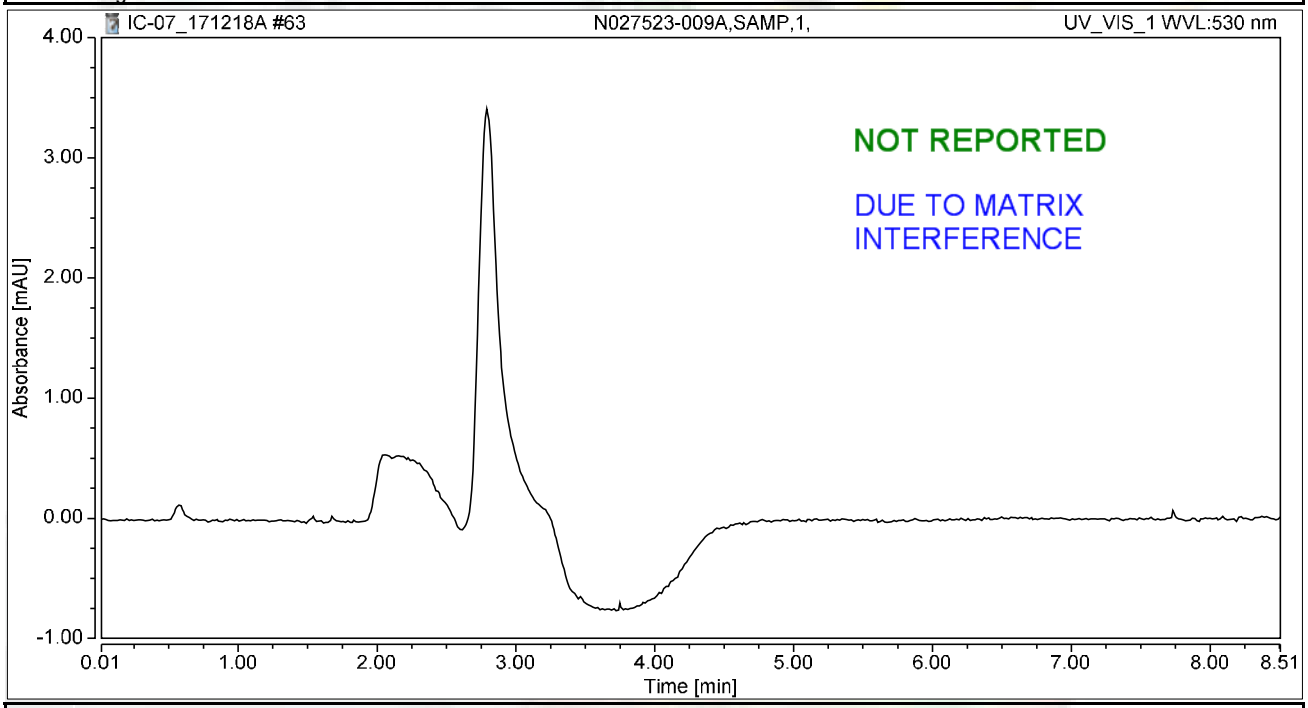
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-009A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 17:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

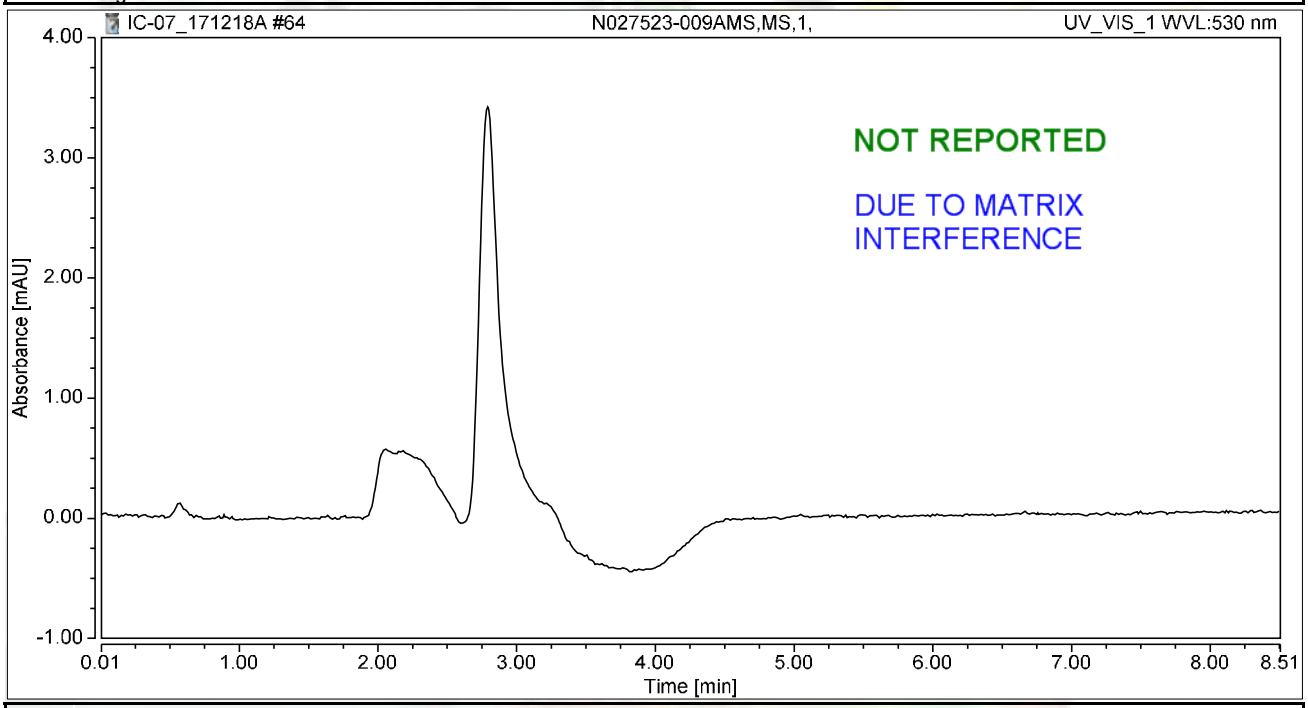
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 17:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

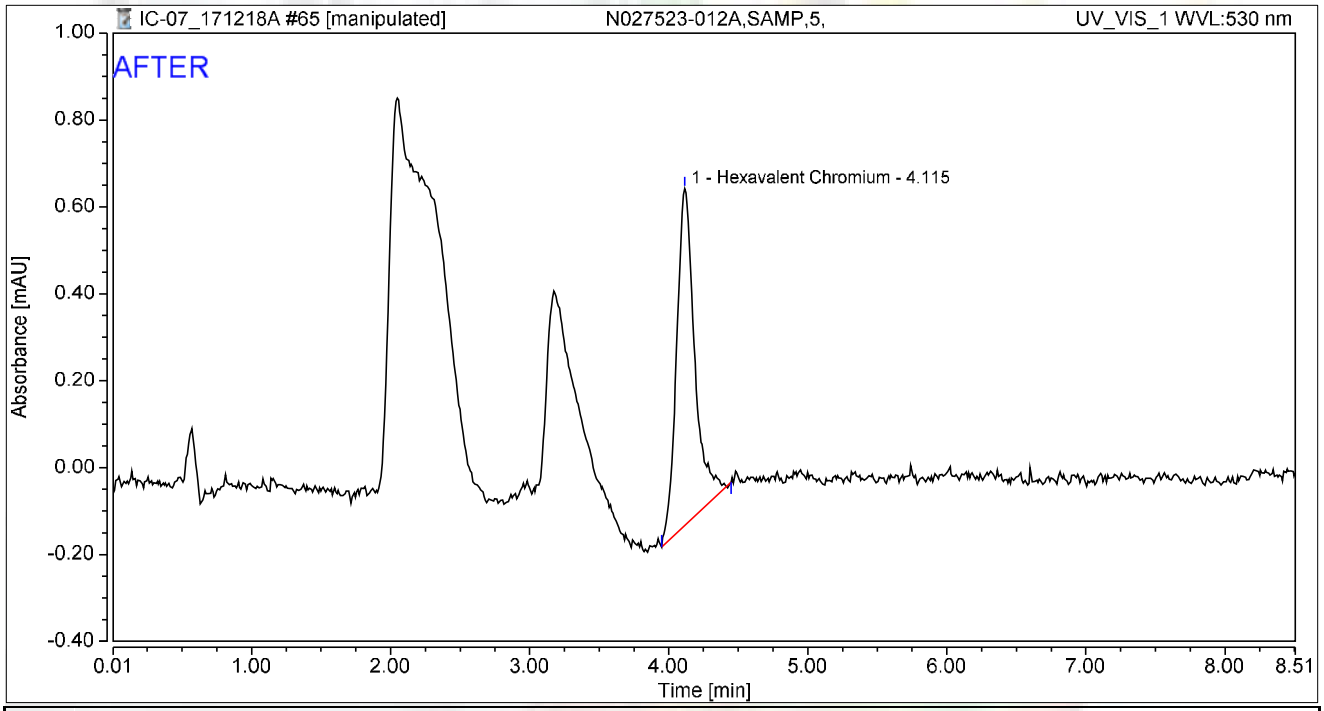
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-012A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 17:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.117	0.775	100.00	100.00	0.4654
Total:			**0.117**	**0.775**	**100.00**	**100.00**	

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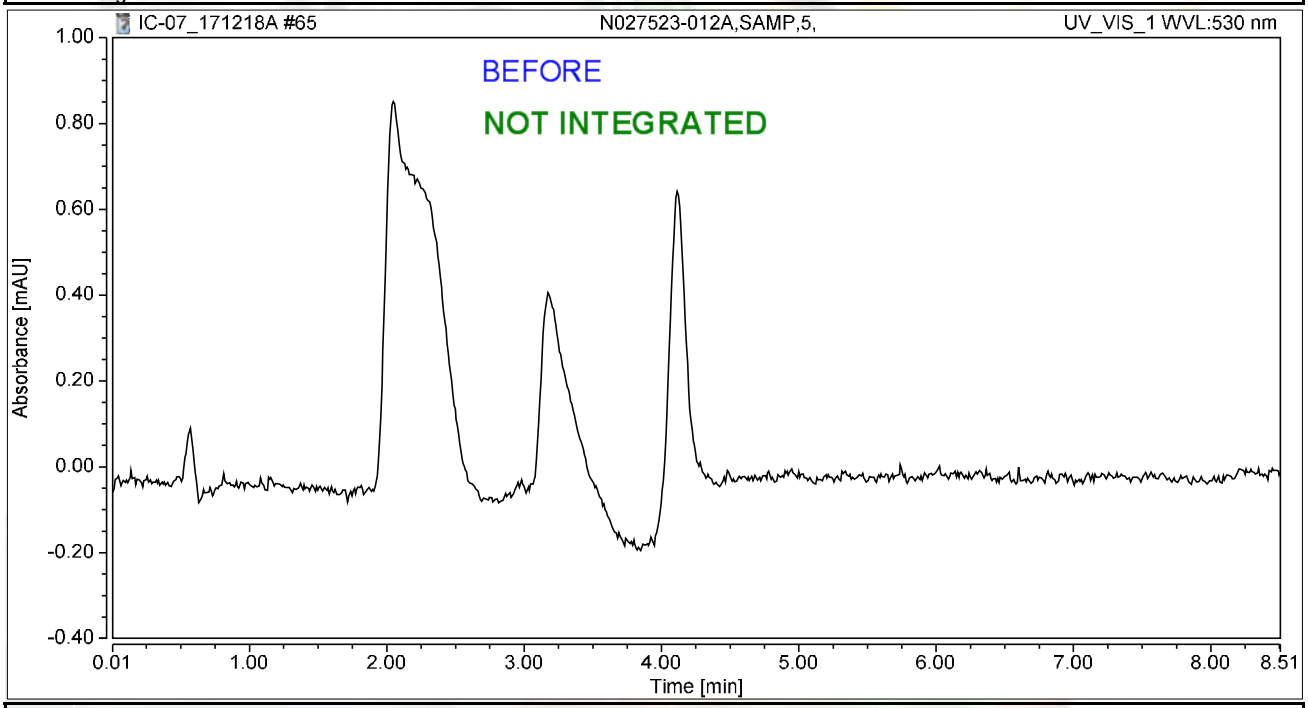
Chromatogram and Results

Injection Details

Injection Name:	**N027523-012A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 17:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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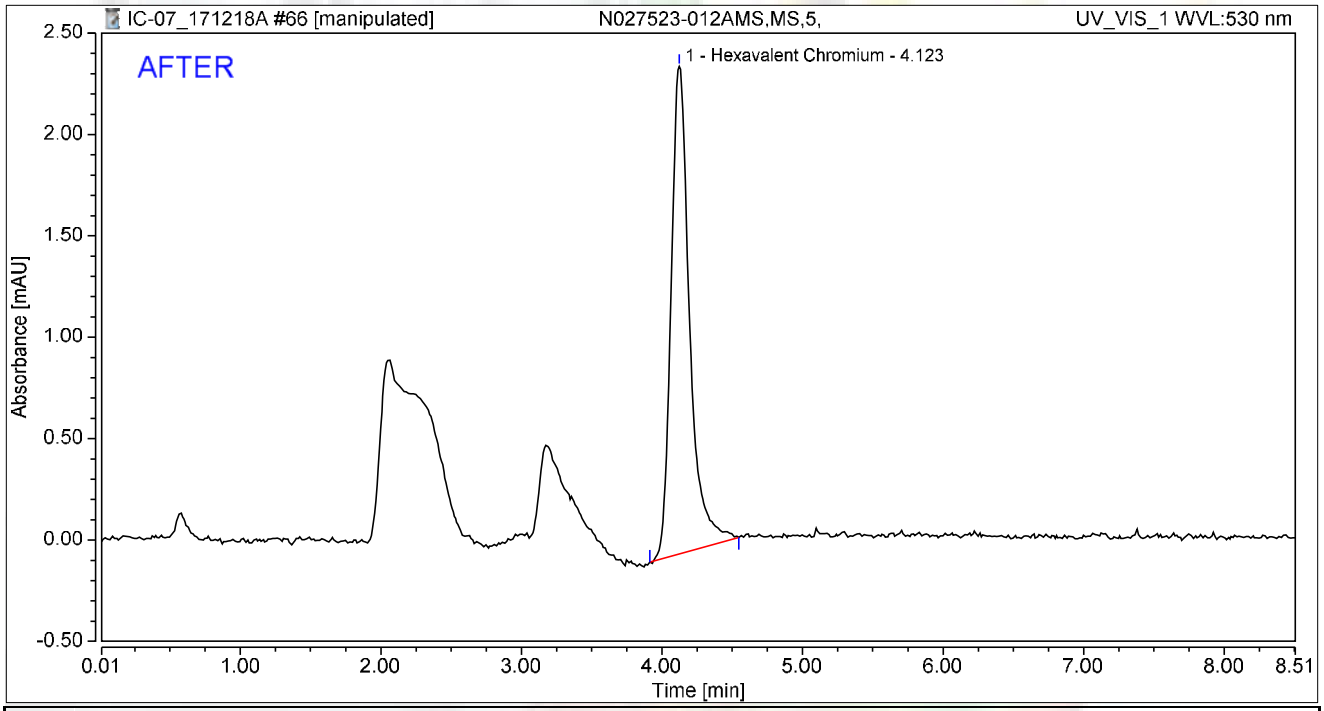
Chromatogram and Results

Injection Details

Injection Name:	**N027523-012AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 17:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.368	2.405	100.00	100.00	1.4644
Total:			**0.368**	**2.405**	**100.00**	**100.00**	

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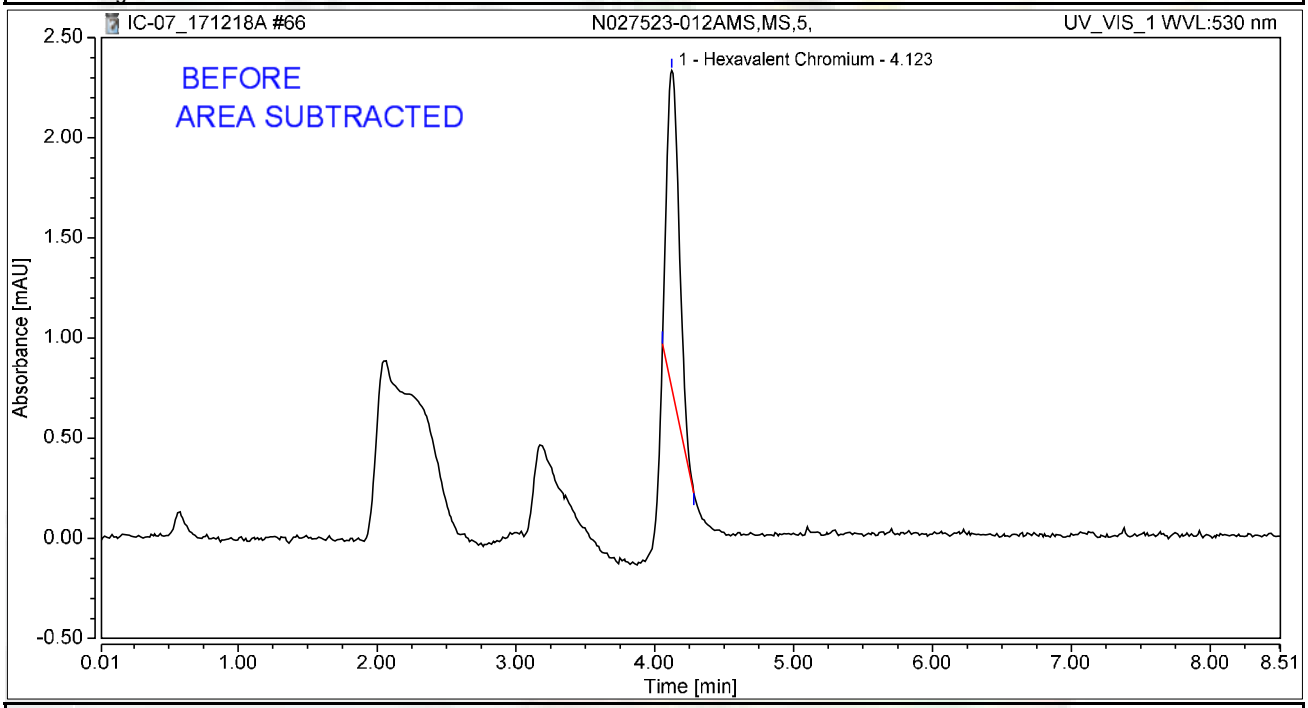
Chromatogram and Results

Injection Details

Injection Name:	**N027523-012AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 17:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.166	1.583	100.00	100.00	0.6614
Total:			**0.166**	**1.583**	**100.00**	**100.00**	

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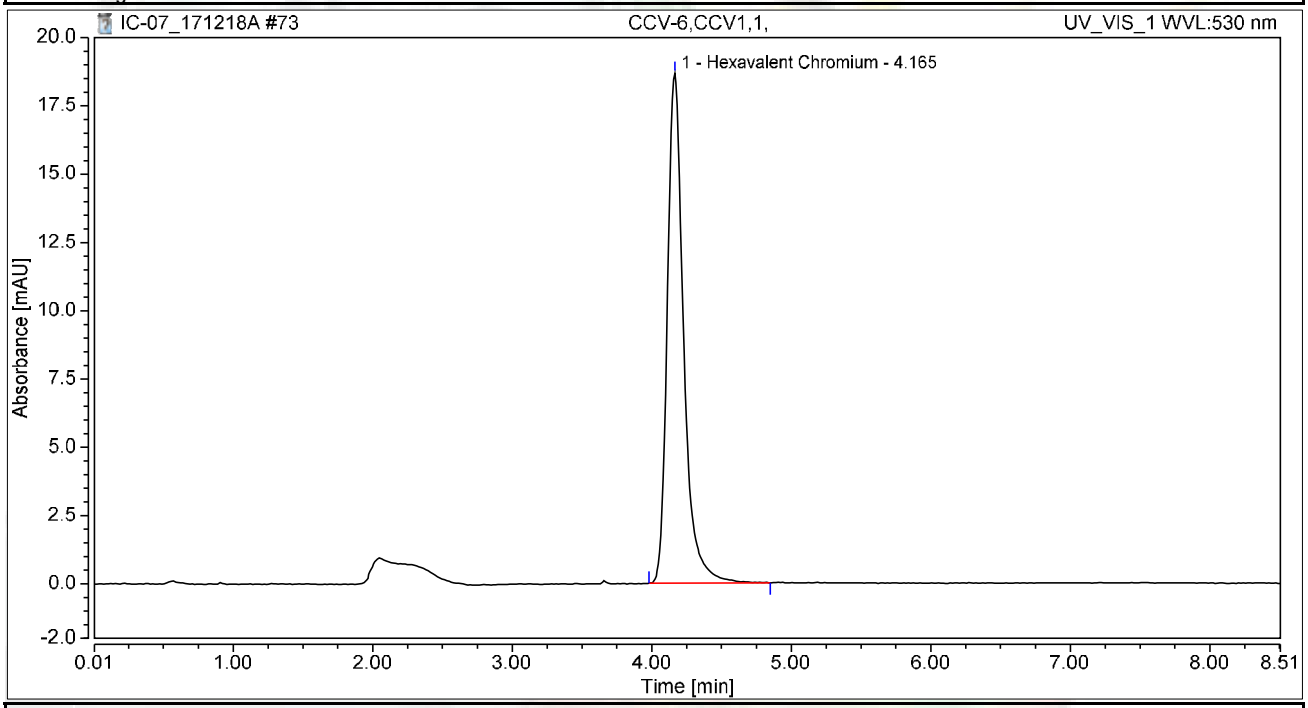
Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 18:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

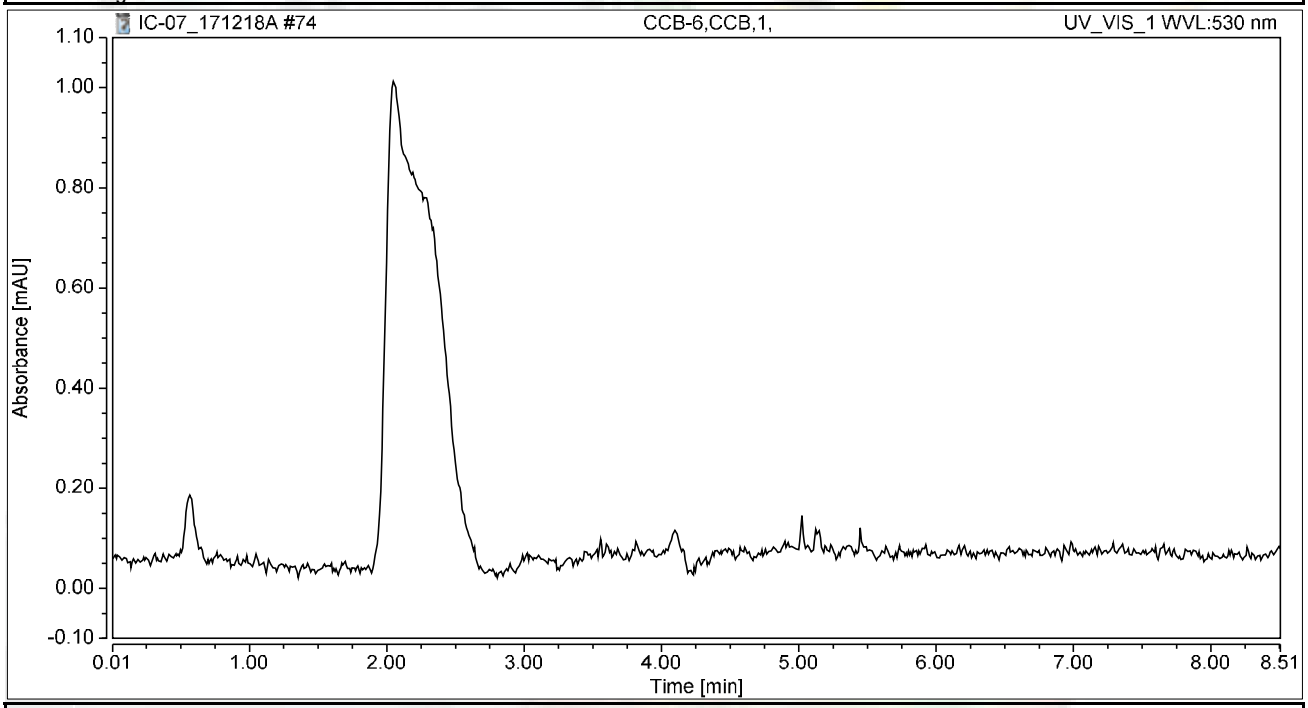
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.530	18.658	100.00	100.00	10.0761
Total:			**2.530**	**18.658**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Dec/17 19:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

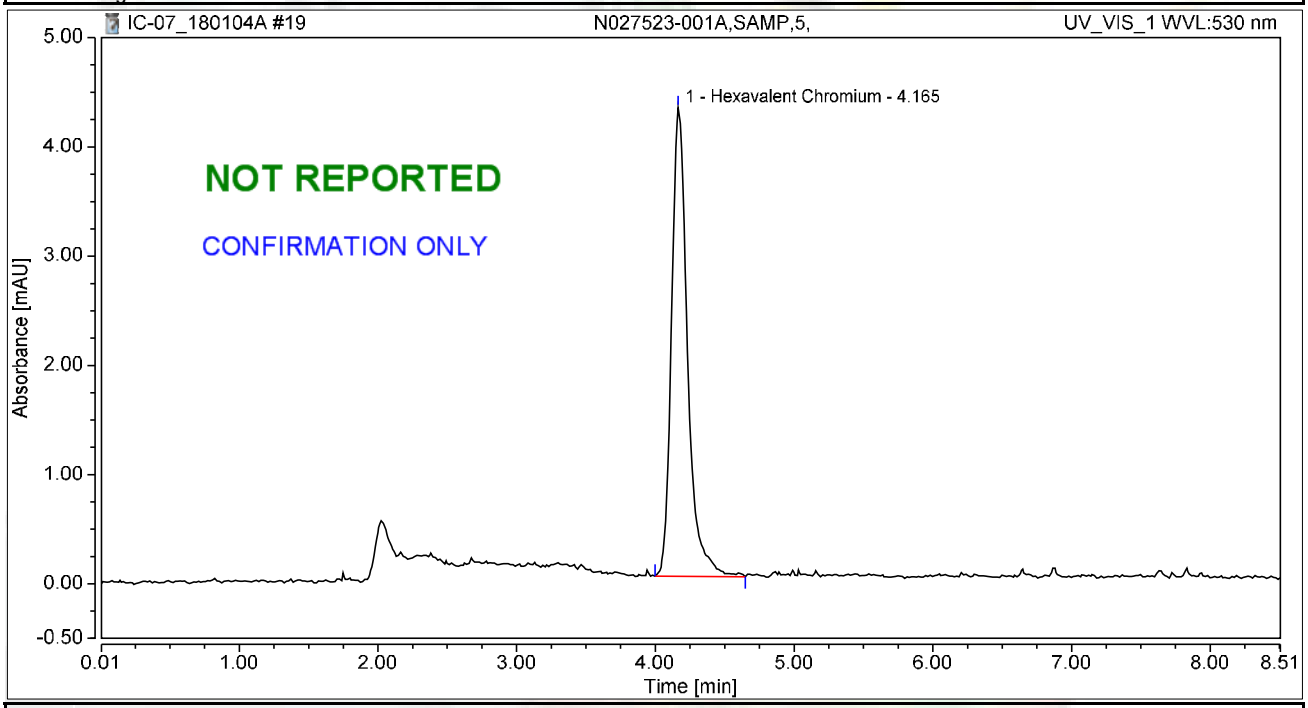
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-001A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Jan/18 11:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.575	4.289	100.00	100.00	2.2503
Total:			**0.575**	**4.289**	**100.00**	**100.00**	

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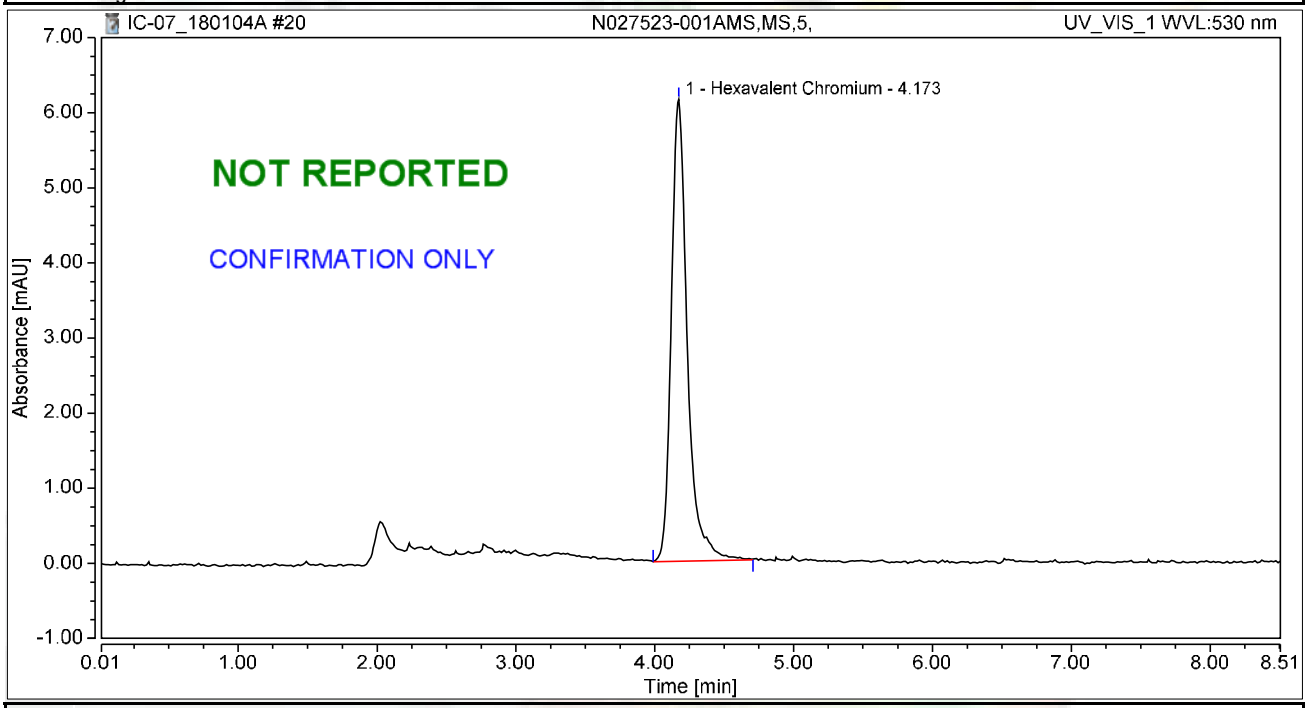
Chromatogram and Results

Injection Details

Injection Name:	**N027523-001AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Jan/18 11:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.823	6.148	100.00	100.00	3.2200
Total:			**0.823**	**6.148**	**100.00**	**100.00**	

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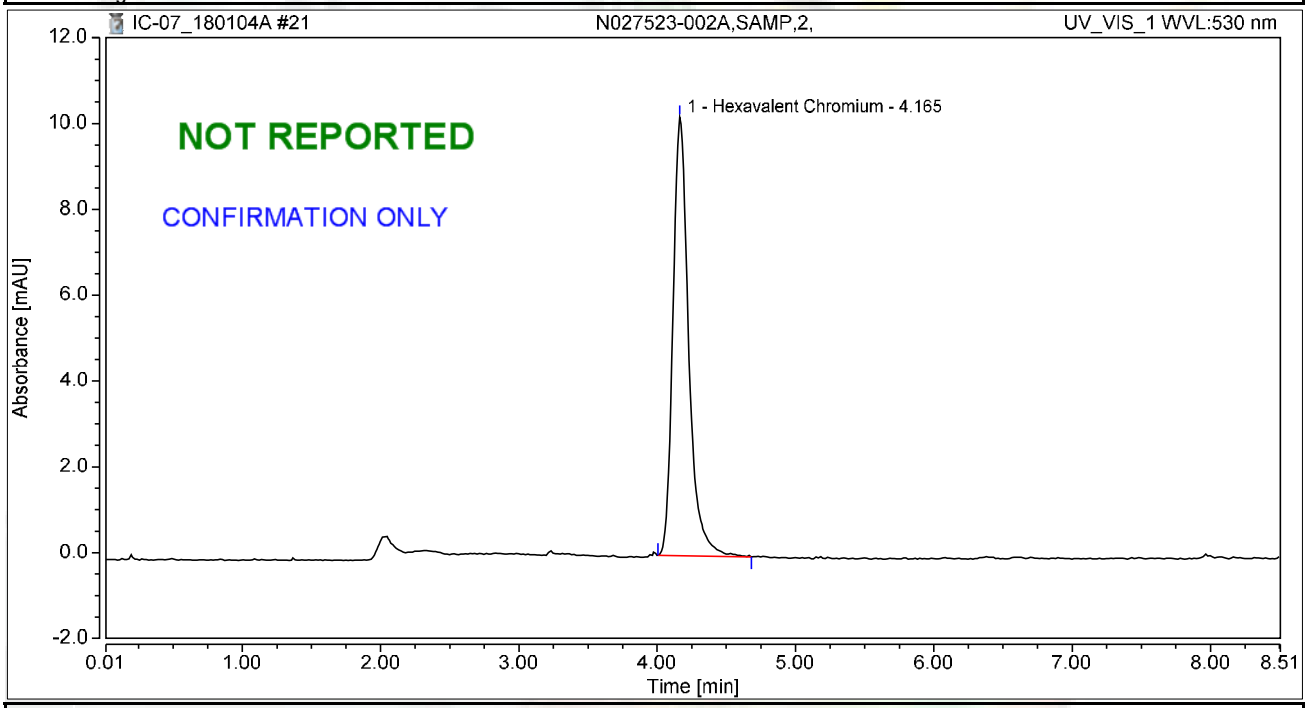
Chromatogram and Results

Injection Details

Injection Name:	**N027523-002A,SAMP,2,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Jan/18 11:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

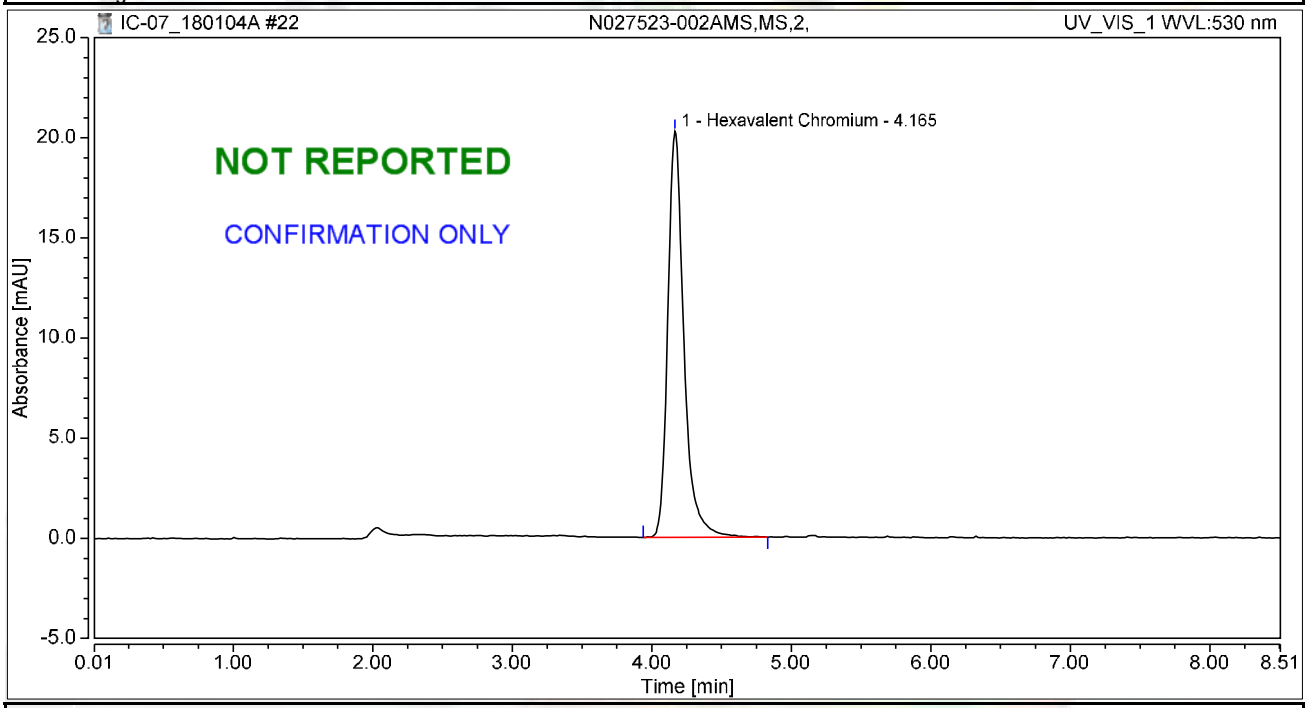
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.346	10.213	100.00	100.00	5.2646
Total:			**1.346**	**10.213**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-002AMS,MS,2,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Jan/18 11:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

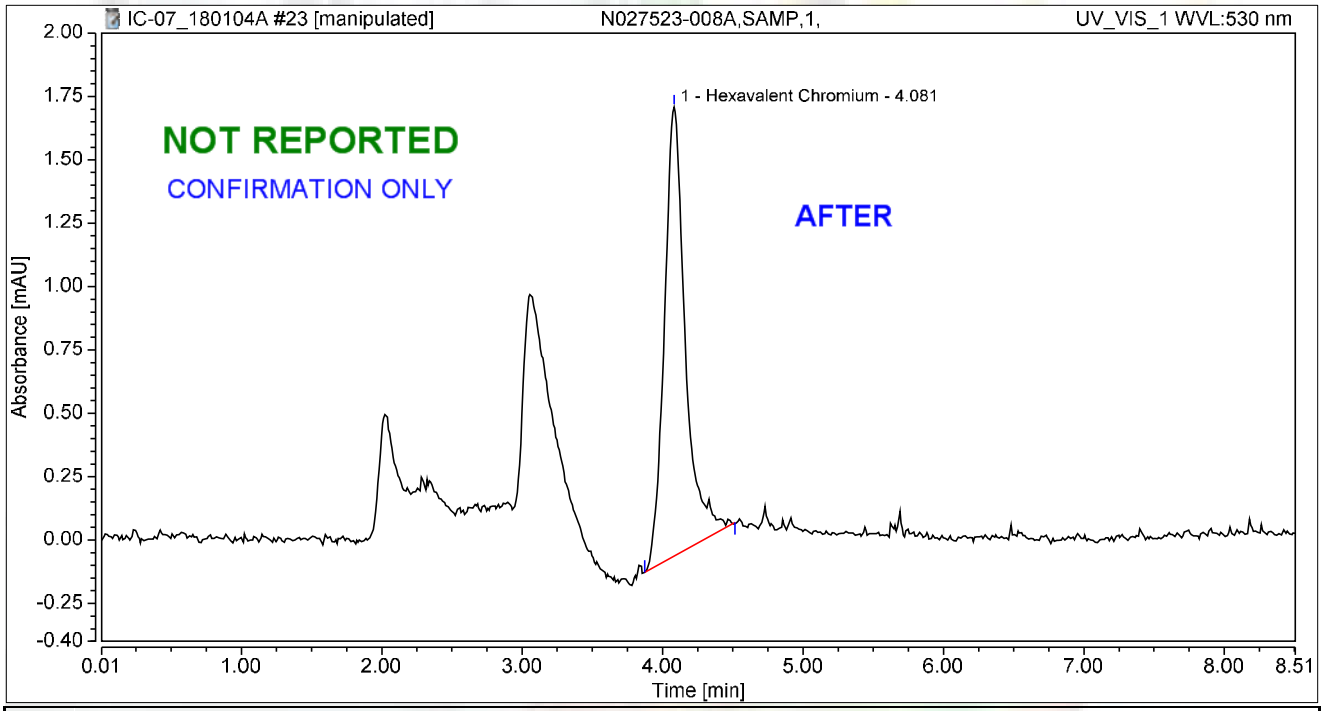
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.716	20.275	100.00	100.00	10.6212
Total:			**2.716**	**20.275**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Jan/18 11:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.306	1.771	100.00	100.00	1.1983
Total:			**0.306**	**1.771**	**100.00**	**100.00**	

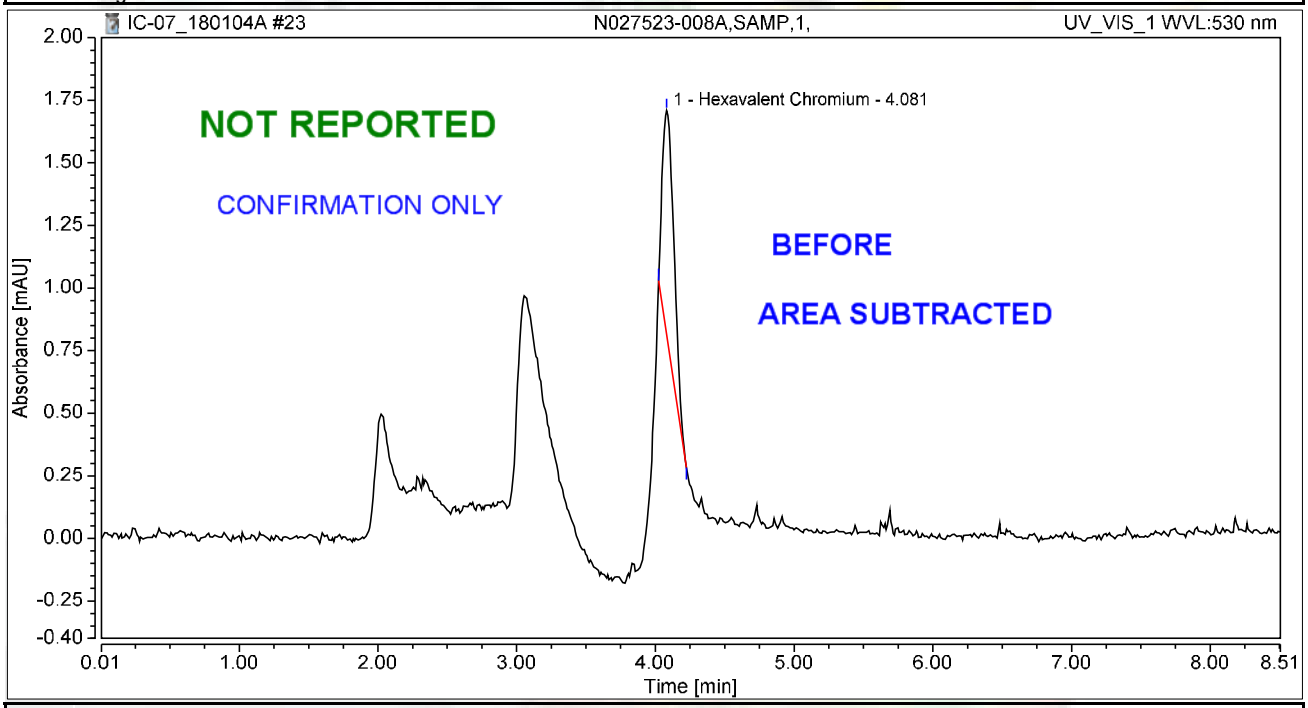
rba 1/5/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027523-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Jan/18 11:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.088	0.896	100.00	100.00	0.3461
Total:			**0.088**	**0.896**	**100.00**	**100.00**	

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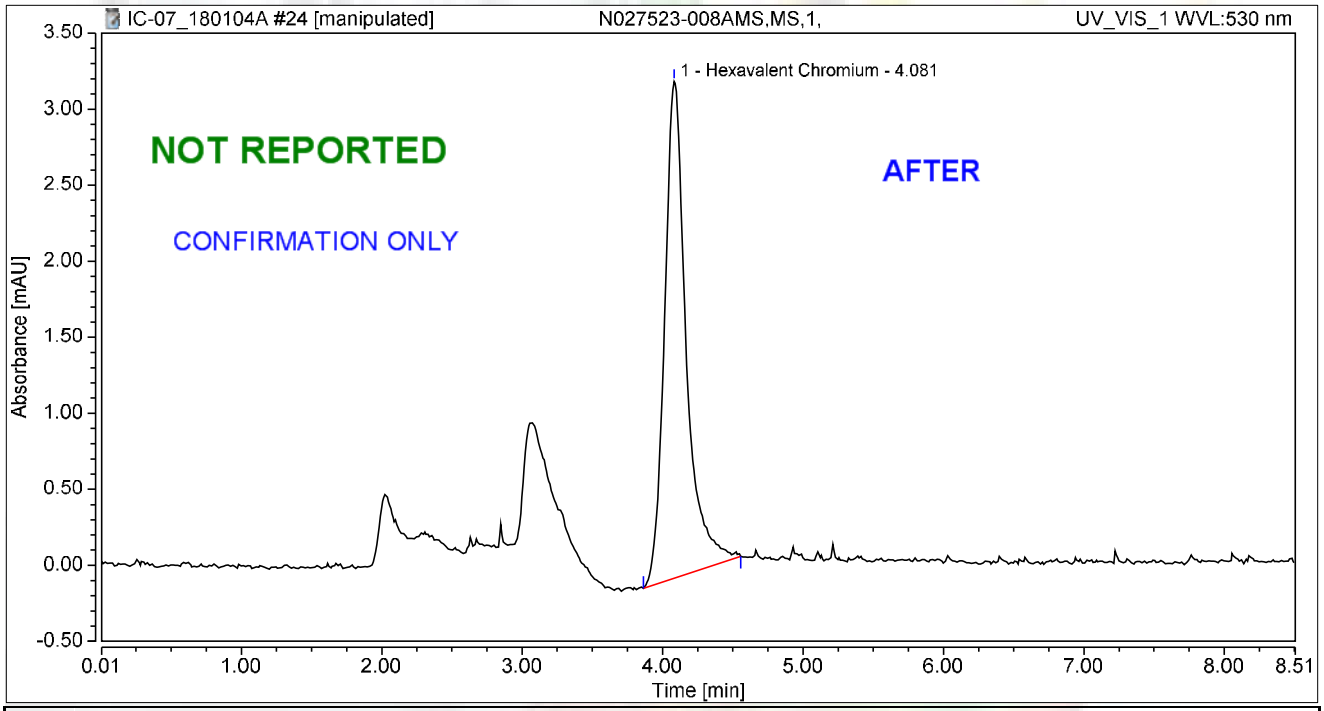
Chromatogram and Results

Injection Details

Injection Name:	**N027523-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Jan/18 11:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.586	3.268	100.00	100.00	2.2896
Total:			**0.586**	**3.268**	**100.00**	**100.00**	

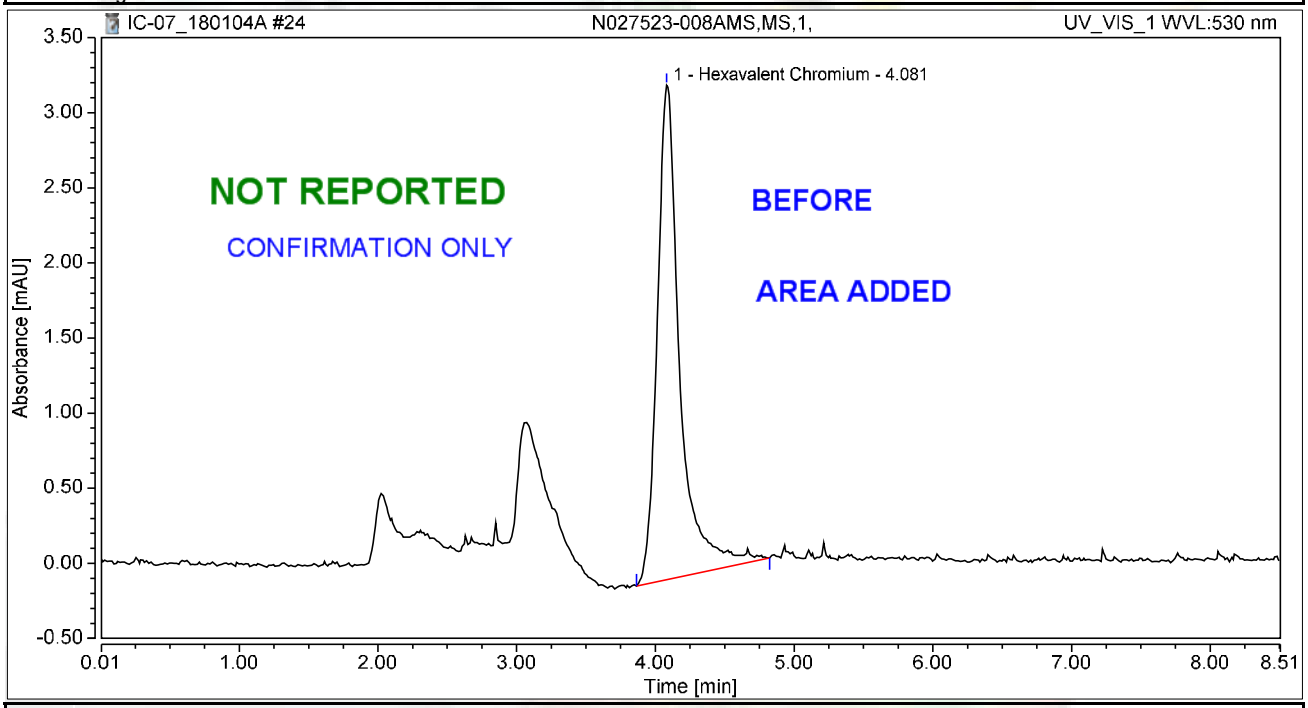
rba 1/5/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027523-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Jan/18 11:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.622	3.291	100.00	100.00	2.4322
Total:			**0.622**	**3.291**	**100.00**	**100.00**	

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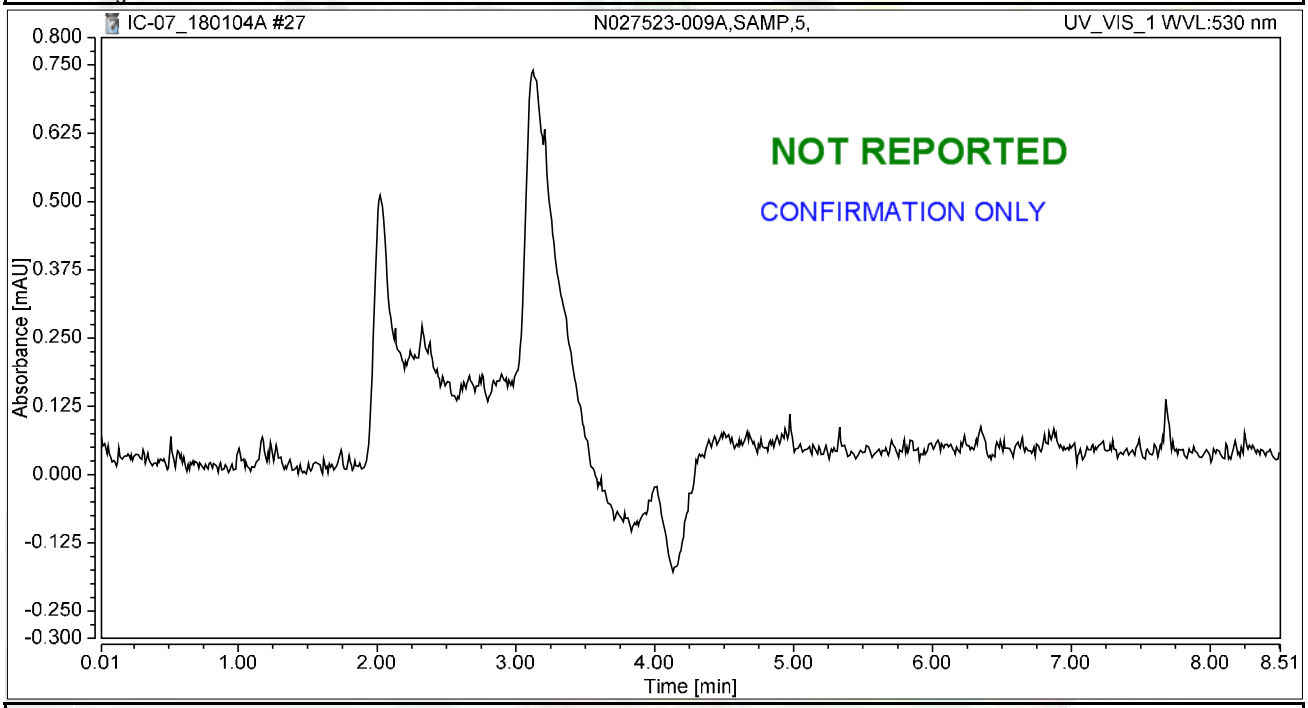
Chromatogram and Results

Injection Details

Injection Name:	**N027523-009A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Jan/18 12:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

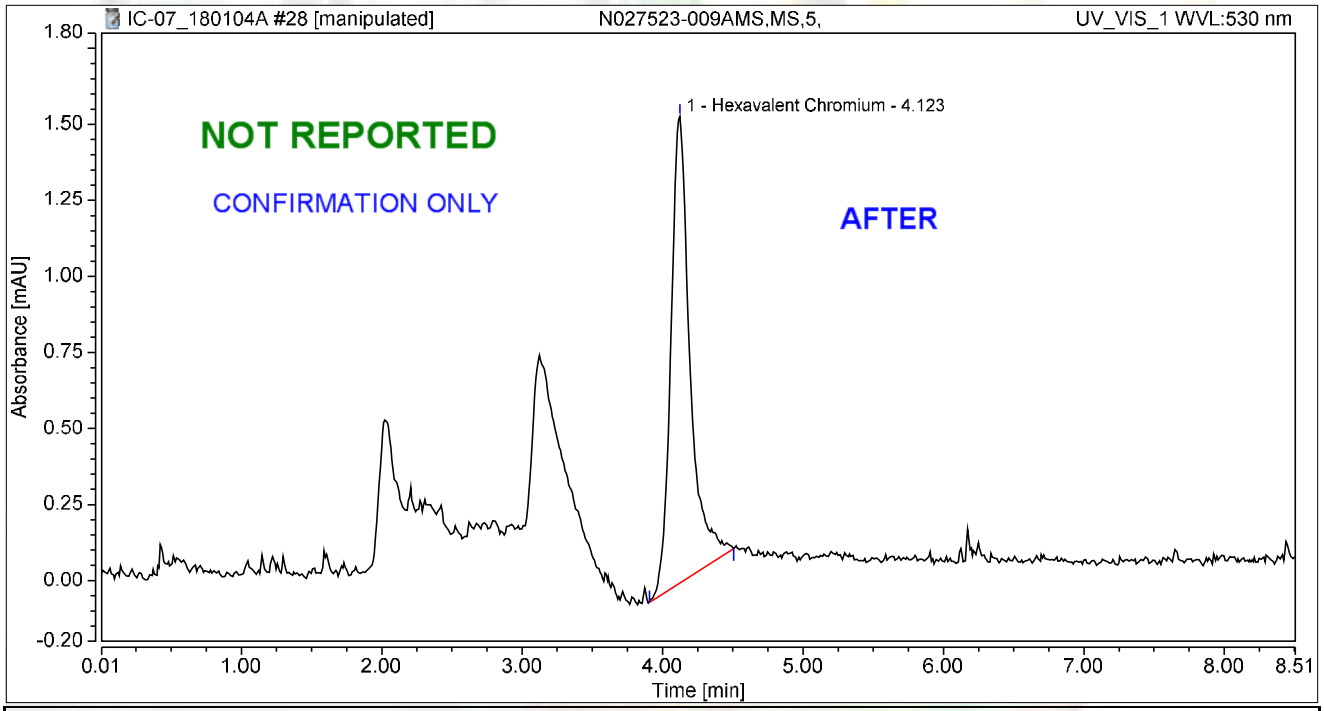
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027523-009AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Jan/18 12:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.244	1.534	100.00	100.00	0.9551
Total:			**0.244**	**1.534**	**100.00**	**100.00**	

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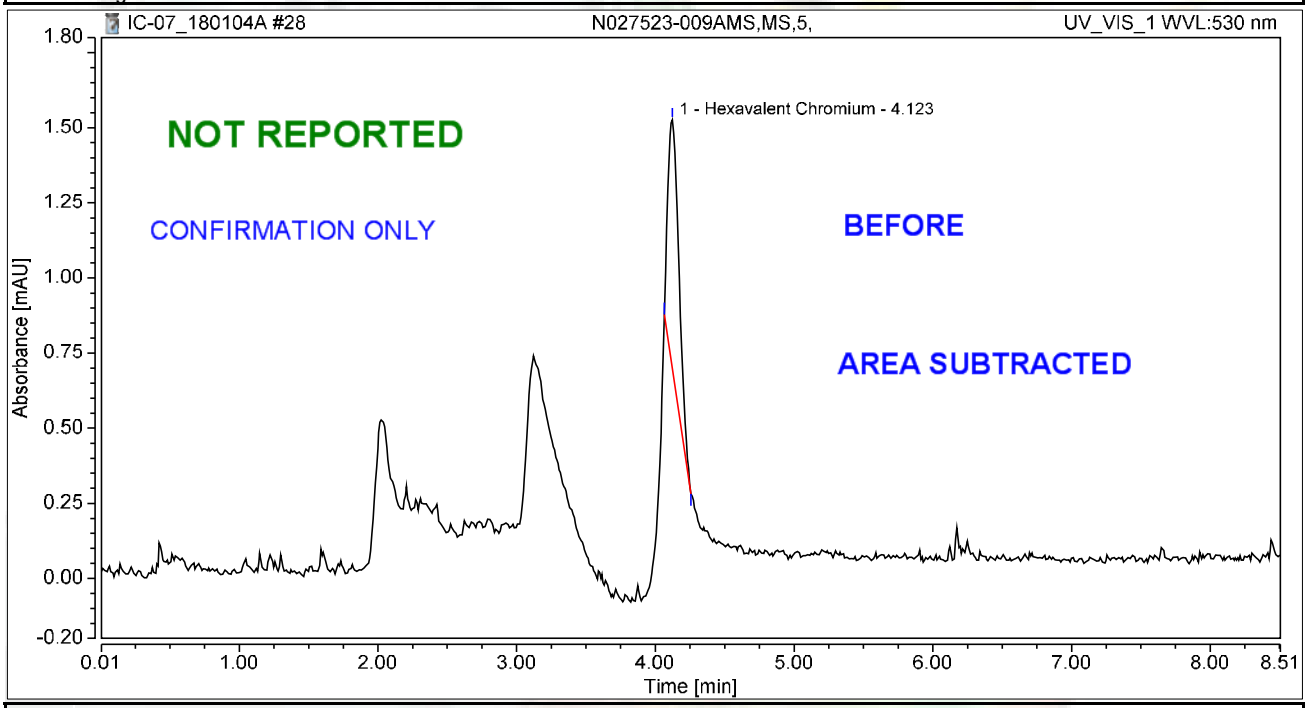
Chromatogram and Results

Injection Details

Injection Name:	**N027523-009AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Jan/18 12:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.076	0.829	100.00	100.00	0.2986
Total:			**0.076**	**0.829**	**100.00**	**100.00**	

rba 1/5/2018

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120882 **Analyst:** LSR

ASSET #: N027523 **Date Analyzed:** 12/15/2017

Method: EPA 2320

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X			X		
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 12/26/2017

2nd Level Reviewer: RB 01/05/2018 Date:

SAMPLE CALCULATION

Sample ID: **N027523-001C @ pH 7.79**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (11.90 mL)

= **0.02101 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (3.75) (0.02101 N) (1) * 1000

= 78.7875 mg**/L**

Reporting results in two significant figures,

= **79 mg/L** as CaCO3

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C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02101 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (3.75 mL) (0.02101) (1) * 1000

= 78.7875 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 78.7875 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **79 mg/L**

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LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.32	50	0.00	0.050	MBLK
LCS-1	8.88	50	0.10	4.70	LCS
N027485-004D	7.60	50	0.00	3.80	SAMP
N027485-005D	9.28	50	0.65	1.75	SAMP
N027485-006D	10.64	50	3.50	4.15	SAMP
N027485-007D	10.67	50	3.60	4.30	SAMP
N027485-008D	7.47	50	0.00	3.60	SAMP
N027485-009D	8.18	50	0.00	5.35	SAMP
N027485-010D	7.72	50	0.00	1.95	SAMP
N027485-011E	7.68	50	0.00	5.60	SAMP
N027485-012E	7.79	50	0.00	5.75	SAMP
N027523-001C	7.79	50	0.00	3.75	SAMP
N027523-002C	8.17	50	0.00	4.80	SAMP
N027523-003C	8.04	50	0.00	2.90	SAMP
N027523-004C	7.94	50	0.00	4.05	SAMP
N027523-005E	8.01	50	0.00	4.10	SAMP
N027523-006D	7.73	50	0.00	1.65	SAMP
N027523-007D	7.78	50	0.00	1.55	SAMP
N027523-008D	7.62	50	0.00	9.95	SAMP
N027523-009D	6.91	50	0.00	11.90	SAMP
N027523-012D	7.48	50	0.00	41.00	SAMP
N027523-001CDUP	7.86	50	0.00	3.65	DUP
N027485-008DMS	8.05	50	0.00	8.15	MS
N027485-008DMSD	8.05	50	0.00	8.40	MSD

Standardization:

Spike amt:	**5**	ml
Titrant used:	**11.90**	ml
N H2SO4	**0.02101**	Normal

Date Analyzed:	**12/15/17**
Time:	**9:15 AM**
Analyzed By:	**LSR**

Sodium Carbonate:	**CINV-161205A**
Sodium Bicarbonate:	**CINV-150601A**
Sulfuric Acid:	**R171214D**

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RB 01/05/2018

Date Analyzed:	12/15/17		Reagents:					Standardization:					P = 0
Time Started:	9:15 AM			Sodium Carbonate:		CINV-161205A			Spike amt:	5	mL		P < 1/2 T
Analyzed By:	LSR			Hydrochloric Acid:		0			Titrant used:	11.9	mL		P = 1/2 T
				Sulfuric Acid:		R171214D							P > 1/2 T
									N H2SO4	0.02101	N		P = T

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.32				0.02101	0.00	0.05	0.05	1	0.00	1.05	
LCS-1	50	8.88				0.02101	0.10	4.60	4.70	1	2.10	98.74	
N027485-004D	50	7.6				0.02101	0.00	3.80	3.80	1	0.00	79.83	
N027485-005D	50	9.28				0.02101	0.65	1.10	1.75	1	13.66	36.76	
N027485-006D	50	10.64				0.02101	3.50	0.65	4.15	1	73.53	87.18	
N027485-007D	50	10.67				0.02101	3.60	0.70	4.30	1	75.63	90.34	
N027485-008D	50	7.47				0.02101	0.00	3.60	3.60	1	0.00	75.63	
N027485-009D	50	8.18				0.02101	0.00	5.35	5.35	1	0.00	112.39	
N027485-010D	50	7.72				0.02101	0.00	1.95	1.95	1	0.00	40.97	
N027485-011E	50	7.68				0.02101	0.00	5.60	5.60	1	0.00	117.65	
N027485-012E	50	7.79				0.02101	0.00	5.75	5.75	1	0.00	120.80	
N027523-001C	50	7.79				0.02101	0.00	3.75	3.75	1	0.00	78.78	
N027523-002C	50	8.17				0.02101	0.00	4.80	4.80	1	0.00	100.84	
N027523-003C	50	8.04				0.02101	0.00	2.90	2.90	1	0.00	60.92	
N027523-004C	50	7.94				0.02101	0.00	4.05	4.05	1	0.00	85.08	
N027523-005E	50	8.01				0.02101	0.00	4.10	4.10	1	0.00	86.13	
N027523-006D	50	7.73				0.02101	0.00	1.65	1.65	1	0.00	34.66	
N027523-007D	50	7.78				0.02101	0.00	1.55	1.55	1	0.00	32.56	
N027523-008D	50	7.62				0.02101	0.00	9.95	9.95	1	0.00	209.03	
N027523-009D	50	6.91				0.02101	0.00	11.90	11.90	1	0.00	250.00	
N027523-012D	50	7.48				0.02101	0.00	41.00	41.00	1	0.00	861.34	
N027523-001CDU	50	7.86				0.02101	0.00	3.65	3.65	1	0.00	76.68	
N027485-008DMS	50	8.05				0.02101	0.00	8.15	8.15	1	0.00	171.22	
N027485-008DMS	50	8.05				0.02101	0.00	8.40	8.40	1	0.00	176.47	

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Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	12/15/17
Time:	9:15 AM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.05	1.05	1.05		P = 0
LCS-1	0.00	4.20	94.54	98.74	98.74		P < 1/2 T
N027485-004D	0.00	0.00	79.83	79.83	79.83		P = 0
N027485-005D	0.00	27.31	9.45	36.76	36.76		P < 1/2 T
N027485-006D	59.87	27.31	0.00	87.18	87.18		P > 1/2 T
N027485-007D	60.92	29.41	0.00	90.34	90.34		P > 1/2 T
N027485-008D	0.00	0.00	75.63	75.63	75.63		P = 0
N027485-009D	0.00	0.00	112.39	112.39	112.39		P = 0
N027485-010D	0.00	0.00	40.97	40.97	40.97		P = 0
N027485-011E	0.00	0.00	117.65	117.65	117.65		P = 0
N027485-012E	0.00	0.00	120.80	120.80	120.80		P = 0
N027523-001C	0.00	0.00	78.78	78.78	78.78		P = 0
N027523-002C	0.00	0.00	100.84	100.84	100.84		P = 0
N027523-003C	0.00	0.00	60.92	60.92	60.92		P = 0
N027523-004C	0.00	0.00	85.08	85.08	85.08		P = 0
N027523-005E	0.00	0.00	86.13	86.13	86.13		P = 0
N027523-006D	0.00	0.00	34.66	34.66	34.66		P = 0
N027523-007D	0.00	0.00	32.56	32.56	32.56		P = 0
N027523-008D	0.00	0.00	209.03	209.03	209.03		P = 0
N027523-009D	0.00	0.00	250.00	250.00	250.00		P = 0
N027523-012D	0.00	0.00	861.34	861.34	861.34		P = 0
N027523-001CDUP	0.00	0.00	76.68	76.68	76.68		P = 0
N027485-008DMS	0.00	0.00	171.22	171.22	171.22		P = 0
N027485-008DMSD	0.00	0.00	176.47	176.47	176.47		P = 0

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Alkalinity Preparation and Runlog

Book #6

Matrix: H_2O

Date Extracted: 12/15/17
Time Extracted:
Extracted By: LSR

Date Analyzed: 12/15/17
Time Analyzed: 915
Analyzed By: LSR

Reagent Lot # / Reagent ID
Sodium Carbonate: CINV161205A
Hydrochloric Acid:
Sulfuric Acid: R171214D
Sodium Bicarbonate: CINV150601A

pH meter Calibration:
SLOPE: 96.7%
pH 7 - 7.03 CINV170615F
4 - 3.98 170615E
10 - 10.01 170822B

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50mL	10.75	IWST171211A	5mL	0.05N	-	-	11.90	50/50	$N_{H_2SO_4} = \frac{(2.65\ g/L)(5\ mL)}{(50)(V\ titrant)}$	= 0.021008423
	#2		10.74				-	-	11.90			
1)	MBUL	50mL	5.32	-	-	-	0.02101	0	0	50/50		
2)	LCS		8.88	IWST171211B	1mL	0.05N		0.10	4.70			
3)	N027485-004D		7.60					0	3.80			
4)	5D		9.28					0.65	1.75			
5)	6D		10.64					3.50	4.15			
6)	7D		10.67					3.60	4.30			
7)	8D		7.47					0	3.60			
8)	9D		8.18					0	5.35			
9)	10D		7.72					0	1.95			
10)	11E		7.68					0	5.60		$P = \frac{(V\ pH\ 8.3)(N\ H_2SO_4)(50,000)}{V_{sx}}$	
11)	12E		7.79					0	5.75			
12)	N027523-1C		7.79					0	3.75			
13)	2C		8.17					0	4.80			
14)	3C		8.04					0	2.90		$T = \frac{(V\ pH\ 4.5)N\ H_2SO_4\ 11/14\ (50,000)}{(V_{sx})}$	
15)	4C		7.94					0	4.05			
16)	5E		8.01					0	4.10			
17)	6D		7.73					0	1.65			
18)	7D		7.78					0	1.55			
19)	8D		7.62					0	9.95			
20)	9D		6.91					0	11.90	12/15		
MS	12D		7.48					0	4.0			
MSD	N027523-1C DUP		7.86					0	3.65			
LCS	N027485-8D MS		8.05	IWST171211B	1mL	0.05N		0	8.15			
	8D MSD		8.05					0	8.40			

Julia Ramit 12/26/2017
RB 01/05/2018

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R120970
ASSET #: N027485 / N027523

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/19/2017

Method:

[X] EPA 300.0
[ ] EPA 7199

[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

Several samples were diluted due to precipitate formed with eluent,

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 12/21/2017

2nd Level Reviewer RLB 01/05/2018 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R121006
ASSET #: N027523

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/20/2017

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions, calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 12/24/2017

2nd Level Reviewer RLB 01/05/2018 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Chloride concentration, in mg/L, in the orignal sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N027523-001C** concentration in mg/L is calculated as follows:

Chloride, mg/L = 4.4146 * 100

= 441.46

Reporting result in two significant values,

Chloride, mg/L = 440

rba 12/27/2017

RLB 01/05/2018

ANALYSIS RUN LOG

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 73
Created: 12/19/2017 9:53:44 AM by IC-05
Last Update: 12/20/2017 8:57:58 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
3	Std - 0	Standard	1000.0	Anions Default	Anions_171219	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171219	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171219	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171219	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171219	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171219	Finished
9	ICV,ICV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
10	ICB,ICB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
11	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
12	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
13	N027459-001E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
14	N027459-002E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
15	N027459-003C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
16	N027459-004C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
17	N027459-005C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
18	N027459-006C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
19	N027459-007C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
20	N027459-008E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
21	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
22	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
23	N027459-001EMS,MS,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
24	N027459-001EMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
25	N027459-008EMS,MS,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
26	N027459-004CDUP,DUP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
27	N027459-009C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
28	N027459-010C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
29	N027459-011C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
30	N027459-012C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
31	N027459-013C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
32	N027459-014C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
33	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
34	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
35	N027459-015C,SAMP,2	Unknown	1000.0	Anions Default	Anions_171219	Finished
36	N027459-016E,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
37	N027459-017E,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
38	N027459-018C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
39	N027459-019C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
40	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
41	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished

rba 12/21/2017

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 73
Created: 12/19/2017 9:53:44 AM by IC-05
Last Update: 12/20/2017 8:57:58 AM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	12/19/2017 9:54:19 AM	BLANK
2	BLANK,BLANK,1	12/19/2017 10:09:37 AM	BLANK
3	Std - 0	12/19/2017 10:24:55 AM	IBLANK
4	Std - 1	12/19/2017 10:45:27 AM	STD-LOW
5	Std - 2	12/19/2017 11:00:45 AM	STD
6	Std - 3	12/19/2017 11:16:03 AM	STD
7	Std - 4	12/19/2017 11:31:21 AM	STD
8	Std - 5	12/19/2017 11:46:39 AM	STD-HIGH
9	ICV,ICV,1	12/19/2017 12:03:52 PM	ICV
10	ICB,ICB,1	12/19/2017 12:19:10 PM	ICB
11	MB-H2O,MBLK,1	12/19/2017 12:34:28 PM	METHOD BLANK
12	LCS-H2O,LCS,1	12/19/2017 12:49:45 PM	LCS
13	N027459-001E,SAMP,5	12/19/2017 1:05:03 PM	SAMP,2>10mL
14	N027459-002E,SAMP,5	12/19/2017 1:20:21 PM	SAMP,2>10mL
15	N027459-003C,SAMP,10	12/19/2017 1:35:39 PM	SAMP,1>10mL
16	N027459-004C,SAMP,10	12/19/2017 1:50:57 PM	SAMP,1>10mL
17	N027459-005C,SAMP,5	12/19/2017 2:06:15 PM	SAMP,2>10mL
18	N027459-006C,SAMP,5	12/19/2017 2:21:33 PM	SAMP,2>10mL
19	N027459-007C,SAMP,1	12/19/2017 2:36:51 PM	SAMP,10mL
20	N027459-008E,SAMP,5	12/19/2017 2:52:08 PM	SAMP,2>10mL
21	CCV-1,CCV,1	12/19/2017 3:07:26 PM	CCV
22	CCB-1,CCB,1	12/19/2017 3:22:44 PM	CCB
23	N027459-001EMS,MS,5	12/19/2017 3:38:02 PM	MS,2>10mL
24	N027459-001EMSD,MSD,5	12/19/2017 3:53:20 PM	MSD,2>10mL
25	N027459-008EMS,MS,5	12/19/2017 4:08:38 PM	MS,2>10mL
26	N027459-004CDUP,DUP,10	12/19/2017 4:23:56 PM	DUP,1>10mL
27	N027459-009C,SAMP,5	12/19/2017 4:39:14 PM	SAMP,2>10mL
28	N027459-010C,SAMP,5	12/19/2017 4:54:31 PM	SAMP,2>10mL
29	N027459-011C,SAMP,1	12/19/2017 5:09:49 PM	SAMP,10mL
30	N027459-012C,SAMP,1	12/19/2017 5:25:07 PM	SAMP,10mL
31	N027459-013C,SAMP,5	12/19/2017 5:40:25 PM	SAMP,2>10mL
32	N027459-014C,SAMP,5	12/19/2017 5:55:43 PM	SAMP,2>10mL
33	CCV-2,CCV,1	12/19/2017 6:11:01 PM	CCV
34	CCB-2,CCB,1	12/19/2017 6:26:19 PM	CCB
35	N027459-015C,SAMP,2	12/19/2017 6:41:37 PM	SAMP,5>10mL
36	N027459-016E,SAMP,1	12/19/2017 6:56:54 PM	SAMP,10mL
37	N027459-017E,SAMP,1	12/19/2017 7:12:13 PM	SAMP,10mL
38	N027459-018C,SAMP,10	12/19/2017 7:27:30 PM	SAMP,1>10mL
39	N027459-019C,SAMP,1	12/19/2017 7:42:48 PM	SAMP,10mL
40	LCS-2,LCS,1	12/19/2017 7:58:06 PM	LCS
41	MB-2,MBLK,1	12/19/2017 8:13:24 PM	METHOD BLANK

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 73
Created: 12/19/2017 9:53:44 AM by IC-05
Last Update: 12/20/2017 8:57:58 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027485-008D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
43	N027485-008DMS,MS,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
44	N027485-008DMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
45	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
46	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
47	N027523-001C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
48	N027523-001CMS,MS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
49	N027523-002C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
50	N027523-002CDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
51	N027485-001D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
52	N027485-002D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
53	N027485-003D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
54	N027485-004D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
55	N027485-005D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
56	N027485-006D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
57	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
58	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
59	N027485-007D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
60	N027485-009D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
61	N027485-010D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
62	N027485-011E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
63	N027485-012E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
64	N027523-003C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
65	N027523-004C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
66	N027523-005E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
67	N027523-006D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
68	N027523-007D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
69	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
70	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
71	N027523-008D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
72	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
73	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 73
Created: 12/19/2017 9:53:44 AM by IC-05
Last Update: 12/20/2017 8:57:58 AM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027485-008D,SAMP,5	12/19/2017 8:28:42 PM	SAMP,2>10mL
43	N027485-008DMS,MS,5	12/19/2017 8:43:59 PM	MS,2>10mL
44	N027485-008DMSD,MSD,5	12/19/2017 8:59:17 PM	MSD,2>10mL
45	CCV-3,CCV,1	12/19/2017 9:14:35 PM	CCV
46	CCB-3,CCB,1	12/19/2017 9:29:53 PM	CCB
47	N027523-001C,SAMP,1	12/19/2017 9:45:11 PM	SAMP,10mL
48	N027523-001CMS,MS,1	12/19/2017 10:00:28 PM	MS,10mL
49	N027523-002C,SAMP,1	12/19/2017 10:15:46 PM	SAMP,10mL
50	N027523-002CDUP,DUP,1	12/19/2017 10:31:04 PM	DUP,10mL
51	N027485-001D,SAMP,1	12/19/2017 10:46:22 PM	SAMP,10mL
52	N027485-002D,SAMP,10	12/19/2017 11:01:39 PM	SAMP,1>10mL
53	N027485-003D,SAMP,10	12/19/2017 11:16:57 PM	SAMP,1>10mL
54	N027485-004D,SAMP,5	12/19/2017 11:32:15 PM	SAMP,2>10mL
55	N027485-005D,SAMP,5	12/19/2017 11:47:33 PM	SAMP,2>10mL
56	N027485-006D,SAMP,5	12/20/2017 12:02:51 AM	SAMP,2>10mL
57	CCV-4,CCV,1	12/20/2017 12:18:09 AM	CCV
58	CCB-4,CCB,1	12/20/2017 12:33:27 AM	CCB
59	N027485-007D,SAMP,5	12/20/2017 12:48:44 AM	SAMP,2>10mL
60	N027485-009D,SAMP,1	12/20/2017 1:04:02 AM	SAMP,10mL
61	N027485-010D,SAMP,5	12/20/2017 1:19:20 AM	SAMP,2>10mL
62	N027485-011E,SAMP,5	12/20/2017 1:34:38 AM	SAMP,2>10mL
63	N027485-012E,SAMP,5	12/20/2017 1:49:56 AM	SAMP,2>10mL
64	N027523-003C,SAMP,1	12/20/2017 2:05:14 AM	SAMP,10mL
65	N027523-004C,SAMP,1	12/20/2017 2:20:32 AM	SAMP,10mL
66	N027523-005E,SAMP,5	12/20/2017 2:35:49 AM	SAMP,2>10mL
67	N027523-006D,SAMP,5	12/20/2017 2:51:08 AM	SAMP,2>10mL
68	N027523-007D,SAMP,5	12/20/2017 3:06:26 AM	SAMP,2>10mL
69	CCV-5,CCV,1	12/20/2017 3:21:44 AM	CCV
70	CCB-5,CCB,1	12/20/2017 3:37:02 AM	CCB
71	N027523-008D,SAMP,5	12/20/2017 3:52:19 AM	SAMP,2>10mL
72	CCV-6,CCV,1	12/20/2017 4:07:37 AM	CCV
73	CCB-6,CCB,1	12/20/2017 4:22:55 AM	CCB

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 79
Created: 12/20/2017 8:55:02 AM by IC-05
Last Update: 12/21/2017 5:58:25 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
3	Std - 0	Standard	1000.0	Anions Default	Anions_171219	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171219	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171219	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171219	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171219	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171219	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
14	N027631-001D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
15	N027632-001D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
16	N027631-001DDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
17	N027631-001DMS,MS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
18	N027631-001DMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
19	N027631-001D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
20	N027631-001DMS,MS,20	Unknown	1000.0	Anions Default	Anions_171219	Finished
21	N027631-001DMSD,MSD,20	Unknown	1000.0	Anions Default	Anions_171219	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
24	N027631-001DDUP,DUP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
25	N027631-001D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
26	N027632-001D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
27	N027523-012D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
28	N027523-009D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
29	N027523-012DDUP,DUP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
30	N027523-012DMS,MS,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
31	N027523-012DMSD,MSD,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
32	N027523-002C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
33	N027523-003C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
34	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
35	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
36	N027523-003CDUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
37	N027523-003CMS,MS,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
38	N027523-003CMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
39	N027523-002CMS,MS,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
40	N027523-001C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
41	N027523-001C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171219	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 79
Created: 12/20/2017 8:55:02 AM by IC-05
Last Update: 12/21/2017 5:58:25 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	12/19/2017 9:54:19 AM	BLANK
2	BLANK,BLANK,1	12/19/2017 10:09:37 AM	BLANK
3	Std - 0	12/19/2017 10:24:55 AM	IBLANK
4	Std - 1	12/19/2017 10:45:27 AM	STD-LOW
5	Std - 2	12/19/2017 11:00:45 AM	STD
6	Std - 3	12/19/2017 11:16:03 AM	STD
7	Std - 4	12/19/2017 11:31:21 AM	STD
8	Std - 5	12/19/2017 11:46:39 AM	STD-HIGH
9	BLANK,BLANK,1	12/20/2017 8:56:34 AM	BLANK
10	CCV-1,CCV,1	12/20/2017 9:11:52 AM	CCV
11	CCB-1,CCB,1	12/20/2017 9:27:10 AM	CCB
12	MB-H2O,MBLK,1	12/20/2017 9:42:28 AM	METHOD BLANK
13	LCS-H2O,LCS,1	12/20/2017 9:57:45 AM	LCS
14	N027631-001D,SAMP,1	12/20/2017 10:13:03 AM	SAMP,10mL
15	N027632-001D,SAMP,10	12/20/2017 10:28:22 AM	SAMP,1>10mL
16	N027631-001DDUP,DUP,1	12/20/2017 10:43:39 AM	DUP,10mL
17	N027631-001DMS,MS,1	12/20/2017 10:58:57 AM	MS,10mL
18	N027631-001DMSD,MSD,1	12/20/2017 11:14:15 AM	MSD,10mL
19	N027631-001D,SAMP,10	12/20/2017 11:29:33 AM	SAMP,1>10mL
20	N027631-001DMS,MS,20	12/20/2017 11:44:51 AM	MS,0.5>10mL
21	N027631-001DMSD,MSD,20	12/20/2017 12:00:09 PM	MSD,0.5>10mL
22	CCV-2,CCV,1	12/20/2017 12:15:27 PM	CCV
23	CCB-2,CCB,1	12/20/2017 12:30:45 PM	CCB
24	N027631-001DDUP,DUP,10	12/20/2017 12:46:03 PM	DUP,1>10mL
25	N027631-001D,SAMP,50	12/20/2017 1:01:21 PM	SAMP,0.2>10mL
26	N027632-001D,SAMP,100	12/20/2017 1:16:38 PM	SAMP,0.1>10mL
27	N027523-012D,SAMP,10	12/20/2017 1:31:56 PM	SAMP,1>10mL
28	N027523-009D,SAMP,10	12/20/2017 1:47:14 PM	SAMP,1>10mL
29	N027523-012DDUP,DUP,10	12/20/2017 2:02:32 PM	DUP,1>10mL
30	N027523-012DMS,MS,10	12/20/2017 2:17:50 PM	MS,1>10mL
31	N027523-012DMSD,MSD,10	12/20/2017 2:33:07 PM	MSD,1>10mL
32	N027523-002C,SAMP,50	12/20/2017 2:48:25 PM	SAMP,0.2>10mL
33	N027523-003C,SAMP,50	12/20/2017 3:03:43 PM	SAMP,0.2>10mL
34	CCV-3,CCV,1	12/20/2017 3:19:01 PM	CCV
35	CCB-3,CCB,1	12/20/2017 3:34:18 PM	CCB
36	N027523-003CDUP,DUP,50	12/20/2017 3:49:36 PM	DUP,0.2>10mL
37	N027523-003CMS,MS,50	12/20/2017 4:04:54 PM	MS,0.2>10mL
38	N027523-003CMSD,MSD,50	12/20/2017 4:20:11 PM	MSD,0.2>10mL
39	N027523-002CMS,MS,50	12/20/2017 4:35:29 PM	MS,0.2>10mL
40	N027523-001C,SAMP,100	12/20/2017 4:50:47 PM	SAMP,0.1>10mL
41	N027523-001C,SAMP,20	12/20/2017 5:06:05 PM	SAMP,0.5>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 79
Created: 12/20/2017 8:55:02 AM by IC-05
Last Update: 12/21/2017 5:58:25 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027523-004C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
43	N027523-004C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
44	N027523-005E,SAMP,200	Unknown	1000.0	Anions Default	Anions_171219	Finished
45	N027523-005E,SAMP,20	Unknown	1000.0	Anions Default	Anions_171219	Finished
46	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
47	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
48	N027523-006D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171219	Finished
49	N027523-006D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
50	N027523-007D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171219	Finished
51	N027523-007D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
52	N027523-008D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171219	Finished
53	N027523-008D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
54	N027523-012D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
55	N027523-009D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171219	Finished
56	N027523-009D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
57	N027523-012D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171219	Finished
58	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
59	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
60	N027523-012D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171219	Finished
61	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
62	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
63	N027546-006D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
64	N027546-006DDUP,DUP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
65	N027546-006DMS,MS,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
66	N027546-006DMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
67	N027546-001D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
68	N027546-002D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
69	N027546-003D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
70	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
71	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
72	N027546-004D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
73	N027546-005D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
74	N027546-007C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
75	N027546-008D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
76	N027546-009D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
77	N027546-010D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
78	CCV-7,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
79	CCB-7,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 79
Created: 12/20/2017 8:55:02 AM by IC-05
Last Update: 12/21/2017 5:58:25 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027523-004C,SAMP,100	12/20/2017 5:21:23 PM	SAMP,0.1>10mL
43	N027523-004C,SAMP,10	12/20/2017 5:36:40 PM	SAMP,1>10mL
44	N027523-005E,SAMP,200	12/20/2017 5:51:58 PM	SAMP,0.05>10mL
45	N027523-005E,SAMP,20	12/20/2017 6:07:16 PM	SAMP,0.5>10mL
46	CCV-4,CCV,1	12/20/2017 6:22:34 PM	CCV
47	CCB-4,CCB,1	12/20/2017 6:37:52 PM	CCB
48	N027523-006D,SAMP,1000	12/20/2017 6:53:09 PM	SAMP,0.01>10mL
49	N027523-006D,SAMP,50	12/20/2017 7:08:27 PM	SAMP,0.2>10mL
50	N027523-007D,SAMP,1000	12/20/2017 7:23:45 PM	SAMP,0.01>10mL
51	N027523-007D,SAMP,50	12/20/2017 7:39:03 PM	SAMP,0.2>10mL
52	N027523-008D,SAMP,500	12/20/2017 7:54:20 PM	SAMP,0.02>10mL
53	N027523-008D,SAMP,50	12/20/2017 8:09:38 PM	SAMP,0.2>10mL
54	N027523-012D,SAMP,10	12/20/2017 8:24:56 PM	SAMP,1>10mL
55	N027523-009D,SAMP,2000	12/20/2017 8:40:14 PM	SAMP,0.005>10mL
56	N027523-009D,SAMP,100	12/20/2017 8:55:32 PM	SAMP,0.1>10mL
57	N027523-012D,SAMP,1000	12/20/2017 9:10:50 PM	SAMP,0.01>10mL
58	CCV-5,CCV,1	12/20/2017 9:26:08 PM	CCV
59	CCB-5,CCB,1	12/20/2017 9:41:27 PM	CCB
60	N027523-012D,SAMP,200	12/20/2017 9:56:45 PM	SAMP,0.05>10mL
61	LCS-2,LCS,1	12/20/2017 10:12:03 PM	LCS
62	MB-2,MBLK,1	12/20/2017 10:27:22 PM	METHOD BLANK
63	N027546-006D,SAMP,5	12/20/2017 10:42:40 PM	SAMP,2>10mL
64	N027546-006DDUP,DUP,5	12/20/2017 10:57:58 PM	DUP,2>10mL
65	N027546-006DMS,MS,5	12/20/2017 11:13:16 PM	MS,2>10mL
66	N027546-006DMSD,MSD,5	12/20/2017 11:28:34 PM	MSD,2>10mL
67	N027546-001D,SAMP,5	12/20/2017 11:43:52 PM	SAMP,2>10mL
68	N027546-002D,SAMP,5	12/20/2017 11:59:09 PM	SAMP,2>10mL
69	N027546-003D,SAMP,5	12/21/2017 12:14:27 AM	SAMP,2>10mL
70	CCV-6,CCV,1	12/21/2017 12:29:45 AM	CCV
71	CCB-6,CCB,1	12/21/2017 12:45:03 AM	CCB
72	N027546-004D,SAMP,5	12/21/2017 1:00:21 AM	SAMP,2>10mL
73	N027546-005D,SAMP,5	12/21/2017 1:15:39 AM	SAMP,2>10mL
74	N027546-007C,SAMP,5	12/21/2017 1:30:56 AM	SAMP,2>10mL
75	N027546-008D,SAMP,5	12/21/2017 1:46:14 AM	SAMP,2>10mL
76	N027546-009D,SAMP,5	12/21/2017 2:01:32 AM	SAMP,2>10mL
77	N027546-010D,SAMP,5	12/21/2017 2:16:50 AM	SAMP,2>10mL
78	CCV-7,CCV,1	12/21/2017 2:32:08 AM	CCV
79	CCB-7,CCB,1	12/21/2017 2:47:26 AM	CCB

INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 12/19/2017

Initial Calibration:

Bromide	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.05	0.25	0.5	1.25	2.5	R^2
Area,mAU*min	0.0000	0.0046	0.0160	0.0327	0.0765	0.1579	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814D

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RLB 01/05/2018

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 12/19/2017

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0744	0.1486	0.2949	0.7826	1.6401	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.



01/05/2018

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 12/19/2017

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0529	0.2187	0.4526	1.1609	2.4307	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RLB 01/05/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID: **ICV**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2874439**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.218	0.50	1.250	0	97.4	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID: **CCV**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2874463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.226	0.50	1.250	0	98.1	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID: **CCV**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2874475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.251	0.50	1.250	0	100	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID: **CCV**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2874487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.235	0.50	1.250	0	98.8	90	110				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID: **CCV**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2874499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.225	0.50	1.250	0	98.0	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID: **CCV**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2874502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.273	0.50	1.250	0	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **ICV**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2875938**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.218	0.50	1.250	0	97.4	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCV**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2875940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.243	0.50	1.250	0	99.4	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCV**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2875944**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.238	0.50	1.250	0	99.0	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCV**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2875951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.260	0.50	1.250	0	101	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCV**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2875953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.240	0.50	1.250	0	99.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCV**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2875955**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.252	0.50	1.250	0	100	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCV**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/21/2017**	SeqNo: **2875966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.253	0.50	1.250	0	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **ICV**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2876110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.982	0.50	2.000	0	99.1	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCV**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2876112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.953	0.50	2.000	0	97.7	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCV**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2876116**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.932	0.50	2.000	0	96.6	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCV**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2876121**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.936	0.50	2.000	0	96.8	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCV**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2876130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.929	0.50	2.000	0	96.5	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCV**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2876137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.939	0.50	2.000	0	97.0	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCV**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/21/2017**	SeqNo: **2876139**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.951	0.50	2.000	0	97.5	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **ICV**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2876141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.950	0.50	4.000	0	98.8	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCV**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2876143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.933	0.50	4.000	0	98.3	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCV**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2876147**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.950	0.50	4.000	0	98.7	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCV**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2876153**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.936	0.50	4.000	0	98.4	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCV**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2876162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.883	0.50	4.000	0	97.1	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCV**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2876168**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.016	0.50	4.000	0	100	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCV**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/21/2017**	SeqNo: **2876171**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.015	0.50	4.000	0	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID: **ICB**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2874440**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID: **CCB**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2874464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID: **CCB**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2874476**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID: **CCB**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2874488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID: **CCB**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2874500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **120970**
Client ID: **CCB**	Batch ID: **R120970**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2874503**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **ICB**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2875939**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCB**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2875941**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCB**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2875945**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCB**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2875952**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCB**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2875954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCB**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2875956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCB**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/21/2017**	SeqNo: **2875967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **ICB**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2876111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCB**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2876113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCB**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2876117**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCB**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2876122**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCB**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2876131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCB**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2876138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCB**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/21/2017**	SeqNo: **2876140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **ICB**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2876142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCB**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2876144**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCB**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2876148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCB**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2876154**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCB**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2876163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCB**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2876169**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121006**
Client ID: **CCB**	Batch ID: **R121006**	TestNo: **EPA 300.0**		Analysis Date: **12/21/2017**	SeqNo: **2876172**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/19/2017

Sample Name		Retention Time	Evaluation
ICV	Bromide	5.804	
CCV-2	Bromide	5.810	
CCV-3	Bromide	5.810	
CCV-4	Bromide	5.807	
CCV-5	Bromide	5.807	
CCV-6	Bromide	5.803	
	Average	5.807	
	Applied RT Window	5.607 - 6.007	
LCS-R120970_BR	Bromide	5.810	PASS
MB-R120970_BR	Bromide	N.A.	N.A.
N027485-008DMS	Bromide	5.810	PASS
N027485-008DMSD	Bromide	5.810	PASS
N027523-001C	Bromide	5.807	PASS
N027523-001CMS	Bromide	5.813	PASS
N027523-002C	Bromide	5.810	PASS
N027523-002CDUP	Bromide	5.803	PASS
N027523-003C	Bromide	5.807	PASS
N027523-004C	Bromide	5.807	PASS
N027523-005E	Bromide	5.810	PASS
N027523-006D	Bromide	5.774	PASS
N027523-007D	Bromide	5.790	PASS
N027523-008D	Bromide	5.797	PASS

rba 12/27/2017

RLB 01/05/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/20/2017

Sample Name		Retention Time	Evaluation
CCV-1	Bromide	5.814	
CCV-2	Bromide	5.810	
CCV-3	Bromide	5.807	
CCV-4	Bromide	5.760	
CCV-5	Bromide	5.774	
CCV-6	Bromide	5.777	
	Average	5.790	
	Applied RT Window	5.590 - 5.990	
MB-R121006_BR	Bromide	N.A.	N.A.
LCS-R121006_BR	Bromide	5.810	PASS
N027523-012D	Bromide	5.807	PASS
N027523-009D	Bromide	5.804	PASS
N027523-012DDUP	Bromide	5.807	PASS
N027523-012DMS	Bromide	5.807	PASS
N027523-012DMSD	Bromide	5.810	PASS

rba 12/27/2017

RLB 01/05/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/20/2017

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	9.564	
CCV-2	Sulfate	9.564	
CCV-3	Sulfate	9.563	
CCV-4	Sulfate	9.390	
CCV-5	Sulfate	9.394	
CCV-6	Sulfate	9.397	
	Average	9.479	
	Applied RT Window	9.279 - 9.679	
MB-R121006_SO4	Sulfate	N.A.	N.A.
LCS-R121006_SO4	Sulfate	9.567	PASS
N027523-002C	Sulfate	9.564	PASS
N027523-003C	Sulfate	9.564	PASS
N027523-003CDUP	Sulfate	9.560	PASS
N027523-003CMS	Sulfate	9.567	PASS
N027523-003CMSD	Sulfate	9.567	PASS
N027523-002CMS	Sulfate	9.564	PASS
N027523-001C	Sulfate	9.567	PASS
N027523-004C	Sulfate	9.433	PASS
N027523-005E	Sulfate	9.400	PASS
N027523-006D	Sulfate	9.424	PASS
N027523-007D	Sulfate	9.423	PASS
N027523-008D	Sulfate	9.420	PASS
N027523-009D	Sulfate	9.420	PASS
N027523-012D	Sulfate	9.394	PASS

rba 12/27/2017

RLB 01/05/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/20/2017

Sample Name		Retention Time	Evaluation
CCV-1	Chloride	4.247	
CCV-2	Chloride	4.247	
CCV-3	Chloride	4.243	
CCV-4	Chloride	4.213	
CCV-5	Chloride	4.227	
CCV-6	Chloride	4.230	

Average 4.235

Applied RT Window 4.035 - 4.435

MB-R121006_CL	Chloride	N.A.	N.A.
LCS-R121006_CL	Chloride	4.247	PASS
N027523-002C	Chloride	4.247	PASS
N027523-003C	Chloride	4.247	PASS
N027523-003CDUP	Chloride	4.243	PASS
N027523-003CMS	Chloride	4.247	PASS
N027523-003CMSD	Chloride	4.247	PASS
N027523-002CMS	Chloride	4.247	PASS
N027523-001C	Chloride	4.243	PASS
N027523-004C	Chloride	4.243	PASS
N027523-005E	Chloride	4.227	PASS
N027523-006D	Chloride	4.227	PASS
N027523-007D	Chloride	4.227	PASS
N027523-008D	Chloride	4.227	PASS
N027523-009D	Chloride	4.230	PASS
N027523-012D	Chloride	4.230	PASS

rba 12/27/2017

RLB 01/05/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 5/23/2017 ; 5/24/2017; 5/25/2017
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Datafile	170523A D36	170523A D37	170523A D38	170524A D17	170524A D18	170525A D45	170525A D46					
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**MDL**	**LOD**	**PQL**
Fluoride	0.020	0.022	0.021	0.020	0.023	0.026	0.024	0.020	0.0021	**0.0065**	0.020	0.10
Chloride	0.133	0.136	0.136	0.133	0.141	0.133	0.136	0.025	0.0029	**0.0091**	0.020	0.50
Nitrite	0.030	0.028	0.027	0.028	0.028	0.027	0.027	0.020	0.0010	**0.0030**	0.010	0.05
Bromide	0.037	0.042	0.043	0.038	0.040	0.032	0.025	0.040	0.0062	**0.0196**	0.040	0.20
Nitrate	0.035	0.034	0.033	0.033	0.033	0.031	0.030	0.020	0.0016	**0.0050**	0.010	0.05
Phosphate	0.047	0.051	0.049	0.046	0.052	0.047	0.059	0.040	0.0043	**0.0135**	0.030	0.10
Sulfate	0.213	0.199	0.208	0.216	0.199	0.201	0.198	0.050	0.0073	**0.0229**	0.050	0.50

MDL/LOD & PQL Verification 2017

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)** Matrix: **WATER**
Method Number: EPA Method 300.0 Unit: mg/L
Analysis Date(s): 5/26/2017
Analyst: Ria Abes

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0065**	0.020	0.024	0.10	0.0906	**91**
Chloride	**0.0091**	0.020	0.130	0.50	0.5635	**113**
Nitrite	**0.0030**	0.010	0.023	0.05	0.0581	**116**
Bromide	**0.0196**	0.040	0.048	0.20	0.194	**97**
Nitrate	**0.0050**	0.010	0.023	0.05	0.0599	**120**
Phosphate	**0.0135**	0.030	0.043	0.10	0.1111	**111**
Sulfate	**0.0229**	0.050	0.195	0.50	0.6178	**124**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121037 **Analyst:** QBM

ASSET #: N027485, N027523, N027524, N027546 **Date Analyzed:** 12/22/2017

Method: **4500_NO3**

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 1/5/2018

2nd Level Reviewer RJB 01/05/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N027523-005D**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.6869	*	5
	=	3.4345	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 3.4 mg/L

RLB 01/05/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

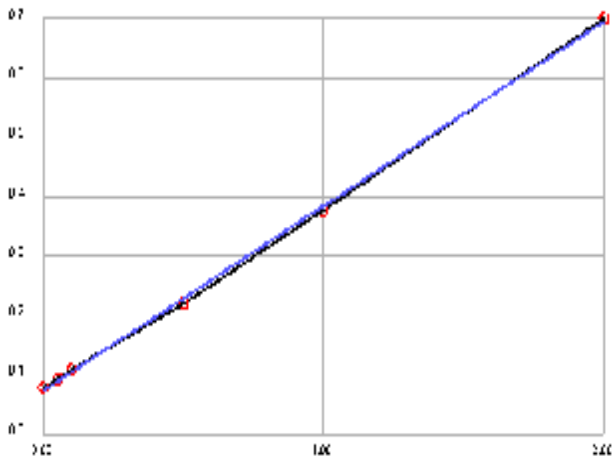
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.31x + 0.0754
Correlation	.99967

Calibrant	Energy	Set	Conc
1	0.0791	0.0000	0.0121
2	0.0937	0.0500	0.0592
3	0.1102	0.1000	0.1124
4	0.2213	0.5000	0.4708
5	0.3786	1.0000	0.9782
6	0.7007	2.0000	2.0173

Notes:

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **ICV**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877834**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.474	0.050	0.5000	0	94.9	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **CCV**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.502	0.050	0.5000	0	100	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **CCV**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.461	0.050	0.5000	0	92.2	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **CCV**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877867**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.457	0.050	0.5000	0	91.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **ICB**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **CCB**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **CCB**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877857**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **CCB**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 12-22-2017 16:49
Time end: 12-22-2017 19:51

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	19:08:19	0.0088		0.0781
2	<BLANK>	19:09:19	0.0085		0.0780
3	<CAL1>	19:10:14	0.0121	[0]	0.0791
4	<CAL2>	19:11:15	0.0592	[0.05]	0.0937
5	<CAL3>	19:12:11	0.1124	[0.1]	0.1102
6	<CAL4>	19:13:05	0.4708	[0.5]	0.2213
7	<CAL5>	19:14:06	0.9782	[1]	0.3786
8	<CAL6>	19:15:02	2.0173	[2]	0.7007
9	,BLANK,BLANK,1, NOT REPORTED	19:16:02	0.0450		0.0893
10	,ICV,ICV,1,	19:16:57	0.4743		0.2224
11	,ICB,ICB,1,	19:17:53	0.0105		0.0786
12	,MB-H2O,MBLK,1,	19:18:48	0.0150		0.0800
13	,LCS-H2O,LCS,1,	19:19:48	0.4760		0.2229
14	,N027485-012D,SAMP,20,	19:20:44	0.9979		0.3847
15	,N027523-005D,SAMP,5,	19:21:39	0.6869		0.2883
16	,N027523-005DMS,MS,5,	19:22:39	1.2063		0.4493
17	,N027523-005DMSD,MSD,5,	19:23:35	1.1557		0.4336
18	,N027523-008C,SAMP,1,	19:24:37	1.2044		0.4487
19	,N027523-008CDUP,DUP,1,	19:25:32	1.3125		0.4822
20	,BLANK, NOT REPORTED	19:26:26	0.0414		0.0882
21	,CCV-1,CCV,1, NOT REPORTED	19:27:28	0.5050		0.2319
22	,CCV-1,CCV,1,	19:28:23	0.5018		0.2309
23	,CCB-1,CCB,1,	19:29:25	0.0188		0.0812
24	,N027523-009C,SAMP,1,	19:30:19	0.0498		0.0908
25	,N027523-012C,SAMP,1,	19:31:14	0.4573		0.2171
26	,N027524-001C,SAMP,5,	19:32:16	0.6095		0.2643

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N027524-002C,SAMP,5,	19:33:10	0.7137		0.2966
28	,N027524-003C,SAMP,5,	19:34:05	0.5166		0.2355
29	,N027524-004C,SAMP,5,	19:35:07	0.5531		0.2468
30	,N027524-005C,SAMP,5,	19:35:49	0.5589		0.2486
31	,N027524-006C,SAMP,5,	19:36:39	0.5353		0.2413
32	,BLANK, NOT REPORTED	19:37:22	0.0101		0.0785
33	,CCV-2,CCV,1,	19:38:10	0.4611		0.2183
34	,CCV-2,CCV,1, NOT REPORTED	19:38:54	0.4472		0.2140
35	,CCB-2,CCB,1,	19:39:36	0.0017		0.0759
36	,N027524-007C,SAMP,5,	19:40:25	0.5202		0.2366
37	,N027524-008C,SAMP,5,	19:41:07	0.4763		0.2230
38	,N027524-009C,SAMP,5,	19:41:51	0.3814		0.1936
39	,N027524-010C,SAMP,5,	19:42:41	0.5160		0.2353
40	,N027524-011C,SAMP,5,	19:43:23	0.5011		0.2307
41	,N027524-012C,SAMP,5,	19:44:06	0.5089		0.2331
42	,N027524-013C,SAMP,5,	19:44:54	0.5389		0.2424
43	,N027546-001C,SAMP,20,	19:45:37	0.7889		0.3199
44	,N027546-002C,SAMP,20,	19:46:19	0.7511		0.3082
45	,BLANK, NOT REPORTED	19:47:09	-0.0008		0.0751
46	,CCV-3,CCV,1,	19:47:51	0.4569		0.2170
47	,CCV-3,CCV,1, NOT REPORTED	19:48:34	0.4363		0.2106
48	,CCB-3,CCB,1,	19:49:23	-0.0128		0.0714

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 12/22/2017
Time Analyzed: 4:44 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171220B
Color reagent: R171220C
2% Copper Sulfate: R171220A
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027485-012D		8.02							
N027523-005D		7.85							
N027523-008C		8.35							
N027523-009C		7.83							
N027523-012C		6.43							
N027524-001C		7.81							
N027524-002C		8.31							
N027524-003C		8.30							
N027524-004C		7.89							
N027524-005C		8.24							
N027524-006C		8.11							
N027524-007C		7.95							
N027524-008C		8.02							
N027524-009C		7.7							
N027524-010C		8.19							
N027524-011C		7.90							
N027524-012C		7.39							
N027524-013C		6.76							
N027546-001C		8.24							
N027546-002C		7.47							

Advanced Technology Laboratories, Inc.
Book # 1

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66042
ASSET #: N027523

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/19/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)		X			X	
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of Ca in LLCCV2 failed, bias high. However Ca has high concentration, thus reported.
%Rec of Ca in N027485-001B MS/MSD failed. However LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/5/18

2nd Level Reviewer 01/05/2018 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66081
ASSET #: N027523

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/19/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.		X			X	
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X			X	
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For N027523-009B & 012B run only.
%Rec of Ca, Fe & Mg in N027523-009B PSMS/MSD failed. However LCS passed criteria.
Dilution test failed for B, Fe & Mg.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/5/18

2nd Level Reviewer 01/05/2018 Date: ____

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66042
ASSET #: N027523

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/22/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		X
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		X
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X			X	
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For K & Na run only.
%Rec of Na in N027485-002B PS/MS/MSD failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed	✓		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/5/18
2nd Level Reviewer 01/05/2018 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66081
ASSET #: N027523

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 1/3/2018

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		X
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		X
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X			X	
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For Na run only.
For N027523-009B & 012B only.
%Rec of Na in N027523-012B PS/MS/MSD failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/5/18

2nd Level Reviewer 01/05/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Boron concentration, in ug/L , in the original sample as follows:

Boron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N027523-001B** , the concentration ir ug/L is calculated as follows:

Boron , ug/L = 0.29678 * 1 * (25/25) * 1000

Boron , ug/L = 296.78

Reporting results in two significant figures,

Boron , ug/L = 300

% RSD SUMMARY

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	B	0	0.26	15	PASS
Standard1	ICAL	1	B	0.1	1.13	15	PASS
Standard3	ICAL	1	B	1	1.19	15	PASS
Standard4	ICAL	1	B	2.5	0.29	15	PASS
Standard5	ICAL	1	B	3.75	0.44	15	PASS
Standard6	ICAL	1	B	5	0.45	15	PASS
Standard7	ICAL	1	B	10	0.59	15	PASS
ICV	ICV	1	B	5.1	0.28	15	PASS
ICB	ICB	1	B	0.032	8.5	15	PASS
LLICV	CCV1	1	B	0.11	1.62	20	PASS
ICSA1	ICSA	1	B	0.088	1.47	15	PASS
ICSAB1	ICSAB	1	B	1.17	0.43	15	PASS
CCV1	CCV	1	B	5.077	0.44	15	PASS
CCB1	CCB	1	B	0.041	16.48	15	<PQL
CCB1	CCB	1	B	0.013	11.56	15	PASS
CCV2	CCV	1	B	4.92	0.23	15	PASS
CCB2	CCB	1	B	0.031	17.11	15	<PQL
CCV3	CCV	1	B	5.2	0.21	15	PASS
CCB3	CCB	1	B	0.058	12.023	15	PASS
CCB3	CCB	1	B	0.021	7.91	15	PASS
MB-66042	MBLK	1	B	0.012	11.98	15	PASS
LCS1-66042	LCS	1	B	4.66	0.84	15	PASS
CCV4	CCV	1	B	4.9	0.63	15	PASS
CCB4	CCB	1	B	0.0098	9.57	15	PASS
LLCCV1	CCV2	1	B	0.098	1.19	20	PASS
ICSA2	ICSA	1	B	0.084	1.79	15	PASS
ICSAB2	ICSAB	1	B	1.18	0.47	15	PASS
N027485-001B	SAMP	1	B	0.62	0.13	15	PASS
N027485-001B	SAMP	5	B	0.13	0.97	15	PASS
N027485-001B-PS	PS	1	B	5.38	0.69	15	PASS
N027485-001B-MS1	MS	1	B	5.4	0.41	15	PASS
N027485-001B-MSD1	MSD	1	B	5.44	0.6	15	PASS
N027485-002B	SAMP	1	B	1.53	0.48	15	PASS
N027485-003B	SAMP	1	B	1.43	0.64	15	PASS
N027485-004B	SAMP	1	B	1.65	0.75	15	PASS
N027485-005B	SAMP	1	B	2.46	0.32	15	PASS
N027485-006B	SAMP	1	B	2.34	0.65	15	PASS
CCV5	CCV	1	B	5.13	0.54	15	PASS
CCB5	CCB	1	B	0.031	4.82	15	PASS
N027485-007B	SAMP	1	B	2.27	0.77	15	PASS
N027485-008B	SAMP	1	B	0.17	1.38	15	PASS
N027485-009B	SAMP	1	B	1.16	0.56	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027485-010B	SAMP	1	B	1.023	0.66	15	PASS
N027485-011C	SAMP	1	B	1.023	0.89	15	PASS
N027485-012C	SAMP	1	B	0.99	0.42	15	PASS
N027523-001B	SAMP	1	B	0.3	0.33	15	PASS
N027523-002B	SAMP	1	B	0.31	0.53	15	PASS
N027523-003B	SAMP	1	B	0.22	0.18	15	PASS
N027523-004B	SAMP	1	B	0.21	0.83	15	PASS
CCV6	CCV	1	B	4.93	0.59	15	PASS
CCB6	CCB	1	B	0.036	56.96	15	<PQL
N027523-005C	SAMP	1	B	0.79	4.079	15	PASS
N027523-006C	SAMP	1	B	1.32	0.1	15	PASS
N027523-007C	SAMP	1	B	1.37	0.6	15	PASS
N027523-008B	SAMP	1	B	0.73	0.39	15	PASS
MB-66081	MBLK	1	B	0.0046	15.62	15	<PQL
LCS1-66081	LCS	1	B	4.57	0.91	15	PASS
CCV7	CCV	1	B	4.81	0.42	15	PASS
CCB7	CCB	1	B	0.028	6.54	15	PASS
N027523-009B	SAMP	1	B	2.57	1.13	15	PASS
N027523-009B	SAMP	5	B	0.57	0.4	15	PASS
N027523-009B-PS	PS	1	B	7.36	0.97	15	PASS
N027523-009B-MS1	MS	1	B	7.48	1.037	15	PASS
N027523-009B-MSD1	MSD	1	B	7.52	0.66	15	PASS
N027523-012B	SAMP	1	B	4.86	0.52	15	PASS
N027546-001B	SAMP	1	B	1.65	0.8	15	PASS
N027546-002B	SAMP	1	B	1.55	0.36	15	PASS
N027546-003B	SAMP	1	B	0.86	0.47	15	PASS
N027546-004B	SAMP	1	B	2.19	0.54	15	PASS
CCV8	CCV	1	B	4.97	0.8	15	PASS
CCB8	CCB	1	B	0.032	9.49	15	PASS
LLCCV2	CCV2	1	B	0.1	3.18	20	PASS
ICSA3	ICSA	1	B	0.086	0.97	15	PASS
ICSAB3	ICSAB	1	B	1.15	0.53	15	PASS
N027546-005B	SAMP	1	B	2.25	0.54	15	PASS
N027546-006B	SAMP	1	B	0.33	0.44	15	PASS
N027546-007B	SAMP	1	B	0.96	0.63	15	PASS
N027546-008B	SAMP	1	B	1.75	0.3	15	PASS
N027546-009B	SAMP	1	B	1.82	0.28	15	PASS
N027546-010B	SAMP	1	B	1.33	0.54	15	PASS
CCV9	CCV	1	B	4.87	0.67	15	PASS
CCB9	CCB	1	B	0.025	10.58	15	PASS
CCV10	CCV	1	B	4.82	0.81	15	PASS
CCB10	CCB	1	B	0.035	8.23	15	PASS

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Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV11	CCV	1	B	4.74	0.42	15	PASS
CCB11	CCB	1	B	0.046	7.74	15	PASS
CCB11	CCB	1	B	0.019	5.52	15	PASS
CCV12	CCV	1	B	4.85	0.53	15	PASS
CCB12	CCB	1	B	0.024	7.59	15	PASS
LLCCV3	CCV2	1	B	0.1	3.0087	20	PASS
ICSA4	ICSA	1	B	0.09	1.081	15	PASS
ICSAB4	ICSAB	1	B	1.13	0.64	15	PASS
N027485-002B	SAMP	5	B	0.34	0.22	15	PASS
N027485-003B	SAMP	5	B	0.32	0.25	15	PASS
CCV13	CCV	1	B	4.89	1.000094	15	PASS
CCB13	CCB	1	B	0.031	9.85	15	PASS
N027485-010B	SAMP	5	B	0.25	0.76	15	PASS
N027523-009B	SAMP	25	B	0.11	1.35	15	PASS
N027523-009B-PS	PS	5	B	1.56	0.69	15	PASS
N027523-009B-MS1	MS	5	B	1.65	0.29	15	PASS
N027523-009B-MSD1	MSD	5	B	1.66	0.61	15	PASS
CCV14	CCV	1	B	4.96	0.56	15	PASS
CCB14	CCB	1	B	0.027	1.84	15	PASS
CCV15	CCV	1	B	4.83	0.61	15	PASS
CCB15	CCB	1	B	0.029	4.2	15	PASS
CCV16	CCV	1	B	4.8	0.77	15	PASS
CCB16	CCB	1	B	0.047	12.42	15	PASS
CCB16	CCB	1	B	0.02	4.068	15	PASS
CCV17	CCV	1	B	5.24	1.23	15	PASS
CCB17	CCB	1	B	0.06	11.74	15	PASS
LLCCV4	CCV2	1	B	0.12	1.54	20	PASS
LLCCV4	CCV2	1	B	0.079	0.74	20	PASS
ICSA5	ICSA	1	B	0.085	1.33	15	PASS
ICSAB5	ICSAB	1	B	1.22	0.32	15	PASS
ICSAB5	ICSAB	1	B	1.022	2.62	15	PASS
CalBlk	IBLK	1	Ca	0	4.61	15	PASS
Standard1	ICAL	1	Ca	0.2	11.24	15	PASS
Standard2	ICAL	1	Ca	1	4.85	15	PASS
Standard3	ICAL	1	Ca	2	2.89	15	PASS
Standard4	ICAL	1	Ca	5	0.84	15	PASS
Standard5	ICAL	1	Ca	7.5	0.92	15	PASS
Standard6	ICAL	1	Ca	10	0.58	15	PASS
Standard7	ICAL	1	Ca	20	0.33	15	PASS
ICV	ICV	1	Ca	10.1	0.16	15	PASS
ICB	ICB	1	Ca	0.025	67.56	15	<PQL
LLICV	CCV1	1	Ca	0.23	11.41	20	PASS

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Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
ICSA1	ICSA	1	Ca	506.49	0.09	15	PASS
ICSAB1	ICSAB	1	Ca	555.54	0.11	15	PASS
CCV1	CCV	1	Ca	10.087	0.51	15	PASS
CCB1	CCB	1	Ca	-0.021	131.14	15	<PQL
CCB1	CCB	1	Ca	0.033	27.36	15	<PQL
CCV2	CCV	1	Ca	9.9	0.58	15	PASS
CCB2	CCB	1	Ca	0.0035	666.54	15	<PQL
CCV3	CCV	1	Ca	10.16	0.48	15	PASS
CCB3	CCB	1	Ca	0.00041	7555.71	15	<PQL
CCB3	CCB	1	Ca	0.018	110.92	15	<PQL
MB-66042	MBLK	1	Ca	0.04	46.33	15	<PQL
LCS1-66042	LCS	1	Ca	9.55	1.041	15	PASS
CCV4	CCV	1	Ca	9.88	0.11	15	PASS
CCB4	CCB	1	Ca	0.029	117.34	15	<PQL
LLCCV1	CCV2	1	Ca	0.22	13.79	20	PASS
ICSA2	ICSA	1	Ca	511.76	0.092	15	PASS
ICSAB2	ICSAB	1	Ca	558.43	0.18	15	PASS
N027485-001B	SAMP	1	Ca	99.23	0.15	15	PASS
N027485-001B	SAMP	5	Ca	21.24	0.78	15	PASS
N027485-001B-PS	PS	1	Ca	108.19	0.14	15	PASS
N027485-001B-MS1	MS	1	Ca	114.17	0.47	15	PASS
N027485-001B-MSD1	MSD	1	Ca	114.59	0.17	15	PASS
N027485-002B	SAMP	1	Ca	647.7	0.099	15	PASS
N027485-003B	SAMP	1	Ca	637.56	0.11	15	PASS
N027485-004B	SAMP	1	Ca	302.46	0.36	15	PASS
N027485-005B	SAMP	1	Ca	345.32	0.12	15	PASS
N027485-006B	SAMP	1	Ca	388.7	0.11	15	PASS
CCV5	CCV	1	Ca	10.35	0.77	15	PASS
CCB5	CCB	1	Ca	0.0066	281.14	15	<PQL
N027485-007B	SAMP	1	Ca	385.16	0.15	15	PASS
N027485-008B	SAMP	1	Ca	373.35	0.42	15	PASS
N027485-009B	SAMP	1	Ca	41.69	0.18	15	PASS
N027485-010B	SAMP	1	Ca	472.13	0.07	15	PASS
N027485-011C	SAMP	1	Ca	159	0.39	15	PASS
N027485-012C	SAMP	1	Ca	154.7	0.16	15	PASS
N027523-001B	SAMP	1	Ca	102.2	0.7	15	PASS
N027523-002B	SAMP	1	Ca	27.26	0.96	15	PASS
N027523-003B	SAMP	1	Ca	58.095	0.18	15	PASS
N027523-004B	SAMP	1	Ca	83.54	0.5	15	PASS
CCV6	CCV	1	Ca	10.068	0.64	15	PASS
CCB6	CCB	1	Ca	-0.02	390.28	15	<PQL
N027523-005C	SAMP	1	Ca	125.45	0.12	15	PASS

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Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027523-006C	SAMP	1	Ca	310.04	0.26	15	PASS
N027523-007C	SAMP	1	Ca	331.86	0.072	15	PASS
N027523-008B	SAMP	1	Ca	161.93	0.058	15	PASS
MB-66081	MBLK	1	Ca	0.058	25.42	15	<PQL
LCS1-66081	LCS	1	Ca	9.35	1.23	15	PASS
CCV7	CCV	1	Ca	9.85	0.94	15	PASS
CCB7	CCB	1	Ca	0.031	61.44	15	<PQL
N027523-009B	SAMP	1	Ca	907.22	0.15	15	PASS
N027523-009B	SAMP	5	Ca	177.47	0.3	15	PASS
N027523-009B-PS	PS	1	Ca	899.1	0.47	15	PASS
N027523-009B-MS1	MS	1	Ca	943.25	0.15	15	PASS
N027523-009B-MSD1	MSD	1	Ca	947.11	0.089	15	PASS
N027523-012B	SAMP	1	Ca	255.94	0.25	15	PASS
N027546-001B	SAMP	1	Ca	315.25	0.43	15	PASS
N027546-002B	SAMP	1	Ca	298.79	0.16	15	PASS
N027546-003B	SAMP	1	Ca	148.09	0.091	15	PASS
N027546-004B	SAMP	1	Ca	400.47	0.3	15	PASS
CCV8	CCV	1	Ca	10.064	0.5	15	PASS
CCB8	CCB	1	Ca	0.048	44.45	15	<PQL
LLCCV2	CCV2	1	Ca	0.27	8.72	20	PASS
ICSA3	ICSA	1	Ca	497.08	0.11	15	PASS
ICSAB3	ICSAB	1	Ca	543.69	0.18	15	PASS
N027546-005B	SAMP	1	Ca	388.06	0.13	15	PASS
N027546-006B	SAMP	1	Ca	148.39	0.53	15	PASS
N027546-007B	SAMP	1	Ca	359.81	0.035	15	PASS
N027546-008B	SAMP	1	Ca	394.19	0.68	15	PASS
N027546-009B	SAMP	1	Ca	407.77	0.36	15	PASS
N027546-010B	SAMP	1	Ca	388.8	0.22	15	PASS
CCV9	CCV	1	Ca	10.13	0.85	15	PASS
CCB9	CCB	1	Ca	0.061	16.2	15	<PQL
CCV10	CCV	1	Ca	9.92	0.49	15	PASS
CCB10	CCB	1	Ca	0.063	30.0053	15	<PQL
CCV11	CCV	1	Ca	9.66	0.31	15	PASS
CCB11	CCB	1	Ca	0.049	17.31	15	<PQL
CCB11	CCB	1	Ca	0.053	25.75	15	<PQL
CCV12	CCV	1	Ca	9.88	0.73	15	PASS
CCB12	CCB	1	Ca	0.055	96.22	15	<PQL
LLCCV3	CCV2	1	Ca	0.26	4.53	20	PASS
ICSA4	ICSA	1	Ca	489.73	0.39	15	PASS
ICSAB4	ICSAB	1	Ca	536.67	0.25	15	PASS
N027485-002B	SAMP	5	Ca	126.31	0.39	15	PASS
N027485-003B	SAMP	5	Ca	125.36	0.21	15	PASS

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Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV13	CCV	1	Ca	9.81	0.84	15	PASS
CCB13	CCB	1	Ca	0.061	71.21	15	<PQL
N027485-010B	SAMP	5	Ca	96.62	0.39	15	PASS
N027523-009B	SAMP	25	Ca	35.48	0.15	15	PASS
N027523-009B-PS	PS	5	Ca	181.45	0.17	15	PASS
N027523-009B-MS1	MS	5	Ca	195.86	0.27	15	PASS
N027523-009B-MSD1	MSD	5	Ca	196.09	0.23	15	PASS
CCV14	CCV	1	Ca	10.006	0.81	15	PASS
CCB14	CCB	1	Ca	0.021	202	15	<PQL
CCV15	CCV	1	Ca	9.48	0.87	15	PASS
CCB15	CCB	1	Ca	0.038	117.27	15	<PQL
CCV16	CCV	1	Ca	9.47	0.34	15	PASS
CCB16	CCB	1	Ca	0.0024	667.76	15	<PQL
CCB16	CCB	1	Ca	0.044	46.61	15	<PQL
CCV17	CCV	1	Ca	10.46	0.51	15	PASS
CCB17	CCB	1	Ca	-0.019	142.64	15	<PQL
LLCCV4	CCV2	1	Ca	0.27	10.024	20	PASS
LLCCV4	CCV2	1	Ca	0.16	3.77	20	PASS
ICSA5	ICSA	1	Ca	511.39	0.15	15	PASS
ICSAB5	ICSAB	1	Ca	561.62	0.28	15	PASS
ICSAB5	ICSAB	1	Ca	464.82	0.11	15	PASS
CalBlk	IBLK	1	Fe	0	4.28	15	PASS
Standard1	ICAL	1	Fe	0.02	0.87	15	PASS
Standard2	ICAL	1	Fe	0.05	0.44	15	PASS
Standard3	ICAL	1	Fe	2	0.44	15	PASS
Standard4	ICAL	1	Fe	5	0.75	15	PASS
Standard5	ICAL	1	Fe	7.5	0.33	15	PASS
Standard6	ICAL	1	Fe	10	1.027	15	PASS
Standard7	ICAL	1	Fe	20	0.18	15	PASS
ICV	ICV	1	Fe	10.27	0.25	15	PASS
ICB	ICB	1	Fe	0.00026	186.27	15	<PQL
LLICV	CCV1	1	Fe	0.022	2.86	20	PASS
ICSA1	ICSA	1	Fe	179.79	0.53	15	PASS
ICSAB1	ICSAB	1	Fe	187.59	0.075	15	PASS
CCV1	CCV	1	Fe	10.069	0.16	15	PASS
CCB1	CCB	1	Fe	-0.00017	84.95	15	<PQL
CCB1	CCB	1	Fe	0.00077	31.18	15	<PQL
CCV2	CCV	1	Fe	9.77	0.13	15	PASS
CCB2	CCB	1	Fe	0.0002	102.016	15	<PQL
CCV3	CCV	1	Fe	10.41	0.3	15	PASS
CCB3	CCB	1	Fe	-0.00038	191.48	15	<PQL
CCB3	CCB	1	Fe	-0.00056	180.67	15	<PQL

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Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
MB-66042	MBLK	1	Fe	-0.00016	824.59	15	<PQL
LCS1-66042	LCS	1	Fe	0.11	0.54	15	PASS
CCV4	CCV	1	Fe	9.84	0.095	15	PASS
CCB4	CCB	1	Fe	-0.00024	315.41	15	<PQL
LLCCV1	CCV2	1	Fe	0.023	3.26	20	PASS
ICSA2	ICSA	1	Fe	181.78	0.087	15	PASS
ICSAB2	ICSAB	1	Fe	188.99	0.08	15	PASS
N027485-001B	SAMP	1	Fe	0.037	0.43	15	PASS
N027485-001B	SAMP	5	Fe	0.0063	9.21	15	PASS
N027485-001B-PS	PS	1	Fe	0.14	0.87	15	PASS
N027485-001B-MS1	MS	1	Fe	0.13	0.68	15	PASS
N027485-001B-MSD1	MSD	1	Fe	0.13	0.29	15	PASS
N027485-002B	SAMP	1	Fe	0.0032	18.95	15	<PQL
N027485-003B	SAMP	1	Fe	0.11	0.31	15	PASS
N027485-004B	SAMP	1	Fe	0.0079	3.9	15	PASS
N027485-005B	SAMP	1	Fe	0.013	2.35	15	PASS
N027485-006B	SAMP	1	Fe	0.013	4.51	15	PASS
CCV5	CCV	1	Fe	10.61	0.8	15	PASS
CCB5	CCB	1	Fe	-0.00035	70.82	15	<PQL
N027485-007B	SAMP	1	Fe	0.015	3.65	15	PASS
N027485-008B	SAMP	1	Fe	0.014	3.86	15	PASS
N027485-009B	SAMP	1	Fe	0.016	1.31	15	PASS
N027485-010B	SAMP	1	Fe	0.23	0.51	15	PASS
N027485-011C	SAMP	1	Fe	0.099	0.88	15	PASS
N027485-012C	SAMP	1	Fe	0.11	0.79	15	PASS
N027523-001B	SAMP	1	Fe	0.18	0.4	15	PASS
N027523-002B	SAMP	1	Fe	1.45	0.81	15	PASS
N027523-003B	SAMP	1	Fe	0.03	0.9	15	PASS
N027523-004B	SAMP	1	Fe	0.038	0.85	15	PASS
CCV6	CCV	1	Fe	9.94	0.081	15	PASS
CCB6	CCB	1	Fe	-0.00036	570.094	15	<PQL
N027523-005C	SAMP	1	Fe	0.036	1.28	15	PASS
N027523-006C	SAMP	1	Fe	0.038	1.4	15	PASS
N027523-007C	SAMP	1	Fe	0.017	2.28	15	PASS
N027523-008B	SAMP	1	Fe	0.026	1.1	15	PASS
MB-66081	MBLK	1	Fe	0.0004	41.095	15	<PQL
LCS1-66081	LCS	1	Fe	0.1	0.68	15	PASS
CCV7	CCV	1	Fe	9.65	0.12	15	PASS
CCB7	CCB	1	Fe	-0.00011	510.0072	15	<PQL
N027523-009B	SAMP	1	Fe	1.28	0.57	15	PASS
N027523-009B	SAMP	5	Fe	0.32	0.24	15	PASS
N027523-009B-PS	PS	1	Fe	1.42	0.42	15	PASS

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Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027523-009B-MS1	MS	1	Fe	1.48	0.49	15	PASS
N027523-009B-MSD1	MSD	1	Fe	1.48	0.61	15	PASS
N027523-012B	SAMP	1	Fe	0.039	1.31	15	PASS
N027546-001B	SAMP	1	Fe	0.0072	4.41	15	PASS
N027546-002B	SAMP	1	Fe	0.008	12.11	15	PASS
N027546-003B	SAMP	1	Fe	0.017	1.84	15	PASS
N027546-004B	SAMP	1	Fe	0.018	6.68	15	PASS
CCV8	CCV	1	Fe	10.27	0.49	15	PASS
CCB8	CCB	1	Fe	0.0003	205.79	15	<PQL
LLCCV2	CCV2	1	Fe	0.023	0.9	20	PASS
ICSA3	ICSA	1	Fe	176.99	0.26	15	PASS
ICSAB3	ICSAB	1	Fe	184.65	0.061	15	PASS
N027546-005B	SAMP	1	Fe	0.094	0.8	15	PASS
N027546-006B	SAMP	1	Fe	0.048	1.72	15	PASS
N027546-007B	SAMP	1	Fe	0.015	5.36	15	PASS
N027546-008B	SAMP	1	Fe	0.037	1.16	15	PASS
N027546-009B	SAMP	1	Fe	0.039	1.05	15	PASS
N027546-010B	SAMP	1	Fe	0.22	1.28	15	PASS
CCV9	CCV	1	Fe	10.19	0.37	15	PASS
CCB9	CCB	1	Fe	0.00067	27.46	15	<PQL
CCV10	CCV	1	Fe	10.15	0.17	15	PASS
CCB10	CCB	1	Fe	0.00061	54.82	15	<PQL
CCV11	CCV	1	Fe	9.7	0.18	15	PASS
CCB11	CCB	1	Fe	0.00057	19.74	15	<PQL
CCB11	CCB	1	Fe	0.00089	115.74	15	<PQL
CCV12	CCV	1	Fe	10.18	0.8	15	PASS
CCB12	CCB	1	Fe	0.0005	8.21	15	PASS
LLCCV3	CCV2	1	Fe	0.024	1.89	20	PASS
ICSA4	ICSA	1	Fe	175.82	1.053	15	PASS
ICSAB4	ICSAB	1	Fe	183.95	0.15	15	PASS
N027485-002B	SAMP	5	Fe	0.0013	47.22	15	<PQL
N027485-003B	SAMP	5	Fe	0.026	1.33	15	PASS
CCV13	CCV	1	Fe	10.15	0.56	15	PASS
CCB13	CCB	1	Fe	0.0011	103.41	15	<PQL
N027485-010B	SAMP	5	Fe	0.05	2.24	15	PASS
N027523-009B	SAMP	25	Fe	0.064	1.05	15	PASS
N027523-009B-PS	PS	5	Fe	0.33	0.28	15	PASS
N027523-009B-MS1	MS	5	Fe	0.36	0.27	15	PASS
N027523-009B-MSD1	MSD	5	Fe	0.36	0.96	15	PASS
CCV14	CCV	1	Fe	10.17	0.018	15	PASS
CCB14	CCB	1	Fe	-0.00054	87.53	15	<PQL
CCV15	CCV	1	Fe	9.94	0.59	15	PASS

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Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB15	CCB	1	Fe	-0.0011	9.77	15	PASS
CCV16	CCV	1	Fe	9.92	0.5	15	PASS
CCB16	CCB	1	Fe	0.00074	80.4	15	<PQL
CCB16	CCB	1	Fe	-0.0007	36.19	15	<PQL
CCV17	CCV	1	Fe	10.91	0.67	15	PASS
CCB17	CCB	1	Fe	-0.00067	75.16	15	<PQL
LLCCV4	CCV2	1	Fe	0.025	2.86	20	PASS
LLCCV4	CCV2	1	Fe	0.017	5.58	20	PASS
ICSA5	ICSA	1	Fe	187.83	0.26	15	PASS
ICSAB5	ICSAB	1	Fe	196.9	0.18	15	PASS
ICSAB5	ICSAB	1	Fe	200.61	1.075	15	PASS
CalBlk	IBLK	1	Mg	0	3.29	15	PASS
Standard1	ICAL	1	Mg	0.1	0.36	15	PASS
Standard2	ICAL	1	Mg	1	0.34	15	PASS
Standard3	ICAL	1	Mg	2	0.47	15	PASS
Standard4	ICAL	1	Mg	5	0.56	15	PASS
Standard5	ICAL	1	Mg	7.5	0.35	15	PASS
Standard6	ICAL	1	Mg	10	1.06	15	PASS
Standard7	ICAL	1	Mg	20	0.26	15	PASS
ICV	ICV	1	Mg	10.26	0.12	15	PASS
ICB	ICB	1	Mg	-0.00057	102.75	15	<PQL
LLICV	CCV1	1	Mg	0.1	1.00022	20	PASS
ICSA1	ICSA	1	Mg	475.94	0.47	15	PASS
ICSAB1	ICSAB	1	Mg	503.56	0.34	15	PASS
CCV1	CCV	1	Mg	10.004	0.13	15	PASS
CCB1	CCB	1	Mg	-0.00046	52.94	15	<PQL
CCB1	CCB	1	Mg	-0.00092	99.41	15	<PQL
CCV2	CCV	1	Mg	9.75	0.24	15	PASS
CCB2	CCB	1	Mg	-0.0016	36.99	15	<PQL
CCV3	CCV	1	Mg	10.39	0.35	15	PASS
CCB3	CCB	1	Mg	-0.00072	141.5	15	<PQL
CCB3	CCB	1	Mg	-0.00061	50.2	15	<PQL
MB-66042	MBLK	1	Mg	0.00027	73.36	15	<PQL
LCS1-66042	LCS	1	Mg	9.36	0.17	15	PASS
CCV4	CCV	1	Mg	9.82	0.3	15	PASS
CCB4	CCB	1	Mg	-0.00072	76.36	15	<PQL
LLCCV1	CCV2	1	Mg	0.11	0.71	20	PASS
ICSA2	ICSA	1	Mg	481.22	0.14	15	PASS
ICSAB2	ICSAB	1	Mg	506.62	0.41	15	PASS
N027485-001B	SAMP	1	Mg	9.13	0.14	15	PASS
N027485-001B	SAMP	5	Mg	2.008	0.24	15	PASS
N027485-001B-PS	PS	1	Mg	18.009	0.057	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027485-001B-MS1	MS	1	Mg	18.44	0.068	15	PASS
N027485-001B-MSD1	MSD	1	Mg	18.53	0.15	15	PASS
N027485-002B	SAMP	1	Mg	26.13	0.22	15	PASS
N027485-003B	SAMP	1	Mg	24.48	0.17	15	PASS
N027485-004B	SAMP	1	Mg	18.7	0.052	15	PASS
N027485-005B	SAMP	1	Mg	1.97	0.059	15	PASS
N027485-006B	SAMP	1	Mg	0.079	0.42	15	PASS
CCV5	CCV	1	Mg	10.57	0.75	15	PASS
CCB5	CCB	1	Mg	-0.00024	141.97	15	<PQL
N027485-007B	SAMP	1	Mg	0.02	2.47	15	PASS
N027485-008B	SAMP	1	Mg	23.15	0.11	15	PASS
N027485-009B	SAMP	1	Mg	7.19	0.14	15	PASS
N027485-010B	SAMP	1	Mg	23.6	0.17	15	PASS
N027485-011C	SAMP	1	Mg	37.026	0.16	15	PASS
N027485-012C	SAMP	1	Mg	35.73	0.24	15	PASS
N027523-001B	SAMP	1	Mg	24.55	0.025	15	PASS
N027523-002B	SAMP	1	Mg	5.3	0.71	15	PASS
N027523-003B	SAMP	1	Mg	8.1	0.19	15	PASS
N027523-004B	SAMP	1	Mg	12.98	0.51	15	PASS
CCV6	CCV	1	Mg	9.88	0.051	15	PASS
CCB6	CCB	1	Mg	0.00095	296.93	15	<PQL
N027523-005C	SAMP	1	Mg	22.03	2.12	15	PASS
N027523-006C	SAMP	1	Mg	19.083	0.2	15	PASS
N027523-007C	SAMP	1	Mg	20.34	0.18	15	PASS
N027523-008B	SAMP	1	Mg	16.027	0.15	15	PASS
MB-66081	MBLK	1	Mg	0.00016	117.51	15	<PQL
LCS1-66081	LCS	1	Mg	9.23	0.16	15	PASS
CCV7	CCV	1	Mg	9.68	0.057	15	PASS
CCB7	CCB	1	Mg	-0.001	43.7	15	<PQL
N027523-009B	SAMP	1	Mg	73.87	0.68	15	PASS
N027523-009B	SAMP	5	Mg	16.42	0.26	15	PASS
N027523-009B-PS	PS	1	Mg	81.78	0.48	15	PASS
N027523-009B-MS1	MS	1	Mg	83.85	0.65	15	PASS
N027523-009B-MSD1	MSD	1	Mg	84.11	0.16	15	PASS
N027523-012B	SAMP	1	Mg	86.54	0.11	15	PASS
N027546-001B	SAMP	1	Mg	20.16	0.29	15	PASS
N027546-002B	SAMP	1	Mg	19.52	0.16	15	PASS
N027546-003B	SAMP	1	Mg	18.75	0.12	15	PASS
N027546-004B	SAMP	1	Mg	5.85	0.8	15	PASS
CCV8	CCV	1	Mg	10.41	0.51	15	PASS
CCB8	CCB	1	Mg	-0.0014	63.1	15	<PQL
LLCCV2	CCV2	1	Mg	0.1	1.16	20	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
ICSA3	ICSA	1	Mg	476.52	0.15	15	PASS
ICSAB3	ICSAB	1	Mg	500.6	0.69	15	PASS
N027546-005B	SAMP	1	Mg	5.038	0.21	15	PASS
N027546-006B	SAMP	1	Mg	20.5	0.094	15	PASS
N027546-007B	SAMP	1	Mg	28.6	0.39	15	PASS
N027546-008B	SAMP	1	Mg	23.85	0.73	15	PASS
N027546-009B	SAMP	1	Mg	24.53	0.56	15	PASS
N027546-010B	SAMP	1	Mg	28.15	0.41	15	PASS
CCV9	CCV	1	Mg	10.32	0.48	15	PASS
CCB9	CCB	1	Mg	-0.0013	70.18	15	<PQL
CCV10	CCV	1	Mg	10.29	0.11	15	PASS
CCB10	CCB	1	Mg	-0.0014	65.99	15	<PQL
CCV11	CCV	1	Mg	9.82	0.36	15	PASS
CCB11	CCB	1	Mg	-0.0014	35.042	15	<PQL
CCB11	CCB	1	Mg	-0.0012	13.65	15	PASS
CCV12	CCV	1	Mg	10.34	0.82	15	PASS
CCB12	CCB	1	Mg	-0.00016	188.32	15	<PQL
LLCCV3	CCV2	1	Mg	0.1	0.81	20	PASS
ICSA4	ICSA	1	Mg	473.9	1.11	15	PASS
ICSAB4	ICSAB	1	Mg	500.15	0.67	15	PASS
N027485-002B	SAMP	5	Mg	5.88	0.22	15	PASS
N027485-003B	SAMP	5	Mg	5.54	0.16	15	PASS
CCV13	CCV	1	Mg	10.32	0.34	15	PASS
CCB13	CCB	1	Mg	0.00036	32.88	15	<PQL
N027485-010B	SAMP	5	Mg	5.52	0.48	15	PASS
N027523-009B	SAMP	25	Mg	3.45	0.073	15	PASS
N027523-009B-PS	PS	5	Mg	19.069	0.092	15	PASS
N027523-009B-MS1	MS	5	Mg	20.45	0.34	15	PASS
N027523-009B-MSD1	MSD	5	Mg	20.52	0.17	15	PASS
CCV14	CCV	1	Mg	10.25	0.18	15	PASS
CCB14	CCB	1	Mg	-0.00055	32.68	15	<PQL
CCV15	CCV	1	Mg	10.007	0.51	15	PASS
CCB15	CCB	1	Mg	-0.00003	276.64	15	<PQL
CCV16	CCV	1	Mg	9.99	0.33	15	PASS
CCB16	CCB	1	Mg	0.00041	25.05	15	<PQL
CCB16	CCB	1	Mg	-0.00009	458.22	15	<PQL
CCV17	CCV	1	Mg	10.98	0.79	15	PASS
CCB17	CCB	1	Mg	-0.00063	95.52	15	<PQL
LLCCV4	CCV2	1	Mg	0.11	0.3	20	PASS
LLCCV4	CCV2	1	Mg	0.081	0.46	20	PASS
ICSA5	ICSA	1	Mg	504.98	0.32	15	PASS
ICSAB5	ICSAB	1	Mg	534.4	0.036	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
ICSAB5	ICSAB	1	Mg	447.75	1.72	15	PASS

RSD SUMMARY: 171222B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	K	0	6.22	15	PASS
Standard1	ICAL	1	K	0.1	3.98	15	PASS
Standard2	ICAL	1	K	1	0.78	15	PASS
Standard3	ICAL	1	K	5	0.18	15	PASS
Standard4	ICAL	1	K	10	0.12	15	PASS
Standard5	ICAL	1	K	20	0.089	15	PASS
Standard6	ICAL	1	K	40	0.07	15	PASS
ICV	ICV	1	K	10.12	0.14	15	PASS
ICB	ICB	1	K	0.0096	126.36	15	<PQL
ICSA1	ICSA	1	K	-0.00025	2046.69	15	<PQL
ICSAB1	ICSAB	1	K	10.12	0.24	15	PASS
MB-66042	MBLK	1	K	-3175.5	48.78	15	<PQL
LCS2-66042	LCS	1	K	-362.43	1038.3	15	<PQL
MB-66042	MBLK	1	K	-0.0059	215.94	15	<PQL
LCS2-66042	LCS	1	K	19.75	0.05	15	PASS
N027523-001B	SAMP	100	K	0.086	8.13	15	PASS
N027523-002B	SAMP	100	K	0.034	25.58	15	<PQL
N027523-003B	SAMP	100	K	0.067	15.067	15	<PQL
N027523-004B	SAMP	100	K	-573.42	461.2	15	<PQL
N027523-005C	SAMP	100	K	0.075	19.069	15	<PQL
N027523-006C	SAMP	100	K	0.18	1.3	15	PASS
CCV1	CCV	1	K	10.002	0.11	15	PASS
CCB1	CCB	1	K	-0.015	36.95	15	<PQL
N027523-007C	SAMP	100	K	0.18	4.55	15	PASS
N027523-008B	SAMP	100	K	0.15	7.0021	15	PASS
N027523-004B	SAMP	100	K	0.064	7.35	15	PASS
N027485-011C	SAMP	100	K	0.13	6.029	15	PASS
N027485-012C	SAMP	100	K	0.13	4.31	15	PASS
N027485-001B	SAMP	100	K	0.13	2.4	15	PASS
N027485-003B	SAMP	100	K	0.31	1.52	15	PASS
N027485-004B	SAMP	100	K	0.3	3.98	15	PASS
N027485-005B	SAMP	500	K	0.091	7.69	15	PASS
N027485-006B	SAMP	500	K	0.085	10.98	15	PASS
CCV2	CCV	1	K	10.03	0.24	15	PASS
CCB2	CCB	1	K	-0.008	121.53	15	<PQL
N027485-007B	SAMP	500	K	0.093	11.33	15	PASS
N027485-008B	SAMP	10	K	0.96	0.78	15	PASS
N027485-009B	SAMP	100	K	0.078	5.55	15	PASS
N027485-010B	SAMP	100	K	0.22	4.87	15	PASS
N027485-002B	SAMP	5	K	6.59	0.22	15	PASS
N027485-002B	SAMP	25	K	1.29	1.087	15	PASS
N027485-002B-PS	PS	5	K	11.52	0.33	15	PASS

RSD SUMMARY: 171222B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027485-002B-MS2	MS	5	K	11.19	1.051	15	PASS
N027485-002B-MSD2	MSD	5	K	11.22	0.24	15	PASS
CCV3	CCV	1	K	10.3	0.096	15	PASS
CCB3	CCB	1	K	0.022	41.43	15	<PQL
N027485-002B	SAMP	100	K	0.34	0.65	15	PASS
N027485-002B	SAMP	500	K	0.1	1.25	15	PASS
N027485-002B-PS	PS	100	K	0.57	2.23	15	PASS
N027485-002B-MS2	MS	100	K	0.56	2.42	15	PASS
N027485-002B-MSD2	MSD	100	K	0.56	0.86	15	PASS
N027485-011C	SAMP	1	K	12.37	0.12	15	PASS
N027485-012C	SAMP	1	K	11.88	0.26	15	PASS
N027523-005C	SAMP	1	K	6.14	0.32	15	PASS
CCV4	CCV	1	K	10.25	0.15	15	PASS
CCB4	CCB	1	K	0.0053	108.9	15	<PQL
CCV5	CCV	1	K	10.18	0.16	15	PASS
CCB5	CCB	1	K	-0.019	10.49	15	PASS
CCV6	CCV	1	K	10.15	0.21	15	PASS
CCB6	CCB	1	K	-0.014	96.62	15	<PQL
ICSA2	ICSA	1	K	-0.0074	269.95	15	<PQL
ICSAB2	ICSAB	1	K	10.14	0.21	15	PASS
CalBlk	IBLK	1	Na	0	7.1	15	PASS
Standard1	ICAL	1	Na	0.1	2.28	15	PASS
Standard2	ICAL	1	Na	1	0.21	15	PASS
Standard3	ICAL	1	Na	5	0.059	15	PASS
Standard4	ICAL	1	Na	10	0.066	15	PASS
Standard5	ICAL	1	Na	20	0.18	15	PASS
Standard6	ICAL	1	Na	40	0.025	15	PASS
ICV	ICV	1	Na	10.18	0.34	15	PASS
ICB	ICB	1	Na	-0.00074	563.25	15	<PQL
ICSA1	ICSA	1	Na	0.00053	922.43	15	<PQL
ICSAB1	ICSAB	1	Na	10.23	0.16	15	PASS
MB-66042	MBLK	1	Na	-2234.9	46.89	15	<PQL
LCS2-66042	LCS	1	Na	-109.71	2732.037	15	<PQL
MB-66042	MBLK	1	Na	0.00037	656.76	15	<PQL
LCS2-66042	LCS	1	Na	20.54	0.044	15	PASS
N027523-001B	SAMP	100	Na	2.14	0.41	15	PASS
N027523-002B	SAMP	100	Na	2.078	0.23	15	PASS
N027523-003B	SAMP	100	Na	1.97	0.36	15	PASS
N027523-004B	SAMP	100	Na	-322.36	501.63	15	<PQL
N027523-005C	SAMP	100	Na	4.85	0.22	15	PASS
N027523-006C	SAMP	100	Na	22.49	0.079	15	PASS
CCV1	CCV	1	Na	10.11	0.044	15	PASS

RSD SUMMARY: 171222B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB1	CCB	1	Na	-0.0071	35.7	15	<PQL
N027523-007C	SAMP	100	Na	23.6	0.095	15	PASS
N027523-008B	SAMP	100	Na	11.89	0.12	15	PASS
N027523-004B	SAMP	100	Na	1.86	0.14	15	PASS
N027485-011C	SAMP	100	Na	6.22	0.19	15	PASS
N027485-012C	SAMP	100	Na	6.025	0.11	15	PASS
N027485-001B	SAMP	100	Na	6.2	0.2	15	PASS
N027485-003B	SAMP	100	Na	21.53	0.032	15	PASS
N027485-004B	SAMP	100	Na	26.22	0.19	15	PASS
N027485-005B	SAMP	500	Na	8.026	0.13	15	PASS
N027485-006B	SAMP	500	Na	7.63	0.22	15	PASS
CCV2	CCV	1	Na	10.14	0.18	15	PASS
CCB2	CCB	1	Na	-0.0075	38.1	15	<PQL
N027485-007B	SAMP	500	Na	7.66	0.093	15	PASS
N027485-008B	SAMP	10	Na	9.36	0.2	15	PASS
N027485-009B	SAMP	100	Na	14.52	0.16	15	PASS
N027485-010B	SAMP	100	Na	13.019	0.096	15	PASS
N027485-002B	SAMP	5	Na	479.27	1.29	15	PASS
N027485-002B	SAMP	25	Na	96.93	0.1	15	PASS
N027485-002B-PS	PS	5	Na	507.79	0.34	15	PASS
N027485-002B-MS2	MS	5	Na	482.56	1.11	15	PASS
N027485-002B-MSD2	MSD	5	Na	484.34	0.21	15	PASS
CCV3	CCV	1	Na	10.54	0.067	15	PASS
CCB3	CCB	1	Na	0.13	6.26	15	PASS
N027485-002B	SAMP	100	Na	23.35	0.22	15	PASS
N027485-002B	SAMP	500	Na	4.9	0.4	15	PASS
N027485-002B-PS	PS	100	Na	25.37	0.16	15	PASS
N027485-002B-MS2	MS	100	Na	24.52	0.13	15	PASS
N027485-002B-MSD2	MSD	100	Na	24.092	0.3	15	PASS
N027485-011C	SAMP	1	Na	599.76	0.82	15	PASS
N027485-012C	SAMP	1	Na	571.06	0.6	15	PASS
N027523-005C	SAMP	1	Na	456.82	0.53	15	PASS
CCV4	CCV	1	Na	10.47	0.33	15	PASS
CCB4	CCB	1	Na	0.12	3.48	15	PASS
CCV5	CCV	1	Na	10.31	0.018	15	PASS
CCB5	CCB	1	Na	0.044	7.75	15	PASS
CCV6	CCV	1	Na	10.26	0.099	15	PASS
CCB6	CCB	1	Na	0.033	12.15	15	PASS
ICSA2	ICSA	1	Na	0.032	8.66	15	PASS
ICSAB2	ICSAB	1	Na	10.27	0.086	15	PASS

RSD SUMMARY: 180103A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	38.46	15	<PQL
Standard1	ICAL	1	Na	0.1	5.37	15	PASS
Standard2	ICAL	1	Na	1	0.47	15	PASS
Standard3	ICAL	1	Na	5	0.35	15	PASS
Standard4	ICAL	1	Na	10	0.21	15	PASS
Standard5	ICAL	1	Na	20	0.11	15	PASS
Standard6	ICAL	1	Na	40	0.14	15	PASS
ICV	ICV	1	Na	9.97	0.32	15	PASS
ICB	ICB	1	Na	0.0031	68.95	15	<PQL
ICSA1	ICSA	1	Na	0.00057	457.55	15	<PQL
ICSAB1	ICSAB	1	Na	10.004	0.22	15	PASS
MB-66081	MBLK	1	Na	-0.019	20.5	15	<PQL
LCS2-66081	LCS	1	Na	20.37	0.3	15	PASS
N027523-009B	SAMP	100	Na	30.96	0.11	15	PASS
N027523-012B	SAMP	100	Na	33.3	0.15	15	PASS
N027546-001B	SAMP	100	Na	13.81	0.086	15	PASS
N027546-002B	SAMP	100	Na	13.7	0.019	15	PASS
N027546-003B	SAMP	100	Na	10.57	0.11	15	PASS
N027546-004B	SAMP	100	Na	33.56	0.4	15	PASS
N027546-005B	SAMP	100	Na	35.25	0.28	15	PASS
N027546-006B	SAMP	100	Na	3.49	0.15	15	PASS
CCV1	CCV	1	Na	9.87	0.5	15	PASS
CCB1	CCB	1	Na	-0.021	21.93	15	<PQL
N027546-007B	SAMP	100	Na	36.21	0.034	15	PASS
N027546-008B	SAMP	100	Na	44.93	0.21	15	PASS
N027546-009B	SAMP	100	Na	45.079	0.06	15	PASS
N027546-010B	SAMP	100	Na	27.88	0.13	15	PASS
N027523-012B	SAMP	500	Na	6.72	0.26	15	PASS
N027523-012B-PS	PS	100	Na	34.63	0.23	15	PASS
N027523-012B-MS2	MS	100	Na	37.19	0.15	15	PASS
N027523-012B-MSD2	MSD	100	Na	34.77	0.37	15	PASS
N027523-012B-MS2	MS	100	Na	34.84	0.25	15	PASS
N027546-007B	SAMP	500	Na	7.49	0.11	15	PASS
CCV2	CCV	1	Na	11.037	17.71	15	NR!
CCV2	CCV	1	Na	9.86	0.19	15	PASS
CCB2	CCB	1	Na	-0.011	30.77	15	<PQL
N027546-006B	SAMP	25	Na	14.41	0.27	15	PASS
N027546-008B	SAMP	500	Na	9.12	0.15	15	PASS
N027546-009B	SAMP	500	Na	9.21	0.11	15	PASS
CCV3	CCV	1	Na	9.81	0.27	15	PASS
CCB3	CCB	1	Na	-0.011	30.71	15	<PQL
CCV4	CCV	1	Na	10.097	0.35	15	PASS

RSD SUMMARY: 180103A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB4	CCB	1	Na	-0.029	10.59	15	PASS
CCV5	CCV	1	Na	10.033	0.31	15	PASS
CCB5	CCB	1	Na	-0.034	14.26	15	PASS
ICSA2	ICSA	1	Na	-0.038	14.39	15	PASS
ICSAB2	ICSAB	1	Na	10.15	0.17	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 171219A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201K/MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201K/-171030G/-171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/19/2017	10:23:34 AM
2	Standard1	ICAL	1	12/19/2017	10:28:24 AM
3	Standard2	ICAL	1	12/19/2017	10:33:45 AM
11	Standard3	ICAL	1	12/19/2017	10:39:04 AM
12	Standard4	ICAL	1	12/19/2017	10:44:25 AM
6	Standard5	ICAL	1	12/19/2017	10:51:46 AM
7	Standard6	ICAL	1	12/19/2017	10:59:06 AM
8	Standard7	ICAL	1	12/19/2017	11:06:41 AM
9	ICV	ICV	1	12/19/2017	11:10:28 AM
1	ICB	ICB	1	12/19/2017	11:21:16 AM
2	LLICV	CCV1	1	12/19/2017	11:26:34 AM
4	ICSA1	ICSA	1	12/19/2017	11:40:02 AM
5	ICSAB1	ICSAB	1	12/19/2017	11:47:34 AM
122	N027429-010B	SAMP	5	12/19/2017	11:55:06 AM
123	N027430-015B	SAMP	5	12/19/2017	12:02:00 PM
108	MB-65991	MBLK	1	12/19/2017	12:08:53 PM
109	LCS1-65991	LCS	1	12/19/2017	12:13:44 PM
110	N027437-001A	SAMP	1	12/19/2017	12:21:07 PM
111	N027437-002A	SAMP	1	12/19/2017	12:26:28 PM
112	N027437-002A	SAMP	5	12/19/2017	12:33:22 PM
113	N027437-002A-PS	PS	1	12/19/2017	12:38:43 PM
114	N027437-002AMS1	MS	1	12/19/2017	12:45:38 PM
115	N027437-002AMSD1	MSD	1	12/19/2017	12:52:31 PM
7	CCV1	CCV	1	12/19/2017	12:59:24 PM
1	CCB1	CCB	1	12/19/2017	01:06:15 PM
1	CCB1	CCB	1	12/19/2017	01:14:21 PM
116	N027437-003C	SAMP	1	12/19/2017	01:19:09 PM
117	N027437-004A	SAMP	1	12/19/2017	01:24:04 PM
118	N027437-005A	SAMP	1	12/19/2017	01:29:27 PM
38	MB-65994	MBLK	1	12/19/2017	01:34:18 PM
39	LCS1-65994	LCS	1	12/19/2017	01:39:09 PM
40	N027459-001C	SAMP	1	12/19/2017	01:46:29 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
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42	N027459-001C-PS	PS	1	12/19/2017	01:58:11 PM
43	N027459-001C-MS1	MS	1	12/19/2017	02:05:02 PM
44	N027459-001C-MSD1	MSD	1	12/19/2017	02:11:54 PM
7	CCV2	CCV	1	12/19/2017	02:18:46 PM
1	CCB2	CCB	1	12/19/2017	02:25:37 PM
45	N027459-002C	SAMP	1	12/19/2017	02:30:56 PM
46	N027459-003B	SAMP	1	12/19/2017	02:37:46 PM
47	N027459-004B	SAMP	1	12/19/2017	02:44:38 PM
48	N027459-005B	SAMP	1	12/19/2017	02:51:28 PM
49	N027459-006B	SAMP	1	12/19/2017	02:58:20 PM
50	N027459-007B	SAMP	1	12/19/2017	03:05:13 PM
51	N027459-008C	SAMP	1	12/19/2017	03:12:46 PM
52	N027459-009B	SAMP	1	12/19/2017	03:20:08 PM
53	N027459-010B	SAMP	1	12/19/2017	03:26:58 PM
54	N027459-011B	SAMP	1	12/19/2017	03:33:50 PM
7	CCV3	CCV	1	12/19/2017	03:40:40 PM
1	CCB3	CCB	1	12/19/2017	03:48:03 PM
55	N027459-012B	SAMP	1	12/19/2017	03:53:21 PM
1	CCB3	CCB	1	12/19/2017	03:58:33 PM
55	N027459-012B	SAMP	1	12/19/2017	04:03:22 PM
56	N027459-013B	SAMP	1	12/19/2017	04:08:43 PM
57	N027459-014B	SAMP	1	12/19/2017	04:15:34 PM
58	N027459-015B	SAMP	1	12/19/2017	04:22:24 PM
59	N027459-016C	SAMP	1	12/19/2017	04:29:17 PM
60	N027459-017C	SAMP	1	12/19/2017	04:36:09 PM
61	N027459-018B	SAMP	1	12/19/2017	04:43:02 PM
62	N027459-019B	SAMP	1	12/19/2017	04:50:27 PM
63	MB-66042	MBLK	1	12/19/2017	04:57:19 PM
64	LCS1-66042	LCS	1	12/19/2017	05:02:10 PM
7	CCV4	CCV	1	12/19/2017	05:09:31 PM
1	CCB4	CCB	1	12/19/2017	05:34:54 PM
2	LLCCV1	CCV2	1	12/19/2017	05:39:42 PM
4	ICSA2	ICSA	1	12/19/2017	05:45:03 PM
5	ICSAB2	ICSAB	1	12/19/2017	05:52:35 PM
65	N027485-001B	SAMP	1	12/19/2017	06:00:08 PM
66	N027485-001B	SAMP	5	12/19/2017	06:05:00 PM
67	N027485-001B-PS	PS	1	12/19/2017	06:10:22 PM
68	N027485-001B-MS1	MS	1	12/19/2017	06:17:41 PM
69	N027485-001B-MSD1	MSD	1	12/19/2017	06:24:34 PM
70	N027485-002B	SAMP	1	12/19/2017	06:31:26 PM
71	N027485-003B	SAMP	1	12/19/2017	06:38:18 PM
72	N027485-004B	SAMP	1	12/19/2017	06:45:10 PM
73	N027485-005B	SAMP	1	12/19/2017	06:52:03 PM
74	N027485-006B	SAMP	1	12/19/2017	06:58:55 PM
7	CCV5	CCV	1	12/19/2017	07:05:47 PM
1	CCB5	CCB	1	12/19/2017	07:15:36 PM
75	N027485-007B	SAMP	1	12/19/2017	07:20:24 PM
76	N027485-008B	SAMP	1	12/19/2017	07:27:16 PM
77	N027485-009B	SAMP	1	12/19/2017	07:34:47 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
78	N027485-010B	SAMP	1	12/19/2017	07:41:39 PM
79	N027485-011C	SAMP	1	12/19/2017	07:48:31 PM
80	N027485-012C	SAMP	1	12/19/2017	07:55:53 PM
81	N027523-001B	SAMP	1	12/19/2017	08:03:16 PM
82	N027523-002B	SAMP	1	12/19/2017	08:10:40 PM
83	N027523-003B	SAMP	1	12/19/2017	08:16:01 PM
84	N027523-004B	SAMP	1	12/19/2017	08:21:22 PM
7	CCV6	CCV	1	12/19/2017	08:26:44 PM
1	CCB6	CCB	1	12/19/2017	08:33:35 PM
85	N027523-005C	SAMP	1	12/19/2017	08:38:25 PM
86	N027523-006C	SAMP	1	12/19/2017	08:45:18 PM
87	N027523-007C	SAMP	1	12/19/2017	08:52:10 PM
88	N027523-008B	SAMP	1	12/19/2017	08:59:02 PM
14	N027459-003B	SAMP	5	12/19/2017	09:05:54 PM
15	N027459-004B	SAMP	5	12/19/2017	09:12:43 PM
16	N027459-006B	SAMP	5	12/19/2017	09:19:32 PM
17	N027459-018B	SAMP	5	12/19/2017	09:24:22 PM
89	MB-66081	MBLK	1	12/19/2017	09:31:12 PM
90	LCS1-66081	LCS	1	12/19/2017	09:36:14 PM
7	CCV7	CCV	1	12/19/2017	09:43:36 PM
1	CCB7	CCB	1	12/19/2017	09:53:44 PM
91	N027523-009B	SAMP	1	12/19/2017	09:58:31 PM
92	N027523-009B	SAMP	5	12/19/2017	10:05:24 PM
93	N027523-009B-PS	PS	1	12/19/2017	10:12:17 PM
94	N027523-009B-MS1	MS	1	12/19/2017	10:19:10 PM
95	N027523-009B-MSD1	MSD	1	12/19/2017	10:26:03 PM
96	N027523-012B	SAMP	1	12/19/2017	10:32:56 PM
97	N027546-001B	SAMP	1	12/19/2017	10:39:51 PM
98	N027546-002B	SAMP	1	12/19/2017	10:47:14 PM
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7	CCV8	CCV	1	12/19/2017	11:07:54 PM
1	CCB8	CCB	1	12/19/2017	11:15:16 PM
2	LLCCV2	CCV2	1	12/19/2017	11:20:35 PM
4	ICSA3	ICSA	1	12/19/2017	11:25:54 PM
5	ICSAB3	ICSAB	1	12/19/2017	11:33:27 PM
101	N027546-005B	SAMP	1	12/19/2017	11:40:59 PM
102	N027546-006B	SAMP	1	12/19/2017	11:47:52 PM
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104	N027546-008B	SAMP	1	12/20/2017	12:02:08 AM
105	N027546-009B	SAMP	1	12/20/2017	12:09:00 AM
106	N027546-010B	SAMP	1	12/20/2017	12:15:53 AM
107	MB-66082	MBLK	1	12/20/2017	12:22:46 AM
108	LCS1-66082	LCS	1	12/20/2017	12:27:38 AM
109	N027557-001B	SAMP	1	12/20/2017	12:35:02 AM
110	N027557-001B	SAMP	5	12/20/2017	12:41:54 AM
7	CCV9	CCV	1	12/20/2017	12:46:48 AM
1	CCB9	CCB	1	12/20/2017	12:54:10 AM
111	N027557-001B-PS	PS	1	12/20/2017	12:59:28 AM
112	N027557-001B-MS1	MS	1	12/20/2017	01:06:23 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
113	N027557-001B-MSD1	MSD	1	12/20/2017	01:13:17 AM
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115	N027557-003B	SAMP	1	12/20/2017	01:27:03 AM
116	N027557-004B	SAMP	1	12/20/2017	01:33:56 AM
117	N027557-005B	SAMP	1	12/20/2017	01:40:49 AM
118	N027557-006B	SAMP	1	12/20/2017	01:47:42 AM
119	N027557-007B	SAMP	1	12/20/2017	01:54:34 AM
120	N027557-008B	SAMP	1	12/20/2017	02:01:28 AM
7	CCV10	CCV	1	12/20/2017	02:06:50 AM
1	CCB10	CCB	1	12/20/2017	02:14:12 AM
121	N027557-009B	SAMP	1	12/20/2017	02:19:30 AM
122	N027557-010B	SAMP	1	12/20/2017	02:26:54 AM
123	MB-66080	MBLK	1	12/20/2017	02:32:17 AM
124	LCS1-66080	LCS	1	12/20/2017	02:37:09 AM
125	N027524-001E	SAMP	1	12/20/2017	02:44:33 AM
126	N027524-001E	SAMP	5	12/20/2017	02:51:26 AM
127	N027524-001E-PS	PS	1	12/20/2017	02:56:47 AM
128	N027524-001E-MS1	MS	1	12/20/2017	03:03:41 AM
129	N027524-001E-MSD1	MSD	1	12/20/2017	03:10:35 AM
130	N027524-002E	SAMP	1	12/20/2017	03:17:29 AM
7	CCV11	CCV	1	12/20/2017	03:24:21 AM
1	CCB11	CCB	1	12/20/2017	03:31:12 AM
131	N027524-003E	SAMP	1	12/20/2017	03:36:30 AM
1	CCB11	CCB	1	12/20/2017	03:47:23 AM
131	N027524-003E	SAMP	1	12/20/2017	03:52:10 AM
132	N027524-004E	SAMP	1	12/20/2017	03:59:04 AM
133	N027524-005E	SAMP	1	12/20/2017	04:05:57 AM
134	N027524-006E	SAMP	1	12/20/2017	04:12:49 AM
135	N027524-007E	SAMP	1	12/20/2017	04:17:42 AM
136	N027524-008E	SAMP	1	12/20/2017	04:22:35 AM
137	N027524-009E	SAMP	1	12/20/2017	04:29:28 AM
138	N027524-010E	SAMP	1	12/20/2017	04:36:21 AM
139	N027524-011E	SAMP	1	12/20/2017	04:43:14 AM
140	N027524-011E-MS1	MS	1	12/20/2017	04:50:07 AM
7	CCV12	CCV	1	12/20/2017	04:57:01 AM
1	CCB12	CCB	1	12/20/2017	05:07:37 AM
2	LLCCV3	CCV2	1	12/20/2017	05:12:57 AM
4	ICSA4	ICSA	1	12/20/2017	05:18:16 AM
5	ICSAB4	ICSAB	1	12/20/2017	05:25:48 AM
141	N027524-012E	SAMP	1	12/20/2017	05:33:21 AM
142	N027524-013E	SAMP	1	12/20/2017	05:40:14 AM
143	N027556-001E	SAMP	1	12/20/2017	05:47:07 AM
144	N027556-002E	SAMP	1	12/20/2017	05:54:00 AM
145	N027556-003E	SAMP	1	12/20/2017	06:00:53 AM
146	N027556-004D	SAMP	1	12/20/2017	06:07:46 AM
147	N027556-005D	SAMP	1	12/20/2017	06:14:39 AM
148	N027556-006E	SAMP	1	12/20/2017	06:21:32 AM
18	N027485-002B	SAMP	5	12/20/2017	06:28:25 AM
19	N027485-003B	SAMP	5	12/20/2017	06:35:15 AM
7	CCV13	CCV	1	12/20/2017	06:42:05 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
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149	N027523-009B	SAMP	25	12/20/2017	07:43:23 AM
150	N027523-009B-PS	PS	5	12/20/2017	07:48:17 AM
151	N027523-009B-MS1	MS	5	12/20/2017	07:55:12 AM
152	N027523-009B-MSD1	MSD	5	12/20/2017	08:02:06 AM
153	N027557-005B	SAMP	5	12/20/2017	08:05:46 AM
154	N027557-007B	SAMP	5	12/20/2017	08:12:39 AM
38	MB-66083	MBLK	1	12/20/2017	08:19:33 AM
39	LCS1-66083	LCS	1	12/20/2017	08:23:38 AM
40	N027524-001F	SAMP	1	12/20/2017	08:29:29 AM
7	CCV14	CCV	1	12/20/2017	08:34:48 AM
1	CCB14	CCB	1	12/20/2017	08:47:22 AM
41	N027524-001F	SAMP	5	12/20/2017	08:51:40 AM
42	N027524-001F-PS	PS	1	12/20/2017	08:56:29 AM
43	N027524-001F-MS1	MS	1	12/20/2017	09:01:50 AM
44	N027524-001F-MSD1	MSD	1	12/20/2017	09:07:11 AM
45	N027524-002F	SAMP	1	12/20/2017	09:12:32 AM
46	N027524-003F	SAMP	1	12/20/2017	09:17:54 AM
47	N027524-004F	SAMP	1	12/20/2017	09:23:15 AM
48	N027524-005F	SAMP	1	12/20/2017	09:28:37 AM
49	N027524-006F	SAMP	1	12/20/2017	09:33:59 AM
50	N027524-007F	SAMP	1	12/20/2017	09:39:21 AM
7	CCV15	CCV	1	12/20/2017	09:50:33 AM
1	CCB15	CCB	1	12/20/2017	10:04:37 AM
51	N027524-008F	SAMP	1	12/20/2017	10:09:24 AM
52	N027524-009F	SAMP	1	12/20/2017	10:14:46 AM
53	N027524-010F	SAMP	1	12/20/2017	10:20:08 AM
54	N027524-011F	SAMP	1	12/20/2017	10:25:39 AM
55	N027524-012F	SAMP	1	12/20/2017	10:31:01 AM
56	N027524-013F	SAMP	1	12/20/2017	10:36:21 AM
57	N027556-001F	SAMP	1	12/20/2017	10:41:41 AM
58	N027556-002F	SAMP	1	12/20/2017	10:47:03 AM
59	N027556-003F	SAMP	1	12/20/2017	10:52:24 AM
60	N027556-006F	SAMP	1	12/20/2017	10:57:45 AM
7	CCV16	CCV	1	12/20/2017	11:03:06 AM
1	CCB16	CCB	1	12/20/2017	11:08:59 AM
1	CCB16	CCB	1	12/20/2017	11:17:02 AM
61	N027556-008E	SAMP	1	12/20/2017	11:20:47 AM
62	N027556-009E	SAMP	1	12/20/2017	11:25:39 AM
63	N027556-010F	SAMP	1	12/20/2017	11:31:31 AM
7	CCV17	CCV	1	12/20/2017	11:40:26 AM
1	CCB17	CCB	1	12/20/2017	11:46:17 AM
2	LLCCV4	CCV2	1	12/20/2017	11:51:05 AM
2	LLCCV4	CCV2	1	12/20/2017	12:04:06 PM
4	ICSA5	ICSA	1	12/20/2017	12:08:54 PM
5	ICSAB5	ICSAB	1	12/20/2017	12:14:57 PM
5	ICSAB5	ICSAB	1	12/20/2017	12:24:11 PM

INJECTION LOG: 171222B

Instrument ID: ICP-02

STANDARD CODE		
Standard1	MWST-170601A,0.025<50mL	MWST-171201R
Standard2	MWST-170601A,0.25<50mL	
Standard3	MWST-170601A,1.25<50mL	
Standard4	MWST-170601A,2.5<50mL	
Standard5	MWST-170601A,5<50mL	
Standard6	MWST-170601A,10<50mL	
ICV	MWST-171030L	
CCV	MWST-170601A,2.5<50mL	MWST-171201R
ICSA/ICSAB	MWST-170601L/MWST-170601B	MWST-171201P/ MWST-171201S
Int. Std. (Sc):	MSST-171009C/B	
PS Spike	MSST-130329D/E	

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/22/2017	03:17:22 PM
26	Standard1	ICAL	1	12/22/2017	03:20:39 PM
27	Standard2	ICAL	1	12/22/2017	03:23:56 PM
28	Standard3	ICAL	1	12/22/2017	03:27:44 PM
29	Standard4	ICAL	1	12/22/2017	03:31:34 PM
30	Standard5	ICAL	1	12/22/2017	03:35:29 PM
31	Standard6	ICAL	1	12/22/2017	03:39:32 PM
32	ICV	ICV	1	12/22/2017	03:42:45 PM
1	ICB	ICB	1	12/22/2017	03:46:40 PM
33	ICSA1	ICSA	1	12/22/2017	03:49:57 PM
34	ICSAB1	ICSAB	1	12/22/2017	03:53:15 PM
38	MB-66042	MBLK	1	12/22/2017	03:57:11 PM
39	LCS2-66042	LCS	1	12/22/2017	04:00:28 PM
38	MB-66042	MBLK	1	12/22/2017	04:03:36 PM
39	LCS2-66042	LCS	1	12/22/2017	04:06:54 PM
51	N027523-001B	SAMP	100	12/22/2017	04:10:58 PM
52	N027523-002B	SAMP	100	12/22/2017	04:14:17 PM
53	N027523-003B	SAMP	100	12/22/2017	04:17:37 PM
54	N027523-004B	SAMP	100	12/22/2017	04:20:55 PM
55	N027523-005C	SAMP	100	12/22/2017	04:24:15 PM
56	N027523-006C	SAMP	100	12/22/2017	04:27:33 PM
8	CCV1	CCV	1	12/22/2017	04:30:52 PM
1	CCB1	CCB	1	12/22/2017	04:34:47 PM
57	N027523-007C	SAMP	100	12/22/2017	04:38:04 PM
58	N027523-008B	SAMP	100	12/22/2017	04:41:22 PM
54	N027523-004B	SAMP	100	12/22/2017	04:44:42 PM
49	N027485-011C	SAMP	100	12/22/2017	04:48:01 PM
50	N027485-012C	SAMP	100	12/22/2017	04:51:21 PM
40	N027485-001B	SAMP	100	12/22/2017	04:55:11 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
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43	N027485-005B	SAMP	500	12/22/2017	05:05:24 PM
44	N027485-006B	SAMP	500	12/22/2017	05:08:44 PM
8	CCV2	CCV	1	12/22/2017	05:12:03 PM
1	CCB2	CCB	1	12/22/2017	05:15:57 PM
157	N027428-001D	SAMP	10	12/22/2017	05:19:56 PM
45	N027485-007B	SAMP	500	12/22/2017	05:23:49 PM
46	N027485-008B	SAMP	10	12/22/2017	05:30:00 PM
47	N027485-009B	SAMP	100	12/22/2017	05:33:51 PM
48	N027485-010B	SAMP	100	12/22/2017	05:37:11 PM
59	N027485-002B	SAMP	5	12/22/2017	05:40:31 PM
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61	N027485-002B-PS	PS	5	12/22/2017	05:49:51 PM
62	N027485-002B-MS2	MS	5	12/22/2017	05:55:19 PM
63	N027485-002B-MSD2	MSD	5	12/22/2017	06:00:46 PM
8	CCV3	CCV	1	12/22/2017	06:06:13 PM
1	CCB3	CCB	1	12/22/2017	06:10:07 PM
64	N027485-002B	SAMP	100	12/22/2017	06:13:25 PM
65	N027485-002B	SAMP	500	12/22/2017	06:16:45 PM
66	N027485-002B-PS	PS	100	12/22/2017	06:20:05 PM
67	N027485-002B-MS2	MS	100	12/22/2017	06:23:55 PM
68	N027485-002B-MSD2	MSD	100	12/22/2017	06:27:46 PM
69	N027485-011C	SAMP	1	12/22/2017	06:31:06 PM
70	N027485-012C	SAMP	1	12/22/2017	06:36:33 PM
71	N027523-005C	SAMP	1	12/22/2017	06:41:59 PM
72	N027459-019B	SAMP	100	12/22/2017	06:46:54 PM
73	MB-66080	MBLK	1	12/22/2017	06:50:14 PM
8	CCV4	CCV	1	12/22/2017	06:53:35 PM
1	CCB4	CCB	1	12/22/2017	06:57:31 PM
74	LCS2-66080	LCS	1	12/22/2017	07:00:48 PM
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76	N027524-002E	SAMP	100	12/22/2017	07:08:13 PM
77	N027524-003E	SAMP	100	12/22/2017	07:11:33 PM
78	N027524-004E	SAMP	100	12/22/2017	07:14:53 PM
79	N027524-005E	SAMP	100	12/22/2017	07:18:13 PM
80	N027524-006E	SAMP	100	12/22/2017	07:21:33 PM
81	N027524-007E	SAMP	100	12/22/2017	07:24:54 PM
82	N027524-008E	SAMP	100	12/22/2017	07:28:15 PM
83	N027524-009E	SAMP	100	12/22/2017	07:31:35 PM
8	CCV5	CCV	1	12/22/2017	07:34:56 PM
1	CCB5	CCB	1	12/22/2017	07:38:51 PM
84	N027524-010E	SAMP	100	12/22/2017	07:42:09 PM
85	N027524-011E	SAMP	100	12/22/2017	07:45:29 PM
86	N027524-012E	SAMP	100	12/22/2017	07:48:50 PM
87	N027524-013E	SAMP	100	12/22/2017	07:52:10 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
88	N027556-001E	SAMP	100	12/22/2017	07:55:31 PM
89	N027556-002E	SAMP	100	12/22/2017	07:58:51 PM
90	N027556-003E	SAMP	100	12/22/2017	08:02:11 PM
91	N027556-004D	SAMP	100	12/22/2017	08:05:31 PM
92	N027556-004D	SAMP	100	12/22/2017	08:09:21 PM
93	N027556-006E	SAMP	100	12/22/2017	08:13:13 PM
8	CCV6	CCV	1	12/22/2017	08:16:34 PM
1	CCB6	CCB	1	12/22/2017	08:20:29 PM
33	ICSA2	ICSA	1	12/22/2017	08:23:47 PM
34	ICSAB2	ICSAB	1	12/22/2017	08:27:06 PM

INJECTION LOG: 180103A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-170601A,0.025<50mL
Standard2	MWST-170601A,0.25<50mL
Standard3	MWST-170601A,1.25<50mL
Standard4	MWST-170601A,2.5<50mL
Standard5	MWST-170601A,5<50mL
Standard6	MWST-170601A,10<50mL
ICV	MWST-171030L
CCV	MWST-170601A,2.5<50mL
ICSA/ICSAB	MWST-170601L/MWST-170601B
Int. Std. (Sc):	MSST-171009C/B
PS Spike	MSST-130329D/E

MWST-171201R

MWST-171201R
MWST-171201P/ MWST-171201S

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	01/03/2018	06:39:20 AM
26	Standard1	ICAL	1	01/03/2018	06:42:39 AM
27	Standard2	ICAL	1	01/03/2018	06:45:55 AM
28	Standard3	ICAL	1	01/03/2018	06:49:43 AM
29	Standard4	ICAL	1	01/03/2018	06:53:33 AM
30	Standard5	ICAL	1	01/03/2018	06:57:26 AM
31	Standard6	ICAL	1	01/03/2018	07:01:30 AM
32	ICV	ICV	1	01/03/2018	07:05:49 AM
1	ICB	ICB	1	01/03/2018	07:09:44 AM
33	ICSA1	ICSA	1	01/03/2018	07:13:01 AM
34	ICSAB1	ICSAB	1	01/03/2018	07:16:19 AM
38	MB-66081	MBLK	1	01/03/2018	07:45:21 AM
39	LCS2-66081	LCS	1	01/03/2018	07:48:40 AM
40	N027523-009B	SAMP	100	01/03/2018	07:52:46 AM
41	N027523-012B	SAMP	100	01/03/2018	07:56:35 AM
42	N027546-001B	SAMP	100	01/03/2018	07:59:54 AM
43	N027546-002B	SAMP	100	01/03/2018	08:03:13 AM
44	N027546-003B	SAMP	100	01/03/2018	08:06:32 AM
45	N027546-004B	SAMP	100	01/03/2018	08:09:50 AM
46	N027546-005B	SAMP	100	01/03/2018	08:13:08 AM
47	N027546-006B	SAMP	100	01/03/2018	08:16:28 AM
29	CCV1	CCV	1	01/03/2018	08:19:47 AM
1	CCB1	CCB	1	01/03/2018	08:23:41 AM
48	N027546-007B	SAMP	100	01/03/2018	08:26:59 AM
49	N027546-008B	SAMP	100	01/03/2018	08:30:19 AM
50	N027546-009B	SAMP	100	01/03/2018	08:33:40 AM
51	N027546-010B	SAMP	100	01/03/2018	08:36:59 AM
52	N027523-012B	SAMP	500	01/03/2018	08:40:49 AM
53	N027523-012B-PS	PS	100	01/03/2018	08:44:07 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
54	N027523-012B-MS2	MS	100	01/03/2018	08:47:25 AM
55	N027523-012B-MSD2	MSD	100	01/03/2018	08:51:12 AM
54	N027523-012B-MS2	MS	100	01/03/2018	08:54:29 AM
56	N027546-007B	SAMP	500	01/03/2018	08:57:49 AM
29	CCV2	CCV	1	01/03/2018	09:01:08 AM
29	CCV2	CCV	1	01/03/2018	09:05:38 AM
1	CCB2	CCB	1	01/03/2018	09:09:31 AM
57	N027546-006B	SAMP	25	01/03/2018	09:12:49 AM
58	N027546-008B	SAMP	500	01/03/2018	09:16:38 AM
59	N027546-009B	SAMP	500	01/03/2018	09:19:59 AM
60	MB-66082	MBLK	1	01/03/2018	09:23:19 AM
61	LCS2-66082	LCS	1	01/03/2018	09:26:39 AM
62	N027557-001B	SAMP	100	01/03/2018	09:33:45 AM
63	N027557-002B	SAMP	100	01/03/2018	09:37:05 AM
64	N027557-003B	SAMP	100	01/03/2018	09:40:25 AM
65	N027557-004B	SAMP	100	01/03/2018	09:43:45 AM
66	N027557-005B	SAMP	100	01/03/2018	09:47:05 AM
29	CCV3	CCV	1	01/03/2018	09:50:24 AM
1	CCB3	CCB	1	01/03/2018	09:54:18 AM
67	N027557-006B	SAMP	100	01/03/2018	09:57:36 AM
68	N027557-007B	SAMP	100	01/03/2018	10:00:56 AM
69	N027557-008B	SAMP	100	01/03/2018	10:04:16 AM
70	N027557-009B	SAMP	100	01/03/2018	10:08:06 AM
71	N027557-010B	SAMP	100	01/03/2018	10:11:55 AM
72	N027557-002B	SAMP	500	01/03/2018	10:15:56 AM
73	N027557-002B-PS	PS	100	01/03/2018	10:19:16 AM
74	N027557-002B-MS2	MS	100	01/03/2018	10:22:36 AM
75	N027557-002B-MSD2	MSD	100	01/03/2018	10:26:28 AM
76	N027557-003B	SAMP	500	01/03/2018	10:30:18 AM
29	CCV4	CCV	1	01/03/2018	10:33:38 AM
1	CCB4	CCB	1	01/03/2018	10:37:33 AM
77	N027557-004B	SAMP	500	01/03/2018	10:40:50 AM
78	N027557-005B	SAMP	500	01/03/2018	10:44:11 AM
79	N027557-008B	SAMP	10	01/03/2018	10:47:31 AM
80	N027557-009B	SAMP	10	01/03/2018	10:51:22 AM
81	N027557-010B	SAMP	10	01/03/2018	10:55:13 AM
82	MB-66203	MBLK	1	01/03/2018	10:59:04 AM
83	LCS2-66203	LCS	1	01/03/2018	11:02:54 AM
84	N027689-001A	SAMP	1	01/03/2018	11:07:01 AM
85	N027689-001A	SAMP	5	01/03/2018	11:10:52 AM
86	N027689-001A-PS	PS	1	01/03/2018	11:14:42 AM
29	CCV5	CCV	1	01/03/2018	11:18:50 AM
1	CCB5	CCB	1	01/03/2018	11:22:44 AM
33	ICSA2	ICSA	1	01/03/2018	11:26:32 AM
34	ICSAB2	ICSAB	1	01/03/2018	11:30:22 AM
87	N027689-001A-MS2	MS	1	01/03/2018	11:34:17 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
88	N027689-001A-MSD2	MSD	1	01/03/2018	11:38:23 AM
89	MB-66126	MBLK	1	01/03/2018	11:42:29 AM
90	LCS2-66126	LCS	1	01/03/2018	11:46:19 AM
91	N027583-001E	SAMP	100	01/03/2018	11:50:26 AM
92	N027583-002E	SAMP	100	01/03/2018	11:53:46 AM
93	N027583-003E	SAMP	100	01/03/2018	11:57:06 AM
94	N027583-001E	SAMP	1	01/03/2018	12:01:37 PM
95	N027583-003E	SAMP	1	01/03/2018	12:06:51 PM
1	RINSE	RINSE	1	01/03/2018	12:13:14 PM
29	CCV6	CCV	1	01/03/2018	12:17:01 PM
1	CCB6	CCB	1	01/03/2018	12:20:55 PM
96	N027583-002E	SAMP	1	01/03/2018	12:24:42 PM
97	N027583-002E	SAMP	5	01/03/2018	12:29:55 PM
98	N027583-002E-PS	PS	1	01/03/2018	12:34:48 PM
99	N027583-002E-MS2	MS	1	01/03/2018	12:40:03 PM
101	N027583-002E	SAMP	500	01/03/2018	12:46:14 PM
102	N027583-002E-PS	PS	100	01/03/2018	12:49:33 PM
103	N027583-002E-MS2	MS	100	01/03/2018	12:52:55 PM
104	N027583-002E-MSD2	MSD	100	01/03/2018	12:56:17 PM
98	N027583-002E-PS	PS	1	01/03/2018	12:59:38 PM
99	N027583-002E-MS2	MS	1	01/03/2018	01:04:54 PM
29	CCV7	CCV	1	01/03/2018	01:10:10 PM
1	CCB7	CCB	1	01/03/2018	01:14:05 PM
100	N027583-002E-MSD2	MSD	1	01/03/2018	01:17:53 PM
29	CCV8	CCV	1	01/03/2018	01:23:08 PM
1	CCB8	CCB	1	01/03/2018	01:27:27 PM
33	ICSA3	ICSA	1	01/03/2018	01:30:44 PM
34	ICSAB3	ICSAB	1	01/03/2018	01:34:33 PM
29	CCV8	CCV	1	01/03/2018	01:47:43 PM
1	CCB8	CCB	1	01/03/2018	01:51:37 PM
33	ICSA3	ICSA	1	01/03/2018	01:55:24 PM
34	ICSAB3	ICSAB	1	01/03/2018	01:59:39 PM
34	ICSAB3	ICSAB	1	01/03/2018	02:21:06 PM
105	N027583-002E	SAMP	25	01/03/2018	02:29:43 PM
106	N027583-002E-PS	PS	5	01/03/2018	02:33:34 PM
107	N027583-002E-MS2	MS	5	01/03/2018	02:38:30 PM
108	N027583-002E-MSD2	MSD	5	01/03/2018	02:43:26 PM
29	CCV9	CCV	1	01/03/2018	02:48:21 PM
1	CCB9	CCB	1	01/03/2018	02:52:16 PM
33	ICSA4	ICSA	1	01/03/2018	02:56:04 PM
33	ICSA4	ICSA	1	01/03/2018	03:01:02 PM
34	ICSAB4	ICSAB	1	01/03/2018	03:04:21 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/13/2017 8:12:07**
Prep End Date: **12/13/2017 3:30:00**
Reviewed/ Date: 01/05/2018
Initials/ Date: FOR
Prep Batch **66042** Prep Code: **3010_W_DISS** Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-3**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-66042	Aqueous		25	☐	0	0	25	1.000		
LCS2-66042	Aqueous		25	☐	0	0	25	1.000		
MB-66042	Aqueous		25	☐	0	0	25	1.000		
N027485-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-007B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9602	NITRIC ACID
9611	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/13/2017 8:12:07**
Prep End Date: **12/13/2017 3:30:00**
Prep Batch **66042** Prep Code: **3010_W_DISS**

Reviewed/ Date: 01/05/2018
Initials/ Date: FOR
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-3**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027485-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-011C	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-012C	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-008B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9602	NITRIC ACID
9611	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/15/2017 7:51:47**
Prep End Date: **12/15/2017 1:00:00**
Prep Batch **66081** Prep Code: **3010_W_DISS**

Reviewed/ Date: 01/05/2018
Initials/ Date: FOR
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**Db-2-5**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-66081	Aqueous		25	☐	0	0	25	1.000		
LCS2-66081	Aqueous		25	☐	0	0	25	1.000		
MB-66081	Aqueous		25	☐	0	0	25	1.000		
N027523-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-009B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-009B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-012B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-012B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-005B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9602	NITRIC ACID
9611	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/15/2017 7:51:47**
Prep End Date: **12/15/2017 1:00:00**
Prep Batch **66081** Prep Code: **3010_W_DISS**

Reviewed/ Date: 01/05/2018
Initials/ Date: FOR
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**Db-2-5**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027546-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-010B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9602	NITRIC ACID
9611	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 171219A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Boron								
CalBlk	12/19/2017	10:23:34 AM	B	249.677	5558	0.00	mg/L	
Standard1	12/19/2017	10:28:24 AM	B	249.677	3689	0.1000	mg/L	
Standard3	12/19/2017	10:39:04 AM	B	249.677	38154	1.000	mg/L	
Standard4	12/19/2017	10:44:25 AM	B	249.677	95676	2.500	mg/L	
Standard5	12/19/2017	10:51:46 AM	B	249.677	146881	3.750	mg/L	
Standard6	12/19/2017	10:59:06 AM	B	249.677	191523	5.000	mg/L	
Standard7	12/19/2017	11:06:41 AM	B	249.677	378948	10.000	mg/L	0.9999
Magnesium								
CalBlk	12/19/2017	10:23:34 AM	Mg	279.079	249	0.00	mg/L	
Standard1	12/19/2017	10:28:24 AM	Mg	279.079	1423	0.1000	mg/L	
Standard2	12/19/2017	10:33:45 AM	Mg	279.079	13161	1.000	mg/L	
Standard3	12/19/2017	10:39:04 AM	Mg	279.079	27739	2.000	mg/L	
Standard4	12/19/2017	10:44:25 AM	Mg	279.079	68479	5.000	mg/L	
Standard5	12/19/2017	10:51:46 AM	Mg	279.079	103673	7.500	mg/L	
Standard6	12/19/2017	10:59:06 AM	Mg	279.079	137290	10.000	mg/L	
Standard7	12/19/2017	11:06:41 AM	Mg	279.079	262216	20.000	mg/L	0.9997
Calcium								
CalBlk	12/19/2017	10:23:34 AM	Ca	227.546	-144	0.00	mg/L	
Standard1	12/19/2017	10:28:24 AM	Ca	227.546	62	0.2000	mg/L	
Standard2	12/19/2017	10:33:45 AM	Ca	227.546	278	1.000	mg/L	
Standard3	12/19/2017	10:39:04 AM	Ca	227.546	591	2.000	mg/L	
Standard4	12/19/2017	10:44:25 AM	Ca	227.546	1444	5.000	mg/L	
Standard5	12/19/2017	10:51:46 AM	Ca	227.546	2153	7.500	mg/L	
Standard6	12/19/2017	10:59:06 AM	Ca	227.546	2875	10.000	mg/L	
Standard7	12/19/2017	11:06:41 AM	Ca	227.546	5631	20.000	mg/L	0.9999
Iron								
CalBlk	12/19/2017	10:23:34 AM	Fe	273.953	-142	0.00	mg/L	
Standard1	12/19/2017	10:28:24 AM	Fe	273.953	491	0.0200	mg/L	
Standard2	12/19/2017	10:33:45 AM	Fe	273.953	1636	0.050	mg/L	
Standard3	12/19/2017	10:39:04 AM	Fe	273.953	44331	2.000	mg/L	
Standard4	12/19/2017	10:44:25 AM	Fe	273.953	109375	5.000	mg/L	
Standard5	12/19/2017	10:51:46 AM	Fe	273.953	165425	7.500	mg/L	
Standard6	12/19/2017	10:59:06 AM	Fe	273.953	218762	10.000	mg/L	
Standard7	12/19/2017	11:06:41 AM	Fe	273.953	417464	20.000	mg/L	0.9997

INITIAL CALIBRATION SUMMARY: 171222B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	12/22/2017	03:17:22 PM	Na	589.594	-138	0.00	mg/L	
Standard1	12/22/2017	03:20:39 PM	Na	589.594	474	0.1000	mg/L	
Standard2	12/22/2017	03:23:56 PM	Na	589.594	3944	1.000	mg/L	
Standard3	12/22/2017	03:27:44 PM	Na	589.594	20031	5.000	mg/L	
Standard4	12/22/2017	03:31:34 PM	Na	589.594	39935	10.000	mg/L	
Standard5	12/22/2017	03:35:29 PM	Na	589.594	78537	20.000	mg/L	
Standard6	12/22/2017	03:39:32 PM	Na	589.594	156629	40.000	mg/L	1.0000
Potassium								
CalBlk	12/22/2017	03:17:22 PM	K	766.451	397	0.00	mg/L	
Standard1	12/22/2017	03:20:39 PM	K	766.451	526	0.1000	mg/L	
Standard2	12/22/2017	03:23:56 PM	K	766.451	4850	1.000	mg/L	
Standard3	12/22/2017	03:27:44 PM	K	766.451	25065	5.000	mg/L	
Standard4	12/22/2017	03:31:34 PM	K	766.451	50113	10.000	mg/L	
Standard5	12/22/2017	03:35:29 PM	K	766.451	98619	20.000	mg/L	
Standard6	12/22/2017	03:39:32 PM	K	766.451	198633	40.000	mg/L	1.0000

INITIAL CALIBRATION SUMMARY: 180103A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	01/03/2018	06:39:20 AM	Na	589.594	62	0.00	mg/L	
Standard1	01/03/2018	06:42:39 AM	Na	589.594	503	0.1000	mg/L	
Standard2	01/03/2018	06:45:55 AM	Na	589.594	4160	1.000	mg/L	
Standard3	01/03/2018	06:49:43 AM	Na	589.594	21022	5.000	mg/L	
Standard4	01/03/2018	06:53:33 AM	Na	589.594	42090	10.000	mg/L	
Standard5	01/03/2018	06:57:26 AM	Na	589.594	84190	20.000	mg/L	
Standard6	01/03/2018	07:01:30 AM	Na	589.594	167500	40.000	mg/L	1.0000

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872867**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5099.945	100	5000	0	102	90	110				
Calcium	10101.951	500	10000	0	101	90	110				
Iron	10265.234	20	10000	0	103	90	110				
Magnesium	10256.827	100	10000	0	103	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	107.330	100	100.0	0	107	80	120				
Calcium	225.252	500	200.0	0	113	80	120				
Iron	22.111	20	20.00	0	111	80	120				
Magnesium	101.031	100	100.0	0	101	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5077.114	100	5000	0	102	90	110				
Calcium	10087.496	500	10000	0	101	90	110				
Iron	10068.629	20	10000	0	101	90	110				
Magnesium	10003.649	100	10000	0	100	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4918.676	100	5000	0	98.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9904.520	500	10000	0	99.0	90	110				
Iron	9773.781	20	10000	0	97.7	90	110				
Magnesium	9754.873	100	10000	0	97.5	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5195.547	100	5000	0	104	90	110				
Calcium	10165.050	500	10000	0	102	90	110				
Iron	10413.547	20	10000	0	104	90	110				
Magnesium	10394.623	100	10000	0	104	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4895.955	100	5000	0	97.9	90	110				
Calcium	9876.655	500	10000	0	98.8	90	110				
Iron	9839.064	20	10000	0	98.4	90	110				
Magnesium	9818.277	100	10000	0	98.2	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **ZZZZZZ** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	98.336	100	100.0	0	98.3	70	130				
Calcium	220.353	500	200.0	0	110	70	130				
Iron	22.875	20	20.00	0	114	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	106.753	100	100.0	0	107	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872936**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5129.771	100	5000	0	103	90	110				
Calcium	10352.156	500	10000	0	104	90	110				
Iron	10606.001	20	10000	0	106	90	110				
Magnesium	10567.979	100	10000	0	106	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4927.431	100	5000	0	98.5	90	110				
Calcium	10068.129	500	10000	0	101	90	110				
Iron	9935.813	20	10000	0	99.4	90	110				
Magnesium	9882.452	100	10000	0	98.8	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872960**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4810.929	100	5000	0	96.2	90	110				
Calcium	9847.946	500	10000	0	98.5	90	110				
Iron	9653.480	20	10000	0	96.5	90	110				
Magnesium	9675.889	100	10000	0	96.8	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV8** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872972**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4965.895	100	5000	0	99.3	90	110				
Calcium	10063.850	500	10000	0	101	90	110				
Iron	10273.994	20	10000	0	103	90	110				
Magnesium	10406.273	100	10000	0	104	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **ZZZZZZ** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	103.773	100	100.0	0	104	70	130				
Calcium	266.163	500	200.0	0	133	70	130				S
Iron	23.330	20	20.00	0	117	70	130				
Magnesium	103.517	100	100.0	0	104	70	130				

Sample ID **CCV9** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873638**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4872.771	100	5000	0	97.5	90	110				
Calcium	10125.639	500	10000	0	101	90	110				
Iron	10186.375	20	10000	0	102	90	110				
Magnesium	10324.037	100	10000	0	103	90	110				

Sample ID **CCV10** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873650**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4823.347	100	5000	0	96.5	90	110				
Calcium	9918.903	500	10000	0	99.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Ca on LLCCV2 is biased high however, samples for this analyte are greater than the regular CCV concentration which passed QC criteria.

01/05/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873650**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10147.604	20	10000	0	101	90	110				
Magnesium	10289.389	100	10000	0	103	90	110				

Sample ID **CCV11**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873662**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4737.324	100	5000	0	94.7	90	110				
Calcium	9659.769	500	10000	0	96.6	90	110				
Iron	9699.493	20	10000	0	97.0	90	110				
Magnesium	9819.285	100	10000	0	98.2	90	110				

Sample ID **CCV12**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873676**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4853.109	100	5000	0	97.1	90	110				
Calcium	9875.510	500	10000	0	98.8	90	110				
Iron	10180.551	20	10000	0	102	90	110				
Magnesium	10344.144	100	10000	0	103	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873678**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	100.097	100	100.0	0	100	70	130				
Calcium	258.351	500	200.0	0	129	70	130				
Iron	23.915	20	20.00	0	120	70	130				
Magnesium	103.278	100	100.0	0	103	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV13** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873691**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4892.170	100	5000	0	97.8	90	110				
Calcium	9814.263	500	10000	0	98.1	90	110				
Iron	10150.534	20	10000	0	102	90	110				
Magnesium	10319.095	100	10000	0	103	90	110				

Sample ID **CCV14** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873703**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4956.354	100	5000	0	99.1	90	110				
Calcium	10006.400	500	10000	0	100	90	110				
Iron	10171.821	20	10000	0	102	90	110				
Magnesium	10251.213	100	10000	0	103	90	110				

Sample ID **CCV15** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4827.137	100	5000	0	96.5	90	110				
Calcium	9477.839	500	10000	0	94.8	90	110				
Iron	9936.651	20	10000	0	99.4	90	110				
Magnesium	10006.673	100	10000	0	100	90	110				

Sample ID **CCV16** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4799.843	100	5000	0	96.0	90	110				
Calcium	9474.062	500	10000	0	94.7	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV16**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9916.966	20	10000	0	99.2	90	110				
Magnesium	9990.379	100	10000	0	99.9	90	110				

Sample ID **CCV17**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873733**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5240.337	100	5000	0	105	90	110				
Calcium	10458.405	500	10000	0	105	90	110				
Iron	10912.185	20	10000	0	109	90	110				
Magnesium	10979.376	100	10000	0	110	90	110				

Sample ID **LLCCV4**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	79.427	100	100.0	0	79.4	70	130				
Calcium	164.854	500	200.0	0	82.4	70	130				
Iron	17.487	20	20.00	0	87.4	70	130				
Magnesium	80.638	100	100.0	0	80.6	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **ICV**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10122.399	500	10000	0	101	90	110				
Sodium	10175.198	500	10000	0	102	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCV**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10001.638	500	10000	0	100	90	110				
Sodium	10109.954	500	10000	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCV**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10029.779	500	10000	0	100	90	110				
Sodium	10142.589	500	10000	0	101	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCV**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10301.903	500	10000	0	103	90	110				
Sodium	10542.144	500	10000	0	105	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCV**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10246.328	500	10000	0	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCV**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10466.692	500	10000	0	105	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCV**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10176.776	500	10000	0	102	90	110				
Sodium	10309.898	500	10000	0	103	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCV**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10150.927	500	10000	0	102	90	110				
Sodium	10255.749	500	10000	0	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **ICV**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9974.235	500	10000	0	99.7	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCV**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9865.611	500	10000	0	98.7	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCV**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883329**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9855.700	500	10000	0	98.6	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCV**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883341**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9806.224	500	10000	0	98.1	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCV**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883353**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10096.655	500	10000	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCV**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883365**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10032.975	500	10000	0	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872868**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	31.928	100									
Calcium	25.289	500									
Iron	0.264	20									
Magnesium	-0.57117	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	13.483	100									
Calcium	33.130	500									
Iron	0.775	20									
Magnesium	-0.917742	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	30.699	100									
Calcium	3.457	500									
Iron	0.203	20									
Magnesium	-1.651536	100									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	21.321	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	17.578	500									
Iron	-0.562511	20									
Magnesium	-0.614019	100									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	9.787	100									
Calcium	29.385	500									
Iron	-0.242624	20									
Magnesium	-0.716168	100									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872937**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	30.912	100									
Calcium	6.563	500									
Iron	-0.349232	20									
Magnesium	-0.244004	100									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	36.370	100									
Calcium	-20.165979	500									
Iron	-0.362088	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	0.953	100									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	28.308	100									
Calcium	31.182	500									
Iron	-0.109383	20									
Magnesium	-1.026871	100									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	31.732	100									
Calcium	48.382	500									
Iron	0.302	20									
Magnesium	-1.353948	100									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873639**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	25.230	100									
Calcium	61.218	500									
Iron	0.666	20									
Magnesium	-1.306078	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873651**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	35.337	100									
Calcium	63.322	500									
Iron	0.612	20									
Magnesium	-1.400694	100									

Sample ID **CCB11**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	19.326	100									
Calcium	53.447	500									
Iron	0.887	20									
Magnesium	-1.219422	100									

Sample ID **CCB12**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873677**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	24.142	100									
Calcium	54.893	500									
Iron	0.497	20									
Magnesium	-0.155927	100									

Sample ID **CCB13**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873692**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	30.685	100									
Calcium	60.610	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB13**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873692**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.102	20									
Magnesium	0.364	100									

Sample ID **CCB14**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873704**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	27.482	100									
Calcium	21.048	500									
Iron	-0.54473	20									
Magnesium	-0.548792	100									

Sample ID **CCB15**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873716**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	29.200	100									
Calcium	37.689	500									
Iron	-1.097273	20									
Magnesium	-0.032286	100									

Sample ID **CCB16**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873729**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	20.228	100									
Calcium	43.740	500									
Iron	-0.701584	20									
Magnesium	-0.088455	100									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCB17	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873734

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	59.735	100									
Calcium	-18.816967	500									
Iron	-0.670956	20									
Magnesium	-0.629145	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **ICB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877885**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9.610	500									
Sodium	-0.744353	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877899**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	-15.196937	500									
Sodium	-7.114299	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	-7.964067	500									
Sodium	-7.508067	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	21.968	500									
Sodium	134.661	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	5.319	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	115.981	500									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	-19.324501	500									
Sodium	44.411	500									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **CCB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877959**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	-13.882764	500									
Sodium	32.744	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **ICB**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3.133	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCB**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883317**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-21.053637	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCB**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883330**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-11.230024	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCB**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883342**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-11.316633	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCB**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883354**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-28.545286	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCB**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-34.152588	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872870**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	498329.453	50	500000	0	99.7	80	120				
Boron	88.100	100									
Calcium	506490.713	500	500000	0	101	80	120				
Iron	179793.677	20	200000	0	89.9	80	120				
Magnesium	475935.929	100	500000	0	95.2	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSAB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	546782.249	50	500000	0	109	80	120				
Boron	1173.352	100	1000	0	117	80	120				
Calcium	555538.618	500	500000	0	111	80	120				
Iron	187588.653	20	200000	0	93.8	80	120				
Magnesium	503556.663	100	500000	0	101	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	505775.123	50	500000	0	101	80	120				
Boron	83.607	100									
Calcium	511760.390	500	500000	0	102	80	120				
Iron	181783.344	20	200000	0	90.9	80	120				
Magnesium	481219.806	100	500000	0	96.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSAB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	551426.519	50	500000	0	110	80	120				
Boron	1175.249	100	1000	0	118	80	120				
Calcium	558431.588	500	500000	0	112	80	120				
Iron	188992.776	20	200000	0	94.5	80	120				
Magnesium	506616.951	100	500000	0	101	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	494366.698	50	500000	0	98.9	80	120				
Boron	85.578	100									
Calcium	497081.940	500	500000	0	99.4	80	120				
Iron	176987.327	20	200000	0	88.5	80	120				
Magnesium	476524.153	100	500000	0	95.3	80	120				

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSAB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	541047.279	50	500000	0	108	80	120				
Boron	1146.351	100	1000	0	115	80	120				
Calcium	543688.104	500	500000	0	109	80	120				
Iron	184653.505	20	200000	0	92.3	80	120				
Magnesium	500595.553	100	500000	0	100	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873679**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	491037.277	50	500000	0	98.2	80	120				
Boron	90.141	100									
Calcium	489727.156	500	500000	0	97.9	80	120				
Iron	175817.995	20	200000	0	87.9	80	120				
Magnesium	473899.027	100	500000	0	94.8	80	120				

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSAB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873680**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	538707.628	50	500000	0	108	80	120				
Boron	1129.484	100	1000	0	113	80	120				
Calcium	536671.907	500	500000	0	107	80	120				
Iron	183946.460	20	200000	0	92.0	80	120				
Magnesium	500154.534	100	500000	0	100	80	120				

Sample ID **ICSA5**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	519089.326	50	500000	0	104	80	120				
Boron	85.383	100									
Calcium	511388.117	500	500000	0	102	80	120				
Iron	187834.978	20	200000	0	93.9	80	120				
Magnesium	504975.878	100	500000	0	101	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB5**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSAB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	473861.160	50	500000	0	94.8	80	120				
Boron	1022.046	100	1000	0	102	80	120				
Calcium	464818.220	500	500000	0	93.0	80	120				
Iron	200609.345	20	200000	0	100	80	120				
Magnesium	447746.521	100	500000	0	89.5	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **ICSA**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	-0.246773	500									
Sodium	0.528	500									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **ICSAB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877887**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10124.730	500	10000	0	101	80	120				
Sodium	10226.982	500	10000	0	102	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **ICSA**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877960**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	-7.390148	500									
Sodium	31.954	500									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **ICSAB**	Batch ID: **R121039**	TestNo: **EPA 6010B**		Analysis Date: **12/22/2017**	SeqNo: **2877961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10145.168	500	10000	0	101	80	120				
Sodium	10266.940	500	10000	0	103	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **ICSA**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883304**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	0.570	500									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **ICSAB**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883305**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10004.420	500	10000	0	100	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **ICSA**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883367**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-37.59857	500									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **ICSAB**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10148.970	500	10000	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	98.9	65-125	PASS
Standard2	ICAL	1	1.053	105.31	65-125	PASS
Standard3	ICAL	1	1.046	104.59	65-125	PASS
Standard4	ICAL	1	1.074	107.38	65-125	PASS
Standard5	ICAL	1	0.99	98.63	65-125	PASS
Standard6	ICAL	1	0.93	93.39	65-125	PASS
Standard7	ICAL	1	0.95	94.61	65-125	PASS
ICV	ICV	1	0.94	94.18	65-125	PASS
ICB	ICB	1	1.015	101.49	65-125	PASS
LLICV	CCV1	1	1.034	103.35	65-125	PASS
ICSA1	ICSA	1	1.015	101.5	65-125	PASS
ICSAB1	ICSAB	1	0.82	81.74	65-125	PASS
CCV1	CCV	1	0.98	97.92	65-125	PASS
CCB1	CCB	1	1	99.98	65-125	PASS
CCB1	CCB	1	1.031	103.1	65-125	PASS
CCV2	CCV	1	1.03	102.97	65-125	PASS
CCB2	CCB	1	1.042	104.16	65-125	PASS
CCV3	CCV	1	0.98	97.7	65-125	PASS
CCB3	CCB	1	1.042	104.17	65-125	PASS
CCB3	CCB	1	1.022	102.22	65-125	PASS
MB-66042	MBLK	1	1.021	102.07	65-125	PASS
LCS1-66042	LCS	1	0.98	98.5	65-125	PASS
CCV4	CCV	1	1.011	101.06	65-125	PASS
CCB4	CCB	1	1	99.81	65-125	PASS
LLCCV1	CCV2	1	1.033	103.33	65-125	PASS
ICSA2	ICSA	1	1.045	104.52	65-125	PASS
ICSAB2	ICSAB	1	0.84	84.43	65-125	PASS
N027485-001B	SAMP	1	0.95	94.99	65-125	PASS
N027485-001B	SAMP	5	1.0027	100.27	65-125	PASS
N027485-001B-PS	PS	1	0.95	94.99	65-125	PASS
N027485-001B-MS1	MS	1	0.94	94.39	65-125	PASS
N027485-001B-MSD1	MSD	1	0.93	93.43	65-125	PASS
N027485-002B	SAMP	1	0.85	85.47	65-125	PASS
N027485-003B	SAMP	1	0.87	87.11	65-125	PASS
N027485-004B	SAMP	1	0.88	87.91	65-125	PASS
N027485-005B	SAMP	1	0.83	82.79	65-125	PASS
N027485-006B	SAMP	1	0.84	83.7	65-125	PASS
CCV5	CCV	1	0.99	98.91	65-125	PASS
CCB5	CCB	1	1.0069	100.69	65-125	PASS
N027485-007B	SAMP	1	0.84	84.44	65-125	PASS

INTERNAL STANDARD: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N027485-008B	SAMP	1	0.98	98.24	65-125	PASS
N027485-009B	SAMP	1	0.93	93.39	65-125	PASS
N027485-010B	SAMP	1	0.91	91.2	65-125	PASS
N027485-011C	SAMP	1	0.97	96.8	65-125	PASS
N027485-012C	SAMP	1	1.0002	100.02	65-125	PASS
N027523-001B	SAMP	1	1.032	103.2	65-125	PASS
N027523-002B	SAMP	1	1.053	105.34	65-125	PASS
N027523-003B	SAMP	1	1.034	103.4	65-125	PASS
N027523-004B	SAMP	1	1.028	102.76	65-125	PASS
CCV6	CCV	1	1.028	102.84	65-125	PASS
CCB6	CCB	1	1.0096	100.96	65-125	PASS
N027523-005C	SAMP	1	0.95	94.5	65-125	PASS
N027523-006C	SAMP	1	0.92	91.93	65-125	PASS
N027523-007C	SAMP	1	0.89	89.008	65-125	PASS
N027523-008B	SAMP	1	0.97	97.073	65-125	PASS
MB-66081	MBLK	1	1.078	107.84	65-125	PASS
LCS1-66081	LCS	1	1.015	101.52	65-125	PASS
CCV7	CCV	1	1.037	103.74	65-125	PASS
CCB7	CCB	1	1.037	103.7	65-125	PASS
N027523-009B	SAMP	1	0.86	86.093	65-125	PASS
N027523-009B	SAMP	5	0.94	94.062	65-125	PASS
N027523-009B-PS	PS	1	0.87	87.39	65-125	PASS
N027523-009B-MS1	MS	1	0.89	89.3	65-125	PASS
N027523-009B-MSD1	MSD	1	0.9	89.63	65-125	PASS
N027523-012B	SAMP	1	0.88	87.87	65-125	PASS
N027546-001B	SAMP	1	0.94	94.32	65-125	PASS
N027546-002B	SAMP	1	0.99	98.77	65-125	PASS
N027546-003B	SAMP	1	0.96	96.38	65-125	PASS
N027546-004B	SAMP	1	0.85	85.41	65-125	PASS
CCV8	CCV	1	1.072	107.21	65-125	PASS
CCB8	CCB	1	1.094	109.41	65-125	PASS
LLCCV2	CCV2	1	1.15	115.04	65-125	PASS
ICSA3	ICSA	1	1.15	114.65	65-125	PASS
ICSAB3	ICSAB	1	0.9	90.38	65-125	PASS
N027546-005B	SAMP	1	0.87	86.96	65-125	PASS
N027546-006B	SAMP	1	1.068	106.85	65-125	PASS
N027546-007B	SAMP	1	0.85	84.86	65-125	PASS
N027546-008B	SAMP	1	0.87	86.59	65-125	PASS
N027546-009B	SAMP	1	0.83	83.29	65-125	PASS
N027546-010B	SAMP	1	0.91	90.51	65-125	PASS
CCV9	CCV	1	1.075	107.45	65-125	PASS

INTERNAL STANDARD: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCB9	CCB	1	1.085	108.54	65-125	PASS
CCV10	CCV	1	1.088	108.83	65-125	PASS
CCB10	CCB	1	1.11	110.82	65-125	PASS
CCV11	CCV	1	1.11	110.54	65-125	PASS
CCB11	CCB	1	1.095	109.54	65-125	PASS
CCB11	CCB	1	1.1	110.07	65-125	PASS
CCV12	CCV	1	1.079	107.91	65-125	PASS
CCB12	CCB	1	1.11	110.73	65-125	PASS
LLCCV3	CCV2	1	1.17	116.58	65-125	PASS
ICSA4	ICSA	1	1.16	115.81	65-125	PASS
ICSAB4	ICSAB	1	0.91	91.32	65-125	PASS
N027485-002B	SAMP	5	0.98	98.18	65-125	PASS
N027485-003B	SAMP	5	0.99	98.55	65-125	PASS
CCV13	CCV	1	1.073	107.34	65-125	PASS
CCB13	CCB	1	1.097	109.65	65-125	PASS
N027485-010B	SAMP	5	0.99	98.6	65-125	PASS
N027523-009B	SAMP	25	1.03	103.02	65-125	PASS
N027523-009B-PS	PS	5	0.95	94.86	65-125	PASS
N027523-009B-MS1	MS	5	0.95	94.68	65-125	PASS
N027523-009B-MSD1	MSD	5	0.94	94.013	65-125	PASS
CCV14	CCV	1	1.074	107.42	65-125	PASS
CCB14	CCB	1	1.048	104.82	65-125	PASS
CCV15	CCV	1	1.029	102.92	65-125	PASS
CCB15	CCB	1	1.038	103.82	65-125	PASS
CCV16	CCV	1	1.033	103.32	65-125	PASS
CCB16	CCB	1	1.042	104.16	65-125	PASS
CCB16	CCB	1	1.043	104.26	65-125	PASS
CCV17	CCV	1	1.023	102.26	65-125	PASS
CCB17	CCB	1	1.012	101.22	65-125	PASS
LLCCV4	CCV2	1	1.12	111.89	65-125	PASS
LLCCV4	CCV2	1	1.047	104.73	65-125	PASS
ICSA5	ICSA	1	1.11	111.01	65-125	PASS
ICSAB5	ICSAB	1	0.88	87.76	65-125	PASS
ICSAB5	ICSAB	1	1.043	104.34	65-125	PASS

INTERNAL STANDARD: 171222B

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.98	98.35	65-125	PASS
Standard2	ICAL	1	0.99	99.36	65-125	PASS
Standard3	ICAL	1	0.97	97.45	65-125	PASS
Standard4	ICAL	1	0.96	96.31	65-125	PASS
Standard5	ICAL	1	0.96	95.89	65-125	PASS
Standard6	ICAL	1	0.94	94.3	65-125	PASS
ICV	ICV	1	0.97	96.98	65-125	PASS
ICB	ICB	1	1.0026	100.26	65-125	PASS
ICSA1	ICSA	1	0.99	99.49	65-125	PASS
ICSAB1	ICSAB	1	0.97	97.081	65-125	PASS
MB-66042	MBLK	1	-0.00006	-0.006	65-125	NR!
LCS2-66042	LCS	1	-0.00004	-0.004	65-125	NR!
MB-66042	MBLK	1	0.99	99.38	65-125	PASS
LCS2-66042	LCS	1	0.99	99.4	65-125	PASS
N027523-001B	SAMP	100	0.98	98.5	65-125	PASS
N027523-002B	SAMP	100	0.98	98.41	65-125	PASS
N027523-003B	SAMP	100	0.98	98.43	65-125	PASS
N027523-004B	SAMP	100	-0.00003	-0.003	65-125	NR!
N027523-005C	SAMP	100	0.96	96.13	65-125	PASS
N027523-006C	SAMP	100	0.96	95.75	65-125	PASS
CCV1	CCV	1	0.97	96.7	65-125	PASS
CCB1	CCB	1	1	99.59	65-125	PASS
N027523-007C	SAMP	100	0.96	95.71	65-125	PASS
N027523-008B	SAMP	100	0.96	96.47	65-125	PASS
N027523-004B	SAMP	100	0.99	98.75	65-125	PASS
N027485-011C	SAMP	100	0.97	96.99	65-125	PASS
N027485-012C	SAMP	100	0.97	97.066	65-125	PASS
N027485-001B	SAMP	100	0.97	96.53	65-125	PASS
N027485-003B	SAMP	100	0.96	95.72	65-125	PASS
N027485-004B	SAMP	100	0.96	95.67	65-125	PASS
N027485-005B	SAMP	500	0.97	96.98	65-125	PASS
N027485-006B	SAMP	500	0.98	97.56	65-125	PASS
CCV2	CCV	1	0.96	96.032	65-125	PASS
CCB2	CCB	1	0.99	99.43	65-125	PASS
N027485-007B	SAMP	500	0.95	95.49	65-125	PASS
N027485-008B	SAMP	10	0.96	95.56	65-125	PASS
N027485-009B	SAMP	100	0.95	94.93	65-125	PASS
N027485-010B	SAMP	100	0.94	94.37	65-125	PASS
N027485-002B	SAMP	5	0.91	90.81	65-125	PASS
N027485-002B	SAMP	25	0.94	93.84	65-125	PASS

INTERNAL STANDARD: 171222B

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N027485-002B-PS	PS	5	0.92	91.78	65-125	PASS
N027485-002B-MS2	MS	5	0.92	92.13	65-125	PASS
N027485-002B-MSD2	MSD	5	0.92	91.9	65-125	PASS
CCV3	CCV	1	0.95	94.95	65-125	PASS
CCB3	CCB	1	0.98	97.57	65-125	PASS
N027485-002B	SAMP	100	0.96	96.15	65-125	PASS
N027485-002B	SAMP	500	0.97	96.53	65-125	PASS
N027485-002B-PS	PS	100	0.96	96.054	65-125	PASS
N027485-002B-MS2	MS	100	0.96	95.65	65-125	PASS
N027485-002B-MSD2	MSD	100	0.96	95.82	65-125	PASS
N027485-011C	SAMP	1	0.95	95.18	65-125	PASS
N027485-012C	SAMP	1	0.96	96.028	65-125	PASS
N027523-005C	SAMP	1	0.93	92.84	65-125	PASS
CCV4	CCV	1	0.94	93.6	65-125	PASS
CCB4	CCB	1	0.97	97.36	65-125	PASS
CCV5	CCV	1	0.97	96.85	65-125	PASS
CCB5	CCB	1	1.0018	100.18	65-125	PASS
CCV6	CCV	1	0.97	97.19	65-125	PASS
CCB6	CCB	1	1.01	101	65-125	PASS
ICSA2	ICSA	1	1.0071	100.71	65-125	PASS
ICSAB2	ICSAB	1	0.98	98.26	65-125	PASS

INTERNAL STANDARD: 180103A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	99.11	65-125	PASS
Standard2	ICAL	1	1.0002	100.02	65-125	PASS
Standard3	ICAL	1	0.98	97.82	65-125	PASS
Standard4	ICAL	1	0.96	95.77	65-125	PASS
Standard5	ICAL	1	0.95	95.12	65-125	PASS
Standard6	ICAL	1	0.94	94.22	65-125	PASS
ICV	ICV	1	0.96	95.99	65-125	PASS
ICB	ICB	1	1.0034	100.34	65-125	PASS
ICSA1	ICSA	1	1.0054	100.54	65-125	PASS
ICSAB1	ICSAB	1	0.96	96.016	65-125	PASS
MB-66081	MBLK	1	1.0076	100.76	65-125	PASS
LCS2-66081	LCS	1	1.032	103.21	65-125	PASS
N027523-009B	SAMP	100	1	99.59	65-125	PASS
N027523-012B	SAMP	100	0.99	99.16	65-125	PASS
N027546-001B	SAMP	100	0.99	99.22	65-125	PASS
N027546-002B	SAMP	100	0.99	99.17	65-125	PASS
N027546-003B	SAMP	100	0.99	99.34	65-125	PASS
N027546-004B	SAMP	100	0.99	98.86	65-125	PASS
N027546-005B	SAMP	100	0.99	98.6	65-125	PASS
N027546-006B	SAMP	100	1.016	101.63	65-125	PASS
CCV1	CCV	1	0.99	98.53	65-125	PASS
CCB1	CCB	1	1.045	104.49	65-125	PASS
N027546-007B	SAMP	100	0.99	99.29	65-125	PASS
N027546-008B	SAMP	100	0.99	99.16	65-125	PASS
N027546-009B	SAMP	100	1	99.62	65-125	PASS
N027546-010B	SAMP	100	0.99	99.15	65-125	PASS
N027523-012B	SAMP	500	1.0026	100.26	65-125	PASS
N027523-012B-PS	PS	100	0.99	98.99	65-125	PASS
N027523-012B-MS2	MS	100	0.98	97.64	65-125	PASS
N027523-012B-MSD2	MSD	100	0.98	97.67	65-125	PASS
N027523-012B-MS2	MS	100	0.97	97.43	65-125	PASS
N027546-007B	SAMP	500	0.98	98.11	65-125	PASS
CCV2	CCV	1	0.67	66.55	65-125	PASS
CCV2	CCV	1	0.99	98.59	65-125	PASS
CCB2	CCB	1	1.024	102.4	65-125	PASS
N027546-006B	SAMP	25	0.99	98.7	65-125	PASS
N027546-008B	SAMP	500	0.99	98.58	65-125	PASS
N027546-009B	SAMP	500	0.99	99.05	65-125	PASS
CCV3	CCV	1	0.99	99.42	65-125	PASS
CCB3	CCB	1	1.034	103.42	65-125	PASS

INTERNAL STANDARD: 180103A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCV4	CCV	1	1.018	101.76	65-125	PASS
CCB4	CCB	1	1.071	107.15	65-125	PASS
CCV5	CCV	1	1.024	102.42	65-125	PASS
CCB5	CCB	1	1.048	104.85	65-125	PASS
ICSA2	ICSA	1	1.073	107.25	65-125	PASS
ICSAB2	ICSAB	1	1.024	102.38	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N027523
Test Method: EPA 6010B
Analysis Date: 12/19/2017 & 12/22/2017

Matrix: Groundwater
Batch No.: 66042

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B & Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027485-001B DT 5X	Boron	ug/L	648.5051	NA	622.2523	4.22%	10
N027485-001B DT 5X	Calcium	ug/L	106215.4	PASS	99232.72	7.04%	10
N027485-001B DT 5X	Iron	ug/L	31.59636	NA	37.24177	15.16%	10
N027485-001B DT 5X	Magnesium	ug/L	10039.93	PASS	9129.987	9.97%	10
N027485-002B DT 25X	Potassium	ug/L	32171.66	PASS	32926.12	2.29%	10
N027485-002B DT 500X	Sodium	ug/L	2450670	PASS	2335082	4.95%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N027523
Test Method: EPA 6010B
Analysis Date: 12/19/2017 & 1/3/2018

Matrix: Groundwater
Batch No.: 66081

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test failed for B, Fe & Mg.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027523-009B DT 5X	Boron	ug/L	2856.928	FAIL	2571.485	11.10%	10
N027523-009B DT 25X	Calcium	ug/L	886864.6	PASS	887365.2	0.06%	10
N027523-009B DT 5X	Iron	ug/L	1580.363	FAIL	1284.448	23.04%	10
N027523-009B DT 5X	Magnesium	ug/L	82117.39	FAIL	73868.66	11.17%	10
N027523-012B DT 500X	Sodium	ug/L	3360526	PASS	3330188	0.91%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N027485-001B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **66042**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2872928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5382.574	100	5000	622.3	95.2	80	120				
Calcium	108190.658	500	10000	99230	89.6	80	120				
Iron	137.491	20	100.0	37.24	100	80	120				
Magnesium	18008.743	100	10000	9130	88.8	80	120				

Sample ID **N027485-002B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **ZZZZZZ**	Batch ID: **66042**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/22/2017**	SeqNo: **2877919**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	57578.001	2500	20000	32930	123	80	120				S

Sample ID **N027485-002B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121039**
Client ID: **ZZZZZZ**	Batch ID: **66042**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/22/2017**	SeqNo: **2877926**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2536628.154	50000	20000	2335000	1010	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027523-009B-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943		
Client ID:	ZZZZZZ	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2872964		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Boron	7362.720	100	5000	2571	95.8	80	120						
Iron	1416.523	20	100.0	1284	132	80	120				S		
Magnesium	81784.069	100	10000	73870	79.2	80	120				S		

Sample ID	N027523-009B-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943		
Client ID:	ZZZZZZ	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2873695		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Calcium	907249.943	2500	10000	887400	199	80	120				S		

Sample ID	N027523-012B-PS	SampType:	PS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	121185		
Client ID:	ZZZZZZ	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883323		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Sodium	3463038.587	50000	20000	3330000	664	80	120				S		

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

LOD & PQL VERIFICATION

Analytical Method: EPA 6010B / 200.7 **Matrix:** Water
Date of Analysis: 2/21/2017 **Units:** mg/L
Instrument Name: ICP2
Analyst: MI

Compound	MDL	LOD		PQL		
		Spike	Recovered	Spike	Recovered	% Recovery
Sodium	0.02621	0.10	0.08408	0.5	0.52080	104.2
Potassium	0.03815	0.10	0.13587	0.5	0.48231	96.5
Strontium	0.00545	0.02	0.02459	0.05	0.06052	121.0

Method Detection Limit

Analytical Method: EPA 6010B / 200.7
Digestion Method: EPA 3010A
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: mg/L

Analyte	1	2	3	4	5	6	7	SD	Ave	AMT SPIKED	%RSD	MDL	PQL
Potassium	0.15443	0.16201	0.14301	0.16141	0.16124	0.12965	0.14652	0.01215	0.15118	0.1000	8.0	0.03815	0.5
Sodium	0.11445	0.11459	0.11678	0.11286	0.11394	0.09515	0.10066	0.00835	0.10978	0.1000	7.6	0.02621	0.5
Strontium	0.02939	0.03046	0.0307	0.02962	0.03209	0.02708	0.02772	0.00174	0.02958	0.0250	5.9	0.00545	0.05

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66061
ASSET #: N027523

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 1/3/2018

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.		X			X	
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X			X	
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?		X			X	
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?		X			X	
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X	X		X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

Mn in N027523-009B is over linear range. For further dilution.
%RSD of Se in N027523-004B, 006C, 007C & 008B & Mn in N027523-004B failed > 15%. For rerun.
For Confirmation:
N027523-001B (6020) = 14 ug/L :confirmation: 15 ug/L ; N027523-001A (218.6) = 11 ug/L :confirmation: 11 ug/L
N027523-002B (6020) = 21 ug/L :confirmation: 21 ug/L ; N027523-002A (218.6) = 11 ug/L :confirmation: 16 ug/L
N027523-008B (6020) = 2.6 ug/L :confirmation: 2.6 ug/L ; N027523-008A (218.6) = 1.2 ug/L :confirmation: 1.4 ug/L
N027523-009B (6020) = 1.5 ug/L :confirmation: 1.2 ug/L ; N027523-009A (218.6) = <1.0 ug/L :confirmation: 1.4 ug/L

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/5/18
2nd Level Reviewer 01/05/2018 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66061
ASSET #: N027523

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 1/4/2018

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		X
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			X
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .			X	X		X
24. LCS compounds within control limits.			X	X		X
25. MS/MSD, RPD's are within control limits			X	X		X
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For dilution of Mn in N027523-009B only.
For Se in N027523-004B, 006C, 007C & 008B & Mn in N027523-004B reruns only.

	Yes	No	N/A
1. All assigned sample(s) analyzed	✓		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/5/18

2nd Level Reviewer 01/05/2018 Date: →

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N027523-001B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 14.0801 * 1 * (25/25)

Chromium , ug/L = 14.0801

Reporting results in two significant figures,

Chromium , ug/L = 14

% RSD SUMMARY

PERCENT RSD SUMMARY: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.087	1.99	15	PASS	0.11	6.37	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.51	1.93	15	PASS	0.51	5.98	15	PASS
Std3-5/50 ppb	ICAL	1	5.15	0.16	15	PASS	5.26	2.45	15	PASS
Std4-10/100 ppb	ICAL	1	10.16	1.63	15	PASS	10.39	2.54	15	PASS
Std5-20/200 ppb	ICAL	1	20.33	1.32	15	PASS	20.81	1.32	15	PASS
Std6-40/400 ppb	ICAL	1	40.33	1.33	15	PASS	41.22	1.63	15	PASS
Std7-100/1000 ppb	ICAL	1	99.78	2.18	15	PASS	102.038	1.6	15	PASS
Std8-200/2000 ppb	ICAL	1	198.76	1.082	15	PASS	198.63	1.33	15	PASS
ICV	ICV	1	10.11	3.032	15	PASS	103.16	2.51	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.062	0.78	20	PASS	0.56	5.42	20	PASS
ICSA1	ICSA	1	0.072	18.5	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.33	1.21	15	PASS	18.13	0.75	15	PASS
LLICV	CCV1	1	1.04	0.76	20	PASS	0.53	2.4	20	PASS
CCV1	CCV	1	20.19	0.95	15	PASS	20.54	1.65	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.21	1.093	15	PASS	20.85	1.12	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.36	2.28	15	PASS	20.72	2.72	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.052	2.76	20	PASS	0.51	6.22	20	PASS
ICSA2	ICSA	1	0.063	8.0034	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.15	1.56	15	PASS	18.075	1.9	15	PASS
CCV4	CCV	1	20.26	2.17	15	PASS	20.8	3.81	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
MB-66061	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV5	CCV	1	20.26	1.39	15	PASS	20.81	2.58	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-66061	LCS	1	10.088	0.55	15	PASS	103.32	0.58	15	PASS
N027523-001B	SAMP	1	14.08	1.73	15	PASS	8.29	1.59	15	PASS
N027523-001B	SAMP	5	3.0084	1.93	15	PASS	1.78	1.74	15	PASS
N027523-001B	SAMP	25	0.61	1.048	15	PASS	0.34	7.93	15	PASS
N027523-001B-PS	PS	1	24.024	0.27	15	PASS	110.74	0.89	15	PASS
N027523-001B-PS	PS	5	5.17	1.55	15	PASS	23.7	0.3	15	PASS
N027523-001B-MS	MS	1	24.18	1.0018	15	PASS	110.87	0.57	15	PASS
N027523-001B-MS	MS	5	5.28	1.27	15	PASS	24.019	0.65	15	PASS
N027523-001B-MSD	MSD	1	23.92	1.41	15	PASS	110.18	1.66	15	PASS
N027523-001B-MSD	MSD	5	5.18	2.5	15	PASS	23.73	2.45	15	PASS
CCV6	CCV	1	20.13	2.21	15	PASS	20.55	2.071	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
LLCCV2	CCV2	1	1.036	3.29	20	PASS	0.53	8.46	20	PASS
ICSA3	ICSA	1	0.068	0.83	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.14	0.51	15	PASS	18.23	0.86	15	PASS
N027523-002B	SAMP	1	21.15	1.32	15	PASS	32.71	1.36	15	PASS
N027523-002B	SAMP	5	4.3	1.15	15	PASS	6.95	1.13	15	PASS
N027523-003B	SAMP	1	12.43	0.83	15	PASS	0.92	2.22	15	PASS
N027523-003B	SAMP	5	2.65	1.66	15	PASS	0.19	14.66	15	PASS
N027523-004B	SAMP	1	23.31	2.025	15	PASS	0.52	24.46	15	NR!
N027523-004B	SAMP	5	4.96	1.89	15	PASS	0.13	15.52	15	<PQL
N027523-005C	SAMP	1	384.11	1.76	15	PASS	<0.000	N/A	15	<PQL
N027523-005C	SAMP	5	82.75	0.26	15	PASS	<0.000	N/A	15	<PQL
N027523-006C	SAMP	1	13.11	1.23	15	PASS	1.52	3.72	15	PASS
N027523-006C	SAMP	5	2.88	0.82	15	PASS	0.32	4.21	15	PASS
CCV7	CCV	1	20.1	1.055	15	PASS	20.45	1.66	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027523-007C	SAMP	1	13.048	1.66	15	PASS	1.49	3.69	15	PASS
N027523-007C	SAMP	5	3.11	0.82	15	PASS	0.34	2.39	15	PASS
N027523-008B	SAMP	1	2.56	1.4	15	PASS	1.33	7.75	15	PASS
N027523-008B	SAMP	5	0.52	2.2	15	PASS	0.26	4.079	15	PASS
N027523-009B	SAMP	1	1.46	2.53	15	PASS	1953.36	0.46	15	PASS
N027523-009B	SAMP	5	0.3	10.99	15	PASS	432.56	1.67	15	PASS
N027523-012B	SAMP	1	2.68	0.82	15	PASS	10.98	0.3	15	PASS
N027523-012B	SAMP	5	0.58	4.56	15	PASS	2.27	0.73	15	PASS
N027546-001B	SAMP	1	2112.93	1.4	15	PASS	0.15	16.32	15	<PQL
N027546-001B	SAMP	5	452.68	0.46	15	PASS	0.054	49.3	15	<PQL
CCV8	CCV	1	20.35	1.27	15	PASS	20.76	1.45	15	PASS
CCB8	CCB	1	0.0095	104.66	15	<PQL	0.00097	879.08	15	<PQL
N027546-002B	SAMP	1	2108.53	1.58	15	PASS	0.13	14.78	15	PASS
N027546-002B	SAMP	5	457.78	1.086	15	PASS	0.053	14.97	15	PASS
N027546-003B	SAMP	1	12.066	1.36	15	PASS	0.5	4.75	15	PASS
N027546-003B	SAMP	5	2.58	3.18	15	PASS	0.12	18.79	15	<PQL
N027546-004B	SAMP	1	1.39	2.27	15	PASS	20.77	0.32	15	PASS
N027546-004B	SAMP	5	0.29	3.33	15	PASS	4.5	1.12	15	PASS
N027546-005B	SAMP	1	12.48	0.77	15	PASS	18.95	0.95	15	PASS
N027546-005B	SAMP	5	2.74	2.85	15	PASS	4.18	1.98	15	PASS
N027546-007B	SAMP	1	<0.000	N/A	15	<PQL	14.06	2.25	15	PASS
N027546-007B	SAMP	5	<0.000	N/A	15	<PQL	3.12	1.86	15	PASS
CCV9	CCV	1	20.11	0.79	15	PASS	20.58	1.58	15	PASS
CCB9	CCB	1	0.0061	134.99	15	<PQL	<0.000	N/A	15	<PQL
N027546-008B	SAMP	1	0.62	5.24	15	PASS	67.87	2.67	15	PASS
N027546-008B	SAMP	5	0.14	10.41	15	PASS	14.84	1.62	15	PASS

PERCENT RSD SUMMARY: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027546-009B	SAMP	1	1.18	1.091	15	PASS	65.96	1.12	15	PASS
N027546-009B	SAMP	5	0.14	14.99	15	PASS	14.41	2.96	15	PASS
N027546-010B	SAMP	1	14.24	1.61	15	PASS	7.31	1.081	15	PASS
N027546-010B	SAMP	5	3.1	1.26	15	PASS	1.62	4.36	15	PASS
CCV10	CCV	1	20.081	1.48	15	PASS	20.56	1.45	15	PASS
CCB10	CCB	1	<0.000	N/A	15	<PQL	0.0068	282.71	15	<PQL
LLCCV3	CCV2	1	1.075	3.038	20	PASS	0.54	3.44	20	PASS
ICSA4	ICSA	1	0.078	18.24	15	<PQL	<0.000	N/A	15	<PQL
ICSAB4	ICSAB	1	20.11	1.97	15	PASS	17.98	2.41	15	PASS

PERCENT RSD SUMMARY: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	8.74	15	PASS	0.096	59.74	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.49	5.49	15	PASS	0.54	15.43	15	NR!
Std3-5/50 ppb	ICAL	1	4.92	0.87	15	PASS	5.057	4.3	15	PASS
Std4-10/100 ppb	ICAL	1	10.094	0.98	15	PASS	10.38	2.32	15	PASS
Std5-20/200 ppb	ICAL	1	19.69	1.69	15	PASS	19.58	3.33	15	PASS
Std6-40/400 ppb	ICAL	1	40.62	0.89	15	PASS	40.26	1.36	15	PASS
Std7-100/1000 ppb	ICAL	1	100.023	0.94	15	PASS	102.69	0.79	15	PASS
Std8-200/2000 ppb	ICAL	1	199.89	1.3	15	PASS	198.62	0.11	15	PASS
ICV	ICV	1	9.98	0.79	15	PASS	9.47	2.33	15	PASS
ICB	ICB	1	0.013	92.16	15	<PQL	0.013	401.11	15	<PQL
LLICV	CCV1	1	0.11	1.14	20	PASS	0.61	11.088	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	21.063	1.53	15	PASS	20.52	2.47	15	PASS
LLICV	CCV1	1	0.13	4.16	20	PASS	0.51	22.8	20	NR!
CCV1	CCV	1	20.023	0.41	15	PASS	20.3	0.57	15	PASS
CCB1	CCB	1	0.0086	54.78	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.88	1.3	15	PASS	19.66	2.17	15	PASS
CCB2	CCB	1	0.00028	2405.71	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	19.89	0.86	15	PASS	19.54	0.88	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.092	25.56	20	<PQL	0.5	26.12	20	NR!
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.72	1.29	15	PASS	19.48	2.64	15	PASS
CCV4	CCV	1	19.71	1.98	15	PASS	19.22	3.28	15	PASS
CCB4	CCB	1	0.0011	289.65	15	<PQL	<0.000	N/A	15	<PQL
MB-66061	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV5	CCV	1	19.78	0.92	15	PASS	19.79	3.21	15	PASS
CCB5	CCB	1	0.008	78.43	15	<PQL	<0.000	N/A	15	<PQL
LCS-66061	LCS	1	9.8	0.67	15	PASS	10.24	4.97	15	PASS
N027523-001B	SAMP	1	1.64	1.31	15	PASS	3.5	4.21	15	PASS
N027523-001B	SAMP	5	0.31	4.22	15	PASS	0.73	11.69	15	PASS
N027523-001B	SAMP	25	0.06	8.87	15	PASS	0.053	126.81	15	<PQL
N027523-001B-PS	PS	1	12.085	2.39	15	PASS	13.97	5.54	15	PASS
N027523-001B-PS	PS	5	2.52	1.98	15	PASS	2.9	14.04	15	PASS
N027523-001B-MS	MS	1	12.22	1.079	15	PASS	13.8	3.37	15	PASS
N027523-001B-MS	MS	5	2.56	0.8	15	PASS	2.94	7.21	15	PASS
N027523-001B-MSD	MSD	1	12	0.19	15	PASS	14.11	4.45	15	PASS
N027523-001B-MSD	MSD	5	2.5	3.088	15	PASS	2.96	3.84	15	PASS
CCV6	CCV	1	19.38	1.37	15	PASS	19.48	4.23	15	PASS
CCB6	CCB	1	0.00022	2797.49	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
LLCCV2	CCV2	1	0.11	3.024	20	PASS	0.53	24.077	20	NR!
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.54	0.67	15	PASS	19.3	2.74	15	PASS
N027523-002B	SAMP	1	11.0071	0.93	15	PASS	2.26	10.93	15	PASS
N027523-002B	SAMP	5	2.32	1.2	15	PASS	0.45	27.11	15	<PQL
N027523-003B	SAMP	1	1.79	6.1	15	PASS	7.99	3.75	15	PASS
N027523-003B	SAMP	5	0.42	10.82	15	PASS	1.7	9.83	15	PASS
N027523-004B	SAMP	1	0.72	6.74	15	PASS	4.0067	15.81	15	NR!
N027523-004B	SAMP	5	0.14	11.27	15	PASS	0.81	9.66	15	PASS
N027523-005C	SAMP	1	1.1	1.54	15	PASS	2.62	12.34	15	PASS
N027523-005C	SAMP	5	0.23	8.79	15	PASS	0.55	31.98	15	NR!
N027523-006C	SAMP	1	3.49	1.77	15	PASS	0.57	28	15	NR!
N027523-006C	SAMP	5	0.73	3.87	15	PASS	0.17	42.57	15	<PQL
CCV7	CCV	1	19.54	1.54	15	PASS	19.89	3.49	15	PASS
CCB7	CCB	1	0.007	150.35	15	<PQL	<0.000	N/A	15	<PQL
N027523-007C	SAMP	1	3.6	2.17	15	PASS	0.72	17.86	15	NR!
N027523-007C	SAMP	5	0.78	2.24	15	PASS	0.1	29.45	15	<PQL
N027523-008B	SAMP	1	1.49	4.034	15	PASS	1.049	21.57	15	NR!
N027523-008B	SAMP	5	0.3	11.14	15	PASS	0.12	45.23	15	<PQL
N027523-009B	SAMP	1	2.52	1.32	15	PASS	0.2	29.5	15	<PQL
N027523-009B	SAMP	5	0.48	11.45	15	PASS	<0.000	N/A	15	<PQL
N027523-012B	SAMP	1	12.8	1.0046	15	PASS	47.23	0.75	15	PASS
N027523-012B	SAMP	5	2.49	4.31	15	PASS	8.36	2.26	15	PASS
N027546-001B	SAMP	1	1.61	5.94	15	PASS	14.57	9.6	15	PASS
N027546-001B	SAMP	5	0.31	7.88	15	PASS	2.83	11.78	15	PASS
CCV8	CCV	1	19.57	1.057	15	PASS	19.6	2.063	15	PASS
CCB8	CCB	1	0.0013	412.87	15	<PQL	<0.000	N/A	15	<PQL
N027546-002B	SAMP	1	1.66	4.058	15	PASS	14.028	0.75	15	PASS
N027546-002B	SAMP	5	0.31	1.38	15	PASS	3.11	9.076	15	PASS
N027546-003B	SAMP	1	1.62	3.86	15	PASS	1.17	8.59	15	PASS
N027546-003B	SAMP	5	0.36	13.48	15	PASS	0.23	34.66	15	<PQL
N027546-004B	SAMP	1	2.22	2.61	15	PASS	1.9	6.26	15	PASS
N027546-004B	SAMP	5	0.46	8	15	PASS	0.25	31.89	15	<PQL
N027546-005B	SAMP	1	6.31	1.66	15	PASS	1.64	14.6	15	PASS
N027546-005B	SAMP	5	1.37	6.16	15	PASS	0.27	40.57	15	<PQL
N027546-007B	SAMP	1	1.61	0.92	15	PASS	0.02	212	15	<PQL
N027546-007B	SAMP	5	0.33	7.23	15	PASS	<0.000	N/A	15	<PQL
CCV9	CCV	1	19.68	0.84	15	PASS	19.93	2.53	15	PASS
CCB9	CCB	1	0.0031	221.64	15	<PQL	<0.000	N/A	15	<PQL
N027546-008B	SAMP	1	2.83	2.61	15	PASS	0.42	10.41	15	PASS
N027546-008B	SAMP	5	0.59	4.77	15	PASS	0.021	103.43	15	<PQL

PERCENT RSD SUMMARY: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027546-009B	SAMP	1	2.82	0.75	15	PASS	0.47	27.99	15	<PQL
N027546-009B	SAMP	5	0.58	6.96	15	PASS	0.062	22.92	15	<PQL
N027546-010B	SAMP	1	2.23	5.68	15	PASS	0.55	26.84	15	NR!
N027546-010B	SAMP	5	0.49	6.86	15	PASS	0.09	74.83	15	<PQL
CCV10	CCV	1	19.95	1.042	15	PASS	19.46	3.84	15	PASS
CCB10	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV3	CCV2	1	0.1	21.98	20	NR!	0.48	7.12	20	PASS
ICSA4	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB4	ICSAB	1	20.63	1.25	15	PASS	20.13	1.47	15	PASS

PERCENT RSD SUMMARY: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.091	14.8	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.47	3.67	15	PASS
Std3-5/50 ppb	ICAL	1	4.88	3.3	15	PASS
Std4-10/100 ppb	ICAL	1	9.81	0.67	15	PASS
Std5-20/200 ppb	ICAL	1	19.61	0.92	15	PASS
Std6-40/400 ppb	ICAL	1	39.46	1.052	15	PASS
Std7-100/1000 ppb	ICAL	1	98.96	0.36	15	PASS
Std8-200/2000 ppb	ICAL	1	200.68	0.56	15	PASS
ICV	ICV	1	10.3	0.9	15	PASS
ICB	ICB	1	0.12	9.59	15	PASS
LLICV	CCV1	1	0.55	0.69	20	PASS
ICSA1	ICSA	1	0.063	12.86	15	PASS
ICSAB1	ICSAB	1	22.18	0.98	15	PASS
LLICV	CCV1	1	0.56	2.94	20	PASS
CCV1	CCV	1	19.7	1.082	15	PASS
CCB1	CCB	1	0.064	10.17	15	PASS
CCV2	CCV	1	19.51	0.81	15	PASS
CCB2	CCB	1	0.049	24.054	15	<PQL
CCV3	CCV	1	19.57	0.62	15	PASS
CCB3	CCB	1	0.046	13.95	15	PASS
LLCCV1	CCV2	1	0.52	2.68	20	PASS
ICSA2	ICSA	1	0.024	15.76	15	<PQL
ICSAB2	ICSAB	1	22.028	1.32	15	PASS
CCV4	CCV	1	19.62	1.22	15	PASS
CCB4	CCB	1	0.055	2.76	15	PASS
MB-66061	MBLK	1	0.0016	325.77	15	<PQL
CCV5	CCV	1	19.74	1.28	15	PASS
CCB5	CCB	1	0.034	18.053	15	<PQL
LCS-66061	LCS	1	9.78	0.37	15	PASS
N027523-001B	SAMP	1	14.02	0.65	15	PASS
N027523-001B	SAMP	5	2.87	0.56	15	PASS
N027523-001B	SAMP	25	0.55	5.72	15	PASS
N027523-001B-PS	PS	1	25.89	2.5	15	PASS
N027523-001B-PS	PS	5	5.18	0.6	15	PASS
N027523-001B-MS	MS	1	25.67	1.53	15	PASS
N027523-001B-MS	MS	5	5.061	0.67	15	PASS
N027523-001B-MSD	MSD	1	25.64	0.46	15	PASS
N027523-001B-MSD	MSD	5	5.17	0.53	15	PASS
CCV6	CCV	1	19.61	2.052	15	PASS
CCB6	CCB	1	0.041	14.7	15	PASS

PERCENT RSD SUMMARY: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
LLCCV2	CCV2	1	0.51	9.48	20	PASS
ICSA3	ICSA	1	0.032	14.52	15	PASS
ICSAB3	ICSAB	1	22.5	1.86	15	PASS
N027523-002B	SAMP	1	16.72	1.014	15	PASS
N027523-002B	SAMP	5	3.33	2.45	15	PASS
N027523-003B	SAMP	1	17	1.5	15	PASS
N027523-003B	SAMP	5	3.49	2.68	15	PASS
N027523-004B	SAMP	1	5.94	2	15	PASS
N027523-004B	SAMP	5	1.16	1.31	15	PASS
N027523-005C	SAMP	1	14.31	1.9	15	PASS
N027523-005C	SAMP	5	2.86	1.6	15	PASS
N027523-006C	SAMP	1	25.12	1.4	15	PASS
N027523-006C	SAMP	5	5.11	2.17	15	PASS
CCV7	CCV	1	19.92	1.44	15	PASS
CCB7	CCB	1	0.044	22.57	15	<PQL
N027523-007C	SAMP	1	26.4	0.77	15	PASS
N027523-007C	SAMP	5	5.36	1.83	15	PASS
N027523-008B	SAMP	1	17.94	0.41	15	PASS
N027523-008B	SAMP	5	3.62	2.068	15	PASS
N027523-009B	SAMP	1	15.27	0.21	15	PASS
N027523-009B	SAMP	5	2.95	2.51	15	PASS
N027523-012B	SAMP	1	77.065	1.33	15	PASS
N027523-012B	SAMP	5	15.2	1.93	15	PASS
N027546-001B	SAMP	1	14.29	0.36	15	PASS
N027546-001B	SAMP	5	2.78	1.64	15	PASS
CCV8	CCV	1	19.89	0.75	15	PASS
CCB8	CCB	1	0.046	35.073	15	<PQL
N027546-002B	SAMP	1	14.22	1.25	15	PASS
N027546-002B	SAMP	5	2.82	1.33	15	PASS
N027546-003B	SAMP	1	13.8	2.025	15	PASS
N027546-003B	SAMP	5	2.76	1.62	15	PASS
N027546-004B	SAMP	1	57.86	1.43	15	PASS
N027546-004B	SAMP	5	11.14	1.25	15	PASS
N027546-005B	SAMP	1	63.84	0.68	15	PASS
N027546-005B	SAMP	5	12.9	1.083	15	PASS
N027546-007B	SAMP	1	10.45	1.4	15	PASS
N027546-007B	SAMP	5	2.12	2.25	15	PASS
CCV9	CCV	1	19.76	1.42	15	PASS
CCB9	CCB	1	0.043	16.63	15	<PQL
N027546-008B	SAMP	1	78.062	2.74	15	PASS
N027546-008B	SAMP	5	15.11	0.82	15	PASS

PERCENT RSD SUMMARY: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N027546-009B	SAMP	1	74.37	0.55	15	PASS
N027546-009B	SAMP	5	14.79	1.51	15	PASS
N027546-010B	SAMP	1	24.61	1.31	15	PASS
N027546-010B	SAMP	5	4.98	1.69	15	PASS
CCV10	CCV	1	19.84	0.17	15	PASS
CCB10	CCB	1	0.041	7.3	15	PASS
LLCCV3	CCV2	1	0.52	5.14	20	PASS
ICSA4	ICSA	1	0.044	17.2	15	<PQL
ICSAB4	ICSAB	1	22.13	0.35	15	PASS

PERCENT RSD SUMMARY: 180104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.13	14.88	15	PASS	0.087	16.74	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.54	6.2	15	PASS	0.54	24.23	15	NR!
Std3-5/50 ppb	ICAL	1	5.19	2.19	15	PASS	4.7	3.69	15	PASS
Std4-10/100 ppb	ICAL	1	10.51	3.084	15	PASS	10.18	0.99	15	PASS
Std5-20/200 ppb	ICAL	1	20.86	2.011	15	PASS	20.21	2.82	15	PASS
Std6-40/400 ppb	ICAL	1	41.28	2.61	15	PASS	40.44	1.66	15	PASS
Std7-100/1000 ppb	ICAL	1	103.69	0.7	15	PASS	101.14	4.26	15	PASS
Std8-200/2000 ppb	ICAL	1	197.78	1.12	15	PASS	199.32	0.71	15	PASS
ICV	ICV	1	102.28	1.62	15	PASS	9.88	4.46	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.034	57.9	15	<PQL
LLICV	CCV1	1	0.56	7.38	20	PASS	0.54	17.95	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.0084	86.61	15	<PQL
ICSAB1	ICSAB	1	18.29	1.23	15	PASS	20.45	1.57	15	PASS
LLICV	CCV1	1	0.55	2.84	20	PASS	0.62	8.45	20	PASS
N027523-004B	SAMP	1	0.62	8.23	15	PASS	4.011	6.9	15	PASS
N027523-006C	SAMP	1	1.65	2.41	15	PASS	0.85	8.17	15	PASS
N027523-007C	SAMP	1	1.8	1.43	15	PASS	0.72	19.49	15	NR!
N027523-008B	SAMP	1	1.36	4.69	15	PASS	1.024	6.53	15	PASS
CCV1	CCV	1	20.81	1.064	15	PASS	19.88	4.058	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0038	173.21	15	<PQL
N027523-007C	SAMP	1	1.67	4.24	15	PASS	0.67	19.25	15	NR!
N027523-007C	SAMP	1	1.72	1.26	15	PASS	0.74	1.74	15	PASS
N027546-010B	SAMP	1	7.51	1.91	15	PASS	0.52	30.094	15	NR!
N027523-009B	SAMP	25	89.64	1.46	15	PASS	0	N/A	15	<PQL
N027546-001B	SAMP	25	0.019	39.11	15	<PQL	0.59	14.096	15	PASS
N027546-002B	SAMP	25	0.079	9.077	15	PASS	0.64	20.7	15	NR!
CCV2	CCV	1	20.94	0.73	15	PASS	19.87	0.2	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.016	114.98	15	<PQL
LLCCV1	CCV2	1	0.53	3.0095	20	PASS	0.59	4.42	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.03	98.028	15	<PQL
ICSAB2	ICSAB	1	18.38	1.66	15	PASS	20.23	2.85	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180103B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0103001.D	RINSE	RINSE	1	01/03/18 7:33 PM
B0103002.D	Cal Blank	IBLK	1	01/03/18 7:39 PM
B0103003.D	Std1-0.1/1 ppb	ICAL	1	01/03/18 7:44 PM
B0103004.D	Std2-0.5/5 ppb	ICAL	1	01/03/18 7:50 PM
B0103005.D	Std3-5/50 ppb	ICAL	1	01/03/18 7:55 PM
B0103006.D	Std4-10/100 ppb	ICAL	1	01/03/18 8:01 PM
B0103007.D	Std5-20/200 ppb	ICAL	1	01/03/18 8:06 PM
B0103008.D	Std6-40/400 ppb	ICAL	1	01/03/18 8:12 PM
B0103009.D	Std7-100/1000 ppb	ICAL	1	01/03/18 8:17 PM
B0103010.D	Std8-200/2000 ppb	ICAL	1	01/03/18 8:23 PM
B0103011.D	ICV	ICV	1	01/03/18 8:28 PM
B0103012.D	ICB	ICB	1	01/03/18 8:34 PM
B0103013.D	LLICV	CCV1	1	01/03/18 8:40 PM
B0103014.D	ICSA1	ICSA	1	01/03/18 8:45 PM
B0103015.D	ICSAB1	ICSAB	1	01/03/18 8:51 PM
B0103016.D	LLICV	CCV1	1	01/03/18 8:56 PM
B0103017.D	MB-66060	MBLK	1	01/03/18 9:02 PM
B0103018.D	LCS-66060	LCS	1	01/03/18 9:07 PM
B0103019.D	N027524-001E	SAMP	1	01/03/18 9:13 PM
B0103020.D	N027524-001E	SAMP	5	01/03/18 9:18 PM
B0103021.D	N027524-001E	SAMP	25	01/03/18 9:24 PM
B0103022.D	N027524-001E-PS	PS	1	01/03/18 9:29 PM
B0103023.D	N027524-001E-PS	PS	5	01/03/18 9:35 PM
B0103024.D	N027524-001E-MS	MS	1	01/03/18 9:40 PM
B0103025.D	N027524-001E-MS	MS	5	01/03/18 9:46 PM
B0103026.D	N027524-001E-MSD	MSD	1	01/03/18 9:51 PM
B0103027.D	CCV1	CCV	1	01/03/18 9:57 PM
B0103028.D	CCB1	CCB	1	01/03/18 10:02 PM
B0103029.D	N027524-001E-MSD	MSD	5	01/03/18 10:08 PM
B0103030.D	N027524-002E	SAMP	1	01/03/18 10:14 PM
B0103031.D	N027524-002E	SAMP	5	01/03/18 10:19 PM
B0103032.D	N027524-003E	SAMP	1	01/03/18 10:25 PM
B0103033.D	N027524-003E	SAMP	5	01/03/18 10:30 PM
B0103034.D	N027524-004E	SAMP	1	01/03/18 10:36 PM
B0103035.D	N027524-004E	SAMP	5	01/03/18 10:41 PM
B0103036.D	N027524-005E	SAMP	1	01/03/18 10:47 PM
B0103037.D	N027524-005E	SAMP	5	01/03/18 10:52 PM
B0103038.D	N027524-006E	SAMP	1	01/03/18 10:58 PM
B0103039.D	CCV2	CCV	1	01/03/18 11:03 PM
B0103040.D	CCB2	CCB	1	01/03/18 11:09 PM
B0103041.D	N027524-006E	SAMP	5	01/03/18 11:14 PM
B0103042.D	N027524-007E	SAMP	1	01/03/18 11:20 PM

INJECTION LOG: 180103B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0103043.D	N027524-007E	SAMP	5	01/03/18 11:25 PM
B0103044.D	N027524-008E	SAMP	1	01/03/18 11:31 PM
B0103045.D	N027524-008E	SAMP	5	01/03/18 11:37 PM
B0103046.D	N027524-009E	SAMP	1	01/03/18 11:42 PM
B0103047.D	N027524-009E	SAMP	5	01/03/18 11:48 PM
B0103048.D	N027524-010E	SAMP	1	01/03/18 11:53 PM
B0103049.D	N027524-010E	SAMP	5	01/03/18 11:59 PM
B0103050.D	N027524-011E	SAMP	1	01/04/18 12:04 AM
B0103051.D	CCV3	CCV	1	01/04/18 12:10 AM
B0103052.D	CCB3	CCB	1	01/04/18 12:15 AM
B0103053.D	LLCCV1	CCV2	1	01/04/18 12:21 AM
B0103054.D	ICSA2	ICSA	1	01/04/18 12:26 AM
B0103055.D	ICSAB2	ICSAB	1	01/04/18 12:32 AM
B0103056.D	N027524-011E	SAMP	5	01/04/18 12:37 AM
B0103057.D	N027524-011E-MS	MS	1	01/04/18 12:43 AM
B0103058.D	N027524-011E-MS	MS	5	01/04/18 12:48 AM
B0103059.D	N027524-012E	SAMP	1	01/04/18 12:54 AM
B0103060.D	N027524-012E	SAMP	5	01/04/18 1:00 AM
B0103061.D	N027524-013E	SAMP	1	01/04/18 1:05 AM
B0103062.D	N027524-013E	SAMP	5	01/04/18 1:11 AM
B0103063.D	N027556-001E	SAMP	1	01/04/18 1:16 AM
B0103064.D	N027556-001E	SAMP	5	01/04/18 1:22 AM
B0103065.D	N027556-002E	SAMP	1	01/04/18 1:27 AM
B0103066.D	CCV4	CCV	1	01/04/18 1:33 AM
B0103067.D	CCB4	CCB	1	01/04/18 1:39 AM
B0103068.D	N027556-002E	SAMP	5	01/04/18 1:44 AM
B0103069.D	N027556-003E	SAMP	1	01/04/18 1:50 AM
B0103070.D	N027556-003E	SAMP	5	01/04/18 1:56 AM
B0103071.D	N027556-006E	SAMP	1	01/04/18 2:01 AM
B0103072.D	N027556-006E	SAMP	5	01/04/18 2:07 AM
B0103073.D	N027556-004D	SAMP	1	01/04/18 2:12 AM
B0103074.D	N027556-004D	SAMP	5	01/04/18 2:18 AM
B0103075.D	N027556-005D	SAMP	1	01/04/18 2:24 AM
B0103076.D	N027556-005D	SAMP	5	01/04/18 2:29 AM
B0103077.D	MB-66061	MBLK	1	01/04/18 2:35 AM
B0103078.D	CCV5	CCV	1	01/04/18 2:40 AM
B0103079.D	CCB5	CCB	1	01/04/18 2:46 AM
B0103080.D	LCS-66061	LCS	1	01/04/18 2:51 AM
B0103081.D	N027523-001B	SAMP	1	01/04/18 2:57 AM
B0103082.D	N027523-001B	SAMP	5	01/04/18 3:02 AM
B0103083.D	N027523-001B	SAMP	25	01/04/18 3:08 AM
B0103084.D	N027523-001B-PS	PS	1	01/04/18 3:13 AM

INJECTION LOG: 180103B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0103085.D	N027523-001B-PS	PS	5	01/04/18 3:19 AM
B0103086.D	N027523-001B-MS	MS	1	01/04/18 3:24 AM
B0103087.D	N027523-001B-MS	MS	5	01/04/18 3:30 AM
B0103088.D	N027523-001B-MSD	MSD	1	01/04/18 3:36 AM
B0103089.D	N027523-001B-MSD	MSD	5	01/04/18 3:41 AM
B0103090.D	CCV6	CCV	1	01/04/18 3:47 AM
B0103091.D	CCB6	CCB	1	01/04/18 3:52 AM
B0103092.D	LLCCV2	CCV2	1	01/04/18 3:58 AM
B0103093.D	ICSA3	ICSA	1	01/04/18 4:03 AM
B0103094.D	ICSAB3	ICSAB	1	01/04/18 4:09 AM
B0103095.D	N027523-002B	SAMP	1	01/04/18 4:14 AM
B0103096.D	N027523-002B	SAMP	5	01/04/18 4:20 AM
B0103097.D	N027523-003B	SAMP	1	01/04/18 4:26 AM
B0103098.D	N027523-003B	SAMP	5	01/04/18 4:31 AM
B0103099.D	N027523-004B	SAMP	1	01/04/18 4:37 AM
B0103100.D	N027523-004B	SAMP	5	01/04/18 4:42 AM
B0103101.D	N027523-005C	SAMP	1	01/04/18 4:48 AM
B0103102.D	N027523-005C	SAMP	5	01/04/18 4:53 AM
B0103103.D	N027523-006C	SAMP	1	01/04/18 4:59 AM
B0103104.D	N027523-006C	SAMP	5	01/04/18 5:04 AM
B0103105.D	CCV7	CCV	1	01/04/18 5:10 AM
B0103106.D	CCB7	CCB	1	01/04/18 5:16 AM
B0103107.D	N027523-007C	SAMP	1	01/04/18 5:21 AM
B0103108.D	N027523-007C	SAMP	5	01/04/18 5:27 AM
B0103109.D	N027523-008B	SAMP	1	01/04/18 5:32 AM
B0103110.D	N027523-008B	SAMP	5	01/04/18 5:38 AM
B0103111.D	N027523-009B	SAMP	1	01/04/18 5:43 AM
B0103112.D	N027523-009B	SAMP	5	01/04/18 5:49 AM
B0103113.D	N027523-012B	SAMP	1	01/04/18 5:55 AM
B0103114.D	N027523-012B	SAMP	5	01/04/18 6:00 AM
B0103115.D	N027546-001B	SAMP	1	01/04/18 6:06 AM
B0103116.D	N027546-001B	SAMP	5	01/04/18 6:11 AM
B0103117.D	CCV8	CCV	1	01/04/18 6:17 AM
B0103118.D	CCB8	CCB	1	01/04/18 6:22 AM
B0103119.D	N027546-002B	SAMP	1	01/04/18 6:28 AM
B0103120.D	N027546-002B	SAMP	5	01/04/18 6:34 AM
B0103121.D	N027546-003B	SAMP	1	01/04/18 6:39 AM
B0103122.D	N027546-003B	SAMP	5	01/04/18 6:45 AM
B0103123.D	N027546-004B	SAMP	1	01/04/18 6:50 AM
B0103124.D	N027546-004B	SAMP	5	01/04/18 6:56 AM
B0103125.D	N027546-005B	SAMP	1	01/04/18 7:01 AM
B0103126.D	N027546-005B	SAMP	5	01/04/18 7:07 AM

INJECTION LOG: 180103B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0103127.D	N027546-007B	SAMP	1	01/04/18 7:13 AM
B0103128.D	N027546-007B	SAMP	5	01/04/18 7:18 AM
B0103129.D	CCV9	CCV	1	01/04/18 7:24 AM
B0103130.D	CCB9	CCB	1	01/04/18 7:29 AM
B0103131.D	N027546-008B	SAMP	1	01/04/18 7:35 AM
B0103132.D	N027546-008B	SAMP	5	01/04/18 7:41 AM
B0103133.D	N027546-009B	SAMP	1	01/04/18 7:47 AM
B0103134.D	N027546-009B	SAMP	5	01/04/18 7:52 AM
B0103135.D	N027546-010B	SAMP	1	01/04/18 7:58 AM
B0103136.D	N027546-010B	SAMP	5	01/04/18 8:04 AM
B0103137.D	CCV10	CCV	1	01/04/18 8:09 AM
B0103138.D	CCB10	CCB	1	01/04/18 8:15 AM
B0103139.D	LLCCV3	CCV2	1	01/04/18 8:20 AM
B0103140.D	ICSA4	ICSA	1	01/04/18 8:26 AM
B0103141.D	ICSAB4	ICSAB	1	01/04/18 8:31 AM

INJECTION LOG: 180104A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0104001.D	RINSE	RINSE	1	01/04/18 11:21 AM
A0104002.D	Cal Blank	IBLK	1	01/04/18 11:26 AM
A0104003.D	Std1-0.1/1 ppb	ICAL	1	01/04/18 11:32 AM
A0104004.D	Std2-0.5/5 ppb	ICAL	1	01/04/18 11:37 AM
A0104005.D	Std3-5/50 ppb	ICAL	1	01/04/18 11:43 AM
A0104006.D	Std4-10/100 ppb	ICAL	1	01/04/18 11:49 AM
A0104007.D	Std5-20/200 ppb	ICAL	1	01/04/18 11:54 AM
A0104008.D	Std6-40/400 ppb	ICAL	1	01/04/18 12:00 PM
A0104009.D	Std7-100/1000 ppb	ICAL	1	01/04/18 12:05 PM
A0104010.D	Std8-200/2000 ppb	ICAL	1	01/04/18 12:11 PM
A0104011.D	ICV	ICV	1	01/04/18 12:17 PM
A0104012.D	ICB	ICB	1	01/04/18 12:22 PM
A0104013.D	LLICV	CCV1	1	01/04/18 12:28 PM
A0104014.D	ICSA1	ICSA	1	01/04/18 12:33 PM
A0104015.D	ICSAB1	ICSAB	1	01/04/18 12:39 PM
A0104016.D	LLICV	CCV1	1	01/04/18 12:44 PM
A0104017.D	N027524-011E-MS	MS	1	01/04/18 12:50 PM
A0104018.D	N027524-011E-MS	MS	5	01/04/18 12:55 PM
A0104019.D	N027556-001E	SAMP	5	01/04/18 1:01 PM
A0104020.D	N027556-002E	SAMP	5	01/04/18 1:06 PM
A0104021.D	N027556-003E	SAMP	5	01/04/18 1:12 PM
A0104022.D	N027556-006E	SAMP	5	01/04/18 1:18 PM
A0104023.D	N027523-004B	SAMP	1	01/04/18 1:23 PM
A0104024.D	N027523-006C	SAMP	1	01/04/18 1:29 PM
A0104025.D	N027523-007C	SAMP	1	01/04/18 1:34 PM
A0104026.D	N027523-008B	SAMP	1	01/04/18 1:40 PM
A0104027.D	CCV1	CCV	1	01/04/18 1:45 PM
A0104028.D	CCB1	CCB	1	01/04/18 1:51 PM
A0104029.D	N027523-007C	SAMP	1	01/04/18 1:58 PM
A0104030.D	N027523-007C	SAMP	1	01/04/18 2:04 PM
A0104031.D	N027546-010B	SAMP	1	01/04/18 2:09 PM
A0104032.D	N027523-009B	SAMP	25	01/04/18 2:15 PM
A0104033.D	N027546-001B	SAMP	25	01/04/18 2:20 PM
A0104034.D	N027546-002B	SAMP	25	01/04/18 2:26 PM
A0104035.D	N027523-001B	SAMP	1	01/04/18 2:32 PM
A0104036.D	N027523-001A	SAMP	1	01/04/18 2:38 PM
A0104037.D	N027523-002B	SAMP	1	01/04/18 2:43 PM
A0104038.D	N027523-002A	SAMP	1	01/04/18 2:49 PM
A0104039.D	CCV2	CCV	1	01/04/18 2:54 PM
A0104040.D	CCB2	CCB	1	01/04/18 3:00 PM
A0104041.D	LLCCV1	CCV2	1	01/04/18 3:05 PM
A0104042.D	ICSA2	ICSA	1	01/04/18 3:11 PM

INJECTION LOG: 180104A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0104043.D	ICSAB2	ICSAB	1	01/04/18 3:16 PM
A0104044.D	N027523-008B	SAMP	1	01/04/18 3:22 PM
A0104045.D	N027523-008A	SAMP	1	01/04/18 3:27 PM
A0104046.D	N027523-009B	SAMP	1	01/04/18 3:33 PM
A0104047.D	N027523-009A	SAMP	1	01/04/18 3:38 PM
A0104048.D	N027524-009E	SAMP	1	01/04/18 3:44 PM
A0104049.D	N027524-009A	SAMP	1	01/04/18 3:49 PM
A0104050.D	N027524-011E	SAMP	1	01/04/18 3:55 PM
A0104051.D	N027524-011A	SAMP	1	01/04/18 4:01 PM
A0104052.D	N027524-013E	SAMP	1	01/04/18 4:06 PM
A0104053.D	N027524-013A	SAMP	1	01/04/18 4:12 PM
A0104054.D	CCV3	CCV	1	01/04/18 4:17 PM
A0104055.D	CCB3	CCB	1	01/04/18 4:23 PM
A0104056.D	N027546-004B	SAMP	1	01/04/18 4:28 PM
A0104057.D	N027546-004A	SAMP	1	01/04/18 4:34 PM
A0104058.D	N027546-005B	SAMP	1	01/04/18 4:39 PM
A0104059.D	N027546-005A	SAMP	1	01/04/18 4:45 PM
A0104060.D	N027546-009B	SAMP	1	01/04/18 4:50 PM
A0104061.D	N027546-009A	SAMP	1	01/04/18 4:56 PM
A0104062.D	N027546-010B	SAMP	1	01/04/18 5:02 PM
A0104063.D	N027546-010A	SAMP	1	01/04/18 5:07 PM
A0104064.D	CCV4	CCV	1	01/04/18 5:13 PM
A0104065.D	CCB4	CCB	1	01/04/18 5:18 PM
A0104066.D	N027556-001E	SAMP	1	01/04/18 5:34 PM
A0104067.D	N027556-001A	SAMP	1	01/04/18 5:39 PM
A0104068.D	N027556-002E	SAMP	1	01/04/18 5:45 PM
A0104069.D	N027556-002A	SAMP	1	01/04/18 5:50 PM
A0104070.D	N027556-004D	SAMP	1	01/04/18 5:56 PM
A0104071.D	N027556-004A	SAMP	1	01/04/18 6:02 PM
A0104072.D	N027556-006E	SAMP	1	01/04/18 6:07 PM
A0104073.D	N027556-006A	SAMP	1	01/04/18 6:13 PM
A0104074.D	CCV5	CCV	1	01/04/18 6:18 PM
A0104075.D	CCB5	CCB	1	01/04/18 6:24 PM
A0104076.D	LLCCV2	CCV2	1	01/04/18 6:29 PM
A0104077.D	ICSA3	ICSA	1	01/04/18 6:35 PM
A0104078.D	ICSAB3	ICSAB	1	01/04/18 6:41 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/18/2017 7:50:28**
Prep End Date: **12/18/2017 12:45:0**

Reviewed/ Date: 01/05/2018
Initials/ Date: 01/05/2018

Prep Batch **66061** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.6**	**02-16**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66061	Aqueous		25	☐	0	0	25	1.000		
MB-66061	Aqueous		25	☐	0	0	25	1.000		
N027523-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-012B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/18/2017 7:50:28**
Prep End Date: **12/18/2017 12:45:0**

Reviewed/ Date: 01/05/2018
Initials/ Date: 01/05/2018

Prep Batch **66061** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.6**	**02-16**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027546-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-010B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 3 Jan 2018 02:42:17 pm
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	204220.00	0.00	
24 Mg	732810.00	0.00	
25 Mg	96419.90	0.00	
26 Mg	112226.00	0.00	
59 Co	886097.00	0.00	
115 In	1405100.00	0.00	
206 Pb	374242.00	0.00	
207 Pb	328943.00	0.00	
208 Pb	805763.00	0.00	

RSD (%)

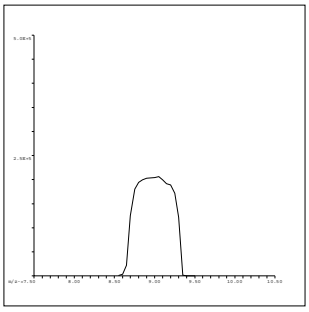
Element	Actual	Required	Flag
9 Be	1.55	5.00	
24 Mg	0.61	5.00	
25 Mg	0.73	5.00	
26 Mg	0.67	5.00	
59 Co	0.67	5.00	
115 In	1.03	5.00	
206 Pb	0.99	5.00	
207 Pb	1.37	5.00	
208 Pb	0.75	5.00	

Ion Ratio

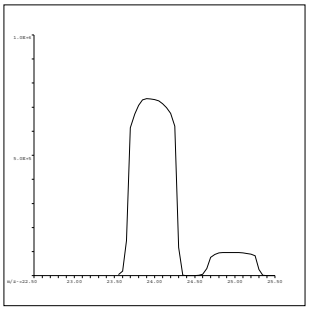
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

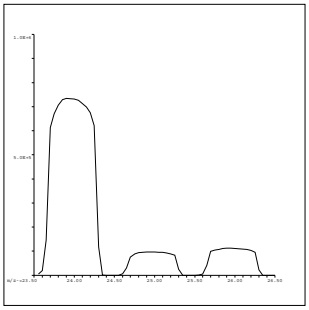
Element	Actual	Required	Flag



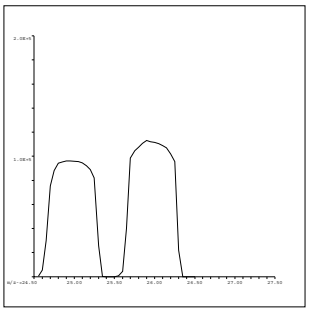
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



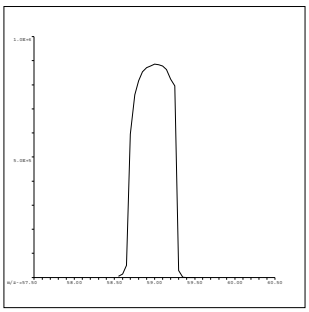
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



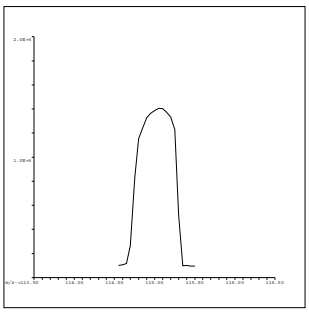
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



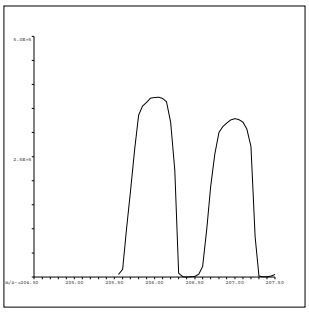
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



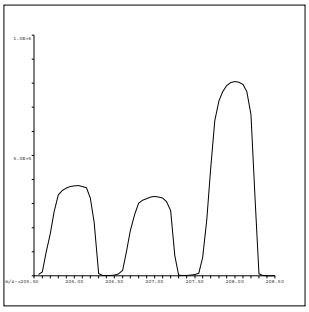
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



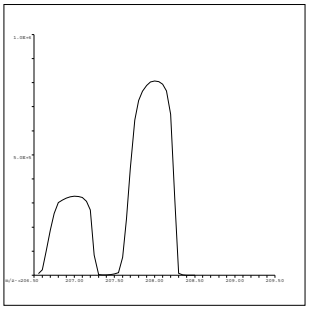
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.05
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 4 Jan 2018 11:09:16 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	151319.00	0.00	
24 Mg	639989.00	0.00	
25 Mg	84330.40	0.00	
26 Mg	98294.60	0.00	
59 Co	795774.00	0.00	
115 In	1397030.00	0.00	
206 Pb	362457.00	0.00	
207 Pb	315596.00	0.00	
208 Pb	771148.00	0.00	

RSD (%)

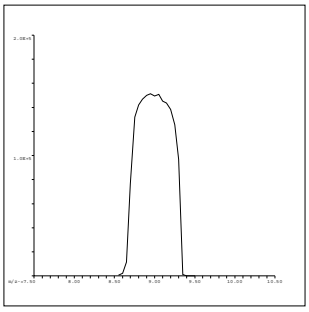
Element	Actual	Required	Flag
9 Be	1.08	5.00	
24 Mg	0.47	5.00	
25 Mg	0.62	5.00	
26 Mg	0.42	5.00	
59 Co	0.47	5.00	
115 In	0.78	5.00	
206 Pb	0.76	5.00	
207 Pb	0.56	5.00	
208 Pb	0.54	5.00	

Ion Ratio

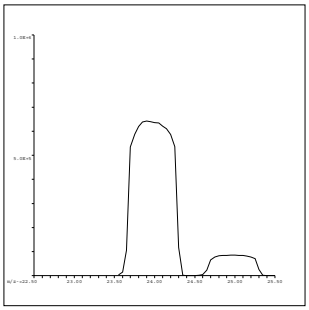
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

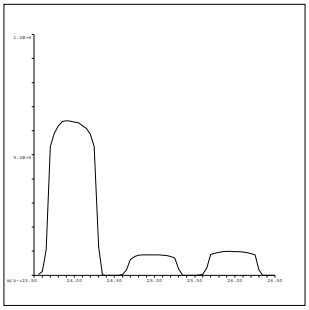
Element	Actual	Required	Flag



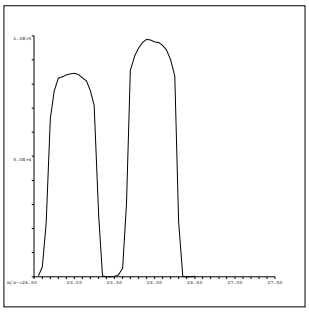
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



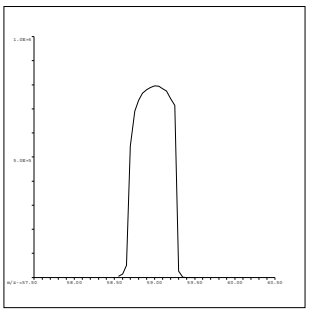
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



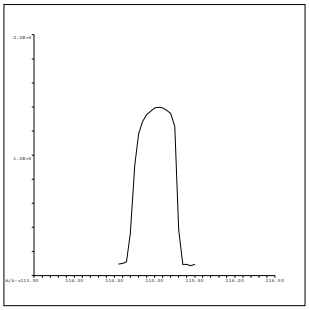
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



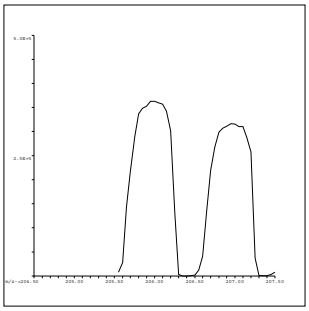
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



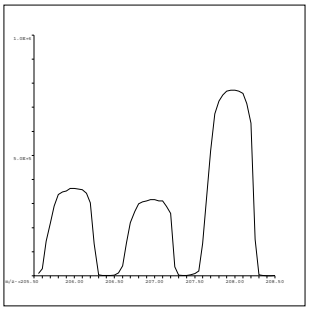
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



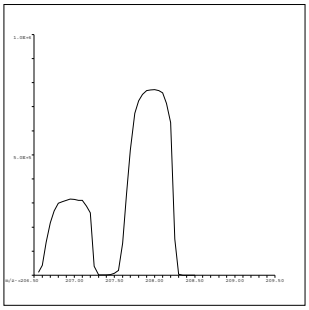
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180103B

Instrument ID: ICPMS-02

Analyte	Data File	B0103002.D	B0103003.D	B0103004.D	B0103005.D	B0103006.D	B0103007.D	B0103008.D	B0103009.D	B0103010.D	
	Acq. Date-Time	01/03/2018 07:39 PM	01/03/2018 07:44 PM	01/03/2018 07:50 PM	01/03/2018 07:55 PM	01/03/2018 08:01 PM	01/03/2018 08:06 PM	01/03/2018 08:12 PM	01/03/2018 08:17 PM	01/03/2018 08:23 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	104949.9		106896.9	106056.4	106836.5	104819.1	104454.4	103626.7	107178	
55 Mn [2]	CPS	206.8		2331.8	21963.7	43491	85243.7	168073.2	412396.7	830065.4	0.9999
52 Cr [2]	CPS	521		4852.9	44180.5	87233.9	170792.5	337101.3	826410	1702530.3	1.0000
72 Ge (ISTD) [1]	CPS	96495.5		97906	97411	98129.6	95443.9	95029.1	92259.4	96223.7	
78 Se [1]	CPS	13.3		182.2	1592.4	3279.3	6003.6	12279.5	30388.2	61287.5	0.9999
72 Ge (ISTD) [2]	CPS	78149.3	79622.9	78858.5	77689.7	78005.5	76794.1	76080.9	75090.9	75875.6	
75 As [2]	CPS	20.9	123.1	500	4761.2	9787.9	18784.2	38357.4	93190.7	188157.5	1.0000
103 Rh (ISTD) [2]	CPS	2361295		2380476.8	2347648.5	2373323	2309508.7	2291983.6	2237276	2266227.6	
95 Mo [2]	CPS	138.9		2725.9	26569.4	53851.3	104652.6	208819	510925.5	1049381.4	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 180104A

Instrument ID: ICPMS-02

Analyte	Data File	A0104002.D	A0104004.D	A0104005.D	A0104006.D	A0104007.D	A0104008.D	A0104009.D	A0104010.D	
	Acq. Date-Time	01/04/2018 11:26 AM	01/04/2018 11:37 AM	01/04/2018 11:43 AM	01/04/2018 11:49 AM	01/04/2018 11:54 AM	01/04/2018 12:00 PM	01/04/2018 12:05 PM	01/04/2018 12:11 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	94490.8	92448.4	94578.1	90701.3	91188.2	89529.2	87685.1	88869	
55 Mn [2]	CPS	121.6	2082.4	19285.8	37299.3	74351.4	144376.7	355075	686299.6	0.9997
72 Ge (ISTD) [1]	CPS	87439.4	87441.6	86243.4	82045.8	83772.5	83479.2	81206.2	80706.5	
78 Se [1]	CPS	0	155.6	1332.3	2745.9	5564.5	11092	26989.9	52866.8	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121204**
Client ID: **ICV** Batch ID: **R121204** TestNo: **EPA 6020** Analysis Date: **1/3/2018** SeqNo: **2884458**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.981	0.10	10.00	0	99.8	90	110				
Manganese	103.157	0.50	100.0	0	103	90	110				
Molybdenum	10.297	0.50	10.00	0	103	90	110				
Selenium	9.465	0.50	10.00	0	94.7	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121204**
Client ID: **ZZZZZZ** Batch ID: **R121204** TestNo: **EPA 6020** Analysis Date: **1/3/2018** SeqNo: **2884460**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.110	0.10	0.1000	0	110	80	120				
Manganese	0.557	0.50	0.5000	0	111	80	120				
Molybdenum	0.546	0.50	0.5000	0	109	80	120				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121204**
Client ID: **ZZZZZZ** Batch ID: **R121204** TestNo: **EPA 6020** Analysis Date: **1/3/2018** SeqNo: **2884463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.510	0.50	0.5000	0	102	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121204**
Client ID: **CCV** Batch ID: **R121204** TestNo: **EPA 6020** Analysis Date: **1/3/2018** SeqNo: **2884474**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.023	0.10	20.00	0	100	90	110				
Manganese	20.544	0.50	20.00	0	103	90	110				
Molybdenum	19.702	0.50	20.00	0	98.5	90	110				
Selenium	20.296	0.50	20.00	0	101	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCV**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2884486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.880	0.10	20.00	0	99.4	90	110				
Manganese	20.846	0.50	20.00	0	104	90	110				
Molybdenum	19.505	0.50	20.00	0	97.5	90	110				
Selenium	19.664	0.50	20.00	0	98.3	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCV**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884498**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.886	0.10	20.00	0	99.4	90	110				
Manganese	20.717	0.50	20.00	0	104	90	110				
Molybdenum	19.575	0.50	20.00	0	97.9	90	110				
Selenium	19.541	0.50	20.00	0	97.7	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **ZZZZZZ**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.092	0.10	0.1000	0	92.4	70	130				
Manganese	0.513	0.50	0.5000	0	103	70	130				
Molybdenum	0.516	0.50	0.5000	0	103	70	130				
Selenium	0.500	0.50	0.5000	0	100	70	130				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCV**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.710	0.10	20.00	0	98.5	90	110				
Manganese	20.801	0.50	20.00	0	104	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCV**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	19.615	0.50	20.00	0	98.1	90	110				
Selenium	19.223	0.50	20.00	0	96.1	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCV**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884525**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.776	0.10	20.00	0	98.9	90	110				
Manganese	20.814	0.50	20.00	0	104	90	110				
Molybdenum	19.743	0.50	20.00	0	98.7	90	110				
Selenium	19.787	0.50	20.00	0	98.9	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCV**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884537**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.379	0.10	20.00	0	96.9	90	110				
Manganese	20.554	0.50	20.00	0	103	90	110				
Molybdenum	19.609	0.50	20.00	0	98.0	90	110				
Selenium	19.478	0.50	20.00	0	97.4	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **ZZZZZZ**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884539**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.107	0.10	0.1000	0	107	70	130				
Manganese	0.529	0.50	0.5000	0	106	70	130				
Molybdenum	0.506	0.50	0.5000	0	101	70	130				
Selenium	0.528	0.50	0.5000	0	106	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCV**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884552**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.536	0.10	20.00	0	97.7	90	110				
Manganese	20.452	0.50	20.00	0	102	90	110				
Molybdenum	19.918	0.50	20.00	0	99.6	90	110				
Selenium	19.891	0.50	20.00	0	99.5	90	110				

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCV**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884564**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.570	0.10	20.00	0	97.9	90	110				
Manganese	20.760	0.50	20.00	0	104	90	110				
Molybdenum	19.889	0.50	20.00	0	99.4	90	110				
Selenium	19.599	0.50	20.00	0	98.0	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCV**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.683	0.10	20.00	0	98.4	90	110				
Manganese	20.582	0.50	20.00	0	103	90	110				
Molybdenum	19.759	0.50	20.00	0	98.8	90	110				
Selenium	19.927	0.50	20.00	0	99.6	90	110				

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCV**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884584**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.946	0.10	20.00	0	99.7	90	110				
Manganese	20.562	0.50	20.00	0	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCV**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884584**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	19.839	0.50	20.00	0	99.2	90	110				
Selenium	19.461	0.50	20.00	0	97.3	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **ZZZZZZ**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884586**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.103	0.10	0.1000	0	103	70	130				
Manganese	0.540	0.50	0.5000	0	108	70	130				
Molybdenum	0.515	0.50	0.5000	0	103	70	130				
Selenium	0.482	0.50	0.5000	0	96.4	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **ICV**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884984**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	102.278	0.50	100.0	0	102	90	110				
Selenium	9.883	0.50	10.00	0	98.8	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **ZZZZZZ**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884986**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.558	0.50	0.5000	0	112	80	120				
Selenium	0.539	0.50	0.5000	0	108	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **CCV**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2885000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.808	0.50	20.00	0	104	90	110				
Selenium	19.877	0.50	20.00	0	99.4	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **CCV**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2885012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.936	0.50	20.00	0	105	90	110				
Selenium	19.866	0.50	20.00	0	99.3	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **ZZZZZZ**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2885014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.526	0.50	0.5000	0	105	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **ZZZZZZ**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2885014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.592	0.50	0.5000	0	118	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **ICV**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2884327**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.113	1.0	10.00	0	101	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **ZZZZZZ**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2884329**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.062	1.0	1.000	0	106	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCV**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2884343**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.194	1.0	20.00	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCV**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2884355**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.209	1.0	20.00	0	101	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCV**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884367**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.364	1.0	20.00	0	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **ZZZZZZ**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.052	1.0	1.000	0	105	70	130				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCV**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.257	1.0	20.00	0	101	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCV**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884394**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.261	1.0	20.00	0	101	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCV**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884406**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.128	1.0	20.00	0	101	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **ZZZZZZ**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884408**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.036	1.0	1.000	0	104	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCV**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884421**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.104	1.0	20.00	0	101	90	110				

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCV**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884433**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.352	1.0	20.00	0	102	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCV**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884445**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.112	1.0	20.00	0	101	90	110				

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCV**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.081	1.0	20.00	0	100	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **ZZZZZZ**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.075	1.0	1.000	0	107	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **ICB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2884459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.120	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2884475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.064	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2884487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.049	0.50									
Selenium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	0.046	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.055	0.50									
Selenium	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884526**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884538**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.041	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884538**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.044	0.50									
Selenium	ND	0.50									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884565**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.046	0.50									
Selenium	ND	0.50									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.043	0.50									
Selenium	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB10** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121204**
Client ID: **CCB** Batch ID: **R121204** TestNo: **EPA 6020** Analysis Date: **1/4/2018** SeqNo: **2884585**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.041	0.50									
Selenium	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **ICB**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884985**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Selenium	0.034	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **CCB**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2885001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **CCB**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2885013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICB	SampType:	ICB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121203
Client ID:	ICB	Batch ID:	R121203	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2884328

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB1	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121203
Client ID:	CCB	Batch ID:	R121203	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2884344

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB2	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121203
Client ID:	CCB	Batch ID:	R121203	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2884356

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB3	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121203
Client ID:	CCB	Batch ID:	R121203	TestNo:	EPA 6020			Analysis Date:	1/4/2018	SeqNo:	2884368

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB4	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121203
Client ID:	CCB	Batch ID:	R121203	TestNo:	EPA 6020			Analysis Date:	1/4/2018	SeqNo:	2884383

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCB**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884395**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCB**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884407**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCB**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884422**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCB**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCB**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884446**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCB**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121204**
Client ID: **ICSA** Batch ID: **R121204** TestNo: **EPA 6020** Analysis Date: **1/3/2018** SeqNo: **2884461**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.063	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121204**
Client ID: **ICSAB** Batch ID: **R121204** TestNo: **EPA 6020** Analysis Date: **1/3/2018** SeqNo: **2884462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.063	0.10	20.00	0	105	80	120				
Manganese	18.133	0.50	20.00	0	90.7	80	120				
Molybdenum	22.178	0.50	20.00	0	111	80	120				
Selenium	20.522	0.50	20.00	0	103	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121204**
Client ID: **ICSA** Batch ID: **R121204** TestNo: **EPA 6020** Analysis Date: **1/4/2018** SeqNo: **2884501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121204**
Client ID: **ICSAB** Batch ID: **R121204** TestNo: **EPA 6020** Analysis Date: **1/4/2018** SeqNo: **2884502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.724	0.10	20.00	0	104	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121204
Client ID:	ICSAB	Batch ID:	R121204	TestNo:	EPA 6020			Analysis Date:	1/4/2018	SeqNo:	2884502

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	18.075	0.50	20.00	0	90.4	80	120				
Molybdenum	22.028	0.50	20.00	0	110	80	120				
Selenium	19.477	0.50	20.00	0	97.4	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121204
Client ID:	ICSA	Batch ID:	R121204	TestNo:	EPA 6020			Analysis Date:	1/4/2018	SeqNo:	2884540

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121204
Client ID:	ICSAB	Batch ID:	R121204	TestNo:	EPA 6020			Analysis Date:	1/4/2018	SeqNo:	2884541

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.538	0.10	20.00	0	103	80	120				
Manganese	18.233	0.50	20.00	0	91.2	80	120				
Molybdenum	22.499	0.50	20.00	0	112	80	120				
Selenium	19.301	0.50	20.00	0	96.5	80	120				

Sample ID	ICSA4	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121204
Client ID:	ICSA	Batch ID:	R121204	TestNo:	EPA 6020			Analysis Date:	1/4/2018	SeqNo:	2884587

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.044	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSA4	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121204
Client ID:	ICSA	Batch ID:	R121204	TestNo:	EPA 6020			Analysis Date:	1/4/2018	SeqNo:	2884587

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	ICSAB4	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121204
Client ID:	ICSAB	Batch ID:	R121204	TestNo:	EPA 6020			Analysis Date:	1/4/2018	SeqNo:	2884588

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.631	0.10	20.00	0	103	80	120				
Manganese	17.976	0.50	20.00	0	89.9	80	120				
Molybdenum	22.134	0.50	20.00	0	111	80	120				
Selenium	20.127	0.50	20.00	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **ICSA**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884987**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **ICSAB**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884988**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	18.287	0.50	20.00	0	91.4	80	120				
Selenium	20.449	0.50	20.00	0	102	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **ICSA**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2885015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Selenium	0.030	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **ICSAB**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2885016**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	18.376	0.50	20.00	0	91.9	80	120				
Selenium	20.225	0.50	20.00	0	101	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121203
Client ID:	ICSA	Batch ID:	R121203	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2884330

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.072	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121203
Client ID:	ICSAB	Batch ID:	R121203	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2884331

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.330	1.0	20.00	0	102	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121203
Client ID:	ICSA	Batch ID:	R121203	TestNo:	EPA 6020			Analysis Date:	1/4/2018	SeqNo:	2884370

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.063	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121203
Client ID:	ICSAB	Batch ID:	R121203	TestNo:	EPA 6020			Analysis Date:	1/4/2018	SeqNo:	2884371

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.154	1.0	20.00	0	101	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121203
Client ID:	ICSA	Batch ID:	R121203	TestNo:	EPA 6020			Analysis Date:	1/4/2018	SeqNo:	2884409

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.068	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **ICSAB**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.137	1.0	20.00	0	101	80	120				

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **ICSA**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884456**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.078	1.0									

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **ICSAB**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884457**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.110	1.0	20.00	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	104949.9	104949.9	100	PASS	70-125	78149.3	78149.3	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	108668.1	104949.9	103.54	PASS	70-125	79622.9	78149.3	101.89	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	106896.9	104949.9	101.86	PASS	70-125	78858.5	78149.3	100.91	PASS	70-125
Std3-5/50 ppb	ICAL	1	106056.4	104949.9	101.05	PASS	70-125	77689.7	78149.3	99.41	PASS	70-125
Std4-10/100 ppb	ICAL	1	106836.5	104949.9	101.8	PASS	70-125	78005.5	78149.3	99.82	PASS	70-125
Std5-20/200 ppb	ICAL	1	104819.1	104949.9	99.88	PASS	70-125	76794.1	78149.3	98.27	PASS	70-125
Std6-40/400 ppb	ICAL	1	104454.4	104949.9	99.53	PASS	70-125	76080.9	78149.3	97.35	PASS	70-125
Std7-100/1000 ppb	ICAL	1	103626.7	104949.9	98.74	PASS	70-125	75090.9	78149.3	96.086	PASS	70-125
Std8-200/2000 ppb	ICAL	1	107178	104949.9	102.12	PASS	70-125	75875.6	78149.3	97.091	PASS	70-125
ICV	ICV	1	100805.4	104949.9	96.051	PASS	70-125	74808.2	78149.3	95.72	PASS	70-125
ICB	ICB	1	99805.3	104949.9	95.098	PASS	70-125	74214.6	78149.3	94.97	PASS	70-125
LLICV	CCV1	1	101540.4	104949.9	96.75	PASS	70-125	75293.7	78149.3	96.35	PASS	70-125
ICSA1	ICSA	1	103550.6	104949.9	98.67	PASS	70-125	75532.8	78149.3	96.65	PASS	70-125
ICSAB1	ICSAB	1	109842.5	104949.9	104.66	PASS	70-125	78420.5	78149.3	100.35	PASS	70-125
LLICV	CCV1	1	116148.8	104949.9	110.67	PASS	70-125	85293.7	78149.3	109.14	PASS	70-125
CCV1	CCV	1	117261.7	104949.9	111.73	PASS	70-125	84189.5	78149.3	107.73	PASS	70-125
CCB1	CCB	1	110703.2	104949.9	105.48	PASS	70-125	80995.5	78149.3	103.64	PASS	70-125
CCV2	CCV	1	116382.6	104949.9	110.89	PASS	70-125	84068.6	78149.3	107.57	PASS	70-125
CCB2	CCB	1	113359.8	104949.9	108.01	PASS	70-125	82415.9	78149.3	105.46	PASS	70-125
CCV3	CCV	1	112289.4	104949.9	106.99	PASS	70-125	81127	78149.3	103.81	PASS	70-125
CCB3	CCB	1	107432.3	104949.9	102.37	PASS	70-125	78481.1	78149.3	100.42	PASS	70-125
LLCCV1	CCV2	1	105283.8	104949.9	100.32	PASS	70-125	78409.6	78149.3	100.33	PASS	70-125
ICSA2	ICSA	1	102891	104949.9	98.038	PASS	70-125	73966.9	78149.3	94.65	PASS	70-125
ICSAB2	ICSAB	1	109268.2	104949.9	104.11	PASS	70-125	77047.3	78149.3	98.59	PASS	70-125
CCV4	CCV	1	110190.5	104949.9	104.99	PASS	70-125	80337.6	78149.3	102.8	PASS	70-125
CCB4	CCB	1	106574.1	104949.9	101.55	PASS	70-125	77783.3	78149.3	99.53	PASS	70-125
MB-66061	MBLK	1	104001.5	104949.9	99.096	PASS	70-125	76945	78149.3	98.46	PASS	70-125
CCV5	CCV	1	106475.7	104949.9	101.45	PASS	70-125	78207.6	78149.3	100.08	PASS	70-125
CCB5	CCB	1	99956.8	104949.9	95.24	PASS	70-125	75053	78149.3	96.038	PASS	70-125
LCS-66061	LCS	1	100340.4	104949.9	95.61	PASS	70-125	74688.7	78149.3	95.57	PASS	70-125
N027523-001B	SAMP	1	97805.1	104949.9	93.19	PASS	70-125	70710.3	78149.3	90.48	PASS	70-125
N027523-001B	SAMP	5	101403.7	104949.9	96.62	PASS	70-125	73678.7	78149.3	94.28	PASS	70-125
N027523-001B	SAMP	25	100106.3	104949.9	95.38	PASS	70-125	74680	78149.3	95.56	PASS	70-125
N027523-001B-PS	PS	1	100294.6	104949.9	95.56	PASS	70-125	72275	78149.3	92.48	PASS	70-125
N027523-001B-PS	PS	5	101979.8	104949.9	97.17	PASS	70-125	74456	78149.3	95.27	PASS	70-125
N027523-001B-MS	MS	1	99734.5	104949.9	95.031	PASS	70-125	72441.4	78149.3	92.7	PASS	70-125
N027523-001B-MS	MS	5	101600.8	104949.9	96.81	PASS	70-125	74556	78149.3	95.4	PASS	70-125
N027523-001B-MSD	MSD	1	103767.3	104949.9	98.87	PASS	70-125	74629.6	78149.3	95.5	PASS	70-125
N027523-001B-MSD	MSD	5	102645.9	104949.9	97.8	PASS	70-125	75024.6	78149.3	96.002	PASS	70-125
CCV6	CCV	1	102839.8	104949.9	97.99	PASS	70-125	75506.8	78149.3	96.62	PASS	70-125
CCB6	CCB	1	97858.8	104949.9	93.24	PASS	70-125	72523.6	78149.3	92.8	PASS	70-125

INTERNAL STANDARD: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
LLCCV2	CCV2	1	99434.6	104949.9	94.74	PASS	70-125	73321.2	78149.3	93.82	PASS	70-125
ICSA3	ICSA	1	96566.2	104949.9	92.012	PASS	70-125	69749.6	78149.3	89.25	PASS	70-125
ICSAB3	ICSAB	1	105748	104949.9	100.76	PASS	70-125	75151.2	78149.3	96.16	PASS	70-125
N027523-002B	SAMP	1	107904.5	104949.9	102.82	PASS	70-125	77320.3	78149.3	98.94	PASS	70-125
N027523-002B	SAMP	5	103472.7	104949.9	98.59	PASS	70-125	75367.4	78149.3	96.44	PASS	70-125
N027523-003B	SAMP	1	103174.2	104949.9	98.31	PASS	70-125	74739.3	78149.3	95.64	PASS	70-125
N027523-003B	SAMP	5	104440.7	104949.9	99.51	PASS	70-125	76405.9	78149.3	97.77	PASS	70-125
N027523-004B	SAMP	1	94542	104949.9	90.083	PASS	70-125	70266.5	78149.3	89.91	PASS	70-125
N027523-004B	SAMP	5	101477.7	104949.9	96.69	PASS	70-125	74322.9	78149.3	95.1	PASS	70-125
N027523-005C	SAMP	1	101412.3	104949.9	96.63	PASS	70-125	72600.5	78149.3	92.9	PASS	70-125
N027523-005C	SAMP	5	105066.7	104949.9	100.11	PASS	70-125	76671.2	78149.3	98.11	PASS	70-125
N027523-006C	SAMP	1	93043.5	104949.9	88.66	PASS	70-125	63064.4	78149.3	80.7	PASS	70-125
N027523-006C	SAMP	5	103890.2	104949.9	98.99	PASS	70-125	74376.4	78149.3	95.17	PASS	70-125
CCV7	CCV	1	111274.6	104949.9	106.03	PASS	70-125	80549.1	78149.3	103.07	PASS	70-125
CCB7	CCB	1	102724.6	104949.9	97.88	PASS	70-125	75328.8	78149.3	96.39	PASS	70-125
N027523-007C	SAMP	1	97623.3	104949.9	93.019	PASS	70-125	65862.2	78149.3	84.28	PASS	70-125
N027523-007C	SAMP	5	107859.2	104949.9	102.77	PASS	70-125	76082.7	78149.3	97.36	PASS	70-125
N027523-008B	SAMP	1	96923.9	104949.9	92.35	PASS	70-125	67164.3	78149.3	85.94	PASS	70-125
N027523-008B	SAMP	5	104671.9	104949.9	99.74	PASS	70-125	75000.5	78149.3	95.97	PASS	70-125
N027523-009B	SAMP	1	92013.5	104949.9	87.67	PASS	70-125	58806.7	78149.3	75.25	PASS	70-125
N027523-009B	SAMP	5	100254.2	104949.9	95.53	PASS	70-125	69262.9	78149.3	88.63	PASS	70-125
N027523-012B	SAMP	1	94026.4	104949.9	89.59	PASS	70-125	61223.1	78149.3	78.34	PASS	70-125
N027523-012B	SAMP	5	102141.9	104949.9	97.32	PASS	70-125	73092.6	78149.3	93.53	PASS	70-125
N027546-001B	SAMP	1	94249.1	104949.9	89.8	PASS	70-125	65376.1	78149.3	83.66	PASS	70-125
N027546-001B	SAMP	5	102509.8	104949.9	97.67	PASS	70-125	74978	78149.3	95.94	PASS	70-125
CCV8	CCV	1	110517.4	104949.9	105.3	PASS	70-125	81111.8	78149.3	103.79	PASS	70-125
CCB8	CCB	1	106071	104949.9	101.07	PASS	70-125	78369.3	78149.3	100.28	PASS	70-125
N027546-002B	SAMP	1	91580	104949.9	87.26	PASS	70-125	63156	78149.3	80.81	PASS	70-125
N027546-002B	SAMP	5	97831.8	104949.9	93.22	PASS	70-125	72402	78149.3	92.65	PASS	70-125
N027546-003B	SAMP	1	95156	104949.9	90.67	PASS	70-125	66714.4	78149.3	85.37	PASS	70-125
N027546-003B	SAMP	5	100064	104949.9	95.34	PASS	70-125	71305	78149.3	91.24	PASS	70-125
N027546-004B	SAMP	1	85853.4	104949.9	81.8	PASS	70-125	56951.1	78149.3	72.87	PASS	70-125
N027546-004B	SAMP	5	97945	104949.9	93.33	PASS	70-125	68897.1	78149.3	88.16	PASS	70-125
N027546-005B	SAMP	1	87829.1	104949.9	83.69	PASS	70-125	58581.4	78149.3	74.96	PASS	70-125
N027546-005B	SAMP	5	100629.5	104949.9	95.88	PASS	70-125	71048.4	78149.3	90.91	PASS	70-125
N027546-007B	SAMP	1	85109.8	104949.9	81.096	PASS	70-125	56272.4	78149.3	72.006	PASS	70-125
N027546-007B	SAMP	5	99987.1	104949.9	95.27	PASS	70-125	71002.4	78149.3	90.85	PASS	70-125
CCV9	CCV	1	106342.6	104949.9	101.33	PASS	70-125	77542.2	78149.3	99.22	PASS	70-125
CCB9	CCB	1	104342.3	104949.9	99.42	PASS	70-125	77208.7	78149.3	98.8	PASS	70-125
N027546-008B	SAMP	1	82255.6	104949.9	78.38	PASS	70-125	54909.9	78149.3	70.26	PASS	70-125
N027546-008B	SAMP	5	98378.6	104949.9	93.74	PASS	70-125	69489.4	78149.3	88.92	PASS	70-125

INTERNAL STANDARD: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027546-009B	SAMP	1	85480.2	104949.9	81.45	PASS	70-125	56787.2	78149.3	72.67	PASS	70-125
N027546-009B	SAMP	5	97882.3	104949.9	93.27	PASS	70-125	69246.3	78149.3	88.61	PASS	70-125
N027546-010B	SAMP	1	88902.5	104949.9	84.71	PASS	70-125	60406.9	78149.3	77.3	PASS	70-125
N027546-010B	SAMP	5	98882.6	104949.9	94.22	PASS	70-125	70983.6	78149.3	90.83	PASS	70-125
CCV10	CCV	1	103184.4	104949.9	98.32	PASS	70-125	75485.9	78149.3	96.59	PASS	70-125
CCB10	CCB	1	97912.9	104949.9	93.29	PASS	70-125	73385.4	78149.3	93.9	PASS	70-125
LLCCV3	CCV2	1	95724.5	104949.9	91.21	PASS	70-125	72582.9	78149.3	92.88	PASS	70-125
ICSA4	ICSA	1	94498.4	104949.9	90.041	PASS	70-125	68954.9	78149.3	88.23	PASS	70-125
ICSAB4	ICSAB	1	101629	104949.9	96.84	PASS	70-125	72763.6	78149.3	93.11	PASS	70-125

INTERNAL STANDARD: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	96495.5	96495.5	100	PASS	70-125	2361295	2361295	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	99265.7	96495.5	102.87	PASS	70-125	2412742.6	2361295	102.18	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	97906	96495.5	101.46	PASS	70-125	2380476.8	2361295	100.81	PASS	70-125
Std3-5/50 ppb	ICAL	1	97411	96495.5	100.95	PASS	70-125	2347648.5	2361295	99.42	PASS	70-125
Std4-10/100 ppb	ICAL	1	98129.6	96495.5	101.69	PASS	70-125	2373323	2361295	100.51	PASS	70-125
Std5-20/200 ppb	ICAL	1	95443.9	96495.5	98.91	PASS	70-125	2309508.7	2361295	97.81	PASS	70-125
Std6-40/400 ppb	ICAL	1	95029.1	96495.5	98.48	PASS	70-125	2291983.6	2361295	97.065	PASS	70-125
Std7-100/1000 ppb	ICAL	1	92259.4	96495.5	95.61	PASS	70-125	2237276	2361295	94.75	PASS	70-125
Std8-200/2000 ppb	ICAL	1	96223.7	96495.5	99.72	PASS	70-125	2266227.6	2361295	95.97	PASS	70-125
ICV	ICV	1	93647.1	96495.5	97.048	PASS	70-125	2261079	2361295	95.76	PASS	70-125
ICB	ICB	1	93049.9	96495.5	96.43	PASS	70-125	2248405.4	2361295	95.22	PASS	70-125
LLICV	CCV1	1	94981.3	96495.5	98.43	PASS	70-125	2298756.9	2361295	97.35	PASS	70-125
ICSA1	ICSA	1	88512	96495.5	91.73	PASS	70-125	2083413.1	2361295	88.23	PASS	70-125
ICSAB1	ICSAB	1	95643.8	96495.5	99.12	PASS	70-125	2152443.9	2361295	91.16	PASS	70-125
LLICV	CCV1	1	107462.9	96495.5	111.37	PASS	70-125	2518581.5	2361295	106.66	PASS	70-125
CCV1	CCV	1	102743.2	96495.5	106.47	PASS	70-125	2484304.3	2361295	105.21	PASS	70-125
CCB1	CCB	1	100678.3	96495.5	104.33	PASS	70-125	2408437.1	2361295	102	PASS	70-125
CCV2	CCV	1	104004.2	96495.5	107.78	PASS	70-125	2488973.2	2361295	105.41	PASS	70-125
CCB2	CCB	1	102136.9	96495.5	105.85	PASS	70-125	2460544.2	2361295	104.2	PASS	70-125
CCV3	CCV	1	100049.7	96495.5	103.68	PASS	70-125	2418536.6	2361295	102.42	PASS	70-125
CCB3	CCB	1	95906.4	96495.5	99.39	PASS	70-125	2342793	2361295	99.22	PASS	70-125
LLCCV1	CCV2	1	99469.3	96495.5	103.08	PASS	70-125	2336490.1	2361295	98.95	PASS	70-125
ICSA2	ICSA	1	88845.8	96495.5	92.072	PASS	70-125	2041939.4	2361295	86.48	PASS	70-125
ICSAB2	ICSAB	1	93375.2	96495.5	96.77	PASS	70-125	2123709.7	2361295	89.94	PASS	70-125
CCV4	CCV	1	97977.5	96495.5	101.54	PASS	70-125	2369429.2	2361295	100.34	PASS	70-125
CCB4	CCB	1	95585.8	96495.5	99.057	PASS	70-125	2310055.6	2361295	97.83	PASS	70-125
MB-66061	MBLK	1	95325.4	96495.5	98.79	PASS	70-125	2249029.8	2361295	95.25	PASS	70-125
CCV5	CCV	1	93689.5	96495.5	97.092	PASS	70-125	2291661.5	2361295	97.051	PASS	70-125
CCB5	CCB	1	93292.5	96495.5	96.68	PASS	70-125	2242981.1	2361295	94.99	PASS	70-125
LCS-66061	LCS	1	91167.2	96495.5	94.48	PASS	70-125	2255651.8	2361295	95.53	PASS	70-125
N027523-001B	SAMP	1	88767.6	96495.5	91.99	PASS	70-125	1953239.5	2361295	82.72	PASS	70-125
N027523-001B	SAMP	5	91268.2	96495.5	94.58	PASS	70-125	2089120.5	2361295	88.47	PASS	70-125
N027523-001B	SAMP	25	93993.4	96495.5	97.41	PASS	70-125	2189686	2361295	92.73	PASS	70-125
N027523-001B-PS	PS	1	90491.2	96495.5	93.78	PASS	70-125	1978704.2	2361295	83.8	PASS	70-125
N027523-001B-PS	PS	5	92771.9	96495.5	96.14	PASS	70-125	2106451.9	2361295	89.21	PASS	70-125
N027523-001B-MS	MS	1	89990.3	96495.5	93.26	PASS	70-125	1964445.6	2361295	83.19	PASS	70-125
N027523-001B-MS	MS	5	92945.7	96495.5	96.32	PASS	70-125	2108138	2361295	89.28	PASS	70-125
N027523-001B-MSD	MSD	1	91171.6	96495.5	94.48	PASS	70-125	2033574.9	2361295	86.12	PASS	70-125
N027523-001B-MSD	MSD	5	92624.1	96495.5	95.99	PASS	70-125	2090799.7	2361295	88.54	PASS	70-125
CCV6	CCV	1	94335.2	96495.5	97.76	PASS	70-125	2227484.7	2361295	94.33	PASS	70-125
CCB6	CCB	1	90583.9	96495.5	93.87	PASS	70-125	2163617.9	2361295	91.63	PASS	70-125

INTERNAL STANDARD: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
LLCCV2	CCV2	1	92804.5	96495.5	96.17	PASS	70-125	2208307.7	2361295	93.52	PASS	70-125
ICSA3	ICSA	1	84317.7	96495.5	87.38	PASS	70-125	1918696	2361295	81.26	PASS	70-125
ICSAB3	ICSAB	1	94159.5	96495.5	97.58	PASS	70-125	2038270.7	2361295	86.32	PASS	70-125
N027523-002B	SAMP	1	96977.7	96495.5	100.5	PASS	70-125	2100778.6	2361295	88.97	PASS	70-125
N027523-002B	SAMP	5	99112.9	96495.5	102.71	PASS	70-125	2135124	2361295	90.42	PASS	70-125
N027523-003B	SAMP	1	94672.9	96495.5	98.11	PASS	70-125	2046281.7	2361295	86.66	PASS	70-125
N027523-003B	SAMP	5	95519.6	96495.5	98.99	PASS	70-125	2148186.4	2361295	90.97	PASS	70-125
N027523-004B	SAMP	1	91072.5	96495.5	94.38	PASS	70-125	1918751.7	2361295	81.26	PASS	70-125
N027523-004B	SAMP	5	93070.4	96495.5	96.45	PASS	70-125	2111281.7	2361295	89.41	PASS	70-125
N027523-005C	SAMP	1	88898.6	96495.5	92.13	PASS	70-125	1951000	2361295	82.62	PASS	70-125
N027523-005C	SAMP	5	93879.2	96495.5	97.29	PASS	70-125	2107107.8	2361295	89.24	PASS	70-125
N027523-006C	SAMP	1	73420	96495.5	76.086	PASS	70-125	1635249.4	2361295	69.25	NR!	70-125
N027523-006C	SAMP	5	90477.7	96495.5	93.76	PASS	70-125	2004057.9	2361295	84.87	PASS	70-125
CCV7	CCV	1	97755.1	96495.5	101.31	PASS	70-125	2337715.5	2361295	99.001	PASS	70-125
CCB7	CCB	1	94025.6	96495.5	97.44	PASS	70-125	2247371	2361295	95.18	PASS	70-125
N027523-007C	SAMP	1	76185.4	96495.5	78.95	PASS	70-125	1674733.3	2361295	70.92	PASS	70-125
N027523-007C	SAMP	5	93670.2	96495.5	97.072	PASS	70-125	2061928.5	2361295	87.32	PASS	70-125
N027523-008B	SAMP	1	84182.4	96495.5	87.24	PASS	70-125	1773995.7	2361295	75.13	PASS	70-125
N027523-008B	SAMP	5	92534	96495.5	95.89	PASS	70-125	2069686.7	2361295	87.65	PASS	70-125
N027523-009B	SAMP	1	66125.6	96495.5	68.53	NR!	70-125	1496547.8	2361295	63.38	NR!	70-125
N027523-009B	SAMP	5	84299.2	96495.5	87.36	PASS	70-125	1899892.9	2361295	80.46	PASS	70-125
N027523-012B	SAMP	1	70635.4	96495.5	73.2	PASS	70-125	1560913.1	2361295	66.1	NR!	70-125
N027523-012B	SAMP	5	88993.4	96495.5	92.23	PASS	70-125	1942163.9	2361295	82.25	PASS	70-125
N027546-001B	SAMP	1	78400.9	96495.5	81.25	PASS	70-125	1688825.1	2361295	71.52	PASS	70-125
N027546-001B	SAMP	5	90941.5	96495.5	94.24	PASS	70-125	2023201.1	2361295	85.68	PASS	70-125
CCV8	CCV	1	99341.1	96495.5	102.95	PASS	70-125	2370984.7	2361295	100.41	PASS	70-125
CCB8	CCB	1	97036.5	96495.5	100.56	PASS	70-125	2273057.7	2361295	96.26	PASS	70-125
N027546-002B	SAMP	1	75748.5	96495.5	78.5	PASS	70-125	1666239.8	2361295	70.56	PASS	70-125
N027546-002B	SAMP	5	86309.4	96495.5	89.44	PASS	70-125	1944409	2361295	82.35	PASS	70-125
N027546-003B	SAMP	1	79441	96495.5	82.33	PASS	70-125	1758696.5	2361295	74.48	PASS	70-125
N027546-003B	SAMP	5	87654.4	96495.5	90.84	PASS	70-125	1971608.4	2361295	83.5	PASS	70-125
N027546-004B	SAMP	1	63732.6	96495.5	66.047	NR!	70-125	1410875.3	2361295	59.75	NR!	70-125
N027546-004B	SAMP	5	81460.1	96495.5	84.42	PASS	70-125	1860840.2	2361295	78.81	PASS	70-125
N027546-005B	SAMP	1	66476.9	96495.5	68.89	NR!	70-125	1446831.2	2361295	61.27	NR!	70-125
N027546-005B	SAMP	5	85186.2	96495.5	88.28	PASS	70-125	1883713.7	2361295	79.77	PASS	70-125
N027546-007B	SAMP	1	66368.5	96495.5	68.78	NR!	70-125	1436800.9	2361295	60.85	NR!	70-125
N027546-007B	SAMP	5	84614.4	96495.5	87.69	PASS	70-125	1928356.7	2361295	81.67	PASS	70-125
CCV9	CCV	1	96433	96495.5	99.94	PASS	70-125	2279967.9	2361295	96.56	PASS	70-125
CCB9	CCB	1	92180.6	96495.5	95.53	PASS	70-125	2277296.5	2361295	96.44	PASS	70-125
N027546-008B	SAMP	1	58918	96495.5	61.058	NR!	70-125	1355322.1	2361295	57.4	NR!	70-125
N027546-008B	SAMP	5	81474.4	96495.5	84.43	PASS	70-125	1894561	2361295	80.23	PASS	70-125

INTERNAL STANDARD: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027546-009B	SAMP	1	63908.9	96495.5	66.23	NR!	70-125	1415734.6	2361295	59.96	NR!	70-125
N027546-009B	SAMP	5	82380	96495.5	85.37	PASS	70-125	1866600.5	2361295	79.05	PASS	70-125
N027546-010B	SAMP	1	69075.5	96495.5	71.58	PASS	70-125	1561329.3	2361295	66.12	NR!	70-125
N027546-010B	SAMP	5	86254.3	96495.5	89.39	PASS	70-125	1921033.6	2361295	81.36	PASS	70-125
CCV10	CCV	1	92328.6	96495.5	95.68	PASS	70-125	2212714.6	2361295	93.71	PASS	70-125
CCB10	CCB	1	88940.7	96495.5	92.17	PASS	70-125	2203148.5	2361295	93.3	PASS	70-125
LLCCV3	CCV2	1	86430.7	96495.5	89.57	PASS	70-125	2129717.7	2361295	90.19	PASS	70-125
ICSA4	ICSA	1	79587.7	96495.5	82.48	PASS	70-125	1916003.8	2361295	81.14	PASS	70-125
ICSAB4	ICSAB	1	83313.6	96495.5	86.34	PASS	70-125	1987090.9	2361295	84.15	PASS	70-125

INTERNAL STANDARD: 180104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	94490.8	94490.8	100	PASS	70-125	87439.4	87439.4	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	93808.1	94490.8	99.28	PASS	70-125	85215.2	87439.4	97.46	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	92448.4	94490.8	97.84	PASS	70-125	87441.6	87439.4	100	PASS	70-125
Std3-5/50 ppb	ICAL	1	94578.1	94490.8	100.09	PASS	70-125	86243.4	87439.4	98.63	PASS	70-125
Std4-10/100 ppb	ICAL	1	90701.3	94490.8	95.99	PASS	70-125	82045.8	87439.4	93.83	PASS	70-125
Std5-20/200 ppb	ICAL	1	91188.2	94490.8	96.5	PASS	70-125	83772.5	87439.4	95.81	PASS	70-125
Std6-40/400 ppb	ICAL	1	89529.2	94490.8	94.75	PASS	70-125	83479.2	87439.4	95.47	PASS	70-125
Std7-100/1000 ppb	ICAL	1	87685.1	94490.8	92.8	PASS	70-125	81206.2	87439.4	92.87	PASS	70-125
Std8-200/2000 ppb	ICAL	1	88869	94490.8	94.05	PASS	70-125	80706.5	87439.4	92.3	PASS	70-125
ICV	ICV	1	87629.3	94490.8	92.74	PASS	70-125	83747.2	87439.4	95.78	PASS	70-125
ICB	ICB	1	86463.2	94490.8	91.5	PASS	70-125	80584.5	87439.4	92.16	PASS	70-125
LLICV	CCV1	1	92071.9	94490.8	97.44	PASS	70-125	84025.9	87439.4	96.096	PASS	70-125
ICSA1	ICSA	1	89572.7	94490.8	94.8	PASS	70-125	79922.4	87439.4	91.4	PASS	70-125
ICSAB1	ICSAB	1	97496.7	94490.8	103.18	PASS	70-125	85805.3	87439.4	98.13	PASS	70-125
LLICV	CCV1	1	101097	94490.8	106.99	PASS	70-125	94167.5	87439.4	107.69	PASS	70-125
N027523-004B	SAMP	1	94988.8	94490.8	100.53	PASS	70-125	86260.7	87439.4	98.65	PASS	70-125
N027523-006C	SAMP	1	88461.9	94490.8	93.62	PASS	70-125	68553.4	87439.4	78.4	PASS	70-125
N027523-007C	SAMP	1	95107.7	94490.8	100.65	PASS	70-125	73409.6	87439.4	83.95	PASS	70-125
N027523-008B	SAMP	1	93111	94490.8	98.54	PASS	70-125	78588	87439.4	89.88	PASS	70-125
CCV1	CCV	1	104556.8	94490.8	110.65	PASS	70-125	92294.8	87439.4	105.55	PASS	70-125
CCB1	CCB	1	97634.7	94490.8	103.33	PASS	70-125	89384.9	87439.4	102.22	PASS	70-125
N027523-007C	SAMP	1	93550	94490.8	99.004	PASS	70-125	71484.4	87439.4	81.75	PASS	70-125
N027523-007C	SAMP	1	93229.7	94490.8	98.67	PASS	70-125	73148.5	87439.4	83.66	PASS	70-125
N027546-010B	SAMP	1	86613.5	94490.8	91.66	PASS	70-125	64756.5	87439.4	74.059	PASS	70-125
N027523-009B	SAMP	25	100953.7	94490.8	106.84	PASS	70-125	84239.5	87439.4	96.34	PASS	70-125
N027546-001B	SAMP	25	96532.9	94490.8	102.16	PASS	70-125	85370.8	87439.4	97.63	PASS	70-125
N027546-002B	SAMP	25	93395.1	94490.8	98.84	PASS	70-125	82618.8	87439.4	94.49	PASS	70-125
CCV2	CCV	1	96854	94490.8	102.5	PASS	70-125	87455.9	87439.4	100.02	PASS	70-125
CCB2	CCB	1	91202.5	94490.8	96.52	PASS	70-125	82751	87439.4	94.64	PASS	70-125
LLCCV1	CCV2	1	94340.9	94490.8	99.84	PASS	70-125	85738.9	87439.4	98.055	PASS	70-125
ICSA2	ICSA	1	89819.7	94490.8	95.057	PASS	70-125	77807	87439.4	88.98	PASS	70-125
ICSAB2	ICSAB	1	95138.4	94490.8	100.69	PASS	70-125	82752.8	87439.4	94.64	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N027523
Test Method: EPA 6020
Analysis Date: 1/3/2018

Matrix: Groundwater
Batch No.: 66061

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr, Mn & Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027523-001B DT 5X	Arsenic	ug/L	1.554926	NA	1.643608	5.40%	10
N027523-001B DT 5X	Chromium	ug/L	15.04223	NA	14.08012	6.83%	10
N027523-001B DT 5X	Manganese	ug/L	8.923825	NA	8.292973	7.61%	10
N027523-001B DT 5X	Molybdenum	ug/L	14.32985	PASS	14.01999	2.21%	10
N027523-001B DT 5X	Selenium	ug/L	3.642209	NA	3.503002	3.97%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N027523-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:			RunNo: **121204**				
Client ID: **ZZZZZZ**	Batch ID: **66061**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/4/2018**			SeqNo: **2884531**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.085	0.10	10.00	1.644	104	80	120				
Manganese	110.738	0.50	100.0	8.293	102	80	120				
Molybdenum	25.889	0.50	10.00	14.02	119	80	120				
Selenium	13.974	0.50	10.00	3.503	105	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027523
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N027523-001B-PS**	SampType: **PS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID:	**ZZZZZZ**	Batch ID: **66061**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2884400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	24.024	1.0	10.00	14.08	99.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

January 08, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027546

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 13, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Litucas for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (1.4 ug/L) and hexavalent chromium (0 ug/L) for sample N027546-004 (MW-60BR-245-LF_D-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (12 ug/L) and hexavalent chromium (2.3 ug/L) for sample N027546-005 (MW-60BR-245-LF_S-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (1.2ug/L) and hexavalent chromium (0 ug/L) for sample N027546-009 (MW-912-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (14 ug/L) and hexavalent chromium (9.3 ug/L) for sample N027546-010 (MW-41M-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 300.0:

Dilution was necessary for all samples due to precipitation upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N027523-009B-MS1, N027523-009B-MSD1, N027523-012B-MS2 and N027523-012B-

MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N027485-001B-MS and N027485-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary on some analytes for some samples due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Because the results for total dissolved chromium (1.4 ug/L) and hexavalent chromium (0 ug/L) for sample N027546-004 (MW-60BR-245-LF_D-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.4 and 0.27 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (12 ug/L) and hexavalent chromium (2.3 ug/L) for sample N027546-005 (MW-60BR-245-LF_S-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 13 and 9.9 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (1.2ug/L) and hexavalent chromium (0 ug/L) for sample N027546-009 (MW-912-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.1 and 0 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (14 ug/L) and hexavalent chromium (9.3 ug/L) for sample N027546-010 (MW-41M-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 14 and 9.8 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027546
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027546-001A	TW-01-Q417	Groundwater	12/13/2017 10:58:00 AM	12/13/2017	1/8/2018
N027546-001B	TW-01-Q417	Groundwater	12/13/2017 10:58:00 AM	12/13/2017	1/8/2018
N027546-001C	TW-01-Q417	Groundwater	12/13/2017 10:58:00 AM	12/13/2017	1/8/2018
N027546-001D	TW-01-Q417	Groundwater	12/13/2017 10:58:00 AM	12/13/2017	1/8/2018
N027546-002A	MW-921-Q417	Groundwater	12/13/2017 11:08:00 AM	12/13/2017	1/8/2018
N027546-002B	MW-921-Q417	Groundwater	12/13/2017 11:08:00 AM	12/13/2017	1/8/2018
N027546-002C	MW-921-Q417	Groundwater	12/13/2017 11:08:00 AM	12/13/2017	1/8/2018
N027546-002D	MW-921-Q417	Groundwater	12/13/2017 11:08:00 AM	12/13/2017	1/8/2018
N027546-003A	MW-41S-Q417	Groundwater	12/13/2017 2:40:00 PM	12/13/2017	1/8/2018
N027546-003B	MW-41S-Q417	Groundwater	12/13/2017 2:40:00 PM	12/13/2017	1/8/2018
N027546-003C	MW-41S-Q417	Groundwater	12/13/2017 2:40:00 PM	12/13/2017	1/8/2018
N027546-003D	MW-41S-Q417	Groundwater	12/13/2017 2:40:00 PM	12/13/2017	1/8/2018
N027546-004A	MW-60BR-245-LF_D-Q417	Groundwater	12/13/2017 10:35:00 AM	12/13/2017	1/8/2018
N027546-004B	MW-60BR-245-LF_D-Q417	Groundwater	12/13/2017 10:35:00 AM	12/13/2017	1/8/2018
N027546-004C	MW-60BR-245-LF_D-Q417	Groundwater	12/13/2017 10:35:00 AM	12/13/2017	1/8/2018
N027546-004D	MW-60BR-245-LF_D-Q417	Groundwater	12/13/2017 10:35:00 AM	12/13/2017	1/8/2018
N027546-005A	MW-60BR-245-LF_S-Q417	Groundwater	12/13/2017 9:15:00 AM	12/13/2017	1/8/2018
N027546-005B	MW-60BR-245-LF_S-Q417	Groundwater	12/13/2017 9:15:00 AM	12/13/2017	1/8/2018
N027546-005C	MW-60BR-245-LF_S-Q417	Groundwater	12/13/2017 9:15:00 AM	12/13/2017	1/8/2018
N027546-005D	MW-60BR-245-LF_S-Q417	Groundwater	12/13/2017 9:15:00 AM	12/13/2017	1/8/2018
N027546-006A	MW-14-Q417	Groundwater	12/13/2017 3:25:00 PM	12/13/2017	1/8/2018
N027546-006B	MW-14-Q417	Groundwater	12/13/2017 3:25:00 PM	12/13/2017	1/8/2018
N027546-006C	MW-14-Q417	Groundwater	12/13/2017 3:25:00 PM	12/13/2017	1/8/2018
N027546-006D	MW-14-Q417	Groundwater	12/13/2017 3:25:00 PM	12/13/2017	1/8/2018
N027546-007A	MW-48-Q417	Groundwater	12/13/2017 2:20:00 PM	12/13/2017	1/8/2018
N027546-007B	MW-48-Q417	Groundwater	12/13/2017 2:20:00 PM	12/13/2017	1/8/2018
N027546-007C	MW-48-Q417	Groundwater	12/13/2017 2:20:00 PM	12/13/2017	1/8/2018
N027546-008A	MW-41D-Q417	Groundwater	12/13/2017 3:14:00 PM	12/13/2017	1/8/2018
N027546-008B	MW-41D-Q417	Groundwater	12/13/2017 3:14:00 PM	12/13/2017	1/8/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027546
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027546-008C	MW-41D-Q417	Groundwater	12/13/2017 3:14:00 PM	12/13/2017	1/8/2018
N027546-008D	MW-41D-Q417	Groundwater	12/13/2017 3:14:00 PM	12/13/2017	1/8/2018
N027546-009A	MW-912-Q417	Groundwater	12/13/2017 3:24:00 PM	12/13/2017	1/8/2018
N027546-009B	MW-912-Q417	Groundwater	12/13/2017 3:24:00 PM	12/13/2017	1/8/2018
N027546-009C	MW-912-Q417	Groundwater	12/13/2017 3:24:00 PM	12/13/2017	1/8/2018
N027546-009D	MW-912-Q417	Groundwater	12/13/2017 3:24:00 PM	12/13/2017	1/8/2018
N027546-010A	MW-41M-Q417	Groundwater	12/13/2017 2:38:00 PM	12/13/2017	1/8/2018
N027546-010B	MW-41M-Q417	Groundwater	12/13/2017 2:38:00 PM	12/13/2017	1/8/2018
N027546-010C	MW-41M-Q417	Groundwater	12/13/2017 2:38:00 PM	12/13/2017	1/8/2018
N027546-010D	MW-41M-Q417	Groundwater	12/13/2017 2:38:00 PM	12/13/2017	1/8/2018
N027546-011A	MW-736-Q417	Groundwater	12/13/2017 4:00:00 PM	12/13/2017	1/8/2018
N027546-012A	MW-737-Q417	Groundwater	12/13/2017 3:30:00 PM	12/13/2017	1/8/2018
N027546-013A	MW-738-Q417	Groundwater	12/13/2017 3:30:00 PM	12/13/2017	1/8/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-01-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 10:58:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171214E**	QC Batch: **R120860**			PrepDate			Analyst: **LR**
Specific Conductance	7100	0.10	0.10		umhos/cm	1	12/14/2017 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 11:08:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171214E**	QC Batch: **R120860**			PrepDate			Analyst: **LR**
Specific Conductance	7000	0.10	0.10		umhos/cm	1	12/14/2017 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41S-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171214E**	QC Batch: **R120860**			PrepDate			Analyst: **LR**
Specific Conductance	5600	0.10	0.10		umhos/cm	1	12/14/2017 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_D-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 10:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171214E**	QC Batch: **R120860**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	12/14/2017 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-005

Client Sample ID: MW-60BR-245-LF_S-Q417
Collection Date: 12/13/2017 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171214E**	QC Batch: **R120860**			PrepDate			Analyst: **LR**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	12/14/2017 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-14-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171214E**	QC Batch: **R120860**			PrepDate			Analyst: **LR**
Specific Conductance	2500	0.10	0.10		umhos/cm	1	12/14/2017 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-48-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171214E**	QC Batch: **R120860**			PrepDate			Analyst: **LR**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	12/14/2017 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41D-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:14:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171214E**	QC Batch: **R120860**			PrepDate			Analyst: **LR**
Specific Conductance	19000	0.10	0.10		umhos/cm	1	12/14/2017 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-912-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171214E**	QC Batch: **R120860**			PrepDate			Analyst: **LR**
Specific Conductance	19000	0.10	0.10		umhos/cm	1	12/14/2017 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41M-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:38:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171214E**	QC Batch: **R120860**			PrepDate			Analyst: **LR**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	12/14/2017 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	**N027546-009DDUP**	SampType:	**DUP**	TestCode:	**120.1_WPGE**	Units:	**umhos/cm**	Prep Date:		RunNo:	**120860**
Client ID:	**ZZZZZZ**	Batch ID:	**R120860**	TestNo:	**EPA 120.1**			Analysis Date:	**12/14/2017**	SeqNo:	**2868423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	19290.000	0.10						19230	0.312	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-001

Client Sample ID: TW-01-Q417
Collection Date: 12/13/2017 10:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171219C**	QC Batch: **66131**				PrepDate	**12/19/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4800	50	50		mg/L	1	12/19/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 11:08:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171219C**	QC Batch: **66131**				PrepDate	**12/19/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4700	50	50		mg/L	1	12/19/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41S-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171219C**	QC Batch: **66131**				PrepDate	**12/19/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3500	50	50		mg/L	1	12/19/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_D-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 10:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171219C**	QC Batch: **66131**				PrepDate	**12/19/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	10000	100	100		mg/L	1	12/19/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_S-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 9:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171219C**	QC Batch: **66131**				PrepDate	**12/19/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	10000	100	100		mg/L	1	12/19/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-14-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171219C**	QC Batch: **66131**				PrepDate	**12/19/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1600	20	20		mg/L	1	12/19/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-48-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171219C**	QC Batch: **66131**				PrepDate	**12/19/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	10000	100	100		mg/L	1	12/19/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41D-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:14:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171219C**	QC Batch: **66131**				PrepDate	**12/19/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	12000	100	100		mg/L	1	12/19/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-912-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171219C**	QC Batch: **66131**				PrepDate	**12/19/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	12000	100	100		mg/L	1	12/19/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41M-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:38:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171219C**	QC Batch: **66131**				PrepDate	**12/19/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	8300	100	100		mg/L	1	12/19/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66131**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/19/2017**	RunNo: **120996**
Client ID: **LCSW**	Batch ID: **66131**	TestNo: **SM2540C**		Analysis Date: **12/19/2017**	SeqNo: **2875502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	958.000	10	1000	0	95.8	80	120				

Sample ID **MB-66131**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/19/2017**	RunNo: **120996**
Client ID: **PBW**	Batch ID: **66131**	TestNo: **SM2540C**		Analysis Date: **12/19/2017**	SeqNo: **2875503**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N027546-009DDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/19/2017**	RunNo: **120996**
Client ID: **ZZZZZZ**	Batch ID: **66131**	TestNo: **SM2540C**		Analysis Date: **12/19/2017**	SeqNo: **2875513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	11470.000	100						11980	4.35	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-001

Client Sample ID: TW-01-Q417
Collection Date: 12/13/2017 10:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171220A**	QC Batch: **R120951**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	2200	17	100		µg/L	500	12/20/2017 12:19 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180104A**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	2300	0.48	25		µg/L	25	1/4/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 11:08:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171220A**	QC Batch: **R120951**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	2200	17	100		µg/L	500	12/20/2017 12:38 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180104A**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	2400	0.48	25		µg/L	25	1/4/2018 02:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-003

Client Sample ID: MW-41S-Q417
Collection Date: 12/13/2017 2:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171220A** QC Batch: **R120951**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	12	0.17	1.0		µg/L	5	12/20/2017 12:57 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180103D** QC Batch: **66061**				PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	12	0.019	1.0		µg/L	1	1/4/2018 06:39 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-004

Client Sample ID: MW-60BR-245-LF_D-Q417
Collection Date: 12/13/2017 10:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171220A** QC Batch: **R120951**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/20/2017 02:01 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180103D** QC Batch: **66061**				PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	1.4	0.019	1.0		µg/L	1	1/4/2018 06:50 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-005

Client Sample ID: MW-60BR-245-LF_S-Q417
Collection Date: 12/13/2017 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171220A**	QC Batch: **R120951**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	2.3	0.17	1.0		µg/L	5	12/20/2017 02:22 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180103D**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	12	0.019	1.0		µg/L	1	1/4/2018 07:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-006

Client Sample ID: MW-14-Q417
Collection Date: 12/13/2017 3:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171220A** QC Batch: **R120951**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	12	0.17	1.0		µg/L	5	12/20/2017 02:40 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180103A** QC Batch: **66022**				PrepDate	**12/14/2017**		Analyst: **CEI**
Chromium	13	0.019	1.0		µg/L	1	1/3/2018 05:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-48-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_171220A** QC Batch: **R120951**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/20/2017 02:59 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103D** QC Batch: **66061**				PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/4/2018 07:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41D-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:14:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_171220A** QC Batch: **R120951**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/20/2017 03:37 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103D** QC Batch: **66061**				PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/4/2018 07:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-912-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171220A**	QC Batch: **R120951**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/20/2017 03:56 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180103D**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	1.2	0.019	1.0		µg/L	1	1/4/2018 07:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41M-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:38:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171220A**	QC Batch: **R120951**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	9.3	0.17	1.0		µg/L	5	12/20/2017 04:15 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103D**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	14	0.019	1.0		µg/L	1	1/4/2018 07:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-736-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171220A**	QC Batch: **R120951**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/20/2017 04:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-737-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171220A**	QC Batch: **R120951**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/20/2017 04:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-738-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171220A**	QC Batch: **R120951**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/20/2017 05:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	LCS-R120951	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120951
Client ID:	LCSW	Batch ID:	R120951	TestNo:	EPA 218.6			Analysis Date:	12/20/2017	SeqNo:	2873134

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.244	0.20	5.000	0	105	90	110				

Sample ID	MB-R120951	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120951
Client ID:	PBW	Batch ID:	R120951	TestNo:	EPA 218.6			Analysis Date:	12/20/2017	SeqNo:	2873135

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	N027556-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120951
Client ID:	ZZZZZZ	Batch ID:	R120951	TestNo:	EPA 218.6			Analysis Date:	12/20/2017	SeqNo:	2873137

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	24.658	0.40	10.00	13.98	107	90	110				

Sample ID	N027556-005AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120951
Client ID:	ZZZZZZ	Batch ID:	R120951	TestNo:	EPA 218.6			Analysis Date:	12/20/2017	SeqNo:	2873138

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	24.590	0.40	10.00	13.98	106	90	110	24.66	0.278	20	

Sample ID	N027634-001DUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120951
Client ID:	ZZZZZZ	Batch ID:	R120951	TestNo:	EPA 218.6			Analysis Date:	12/20/2017	SeqNo:	2873140

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	229.254	4.0						230.2	0.407	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027556-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **ZZZZZZ**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2875724**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	15.956	0.20	5.000	10.70	105	90	110				

Sample ID **N027546-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **ZZZZZZ**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2875726**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4844.150	100	2500	2214	105	90	110				

Sample ID **N027546-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **ZZZZZZ**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2875728**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4867.450	100	2500	2216	106	90	110				

Sample ID **N027546-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **ZZZZZZ**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2875732**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	38.138	1.0	25.00	11.78	105	90	110				

Sample ID **N027546-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **ZZZZZZ**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2875734**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.348	1.0	5.000	0	107	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027546-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120951
Client ID:	ZZZZZZ	Batch ID:	R120951	TestNo:	EPA 218.6			Analysis Date:	12/20/2017	SeqNo:	2875736

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.451	1.0	5.000	2.259	104	90	110				

Sample ID	N027546-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120951
Client ID:	ZZZZZZ	Batch ID:	R120951	TestNo:	EPA 218.6			Analysis Date:	12/20/2017	SeqNo:	2875738

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	17.124	1.0	5.000	11.74	108	90	110				

Sample ID	N027546-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120951
Client ID:	ZZZZZZ	Batch ID:	R120951	TestNo:	EPA 218.6			Analysis Date:	12/20/2017	SeqNo:	2875742

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.847	1.0	5.000	0	96.9	90	110				

Sample ID	N027546-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120951
Client ID:	ZZZZZZ	Batch ID:	R120951	TestNo:	EPA 218.6			Analysis Date:	12/20/2017	SeqNo:	2875744

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.688	1.0	5.000	0	93.8	90	110				

Sample ID	N027546-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120951
Client ID:	ZZZZZZ	Batch ID:	R120951	TestNo:	EPA 218.6			Analysis Date:	12/20/2017	SeqNo:	2875746

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.854	1.0	5.000	0	97.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027546-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120951
Client ID:	ZZZZZZ	Batch ID:	R120951	TestNo:	EPA 218.6			Analysis Date:	12/20/2017	SeqNo:	2875748

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.365	1.0	5.000	9.258	102	90	110				

Sample ID	N027546-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120951
Client ID:	ZZZZZZ	Batch ID:	R120951	TestNo:	EPA 218.6			Analysis Date:	12/20/2017	SeqNo:	2875750

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0	106	90	110				

Sample ID	N027546-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120951
Client ID:	ZZZZZZ	Batch ID:	R120951	TestNo:	EPA 218.6			Analysis Date:	12/20/2017	SeqNo:	2875754

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.021	0.20	1.000	0	102	90	110				

Sample ID	N027546-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120951
Client ID:	ZZZZZZ	Batch ID:	R120951	TestNo:	EPA 218.6			Analysis Date:	12/20/2017	SeqNo:	2875756

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.067	0.20	1.000	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66022	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121175
Client ID:	PBW	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2882374

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66022	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121175
Client ID:	LCSW	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2882375

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.955	1.0	10.00	0	99.5	85	115				

Sample ID	N027485-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121175
Client ID:	ZZZZZZ	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2882391

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	157.980	1.0	10.00	153.5	45.0	75	125				S

Sample ID	N027485-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121175
Client ID:	ZZZZZZ	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2882393

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	156.223	1.0	10.00	153.5	27.4	75	125	158.0	1.12	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66061	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/18/2017	RunNo:	121203
Client ID:	PBW	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884393

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66061	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121203
Client ID:	LCSW	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884396

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.088	1.0	10.00	0	101	85	115				

Sample ID	N027523-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/18/2017	RunNo:	121203
Client ID:	ZZZZZZ	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884402

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	24.181	1.0	10.00	14.08	101	75	125				

Sample ID	N027523-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/18/2017	RunNo:	121203
Client ID:	ZZZZZZ	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884404

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	23.924	1.0	10.00	14.08	98.4	75	125	24.18	1.07	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-01-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 10:58:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171218J**	QC Batch: **R121068**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	110	1.2	5.0		mg/L	1	12/18/2017 07:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 11:08:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171218J**	QC Batch: **R121068**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	110	1.2	5.0		mg/L	1	12/18/2017 07:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41S-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171218J**	QC Batch: **R121068**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	51	1.2	5.0		mg/L	1	12/18/2017 07:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-004

Client Sample ID: MW-60BR-245-LF_D-Q417
Collection Date: 12/13/2017 10:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171218J**	QC Batch: **R121068**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	22	1.2	5.0		mg/L	1	12/18/2017 07:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_S-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 9:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171218J**	QC Batch: **R121068**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	22	1.2	5.0		mg/L	1	12/18/2017 07:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-14-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171218J**	QC Batch: **R121068**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	63	1.2	5.0		mg/L	1	12/18/2017 07:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-48-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171218J**	QC Batch: **R121068**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	29	1.2	5.0		mg/L	1	12/18/2017 07:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41D-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:14:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	38	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-912-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	40	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41M-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:38:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	36	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R121068**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121068**
Client ID: **LCSW**	Batch ID: **R121068**	TestNo: **SM 2320 B**		Analysis Date: **12/18/2017**	SeqNo: **2879179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	98.121	5.0	100.0	0	98.1	85	115				

Sample ID **MB-R121068**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121068**
Client ID: **PBW**	Batch ID: **R121068**	TestNo: **SM 2320 B**		Analysis Date: **12/18/2017**	SeqNo: **2879180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N027524-001DDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121068**
Client ID: **ZZZZZZ**	Batch ID: **R121068**	TestNo: **SM 2320 B**		Analysis Date: **12/18/2017**	SeqNo: **2879182**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	62.630	5.0						62.63	0	30	

Sample ID **N027546-001DMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121068**
Client ID: **ZZZZZZ**	Batch ID: **R121068**	TestNo: **SM 2320 B**		Analysis Date: **12/18/2017**	SeqNo: **2879196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	202.505	5.0	100.0	106.5	96.0	75	125				

Sample ID **N027546-001DMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121068**
Client ID: **ZZZZZZ**	Batch ID: **R121068**	TestNo: **SM 2320 B**		Analysis Date: **12/18/2017**	SeqNo: **2879197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	202.505	5.0	100.0	106.5	96.0	75	125	202.5	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID	LCS-R121069	SampType:	LCS	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	121069
Client ID:	LCSW	Batch ID:	R121069	TestNo:	SM 2320 B			Analysis Date:	12/19/2017	SeqNo:	2879204

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	99.576	5.0	100.0	0	99.6	85	115				

Sample ID	MB-R121069	SampType:	MBLK	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	121069
Client ID:	PBW	Batch ID:	R121069	TestNo:	SM 2320 B			Analysis Date:	12/19/2017	SeqNo:	2879205

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID	N027557-001CDUP	SampType:	DUP	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	121069
Client ID:	ZZZZZZ	Batch ID:	R121069	TestNo:	SM 2320 B			Analysis Date:	12/19/2017	SeqNo:	2879214

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	36.017	5.0						34.96	2.99	30	

Sample ID	N027583-001DMS	SampType:	MS	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	121069
Client ID:	ZZZZZZ	Batch ID:	R121069	TestNo:	SM 2320 B			Analysis Date:	12/19/2017	SeqNo:	2879225

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	163.136	5.0	100.0	65.68	97.5	75	125				

Sample ID	N027583-001DMSD	SampType:	MSD	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	121069
Client ID:	ZZZZZZ	Batch ID:	R121069	TestNo:	SM 2320 B			Analysis Date:	12/19/2017	SeqNo:	2879226

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	163.136	5.0	100.0	65.68	97.5	75	125	163.1	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-001

Client Sample ID: TW-01-Q417
Collection Date: 12/13/2017 10:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220B** QC Batch: **R121007**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/20/2017 11:43 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Chloride	2200	4.6	250		mg/L	500	12/22/2017 01:52 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Sulfate	710	2.3	50		mg/L	100	12/22/2017 02:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-002

Client Sample ID: MW-921-Q417
Collection Date: 12/13/2017 11:08:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220B** QC Batch: **R121007**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/20/2017 11:59 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Chloride	2300	4.6	250		mg/L	500	12/22/2017 03:24 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Sulfate	700	2.3	50		mg/L	100	12/22/2017 03:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-003

Client Sample ID: MW-41S-Q417
Collection Date: 12/13/2017 2:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220B** QC Batch: **R121007**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/21/2017 12:14 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Chloride	1900	4.6	250		mg/L	500	12/22/2017 03:54 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Sulfate	330	1.1	25		mg/L	50	12/22/2017 04:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-004

Client Sample ID: MW-60BR-245-LF_D-Q417
Collection Date: 12/13/2017 10:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220B** QC Batch: **R121007**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/21/2017 01:00 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Chloride	5700	18	1000		mg/L	2000	12/22/2017 04:25 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Sulfate	780	2.3	50		mg/L	100	12/22/2017 04:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-005

Client Sample ID: MW-60BR-245-LF_S-Q417
Collection Date: 12/13/2017 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220B** QC Batch: **R121007**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/21/2017 01:15 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Chloride	5900	18	1000		mg/L	2000	12/22/2017 04:56 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Sulfate	780	2.3	50		mg/L	100	12/22/2017 05:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-006

Client Sample ID: MW-14-Q417
Collection Date: 12/13/2017 3:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220B** QC Batch: **R121007**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/20/2017 10:42 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Chloride	770	1.8	100		mg/L	200	12/22/2017 12:20 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Sulfate	130	0.46	10		mg/L	20	12/22/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-007

Client Sample ID: MW-48-Q417
Collection Date: 12/13/2017 2:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220B** QC Batch: **R121007**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/21/2017 01:30 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Chloride	6100	18	1000		mg/L	2000	12/22/2017 05:57 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Sulfate	560	2.3	50		mg/L	100	12/22/2017 06:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-008

Client Sample ID: MW-41D-Q417
Collection Date: 12/13/2017 3:14:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220B** QC Batch: **R121007**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/21/2017 01:46 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Chloride	7200	18	1000		mg/L	2000	12/22/2017 06:27 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Sulfate	760	2.3	50		mg/L	100	12/22/2017 06:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-009

Client Sample ID: MW-912-Q417
Collection Date: 12/13/2017 3:24:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220B** QC Batch: **R121007**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/21/2017 02:01 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Chloride	7000	18	1000		mg/L	2000	12/22/2017 06:58 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Sulfate	760	2.3	50		mg/L	100	12/22/2017 07:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-010

Client Sample ID: MW-41M-Q417
Collection Date: 12/13/2017 2:38:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220B** QC Batch: **R121007**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/21/2017 02:16 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Chloride	4600	9.1	500		mg/L	1000	12/22/2017 07:29 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Sulfate	550	2.3	50		mg/L	100	12/22/2017 07:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	LCS-R121007_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121007
Client ID:	LCSW	Batch ID:	R121007	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876192

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.233	0.50	1.250	0	98.6	90	110				

Sample ID	MB-R121007_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121007
Client ID:	PBW	Batch ID:	R121007	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876193

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	N027546-006DDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121007
Client ID:	ZZZZZZ	Batch ID:	R121007	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876195

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.138	2.5						0.1100	0	20	

Sample ID	N027546-006DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121007
Client ID:	ZZZZZZ	Batch ID:	R121007	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876196

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	6.339	2.5	6.250	0.1100	99.7	80	120				

Sample ID	N027546-006DMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121007
Client ID:	ZZZZZZ	Batch ID:	R121007	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876197

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	6.617	2.5	6.250	0.1100	104	80	120	6.339	4.28	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R121065_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	PBW	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2878982

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R121065_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	LCSW	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2878983

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.952	0.50	2.000	0	97.6	90	110				

Sample ID	N027546-006DMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	ZZZZZZ	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2878985

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1174.280	100	400.0	769.2	101	80	120				

Sample ID	N027546-006DMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	ZZZZZZ	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2878986

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1178.460	100	400.0	769.2	102	80	120	1174	0.355	20	

Sample ID	N027546-001DDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	ZZZZZZ	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2878988

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2250.350	250						2228	0.976	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R121065_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	PBW	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2879012

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R121065_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	LCSW	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2879013

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.925	0.50	4.000	0	98.1	90	110				

Sample ID	N027546-006DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	ZZZZZZ	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2879015

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	206.266	10	80.00	127.8	98.1	80	120				

Sample ID	N027546-006DMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	ZZZZZZ	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2879016

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	206.912	10	80.00	127.8	99.0	80	120	206.3	0.313	20	

Sample ID	N027546-001DDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	ZZZZZZ	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2879020

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	711.490	50						709.9	0.227	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-01-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 10:58:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222D**	QC Batch: **R121037**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	16	0.44	1.0		mg/L	20	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 11:08:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222D**	QC Batch: **R121037**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	15	0.44	1.0		mg/L	20	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41S-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.6	0.044	0.10		mg/L	2	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_D-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 10:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.060	0.022	0.050		mg/L	1	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_S-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 9:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.072	0.022	0.050		mg/L	1	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-006

Client Sample ID: MW-14-Q417
Collection Date: 12/13/2017 3:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	3.4	0.11	0.25		mg/L	5	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41D-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:14:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.47	0.022	0.050		mg/L	1	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-912-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.49	0.022	0.050		mg/L	1	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41M-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:38:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.66	0.022	0.050		mg/L	1	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R121037	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121037
Client ID:	PBW	Batch ID:	R121037	TestNo:	SM4500-NO3			Analysis Date:	12/22/2017	SeqNo:	2877836

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R121037	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121037
Client ID:	LCSW	Batch ID:	R121037	TestNo:	SM4500-NO3			Analysis Date:	12/22/2017	SeqNo:	2877837

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.476	0.050	0.5000	0	95.2	85	115				

Sample ID	N027523-005DMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121037
Client ID:	ZZZZZZ	Batch ID:	R121037	TestNo:	SM4500-NO3			Analysis Date:	12/22/2017	SeqNo:	2877840

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.032	0.25	2.500	3.434	104	75	125				

Sample ID	N027523-005DMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121037
Client ID:	ZZZZZZ	Batch ID:	R121037	TestNo:	SM4500-NO3			Analysis Date:	12/22/2017	SeqNo:	2877841

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.779	0.25	2.500	3.434	93.8	75	125	6.032	4.28	20	

Sample ID	N027523-008CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121037
Client ID:	ZZZZZZ	Batch ID:	R121037	TestNo:	SM4500-NO3			Analysis Date:	12/22/2017	SeqNo:	2877843

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.313	0.050						1.204	8.59	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R121101**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **PBW**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R121101**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **LCSW**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.504	0.050	0.5000	0	101	85	115				

Sample ID **N027546-003CMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **ZZZZZZ**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.842	0.10	1.000	1.650	119	75	125				

Sample ID **N027546-003CMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **ZZZZZZ**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880070**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.813	0.10	1.000	1.650	116	75	125	2.842	1.02	20	

Sample ID **N027546-004CDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **ZZZZZZ**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880072**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0.06030	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-001

Client Sample ID: TW-01-Q417
Collection Date: 12/13/2017 10:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66081**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	1600	38	100		ug/L	1	12/19/2017 10:39 PM
Calcium	320000	28	500		ug/L	1	12/19/2017 10:39 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 10:39 PM
Magnesium	20000	4.4	100		ug/L	1	12/19/2017 10:39 PM
Sodium	1400000	2600	50000		ug/L	100	1/3/2018 07:59 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-002

Client Sample ID: MW-921-Q417
Collection Date: 12/13/2017 11:08:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66081**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	1500	38	100		ug/L	1	12/19/2017 10:47 PM
Calcium	300000	28	500		ug/L	1	12/19/2017 10:47 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 10:47 PM
Magnesium	20000	4.4	100		ug/L	1	12/19/2017 10:47 PM
Sodium	1400000	2600	50000		ug/L	100	1/3/2018 08:03 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-003

Client Sample ID: MW-41S-Q417
Collection Date: 12/13/2017 2:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66081**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	860	38	100		ug/L	1	12/19/2017 10:54 PM
Calcium	150000	28	500		ug/L	1	12/19/2017 10:54 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 10:54 PM
Magnesium	19000	4.4	100		ug/L	1	12/19/2017 10:54 PM
Sodium	1100000	2600	50000		ug/L	100	1/3/2018 08:06 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-004

Client Sample ID: MW-60BR-245-LF_D-Q417
Collection Date: 12/13/2017 10:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66081**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	2200	38	100		ug/L	1	12/19/2017 11:01 PM
Calcium	400000	28	500		ug/L	1	12/19/2017 11:01 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 11:01 PM
Magnesium	5900	4.4	100		ug/L	1	12/19/2017 11:01 PM
Sodium	3400000	2600	50000		ug/L	100	1/3/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-005

Client Sample ID: MW-60BR-245-LF_S-Q417
Collection Date: 12/13/2017 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66081**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	2300	38	100		ug/L	1	12/19/2017 11:40 PM
Calcium	390000	28	500		ug/L	1	12/19/2017 11:40 PM
Iron	94	1.8	20		ug/L	1	12/19/2017 11:40 PM
Magnesium	5000	4.4	100		ug/L	1	12/19/2017 11:40 PM
Sodium	3500000	2600	50000		ug/L	100	1/3/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-006

Client Sample ID: MW-14-Q417
Collection Date: 12/13/2017 3:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66081**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	330	38	100		ug/L	1	12/19/2017 11:47 PM
Calcium	150000	28	500		ug/L	1	12/19/2017 11:47 PM
Iron	48	1.8	20		ug/L	1	12/19/2017 11:47 PM
Magnesium	20000	4.4	100		ug/L	1	12/19/2017 11:47 PM
Sodium	360000	660	12000		ug/L	25	1/3/2018 09:12 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-007

Client Sample ID: MW-48-Q417
Collection Date: 12/13/2017 2:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66081**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	960	38	100		ug/L	1	12/19/2017 11:55 PM
Calcium	360000	28	500		ug/L	1	12/19/2017 11:55 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 11:55 PM
Magnesium	29000	4.4	100		ug/L	1	12/19/2017 11:55 PM
Sodium	3700000	13000	250000		ug/L	500	1/3/2018 08:57 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-008

Client Sample ID: MW-41D-Q417
Collection Date: 12/13/2017 3:14:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66081**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	1800	38	100		ug/L	1	12/20/2017 12:02 AM
Calcium	390000	28	500		ug/L	1	12/20/2017 12:02 AM
Iron	37	1.8	20		ug/L	1	12/20/2017 12:02 AM
Magnesium	24000	4.4	100		ug/L	1	12/20/2017 12:02 AM
Sodium	4600000	13000	250000		ug/L	500	1/3/2018 09:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-009

Client Sample ID: MW-912-Q417
Collection Date: 12/13/2017 3:24:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_171219B** QC Batch: **66081** PrepDate **12/15/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	1800	38	100		ug/L	1	12/20/2017 12:09 AM
Calcium	410000	28	500		ug/L	1	12/20/2017 12:09 AM
Iron	39	1.8	20		ug/L	1	12/20/2017 12:09 AM
Magnesium	25000	4.4	100		ug/L	1	12/20/2017 12:09 AM
Sodium	4600000	13000	250000		ug/L	500	1/3/2018 09:19 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41M-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:38:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-010		

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_171219B** QC Batch: **66081** PrepDate **12/15/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	1300	38	100		ug/L	1	12/20/2017 12:15 AM
Calcium	390000	28	500		ug/L	1	12/20/2017 12:15 AM
Iron	220	1.8	20		ug/L	1	12/20/2017 12:15 AM
Magnesium	28000	4.4	100		ug/L	1	12/20/2017 12:15 AM
Sodium	2800000	2600	50000		ug/L	100	1/3/2018 08:36 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-66081**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/15/2017**	RunNo: **120943**
Client ID: **PBW**	Batch ID: **66081**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2872958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	58.456	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-66081**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/15/2017**	RunNo: **120943**
Client ID: **LCSW**	Batch ID: **66081**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2872959**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4574.030	100	5000	0	91.5	85	115				
Calcium	9346.317	500	10000	0	93.5	85	115				
Iron	101.514	20	100.0	0	102	85	115				
Magnesium	9234.344	100	10000	0	92.3	85	115				

Sample ID **N027523-009B-MS1**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/15/2017**	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **66081**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2872965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	7484.210	100	5000	2571	98.3	75	125				
Iron	1481.359	20	100.0	1284	197	75	125				S
Magnesium	83845.823	100	10000	73870	99.8	75	125				

Sample ID **N027523-009B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/15/2017**	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **66081**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2872966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	7521.074	100	5000	2571	99.0	75	125	7484	0.491	20	
Iron	1482.823	20	100.0	1284	198	75	125	1481	0.0988	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027523-009B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	120943
Client ID:	ZZZZZZ	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2872966

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	84110.485	100	10000	73870	102	75	125	83850	0.315	20	

Sample ID	N027523-009B-MS1	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	120943
Client ID:	ZZZZZZ	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2873696

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	979282.613	2500	10000	887400	919	75	125				S

Sample ID	N027523-009B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	120943
Client ID:	ZZZZZZ	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2873697

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	980455.201	2500	10000	887400	931	75	125	979300	0.120	20	S

Sample ID	MB-66081	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	121185
Client ID:	PBW	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883306

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID	LCS2-66081	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	121185
Client ID:	LCSW	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883307

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20372.380	500	20000	0	102	85	115				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027523-012B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	121185
Client ID:	ZZZZZZ	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883325

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3477083.040	50000	20000	3330000	734	75	125	3484000	0.189	20	S

Sample ID	N027523-012B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	121185
Client ID:	ZZZZZZ	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883326

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3483647.513	50000	20000	3330000	767	75	125				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-01-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 10:58:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**				PrepDate	**12/18/2017**	Analyst: **CEI**
Manganese	ND	0.056	0.50		µg/L	1	1/4/2018 06:06 AM
Molybdenum	14	0.039	0.50		µg/L	1	1/4/2018 06:06 AM
Selenium	15	0.028	0.50		µg/L	1	1/4/2018 06:06 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 11:08:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**				PrepDate	**12/18/2017**	Analyst: **CEI**
Manganese	ND	0.056	0.50		µg/L	1	1/4/2018 06:28 AM
Molybdenum	14	0.039	0.50		µg/L	1	1/4/2018 06:28 AM
Selenium	14	0.028	0.50		µg/L	1	1/4/2018 06:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-003

Client Sample ID: MW-41S-Q417
Collection Date: 12/13/2017 2:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**	Analyst: **CEI**	
Arsenic	1.6	0.025	0.10		µg/L	1	1/4/2018 06:39 AM
Manganese	0.50	0.056	0.50		µg/L	1	1/4/2018 06:39 AM
Molybdenum	14	0.039	0.50		µg/L	1	1/4/2018 06:39 AM
Selenium	1.2	0.028	0.50		µg/L	1	1/4/2018 06:39 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-004

Client Sample ID: MW-60BR-245-LF_D-Q417
Collection Date: 12/13/2017 10:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/4/2018 06:50 AM
Manganese	21	0.056	0.50		µg/L	1	1/4/2018 06:50 AM
Molybdenum	56	0.19	2.5		µg/L	5	1/4/2018 06:56 AM
Selenium	ND	0.14	2.5		µg/L	5	1/4/2018 06:56 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-005

Client Sample ID: MW-60BR-245-LF_S-Q417
Collection Date: 12/13/2017 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Arsenic	6.3	0.025	0.10		µg/L	1	1/4/2018 07:01 AM
Manganese	19	0.056	0.50		µg/L	1	1/4/2018 07:01 AM
Molybdenum	64	0.19	2.5		µg/L	5	1/4/2018 07:07 AM
Selenium	ND	0.14	2.5		µg/L	5	1/4/2018 07:07 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-006

Client Sample ID: MW-14-Q417
Collection Date: 12/13/2017 3:25:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180102E** QC Batch: **66022** PrepDate **12/14/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.031	0.50		µg/L	1	1/2/2018 10:34 PM
Arsenic	0.78	0.025	0.10		µg/L	1	1/2/2018 10:34 PM
Barium	170	0.35	5.0		µg/L	5	1/2/2018 10:40 PM
Beryllium	ND	0.043	0.50		µg/L	1	1/2/2018 10:34 PM
Cadmium	ND	0.047	0.50		µg/L	1	1/2/2018 10:34 PM
Cobalt	ND	0.026	0.50		µg/L	1	1/2/2018 10:34 PM
Copper	ND	0.26	1.0		µg/L	1	1/2/2018 10:34 PM
Lead	ND	0.037	1.0		µg/L	1	1/2/2018 10:34 PM
Manganese	1.9	0.056	0.50		µg/L	1	1/2/2018 10:34 PM
Molybdenum	13	0.039	0.50		µg/L	1	1/2/2018 10:34 PM
Nickel	6.2	0.040	1.0		µg/L	1	1/2/2018 10:34 PM
Selenium	2.0	0.028	0.50		µg/L	1	1/3/2018 05:27 PM
Silver	ND	0.059	0.50		µg/L	1	1/2/2018 10:34 PM
Thallium	ND	0.030	0.50		µg/L	1	1/2/2018 10:34 PM
Vanadium	2.8	0.021	1.0		µg/L	1	1/3/2018 05:27 PM
Zinc	ND	0.27	10		µg/L	1	1/2/2018 10:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-48-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**				PrepDate	**12/18/2017**	Analyst: **CEI**
Manganese	14	0.056	0.50		µg/L	1	1/4/2018 07:13 AM
Molybdenum	11	0.19	2.5		µg/L	5	1/4/2018 07:18 AM
Selenium	ND	0.14	2.5		µg/L	5	1/4/2018 07:18 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-008

Client Sample ID: MW-41D-Q417
Collection Date: 12/13/2017 3:14:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**	Analyst: **CEI**	
Arsenic	2.8	0.025	0.10		µg/L	1	1/4/2018 07:35 AM
Manganese	68	0.056	0.50		µg/L	1	1/4/2018 07:35 AM
Molybdenum	76	0.19	2.5		µg/L	5	1/4/2018 07:41 AM
Selenium	ND	0.14	2.5		µg/L	5	1/4/2018 07:41 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-009

Client Sample ID: MW-912-Q417
Collection Date: 12/13/2017 3:24:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**	Analyst: **CEI**	
Arsenic	2.8	0.025	0.10		µg/L	1	1/4/2018 07:47 AM
Manganese	66	0.056	0.50		µg/L	1	1/4/2018 07:47 AM
Molybdenum	74	0.19	2.5		µg/L	5	1/4/2018 07:52 AM
Selenium	ND	0.14	2.5		µg/L	5	1/4/2018 07:52 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-010

Client Sample ID: MW-41M-Q417
Collection Date: 12/13/2017 2:38:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/4/2018 07:58 AM
Manganese	7.3	0.056	0.50		µg/L	1	1/4/2018 07:58 AM
Molybdenum	25	0.19	2.5		µg/L	5	1/4/2018 08:04 AM
Selenium	0.54	0.028	0.50		µg/L	1	1/5/2018 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66022**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/14/2017**	RunNo: **121176**
Client ID: **PBW**	Batch ID: **66022**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/2/2018**	SeqNo: **2882470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.039	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.080	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Silver	0.172	0.50									
Thallium	0.072	0.50									
Zinc	ND	10									

Sample ID **LCS-66022**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/14/2017**	RunNo: **121176**
Client ID: **LCSW**	Batch ID: **66022**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/2/2018**	SeqNo: **2882471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.594	0.50	10.00	0	95.9	85	115				
Arsenic	10.068	0.10	10.00	0	101	85	115				
Barium	9.869	1.0	10.00	0	98.7	85	115				
Beryllium	9.831	0.50	10.00	0	98.3	85	115				
Cadmium	10.155	0.50	10.00	0	102	85	115				
Cobalt	9.625	0.50	10.00	0	96.3	85	115				
Copper	9.858	1.0	10.00	0	98.6	85	115				
Lead	9.954	1.0	10.00	0	99.5	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	LCS-66022	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121176
Client ID:	LCSW	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2882471

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	99.844	0.50	100.0	0	99.8	85	115				
Molybdenum	9.775	0.50	10.00	0	97.7	85	115				
Nickel	10.210	1.0	10.00	0	102	85	115				
Selenium	9.423	0.50	10.00	0	94.2	85	115				
Silver	9.434	0.50	10.00	0	94.3	85	115				
Thallium	9.897	0.50	10.00	0	99.0	85	115				
Zinc	102.047	10	100.0	0	102	85	115				

Sample ID	N027485-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121176
Client ID:	ZZZZZZ	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2882487

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.067	0.50	10.00	0.08078	99.9	75	125				
Arsenic	14.588	0.10	10.00	3.881	107	75	125				
Barium	71.282	1.0	10.00	63.49	77.9	75	125				
Beryllium	10.773	0.50	10.00	0	108	75	125				
Cadmium	9.822	0.50	10.00	0	98.2	75	125				
Cobalt	9.185	0.50	10.00	0	91.9	75	125				
Copper	8.246	1.0	10.00	0	82.5	75	125				
Lead	10.971	1.0	10.00	0	110	75	125				
Manganese	109.145	0.50	100.0	11.34	97.8	75	125				
Molybdenum	81.348	0.50	10.00	71.60	97.5	75	125				
Nickel	11.267	1.0	10.00	1.330	99.4	75	125				
Selenium	14.355	0.50	10.00	4.853	95.0	75	125				
Silver	9.976	0.50	10.00	0	99.8	75	125				
Thallium	10.873	0.50	10.00	0.8445	100	75	125				
Zinc	117.977	10	100.0	0	118	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027485-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121176
Client ID:	ZZZZZZ	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2882489

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.199	0.50	10.00	0.08078	101	75	125	10.07	1.30	20	
Arsenic	14.431	0.10	10.00	3.881	106	75	125	14.59	1.08	20	
Barium	71.934	1.0	10.00	63.49	84.4	75	125	71.28	0.910	20	
Beryllium	10.625	0.50	10.00	0	106	75	125	10.77	1.38	20	
Cadmium	9.731	0.50	10.00	0	97.3	75	125	9.822	0.930	20	
Cobalt	9.045	0.50	10.00	0	90.4	75	125	9.185	1.54	20	
Copper	8.131	1.0	10.00	0	81.3	75	125	8.246	1.41	20	
Lead	10.868	1.0	10.00	0	109	75	125	10.97	0.936	20	
Manganese	107.405	0.50	100.0	11.34	96.1	75	125	109.1	1.61	20	
Molybdenum	81.932	0.50	10.00	71.60	103	75	125	81.35	0.716	20	
Nickel	11.302	1.0	10.00	1.330	99.7	75	125	11.27	0.310	20	
Selenium	13.447	0.50	10.00	4.853	85.9	75	125	14.36	6.53	20	
Silver	9.993	0.50	10.00	0	99.9	75	125	9.976	0.169	20	
Thallium	10.833	0.50	10.00	0.8445	99.9	75	125	10.87	0.372	20	
Zinc	115.797	10	100.0	0	116	75	125	118.0	1.86	20	

Sample ID	MB-66022	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121192
Client ID:	PBW	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883829

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	ND	1.0									

Sample ID	LCS-66022	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121192
Client ID:	LCSW	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883830

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	10.252	1.0	10.00	0	103	85	115				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027485-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121192
Client ID:	ZZZZZZ	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883840

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	14.407	1.0	10.00	4.152	103	75	125				

Sample ID	N027485-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121192
Client ID:	ZZZZZZ	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883841

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	14.323	1.0	10.00	4.152	102	75	125	14.41	0.587	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	MB-66061	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/18/2017	RunNo:	121204
Client ID:	PBW	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884524

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID	LCS-66061	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121204
Client ID:	LCSW	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884527

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.805	0.10	10.00	0	98.0	85	115				
Manganese	103.318	0.50	100.0	0	103	85	115				
Molybdenum	9.782	0.50	10.00	0	97.8	85	115				
Selenium	10.243	0.50	10.00	0	102	85	115				

Sample ID	N027523-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/18/2017	RunNo:	121204
Client ID:	ZZZZZZ	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884533

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.220	0.10	10.00	1.644	106	75	125				
Manganese	110.872	0.50	100.0	8.293	103	75	125				
Molybdenum	25.666	0.50	10.00	14.02	116	75	125				
Selenium	13.800	0.50	10.00	3.503	103	75	125				

Sample ID	N027523-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/18/2017	RunNo:	121204
Client ID:	ZZZZZZ	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884535

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.997	0.10	10.00	1.644	104	75	125	12.22	1.83	20	
Manganese	110.182	0.50	100.0	8.293	102	75	125	110.9	0.624	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027523-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/18/2017	RunNo:	121204
Client ID:	ZZZZZZ	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884535

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	25.638	0.50	10.00	14.02	116	75	125	25.67	0.109	20	
Selenium	14.112	0.50	10.00	3.503	106	75	125	13.80	2.23	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-14-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **NV00922-AA1_171215A**	QC Batch: **66079**			PrepDate	**12/15/2017**		Analyst: **MG**
Mercury	ND	0.087	0.20		µg/L	1	12/15/2017 02:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID	MB-66079	SampType:	MBLK	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/15/2017	RunNo:	120869
Client ID:	PBW	Batch ID:	66079	TestNo:	EPA 7470A			Analysis Date:	12/15/2017	SeqNo:	2868853

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID	LCS-66079	SampType:	LCS	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/15/2017	RunNo:	120869
Client ID:	LCSW	Batch ID:	66079	TestNo:	EPA 7470A			Analysis Date:	12/15/2017	SeqNo:	2868855

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.660	0.20	5.000	0	93.2	85	115				

Sample ID	N027546-006B-MS	SampType:	MS	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/15/2017	RunNo:	120869
Client ID:	ZZZZZZ	Batch ID:	66079	TestNo:	EPA 7470A			Analysis Date:	12/15/2017	SeqNo:	2868856

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.644	0.20	5.000	0	92.9	75	125				

Sample ID	N027546-006B-MSD	SampType:	MSD	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/15/2017	RunNo:	120869
Client ID:	ZZZZZZ	Batch ID:	66079	TestNo:	EPA 7470A			Analysis Date:	12/15/2017	SeqNo:	2868857

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.490	0.20	5.000	0	89.8	75	125	4.644	3.38	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Page 1 of 2

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓ Specify: RWQCB
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Global ID: Specify State:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	
Title: Geologist II	Phone: 916-786-3302 Fax:		
Signature: 12/13/2017 Date:	Sampled By: Gantt Jeffers		

I hereby authorize ASSET Labs to perform the tests indicated below.

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Project Name: PG&E Topock - GMP

Project Number: RC000753.801B

Signature: Date: 12/13/2017

Matrix: Ground x Sediment; Potable Soil; NPDES Other Solid; Surface

Sample Receipt Condition (Y / N):
1. Chilled ✓
2. Headspace
3. Container Intact ✓
4. Seal Present
5. IR number
6. Method of Cooling: ICE
Sample Temp: 2.4°C
Courier: ASSET
Tracking No.: N/A

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM; 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3; 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4; 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0); 1 liter poly	Specific Conductance (EPA 120.1); 1 liter poly	Total Dissolved Solids (SM2540C); 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B); 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027546-01	TW-01-Q417	12/13/2017	10:58		X			X		X					X		X	X	X	X	X	E	4	P	BNS	
2	-02	MW-921-Q417	12/13/2017	11:08		X					X					X		X	X	X	X	X	E	4	P	BNS	
3	-03	MW-41S-Q417	12/13/2017	14:40		X			X		X							X	X	X	X	X	E	4	P	BNS	
4	-04	MW-60BR-245-LF_D-Q417	12/13/2017	10:35		X			X		X							X	X	X	X	X	E	4	P	BNS	
5	-05	MW-60BR-245-LF_S-Q417	12/13/2017	9:15		X			X		X							X	X	X	X	X	E	4	P	BNS	
6	-06	MW-14-Q417	12/13/2017	15:25		X						X	X				X	X	X	X	X	X	E	4	P	BNS	
7	-07	MW-48-Q417	12/13/2017	14:20		X					X					X			X	X	X	X	E	3	P	BN	
8	-08	MW-41D-Q417	12/13/2017	15:14		X			X		X							X	X	X	X	X	E	4	P	BNS	
9	-09	MW-912-Q417	12/13/2017	15:24		X			X		X							X	X	X	X	X	E	4	P	BNS	
10	-10	MW-41M-Q417	12/13/2017	14:38		X			X		X							X	X	X	X	X	E	4	P	BNS	

Relinquished by (Signature and Printed Name): G. Jeffers Date/Time: 12.13.17 1620
Received by (Signature and Printed Name): Date/Time: 12/13/17 1620

Relinquished by (Signature and Printed Name): 12/13/17 18:40
Received by (Signature and Printed Name): 12/13/17 18:40

Relinquished by (Signature and Printed Name): Date/Time:
Received by (Signature and Printed Name): Date/Time:

Turn Around Time (TAT)

- A = < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B = $(NH_4)2SO4/NH4OH$		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET LABORATORIES
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California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker	RWQCB ✓	1. Chilled /
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec	CalTrans	2. Headspace /
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	Others ✓	LEVEL III	3. Container Intact /
Title: Geologist II	Phone: 916-786-3302 Fax:		Specify: RWQCB	LEVEL IV	4. Seal Present /
Signature: Date: 12/13/2017	Sampled By: Gantt Jeffers		Global ID:	Regulatory	5. IR number 2
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*			Specify State:	6. Method of Cooling: ICE
Project Name: PG&E Topock - GMP	Signature: Date: 12/13/2017				Sample Temp: 2.4 °C
Project Number: RC000753.801B					Courier: ASSET
					Tracking No.: N/A

Matrix: Ground x | Sediment; Potable | Soil; NPDES | Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM; 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3; 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4; 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0); 1 liter poly	Specific Conductance (EPA 120.1); 1 liter poly	Total Dissolved Solids (SM2540C); 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B); 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027546-11	MW-736-Q417	12/13/2017	16:00		X																	E	1	P	B	
2	-12	MW-737-Q417	12/13/2017	15:30		X																	E	1	P	B	
3	-13	MW-738-Q417	12/13/2017	15:30		X																	E	1	P	B	
4																											
5																											
6																											
7																											
8																											
9																											
10																											

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
Gantt Jeffers	12.13.17 1620		12/13/17 16:20
	12/13/17 18:40		12/13/17 18:40

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis.
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
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5. Trip Blanks and Equipment Blanks are billable sample.
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8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B = (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/13/2017	Workorder:	N027546
Rep sample Temp (Deg C):	2.4	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: N/A Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 12/21/2017

Reviewed By: 12/26/2017

ASSET Laboratories

WORK ORDER Summary

14-Dec-17

WorkOrder: N027546

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/13/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027546-001A	TW-01-Q417	12/13/2017 10:58:00 AM	12/28/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027546-001B			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027546-001C			12/28/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027546-001D			12/28/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/28/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/28/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/28/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027546-002A	MW-921-Q417	12/13/2017 11:08:00 AM	12/28/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027546-002B			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027546-002C			12/28/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

14-Dec-17

WorkOrder: N027546

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/13/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027546-002D	MW-921-Q417	12/13/2017 11:08:00 AM	12/28/2017	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/28/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/28/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/28/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027546-003A	MW-41S-Q417	12/13/2017 2:40:00 PM	12/28/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027546-003B			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027546-003C			12/28/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027546-003D			12/28/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/28/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/28/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/28/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027546-004A	MW-60BR-245-LF_D-Q417	12/13/2017 10:35:00 AM	12/28/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

14-Dec-17

WorkOrder: N027546

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/13/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027546-004B	MW-60BR-245-LF_D-Q417	12/13/2017 10:35:00 AM	12/28/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027546-004C			12/28/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027546-004D			12/28/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/28/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/28/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/28/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027546-005A	MW-60BR-245-LF_S-Q417	12/13/2017 9:15:00 AM	12/28/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027546-005B			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027546-005C			12/28/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027546-005D			12/28/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

14-Dec-17

WorkOrder: N027546

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/13/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027546-005D	MW-60BR-245-LF_S-Q417	12/13/2017 9:15:00 AM	12/28/2017	Groundwater	SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/28/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/28/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027546-006A	MW-14-Q417	12/13/2017 3:25:00 PM	12/28/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027546-006B			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2017			DISSOLVED MERCURY PREP	☐	☐	☐	WW
			12/28/2017		EPA 7470A	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N027546-006C			12/28/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027546-006D			12/28/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/28/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/28/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/28/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

14-Dec-17

WorkOrder: N027546

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/13/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027546-006D	MW-14-Q417	12/13/2017 3:25:00 PM	12/28/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027546-007A	MW-48-Q417	12/13/2017 2:20:00 PM	12/28/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027546-007B			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027546-007C			12/28/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/28/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/28/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/28/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027546-008A	MW-41D-Q417	12/13/2017 3:14:00 PM	12/28/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027546-008B			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027546-008C			12/28/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027546-008D			12/28/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

14-Dec-17

WorkOrder: N027546

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/13/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027546-008D	MW-41D-Q417	12/13/2017 3:14:00 PM	12/28/2017	Groundwater	SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/28/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/28/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027546-009A	MW-912-Q417	12/13/2017 3:24:00 PM	12/28/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027546-009B			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027546-009C			12/28/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027546-009D			12/28/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/28/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/28/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/28/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027546-010A	MW-41M-Q417	12/13/2017 2:38:00 PM	12/28/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027546-010B			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

14-Dec-17

WorkOrder: N027546

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/13/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027546-010B	MW-41M-Q417	12/13/2017 2:38:00 PM	12/28/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027546-010C			12/28/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027546-010D			12/28/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/28/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/28/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/28/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027546-011A	MW-736-Q417	12/13/2017 4:00:00 PM	12/28/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027546-012A	MW-737-Q417	12/13/2017 3:30:00 PM	12/28/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027546-013A	MW-738-Q417		12/28/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027546-014A	FOLDER	12/28/2017	12/28/2017		EDD	RWQCB	☐	☐	☐	LAB
			12/28/2017		Folder	Folder	☐	☐	☐	LAB
			12/28/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP

Project No.: RC000753.801B

ASSET Laboratories Work Order:

N027546

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

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January 08, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027546

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 13, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Litucas for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (1.4 ug/L) and hexavalent chromium (0 ug/L) for sample N027546-004 (MW-60BR-245-LF_D-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (12 ug/L) and hexavalent chromium (2.3 ug/L) for sample N027546-005 (MW-60BR-245-LF_S-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (1.2ug/L) and hexavalent chromium (0 ug/L) for sample N027546-009 (MW-912-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (14 ug/L) and hexavalent chromium (9.3 ug/L) for sample N027546-010 (MW-41M-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 300.0:

Dilution was necessary for all samples due to precipitation upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N027523-009B-MS1, N027523-009B-MSD1, N027523-012B-MS2 and N027523-012B-

MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N027485-001B-MS and N027485-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary on some analytes for some samples due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Because the results for total dissolved chromium (1.4 ug/L) and hexavalent chromium (0 ug/L) for sample N027546-004 (MW-60BR-245-LF_D-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.4 and 0.27 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (12 ug/L) and hexavalent chromium (2.3 ug/L) for sample N027546-005 (MW-60BR-245-LF_S-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 13 and 9.9 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (1.2ug/L) and hexavalent chromium (0 ug/L) for sample N027546-009 (MW-912-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.1 and 0 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (14 ug/L) and hexavalent chromium (9.3 ug/L) for sample N027546-010 (MW-41M-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 14 and 9.8 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

ASSET Laboratories

Date: *08-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027546
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027546-001A	TW-01-Q417	Groundwater	12/13/2017 10:58:00 AM	12/13/2017	1/8/2018
N027546-001B	TW-01-Q417	Groundwater	12/13/2017 10:58:00 AM	12/13/2017	1/8/2018
N027546-001C	TW-01-Q417	Groundwater	12/13/2017 10:58:00 AM	12/13/2017	1/8/2018
N027546-001D	TW-01-Q417	Groundwater	12/13/2017 10:58:00 AM	12/13/2017	1/8/2018
N027546-002A	MW-921-Q417	Groundwater	12/13/2017 11:08:00 AM	12/13/2017	1/8/2018
N027546-002B	MW-921-Q417	Groundwater	12/13/2017 11:08:00 AM	12/13/2017	1/8/2018
N027546-002C	MW-921-Q417	Groundwater	12/13/2017 11:08:00 AM	12/13/2017	1/8/2018
N027546-002D	MW-921-Q417	Groundwater	12/13/2017 11:08:00 AM	12/13/2017	1/8/2018
N027546-003A	MW-41S-Q417	Groundwater	12/13/2017 2:40:00 PM	12/13/2017	1/8/2018
N027546-003B	MW-41S-Q417	Groundwater	12/13/2017 2:40:00 PM	12/13/2017	1/8/2018
N027546-003C	MW-41S-Q417	Groundwater	12/13/2017 2:40:00 PM	12/13/2017	1/8/2018
N027546-003D	MW-41S-Q417	Groundwater	12/13/2017 2:40:00 PM	12/13/2017	1/8/2018
N027546-004A	MW-60BR-245-LF_D-Q417	Groundwater	12/13/2017 10:35:00 AM	12/13/2017	1/8/2018
N027546-004B	MW-60BR-245-LF_D-Q417	Groundwater	12/13/2017 10:35:00 AM	12/13/2017	1/8/2018
N027546-004C	MW-60BR-245-LF_D-Q417	Groundwater	12/13/2017 10:35:00 AM	12/13/2017	1/8/2018
N027546-004D	MW-60BR-245-LF_D-Q417	Groundwater	12/13/2017 10:35:00 AM	12/13/2017	1/8/2018
N027546-005A	MW-60BR-245-LF_S-Q417	Groundwater	12/13/2017 9:15:00 AM	12/13/2017	1/8/2018
N027546-005B	MW-60BR-245-LF_S-Q417	Groundwater	12/13/2017 9:15:00 AM	12/13/2017	1/8/2018
N027546-005C	MW-60BR-245-LF_S-Q417	Groundwater	12/13/2017 9:15:00 AM	12/13/2017	1/8/2018
N027546-005D	MW-60BR-245-LF_S-Q417	Groundwater	12/13/2017 9:15:00 AM	12/13/2017	1/8/2018
N027546-006A	MW-14-Q417	Groundwater	12/13/2017 3:25:00 PM	12/13/2017	1/8/2018
N027546-006B	MW-14-Q417	Groundwater	12/13/2017 3:25:00 PM	12/13/2017	1/8/2018
N027546-006C	MW-14-Q417	Groundwater	12/13/2017 3:25:00 PM	12/13/2017	1/8/2018
N027546-006D	MW-14-Q417	Groundwater	12/13/2017 3:25:00 PM	12/13/2017	1/8/2018
N027546-007A	MW-48-Q417	Groundwater	12/13/2017 2:20:00 PM	12/13/2017	1/8/2018
N027546-007B	MW-48-Q417	Groundwater	12/13/2017 2:20:00 PM	12/13/2017	1/8/2018
N027546-007C	MW-48-Q417	Groundwater	12/13/2017 2:20:00 PM	12/13/2017	1/8/2018
N027546-008A	MW-41D-Q417	Groundwater	12/13/2017 3:14:00 PM	12/13/2017	1/8/2018
N027546-008B	MW-41D-Q417	Groundwater	12/13/2017 3:14:00 PM	12/13/2017	1/8/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027546
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027546-008C	MW-41D-Q417	Groundwater	12/13/2017 3:14:00 PM	12/13/2017	1/8/2018
N027546-008D	MW-41D-Q417	Groundwater	12/13/2017 3:14:00 PM	12/13/2017	1/8/2018
N027546-009A	MW-912-Q417	Groundwater	12/13/2017 3:24:00 PM	12/13/2017	1/8/2018
N027546-009B	MW-912-Q417	Groundwater	12/13/2017 3:24:00 PM	12/13/2017	1/8/2018
N027546-009C	MW-912-Q417	Groundwater	12/13/2017 3:24:00 PM	12/13/2017	1/8/2018
N027546-009D	MW-912-Q417	Groundwater	12/13/2017 3:24:00 PM	12/13/2017	1/8/2018
N027546-010A	MW-41M-Q417	Groundwater	12/13/2017 2:38:00 PM	12/13/2017	1/8/2018
N027546-010B	MW-41M-Q417	Groundwater	12/13/2017 2:38:00 PM	12/13/2017	1/8/2018
N027546-010C	MW-41M-Q417	Groundwater	12/13/2017 2:38:00 PM	12/13/2017	1/8/2018
N027546-010D	MW-41M-Q417	Groundwater	12/13/2017 2:38:00 PM	12/13/2017	1/8/2018
N027546-011A	MW-736-Q417	Groundwater	12/13/2017 4:00:00 PM	12/13/2017	1/8/2018
N027546-012A	MW-737-Q417	Groundwater	12/13/2017 3:30:00 PM	12/13/2017	1/8/2018
N027546-013A	MW-738-Q417	Groundwater	12/13/2017 3:30:00 PM	12/13/2017	1/8/2018

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-001

Client Sample ID: TW-01-Q417
Collection Date: 12/13/2017 10:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171214E**	QC Batch: **R120860**			PrepDate			Analyst: **LR**
Specific Conductance	7100	0.10	0.10		umhos/cm	1	12/14/2017 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 11:08:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171214E**	QC Batch: **R120860**			PrepDate			Analyst: **LR**
Specific Conductance	7000	0.10	0.10		umhos/cm	1	12/14/2017 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41S-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171214E**	QC Batch: **R120860**			PrepDate			Analyst: **LR**
Specific Conductance	5600	0.10	0.10		umhos/cm	1	12/14/2017 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-004

Client Sample ID: MW-60BR-245-LF_D-Q417
Collection Date: 12/13/2017 10:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171214E**	QC Batch: **R120860**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	12/14/2017 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-005

Client Sample ID: MW-60BR-245-LF_S-Q417
Collection Date: 12/13/2017 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171214E**	QC Batch: **R120860**			PrepDate			Analyst: **LR**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	12/14/2017 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-006

Client Sample ID: MW-14-Q417
Collection Date: 12/13/2017 3:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171214E**	QC Batch: **R120860**			PrepDate			Analyst: **LR**
Specific Conductance	2500	0.10	0.10		umhos/cm	1	12/14/2017 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-48-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171214E**	QC Batch: **R120860**			PrepDate			Analyst: **LR**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	12/14/2017 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41D-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:14:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171214E**	QC Batch: **R120860**			PrepDate			Analyst: **LR**
Specific Conductance	19000	0.10	0.10		umhos/cm	1	12/14/2017 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-912-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171214E**	QC Batch: **R120860**			PrepDate			Analyst: **LR**
Specific Conductance	19000	0.10	0.10		umhos/cm	1	12/14/2017 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-010

Client Sample ID: MW-41M-Q417
Collection Date: 12/13/2017 2:38:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171214E**	QC Batch: **R120860**			PrepDate			Analyst: **LR**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	12/14/2017 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	**N027546-009DDUP**	SampType:	**DUP**	TestCode:	**120.1_WPGE**	Units:	**umhos/cm**	Prep Date:		RunNo:	**120860**
Client ID:	**ZZZZZZ**	Batch ID:	**R120860**	TestNo:	**EPA 120.1**			Analysis Date:	**12/14/2017**	SeqNo:	**2868423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	19290.000	0.10						19230	0.312	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-001

Client Sample ID: TW-01-Q417
Collection Date: 12/13/2017 10:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171219C**	QC Batch: **66131**				PrepDate	**12/19/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4800	50	50		mg/L	1	12/19/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 11:08:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171219C**	QC Batch: **66131**			PrepDate	**12/19/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4700	50	50		mg/L	1	12/19/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41S-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171219C**	QC Batch: **66131**				PrepDate	**12/19/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3500	50	50		mg/L	1	12/19/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-004

Client Sample ID: MW-60BR-245-LF_D-Q417
Collection Date: 12/13/2017 10:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171219C**	QC Batch: **66131**				PrepDate	**12/19/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	10000	100	100		mg/L	1	12/19/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-005

Client Sample ID: MW-60BR-245-LF_S-Q417
Collection Date: 12/13/2017 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171219C**	QC Batch: **66131**				PrepDate	**12/19/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	10000	100	100		mg/L	1	12/19/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-14-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171219C**	QC Batch: **66131**				PrepDate	**12/19/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1600	20	20		mg/L	1	12/19/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-48-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171219C**	QC Batch: **66131**				PrepDate	**12/19/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	10000	100	100		mg/L	1	12/19/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41D-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:14:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171219C**	QC Batch: **66131**				PrepDate	**12/19/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	12000	100	100		mg/L	1	12/19/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-912-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171219C**	QC Batch: **66131**				PrepDate	**12/19/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	12000	100	100		mg/L	1	12/19/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41M-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:38:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171219C**	QC Batch: **66131**				PrepDate	**12/19/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	8300	100	100		mg/L	1	12/19/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66131**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/19/2017**	RunNo: **120996**
Client ID: **LCSW**	Batch ID: **66131**	TestNo: **SM2540C**		Analysis Date: **12/19/2017**	SeqNo: **2875502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	958.000	10	1000	0	95.8	80	120				

Sample ID **MB-66131**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/19/2017**	RunNo: **120996**
Client ID: **PBW**	Batch ID: **66131**	TestNo: **SM2540C**		Analysis Date: **12/19/2017**	SeqNo: **2875503**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N027546-009DDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **12/19/2017**	RunNo: **120996**
Client ID: **ZZZZZZ**	Batch ID: **66131**	TestNo: **SM2540C**		Analysis Date: **12/19/2017**	SeqNo: **2875513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	11470.000	100						11980	4.35	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-001

Client Sample ID: TW-01-Q417
Collection Date: 12/13/2017 10:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171220A**	QC Batch: **R120951**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	2200	17	100		µg/L	500	12/20/2017 12:19 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180104A**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	2300	0.48	25		µg/L	25	1/4/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-002

Client Sample ID: MW-921-Q417
Collection Date: 12/13/2017 11:08:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171220A**	QC Batch: **R120951**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	2200	17	100		µg/L	500	12/20/2017 12:38 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180104A**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	2400	0.48	25		µg/L	25	1/4/2018 02:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-003

Client Sample ID: MW-41S-Q417
Collection Date: 12/13/2017 2:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171220A** QC Batch: **R120951**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	12	0.17	1.0		µg/L	5	12/20/2017 12:57 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A	**EPA 6020**			
RunID: **NV00922-ICP7_180103D** QC Batch: **66061**				PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	12	0.019	1.0		µg/L	1	1/4/2018 06:39 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_D-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 10:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171220A** QC Batch: **R120951**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/20/2017 02:01 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180103D** QC Batch: **66061**				PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	1.4	0.019	1.0		µg/L	1	1/4/2018 06:50 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_S-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 9:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171220A**	QC Batch: **R120951**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	2.3	0.17	1.0		µg/L	5	12/20/2017 02:22 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103D**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	12	0.019	1.0		µg/L	1	1/4/2018 07:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-14-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171220A** QC Batch: **R120951**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	12	0.17	1.0		µg/L	5	12/20/2017 02:40 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180103A** QC Batch: **66022**				PrepDate	**12/14/2017**		Analyst: **CEI**
Chromium	13	0.019	1.0		µg/L	1	1/3/2018 05:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-007

Client Sample ID: MW-48-Q417
Collection Date: 12/13/2017 2:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171220A** QC Batch: **R120951**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/20/2017 02:59 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A				**EPA 6020**
RunID: **NV00922-ICP7_180103D** QC Batch: **66061**				PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/4/2018 07:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-008

Client Sample ID: MW-41D-Q417
Collection Date: 12/13/2017 3:14:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171220A**	QC Batch: **R120951**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/20/2017 03:37 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180103D**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/4/2018 07:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-009

Client Sample ID: MW-912-Q417
Collection Date: 12/13/2017 3:24:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171220A**	QC Batch: **R120951**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/20/2017 03:56 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180103D**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	1.2	0.019	1.0		µg/L	1	1/4/2018 07:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41M-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:38:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171220A** QC Batch: **R120951**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	9.3	0.17	1.0		µg/L	5	12/20/2017 04:15 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180103D** QC Batch: **66061**				PrepDate	**12/18/2017**		Analyst: **CEI**
Chromium	14	0.019	1.0		µg/L	1	1/4/2018 07:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-736-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171220A**	QC Batch: **R120951**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/20/2017 04:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-012

Client Sample ID: MW-737-Q417
Collection Date: 12/13/2017 3:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171220A**	QC Batch: **R120951**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/20/2017 04:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-738-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171220A**	QC Batch: **R120951**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/20/2017 05:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R120951**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **LCSW**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2873134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.244	0.20	5.000	0	105	90	110				

Sample ID **MB-R120951**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **PBW**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2873135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **N027556-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **ZZZZZZ**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2873137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	24.658	0.40	10.00	13.98	107	90	110				

Sample ID **N027556-005AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **ZZZZZZ**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2873138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	24.590	0.40	10.00	13.98	106	90	110	24.66	0.278	20	

Sample ID **N027634-001DUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **ZZZZZZ**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2873140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	229.254	4.0						230.2	0.407	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027556-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **ZZZZZZ**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2875724**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	15.956	0.20	5.000	10.70	105	90	110				

Sample ID **N027546-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **ZZZZZZ**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2875726**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4844.150	100	2500	2214	105	90	110				

Sample ID **N027546-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **ZZZZZZ**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2875728**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4867.450	100	2500	2216	106	90	110				

Sample ID **N027546-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **ZZZZZZ**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2875732**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	38.138	1.0	25.00	11.78	105	90	110				

Sample ID **N027546-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **ZZZZZZ**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2875734**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.348	1.0	5.000	0	107	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027546-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120951**
Client ID: **ZZZZZZ** Batch ID: **R120951** TestNo: **EPA 218.6** Analysis Date: **12/20/2017** SeqNo: **2875736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.451	1.0	5.000	2.259	104	90	110				

Sample ID **N027546-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120951**
Client ID: **ZZZZZZ** Batch ID: **R120951** TestNo: **EPA 218.6** Analysis Date: **12/20/2017** SeqNo: **2875738**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	17.124	1.0	5.000	11.74	108	90	110				

Sample ID **N027546-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120951**
Client ID: **ZZZZZZ** Batch ID: **R120951** TestNo: **EPA 218.6** Analysis Date: **12/20/2017** SeqNo: **2875742**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.847	1.0	5.000	0	96.9	90	110				

Sample ID **N027546-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120951**
Client ID: **ZZZZZZ** Batch ID: **R120951** TestNo: **EPA 218.6** Analysis Date: **12/20/2017** SeqNo: **2875744**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.688	1.0	5.000	0	93.8	90	110				

Sample ID **N027546-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **120951**
Client ID: **ZZZZZZ** Batch ID: **R120951** TestNo: **EPA 218.6** Analysis Date: **12/20/2017** SeqNo: **2875746**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.854	1.0	5.000	0	97.1	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027546-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120951
Client ID:	ZZZZZZ	Batch ID:	R120951	TestNo:	EPA 218.6			Analysis Date:	12/20/2017	SeqNo:	2875748

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.365	1.0	5.000	9.258	102	90	110				

Sample ID	N027546-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120951
Client ID:	ZZZZZZ	Batch ID:	R120951	TestNo:	EPA 218.6			Analysis Date:	12/20/2017	SeqNo:	2875750

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0	106	90	110				

Sample ID	N027546-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120951
Client ID:	ZZZZZZ	Batch ID:	R120951	TestNo:	EPA 218.6			Analysis Date:	12/20/2017	SeqNo:	2875754

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.021	0.20	1.000	0	102	90	110				

Sample ID	N027546-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	120951
Client ID:	ZZZZZZ	Batch ID:	R120951	TestNo:	EPA 218.6			Analysis Date:	12/20/2017	SeqNo:	2875756

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.067	0.20	1.000	0	107	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-66022**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/14/2017**	RunNo: **121175**
Client ID: **PBW**	Batch ID: **66022**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/2/2018**	SeqNo: **2882374**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-66022**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/14/2017**	RunNo: **121175**
Client ID: **LCSW**	Batch ID: **66022**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/2/2018**	SeqNo: **2882375**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.955	1.0	10.00	0	99.5	85	115				

Sample ID **N027485-001B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/14/2017**	RunNo: **121175**
Client ID: **ZZZZZZ**	Batch ID: **66022**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/2/2018**	SeqNo: **2882391**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	157.980	1.0	10.00	153.5	45.0	75	125				S

Sample ID **N027485-001B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/14/2017**	RunNo: **121175**
Client ID: **ZZZZZZ**	Batch ID: **66022**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/2/2018**	SeqNo: **2882393**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	156.223	1.0	10.00	153.5	27.4	75	125	158.0	1.12	20	S

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-66061**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/18/2017**	RunNo: **121203**
Client ID: **PBW**	Batch ID: **66061**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2884393**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-66061**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/14/2017**	RunNo: **121203**
Client ID: **LCSW**	Batch ID: **66061**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2884396**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.088	1.0	10.00	0	101	85	115				

Sample ID **N027523-001B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/18/2017**	RunNo: **121203**
Client ID: **ZZZZZZ**	Batch ID: **66061**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2884402**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	24.181	1.0	10.00	14.08	101	75	125				

Sample ID **N027523-001B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **12/18/2017**	RunNo: **121203**
Client ID: **ZZZZZZ**	Batch ID: **66061**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2884404**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	23.924	1.0	10.00	14.08	98.4	75	125	24.18	1.07	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-001

Client Sample ID: TW-01-Q417
Collection Date: 12/13/2017 10:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171218J**	QC Batch: **R121068**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	110	1.2	5.0		mg/L	1	12/18/2017 07:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 11:08:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171218J**	QC Batch: **R121068**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	110	1.2	5.0		mg/L	1	12/18/2017 07:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41S-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171218J**	QC Batch: **R121068**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	51	1.2	5.0		mg/L	1	12/18/2017 07:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-004

Client Sample ID: MW-60BR-245-LF_D-Q417
Collection Date: 12/13/2017 10:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171218J**	QC Batch: **R121068**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	22	1.2	5.0		mg/L	1	12/18/2017 07:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_S-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 9:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171218J**	QC Batch: **R121068**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	22	1.2	5.0		mg/L	1	12/18/2017 07:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-14-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171218J**	QC Batch: **R121068**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	63	1.2	5.0		mg/L	1	12/18/2017 07:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-48-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171218J**	QC Batch: **R121068**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	29	1.2	5.0		mg/L	1	12/18/2017 07:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41D-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:14:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	38	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-009

Client Sample ID: MW-912-Q417
Collection Date: 12/13/2017 3:24:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	40	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41M-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:38:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	36	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R121068**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121068**
Client ID: **LCSW**	Batch ID: **R121068**	TestNo: **SM 2320 B**		Analysis Date: **12/18/2017**	SeqNo: **2879179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	98.121	5.0	100.0	0	98.1	85	115				

Sample ID **MB-R121068**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121068**
Client ID: **PBW**	Batch ID: **R121068**	TestNo: **SM 2320 B**		Analysis Date: **12/18/2017**	SeqNo: **2879180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N027524-001DDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121068**
Client ID: **ZZZZZZ**	Batch ID: **R121068**	TestNo: **SM 2320 B**		Analysis Date: **12/18/2017**	SeqNo: **2879182**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	62.630	5.0						62.63	0	30	

Sample ID **N027546-001DMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121068**
Client ID: **ZZZZZZ**	Batch ID: **R121068**	TestNo: **SM 2320 B**		Analysis Date: **12/18/2017**	SeqNo: **2879196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	202.505	5.0	100.0	106.5	96.0	75	125				

Sample ID **N027546-001DMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121068**
Client ID: **ZZZZZZ**	Batch ID: **R121068**	TestNo: **SM 2320 B**		Analysis Date: **12/18/2017**	SeqNo: **2879197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	202.505	5.0	100.0	106.5	96.0	75	125	202.5	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID	LCS-R121069	SampType:	LCS	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	121069
Client ID:	LCSW	Batch ID:	R121069	TestNo:	SM 2320 B			Analysis Date:	12/19/2017	SeqNo:	2879204

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	99.576	5.0	100.0	0	99.6	85	115				

Sample ID	MB-R121069	SampType:	MBLK	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	121069
Client ID:	PBW	Batch ID:	R121069	TestNo:	SM 2320 B			Analysis Date:	12/19/2017	SeqNo:	2879205

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID	N027557-001CDUP	SampType:	DUP	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	121069
Client ID:	ZZZZZZ	Batch ID:	R121069	TestNo:	SM 2320 B			Analysis Date:	12/19/2017	SeqNo:	2879214

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	36.017	5.0						34.96	2.99	30	

Sample ID	N027583-001DMS	SampType:	MS	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	121069
Client ID:	ZZZZZZ	Batch ID:	R121069	TestNo:	SM 2320 B			Analysis Date:	12/19/2017	SeqNo:	2879225

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	163.136	5.0	100.0	65.68	97.5	75	125				

Sample ID	N027583-001DMSD	SampType:	MSD	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	121069
Client ID:	ZZZZZZ	Batch ID:	R121069	TestNo:	SM 2320 B			Analysis Date:	12/19/2017	SeqNo:	2879226

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	163.136	5.0	100.0	65.68	97.5	75	125	163.1	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-001

Client Sample ID: TW-01-Q417
Collection Date: 12/13/2017 10:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220B** QC Batch: **R121007**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/20/2017 11:43 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Chloride	2200	4.6	250		mg/L	500	12/22/2017 01:52 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Sulfate	710	2.3	50		mg/L	100	12/22/2017 02:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-002

Client Sample ID: MW-921-Q417
Collection Date: 12/13/2017 11:08:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220B** QC Batch: **R121007**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/20/2017 11:59 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Chloride	2300	4.6	250		mg/L	500	12/22/2017 03:24 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Sulfate	700	2.3	50		mg/L	100	12/22/2017 03:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-003

Client Sample ID: MW-41S-Q417
Collection Date: 12/13/2017 2:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220B** QC Batch: **R121007**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/21/2017 12:14 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Chloride	1900	4.6	250		mg/L	500	12/22/2017 03:54 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Sulfate	330	1.1	25		mg/L	50	12/22/2017 04:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-004

Client Sample ID: MW-60BR-245-LF_D-Q417
Collection Date: 12/13/2017 10:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220B** QC Batch: **R121007**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/21/2017 01:00 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Chloride	5700	18	1000		mg/L	2000	12/22/2017 04:25 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Sulfate	780	2.3	50		mg/L	100	12/22/2017 04:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-005

Client Sample ID: MW-60BR-245-LF_S-Q417
Collection Date: 12/13/2017 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220B** QC Batch: **R121007**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/21/2017 01:15 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Chloride	5900	18	1000		mg/L	2000	12/22/2017 04:56 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Sulfate	780	2.3	50		mg/L	100	12/22/2017 05:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-006

Client Sample ID: MW-14-Q417
Collection Date: 12/13/2017 3:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220B** QC Batch: **R121007**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/20/2017 10:42 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Chloride	770	1.8	100		mg/L	200	12/22/2017 12:20 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Sulfate	130	0.46	10		mg/L	20	12/22/2017 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-007

Client Sample ID: MW-48-Q417
Collection Date: 12/13/2017 2:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220B** QC Batch: **R121007**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/21/2017 01:30 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Chloride	6100	18	1000		mg/L	2000	12/22/2017 05:57 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Sulfate	560	2.3	50		mg/L	100	12/22/2017 06:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-008

Client Sample ID: MW-41D-Q417
Collection Date: 12/13/2017 3:14:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220B** QC Batch: **R121007**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/21/2017 01:46 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Chloride	7200	18	1000		mg/L	2000	12/22/2017 06:27 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Sulfate	760	2.3	50		mg/L	100	12/22/2017 06:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-009

Client Sample ID: MW-912-Q417
Collection Date: 12/13/2017 3:24:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220B** QC Batch: **R121007**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/21/2017 02:01 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Chloride	7000	18	1000		mg/L	2000	12/22/2017 06:58 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Sulfate	760	2.3	50		mg/L	100	12/22/2017 07:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-010

Client Sample ID: MW-41M-Q417
Collection Date: 12/13/2017 2:38:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171220B** QC Batch: **R121007**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/21/2017 02:16 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Chloride	4600	9.1	500		mg/L	1000	12/22/2017 07:29 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Sulfate	550	2.3	50		mg/L	100	12/22/2017 07:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	LCS-R121007_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121007
Client ID:	LCSW	Batch ID:	R121007	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876192

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.233	0.50	1.250	0	98.6	90	110				

Sample ID	MB-R121007_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121007
Client ID:	PBW	Batch ID:	R121007	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876193

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	N027546-006DDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121007
Client ID:	ZZZZZZ	Batch ID:	R121007	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876195

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.138	2.5						0.1100	0	20	

Sample ID	N027546-006DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121007
Client ID:	ZZZZZZ	Batch ID:	R121007	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876196

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	6.339	2.5	6.250	0.1100	99.7	80	120				

Sample ID	N027546-006DMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121007
Client ID:	ZZZZZZ	Batch ID:	R121007	TestNo:	EPA 300.0			Analysis Date:	12/20/2017	SeqNo:	2876197

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	6.617	2.5	6.250	0.1100	104	80	120	6.339	4.28	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R121065_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	PBW	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2878982

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R121065_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	LCSW	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2878983

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.952	0.50	2.000	0	97.6	90	110				

Sample ID	N027546-006DMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	ZZZZZZ	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2878985

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1174.280	100	400.0	769.2	101	80	120				

Sample ID	N027546-006DMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	ZZZZZZ	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2878986

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1178.460	100	400.0	769.2	102	80	120	1174	0.355	20	

Sample ID	N027546-001DDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	ZZZZZZ	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2878988

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2250.350	250						2228	0.976	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R121065_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	PBW	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2879012

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R121065_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	LCSW	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2879013

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.925	0.50	4.000	0	98.1	90	110				

Sample ID	N027546-006DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	ZZZZZZ	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2879015

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	206.266	10	80.00	127.8	98.1	80	120				

Sample ID	N027546-006DMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	ZZZZZZ	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2879016

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	206.912	10	80.00	127.8	99.0	80	120	206.3	0.313	20	

Sample ID	N027546-001DDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	ZZZZZZ	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2879020

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	711.490	50						709.9	0.227	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-01-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 10:58:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222D**	QC Batch: **R121037**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	16	0.44	1.0		mg/L	20	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 11:08:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171222D**	QC Batch: **R121037**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	15	0.44	1.0		mg/L	20	12/22/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41S-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.6	0.044	0.10		mg/L	2	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_D-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 10:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.060	0.022	0.050		mg/L	1	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_S-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 9:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.072	0.022	0.050		mg/L	1	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-14-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	3.4	0.11	0.25		mg/L	5	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41D-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:14:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.47	0.022	0.050		mg/L	1	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-009

Client Sample ID: MW-912-Q417
Collection Date: 12/13/2017 3:24:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.49	0.022	0.050		mg/L	1	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41M-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 2:38:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION				**SM4500-NO3F**			
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.66	0.022	0.050		mg/L	1	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R121037	**MBLK**	**4500N03F_W**	**mg/L**		**121037**
Client ID: **PBW**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-R121037	**LCS**	**4500N03F_W**	**mg/L**		**121037**
Client ID: **LCSW**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877837**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.476	0.050	0.5000	0	95.2	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027523-005DMS	**MS**	**4500N03F_W**	**mg/L**		**121037**
Client ID: **ZZZZZZ**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877840**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.032	0.25	2.500	3.434	104	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027523-005DMSD	**MSD**	**4500N03F_W**	**mg/L**		**121037**
Client ID: **ZZZZZZ**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.779	0.25	2.500	3.434	93.8	75	125	6.032	4.28	20	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027523-008CDUP	**DUP**	**4500N03F_W**	**mg/L**		**121037**
Client ID: **ZZZZZZ**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877843**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.313	0.050						1.204	8.59	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R121101**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **PBW**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R121101**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **LCSW**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.504	0.050	0.5000	0	101	85	115				

Sample ID **N027546-003CMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **ZZZZZZ**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.842	0.10	1.000	1.650	119	75	125				

Sample ID **N027546-003CMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **ZZZZZZ**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880070**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.813	0.10	1.000	1.650	116	75	125	2.842	1.02	20	

Sample ID **N027546-004CDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **ZZZZZZ**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880072**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0.06030	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-001

Client Sample ID: TW-01-Q417
Collection Date: 12/13/2017 10:58:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_171219B** QC Batch: **66081** PrepDate **12/15/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	1600	38	100		ug/L	1	12/19/2017 10:39 PM
Calcium	320000	28	500		ug/L	1	12/19/2017 10:39 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 10:39 PM
Magnesium	20000	4.4	100		ug/L	1	12/19/2017 10:39 PM
Sodium	1400000	2600	50000		ug/L	100	1/3/2018 07:59 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-002

Client Sample ID: MW-921-Q417
Collection Date: 12/13/2017 11:08:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66081**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	1500	38	100		ug/L	1	12/19/2017 10:47 PM
Calcium	300000	28	500		ug/L	1	12/19/2017 10:47 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 10:47 PM
Magnesium	20000	4.4	100		ug/L	1	12/19/2017 10:47 PM
Sodium	1400000	2600	50000		ug/L	100	1/3/2018 08:03 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-003

Client Sample ID: MW-41S-Q417
Collection Date: 12/13/2017 2:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66081**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	860	38	100		ug/L	1	12/19/2017 10:54 PM
Calcium	150000	28	500		ug/L	1	12/19/2017 10:54 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 10:54 PM
Magnesium	19000	4.4	100		ug/L	1	12/19/2017 10:54 PM
Sodium	1100000	2600	50000		ug/L	100	1/3/2018 08:06 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-004

Client Sample ID: MW-60BR-245-LF_D-Q417
Collection Date: 12/13/2017 10:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66081**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	2200	38	100		ug/L	1	12/19/2017 11:01 PM
Calcium	400000	28	500		ug/L	1	12/19/2017 11:01 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 11:01 PM
Magnesium	5900	4.4	100		ug/L	1	12/19/2017 11:01 PM
Sodium	3400000	2600	50000		ug/L	100	1/3/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-005

Client Sample ID: MW-60BR-245-LF_S-Q417
Collection Date: 12/13/2017 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66081**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	2300	38	100		ug/L	1	12/19/2017 11:40 PM
Calcium	390000	28	500		ug/L	1	12/19/2017 11:40 PM
Iron	94	1.8	20		ug/L	1	12/19/2017 11:40 PM
Magnesium	5000	4.4	100		ug/L	1	12/19/2017 11:40 PM
Sodium	3500000	2600	50000		ug/L	100	1/3/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-006

Client Sample ID: MW-14-Q417
Collection Date: 12/13/2017 3:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66081**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	330	38	100		ug/L	1	12/19/2017 11:47 PM
Calcium	150000	28	500		ug/L	1	12/19/2017 11:47 PM
Iron	48	1.8	20		ug/L	1	12/19/2017 11:47 PM
Magnesium	20000	4.4	100		ug/L	1	12/19/2017 11:47 PM
Sodium	360000	660	12000		ug/L	25	1/3/2018 09:12 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-007

Client Sample ID: MW-48-Q417
Collection Date: 12/13/2017 2:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66081**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	960	38	100		ug/L	1	12/19/2017 11:55 PM
Calcium	360000	28	500		ug/L	1	12/19/2017 11:55 PM
Iron	ND	1.8	20		ug/L	1	12/19/2017 11:55 PM
Magnesium	29000	4.4	100		ug/L	1	12/19/2017 11:55 PM
Sodium	3700000	13000	250000		ug/L	500	1/3/2018 08:57 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41D-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:14:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-008		

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_171219B** QC Batch: **66081** PrepDate **12/15/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	1800	38	100		ug/L	1	12/20/2017 12:02 AM
Calcium	390000	28	500		ug/L	1	12/20/2017 12:02 AM
Iron	37	1.8	20		ug/L	1	12/20/2017 12:02 AM
Magnesium	24000	4.4	100		ug/L	1	12/20/2017 12:02 AM
Sodium	4600000	13000	250000		ug/L	500	1/3/2018 09:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-009

Client Sample ID: MW-912-Q417
Collection Date: 12/13/2017 3:24:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_171219B** QC Batch: **66081** PrepDate **12/15/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	1800	38	100		ug/L	1	12/20/2017 12:09 AM
Calcium	410000	28	500		ug/L	1	12/20/2017 12:09 AM
Iron	39	1.8	20		ug/L	1	12/20/2017 12:09 AM
Magnesium	25000	4.4	100		ug/L	1	12/20/2017 12:09 AM
Sodium	4600000	13000	250000		ug/L	500	1/3/2018 09:19 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-010

Client Sample ID: MW-41M-Q417
Collection Date: 12/13/2017 2:38:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66081**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	1300	38	100		ug/L	1	12/20/2017 12:15 AM
Calcium	390000	28	500		ug/L	1	12/20/2017 12:15 AM
Iron	220	1.8	20		ug/L	1	12/20/2017 12:15 AM
Magnesium	28000	4.4	100		ug/L	1	12/20/2017 12:15 AM
Sodium	2800000	2600	50000		ug/L	100	1/3/2018 08:36 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-66081**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/15/2017**	RunNo: **120943**
Client ID: **PBW**	Batch ID: **66081**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2872958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	58.456	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-66081**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/15/2017**	RunNo: **120943**
Client ID: **LCSW**	Batch ID: **66081**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2872959**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4574.030	100	5000	0	91.5	85	115				
Calcium	9346.317	500	10000	0	93.5	85	115				
Iron	101.514	20	100.0	0	102	85	115				
Magnesium	9234.344	100	10000	0	92.3	85	115				

Sample ID **N027523-009B-MS1**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/15/2017**	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **66081**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2872965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	7484.210	100	5000	2571	98.3	75	125				
Iron	1481.359	20	100.0	1284	197	75	125				S
Magnesium	83845.823	100	10000	73870	99.8	75	125				

Sample ID **N027523-009B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/15/2017**	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **66081**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2872966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	7521.074	100	5000	2571	99.0	75	125	7484	0.491	20	
Iron	1482.823	20	100.0	1284	198	75	125	1481	0.0988	20	S

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027523-009B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	120943
Client ID:	ZZZZZZ	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/19/2017	SeqNo:	2872966

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	84110.485	100	10000	73870	102	75	125	83850	0.315	20	

Sample ID	N027523-009B-MS1	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	120943
Client ID:	ZZZZZZ	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2873696

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	979282.613	2500	10000	887400	919	75	125				S

Sample ID	N027523-009B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	120943
Client ID:	ZZZZZZ	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2873697

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	980455.201	2500	10000	887400	931	75	125	979300	0.120	20	S

Sample ID	MB-66081	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	121185
Client ID:	PBW	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883306

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID	LCS2-66081	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	121185
Client ID:	LCSW	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883307

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20372.380	500	20000	0	102	85	115				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027523-012B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	121185
Client ID:	ZZZZZZ	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883325

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3477083.040	50000	20000	3330000	734	75	125	3484000	0.189	20	S

Sample ID	N027523-012B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	121185
Client ID:	ZZZZZZ	Batch ID:	66081	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883326

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3483647.513	50000	20000	3330000	767	75	125				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-001

Client Sample ID: TW-01-Q417
Collection Date: 12/13/2017 10:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**	Analyst: **CEI**	
Manganese	ND	0.056	0.50		µg/L	1	1/4/2018 06:06 AM
Molybdenum	14	0.039	0.50		µg/L	1	1/4/2018 06:06 AM
Selenium	15	0.028	0.50		µg/L	1	1/4/2018 06:06 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-002

Client Sample ID: MW-921-Q417
Collection Date: 12/13/2017 11:08:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**	Analyst: **CEI**	
Manganese	ND	0.056	0.50		µg/L	1	1/4/2018 06:28 AM
Molybdenum	14	0.039	0.50		µg/L	1	1/4/2018 06:28 AM
Selenium	14	0.028	0.50		µg/L	1	1/4/2018 06:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-003

Client Sample ID: MW-41S-Q417
Collection Date: 12/13/2017 2:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**	Analyst: **CEI**	
Arsenic	1.6	0.025	0.10		µg/L	1	1/4/2018 06:39 AM
Manganese	0.50	0.056	0.50		µg/L	1	1/4/2018 06:39 AM
Molybdenum	14	0.039	0.50		µg/L	1	1/4/2018 06:39 AM
Selenium	1.2	0.028	0.50		µg/L	1	1/4/2018 06:39 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-004

Client Sample ID: MW-60BR-245-LF_D-Q417
Collection Date: 12/13/2017 10:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/4/2018 06:50 AM
Manganese	21	0.056	0.50		µg/L	1	1/4/2018 06:50 AM
Molybdenum	56	0.19	2.5		µg/L	5	1/4/2018 06:56 AM
Selenium	ND	0.14	2.5		µg/L	5	1/4/2018 06:56 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-005

Client Sample ID: MW-60BR-245-LF_S-Q417
Collection Date: 12/13/2017 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Arsenic	6.3	0.025	0.10		µg/L	1	1/4/2018 07:01 AM
Manganese	19	0.056	0.50		µg/L	1	1/4/2018 07:01 AM
Molybdenum	64	0.19	2.5		µg/L	5	1/4/2018 07:07 AM
Selenium	ND	0.14	2.5		µg/L	5	1/4/2018 07:07 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-006

Client Sample ID: MW-14-Q417
Collection Date: 12/13/2017 3:25:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180102E** QC Batch: **66022** PrepDate **12/14/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.031	0.50		µg/L	1	1/2/2018 10:34 PM
Arsenic	0.78	0.025	0.10		µg/L	1	1/2/2018 10:34 PM
Barium	170	0.35	5.0		µg/L	5	1/2/2018 10:40 PM
Beryllium	ND	0.043	0.50		µg/L	1	1/2/2018 10:34 PM
Cadmium	ND	0.047	0.50		µg/L	1	1/2/2018 10:34 PM
Cobalt	ND	0.026	0.50		µg/L	1	1/2/2018 10:34 PM
Copper	ND	0.26	1.0		µg/L	1	1/2/2018 10:34 PM
Lead	ND	0.037	1.0		µg/L	1	1/2/2018 10:34 PM
Manganese	1.9	0.056	0.50		µg/L	1	1/2/2018 10:34 PM
Molybdenum	13	0.039	0.50		µg/L	1	1/2/2018 10:34 PM
Nickel	6.2	0.040	1.0		µg/L	1	1/2/2018 10:34 PM
Selenium	2.0	0.028	0.50		µg/L	1	1/3/2018 05:27 PM
Silver	ND	0.059	0.50		µg/L	1	1/2/2018 10:34 PM
Thallium	ND	0.030	0.50		µg/L	1	1/2/2018 10:34 PM
Vanadium	2.8	0.021	1.0		µg/L	1	1/3/2018 05:27 PM
Zinc	ND	0.27	10		µg/L	1	1/2/2018 10:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-007

Client Sample ID: MW-48-Q417
Collection Date: 12/13/2017 2:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Manganese	14	0.056	0.50		µg/L	1	1/4/2018 07:13 AM
Molybdenum	11	0.19	2.5		µg/L	5	1/4/2018 07:18 AM
Selenium	ND	0.14	2.5		µg/L	5	1/4/2018 07:18 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-008

Client Sample ID: MW-41D-Q417
Collection Date: 12/13/2017 3:14:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**	Analyst: **CEI**	
Arsenic	2.8	0.025	0.10		µg/L	1	1/4/2018 07:35 AM
Manganese	68	0.056	0.50		µg/L	1	1/4/2018 07:35 AM
Molybdenum	76	0.19	2.5		µg/L	5	1/4/2018 07:41 AM
Selenium	ND	0.14	2.5		µg/L	5	1/4/2018 07:41 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-009

Client Sample ID: MW-912-Q417
Collection Date: 12/13/2017 3:24:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Arsenic	2.8	0.025	0.10		µg/L	1	1/4/2018 07:47 AM
Manganese	66	0.056	0.50		µg/L	1	1/4/2018 07:47 AM
Molybdenum	74	0.19	2.5		µg/L	5	1/4/2018 07:52 AM
Selenium	ND	0.14	2.5		µg/L	5	1/4/2018 07:52 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027546
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027546-010

Client Sample ID: MW-41M-Q417
Collection Date: 12/13/2017 2:38:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180103E**	QC Batch: **66061**			PrepDate	**12/18/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/4/2018 07:58 AM
Manganese	7.3	0.056	0.50		µg/L	1	1/4/2018 07:58 AM
Molybdenum	25	0.19	2.5		µg/L	5	1/4/2018 08:04 AM
Selenium	0.54	0.028	0.50		µg/L	1	1/5/2018 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66022**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/14/2017**	RunNo: **121176**
Client ID: **PBW**	Batch ID: **66022**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/2/2018**	SeqNo: **2882470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.039	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.080	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Silver	0.172	0.50									
Thallium	0.072	0.50									
Zinc	ND	10									

Sample ID **LCS-66022**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/14/2017**	RunNo: **121176**
Client ID: **LCSW**	Batch ID: **66022**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/2/2018**	SeqNo: **2882471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.594	0.50	10.00	0	95.9	85	115				
Arsenic	10.068	0.10	10.00	0	101	85	115				
Barium	9.869	1.0	10.00	0	98.7	85	115				
Beryllium	9.831	0.50	10.00	0	98.3	85	115				
Cadmium	10.155	0.50	10.00	0	102	85	115				
Cobalt	9.625	0.50	10.00	0	96.3	85	115				
Copper	9.858	1.0	10.00	0	98.6	85	115				
Lead	9.954	1.0	10.00	0	99.5	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	LCS-66022	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121176
Client ID:	LCSW	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2882471

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	99.844	0.50	100.0	0	99.8	85	115				
Molybdenum	9.775	0.50	10.00	0	97.7	85	115				
Nickel	10.210	1.0	10.00	0	102	85	115				
Selenium	9.423	0.50	10.00	0	94.2	85	115				
Silver	9.434	0.50	10.00	0	94.3	85	115				
Thallium	9.897	0.50	10.00	0	99.0	85	115				
Zinc	102.047	10	100.0	0	102	85	115				

Sample ID	N027485-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121176
Client ID:	ZZZZZZ	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2882487

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.067	0.50	10.00	0.08078	99.9	75	125				
Arsenic	14.588	0.10	10.00	3.881	107	75	125				
Barium	71.282	1.0	10.00	63.49	77.9	75	125				
Beryllium	10.773	0.50	10.00	0	108	75	125				
Cadmium	9.822	0.50	10.00	0	98.2	75	125				
Cobalt	9.185	0.50	10.00	0	91.9	75	125				
Copper	8.246	1.0	10.00	0	82.5	75	125				
Lead	10.971	1.0	10.00	0	110	75	125				
Manganese	109.145	0.50	100.0	11.34	97.8	75	125				
Molybdenum	81.348	0.50	10.00	71.60	97.5	75	125				
Nickel	11.267	1.0	10.00	1.330	99.4	75	125				
Selenium	14.355	0.50	10.00	4.853	95.0	75	125				
Silver	9.976	0.50	10.00	0	99.8	75	125				
Thallium	10.873	0.50	10.00	0.8445	100	75	125				
Zinc	117.977	10	100.0	0	118	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027485-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121176
Client ID:	ZZZZZZ	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2882489

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.199	0.50	10.00	0.08078	101	75	125	10.07	1.30	20	
Arsenic	14.431	0.10	10.00	3.881	106	75	125	14.59	1.08	20	
Barium	71.934	1.0	10.00	63.49	84.4	75	125	71.28	0.910	20	
Beryllium	10.625	0.50	10.00	0	106	75	125	10.77	1.38	20	
Cadmium	9.731	0.50	10.00	0	97.3	75	125	9.822	0.930	20	
Cobalt	9.045	0.50	10.00	0	90.4	75	125	9.185	1.54	20	
Copper	8.131	1.0	10.00	0	81.3	75	125	8.246	1.41	20	
Lead	10.868	1.0	10.00	0	109	75	125	10.97	0.936	20	
Manganese	107.405	0.50	100.0	11.34	96.1	75	125	109.1	1.61	20	
Molybdenum	81.932	0.50	10.00	71.60	103	75	125	81.35	0.716	20	
Nickel	11.302	1.0	10.00	1.330	99.7	75	125	11.27	0.310	20	
Selenium	13.447	0.50	10.00	4.853	85.9	75	125	14.36	6.53	20	
Silver	9.993	0.50	10.00	0	99.9	75	125	9.976	0.169	20	
Thallium	10.833	0.50	10.00	0.8445	99.9	75	125	10.87	0.372	20	
Zinc	115.797	10	100.0	0	116	75	125	118.0	1.86	20	

Sample ID	MB-66022	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121192
Client ID:	PBW	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883829

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	ND	1.0									

Sample ID	LCS-66022	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121192
Client ID:	LCSW	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883830

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	10.252	1.0	10.00	0	103	85	115				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027485-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121192
Client ID:	ZZZZZZ	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883840

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	14.407	1.0	10.00	4.152	103	75	125				

Sample ID	N027485-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121192
Client ID:	ZZZZZZ	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883841

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	14.323	1.0	10.00	4.152	102	75	125	14.41	0.587	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	MB-66061	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/18/2017	RunNo:	121204
Client ID:	PBW	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884524

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID	LCS-66061	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/14/2017	RunNo:	121204
Client ID:	LCSW	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884527

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.805	0.10	10.00	0	98.0	85	115				
Manganese	103.318	0.50	100.0	0	103	85	115				
Molybdenum	9.782	0.50	10.00	0	97.8	85	115				
Selenium	10.243	0.50	10.00	0	102	85	115				

Sample ID	N027523-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/18/2017	RunNo:	121204
Client ID:	ZZZZZZ	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884533

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.220	0.10	10.00	1.644	106	75	125				
Manganese	110.872	0.50	100.0	8.293	103	75	125				
Molybdenum	25.666	0.50	10.00	14.02	116	75	125				
Selenium	13.800	0.50	10.00	3.503	103	75	125				

Sample ID	N027523-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/18/2017	RunNo:	121204
Client ID:	ZZZZZZ	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884535

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.997	0.10	10.00	1.644	104	75	125	12.22	1.83	20	
Manganese	110.182	0.50	100.0	8.293	102	75	125	110.9	0.624	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027523-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/18/2017	RunNo:	121204
Client ID:	ZZZZZZ	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884535

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	25.638	0.50	10.00	14.02	116	75	125	25.67	0.109	20	
Selenium	14.112	0.50	10.00	3.503	106	75	125	13.80	2.23	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-14-Q417
Lab Order:	N027546	**Collection Date:**	12/13/2017 3:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027546-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 7470A				
RunID: **NV00922-AA1_171215A**	QC Batch: **66079**			PrepDate	**12/15/2017**		Analyst: **MG**
Mercury	ND	0.087	0.20		µg/L	1	12/15/2017 02:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID	MB-66079	SampType:	MBLK	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/15/2017	RunNo:	120869
Client ID:	PBW	Batch ID:	66079	TestNo:	EPA 7470A			Analysis Date:	12/15/2017	SeqNo:	2868853

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.20									

Sample ID	LCS-66079	SampType:	LCS	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/15/2017	RunNo:	120869
Client ID:	LCSW	Batch ID:	66079	TestNo:	EPA 7470A			Analysis Date:	12/15/2017	SeqNo:	2868855

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.660	0.20	5.000	0	93.2	85	115				

Sample ID	N027546-006B-MS	SampType:	MS	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/15/2017	RunNo:	120869
Client ID:	ZZZZZZ	Batch ID:	66079	TestNo:	EPA 7470A			Analysis Date:	12/15/2017	SeqNo:	2868856

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.644	0.20	5.000	0	92.9	75	125				

Sample ID	N027546-006B-MSD	SampType:	MSD	TestCode:	7470_W_DIS	Units:	µg/L	Prep Date:	12/15/2017	RunNo:	120869
Client ID:	ZZZZZZ	Batch ID:	66079	TestNo:	EPA 7470A			Analysis Date:	12/15/2017	SeqNo:	2868857

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.490	0.20	5.000	0	89.8	75	125	4.644	3.38	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Page 1 of 2

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition (Y / N): 1. Chilled Y; 2. Headspace; 3. Container Intact Y; 4. Seal Present; 5. IR number
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	6. Method of Cooling: ICE
Submitted By: Gantt Jeffers	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	Sample Temp: 2.4°C
Title: Geologist II	Sampled By: Gantt Jeffers	Matrix: Ground x Sediment; Potable Soil; NPDES Other Solid; Surface	Courier: ASSET; Tracking No.: N/A
Signature: Date: 12/13/2017			
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*		
Project Name: PG&E Topock - GMP	Signature: Date: 12/13/2017		
Project Number: RC000753.801B			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM; 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3; 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4; 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0); 1 liter poly	Specific Conductance (EPA 120.1); 1 liter poly	Total Dissolved Solids (SM2540C); 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B); 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027546-01	TW-01-Q417	12/13/2017	10:58		X			X		X					X		X	X	X	X	X	E	4	P	BNS	
2	-02	MW-921-Q417	12/13/2017	11:08		X					X					X		X	X	X	X	X	E	4	P	BNS	
3	-03	MW-41S-Q417	12/13/2017	14:40		X			X		X							X	X	X	X	X	E	4	P	BNS	
4	-04	MW-60BR-245-LF_D-Q417	12/13/2017	10:35		X			X		X							X	X	X	X	X	E	4	P	BNS	
5	-05	MW-60BR-245-LF_S-Q417	12/13/2017	9:15		X			X		X							X	X	X	X	X	E	4	P	BNS	
6	-06	MW-14-Q417	12/13/2017	15:25		X						X	X				X	X	X	X	X	X	E	4	P	BNS	
7	-07	MW-48-Q417	12/13/2017	14:20		X					X					X			X	X	X	X	E	3	P	BN	
8	-08	MW-41D-Q417	12/13/2017	15:14		X			X		X							X	X	X	X	X	E	4	P	BNS	
9	-09	MW-912-Q417	12/13/2017	15:24		X			X		X							X	X	X	X	X	E	4	P	BNS	
10	-10	MW-41M-Q417	12/13/2017	14:38		X			X		X							X	X	X	X	X	E	4	P	BNS	

Relinquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
G. Jeffers	12.13.17 1620		12/13/17 1620
	12/13/17 18:40		12/13/17 18:40

Turn Around Time (TAT)

- A = < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B = (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker	RWQCB ✓	1. Chilled
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec	CalTrans	2. Headspace
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	Others ✓	LEVEL III	3. Container Intact
Title: Geologist II	Phone: 916-786-3302 Fax:		Specify: RWQCB	LEVEL IV	4. Seal Present
Signature: Date: 12/13/2017	Sampled By: Gantt Jeffers		Global ID:	Regulatory	5. IR number 2
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*			Specify State:	6. Method of Cooling: ICE
Project Name: PG&E Topock - GMP	Signature: Date: 12/13/2017				Sample Temp: 2.4 °C
Project Number: RC000753.801B					Courier: ASSET
					Tracking No.: N/A

Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3 500 mL poly	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) 1 liter poly	Specific Conductance (EPA 120.1) 1 liter poly	Total Dissolved Solids (SM2540C) 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027546-11	MW-736-Q417	12/13/2017	16:00		X																E	1	P	B	
2	-12	MW-737-Q417	12/13/2017	15:30		X																E	1	P	B	
3	-13	MW-738-Q417	12/13/2017	15:30		X																E	1	P	B	
4																										
5																										
6																										
7																										
8																										
9																										
10																										

Relinquished by (Signature and Printed Name): Gantt Jeffers Date/Time: 12.13.17 1620
Relinquished by (Signature and Printed Name): Date/Time: 12/13/17 16:20
Relinquished by (Signature and Printed Name): Date/Time: 12/13/17 18:40
Relinquished by (Signature and Printed Name): Date/Time: 12/13/17 18:40

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis.
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B = (NH4)2SO4/NH4OH		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/13/2017	Workorder:	N027546
Rep sample Temp (Deg C):	2.4	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	N/A	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 12/21/2017

Reviewed By: 12/26/2017

ASSET Laboratories

WORK ORDER Summary

14-Dec-17

WorkOrder: N027546

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/13/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027546-001A	TW-01-Q417	12/13/2017 10:58:00 AM	12/28/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027546-001B			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027546-001C			12/28/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027546-001D			12/28/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/28/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/28/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/28/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027546-002A	MW-921-Q417	12/13/2017 11:08:00 AM	12/28/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027546-002B			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027546-002C			12/28/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

WORK ORDER Summary

14-Dec-17

WorkOrder: N027546

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/13/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027546-002D	MW-921-Q417	12/13/2017 11:08:00 AM	12/28/2017	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/28/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/28/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/28/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027546-003A	MW-41S-Q417	12/13/2017 2:40:00 PM	12/28/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027546-003B			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027546-003C			12/28/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027546-003D			12/28/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/28/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/28/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/28/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027546-004A	MW-60BR-245-LF_D-Q417	12/13/2017 10:35:00 AM	12/28/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

WORK ORDER Summary

14-Dec-17

WorkOrder: N027546

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/13/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027546-004B	MW-60BR-245-LF_D-Q417	12/13/2017 10:35:00 AM	12/28/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027546-004C			12/28/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027546-004D			12/28/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/28/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/28/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/28/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027546-005A	MW-60BR-245-LF_S-Q417	12/13/2017 9:15:00 AM	12/28/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027546-005B			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027546-005C			12/28/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027546-005D			12/28/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

WORK ORDER Summary

14-Dec-17

WorkOrder: N027546

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/13/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027546-005D	MW-60BR-245-LF_S-Q417	12/13/2017 9:15:00 AM	12/28/2017	Groundwater	SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/28/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/28/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027546-006A	MW-14-Q417	12/13/2017 3:25:00 PM	12/28/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027546-006B			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2017			DISSOLVED MERCURY PREP	☐	☐	☐	WW
			12/28/2017		EPA 7470A	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
N027546-006C			12/28/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027546-006D			12/28/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/28/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/28/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/28/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

WORK ORDER Summary

14-Dec-17

WorkOrder: N027546

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/13/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027546-006D	MW-14-Q417	12/13/2017 3:25:00 PM	12/28/2017	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027546-007A	MW-48-Q417	12/13/2017 2:20:00 PM	12/28/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027546-007B			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027546-007C			12/28/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/28/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/28/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/28/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027546-008A	MW-41D-Q417	12/13/2017 3:14:00 PM	12/28/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027546-008B			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027546-008C			12/28/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027546-008D			12/28/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

WORK ORDER Summary

14-Dec-17

WorkOrder: N027546

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/13/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027546-008D	MW-41D-Q417	12/13/2017 3:14:00 PM	12/28/2017	Groundwater	SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/28/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/28/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027546-009A	MW-912-Q417	12/13/2017 3:24:00 PM	12/28/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027546-009B			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027546-009C			12/28/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027546-009D			12/28/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/28/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/28/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/28/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027546-010A	MW-41M-Q417	12/13/2017 2:38:00 PM	12/28/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027546-010B			12/28/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

14-Dec-17

WorkOrder: N027546

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/13/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027546-010B	MW-41M-Q417	12/13/2017 2:38:00 PM	12/28/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/28/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/28/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027546-010C			12/28/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027546-010D			12/28/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			12/28/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			12/28/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			12/28/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			12/28/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027546-011A	MW-736-Q417	12/13/2017 4:00:00 PM	12/28/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027546-012A	MW-737-Q417	12/13/2017 3:30:00 PM	12/28/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027546-013A	MW-738-Q417		12/28/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027546-014A	FOLDER	12/28/2017	12/28/2017		EDD	RWQCB	☐	☐	☐	LAB
			12/28/2017		Folder	Folder	☐	☐	☐	LAB
			12/28/2017		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N027546

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6010B_Dissolved, EPA 6020_Dissolved
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	EPA 120.1, SM 2540C, SM 2320 B
Mark Gesmundo	EPA 7470A_Dissolved

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120860 **Analyst:** LSR

ASSET #: N027546 **Date Analyzed:** 12/14/2017

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 12/26/2017

2nd Level Reviewer: RLB 01/08/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 12/13/17 1430

Analyst: LSR (CONT'D)

Standard	Std ID	Reading	Comments
9.43 mS/cm	CNW-171018A	9.55 @ 23.7°C	% Rec: (90-110%)
1410	170822C	1418 @ 22.9°C	
9986	171018B	9960 @ 22.9°C	
99842	171218B	99700 @ 22.6°C	

	Sample ID	Matrix	Reading	Comments
1	NO27527-001D	H2O	37500 @ 20.2°C	
2	2D		37700 @ 20.3°C	
3	3D		25700 @ 20.7°C	1413 - CNW170615G
4	4D		25000 @ 20.8°C	= 1467 @ 23.6°C
5	5D		24800 @ 21.1°C	10000 - CNW170822F
6	6D		25000 @ 21.0°C	= 10210 @ 23.8°C
7	7D		35900 @ 21.2°C	99672 = CNW170831B
8	8D		36600 @ 21.3°C	= 99200 @ 23.7°C
9	8D DUP		36500 @ 21.3°C	
10				
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: 12/14/17 1110

Analyst: LSR

Standard	Std ID	Reading	Comments
9.43	CNW-171018A	9.63 @ 22.5°C	% Rec: (90-110%)
1410	170822C	1428 @ 22.7°C	
9986	171018B	9980 @ 22.7°C	
99842	171218B	99300 @ 22.7°C	

	Sample ID	Matrix	Reading	Comments
1	NO27546-001D	H2O	7130 @ 20.0°C	
2	2D		6980 @ 19.9°C	
3	3D		5630 @ 19.7°C	1413 CNW170615G
4	4D		15430 @ 19.5°C	= 1449 @ 22.7°C
5	5D		15560 @ 19.6°C	10000 CNW170822F
6	6D		2570 @ 19.6°C	= 9990 @ 22.7°C
7	7D		16170 @ 19.6°C	99672 CNW170831B
8	8D		19050 @ 19.9°C	= 97600 @ 22.5°C
9	~~9D~~ 10D		19330 @ 19.8°C	
10	9D DUP		19290 @ 19.5°C	
Dup	10D		19370 @ 19.8°C	Accept: 10% water, 20% soil
	Std Chk:	Silvia Ramit 12/26/2017		% Rec: (90-110%)

01/08/2018

Logbook # 6

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66131 **Analyst:** LSR

ASSET #: N027546 **Date Analyzed:** 12/19/2017

Method: EPA 160.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 12/27/2017

2nd Level Reviewer RLB 01/08/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N027546-001D,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(61.2295 - 61.1342)*1000000}{20}$$

= 4765 mg/L

Reporting result in two significant figures,

TDS = 4800 mg/L

Julia Ramit 12/27/2017

01/08/2018

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/19/2017 1:13:21**
Prep End Date:

Reviewed/ Date: RB 01/08/2018

Initials/ Date: Lilia Ramit 12/27/2017

Prep Batch **66131** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit** Prep Factor Units **mL / mL**

Sample ID	Matrix	pH (Cond)	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66131	Water	1W171718A	100	☐	0	0	100	1.000		
MB-66131	Water		100	☐	0	0	100	1.000		
N027546-001D	Groundwater	730	100 /20	☐	0	0	100	1.000		
N027546-002D	Groundwater	6980	100 /20	☐	0	0	100	1.000		
N027546-003D	Groundwater	5630	100 /20	☐	0	0	100	1.000		
N027546-004D	Groundwater	15430	100 /10	☐	0	0	100	1.000		
N027546-005D	Groundwater	15560	100 /10	☐	0	0	100	1.000		
N027546-006D	Groundwater	2570	100 /50	☐	0	0	100	1.000		
N027546-007C	Groundwater	16170	100 /10	☐	0	0	100	1.000		
N027546-008D	Groundwater	19050	100 /10	☐	0	0	100	1.000		
N027546-009D	Groundwater	19230	100 /10	☐	0	0	100	1.000		
N027546-009D-DU	Groundwater	]	100 /10	☐	0	0	100	1.000		
N027546-010D	Groundwater	13270	100 /10	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9667

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/19/2017 1:13:21**
Prep End Date: **12/20/2017 11:00:0**

Reviewed/ Date: RB 01/08/2018

Initials/ Date: Lilia Ramit 12/27/2017

Prep Batch **66131** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66131	Water		100	☐	0	0	100	1.000		
MB-66131	Water		100	☐	0	0	100	1.000		
N027546-001D	Groundwater		20	☐	0	0	100	5.000		
N027546-002D	Groundwater		20	☐	0	0	100	5.000		
N027546-003D	Groundwater		20	☐	0	0	100	5.000		
N027546-004D	Groundwater		10	☐	0	0	100	10.000		
N027546-005D	Groundwater		10	☐	0	0	100	10.000		
N027546-006D	Groundwater		50	☐	0	0	100	2.000		
N027546-007C	Groundwater		10	☐	0	0	100	10.000		
N027546-008D	Groundwater		10	☐	0	0	100	10.000		
N027546-009D	Groundwater		10	☐	0	0	100	10.000		
N027546-009D-DU	Groundwater		10	☐	0	0	100	10.000		
N027546-010D	Groundwater		10	☐	0	0	100	10.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9667	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171218A	1000 ppm NaCl	LCS	100

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/19/17 1313 FF	MB 66131	100	68.2031 68.2027	68.2026 68.2024	
CC	LCS 66131	100	70.0720 70.0720	70.1681 70.1678	
9	NO27546-0010	20	61.1339 61.1342	61.2291 61.2295	
12	20	20	53.6914 53.6918	53.7850 53.7853	
DK	30	20	53.7854 53.7857	53.8555 53.8555	
—	40	10	60.5840 60.5843	60.6873 60.6869	
b	50	10	54.4491 54.4491	54.5505 54.5502	
Dx	60	50	76.5846 76.5843	76.6647 76.6651	
8	70	10	53.6983 53.6983	53.7978 53.7982	
RK	80	10	62.3267 62.3266	62.4458 62.4457	

Julia Ramit 12/27/2017

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
NELAP ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00022
ORELAP/NELAP Cert 4

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/19/17 LL	N027546-009D	10	62.4166 62.4163	62.5965 62.5361	
LF	9D DUP	10	60.6213 60.6213	60.7360 60.7360	
LS	10D	10	61.5218 61.5216	61.6049 61.6046	
Silvia Ramit	12/27/2017				

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
12/20/2017									
MB-66131	100	68.2027	68.2028	1	1	1			MBLK
LCS-66131	100	70.072	70.1678	958	1	958			LCS
N027546-001D	20	61.1342	61.2295	953	5	4765	7130	0.668	SAMP
N027546-002D	20	53.6918	53.7853	935	5	4675	6980	0.670	SAMP
N027546-003D	20	53.7857	53.8555	698	5	3490	5630	0.620	SAMP
N027546-004D	10	60.5843	60.6869	1026	10	10260	15430	0.665	SAMP
N027546-005D	10	54.4491	54.5502	1011	10	10110	15560	0.650	SAMP
N027546-006D	50	76.5843	76.6651	808	2	1616	2510	0.644	SAMP
N027546-007C	10	53.6983	53.7982	999	10	9990	16170	0.618	SAMP
N027546-008D	10	62.3266	62.4457	1191	10	11910	19050	0.625	SAMP
N027546-009D	10	62.4163	62.5361	1198	10	11980	19230	0.623	SAMP
N027546-009DDUP	10	60.6213	60.736	1147	10	11470	19230	0.596	DUP
N027546-010D	10	61.5216	61.6046	830	10	8300	13270	0.625	SAMP

Silvia Ramit 12/27/2017

RLB 01/08/2018

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R120951
ASSET #: N027546

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 12/20/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?		X			X	
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?		X			X	
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?	X			X		
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments: **Dilution was necessary for N027546-004A, -005A, 007A to 010A due to matrix interference.**

N027546-004A = <1.0 ug/L ; N027546-004B (6020) = 1.4 ug/L **N027546-~~005~~005A = 2.3 ug/L ; N027546-~~005~~005B (6020) = 12 ug/L**

N027546-009A = <1.0 ug/L ; N027546-009B (6020) = 1.2 ug/L **N027546-010A = 9.3 ug/L ; N027546-010B (6020) = 14 ug/L**

MS protocol performed. Recovery within criteria.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 12/24/2017

2nd Level Reviewer RB 01/08/2018 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N027546-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 4.4281 * 500$$

$$Cr^{+6}, \mu g/L = 2214.05$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 2200}$$

rba 12/24/2017

RLB 01/08/2018

ANALYSIS RUN LOG

INJECTION LOG: 171128A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/28/17 10:57 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/28/17 11:08 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/28/17 11:17 AM	Reported
13	MB-R120468	MBLK	1	Hexavalent Chromium	11/28/17 11:27 AM	Reported
14	LCS-R120468	LCS	1	Hexavalent Chromium	11/28/17 11:36 AM	Reported
15	N027215-001A	SAMP	1	Hexavalent Chromium	11/28/17 11:47 AM	Reported
16	N027215-002A	SAMP	1	Hexavalent Chromium	11/28/17 11:59 AM	Reported
17	N027215-003A	SAMP	1	Hexavalent Chromium	11/28/17 12:08 PM	Reported
18	N027215-004A	SAMP	1	Hexavalent Chromium	11/28/17 12:18 PM	Reported
19	N027215-005A	SAMP	1	Hexavalent Chromium	11/28/17 12:27 PM	Reported
20	N027215-002ADUP	DUP	1	Hexavalent Chromium	11/28/17 12:37 PM	Reported
21	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 12:46 PM	Not Reported
22	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 12:56 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	11/28/17 1:05 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/28/17 1:14 PM	Reported
25	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:04 PM	Not Reported
26	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:16 PM	Not Reported
27	N027215-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:29 PM	Reported
28	N027215-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:41 PM	Reported
29	CCV-2	CCV	1	Hexavalent Chromium	11/28/17 2:50 PM	Reported
30	CCB-2	CCB	1	Hexavalent Chromium	11/28/17 3:00 PM	Reported



Injection Log Summary

Sequence Details

Name:	**IC-07_171128A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**28/Nov/17 15:47:35**
No. of Injections:	**33**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		11/28/2017 10:57	Finished	ICV @5ppb, IWST-171002A
11	PQL@0.2ppb,CCV2,1	12	1000	Unknown		11/28/2017 11:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		11/28/2017 11:17	Finished	ICB R171114C
13	MB-H2O,MBLK,1	14	1000	Unknown		11/28/2017 11:27	Finished	MB R171114C
14	LCS-H2O,LCS,1	15	1000	Unknown		11/28/2017 11:36	Finished	LCS, IWST-171002B
15	N027215-001A,SAMP	17	1000	Unknown		11/28/2017 11:47	Finished	SAMP,10mL
16	N027215-002A,SAMP	18	1000	Unknown		11/28/2017 11:59	Finished	SAMP,10mL
17	N027215-003A,SAMP	19	1000	Unknown		11/28/2017 12:08	Finished	SAMP,10mL
18	N027215-004A,SAMP	20	1000	Unknown		11/28/2017 12:18	Finished	SAMP,10mL
19	N027215-005A,SAMP	21	1000	Unknown		11/28/2017 12:27	Finished	SAMP,10mL
20	N027215-002ADUP,D	22	1000	Unknown		11/28/2017 12:37	Finished	DUP,10mL
21	N027157-001AMS,MS	23	1000	Unknown		11/28/2017 12:46	Finished	MS (5ppb), IWST-171002B,10
22	N027157-001AMSD,M	24	1000	Unknown		11/28/2017 12:56	Finished	MSD (5ppb), IWST-171002B,1(
23	CCV-1,CCV1,1,	25	1000	Unknown		11/28/2017 13:05	Finished	CCV @10ppb, IWST-171002A
24	CCB-1,CCB,1,	26	1000	Unknown		11/28/2017 13:14	Finished	CCB R171031A
25	N027157-001AMS,MS	28	1000	Unknown		11/28/2017 14:04	Finished	MS (5ppb), IWST-171002B,10
26	N027157-001AMSD,M	29	1000	Unknown		11/28/2017 14:16	Finished	MSD (5ppb), IWST-171002B,1(
27	N027215-001AMS,MS	31	1000	Unknown		11/28/2017 14:29	Finished	MS (5ppb), IWST-171002B,10
28	N027215-001AMSD,M	32	1000	Unknown		11/28/2017 14:41	Finished	MSD (5ppb), IWST-171002B,1(
29	CCV-2,CCV,1,	33	1000	Unknown		11/28/2017 14:50	Finished	CCV @5ppb, IWST-171002A
30	CCB-2,CCB,1,	34	1000	Unknown		11/28/2017 15:00	Finished	CCB R171031A
31	SHUTDOWN	35	1000	Unknown		11/28/2017 15:09	Finished	
32	Eluent: R171128A	36	1000	Unknown		n.a.	Finished	Eluent
33	PCR: R171128B	37	1000	Unknown		n.a.	Finished	Post-Column Reagent

rba 11/29/2017

INJECTION LOG: 171220A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/20/17 8:34 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/20/17 8:45 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/20/17 8:54 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/20/17 9:04 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/20/17 9:13 AM	Reported
15	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/20/17 9:24 AM	Reported
16	MB-R120951	MBLK	1	Hexavalent Chromium	12/20/17 9:36 AM	Not Reported
17	LCS-R120951	LCS	1	Hexavalent Chromium	12/20/17 9:45 AM	Reported
18	MB-R120951	MBLK	1	Hexavalent Chromium	12/20/17 9:56 AM	Reported
19	N027634-001A	SAMP	100	Hexavalent Chromium	12/20/17 10:07 AM	Not Reported
20	N027556-005A	SAMP	2	Hexavalent Chromium	12/20/17 10:16 AM	Reported
21	N027556-005AMS	MS	2	Hexavalent Chromium	12/20/17 10:26 AM	Reported
22	N027556-005AMSD	MSD	2	Hexavalent Chromium	12/20/17 10:35 AM	Reported
23	N027634-001A	SAMP	20	Hexavalent Chromium	12/20/17 10:45 AM	Reported
24	N027634-001DUP	DUP	20	Hexavalent Chromium	12/20/17 10:54 AM	Reported
25	N027556-004A	SAMP	1	Hexavalent Chromium	12/20/17 11:04 AM	Reported
26	CCV-2	CCV1	1	Hexavalent Chromium	12/20/17 11:13 AM	Reported
27	CCB-2	CCB	1	Hexavalent Chromium	12/20/17 11:22 AM	Reported
28	N027556-004AMS	MS	1	Hexavalent Chromium	12/20/17 11:32 AM	Reported
29	N027431-002A	SAMP	1	Hexavalent Chromium	12/20/17 11:41 AM	Not Reported
30	N027431-002AMS	MS	1	Hexavalent Chromium	12/20/17 11:51 AM	Not Reported
31	N027546-004A	SAMP	1	Hexavalent Chromium	12/20/17 12:00 PM	Not Reported
32	N027546-005A	SAMP	1	Hexavalent Chromium	12/20/17 12:10 PM	Not Reported
33	N027546-001A	SAMP	500	Hexavalent Chromium	12/20/17 12:19 PM	Reported
34	N027546-001AMS	MS	500	Hexavalent Chromium	12/20/17 12:29 PM	Reported
35	N027546-002A	SAMP	500	Hexavalent Chromium	12/20/17 12:38 PM	Reported
36	N027546-002AMS	MS	500	Hexavalent Chromium	12/20/17 12:48 PM	Reported
37	N027546-003A	SAMP	5	Hexavalent Chromium	12/20/17 12:57 PM	Reported
38	CCV-3	CCV	1	Hexavalent Chromium	12/20/17 1:07 PM	Reported
39	CCB-3	CCB	1	Hexavalent Chromium	12/20/17 1:16 PM	Reported
40	N027546-003AMS	MS	5	Hexavalent Chromium	12/20/17 1:25 PM	Reported
41	N027546-004AMS	MS	1	Hexavalent Chromium	12/20/17 1:35 PM	Not Reported
42	N027546-005AMS	MS	1	Hexavalent Chromium	12/20/17 1:44 PM	Not Reported

INJECTION LOG: 171220A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027546-004A	SAMP	5	Hexavalent Chromium	12/20/17 2:01 PM	Reported
44	N027546-004AMS	MS	5	Hexavalent Chromium	12/20/17 2:12 PM	Reported
45	N027546-005A	SAMP	5	Hexavalent Chromium	12/20/17 2:22 PM	Reported
46	N027546-005AMS	MS	5	Hexavalent Chromium	12/20/17 2:31 PM	Reported
47	N027546-006A	SAMP	5	Hexavalent Chromium	12/20/17 2:40 PM	Reported
48	N027546-006AMS	MS	5	Hexavalent Chromium	12/20/17 2:50 PM	Reported
49	N027546-007A	SAMP	5	Hexavalent Chromium	12/20/17 2:59 PM	Reported
50	CCV-4	CCV1	1	Hexavalent Chromium	12/20/17 3:09 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	12/20/17 3:18 PM	Reported
52	N027546-007AMS	MS	5	Hexavalent Chromium	12/20/17 3:28 PM	Reported
53	N027546-008A	SAMP	5	Hexavalent Chromium	12/20/17 3:37 PM	Reported
54	N027546-008AMS	MS	5	Hexavalent Chromium	12/20/17 3:47 PM	Reported
55	N027546-009A	SAMP	5	Hexavalent Chromium	12/20/17 3:56 PM	Reported
56	N027546-009AMS	MS	5	Hexavalent Chromium	12/20/17 4:06 PM	Reported
57	N027546-010A	SAMP	5	Hexavalent Chromium	12/20/17 4:15 PM	Reported
58	N027546-010AMS	MS	5	Hexavalent Chromium	12/20/17 4:25 PM	Reported
59	N027546-011A	SAMP	1	Hexavalent Chromium	12/20/17 4:34 PM	Reported
60	N027546-011AMS	MS	1	Hexavalent Chromium	12/20/17 4:43 PM	Reported
61	N027546-012A	SAMP	1	Hexavalent Chromium	12/20/17 4:53 PM	Reported
62	CCV-5	CCV	1	Hexavalent Chromium	12/20/17 5:02 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	12/20/17 5:12 PM	Reported
64	N027546-012AMS	MS	1	Hexavalent Chromium	12/20/17 5:21 PM	Reported
65	N027546-013A	SAMP	1	Hexavalent Chromium	12/20/17 5:31 PM	Reported
66	N027546-013AMS	MS	1	Hexavalent Chromium	12/20/17 5:40 PM	Reported
67	N027546-007A	SAMP	1	Hexavalent Chromium	12/20/17 5:50 PM	Not Reported
68	N027546-007AMS	MS	1	Hexavalent Chromium	12/20/17 5:59 PM	Not Reported
69	N027546-008A	SAMP	1	Hexavalent Chromium	12/20/17 6:09 PM	Not Reported
70	N027546-008AMS	MS	1	Hexavalent Chromium	12/20/17 6:18 PM	Not Reported
71	N027546-009A	SAMP	1	Hexavalent Chromium	12/20/17 6:28 PM	Not Reported
72	N027546-009AMS	MS	1	Hexavalent Chromium	12/20/17 6:37 PM	Not Reported
73	N027546-010A	SAMP	1	Hexavalent Chromium	12/20/17 6:46 PM	Not Reported
74	CCV-6	CCV1	1	Hexavalent Chromium	12/20/17 6:56 PM	Reported
75	CCB-6	CCB	1	Hexavalent Chromium	12/20/17 7:05 PM	Reported
76	N027546-010AMS	MS	1	Hexavalent Chromium	12/20/17 7:15 PM	Not Reported
77	N027429-001A	SAMP	1	Hexavalent Chromium	12/20/17 7:24 PM	Not Reported
78	N027429-001AMS	MS	1	Hexavalent Chromium	12/20/17 7:34 PM	Not Reported
79	N027429-002A	SAMP	1	Hexavalent Chromium	12/20/17 7:43 PM	Not Reported
80	N027429-002AMS	MS	1	Hexavalent Chromium	12/20/17 7:53 PM	Not Reported
81	N027430-002A	SAMP	1	Hexavalent Chromium	12/20/17 8:03 PM	Not Reported
82	N027430-002AMS	MS	1	Hexavalent Chromium	12/20/17 8:12 PM	Not Reported
83	N027430-012A	SAMP	1	Hexavalent Chromium	12/20/17 8:22 PM	Not Reported
84	N027430-012AMS	MS	1	Hexavalent Chromium	12/20/17 8:31 PM	Not Reported

INJECTION LOG: 171220A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	12/20/17 8:41 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	12/20/17 8:50 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171220A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**21/Dec/17 13:43:03**
No. of Injections:	**89**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/20/2017 08:34	Finished	BLANK
11	BLANK	2	1000	Unknown		12/20/2017 08:45	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/20/2017 08:54	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,	4	1000	Unknown		12/20/2017 09:04	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/20/2017 09:13	Finished	CCB R171129A
15	PQL@0.2ppb,CCV2,	5	1000	Unknown		12/20/2017 09:24	Finished	PQL @ 0.2ppb
16	MB-H2O,MBLK,1	6	1000	Unknown		12/20/2017 09:36	Finished	MB R171129A
17	LCS-H2O,LCS,1	7	1000	Unknown		12/20/2017 09:45	Finished	LCS, IWST-171002B
18	MB-H2O,MBLK,1	8	1000	Unknown		12/20/2017 09:56	Finished	MB R171129A
19	N027634-001A,SAMF	9	1000	Unknown		12/20/2017 10:07	Finished	SAMP,0.1>10mL
20	N027556-005A,SAMF	10	1000	Unknown		12/20/2017 10:16	Finished	SAMP,5>10mL
21	N027556-005AMS,MS	11	1000	Unknown		12/20/2017 10:26	Finished	MS (5ppb), IWST-171002B,5>1
22	N027556-005AMSD,M	12	1000	Unknown		12/20/2017 10:35	Finished	MSD (5ppb), IWST-171002B,5>
23	N027634-001A,SAMF	13	1000	Unknown		12/20/2017 10:45	Finished	SAMP,0.5>10mL
24	N027634-001DUP,DU	14	1000	Unknown		12/20/2017 10:54	Finished	DUP,0.5>10mL
25	N027556-004A,SAMF	15	1000	Unknown		12/20/2017 11:04	Finished	SAMP,10mL
26	CCV-2,CCV1,1,	16	1000	Unknown		12/20/2017 11:13	Finished	CCV @10ppb, IWST-171002A
27	CCB-2,CCB,1,	17	1000	Unknown		12/20/2017 11:22	Finished	CCB R171129A
28	N027556-004AMS,MS	18	1000	Unknown		12/20/2017 11:32	Finished	MS (5ppb), IWST-171002B,10
29	N027431-002A,SAMF	19	1000	Unknown		12/20/2017 11:41	Finished	SAMP,10mL
30	N027431-002AMS,MS	20	1000	Unknown		12/20/2017 11:51	Finished	MS (1ppb), IWST-171002B,10
31	N027546-004A,SAMF	21	1000	Unknown		12/20/2017 12:00	Finished	SAMP,10mL
32	N027546-005A,SAMF	22	1000	Unknown		12/20/2017 12:10	Finished	SAMP,10mL
33	N027546-001A,SAMF	23	1000	Unknown		12/20/2017 12:19	Finished	SAMP,0.02>10mL
34	N027546-001AMS,MS	24	1000	Unknown		12/20/2017 12:29	Finished	MS (5ppb), IWST-171002B,0.0
35	N027546-002A,SAMF	25	1000	Unknown		12/20/2017 12:38	Finished	SAMP,0.02>10mL
36	N027546-002AMS,MS	26	1000	Unknown		12/20/2017 12:48	Finished	MS (5ppb), IWST-171002B,0.0
37	N027546-003A,SAMF	27	1000	Unknown		12/20/2017 12:57	Finished	SAMP,2>10mL
38	CCV-3,CCV,1,	28	1000	Unknown		12/20/2017 13:07	Finished	CCV @5ppb, IWST-171002A
39	CCB-3,CCB,1,	29	1000	Unknown		12/20/2017 13:16	Finished	CCB R171129A
40	N027546-003AMS,MS	30	1000	Unknown		12/20/2017 13:25	Finished	MS (5ppb), IWST-171002B,2>1
41	N027546-004AMS,MS	31	1000	Unknown		12/20/2017 13:35	Finished	MS (1ppb), IWST-171002B,10
42	N027546-005AMS,MS	32	1000	Unknown		12/20/2017 13:44	Finished	MS (1ppb), IWST-171002B,10
43	N027546-004A,SAMF	1	1000	Unknown		12/20/2017 14:01	Finished	SAMP,2>10mL
44	N027546-004AMS,MS	2	1000	Unknown		12/20/2017 14:12	Finished	MS (1ppb), IWST-171002B,2>1
45	N027546-005A,SAMF	3	1000	Unknown		12/20/2017 14:22	Finished	SAMP,2>10mL
46	N027546-005AMS,MS	4	1000	Unknown		12/20/2017 14:31	Finished	MS (1ppb), IWST-171002B,2>1
47	N027546-006A,SAMF	5	1000	Unknown		12/20/2017 14:40	Finished	SAMP,2>10mL
48	N027546-006AMS,MS	6	1000	Unknown		12/20/2017 14:50	Finished	MS (1ppb), IWST-171002B,2>1
49	N027546-007A,SAMF	7	1000	Unknown		12/20/2017 14:59	Finished	SAMP,2>10mL
50	CCV-4,CCV1,1,	8	1000	Unknown		12/20/2017 15:09	Finished	CCV @10ppb, IWST-171002A
51	CCB-4,CCB,1,	9	1000	Unknown		12/20/2017 15:18	Finished	CCB R171129A
52	N027546-007AMS,MS	10	1000	Unknown		12/20/2017 15:28	Finished	MS (1ppb), IWST-171002B,2>1
53	N027546-008A,SAMF	11	1000	Unknown		12/20/2017 15:37	Finished	SAMP,2>10mL
54	N027546-008AMS,MS	12	1000	Unknown		12/20/2017 15:47	Finished	MS (1ppb), IWST-171002B,2>1
55	N027546-009A,SAMF	13	1000	Unknown		12/20/2017 15:56	Finished	SAMP,2>10mL
56	N027546-009AMS,MS	14	1000	Unknown		12/20/2017 16:06	Finished	MS (1ppb), IWST-171002B,2>1
57	N027546-010A,SAMF	15	1000	Unknown		12/20/2017 16:15	Finished	SAMP,2>10mL
58	N027546-010AMS,MS	16	1000	Unknown		12/20/2017 16:25	Finished	MS (1ppb), IWST-171002B,2>1
59	N027546-011A,SAMF	17	1000	Unknown		12/20/2017 16:34	Finished	SAMP,10mL
60	N027546-011AMS,MS	18	1000	Unknown		12/20/2017 16:43	Finished	MS (1ppb), IWST-171002B,10

61	N027546-012A,SAMP	19	1000	Unknown		12/20/2017 16:53	Finished	SAMP,10mL
62	CCV-5,CCV,1,	20	1000	Unknown		12/20/2017 17:02	Finished	CCV @5ppb, IWST-171002A
63	CCB-5,CCB,1,	21	1000	Unknown		12/20/2017 17:12	Finished	CCB R171129A
64	N027546-012AMS,MS	22	1000	Unknown		12/20/2017 17:21	Finished	MS (1ppb), IWST-171002B,10
65	N027546-013A,SAMP	23	1000	Unknown		12/20/2017 17:31	Finished	SAMP,10mL
66	N027546-013AMS,MS	24	1000	Unknown		12/20/2017 17:40	Finished	MS (1ppb), IWST-171002B,10
67	N027546-007A,SAMP	25	1000	Unknown		12/20/2017 17:50	Finished	SAMP,10mL
68	N027546-007AMS,MS	26	1000	Unknown		12/20/2017 17:59	Finished	MS (1ppb), IWST-171002B,10
69	N027546-008A,SAMP	27	1000	Unknown		12/20/2017 18:09	Finished	SAMP,10mL
70	N027546-008AMS,MS	28	1000	Unknown		12/20/2017 18:18	Finished	MS (1ppb), IWST-171002B,10
71	N027546-009A,SAMP	29	1000	Unknown		12/20/2017 18:28	Finished	SAMP,10mL
72	N027546-009AMS,MS	30	1000	Unknown		12/20/2017 18:37	Finished	MS (1ppb), IWST-171002B,10
73	N027546-010A,SAMP	31	1000	Unknown		12/20/2017 18:46	Finished	SAMP,10mL
74	CCV-6,CCV1,1,	32	1000	Unknown		12/20/2017 18:56	Finished	CCV @10ppb, IWST-171002A
75	CCB-6,CCB,1,	33	1000	Unknown		12/20/2017 19:05	Finished	CCB R171129A
76	N027546-010AMS,MS	34	1000	Unknown		12/20/2017 19:15	Finished	MS (1ppb), IWST-171002B,10
77	N027429-001A,SAMP	35	1000	Unknown		12/20/2017 19:24	Finished	SAMP,10mL
78	N027429-001AMS,MS	36	1000	Unknown		12/20/2017 19:34	Finished	MS (1ppb), IWST-171002B,10
79	N027429-002A,SAMP	37	1000	Unknown		12/20/2017 19:43	Finished	SAMP,10mL
80	N027429-002AMS,MS	38	1000	Unknown		12/20/2017 19:53	Finished	MS (1ppb), IWST-171002B,10
81	N027430-002A,SAMP	39	1000	Unknown		12/20/2017 20:03	Finished	SAMP,10mL
82	N027430-002AMS,MS	40	1000	Unknown		12/20/2017 20:12	Finished	MS (1ppb), IWST-171002B,10
83	N027430-012A,SAMP	41	1000	Unknown		12/20/2017 20:22	Finished	SAMP,10mL
84	N027430-012AMS,MS	42	1000	Unknown		12/20/2017 20:31	Finished	MS (1ppb), IWST-171002B,10
85	CCV-7,CCV,1,	43	1000	Unknown		12/20/2017 20:41	Finished	CCV @5ppb, IWST-171002A
86	CCB-7,CCB,1,	44	1000	Unknown		12/20/2017 20:50	Finished	CCB R171129A
87	SHUTDOWN	45	1000	Unknown		12/20/2017 20:59	Finished	
88	Eluent: R171219A	46	1000	Unknown		n.a.	Finished	Eluent
89	PCR: R171219B	47	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 12/14/17
Time Prepared: 1512H / 1015H (SUN)
Prepared By: ML

Reagent ID:
Sulfuric Acid: ~~9465~~ NV 9665
Diphenylcarbazide: CLNV - 170620A
NH4OH + NH4SO4 eluent: M71214A
NH4OH + NH4SO4 buffer: M71129A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N027546 - 1A	9.19	9.37	250 mL	250 mL	3 drops	M71129A
2)	2A	9.27	9.34			1 drop	
3)	3A	9.37	—				
4)	4A	9.43	—				
5)	5A	9.46	—				
6)	6A	9.33	—				
7)	7A	9.41	—				
8)	8A	9.43	—				
9)	9A	9.35	—				
10)	10A	9.42	—				
11)	11A	9.53	—				
12)	12A	9.45	—				
13)	13A	9.42	—				
14)	N027542 - 1B	6.10	—	250 mL	250 mL		
15)	N027544 - 001A	9.39	—				

Sample Preparation

Date Prepared: 12/15/17
Time Prepared: 1316H
Prepared By: ML

Slope = 96.7%
PH 4: 3.98 @ 25°C
7: 7.03 @ 25°C
10: 10.01 @ 25°C
Lab: 7.09

Reagent ID:
Sulfuric Acid: ~~9465~~ 9665
Diphenylcarbazide: ~~CLNV - 170620A~~
NH4OH + NH4SO4 eluent: M71219A
NH4OH + NH4SO4 buffer: M71129A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N027524 - 9A	9.42	—	250 mL	250 mL		M71129A
2)	10A	9.48	—				
3)	11A	9.44	—				
4)	12A	9.43	—				
5)	13A	9.41	—				
6)	N027556 - 1A	9.47	—				
7)	2A	9.48	—				
8)	3A	9.46	—				
9)	4A	9.49	—				
10)	5A	9.49	—				
11)	6A	9.52	—				
12)	N027557 - 1A	9.59	—				1/2
13)	1A	9.60	—				2/2
14)	2A	9.55	—				1/2
15)	2A	9.52	—				2/2
	3A	9.52	—				1/2

Logbook No. 13

rba 12/24/2017

RB 01/08/2018

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 11/28/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0529	0.2484	1.2584	2.5328	3.7596	5.0155	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-171002A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RLB 01/08/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **ICV**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2873128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.092	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **ZZZZZZ**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2873129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.185	0.20	0.2000	0	92.6	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **CCV**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2873131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.089	0.20	5.000	0	102	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **ZZZZZZ**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2873133**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.187	0.20	0.2000	0	93.6	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **ZZZZZZ**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2873142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.292	0.20	10.00	0	103	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **CCV**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2875730**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.174	0.20	5.000	0	103	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **ZZZZZZ**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2875740**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.305	0.20	10.00	0	103	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **CCV**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2875752**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.152	0.20	5.000	0	103	95	105				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **ZZZZZZ**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2875757**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.304	0.20	10.00	0	103	95	105				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **CCV**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2875759**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.156	0.20	5.000	0	103	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **ICB**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2873130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **CCB**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2873132**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **CCB**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2873143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **CCB**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2875731**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **CCB**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2875741**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **CCB**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2875753**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **CCB**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2875758**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **120951**
Client ID: **CCB**	Batch ID: **R120951**	TestNo: **EPA 218.6**		Analysis Date: **12/20/2017**	SeqNo: **2875760**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/20/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.173	
CCV-7	4.165	

Average	4.166	
Actual RT Window	4.086 -	4.246
Applied RT Window	3.966 -	4.366

MB-R120951	3.898	FAIL
LCS-R120951	4.165	PASS
MB-R120951	N.A.	N.A.
N027634-001A	4.156	PASS
N027556-005A	4.131	PASS
N027556-005AMS	4.131	PASS
N027556-005AMSD	4.131	PASS
N027634-001A	4.156	PASS
N027634-001DUP	4.156	PASS
N027556-004A	4.081	PASS
N027556-004AMS	4.081	PASS
N027431-002A	N.A.	N.A.
N027431-002AMS	3.990	PASS
N027546-004A	N.A.	N.A.
N027546-005A	N.A.	N.A.
N027546-001A	4.165	PASS
N027546-001AMS	4.165	PASS
N027546-002A	4.165	PASS
N027546-002AMS	4.165	PASS
N027546-003A	4.148	PASS
N027546-003AMS	4.148	PASS
N027546-004AMS	N.A.	N.A.

RLB 01/08/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/20/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.173	
CCV-7	4.165	
Average	4.166	
Actual RT Window	4.086 - 4.246	
Applied RT Window	3.966 - 4.366	
N027546-005AMS	N.A.	N.A.
N027546-004A	N.A.	N.A.
N027546-004AMS	4.106	PASS
N027546-005A	4.098	PASS
N027546-005AMS	4.098	PASS
N027546-006A	4.156	PASS
N027546-006AMS	4.156	PASS
N027546-007A	N.A.	N.A.
N027546-007AMS	4.106	PASS
N027546-008A	N.A.	N.A.
N027546-008AMS	4.090	PASS
N027546-009A	N.A.	N.A.
N027546-009AMS	4.090	PASS
N027546-010A	4.115	PASS
N027546-010AMS	4.115	PASS
N027546-011A	N.A.	N.A.
N027546-011AMS	4.156	PASS
N027546-012A	N.A.	N.A.
N027546-012AMS	4.165	PASS
N027546-013A	N.A.	N.A.
N027546-013AMS	4.165	PASS
N027546-007A	N.A.	N.A.

RLB 01/08/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/20/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.173	
CCV-7	4.165	
Average	4.166	
Actual RT Window	4.086 - 4.246	
Applied RT Window	3.966 - 4.366	
N027546-007AMS	N.A.	N.A.
N027546-008A	N.A.	N.A.
N027546-008AMS	N.A.	N.A.
N027546-009A	N.A.	N.A.
N027546-009AMS	N.A.	N.A.
N027546-010A	3.781	FAIL
N027546-010AMS	3.781	FAIL
N027429-001A	N.A.	N.A.
N027429-001AMS	4.156	PASS
N027429-002A	4.140	PASS
N027429-002AMS	4.148	PASS
N027430-002A	N.A.	N.A.
N027430-002AMS	4.073	PASS
N027430-012A	N.A.	N.A.
N027430-012AMS	4.115	PASS

RLB 01/08/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 Unit: ug/L
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

MDL/LOD & PQL Verification 2017

Method Name: **Hexavalent Chromium by IC**
Method Number: EPA Method 218.6
Analysis Date(s): 5/31/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: µg/L

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.103

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.194	**97**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 171128A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/28/17 10:57 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/28/17 11:08 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/28/17 11:17 AM	Reported
13	MB-R120468	MBLK	1	Hexavalent Chromium	11/28/17 11:27 AM	Reported
14	LCS-R120468	LCS	1	Hexavalent Chromium	11/28/17 11:36 AM	Reported
15	N027215-001A	SAMP	1	Hexavalent Chromium	11/28/17 11:47 AM	Reported
16	N027215-002A	SAMP	1	Hexavalent Chromium	11/28/17 11:59 AM	Reported
17	N027215-003A	SAMP	1	Hexavalent Chromium	11/28/17 12:08 PM	Reported
18	N027215-004A	SAMP	1	Hexavalent Chromium	11/28/17 12:18 PM	Reported
19	N027215-005A	SAMP	1	Hexavalent Chromium	11/28/17 12:27 PM	Reported
20	N027215-002ADUP	DUP	1	Hexavalent Chromium	11/28/17 12:37 PM	Reported
21	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 12:46 PM	Not Reported
22	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 12:56 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	11/28/17 1:05 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/28/17 1:14 PM	Reported
25	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:04 PM	Not Reported
26	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:16 PM	Not Reported
27	N027215-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:29 PM	Reported
28	N027215-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:41 PM	Reported
29	CCV-2	CCV	1	Hexavalent Chromium	11/28/17 2:50 PM	Reported
30	CCB-2	CCB	1	Hexavalent Chromium	11/28/17 3:00 PM	Reported

rba 11/29/2017

RB 12/11/2017

Injection Log Summary

Sequence Details

Name:	**IC-07_171128A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**28/Nov/17 15:47:35**
No. of Injections:	**33**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		11/28/2017 10:57	Finished	ICV @5ppb, IWST-171002A
11	PQL@0.2ppb,CCV2,	12	1000	Unknown		11/28/2017 11:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		11/28/2017 11:17	Finished	ICB R171114C
13	MB-H2O,MBLK,1	14	1000	Unknown		11/28/2017 11:27	Finished	MB R171114C
14	LCS-H2O,LCS,1	15	1000	Unknown		11/28/2017 11:36	Finished	LCS, IWST-171002B
15	N027215-001A,SAMF	17	1000	Unknown		11/28/2017 11:47	Finished	SAMP,10mL
16	N027215-002A,SAMF	18	1000	Unknown		11/28/2017 11:59	Finished	SAMP,10mL
17	N027215-003A,SAMF	19	1000	Unknown		11/28/2017 12:08	Finished	SAMP,10mL
18	N027215-004A,SAMF	20	1000	Unknown		11/28/2017 12:18	Finished	SAMP,10mL
19	N027215-005A,SAMF	21	1000	Unknown		11/28/2017 12:27	Finished	SAMP,10mL
20	N027215-002ADUP,D	22	1000	Unknown		11/28/2017 12:37	Finished	DUP,10mL
21	N027157-001AMS,MS	23	1000	Unknown		11/28/2017 12:46	Finished	MS (5ppb), IWST-171002B,10
22	N027157-001AMSD,M	24	1000	Unknown		11/28/2017 12:56	Finished	MSD (5ppb), IWST-171002B,1
23	CCV-1,CCV1,1,	25	1000	Unknown		11/28/2017 13:05	Finished	CCV @10ppb, IWST-171002A
24	CCB-1,CCB,1,	26	1000	Unknown		11/28/2017 13:14	Finished	CCB R171031A
25	N027157-001AMS,MS	28	1000	Unknown		11/28/2017 14:04	Finished	MS (5ppb), IWST-171002B,10
26	N027157-001AMSD,M	29	1000	Unknown		11/28/2017 14:16	Finished	MSD (5ppb), IWST-171002B,1
27	N027215-001AMS,MS	31	1000	Unknown		11/28/2017 14:29	Finished	MS (5ppb), IWST-171002B,10
28	N027215-001AMSD,M	32	1000	Unknown		11/28/2017 14:41	Finished	MSD (5ppb), IWST-171002B,1
29	CCV-2,CCV,1,	33	1000	Unknown		11/28/2017 14:50	Finished	CCV @5ppb, IWST-171002A
30	CCB-2,CCB,1,	34	1000	Unknown		11/28/2017 15:00	Finished	CCB R171031A
31	SHUTDOWN	35	1000	Unknown		11/28/2017 15:09	Finished	
32	Eluent: R171128A	36	1000	Unknown		n.a.	Finished	Eluent
33	PCR: R171128B	37	1000	Unknown		n.a.	Finished	Post-Column Reagent

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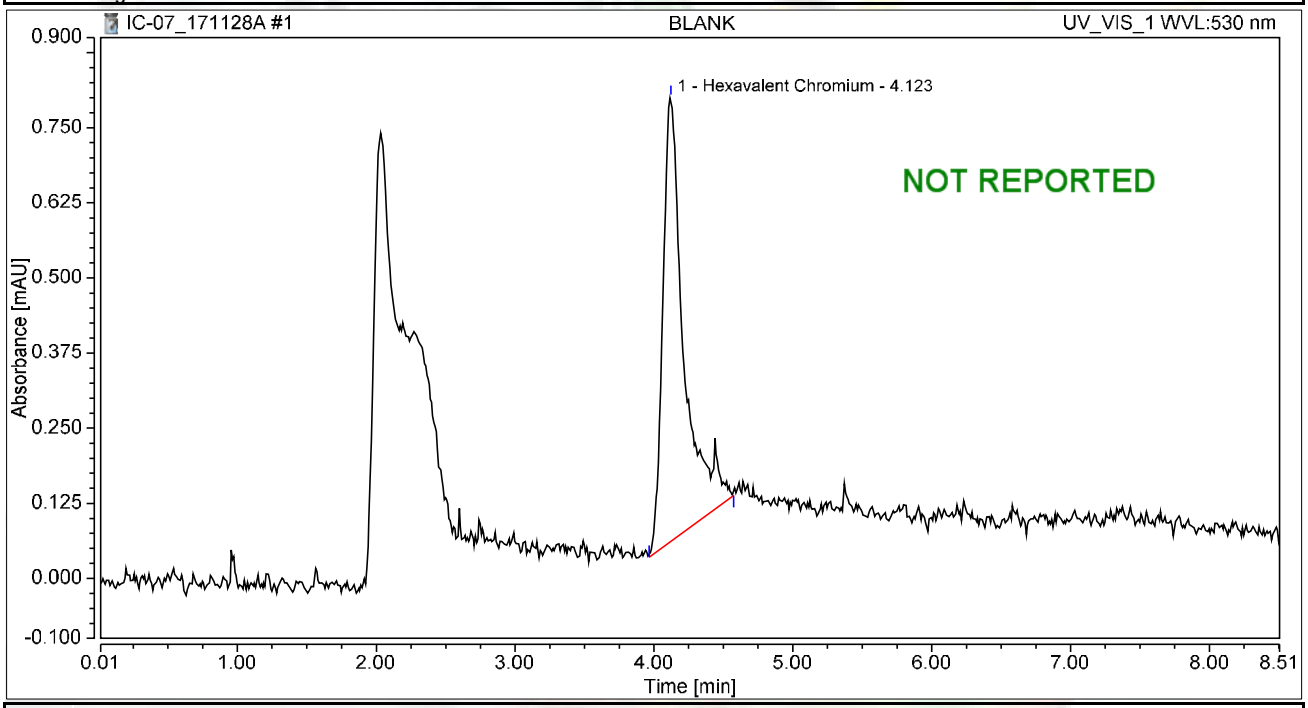
Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

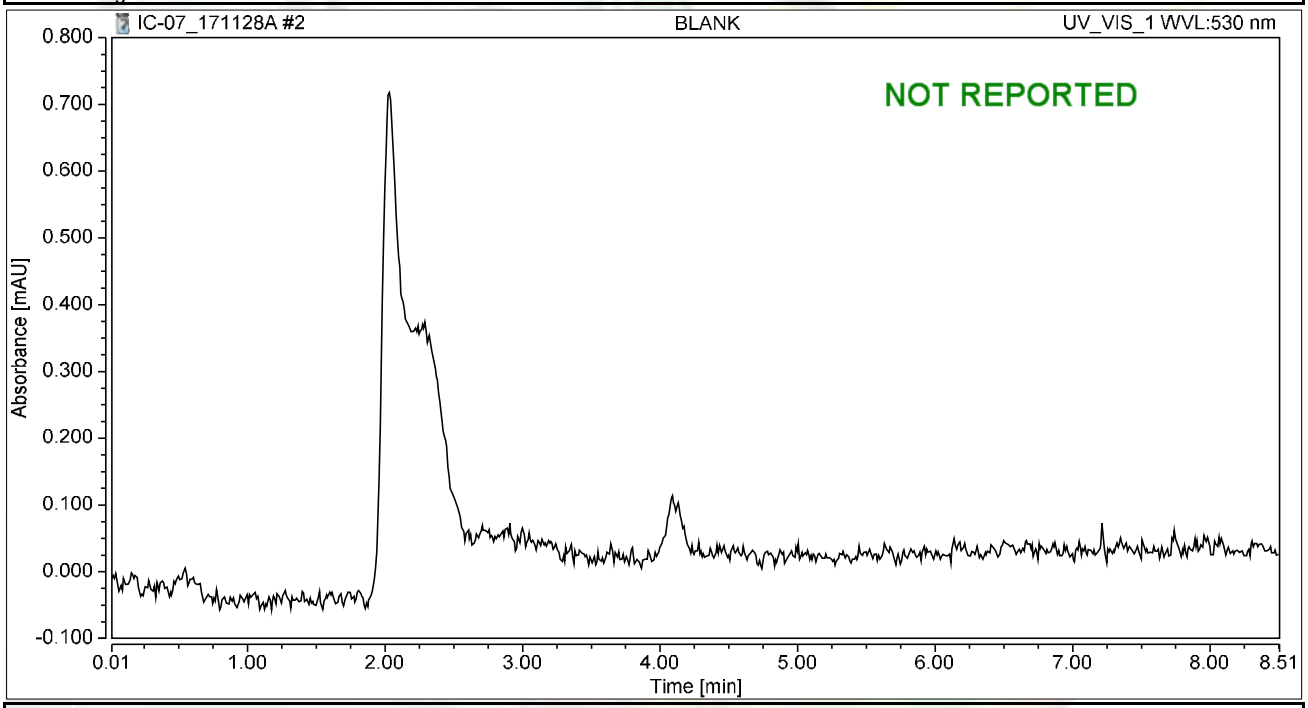
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.130	0.738	100.00	100.00	0.5193
Total:			**0.130**	**0.738**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

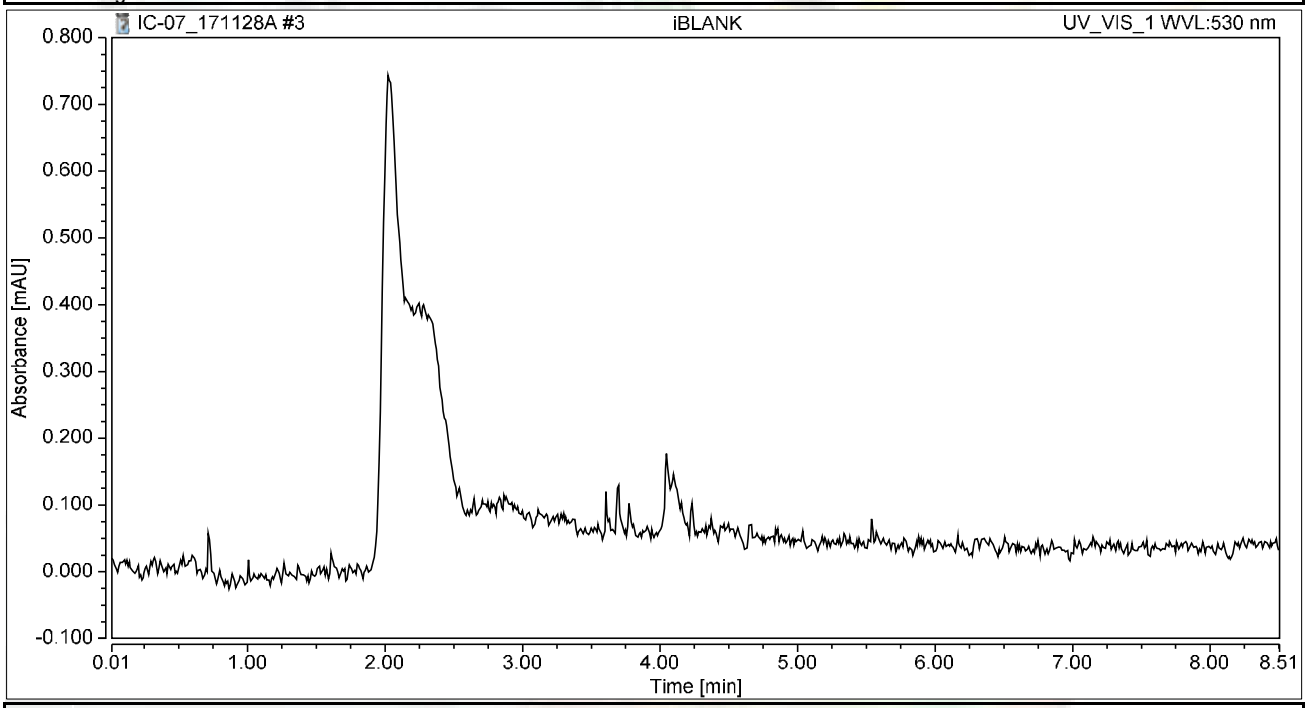
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

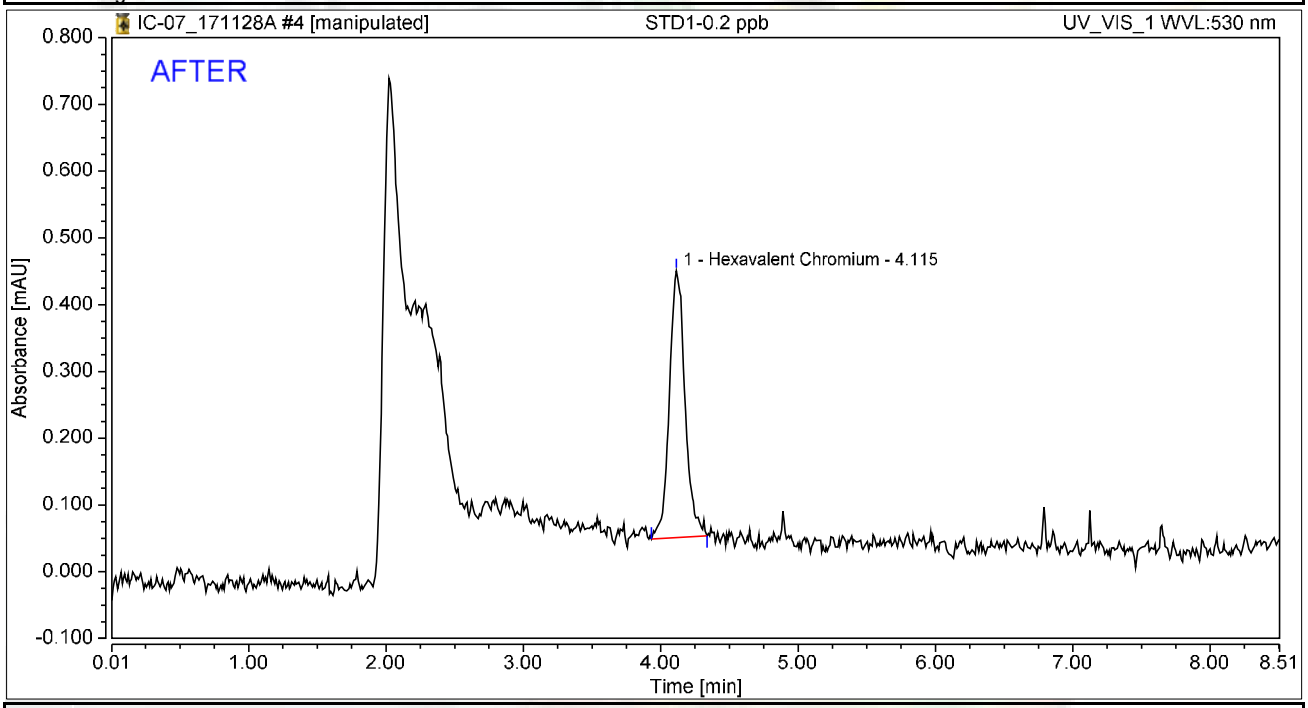
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.053	0.400	100.00	100.00	0.2108
Total:			**0.053**	**0.400**	**100.00**	**100.00**	

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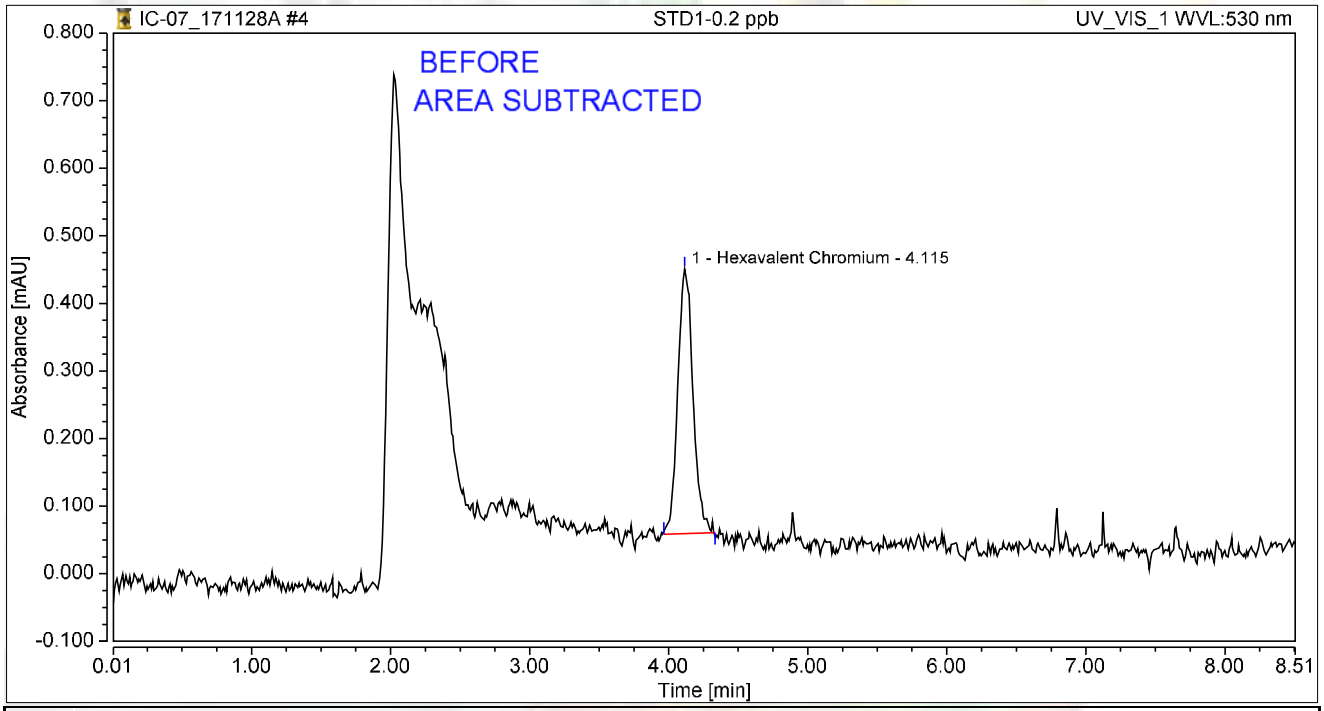
Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.050	0.391	100.00	100.00	0.1957
Total:			**0.050**	**0.391**	**100.00**	**100.00**	

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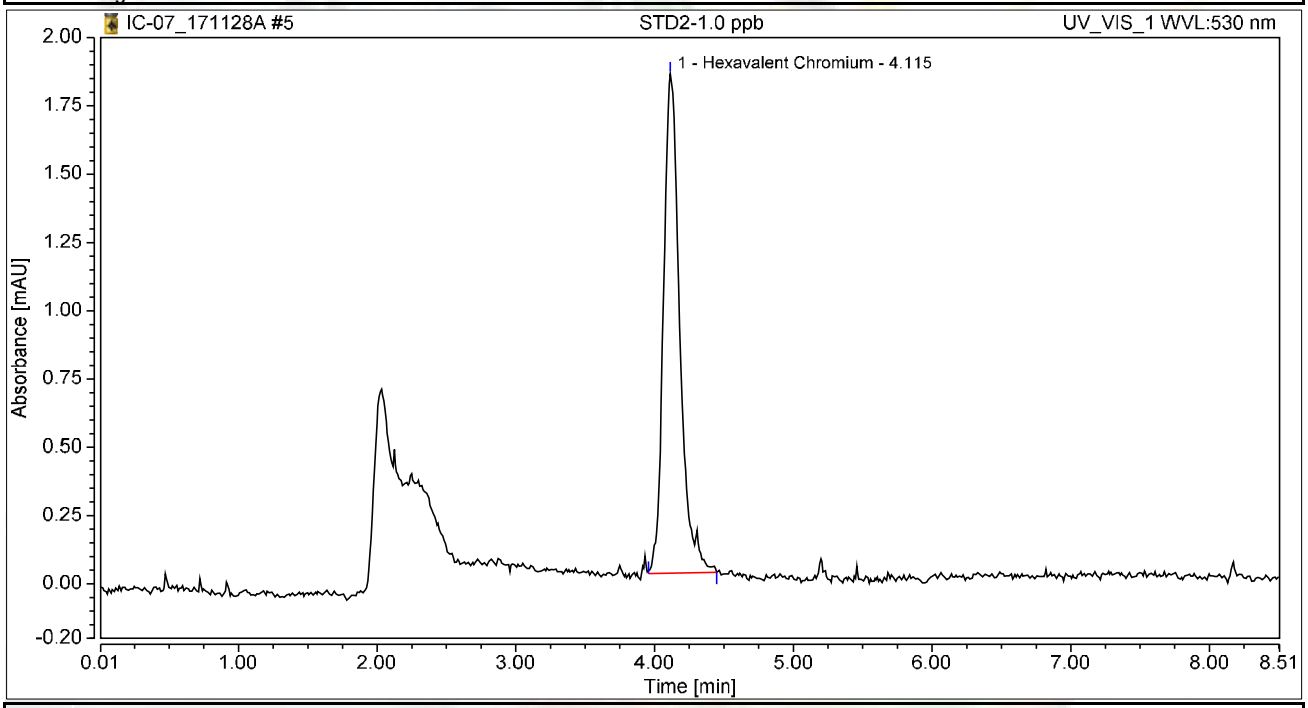
Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

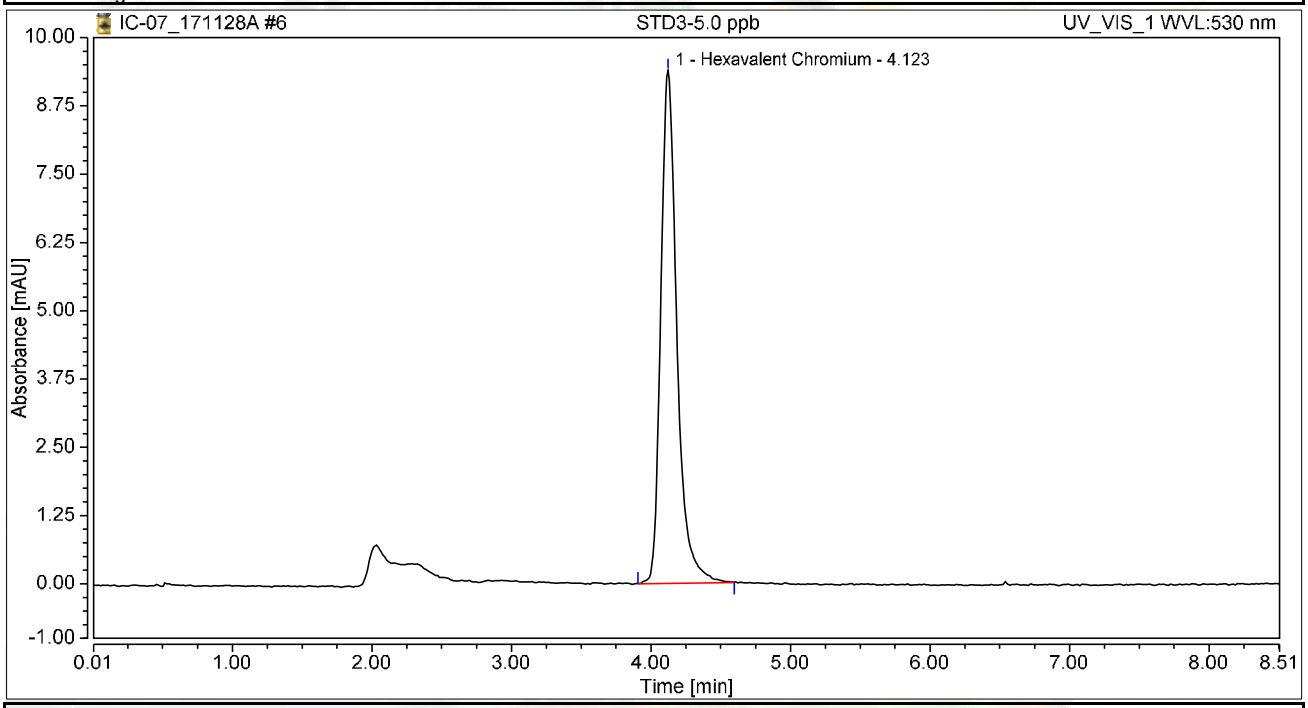
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.248	1.827	100.00	100.00	0.9892
Total:			**0.248**	**1.827**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

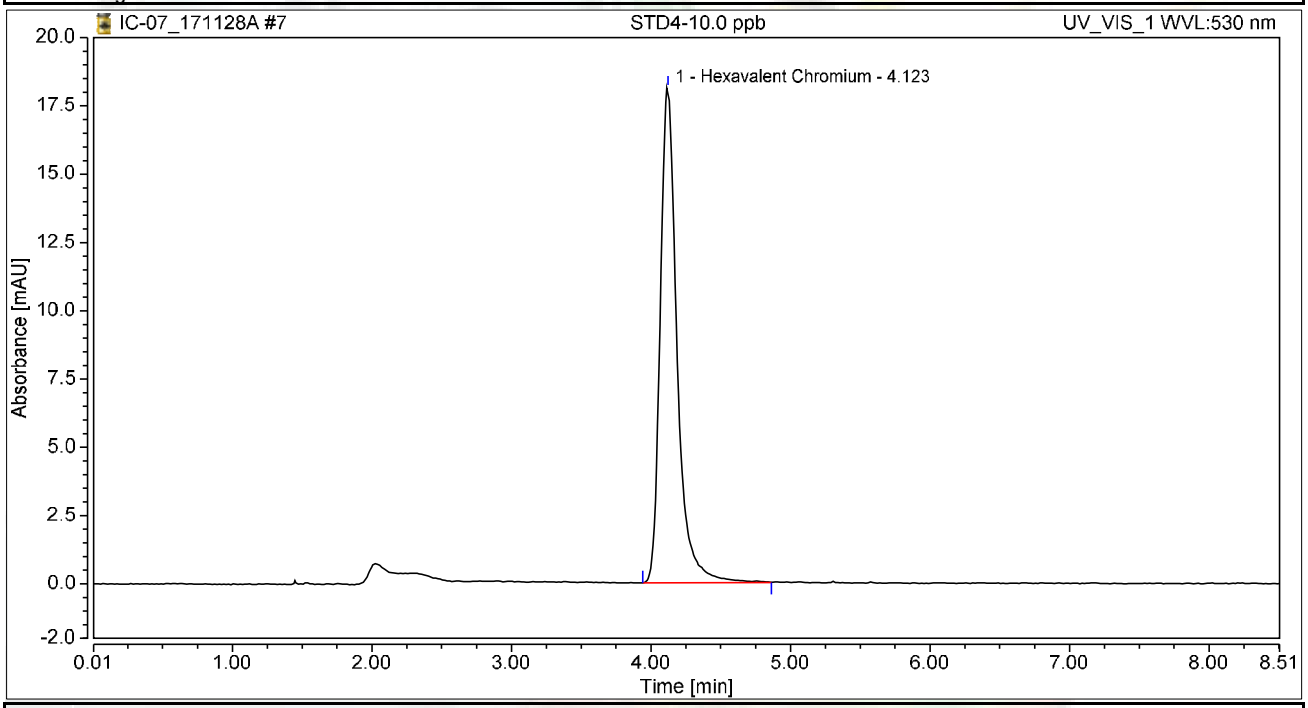
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.258	9.388	100.00	100.00	5.0118
Total:			**1.258**	**9.388**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

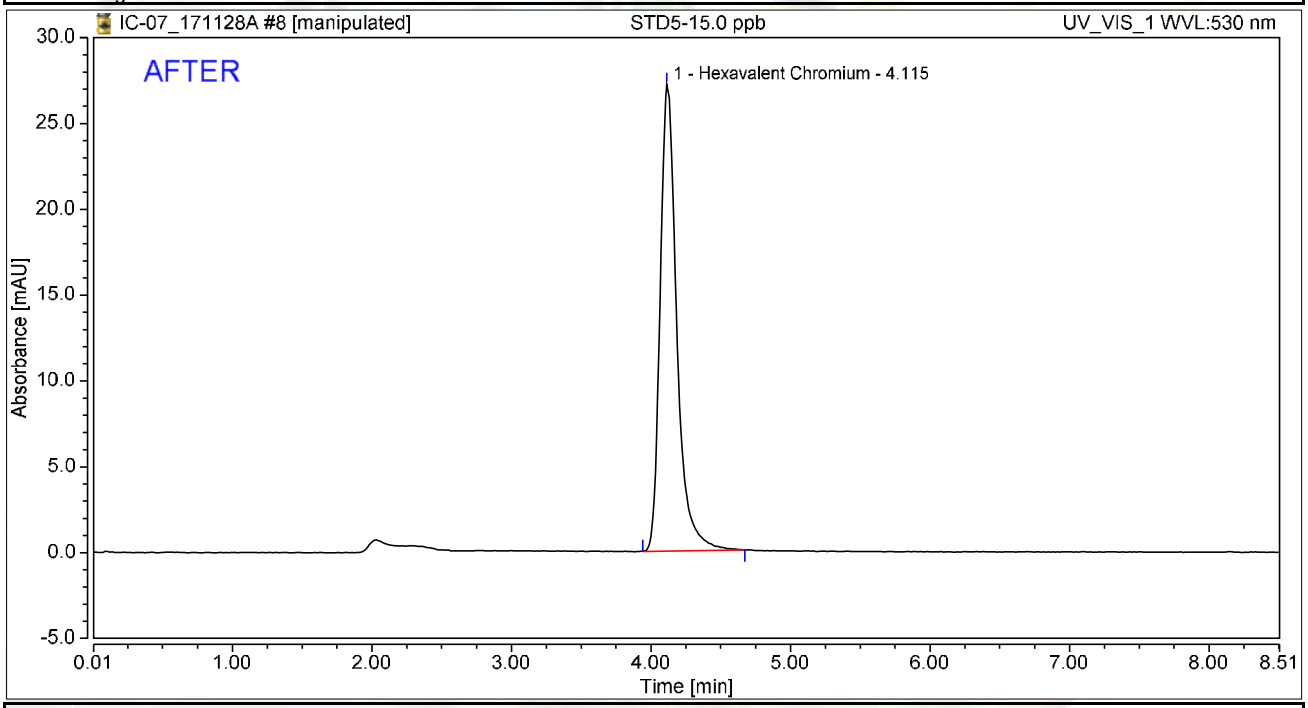
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	2.533	18.115	100.00	100.00	10.0869
Total:			**2.533**	**18.115**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	3.760	27.183	100.00	100.00	14.9728
Total:			**3.760**	**27.183**	**100.00**	**100.00**	

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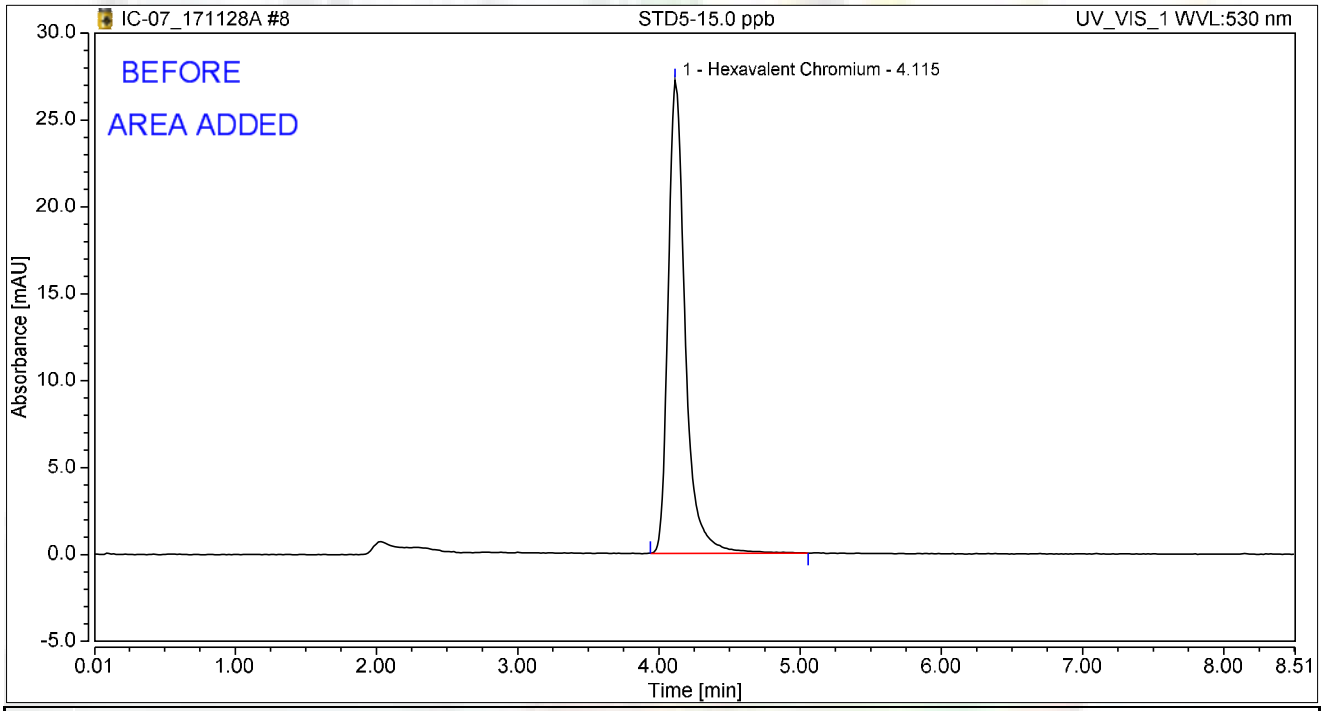
Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	3.807	27.204	100.00	100.00	14.9839
Total:			**3.807**	**27.204**	**100.00**	**100.00**	

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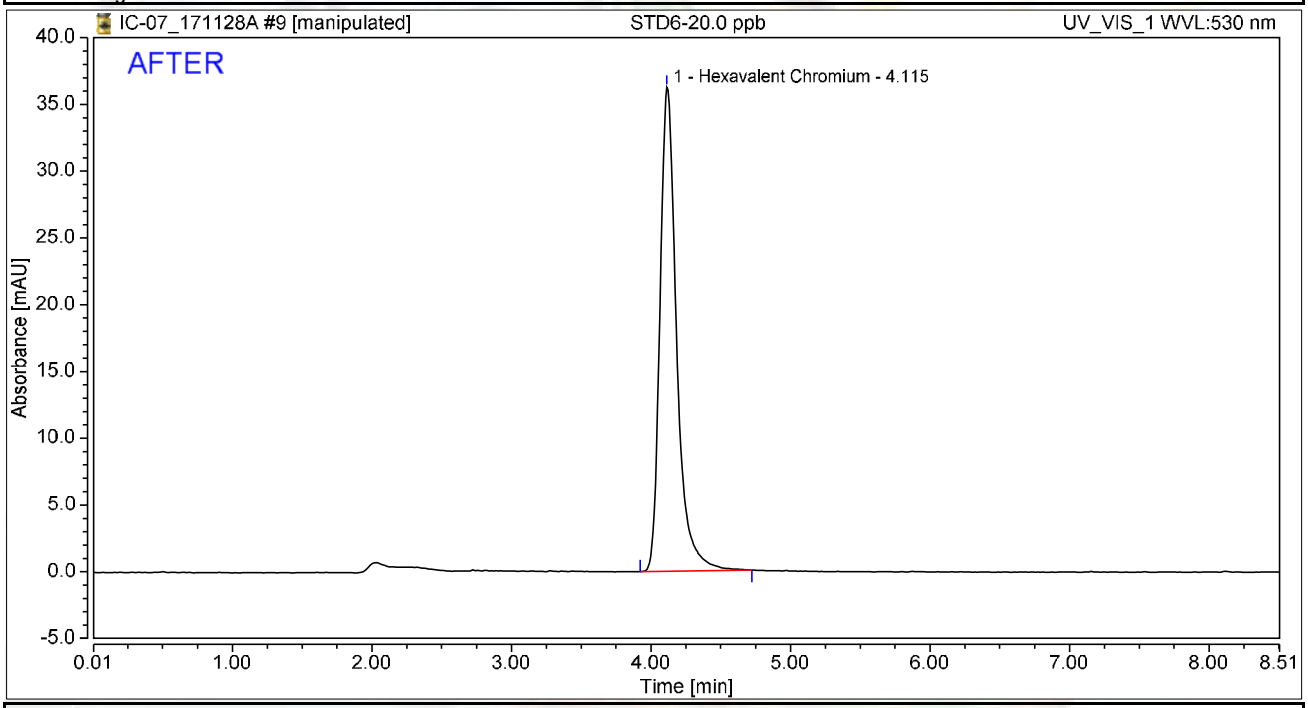
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	5.015	36.251	100.00	100.00	19.9744
Total:			**5.015**	**36.251**	**100.00**	**100.00**	

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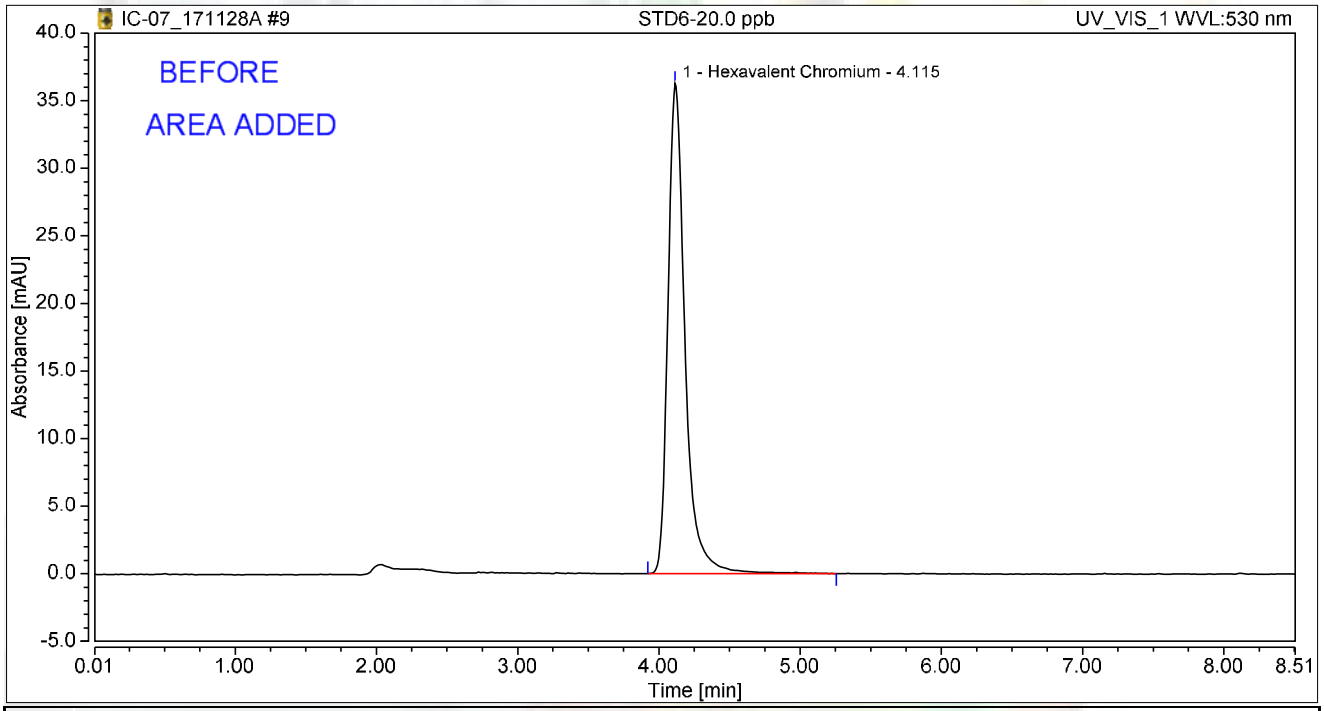
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	5.092	36.279	100.00	100.00	20.0407
Total:			**5.092**	**36.279**	**100.00**	**100.00**	

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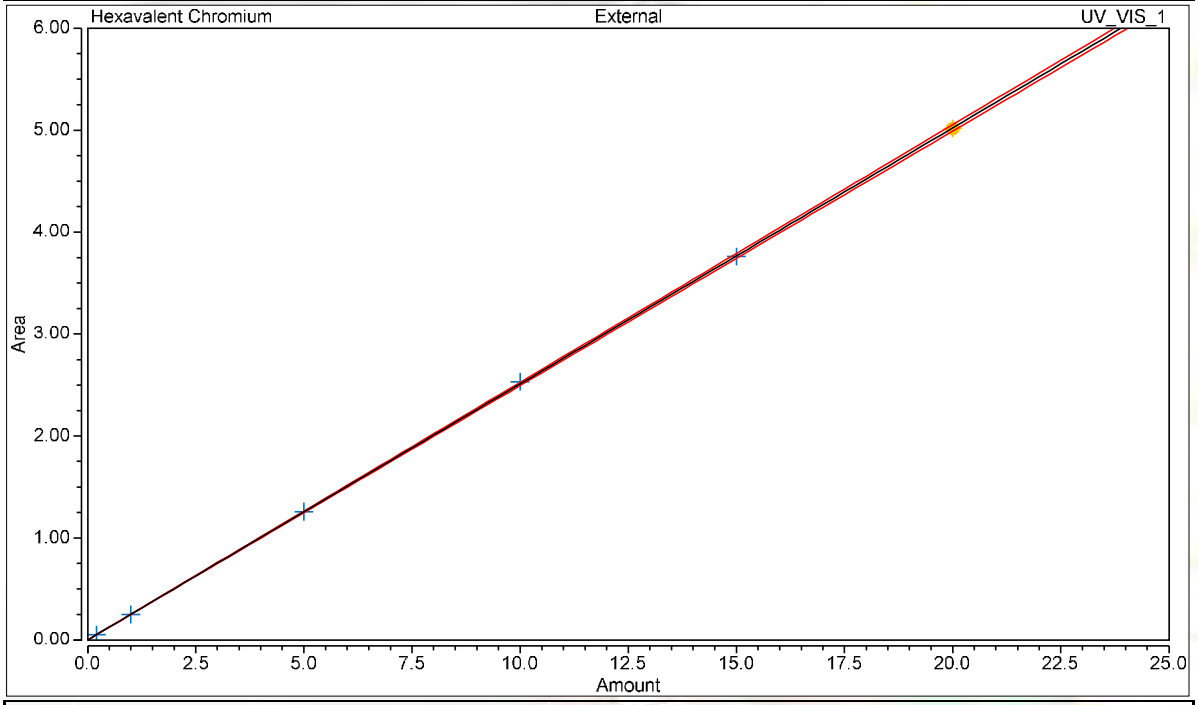
Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2511
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99997

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

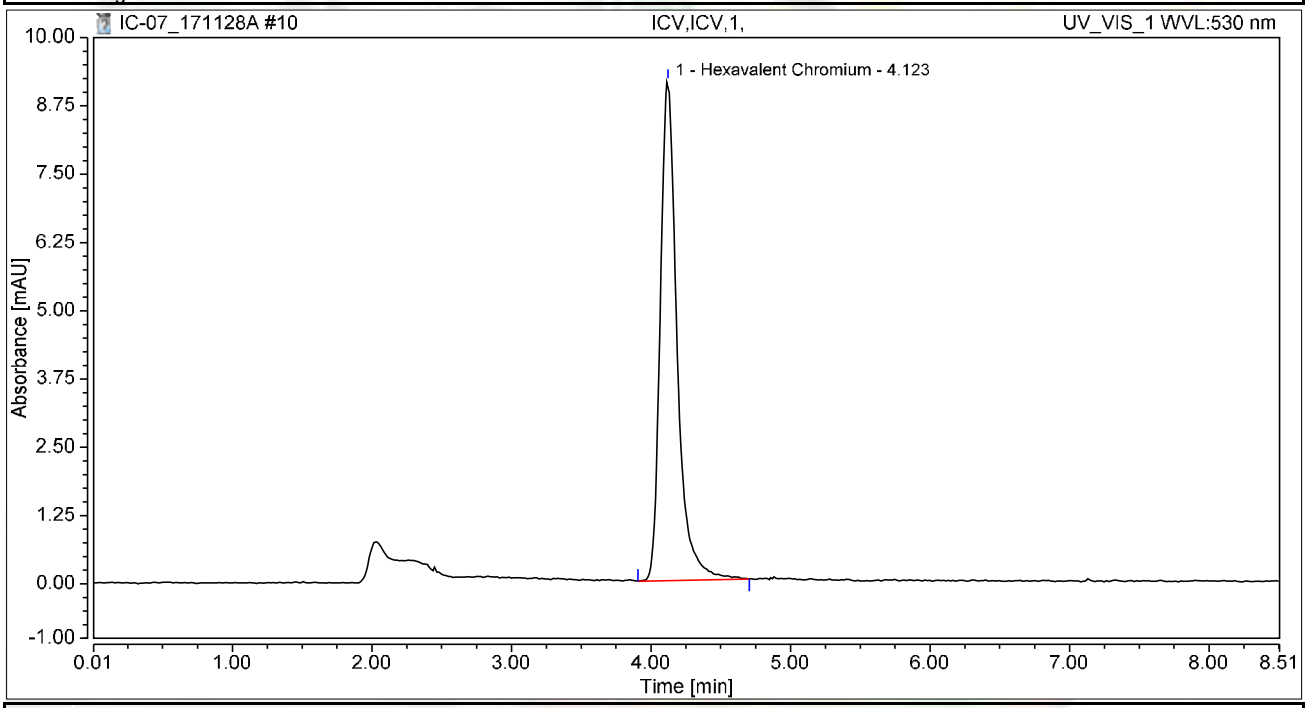
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0529	0.053	0.400
5	STD2-1.0 ppb	02	1.0000	0.2484	0.248	1.827
6	STD3-5.0 ppb	03	5.0000	1.2584	1.258	9.388
7	STD4-10.0 ppb	04	10.0000	2.5328	2.533	18.115
8	STD5-15.0 ppb	05	15.0000	3.7596	3.760	27.183
9	STD6-20.0 ppb	06	20.0000	5.0155	5.015	36.251

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

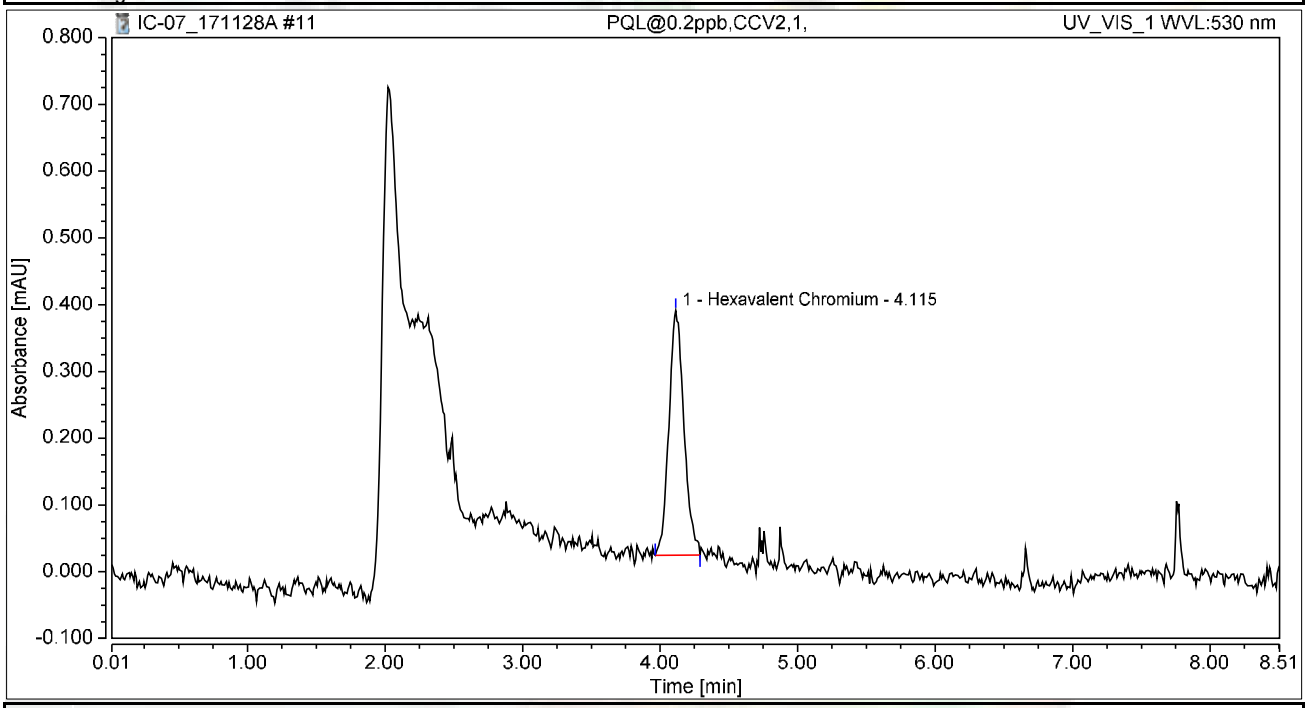
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.279	9.143	100.00	100.00	5.0922
Total:			**1.279**	**9.143**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

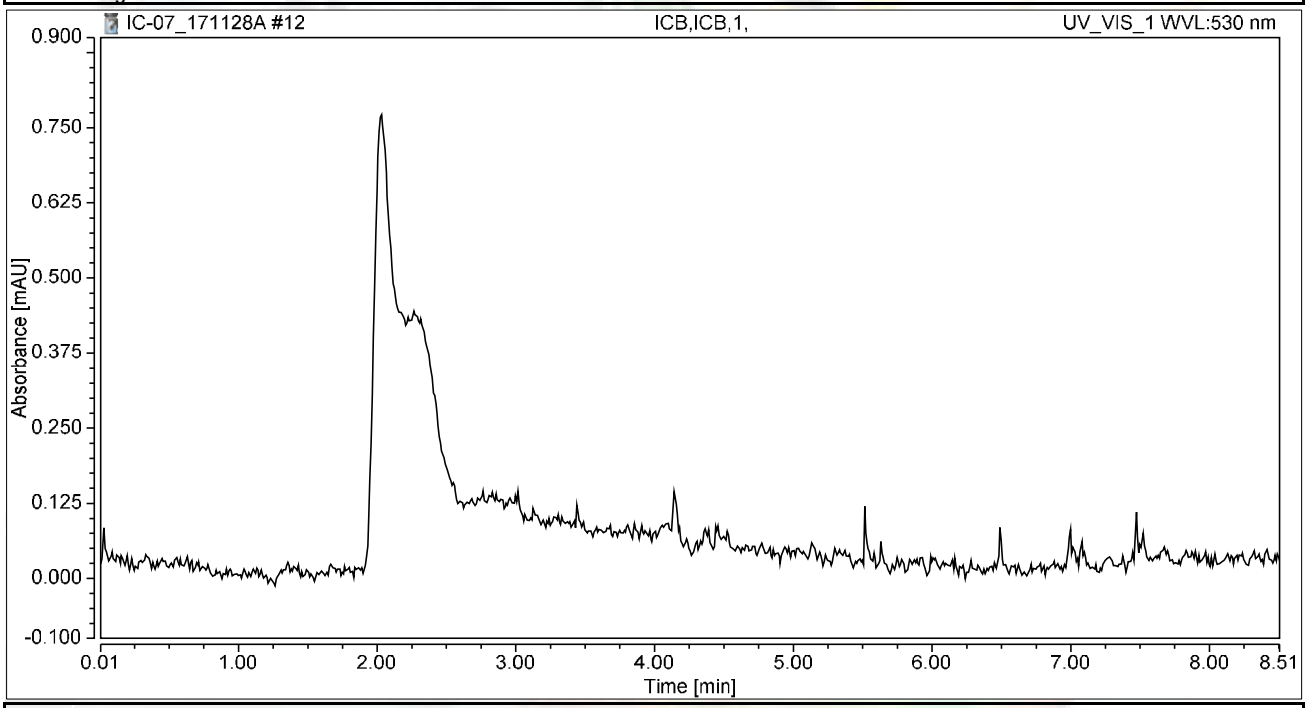
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.046	0.367	100.00	100.00	0.1851
Total:			**0.046**	**0.367**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 171220A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/20/17 8:34 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/20/17 8:45 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/20/17 8:54 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/20/17 9:04 AM	Not Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/20/17 9:13 AM	Reported
15	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/20/17 9:24 AM	Reported
16	MB-R120951	MBLK	1	Hexavalent Chromium	12/20/17 9:36 AM	Not Reported
17	LCS-R120951	LCS	1	Hexavalent Chromium	12/20/17 9:45 AM	Reported
18	MB-R120951	MBLK	1	Hexavalent Chromium	12/20/17 9:56 AM	Reported
19	N027634-001A	SAMP	100	Hexavalent Chromium	12/20/17 10:07 AM	Not Reported
20	N027556-005A	SAMP	2	Hexavalent Chromium	12/20/17 10:16 AM	Reported
21	N027556-005AMS	MS	2	Hexavalent Chromium	12/20/17 10:26 AM	Reported
22	N027556-005AMSD	MSD	2	Hexavalent Chromium	12/20/17 10:35 AM	Reported
23	N027634-001A	SAMP	20	Hexavalent Chromium	12/20/17 10:45 AM	Reported
24	N027634-001DUP	DUP	20	Hexavalent Chromium	12/20/17 10:54 AM	Reported
25	N027556-004A	SAMP	1	Hexavalent Chromium	12/20/17 11:04 AM	Reported
26	CCV-2	CCV1	1	Hexavalent Chromium	12/20/17 11:13 AM	Reported
27	CCB-2	CCB	1	Hexavalent Chromium	12/20/17 11:22 AM	Reported
28	N027556-004AMS	MS	1	Hexavalent Chromium	12/20/17 11:32 AM	Reported
29	N027431-002A	SAMP	1	Hexavalent Chromium	12/20/17 11:41 AM	Not Reported
30	N027431-002AMS	MS	1	Hexavalent Chromium	12/20/17 11:51 AM	Not Reported
31	N027546-004A	SAMP	1	Hexavalent Chromium	12/20/17 12:00 PM	Not Reported
32	N027546-005A	SAMP	1	Hexavalent Chromium	12/20/17 12:10 PM	Not Reported
33	N027546-001A	SAMP	500	Hexavalent Chromium	12/20/17 12:19 PM	Reported
34	N027546-001AMS	MS	500	Hexavalent Chromium	12/20/17 12:29 PM	Reported
35	N027546-002A	SAMP	500	Hexavalent Chromium	12/20/17 12:38 PM	Reported
36	N027546-002AMS	MS	500	Hexavalent Chromium	12/20/17 12:48 PM	Reported
37	N027546-003A	SAMP	5	Hexavalent Chromium	12/20/17 12:57 PM	Reported
38	CCV-3	CCV	1	Hexavalent Chromium	12/20/17 1:07 PM	Reported
39	CCB-3	CCB	1	Hexavalent Chromium	12/20/17 1:16 PM	Reported
40	N027546-003AMS	MS	5	Hexavalent Chromium	12/20/17 1:25 PM	Reported
41	N027546-004AMS	MS	1	Hexavalent Chromium	12/20/17 1:35 PM	Not Reported
42	N027546-005AMS	MS	1	Hexavalent Chromium	12/20/17 1:44 PM	Not Reported

INJECTION LOG: 171220A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027546-004A	SAMP	5	Hexavalent Chromium	12/20/17 2:01 PM	Reported
44	N027546-004AMS	MS	5	Hexavalent Chromium	12/20/17 2:12 PM	Reported
45	N027546-005A	SAMP	5	Hexavalent Chromium	12/20/17 2:22 PM	Reported
46	N027546-005AMS	MS	5	Hexavalent Chromium	12/20/17 2:31 PM	Reported
47	N027546-006A	SAMP	5	Hexavalent Chromium	12/20/17 2:40 PM	Reported
48	N027546-006AMS	MS	5	Hexavalent Chromium	12/20/17 2:50 PM	Reported
49	N027546-007A	SAMP	5	Hexavalent Chromium	12/20/17 2:59 PM	Reported
50	CCV-4	CCV1	1	Hexavalent Chromium	12/20/17 3:09 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	12/20/17 3:18 PM	Reported
52	N027546-007AMS	MS	5	Hexavalent Chromium	12/20/17 3:28 PM	Reported
53	N027546-008A	SAMP	5	Hexavalent Chromium	12/20/17 3:37 PM	Reported
54	N027546-008AMS	MS	5	Hexavalent Chromium	12/20/17 3:47 PM	Reported
55	N027546-009A	SAMP	5	Hexavalent Chromium	12/20/17 3:56 PM	Reported
56	N027546-009AMS	MS	5	Hexavalent Chromium	12/20/17 4:06 PM	Reported
57	N027546-010A	SAMP	5	Hexavalent Chromium	12/20/17 4:15 PM	Reported
58	N027546-010AMS	MS	5	Hexavalent Chromium	12/20/17 4:25 PM	Reported
59	N027546-011A	SAMP	1	Hexavalent Chromium	12/20/17 4:34 PM	Reported
60	N027546-011AMS	MS	1	Hexavalent Chromium	12/20/17 4:43 PM	Reported
61	N027546-012A	SAMP	1	Hexavalent Chromium	12/20/17 4:53 PM	Reported
62	CCV-5	CCV	1	Hexavalent Chromium	12/20/17 5:02 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	12/20/17 5:12 PM	Reported
64	N027546-012AMS	MS	1	Hexavalent Chromium	12/20/17 5:21 PM	Reported
65	N027546-013A	SAMP	1	Hexavalent Chromium	12/20/17 5:31 PM	Reported
66	N027546-013AMS	MS	1	Hexavalent Chromium	12/20/17 5:40 PM	Reported
67	N027546-007A	SAMP	1	Hexavalent Chromium	12/20/17 5:50 PM	Not Reported
68	N027546-007AMS	MS	1	Hexavalent Chromium	12/20/17 5:59 PM	Not Reported
69	N027546-008A	SAMP	1	Hexavalent Chromium	12/20/17 6:09 PM	Not Reported
70	N027546-008AMS	MS	1	Hexavalent Chromium	12/20/17 6:18 PM	Not Reported
71	N027546-009A	SAMP	1	Hexavalent Chromium	12/20/17 6:28 PM	Not Reported
72	N027546-009AMS	MS	1	Hexavalent Chromium	12/20/17 6:37 PM	Not Reported
73	N027546-010A	SAMP	1	Hexavalent Chromium	12/20/17 6:46 PM	Not Reported
74	CCV-6	CCV1	1	Hexavalent Chromium	12/20/17 6:56 PM	Reported
75	CCB-6	CCB	1	Hexavalent Chromium	12/20/17 7:05 PM	Reported
76	N027546-010AMS	MS	1	Hexavalent Chromium	12/20/17 7:15 PM	Not Reported
77	N027429-001A	SAMP	1	Hexavalent Chromium	12/20/17 7:24 PM	Not Reported
78	N027429-001AMS	MS	1	Hexavalent Chromium	12/20/17 7:34 PM	Not Reported
79	N027429-002A	SAMP	1	Hexavalent Chromium	12/20/17 7:43 PM	Not Reported
80	N027429-002AMS	MS	1	Hexavalent Chromium	12/20/17 7:53 PM	Not Reported
81	N027430-002A	SAMP	1	Hexavalent Chromium	12/20/17 8:03 PM	Not Reported
82	N027430-002AMS	MS	1	Hexavalent Chromium	12/20/17 8:12 PM	Not Reported
83	N027430-012A	SAMP	1	Hexavalent Chromium	12/20/17 8:22 PM	Not Reported
84	N027430-012AMS	MS	1	Hexavalent Chromium	12/20/17 8:31 PM	Not Reported

INJECTION LOG: 171220A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	12/20/17 8:41 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	12/20/17 8:50 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171220A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**21/Dec/17 13:43:03**
No. of Injections:	**89**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/20/2017 08:34	Finished	BLANK
11	BLANK	2	1000	Unknown		12/20/2017 08:45	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/20/2017 08:54	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,	4	1000	Unknown		12/20/2017 09:04	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/20/2017 09:13	Finished	CCB R171129A
15	PQL@0.2ppb,CCV2,	5	1000	Unknown		12/20/2017 09:24	Finished	PQL @ 0.2ppb
16	MB-H2O,MBLK,1	6	1000	Unknown		12/20/2017 09:36	Finished	MB R171129A
17	LCS-H2O,LCS,1	7	1000	Unknown		12/20/2017 09:45	Finished	LCS, IWST-171002B
18	MB-H2O,MBLK,1	8	1000	Unknown		12/20/2017 09:56	Finished	MB R171129A
19	N027634-001A,SAMF	9	1000	Unknown		12/20/2017 10:07	Finished	SAMP,0.1>10mL
20	N027556-005A,SAMF	10	1000	Unknown		12/20/2017 10:16	Finished	SAMP,5>10mL
21	N027556-005AMS,MS	11	1000	Unknown		12/20/2017 10:26	Finished	MS (5ppb), IWST-171002B,5>1
22	N027556-005AMSD,M	12	1000	Unknown		12/20/2017 10:35	Finished	MSD (5ppb), IWST-171002B,5>
23	N027634-001A,SAMF	13	1000	Unknown		12/20/2017 10:45	Finished	SAMP,0.5>10mL
24	N027634-001DUP,DU	14	1000	Unknown		12/20/2017 10:54	Finished	DUP,0.5>10mL
25	N027556-004A,SAMF	15	1000	Unknown		12/20/2017 11:04	Finished	SAMP,10mL
26	CCV-2,CCV1,1,	16	1000	Unknown		12/20/2017 11:13	Finished	CCV @10ppb, IWST-171002A
27	CCB-2,CCB,1,	17	1000	Unknown		12/20/2017 11:22	Finished	CCB R171129A
28	N027556-004AMS,MS	18	1000	Unknown		12/20/2017 11:32	Finished	MS (5ppb), IWST-171002B,10
29	N027431-002A,SAMF	19	1000	Unknown		12/20/2017 11:41	Finished	SAMP,10mL
30	N027431-002AMS,MS	20	1000	Unknown		12/20/2017 11:51	Finished	MS (1ppb), IWST-171002B,10
31	N027546-004A,SAMF	21	1000	Unknown		12/20/2017 12:00	Finished	SAMP,10mL
32	N027546-005A,SAMF	22	1000	Unknown		12/20/2017 12:10	Finished	SAMP,10mL
33	N027546-001A,SAMF	23	1000	Unknown		12/20/2017 12:19	Finished	SAMP,0.02>10mL
34	N027546-001AMS,MS	24	1000	Unknown		12/20/2017 12:29	Finished	MS (5ppb), IWST-171002B,0.0
35	N027546-002A,SAMF	25	1000	Unknown		12/20/2017 12:38	Finished	SAMP,0.02>10mL
36	N027546-002AMS,MS	26	1000	Unknown		12/20/2017 12:48	Finished	MS (5ppb), IWST-171002B,0.0
37	N027546-003A,SAMF	27	1000	Unknown		12/20/2017 12:57	Finished	SAMP,2>10mL
38	CCV-3,CCV,1,	28	1000	Unknown		12/20/2017 13:07	Finished	CCV @5ppb, IWST-171002A
39	CCB-3,CCB,1,	29	1000	Unknown		12/20/2017 13:16	Finished	CCB R171129A
40	N027546-003AMS,MS	30	1000	Unknown		12/20/2017 13:25	Finished	MS (5ppb), IWST-171002B,2>1
41	N027546-004AMS,MS	31	1000	Unknown		12/20/2017 13:35	Finished	MS (1ppb), IWST-171002B,10
42	N027546-005AMS,MS	32	1000	Unknown		12/20/2017 13:44	Finished	MS (1ppb), IWST-171002B,10
43	N027546-004A,SAMF	1	1000	Unknown		12/20/2017 14:01	Finished	SAMP,2>10mL
44	N027546-004AMS,MS	2	1000	Unknown		12/20/2017 14:12	Finished	MS (1ppb), IWST-171002B,2>1
45	N027546-005A,SAMF	3	1000	Unknown		12/20/2017 14:22	Finished	SAMP,2>10mL
46	N027546-005AMS,MS	4	1000	Unknown		12/20/2017 14:31	Finished	MS (1ppb), IWST-171002B,2>1
47	N027546-006A,SAMF	5	1000	Unknown		12/20/2017 14:40	Finished	SAMP,2>10mL
48	N027546-006AMS,MS	6	1000	Unknown		12/20/2017 14:50	Finished	MS (1ppb), IWST-171002B,2>1
49	N027546-007A,SAMF	7	1000	Unknown		12/20/2017 14:59	Finished	SAMP,2>10mL
50	CCV-4,CCV1,1,	8	1000	Unknown		12/20/2017 15:09	Finished	CCV @10ppb, IWST-171002A
51	CCB-4,CCB,1,	9	1000	Unknown		12/20/2017 15:18	Finished	CCB R171129A
52	N027546-007AMS,MS	10	1000	Unknown		12/20/2017 15:28	Finished	MS (1ppb), IWST-171002B,2>1
53	N027546-008A,SAMF	11	1000	Unknown		12/20/2017 15:37	Finished	SAMP,2>10mL
54	N027546-008AMS,MS	12	1000	Unknown		12/20/2017 15:47	Finished	MS (1ppb), IWST-171002B,2>1
55	N027546-009A,SAMF	13	1000	Unknown		12/20/2017 15:56	Finished	SAMP,2>10mL
56	N027546-009AMS,MS	14	1000	Unknown		12/20/2017 16:06	Finished	MS (1ppb), IWST-171002B,2>1
57	N027546-010A,SAMF	15	1000	Unknown		12/20/2017 16:15	Finished	SAMP,2>10mL
58	N027546-010AMS,MS	16	1000	Unknown		12/20/2017 16:25	Finished	MS (1ppb), IWST-171002B,2>1
59	N027546-011A,SAMF	17	1000	Unknown		12/20/2017 16:34	Finished	SAMP,10mL
60	N027546-011AMS,MS	18	1000	Unknown		12/20/2017 16:43	Finished	MS (1ppb), IWST-171002B,10

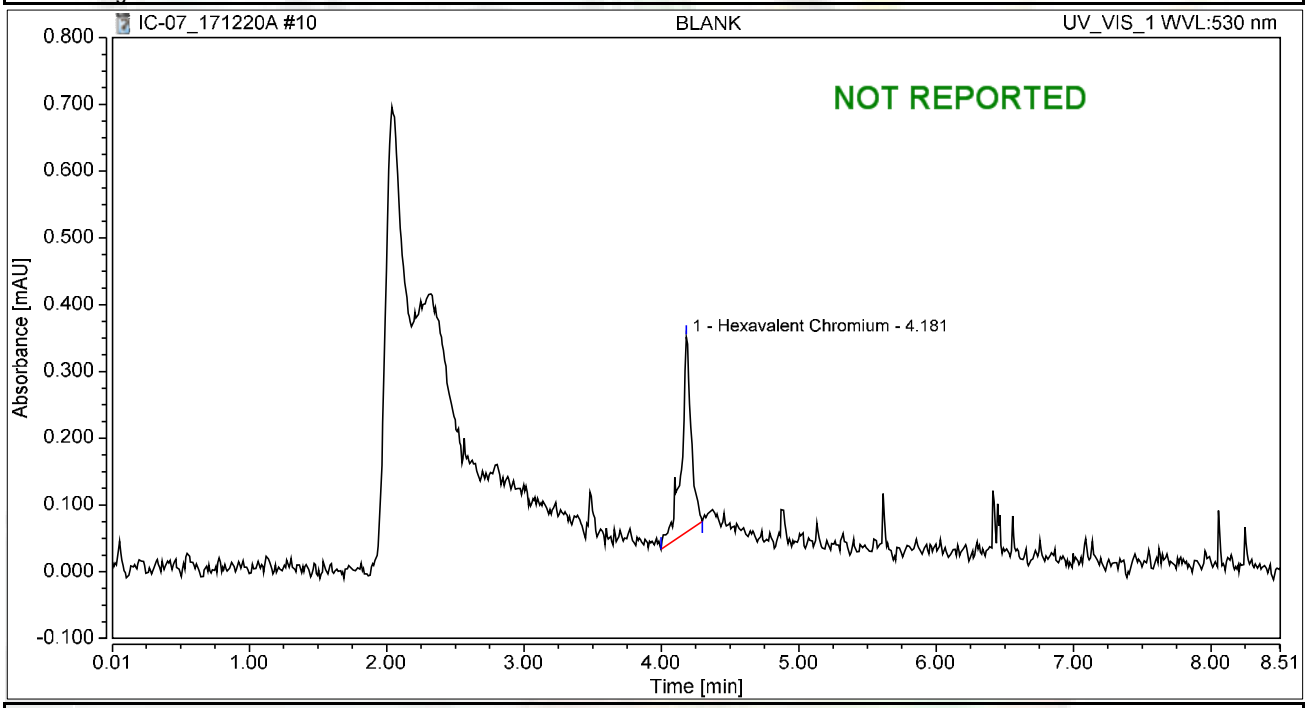
61	N027546-012A,SAMP	19	1000	Unknown		12/20/2017 16:53	Finished	SAMP,10mL
62	CCV-5,CCV,1,	20	1000	Unknown		12/20/2017 17:02	Finished	CCV @5ppb, IWST-171002A
63	CCB-5,CCB,1,	21	1000	Unknown		12/20/2017 17:12	Finished	CCB R171129A
64	N027546-012AMS,MS	22	1000	Unknown		12/20/2017 17:21	Finished	MS (1ppb), IWST-171002B,10
65	N027546-013A,SAMP	23	1000	Unknown		12/20/2017 17:31	Finished	SAMP,10mL
66	N027546-013AMS,MS	24	1000	Unknown		12/20/2017 17:40	Finished	MS (1ppb), IWST-171002B,10
67	N027546-007A,SAMP	25	1000	Unknown		12/20/2017 17:50	Finished	SAMP,10mL
68	N027546-007AMS,MS	26	1000	Unknown		12/20/2017 17:59	Finished	MS (1ppb), IWST-171002B,10
69	N027546-008A,SAMP	27	1000	Unknown		12/20/2017 18:09	Finished	SAMP,10mL
70	N027546-008AMS,MS	28	1000	Unknown		12/20/2017 18:18	Finished	MS (1ppb), IWST-171002B,10
71	N027546-009A,SAMP	29	1000	Unknown		12/20/2017 18:28	Finished	SAMP,10mL
72	N027546-009AMS,MS	30	1000	Unknown		12/20/2017 18:37	Finished	MS (1ppb), IWST-171002B,10
73	N027546-010A,SAMP	31	1000	Unknown		12/20/2017 18:46	Finished	SAMP,10mL
74	CCV-6,CCV1,1,	32	1000	Unknown		12/20/2017 18:56	Finished	CCV @10ppb, IWST-171002A
75	CCB-6,CCB,1,	33	1000	Unknown		12/20/2017 19:05	Finished	CCB R171129A
76	N027546-010AMS,MS	34	1000	Unknown		12/20/2017 19:15	Finished	MS (1ppb), IWST-171002B,10
77	N027429-001A,SAMP	35	1000	Unknown		12/20/2017 19:24	Finished	SAMP,10mL
78	N027429-001AMS,MS	36	1000	Unknown		12/20/2017 19:34	Finished	MS (1ppb), IWST-171002B,10
79	N027429-002A,SAMP	37	1000	Unknown		12/20/2017 19:43	Finished	SAMP,10mL
80	N027429-002AMS,MS	38	1000	Unknown		12/20/2017 19:53	Finished	MS (1ppb), IWST-171002B,10
81	N027430-002A,SAMP	39	1000	Unknown		12/20/2017 20:03	Finished	SAMP,10mL
82	N027430-002AMS,MS	40	1000	Unknown		12/20/2017 20:12	Finished	MS (1ppb), IWST-171002B,10
83	N027430-012A,SAMP	41	1000	Unknown		12/20/2017 20:22	Finished	SAMP,10mL
84	N027430-012AMS,MS	42	1000	Unknown		12/20/2017 20:31	Finished	MS (1ppb), IWST-171002B,10
85	CCV-7,CCV,1,	43	1000	Unknown		12/20/2017 20:41	Finished	CCV @5ppb, IWST-171002A
86	CCB-7,CCB,1,	44	1000	Unknown		12/20/2017 20:50	Finished	CCB R171129A
87	SHUTDOWN	45	1000	Unknown		12/20/2017 20:59	Finished	
88	Eluent: R171219A	46	1000	Unknown		n.a.	Finished	Eluent
89	PCR: R171219B	47	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 08:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

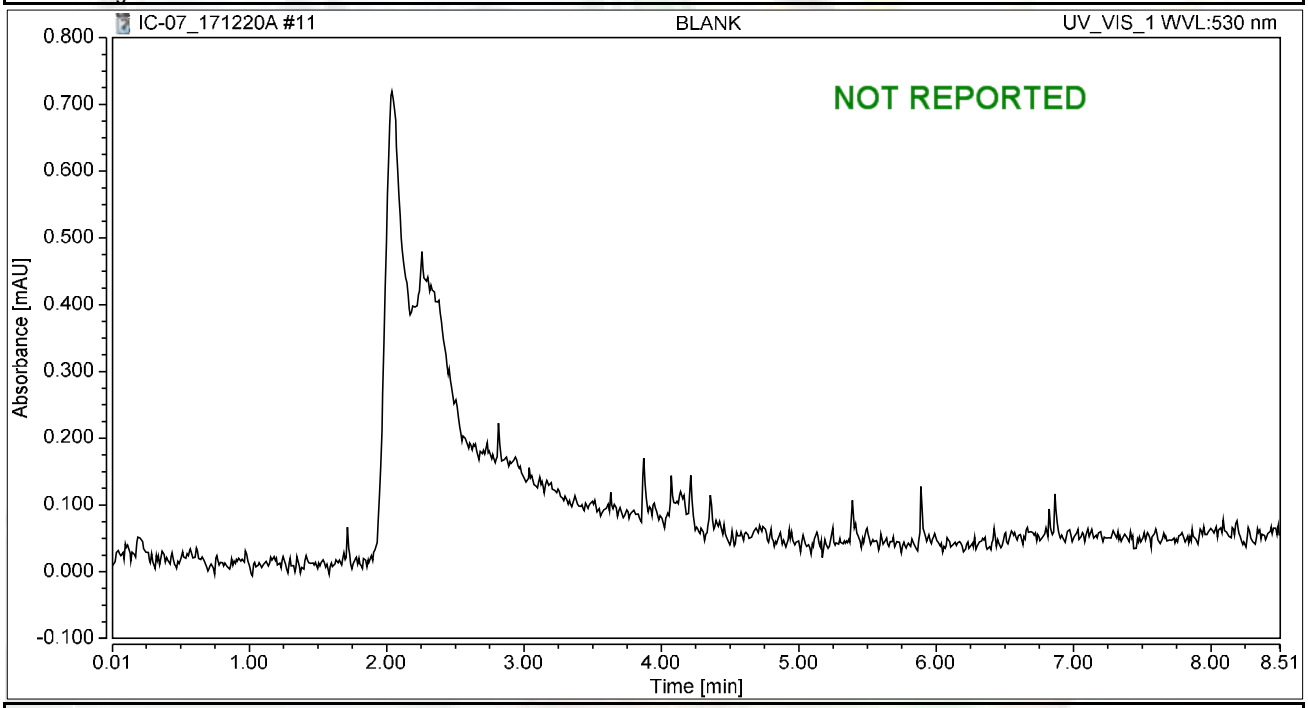
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.024	0.292	100.00	100.00	0.0974
Total:			**0.024**	**0.292**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 08:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

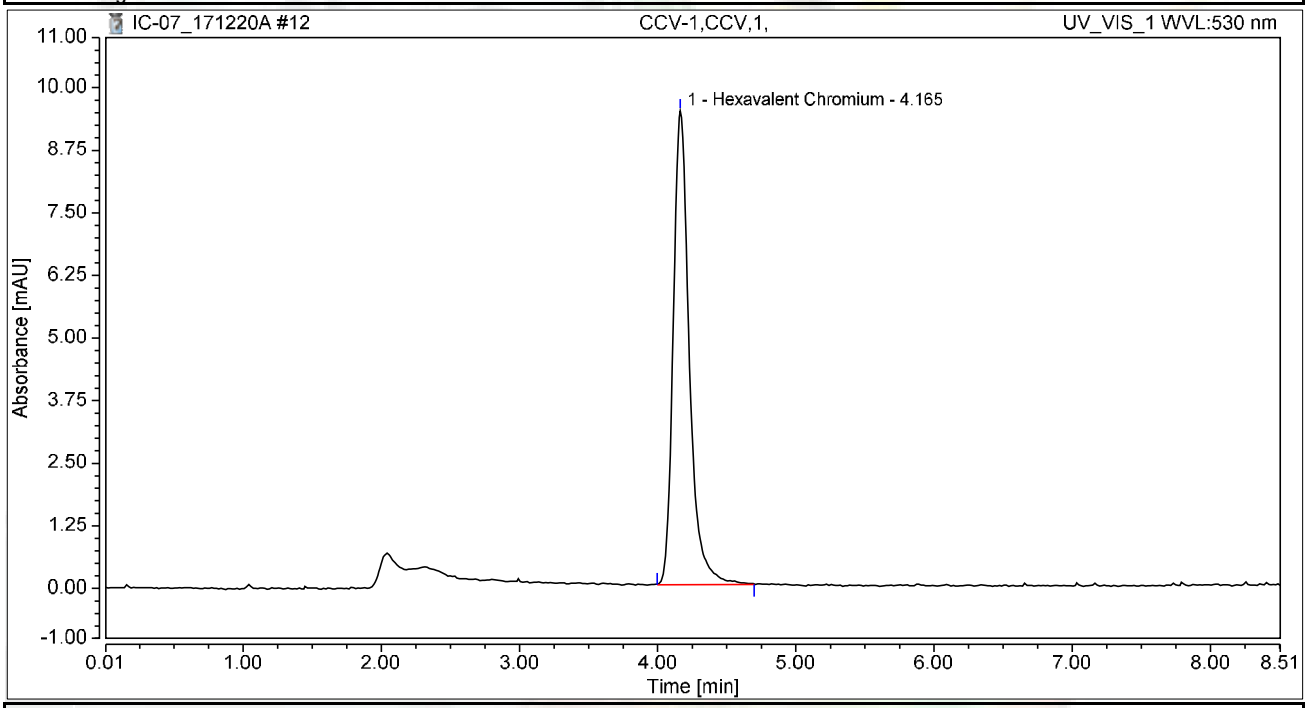
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 08:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

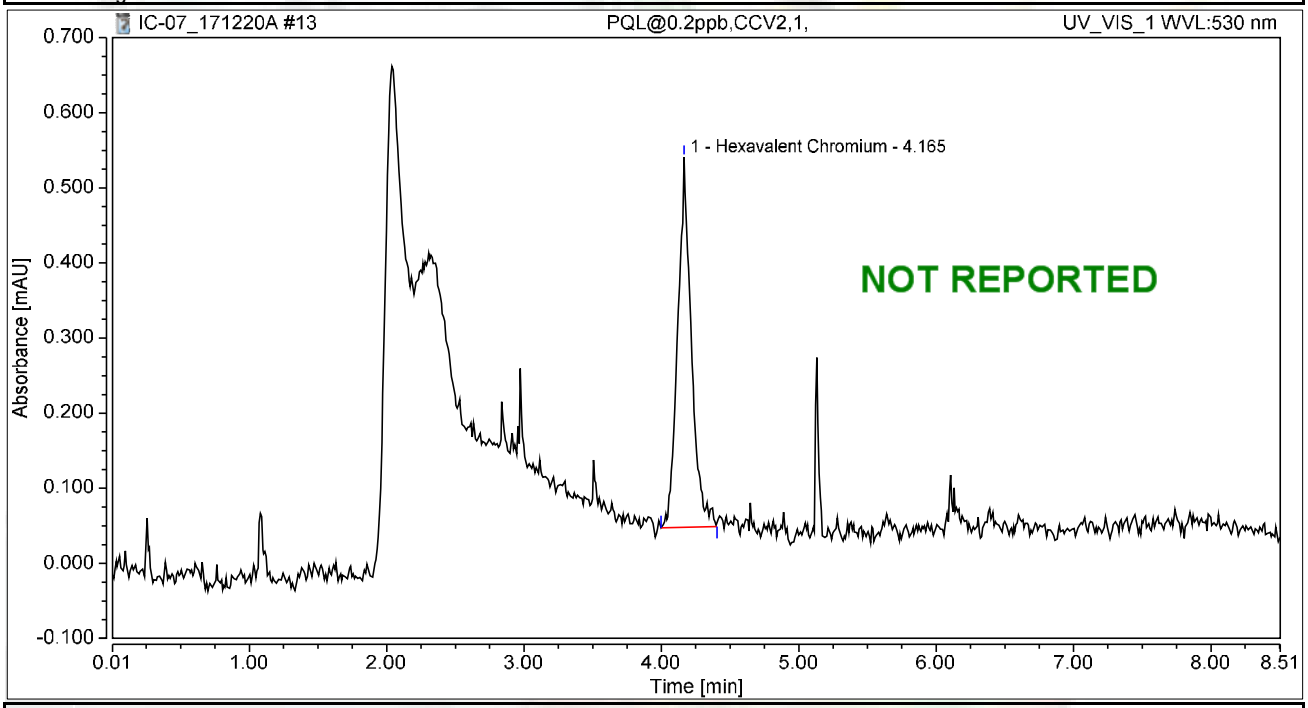
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.278	9.460	100.00	100.00	5.0891
Total:			**1.278**	**9.460**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 09:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.057	0.492	100.00	100.00	0.2251
Total:			**0.057**	**0.492**	**100.00**	**100.00**	

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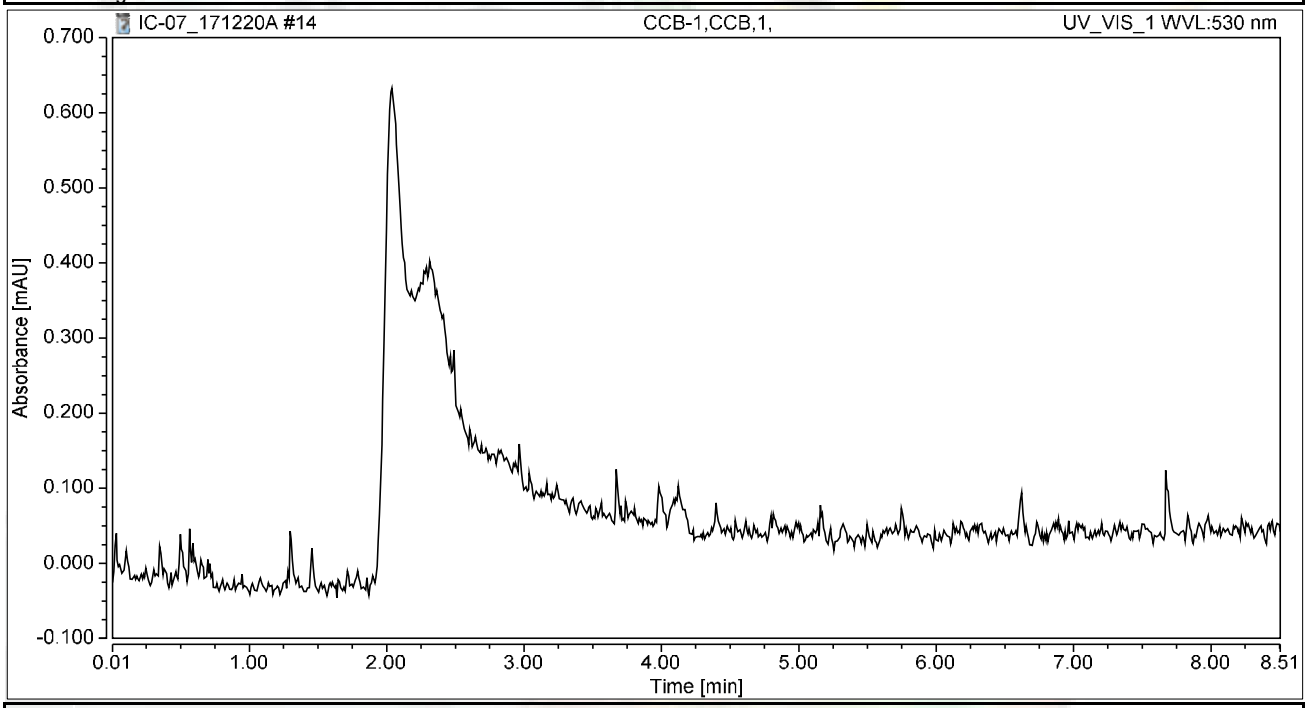
Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 09:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

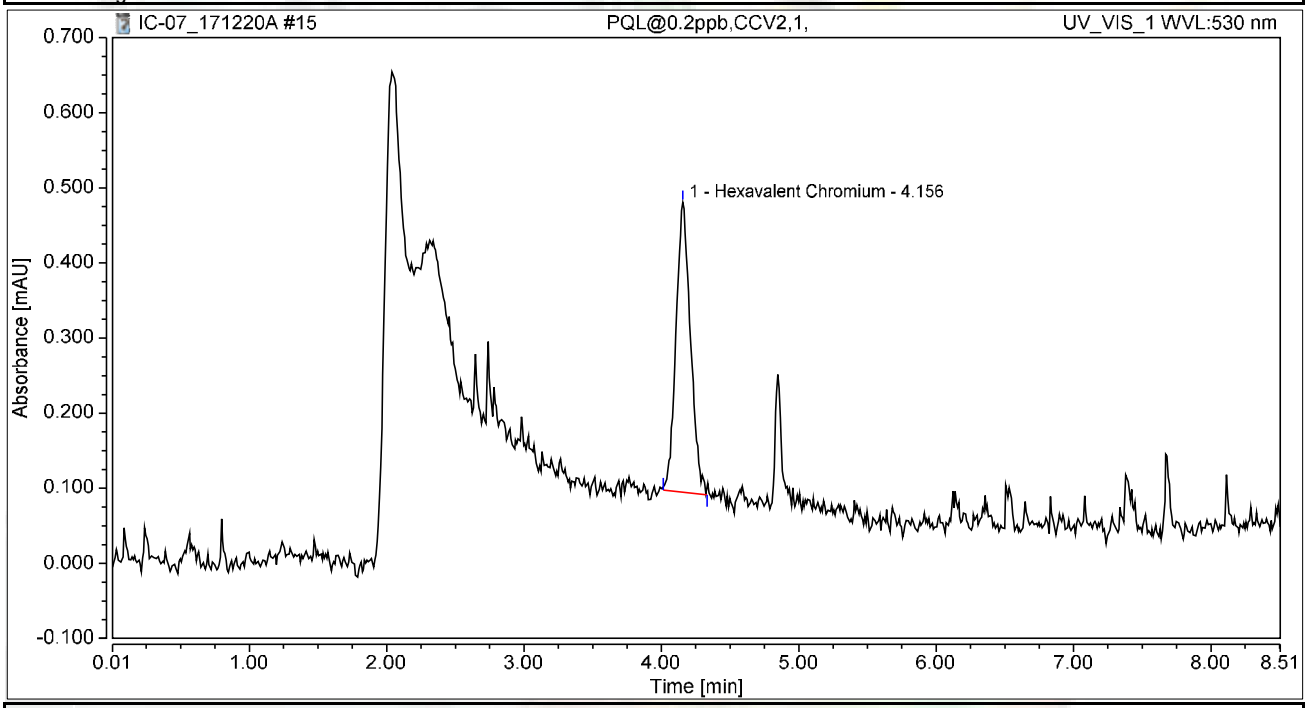
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 09:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

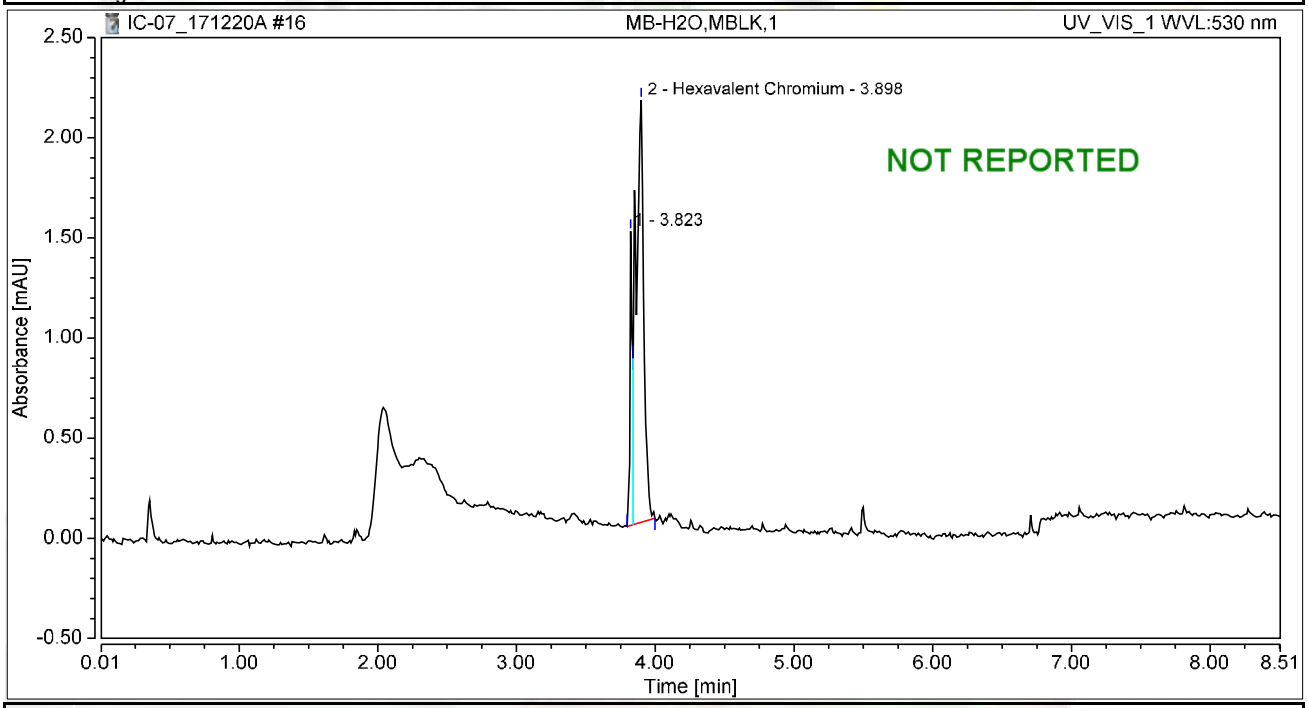
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.047	0.386	100.00	100.00	0.1872
Total:			**0.047**	**0.386**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 09:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.823	0.026	1.469	15.80	41.06	n.a.
2	Hexavalent Chromium	3.898	0.139	2.110	84.20	58.94	0.5535
Total:			**0.165**	**3.579**	**100.00**	**100.00**	

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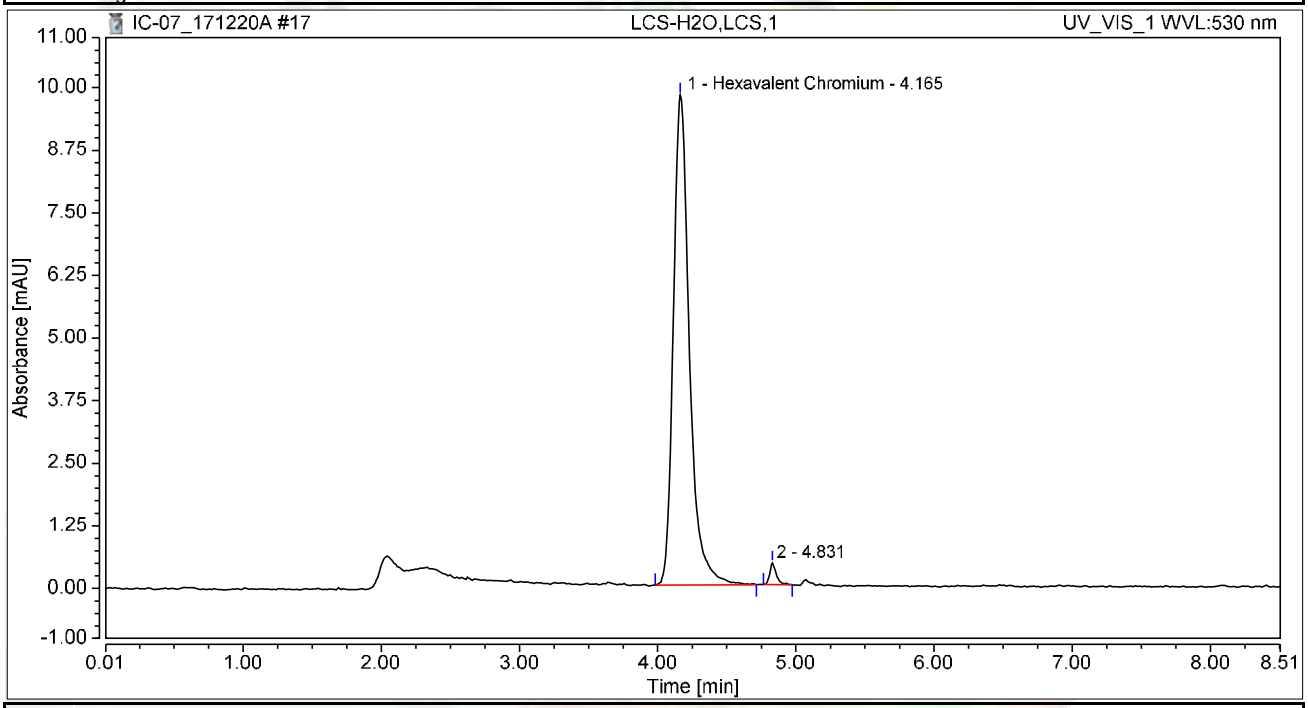
Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 09:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

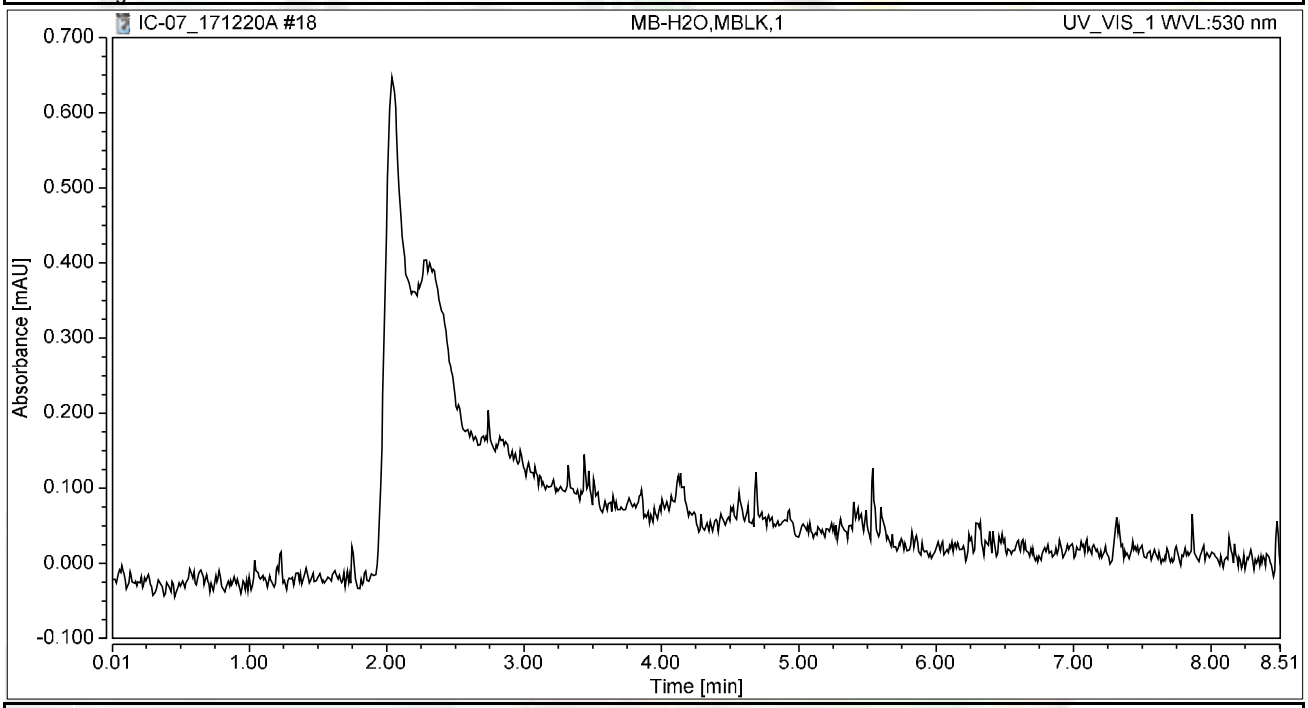
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.317	9.789	98.21	95.76	5.2437
2		4.831	0.024	0.434	1.79	4.24	n.a.
Total:			**1.341**	**10.223**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 09:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

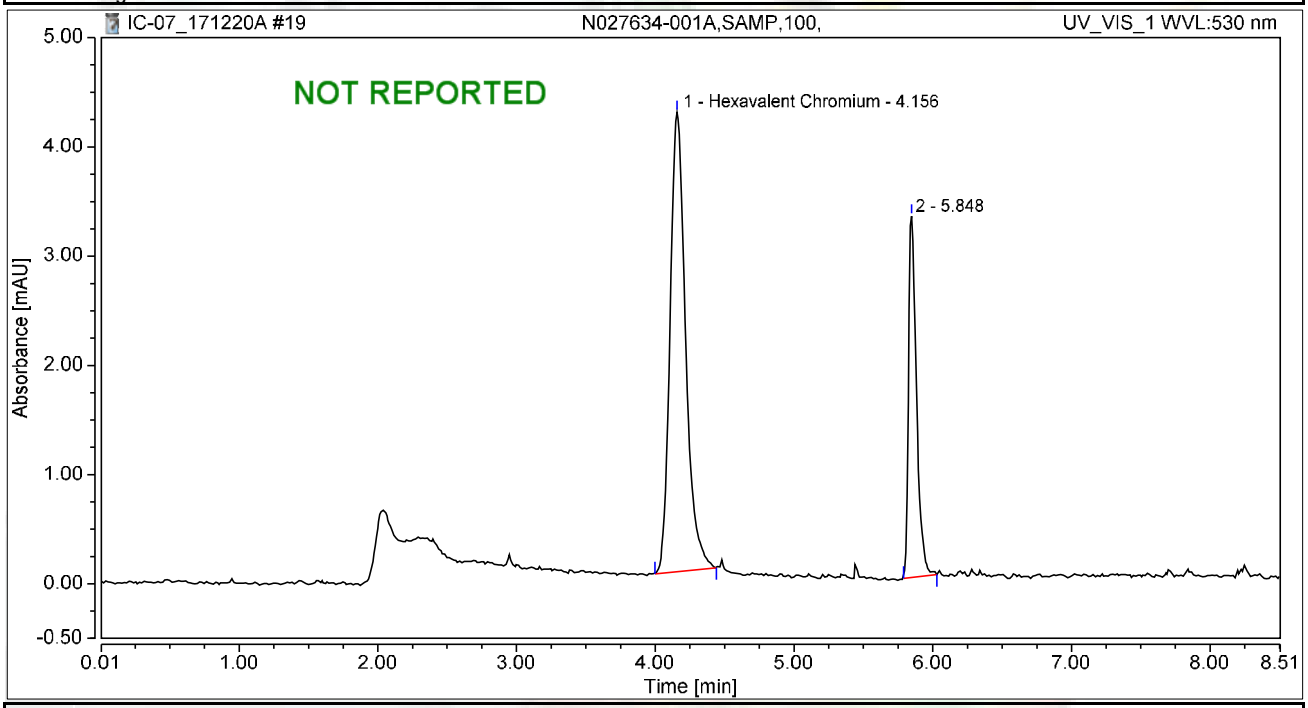
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027634-001A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 10:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

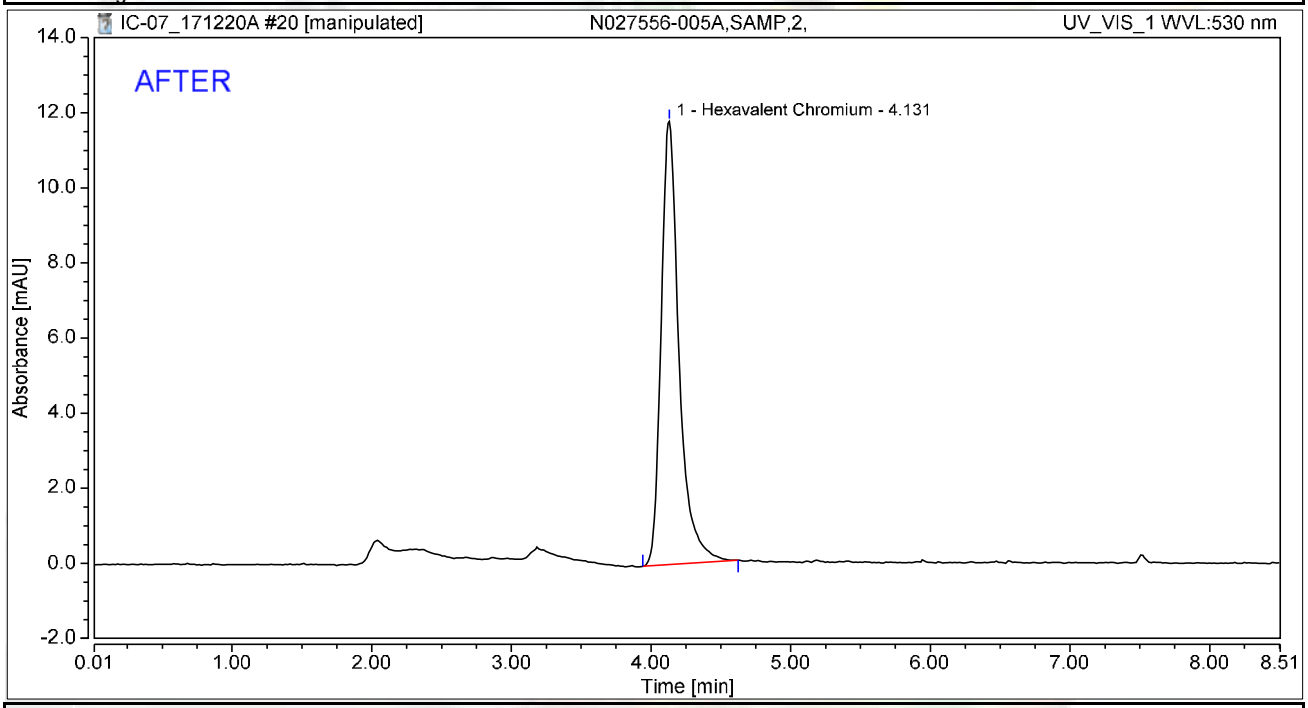
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.546	4.203	71.24	55.98	2.1742
2		5.848	0.220	3.306	28.76	44.02	n.a.
Total:			**0.766**	**7.509**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027556-005A,SAMP,2,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 10:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.755	11.805	100.00	100.00	6.9910
Total:			**1.755**	**11.805**	**100.00**	**100.00**	

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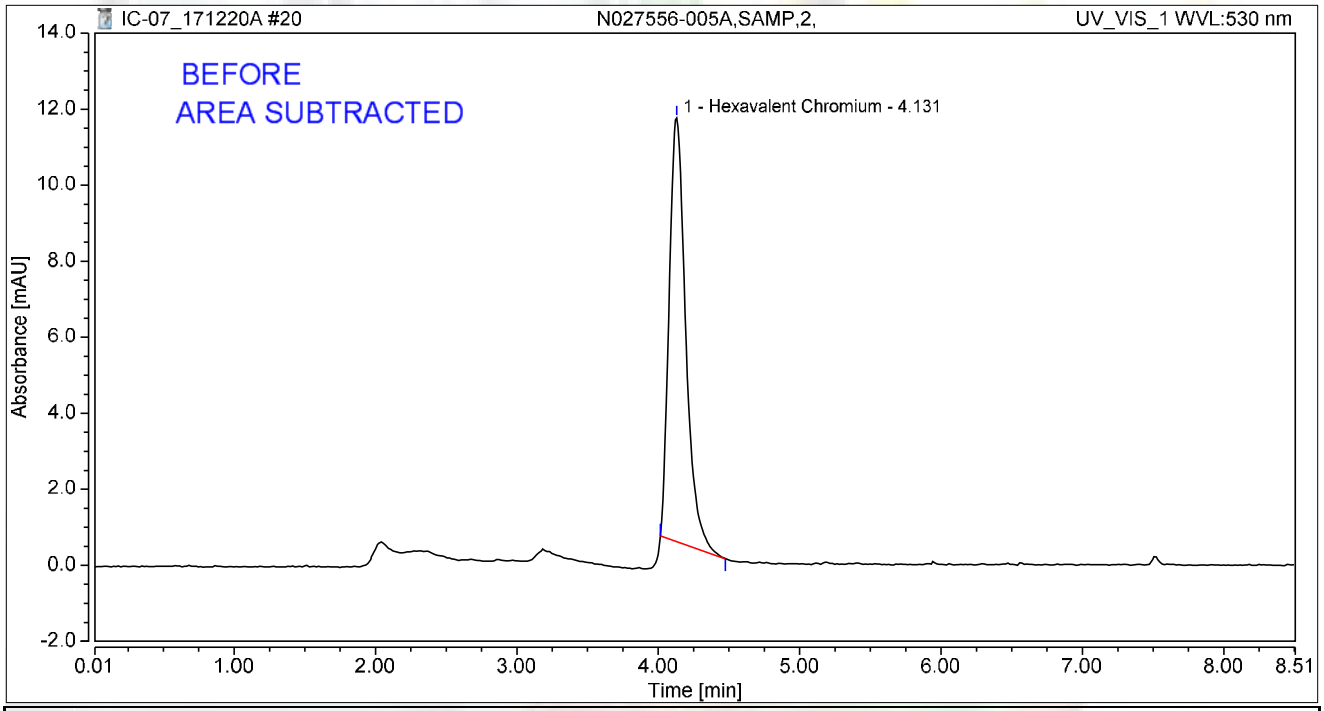
Chromatogram and Results

Injection Details

Injection Name:	**N027556-005A,SAMP,2,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 10:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.513	11.149	100.00	100.00	6.0263
Total:			**1.513**	**11.149**	**100.00**	**100.00**	

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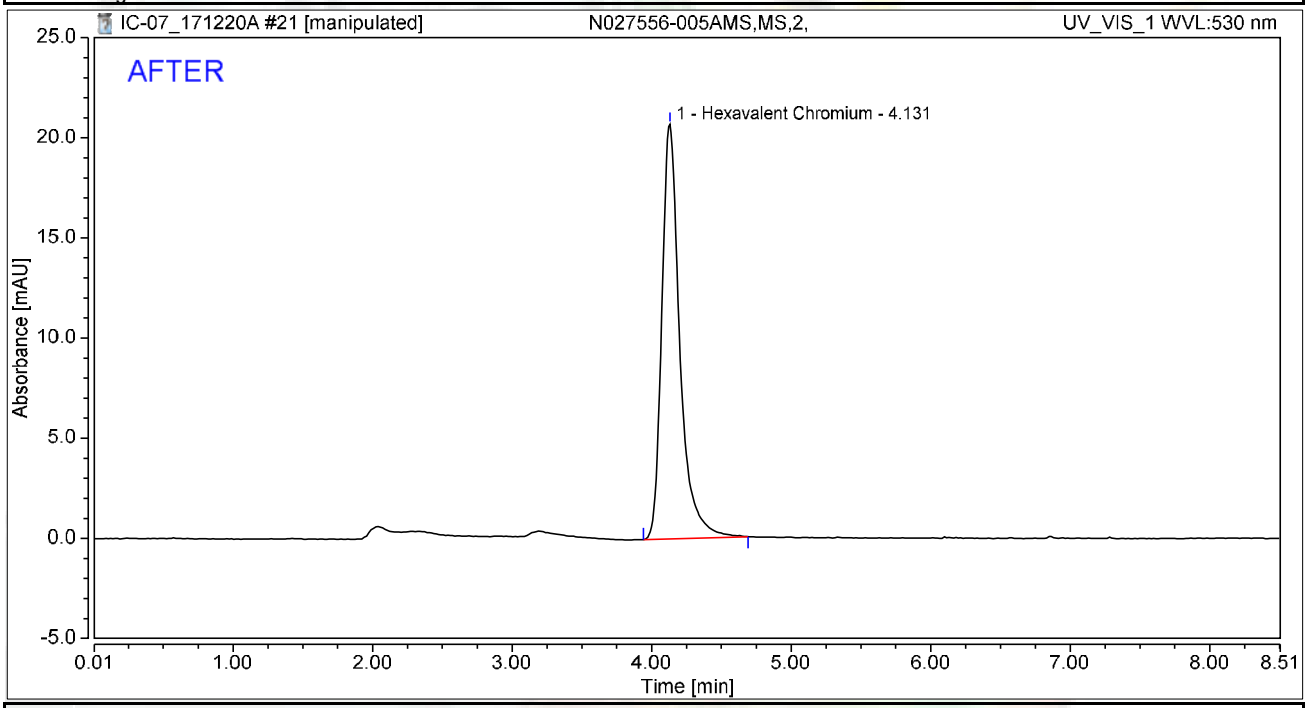
Chromatogram and Results

Injection Details

Injection Name:	**N027556-005AMS,MS,2,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 10:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	3.096	20.699	100.00	100.00	12.3292
Total:			**3.096**	**20.699**	**100.00**	**100.00**	

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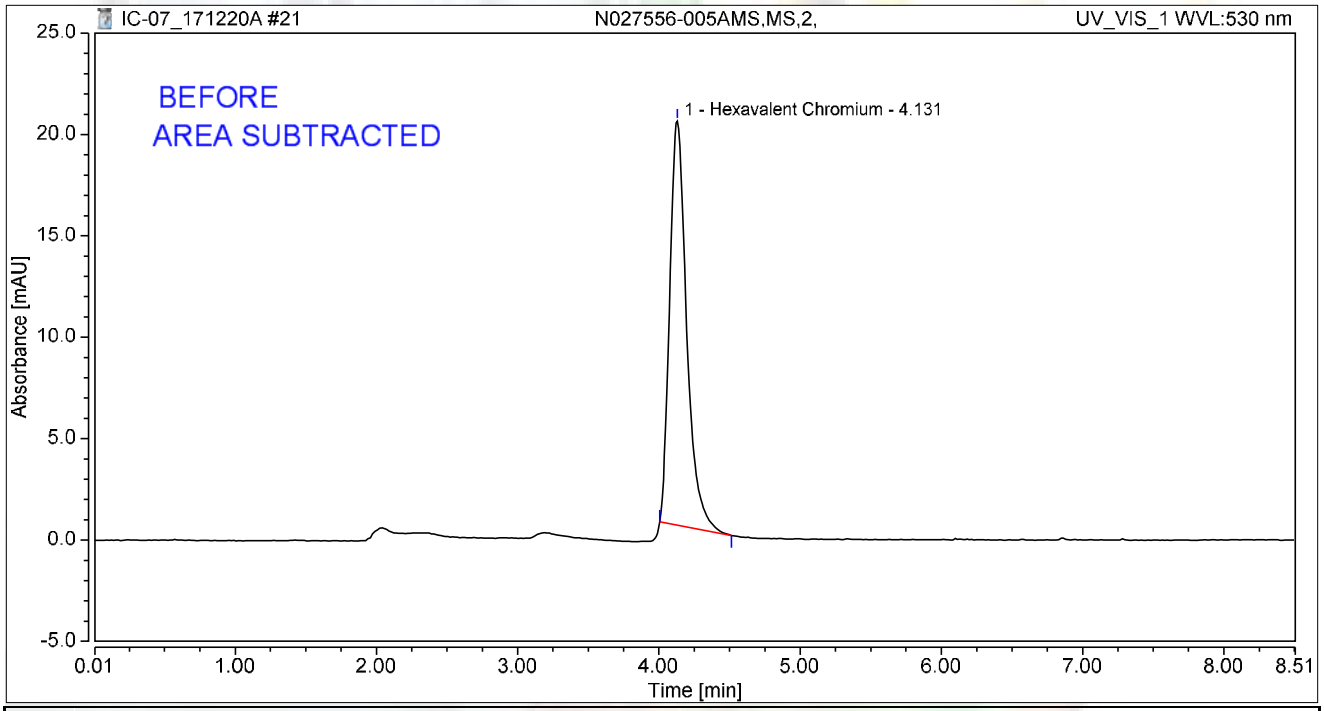
Chromatogram and Results

Injection Details

Injection Name:	**N027556-005AMS,MS,2,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 10:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.784	19.947	100.00	100.00	11.0894
Total:			**2.784**	**19.947**	**100.00**	**100.00**	

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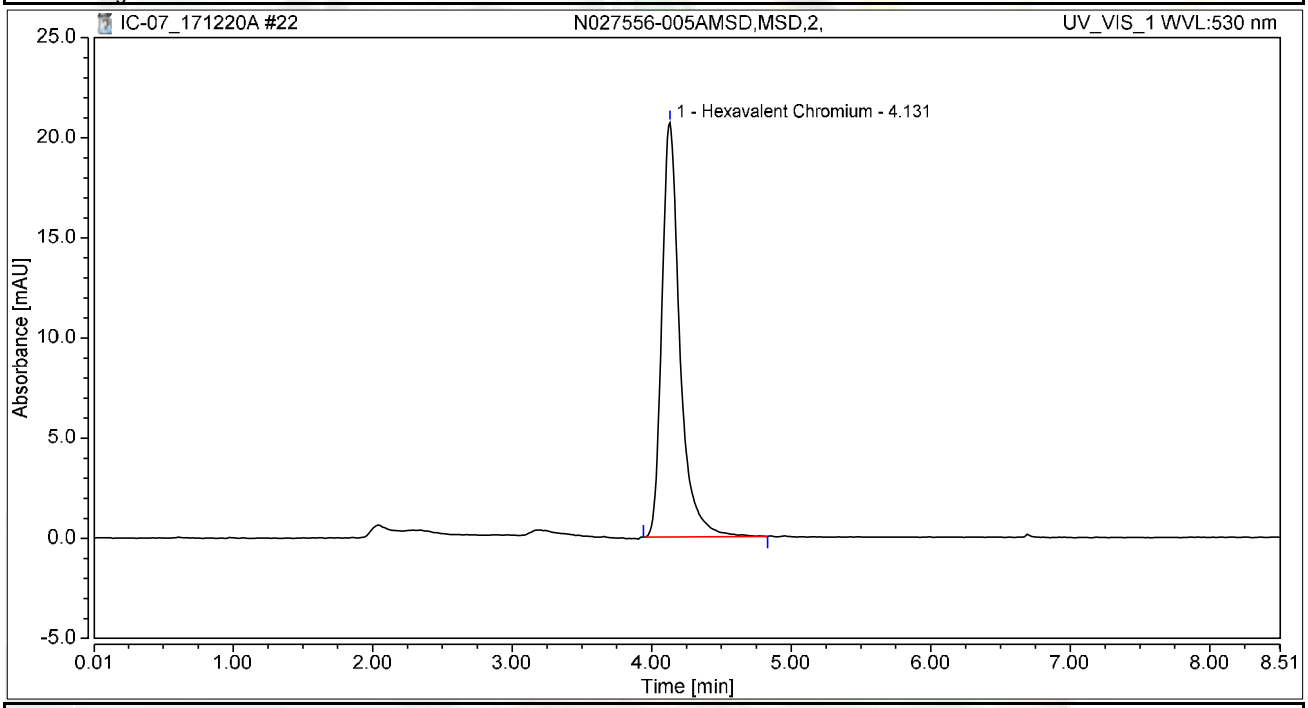
Chromatogram and Results

Injection Details

Injection Name:	**N027556-005AMSD,MSD,2,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 10:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	3.087	20.677	100.00	100.00	12.2950
Total:			**3.087**	**20.677**	**100.00**	**100.00**	

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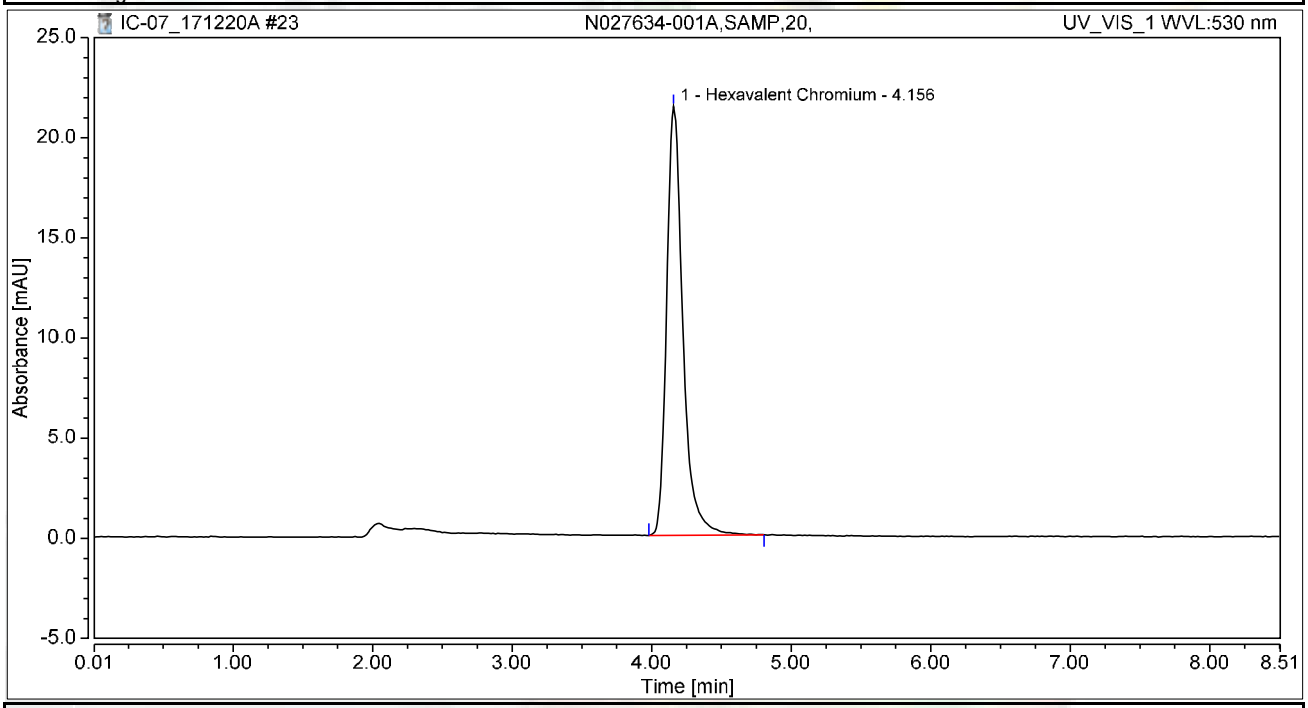
Chromatogram and Results

Injection Details

Injection Name:	**N027634-001A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 10:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

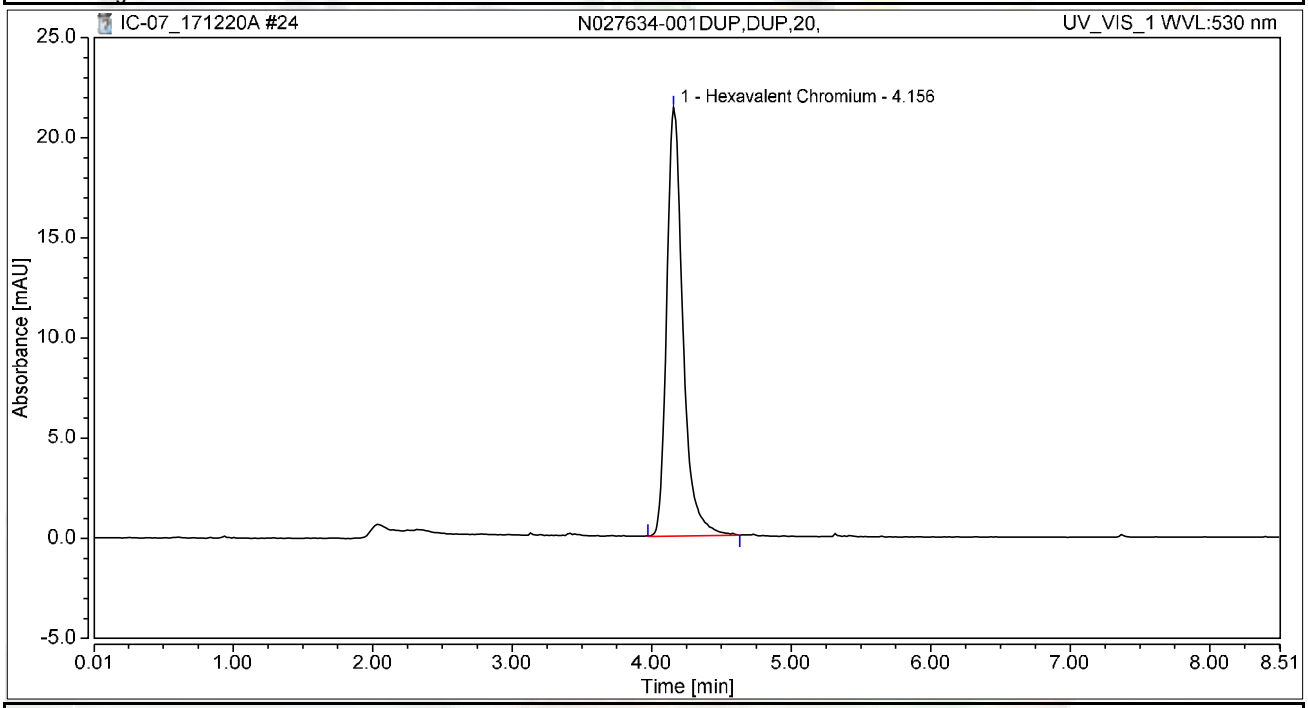
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.890	21.420	100.00	100.00	11.5095
Total:			**2.890**	**21.420**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027634-001DUP,DUP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 10:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

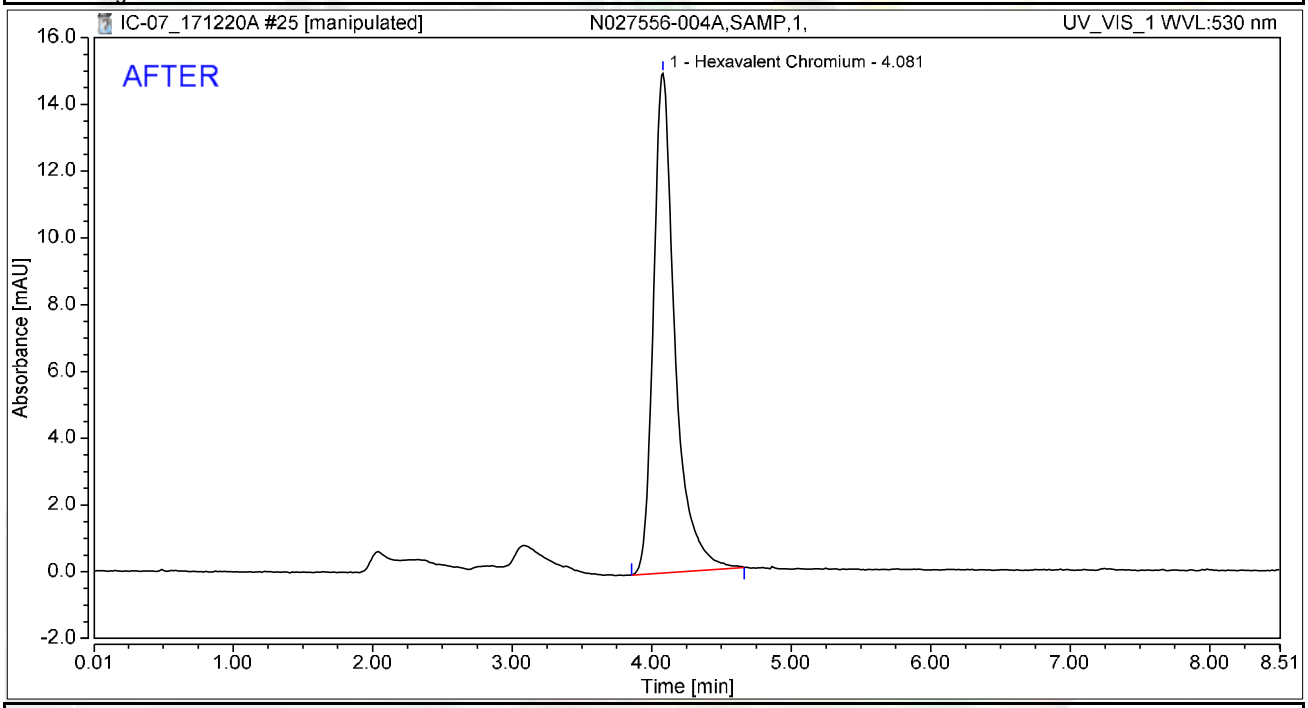
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.878	21.390	100.00	100.00	11.4627
Total:			**2.878**	**21.390**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027556-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 11:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	2.686	14.971	100.00	100.00	10.6988
Total:			**2.686**	**14.971**	**100.00**	**100.00**	

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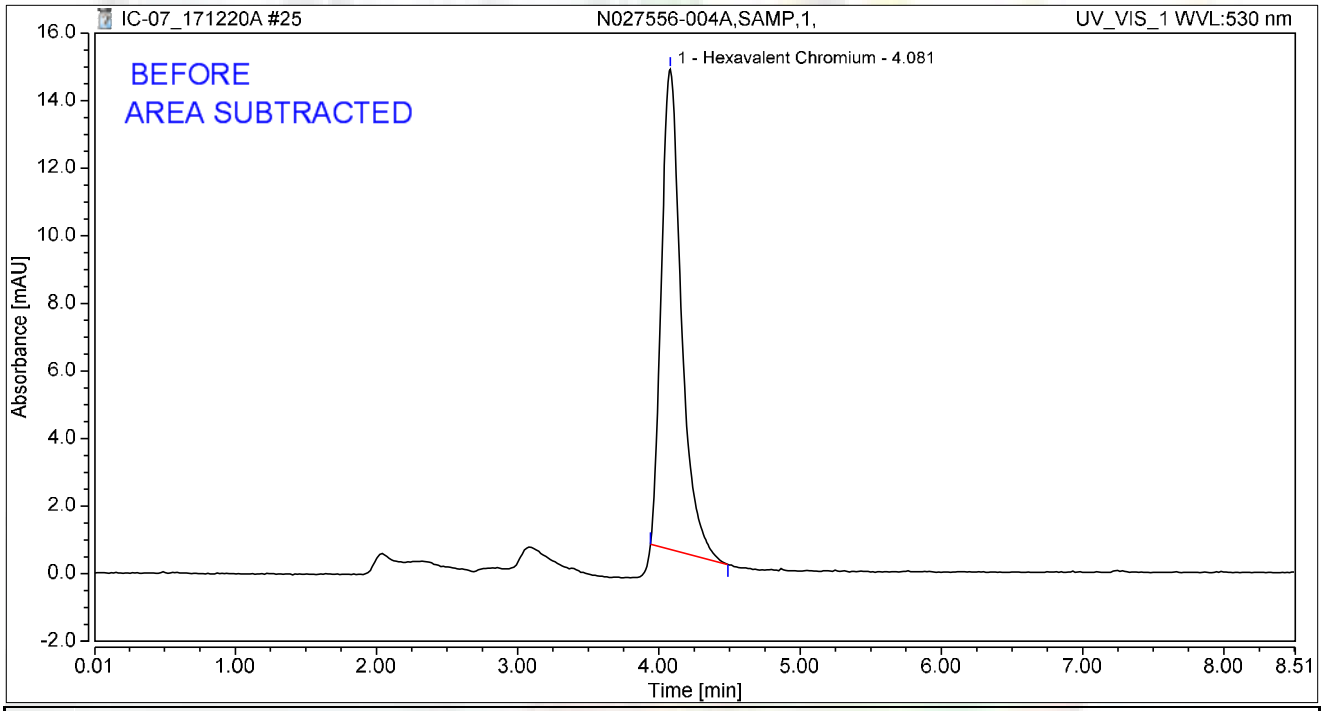
Chromatogram and Results

Injection Details

Injection Name:	**N027556-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 11:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	2.338	14.219	100.00	100.00	9.3122
Total:			**2.338**	**14.219**	**100.00**	**100.00**	

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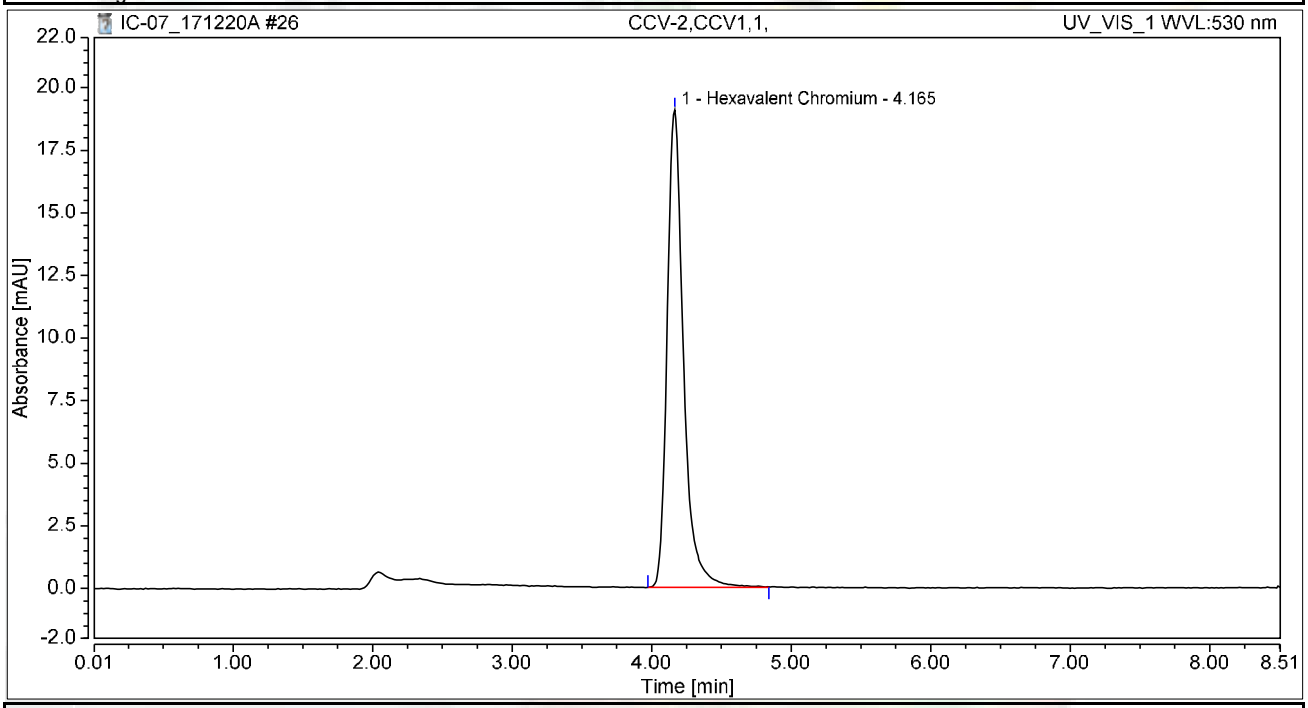
Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 11:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

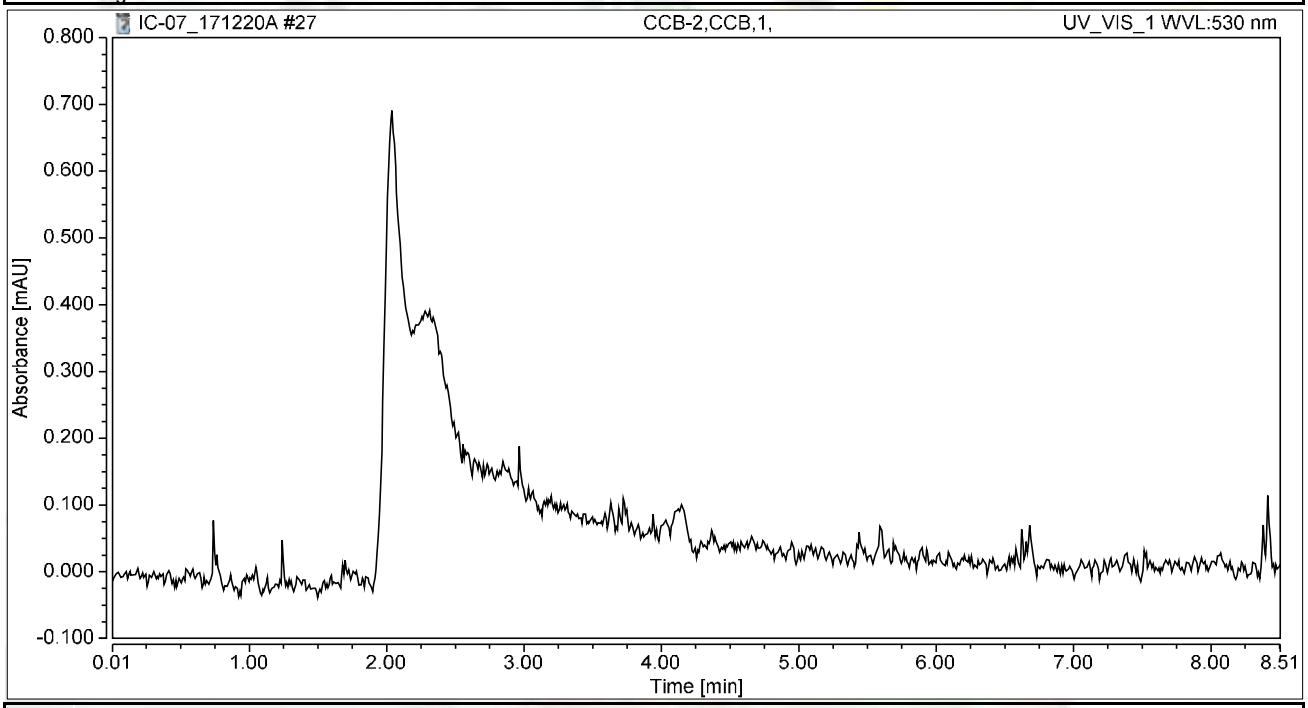
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.584	19.069	100.00	100.00	10.2917
Total:			**2.584**	**19.069**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 11:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

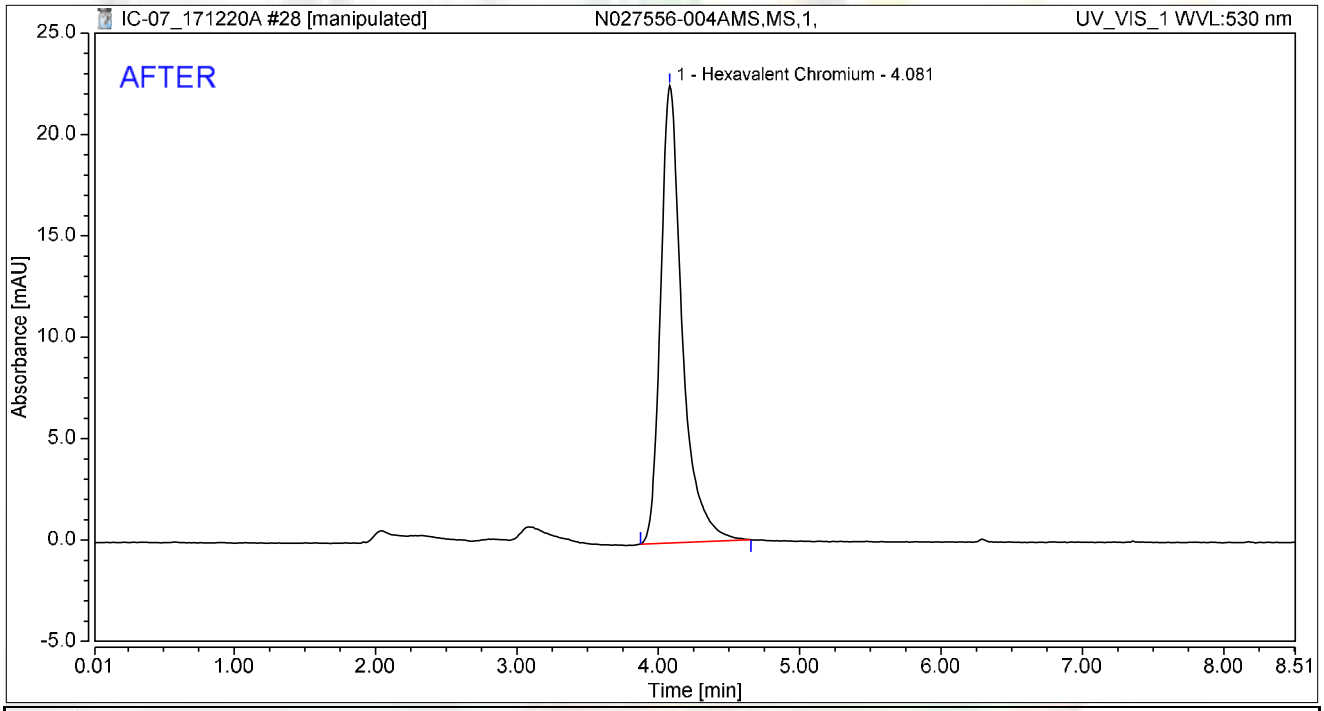
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027556-004AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 11:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	4.006	22.557	100.00	100.00	15.9560
Total:			**4.006**	**22.557**	**100.00**	**100.00**	

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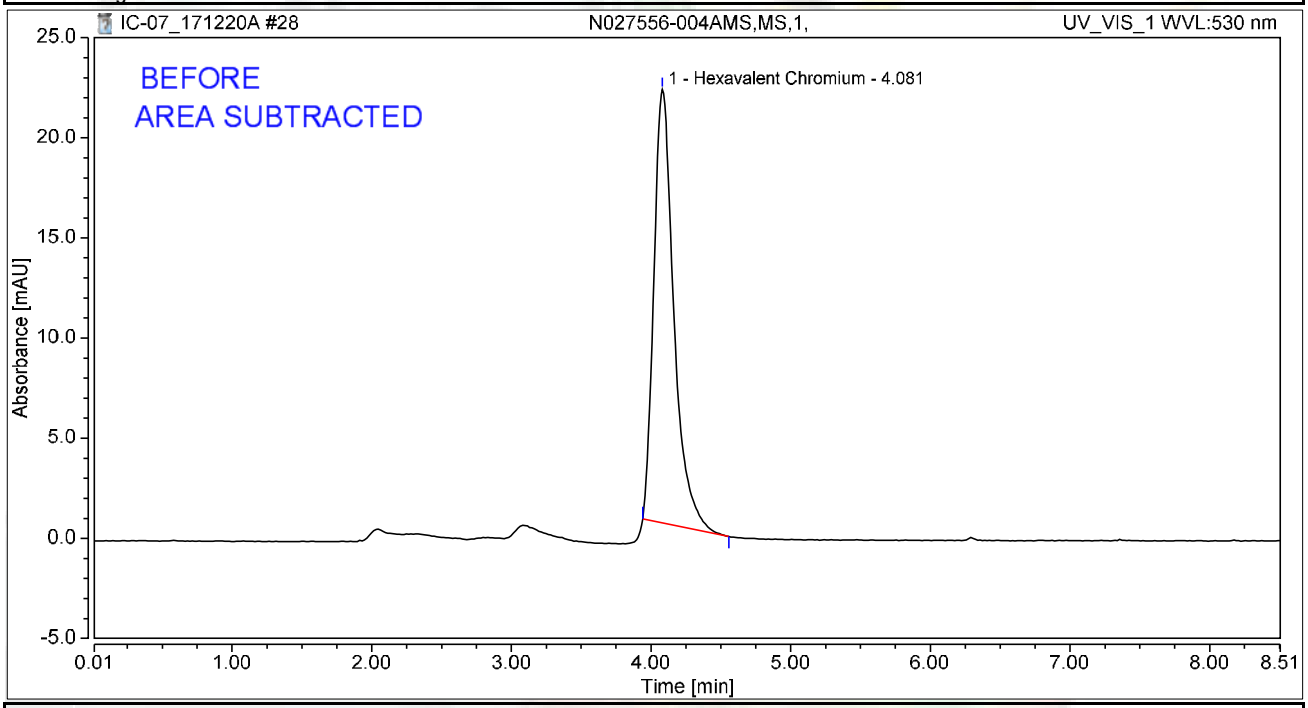
Chromatogram and Results

Injection Details

Injection Name:	**N027556-004AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 11:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	3.581	21.627	100.00	100.00	14.2601
Total:			**3.581**	**21.627**	**100.00**	**100.00**	

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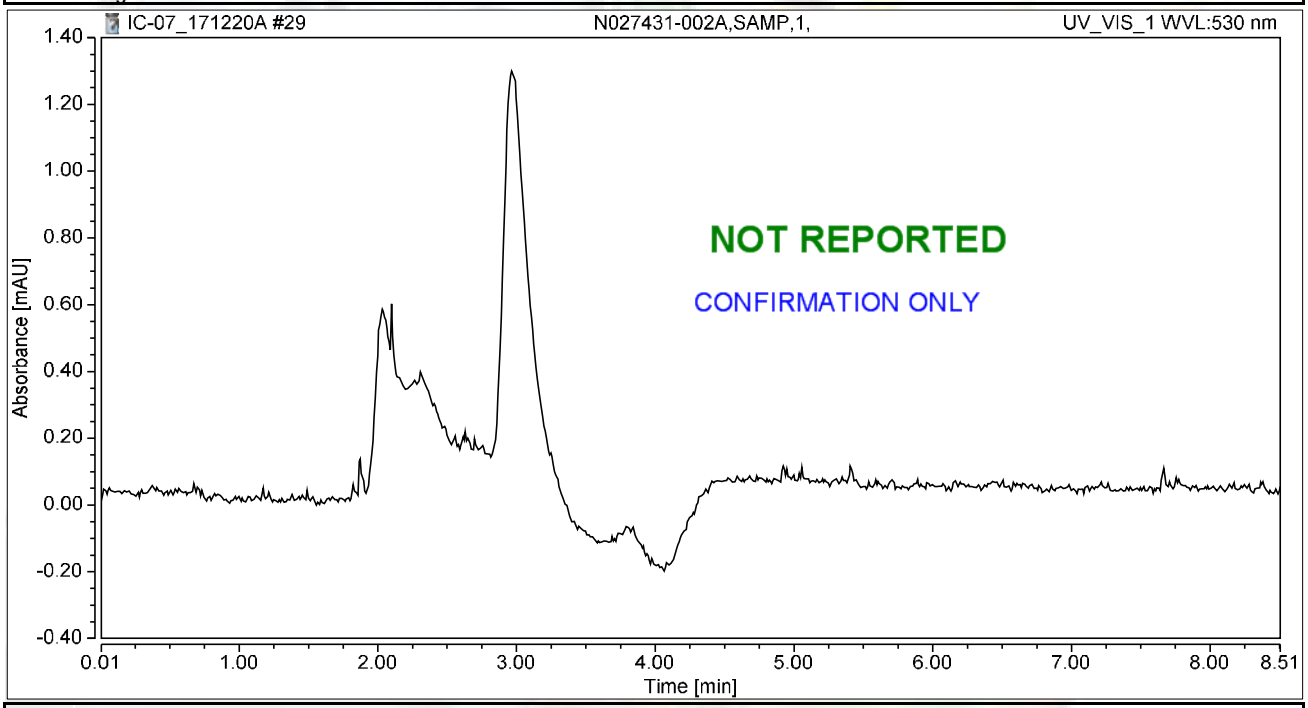
Chromatogram and Results

Injection Details

Injection Name:	**N027431-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 11:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

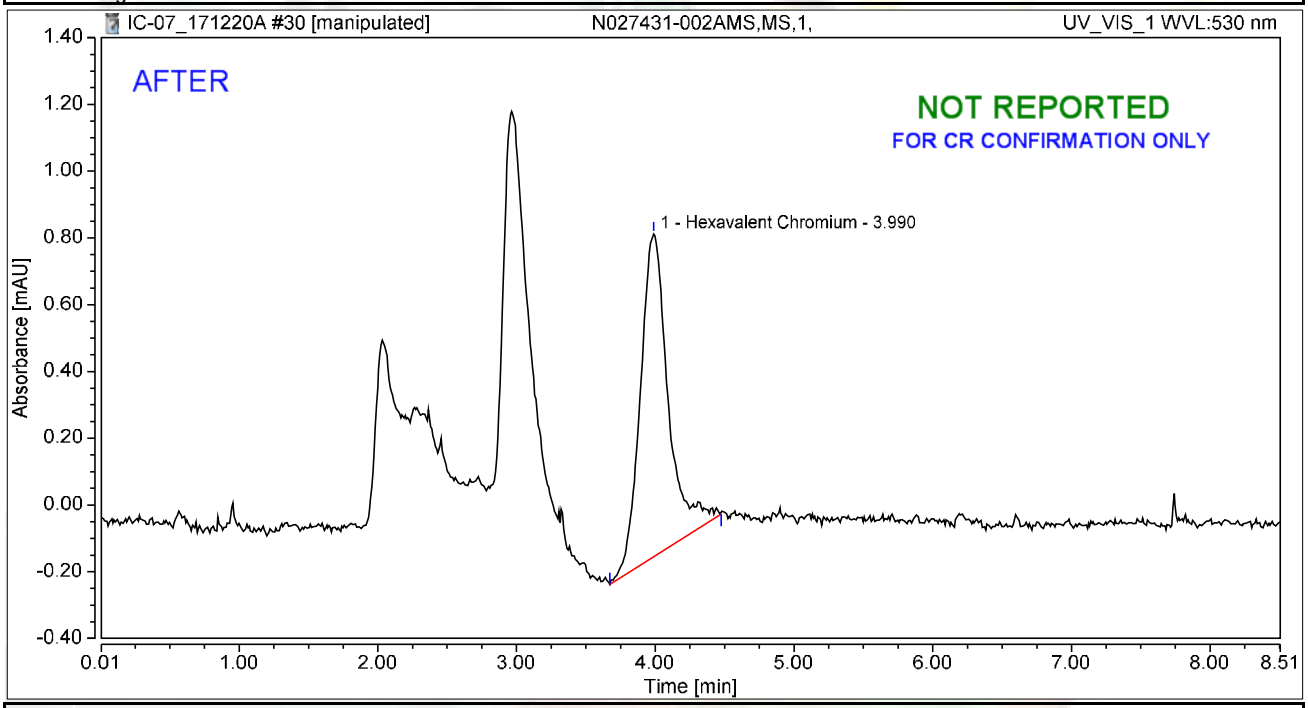
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027431-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 11:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.990	0.226	0.967	100.00	100.00	0.9011
Total:			**0.226**	**0.967**	**100.00**	**100.00**	

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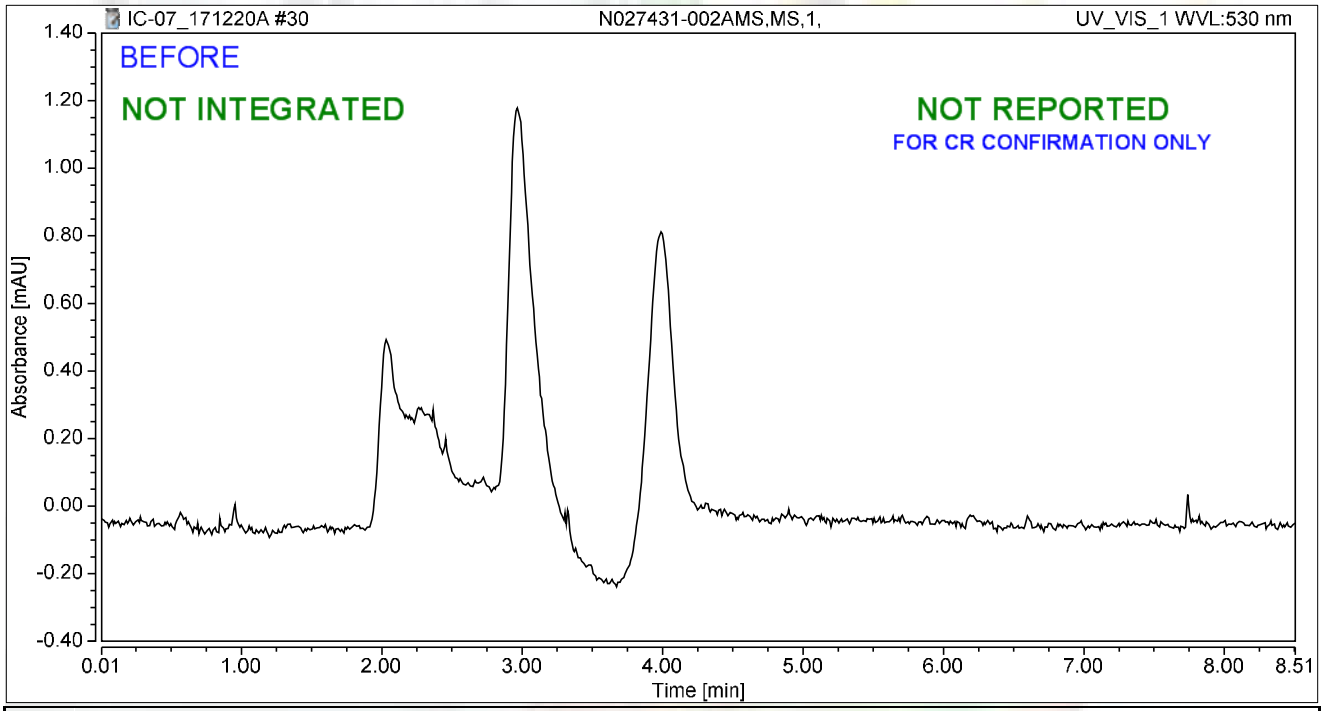
Chromatogram and Results

Injection Details

Injection Name:	**N027431-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 11:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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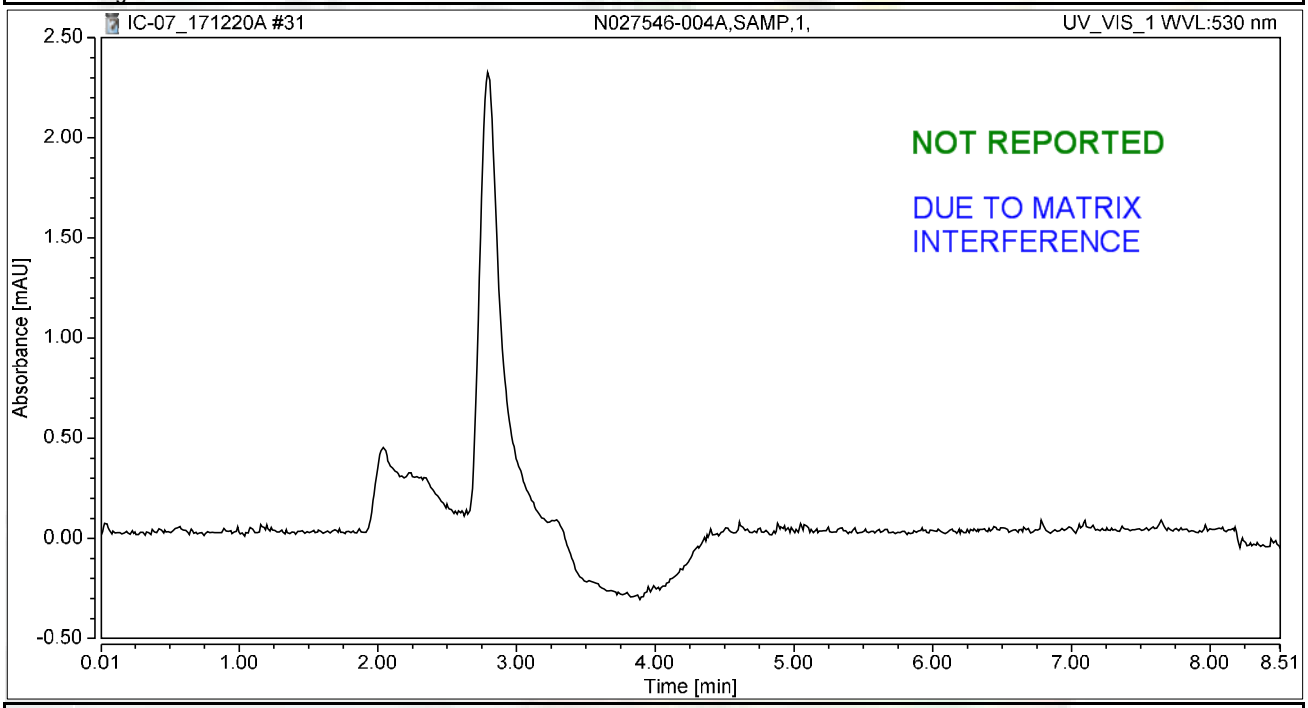
Chromatogram and Results

Injection Details

Injection Name:	**N027546-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 12:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

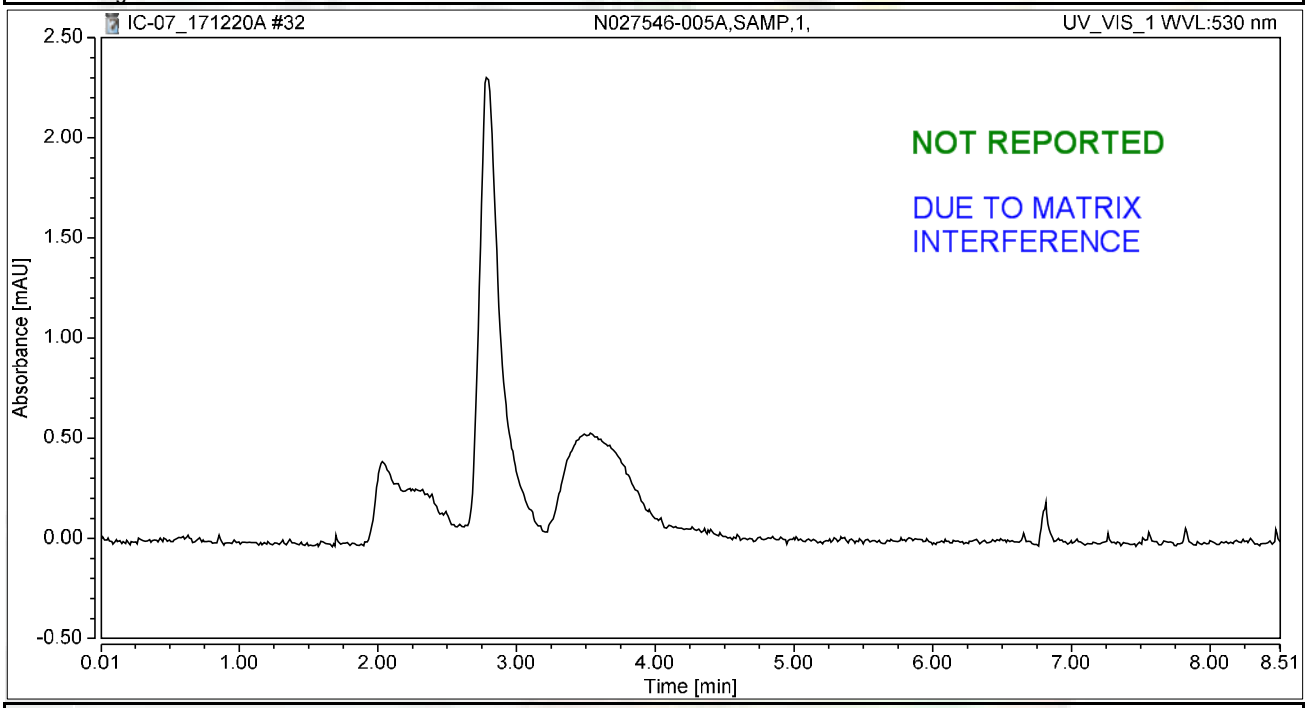
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 12:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

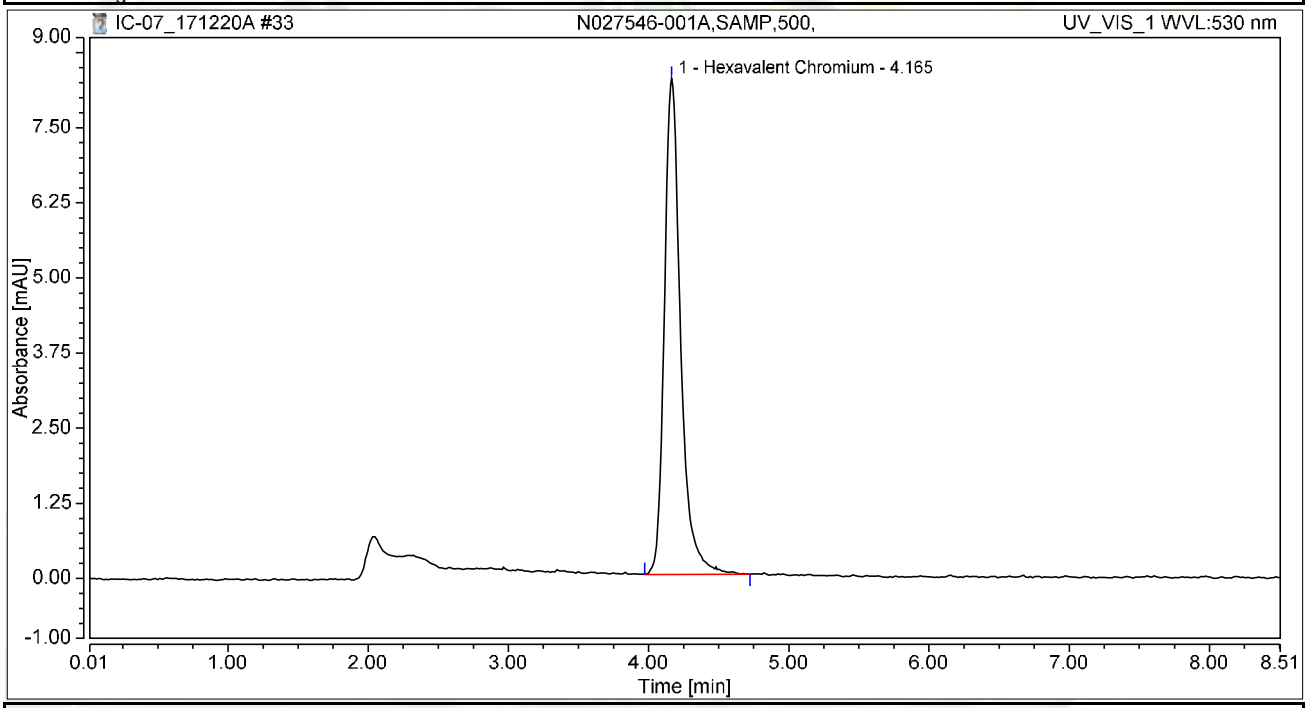
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-001A,SAMP,500,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 12:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

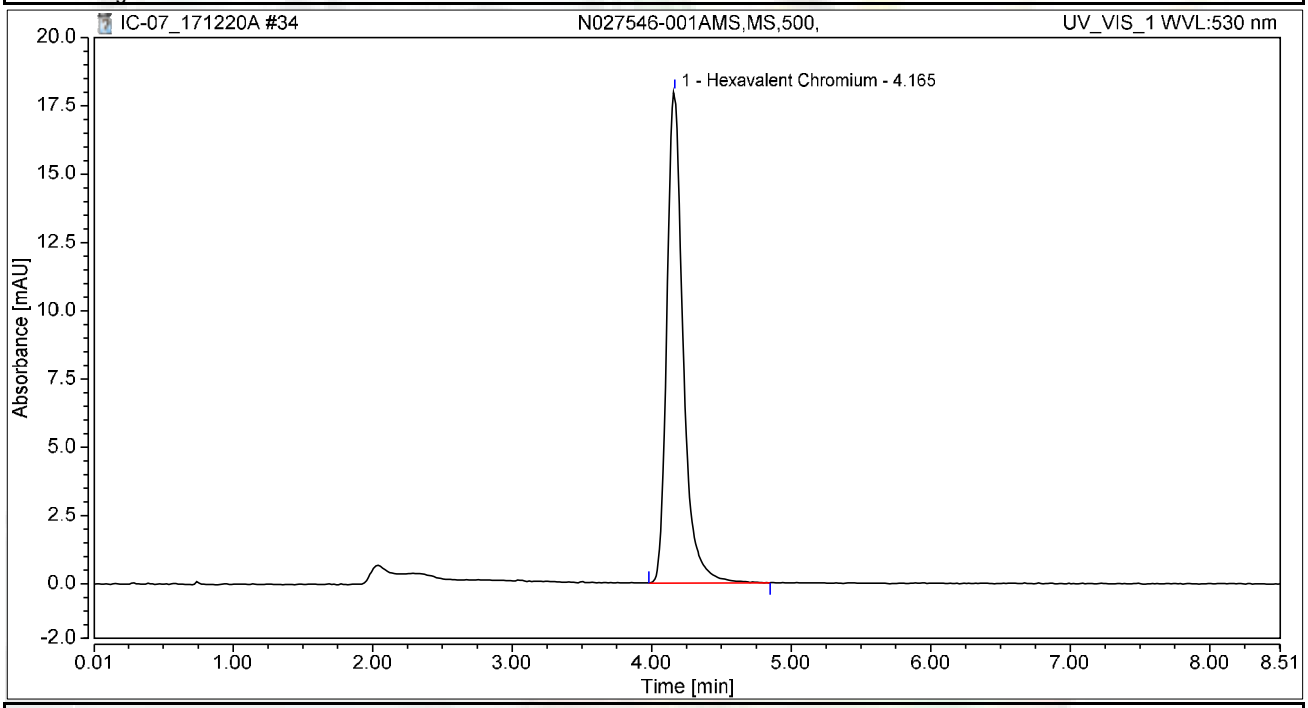
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.112	8.259	100.00	100.00	4.4281
Total:			**1.112**	**8.259**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-001AMS,MS,500,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 12:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

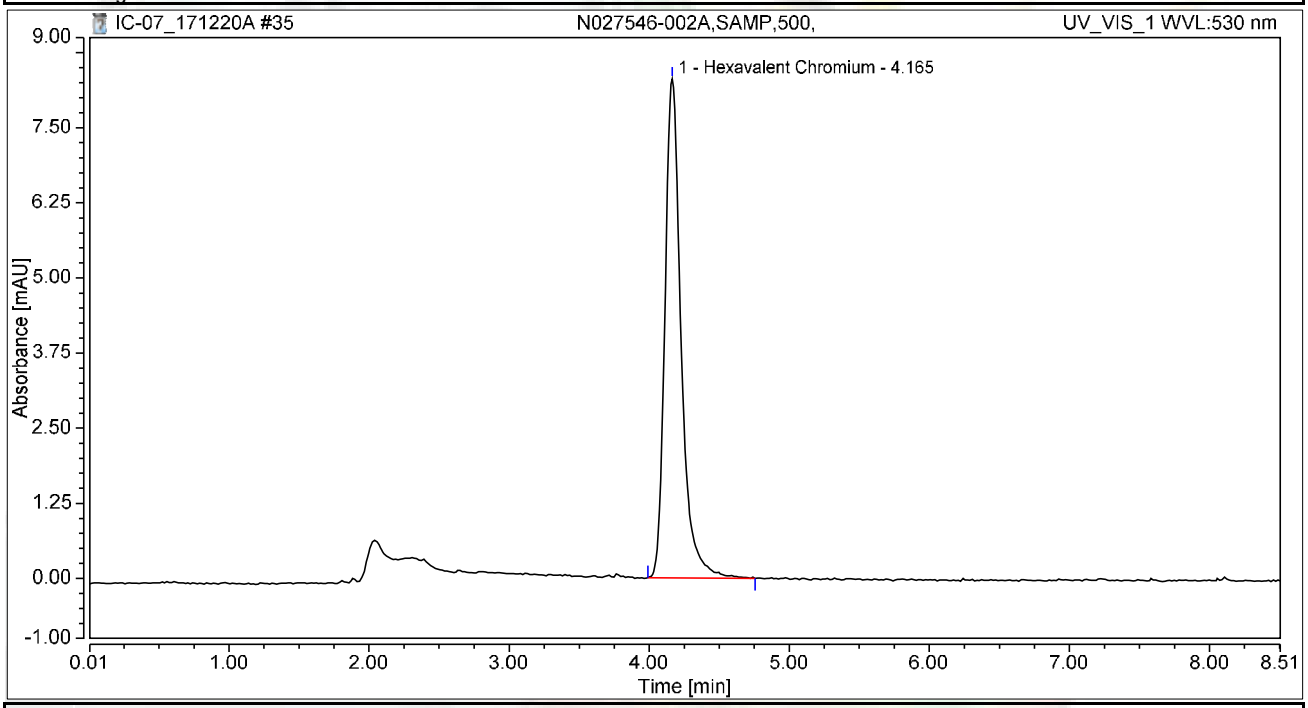
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.433	18.001	100.00	100.00	9.6883
Total:			**2.433**	**18.001**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-002A,SAMP,500,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 12:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

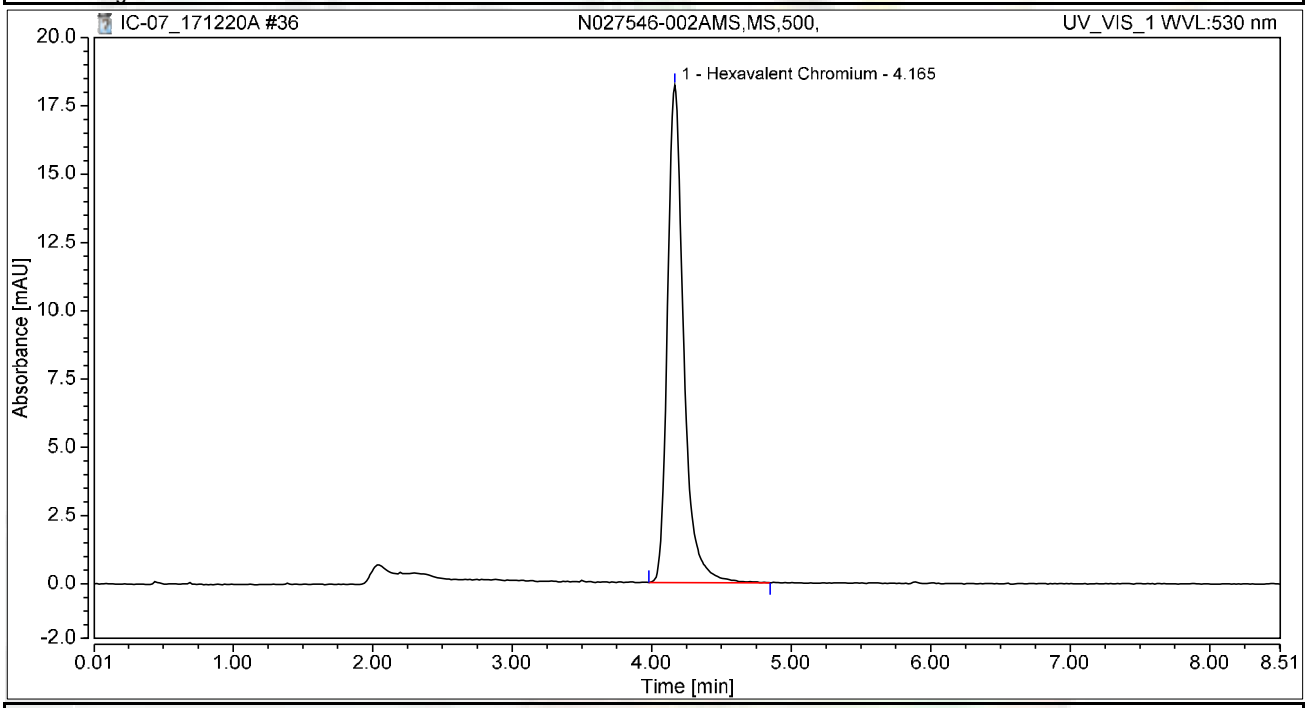
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.113	8.302	100.00	100.00	4.4328
Total:			**1.113**	**8.302**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-002AMS,MS,500,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 12:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

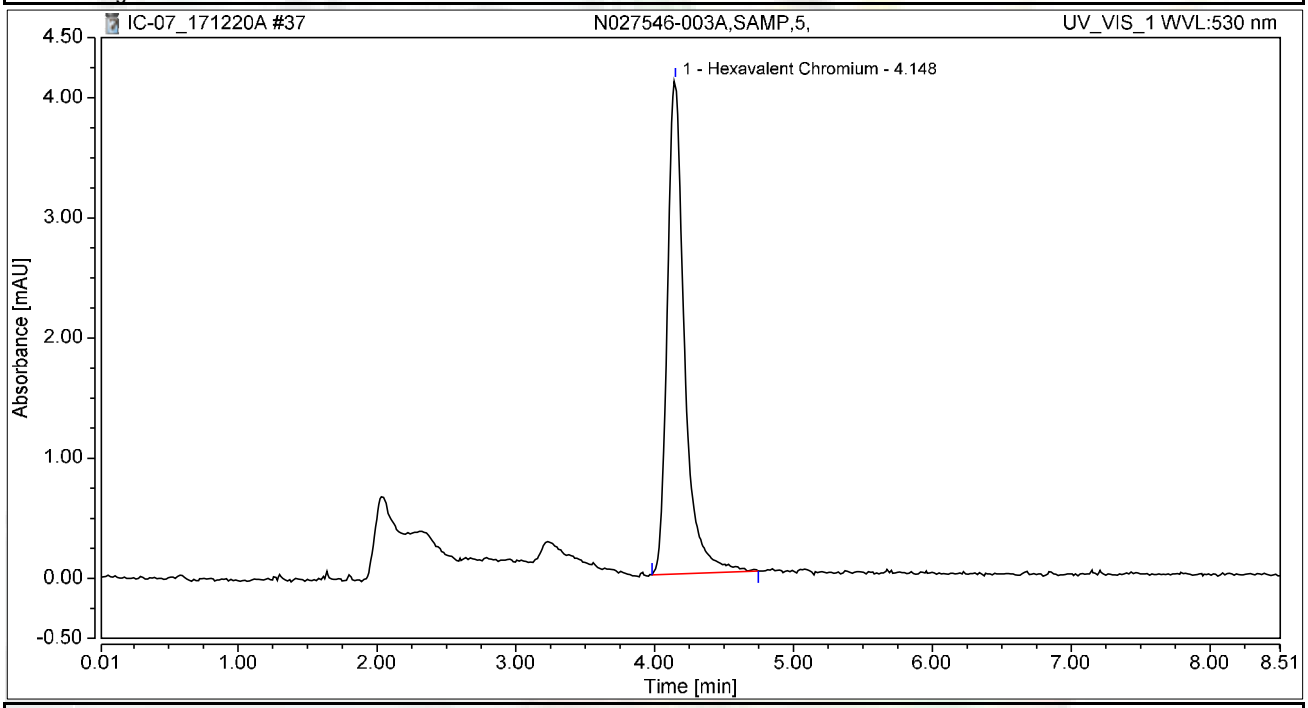
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.444	18.210	100.00	100.00	9.7349
Total:			**2.444**	**18.210**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-003A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 12:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

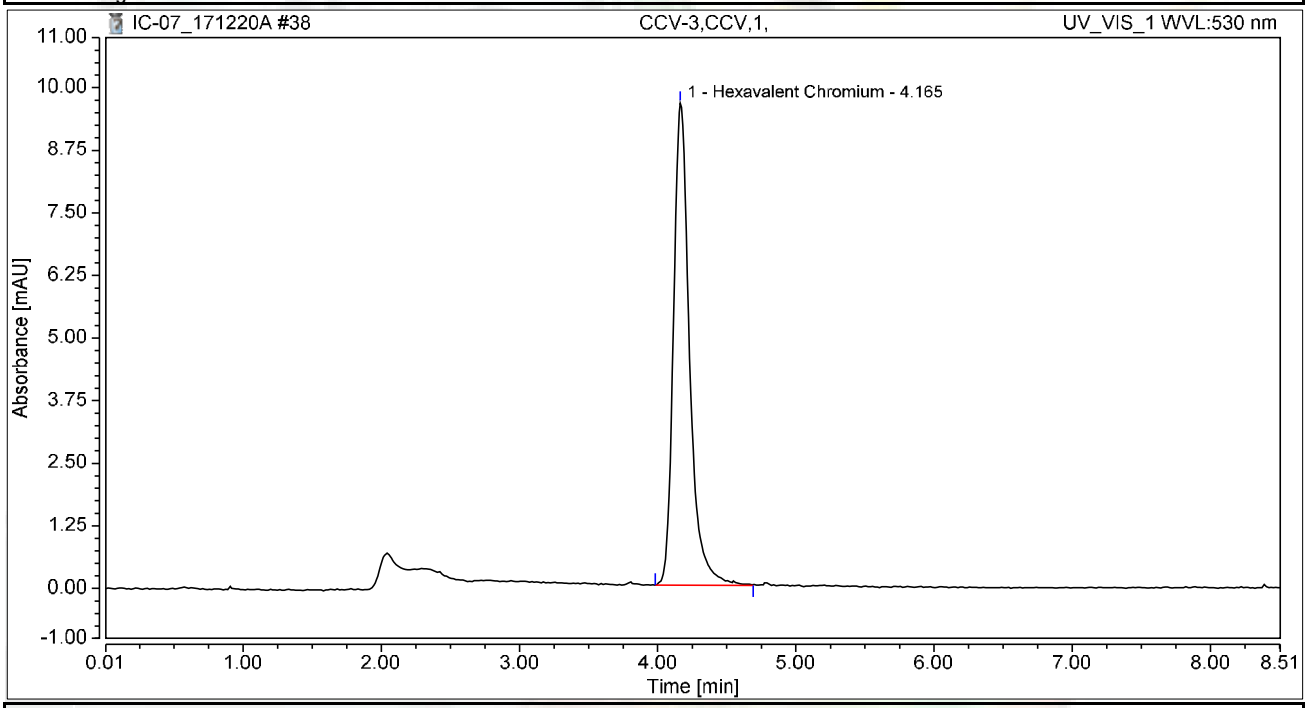
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.591	4.113	100.00	100.00	2.3556
Total:			**0.591**	**4.113**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

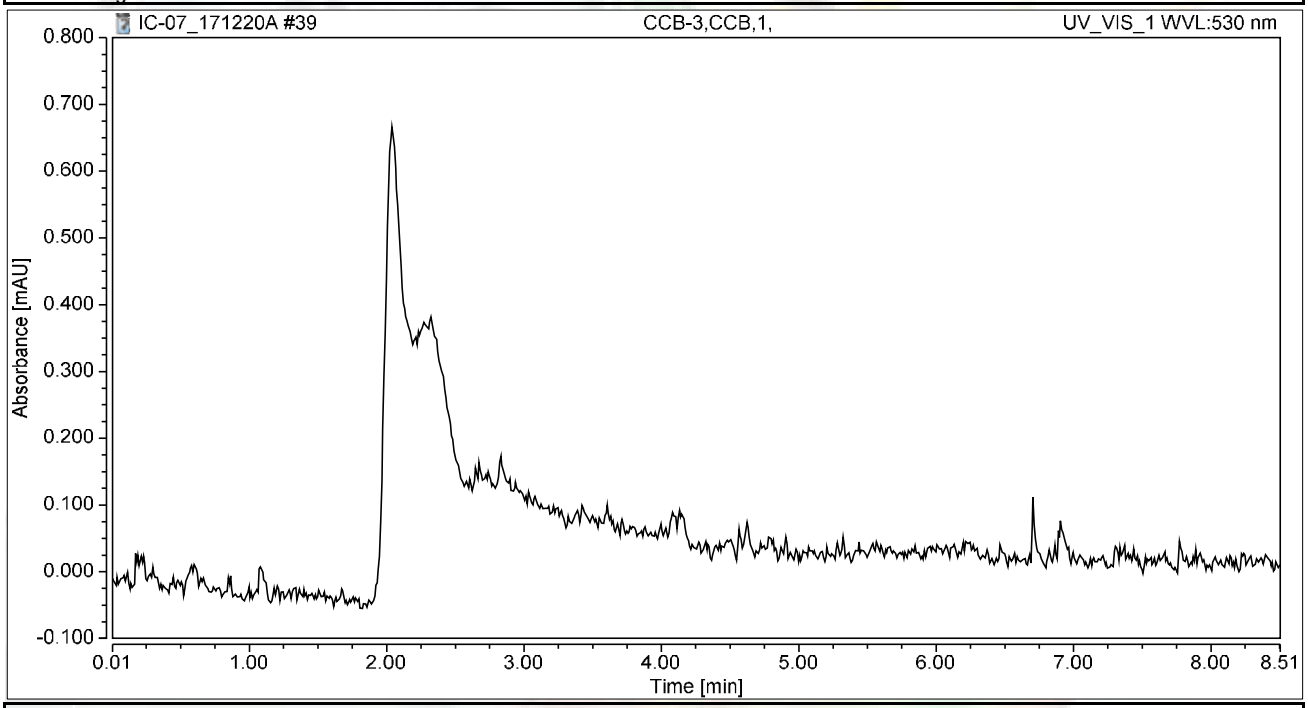
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.299	9.628	100.00	100.00	5.1744
Total:			**1.299**	**9.628**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 13:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

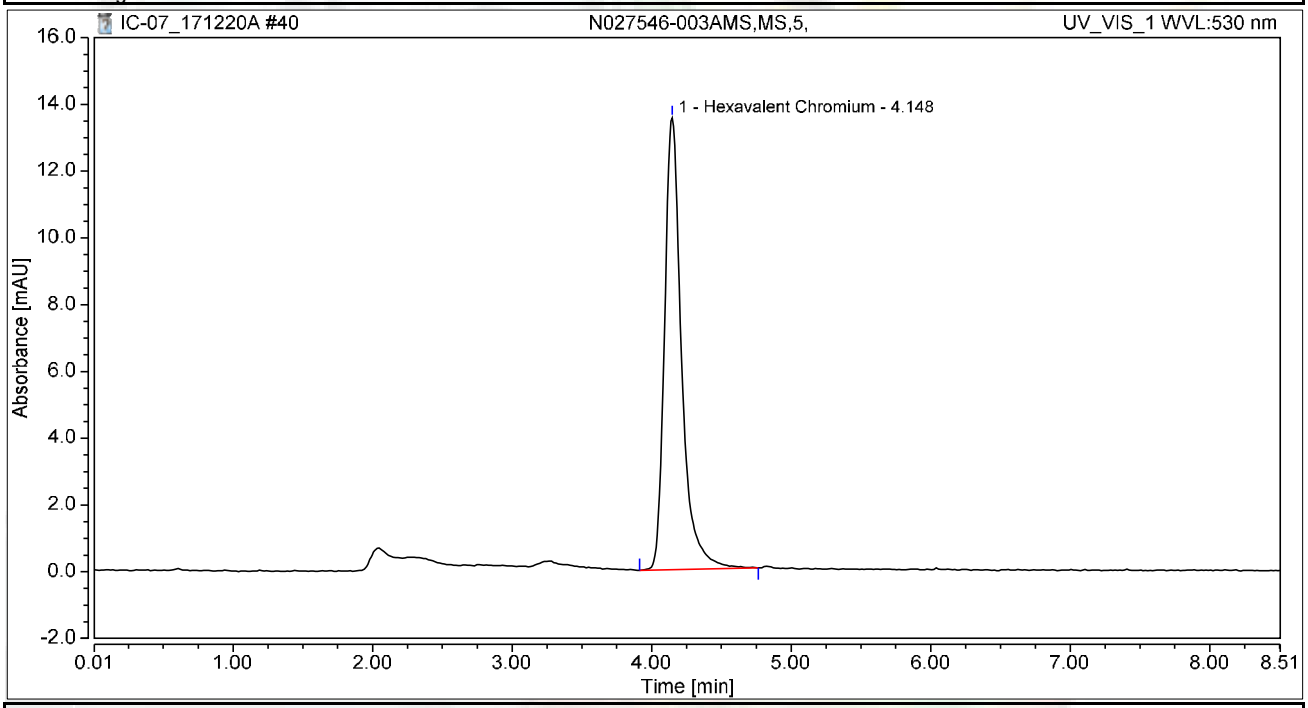
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-003AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 13:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

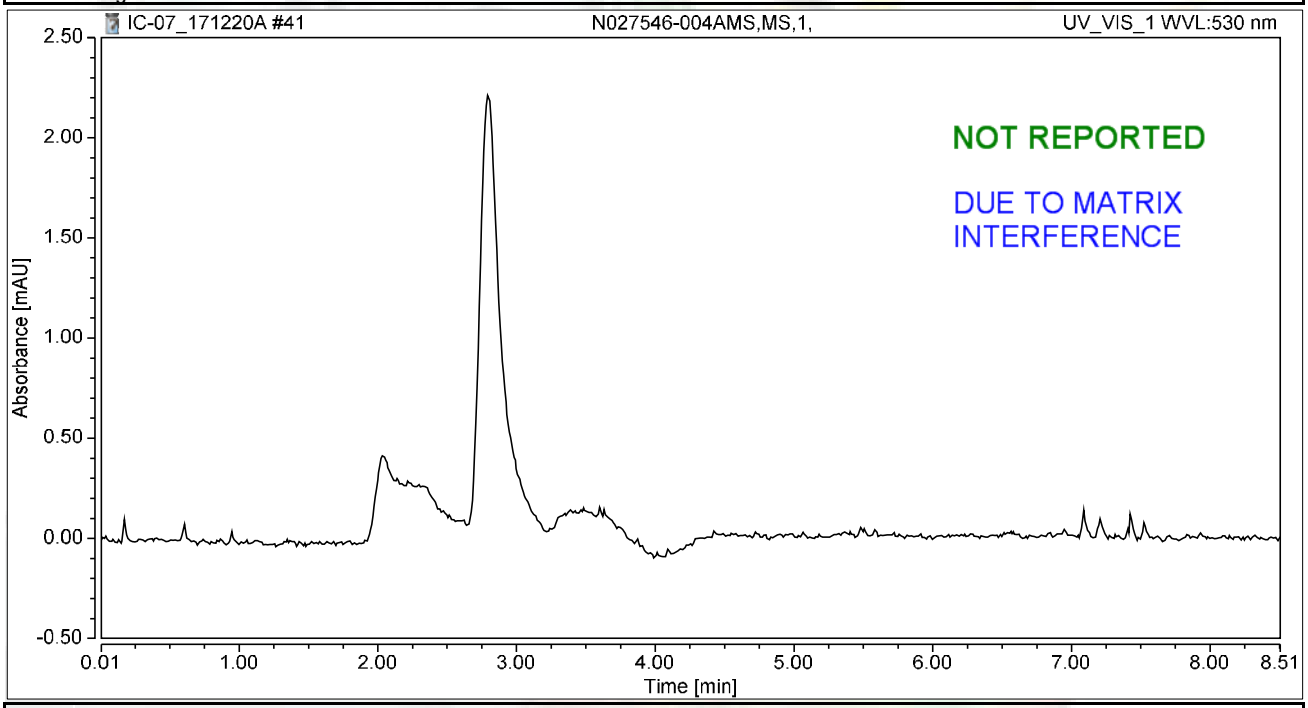
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.915	13.536	100.00	100.00	7.6276
Total:			**1.915**	**13.536**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 13:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

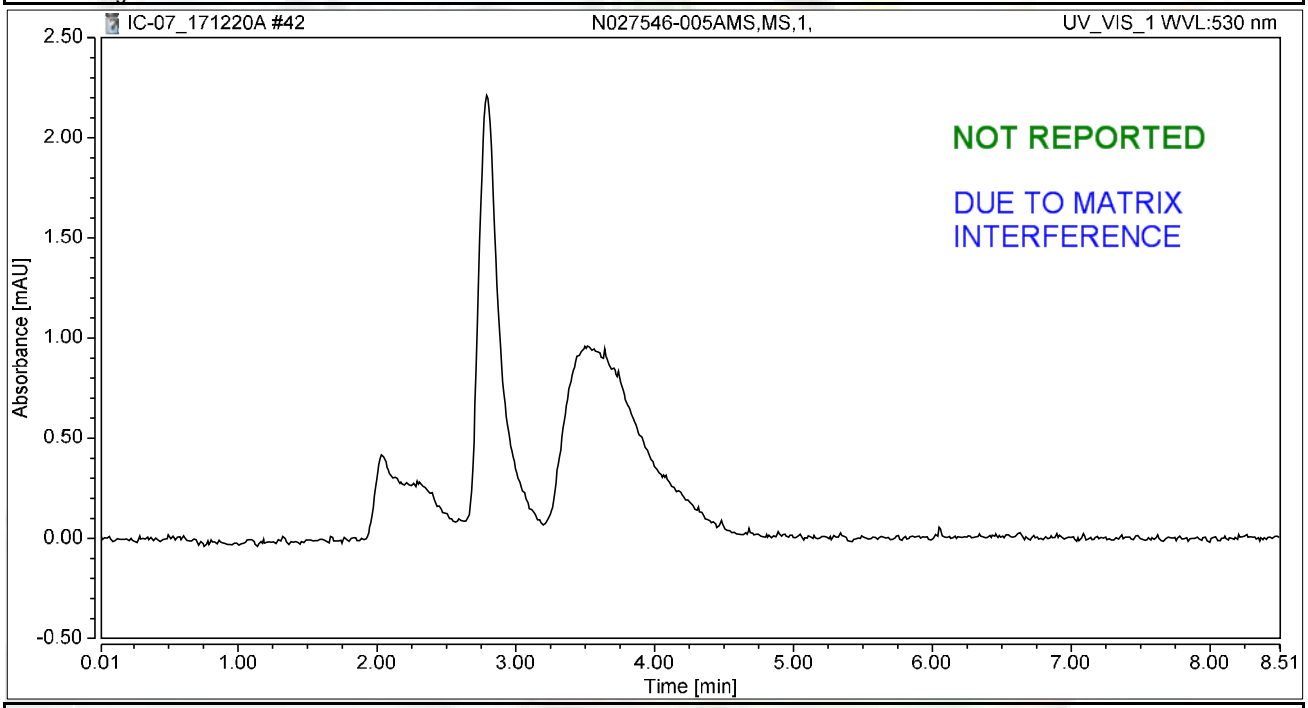
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-005AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 13:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

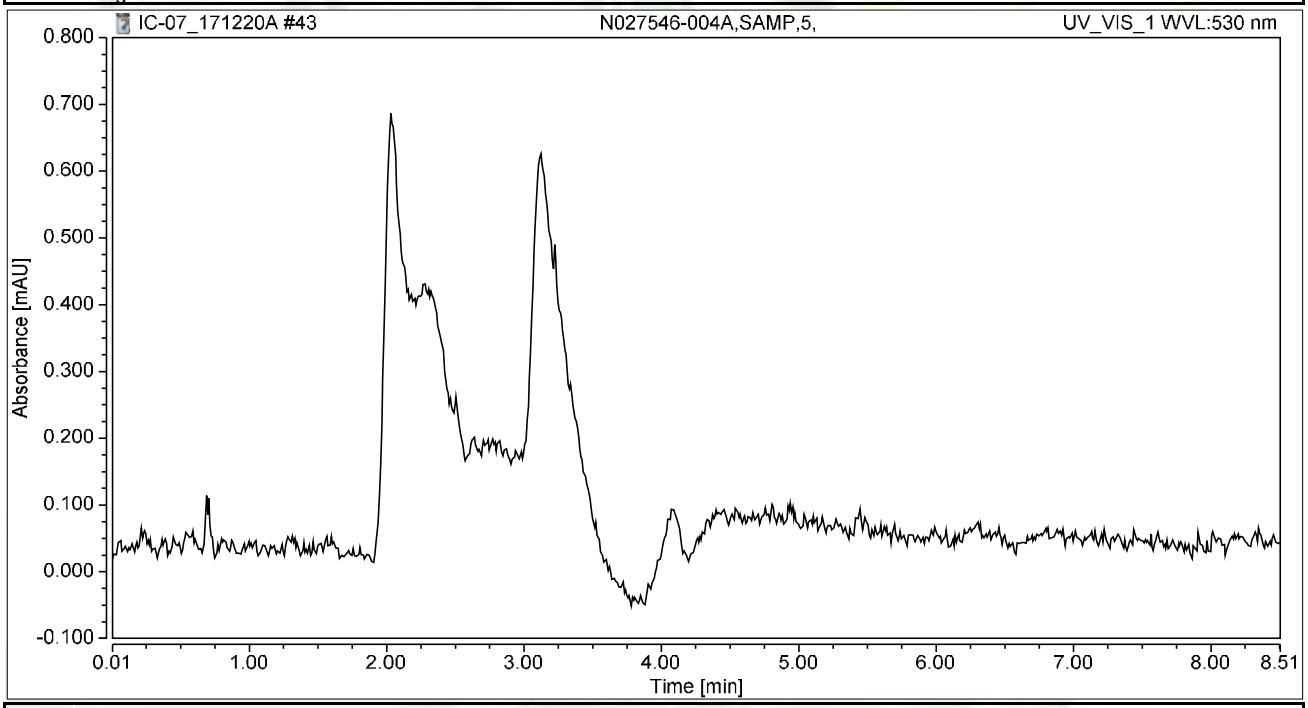
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 14:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

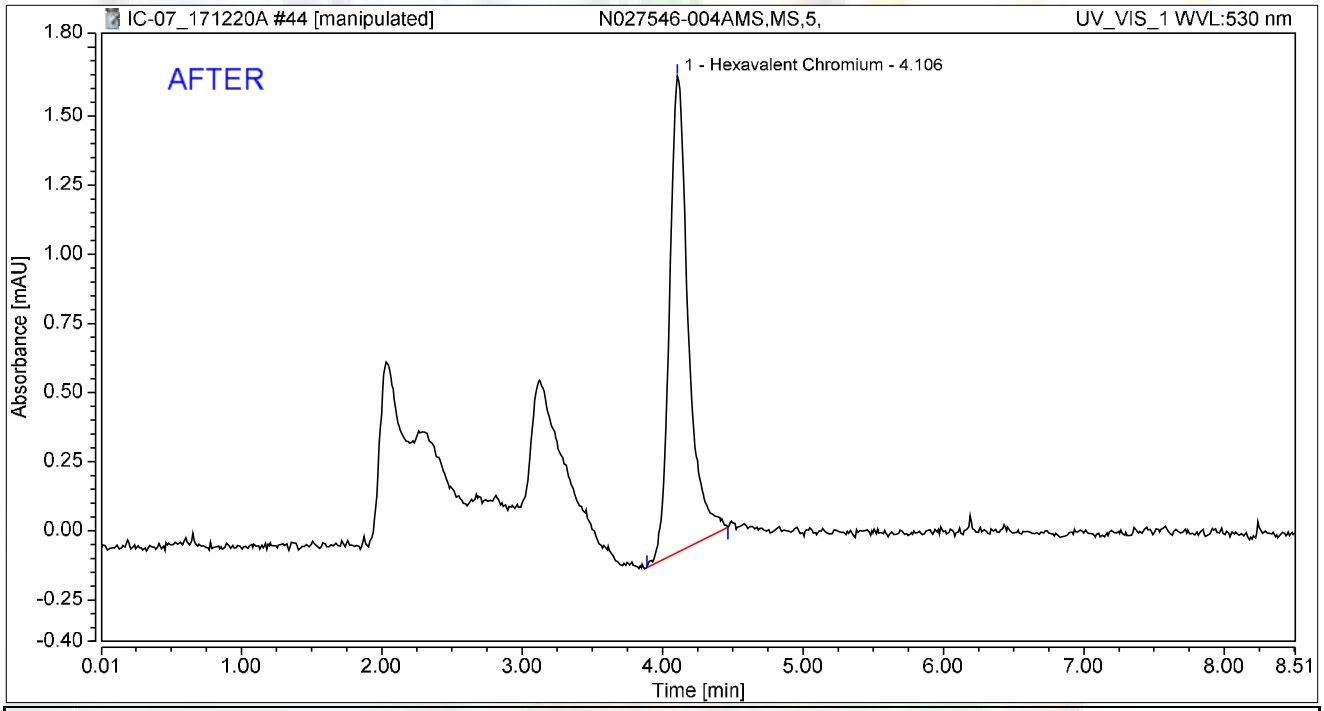
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 14:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.269	1.722	100.00	100.00	1.0695
Total:			**0.269**	**1.722**	**100.00**	**100.00**	

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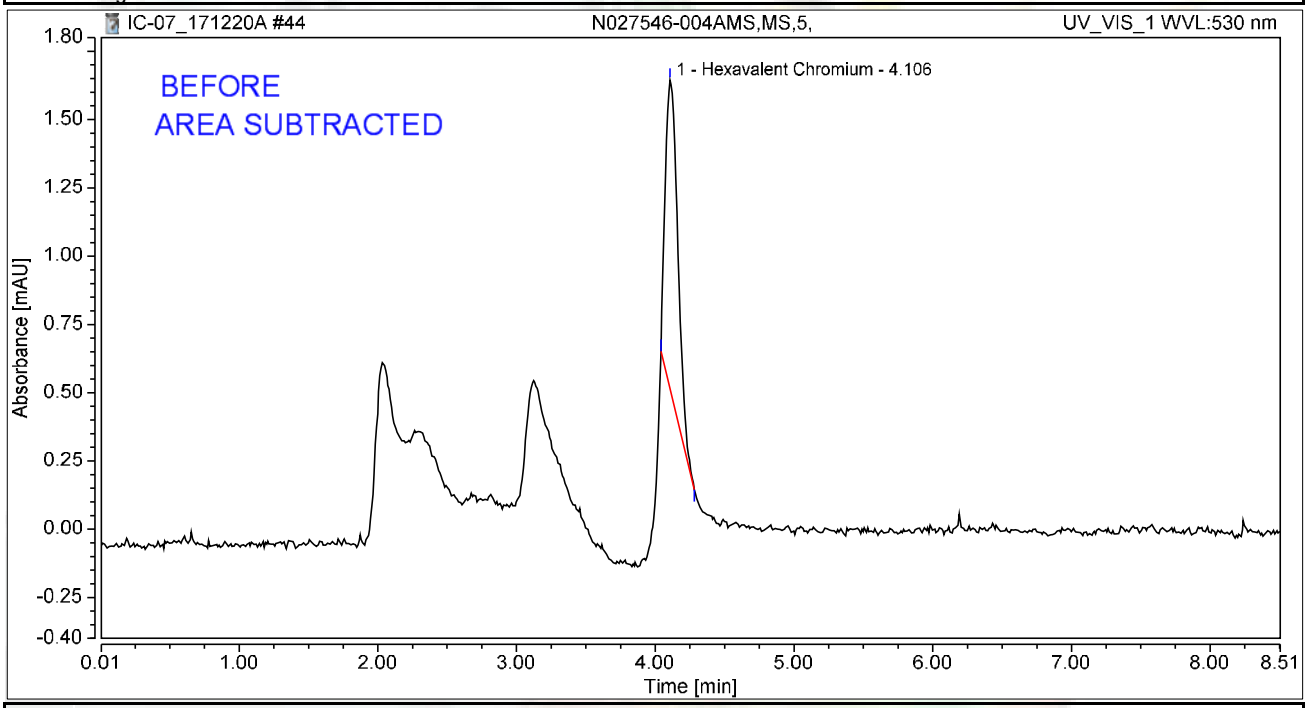
Chromatogram and Results

Injection Details

Injection Name:	**N027546-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 14:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.120	1.132	100.00	100.00	0.4763
Total:			**0.120**	**1.132**	**100.00**	**100.00**	

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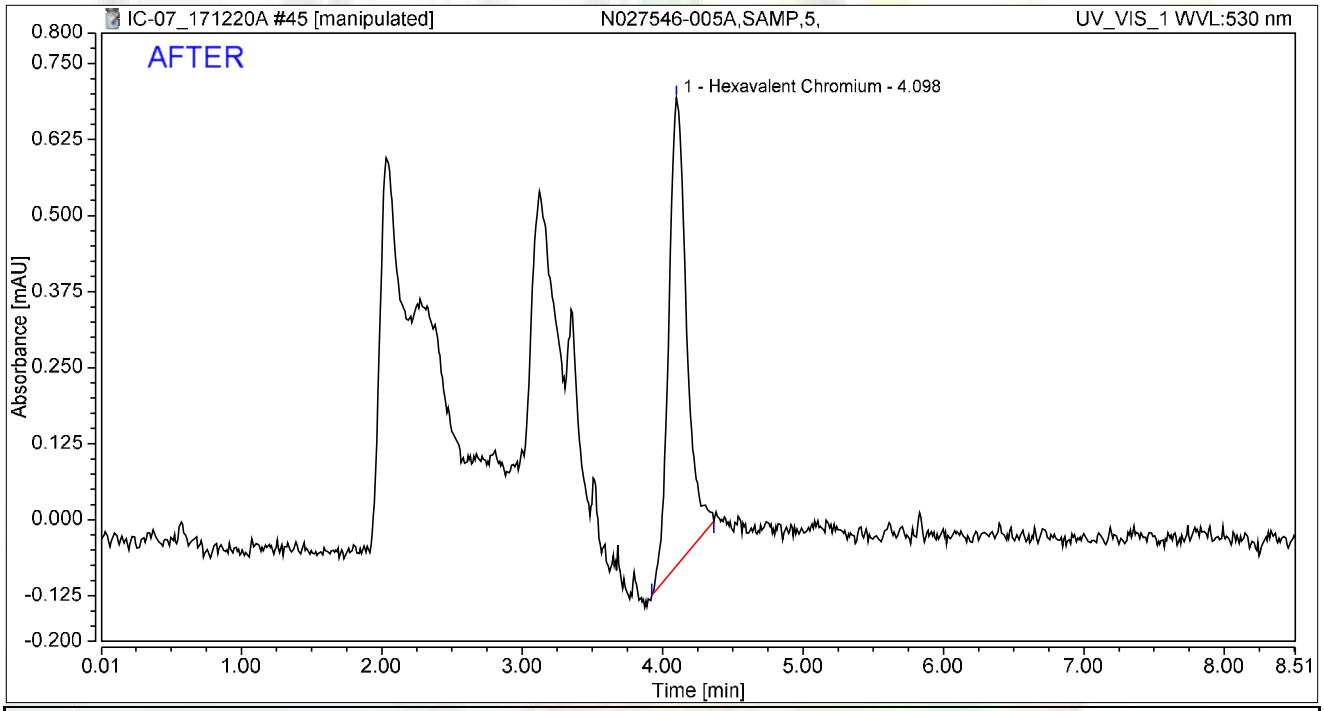
Chromatogram and Results

Injection Details

Injection Name:	**N027546-005A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 14:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.113	0.770	100.00	100.00	0.4517
Total:			**0.113**	**0.770**	**100.00**	**100.00**	

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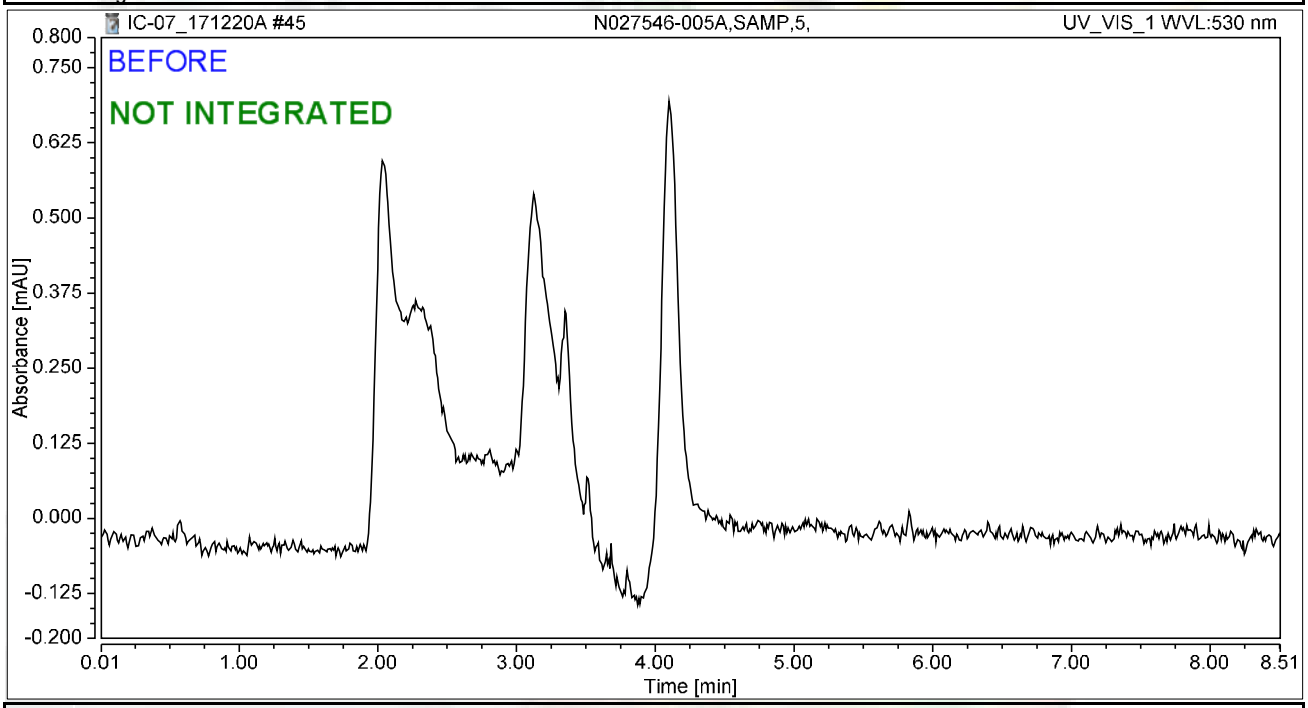
Chromatogram and Results

Injection Details

Injection Name:	**N027546-005A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 14:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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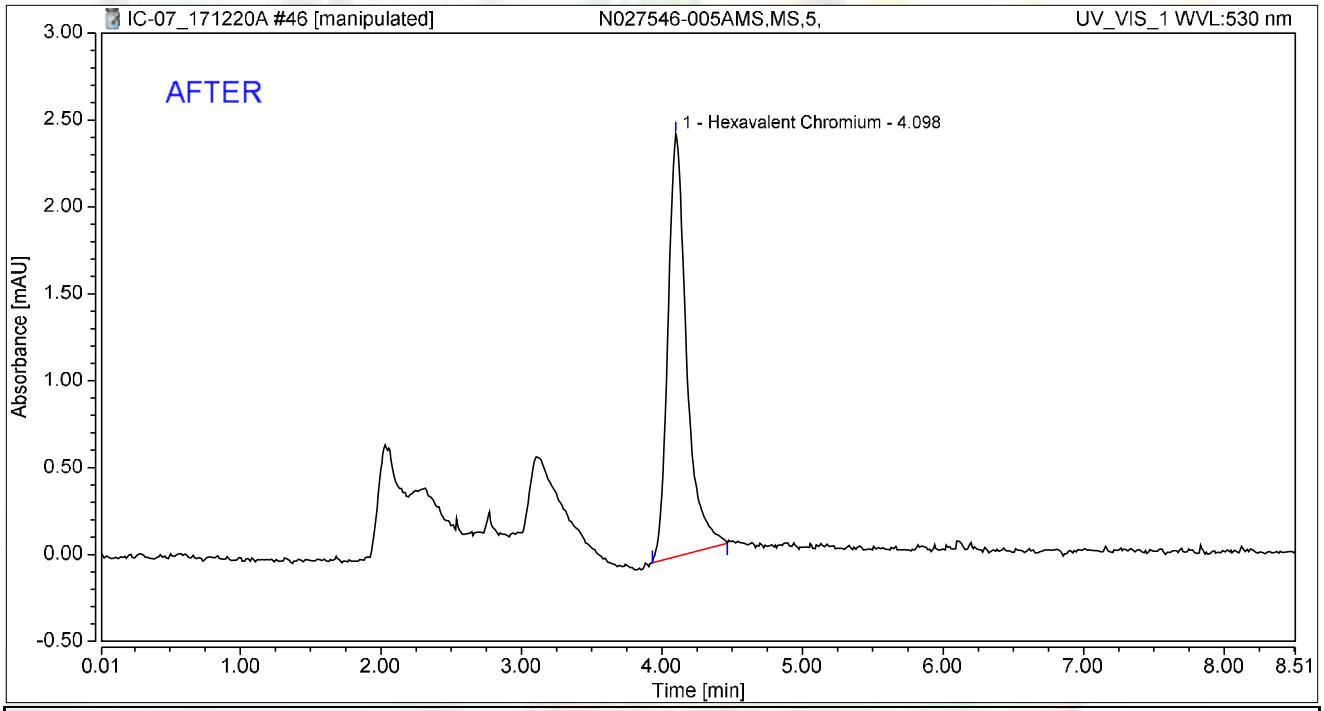
Chromatogram and Results

Injection Details

Injection Name:	**N027546-005AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 14:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.374	2.432	100.00	100.00	1.4902
Total:			**0.374**	**2.432**	**100.00**	**100.00**	

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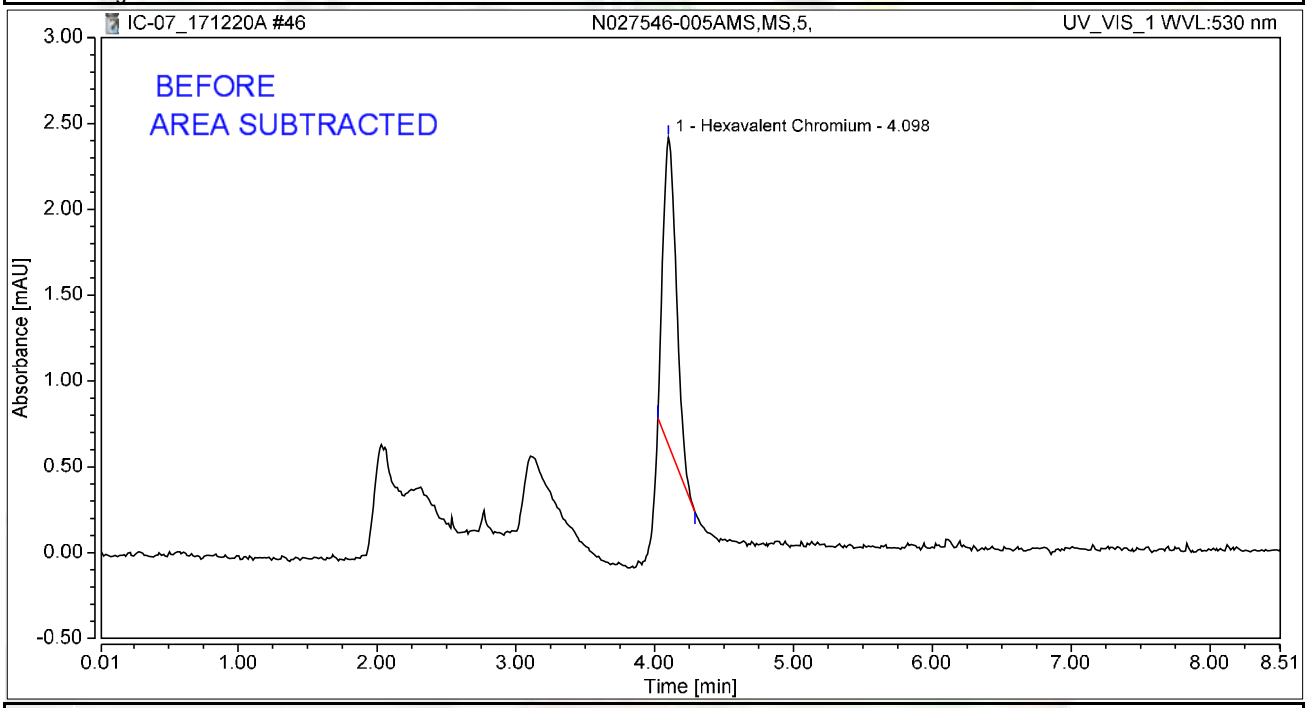
Chromatogram and Results

Injection Details

Injection Name:	**N027546-005AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 14:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.200	1.788	100.00	100.00	0.7963
Total:			**0.200**	**1.788**	**100.00**	**100.00**	

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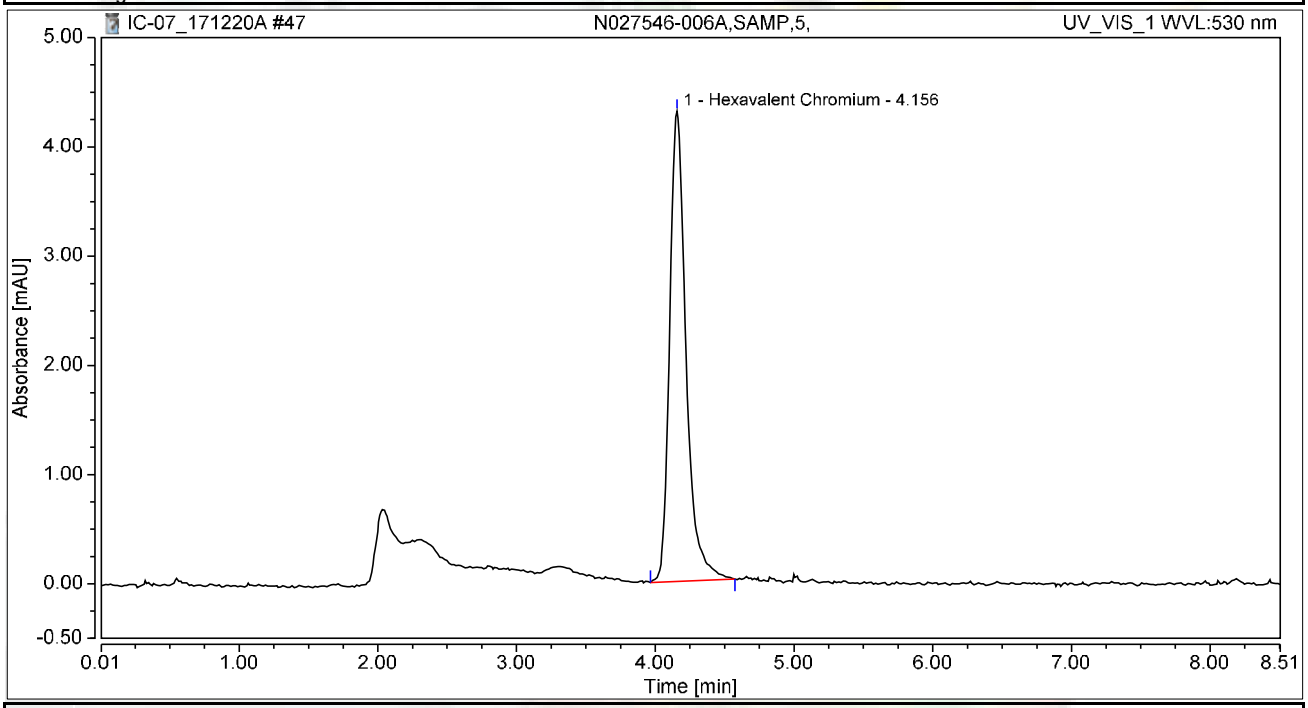
Chromatogram and Results

Injection Details

Injection Name:	**N027546-006A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 14:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

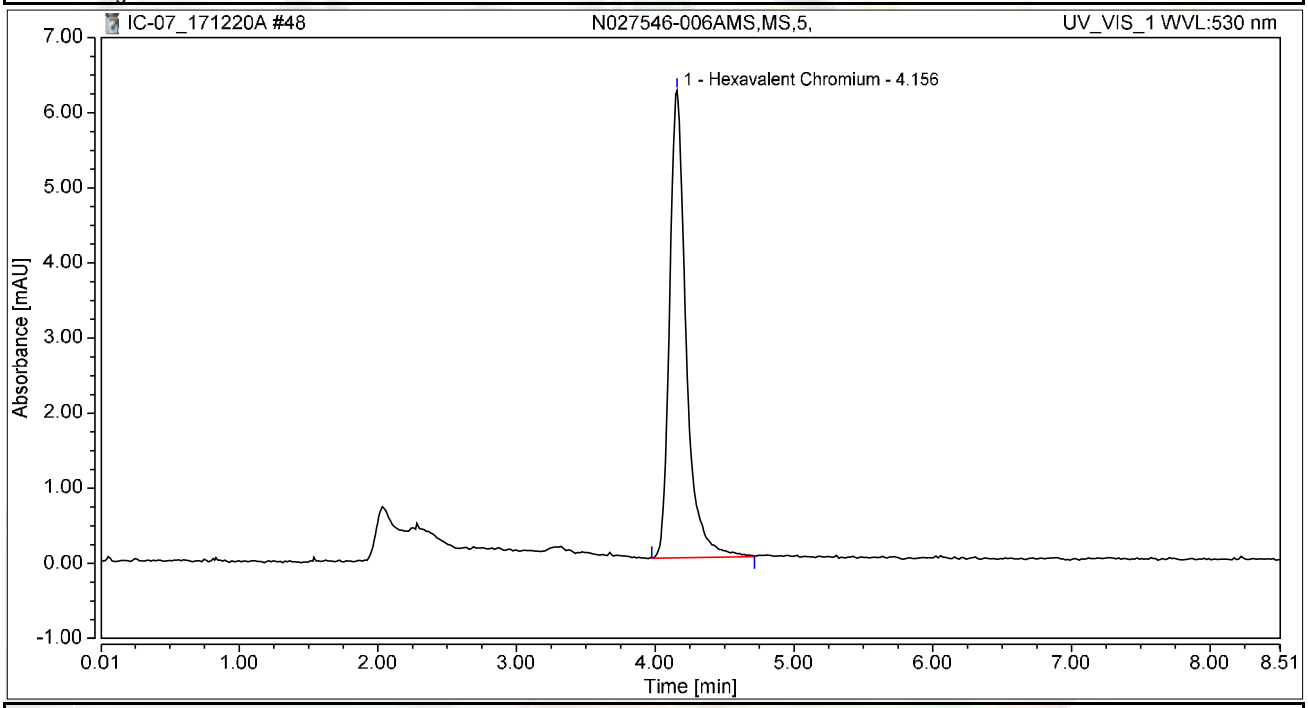
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.589	4.305	100.00	100.00	2.3472
Total:			**0.589**	**4.305**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-006AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 14:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

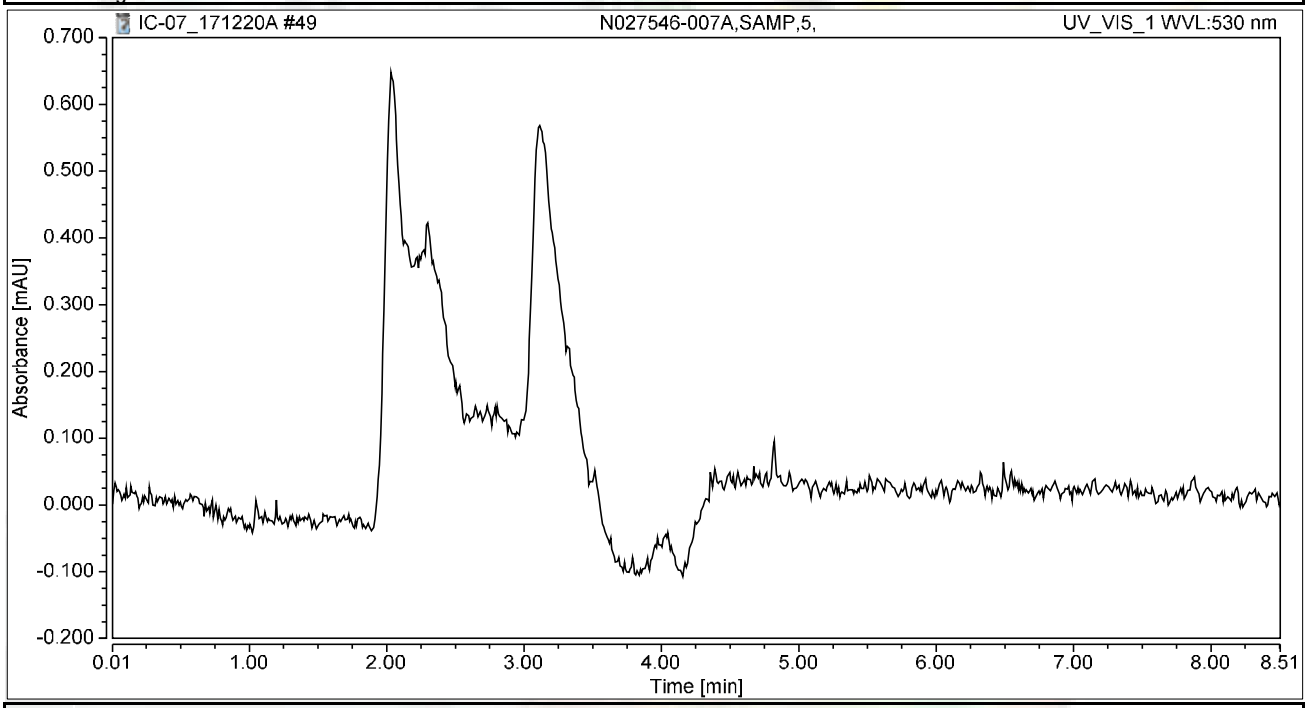
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.860	6.222	100.00	100.00	3.4248
Total:			**0.860**	**6.222**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-007A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 14:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

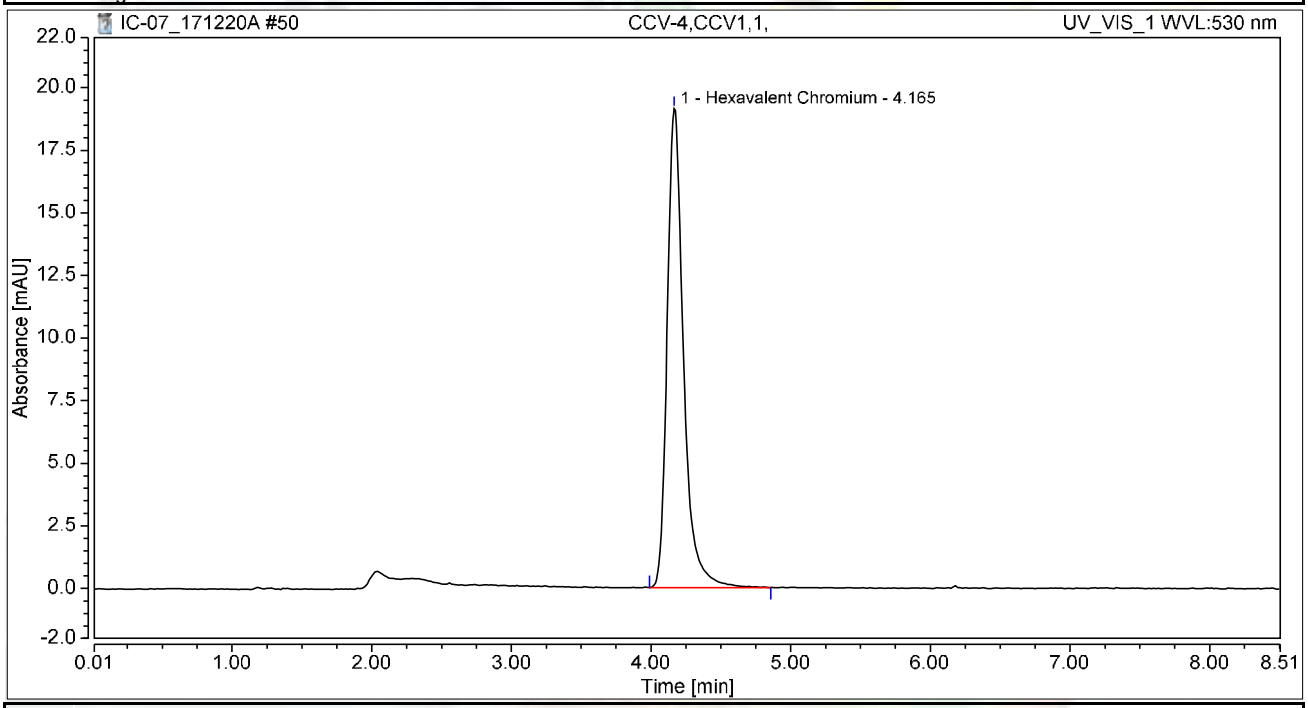
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 15:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

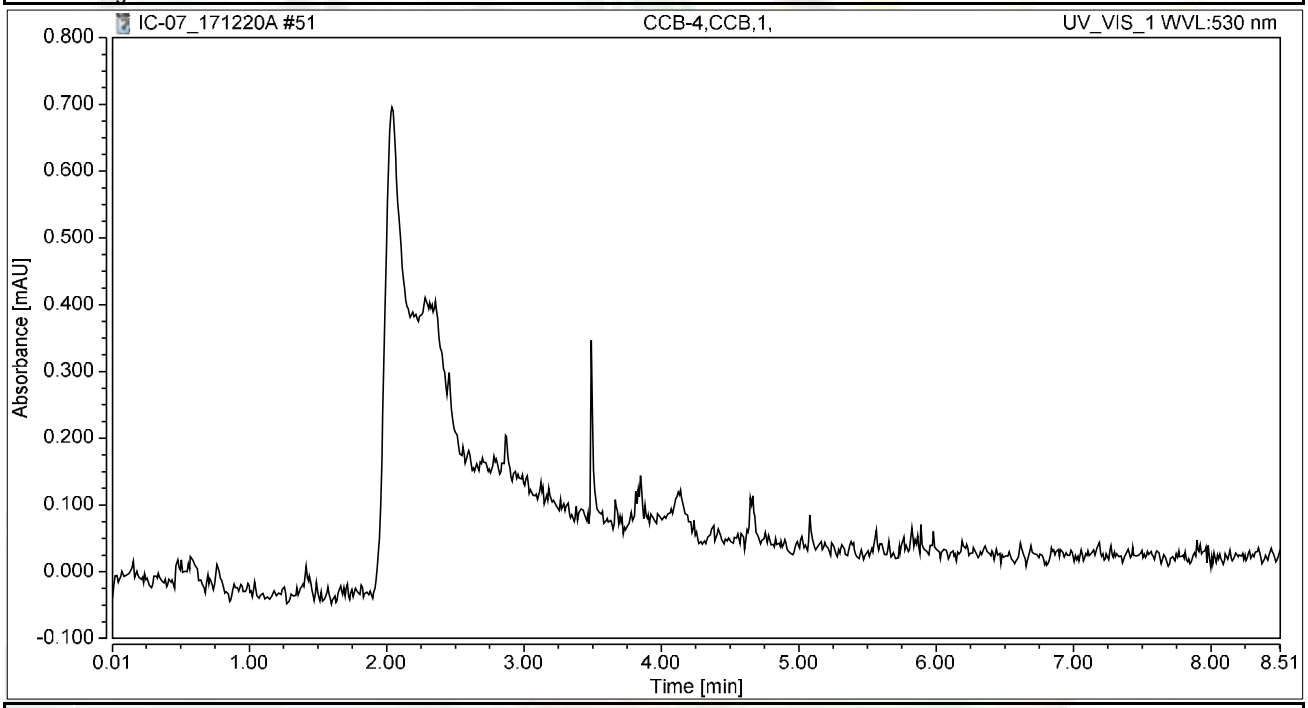
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.588	19.126	100.00	100.00	10.3052
Total:			**2.588**	**19.126**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 15:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

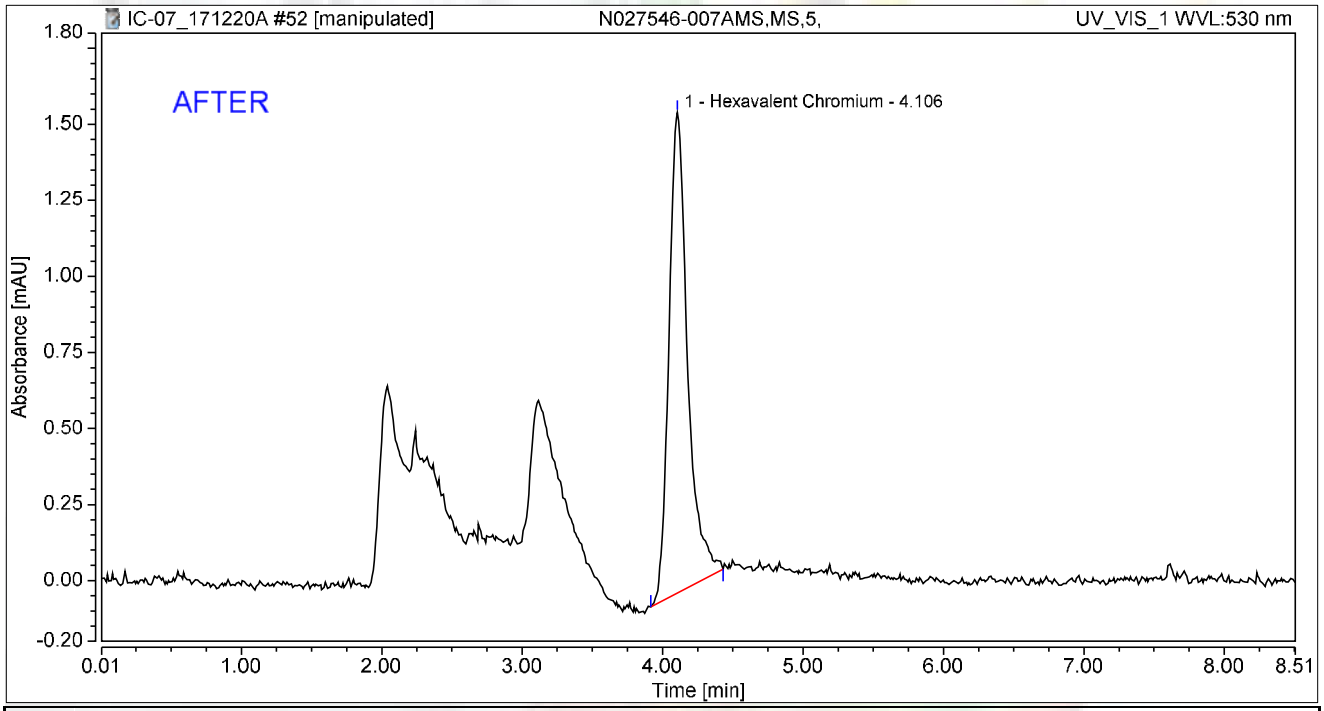
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-007AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 15:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.243	1.580	100.00	100.00	0.9693
Total:			**0.243**	**1.580**	**100.00**	**100.00**	

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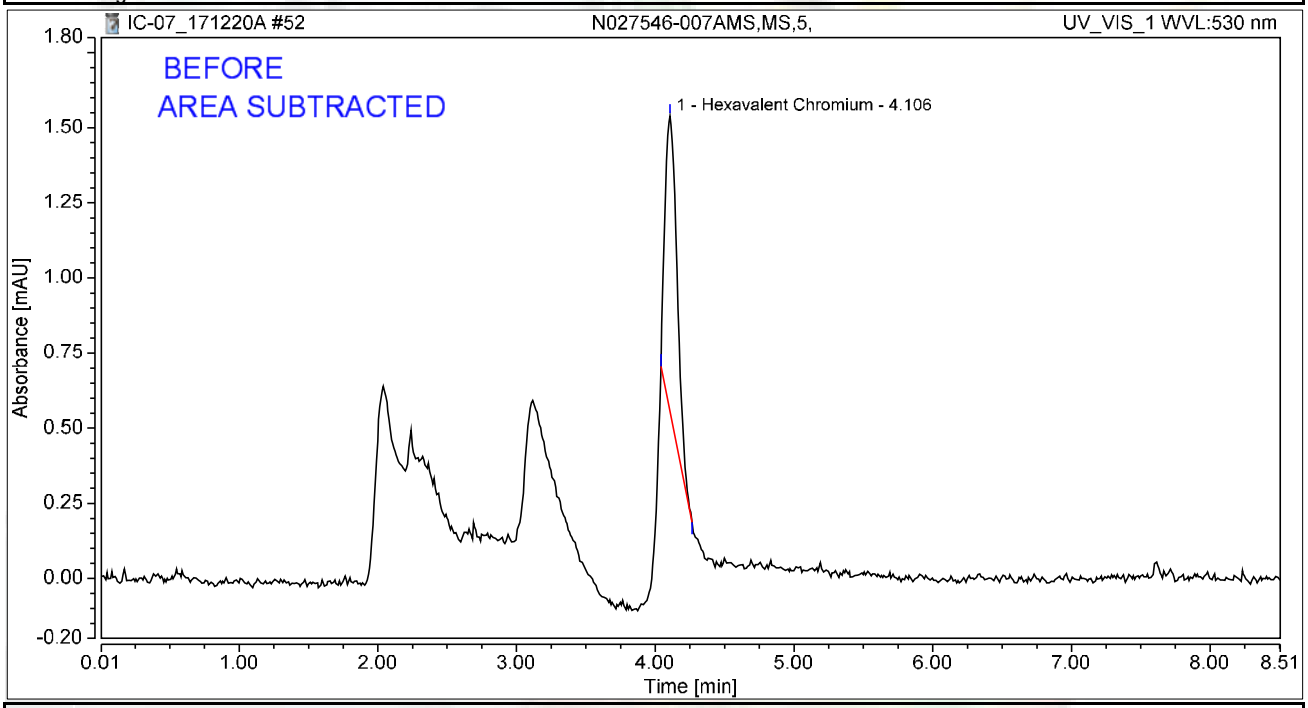
Chromatogram and Results

Injection Details

Injection Name:	**N027546-007AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 15:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.100	0.987	100.00	100.00	0.3974
Total:			**0.100**	**0.987**	**100.00**	**100.00**	

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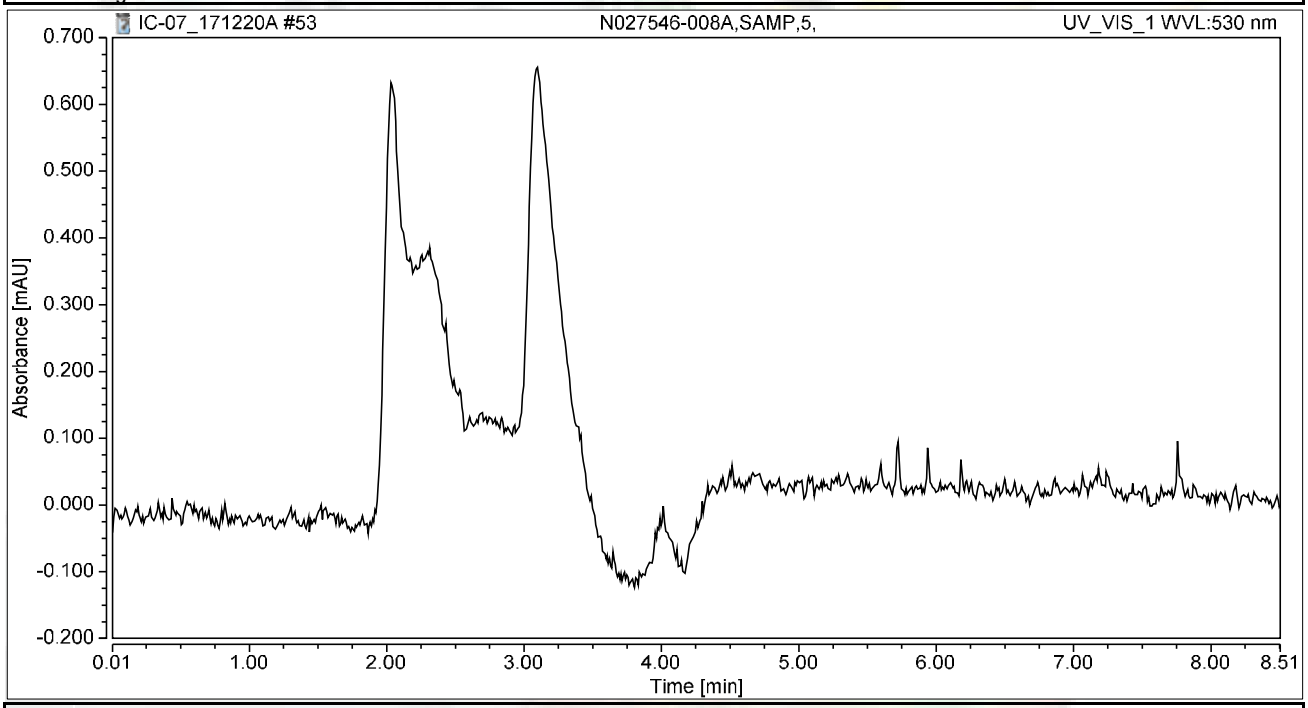
Chromatogram and Results

Injection Details

Injection Name:	**N027546-008A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 15:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

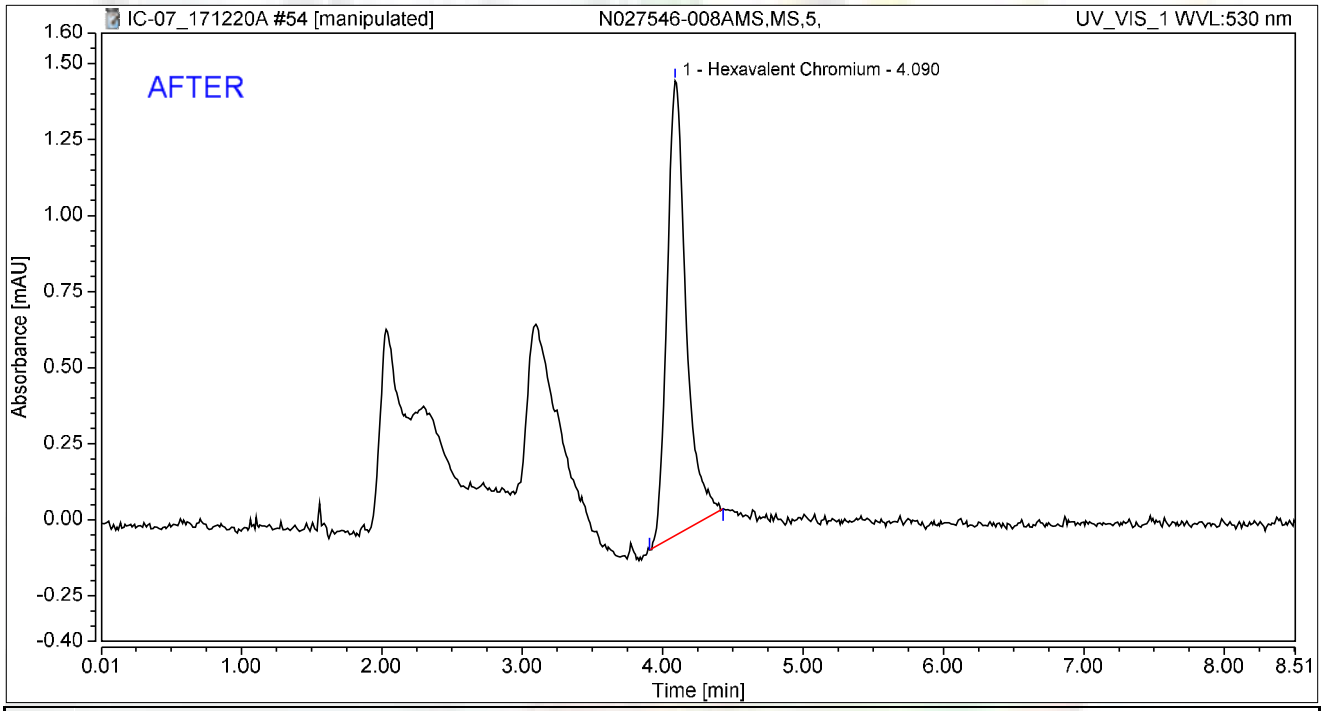
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-008AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 15:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.235	1.494	100.00	100.00	0.9375
Total:			**0.235**	**1.494**	**100.00**	**100.00**	

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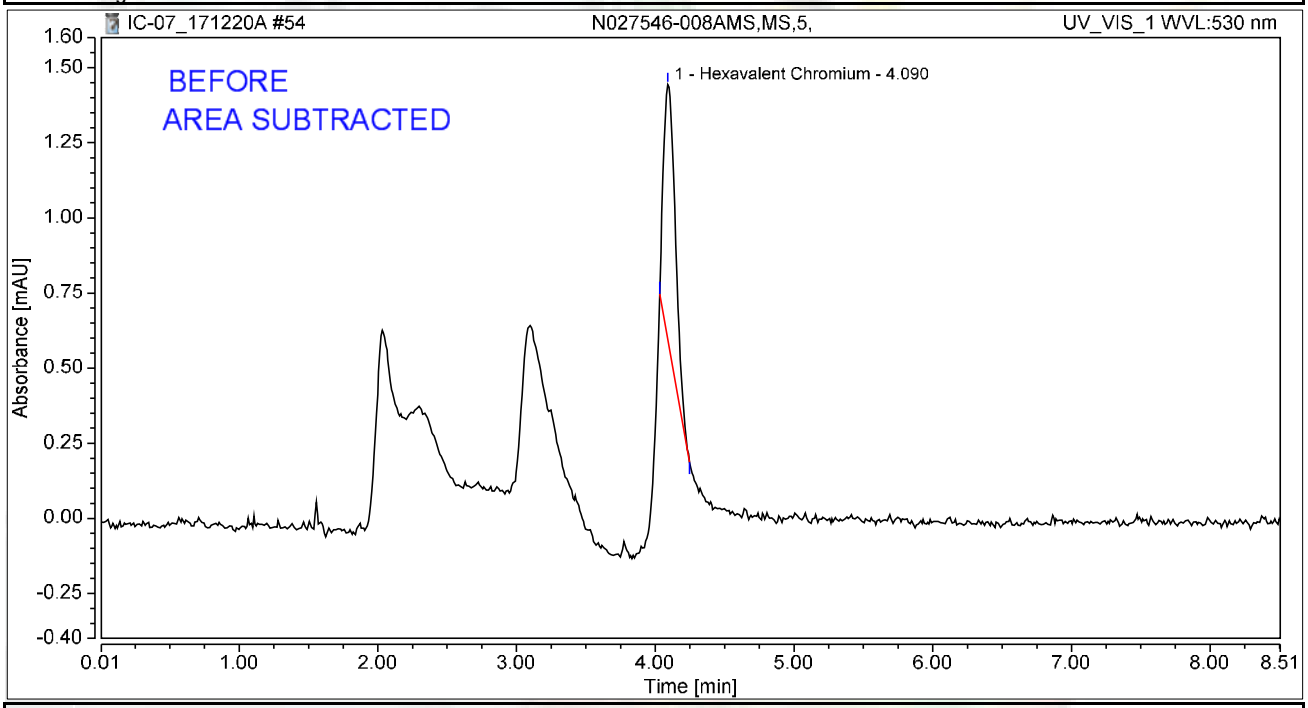
Chromatogram and Results

Injection Details

Injection Name:	**N027546-008AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 15:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.085	0.847	100.00	100.00	0.3393
Total:			**0.085**	**0.847**	**100.00**	**100.00**	

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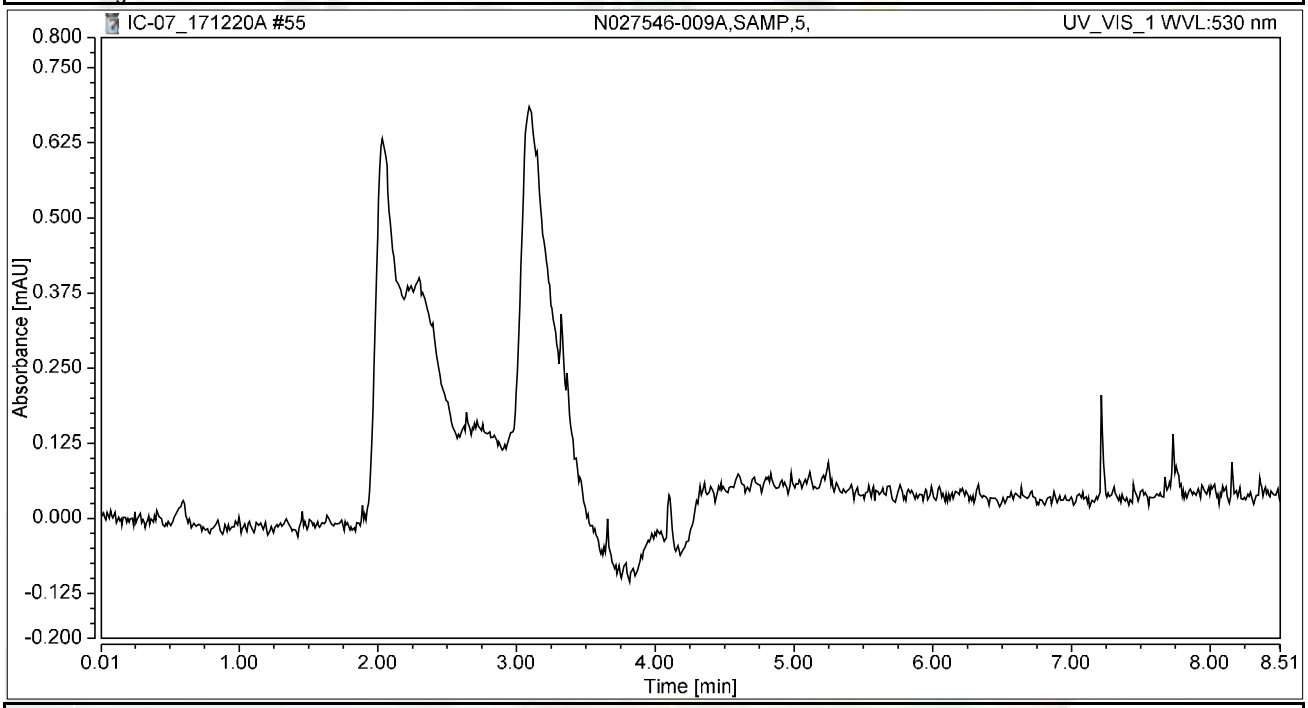
Chromatogram and Results

Injection Details

Injection Name:	**N027546-009A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 15:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

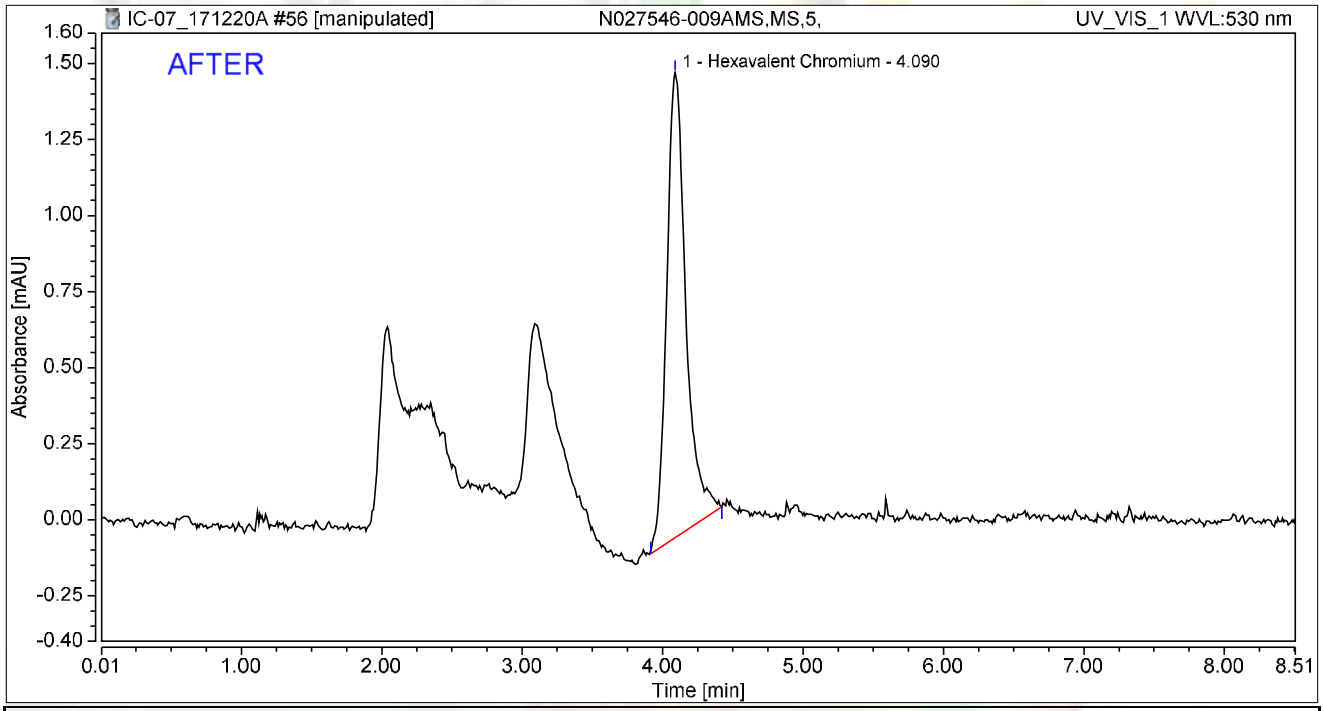
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-009AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 16:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.244	1.529	100.00	100.00	0.9707
Total:			**0.244**	**1.529**	**100.00**	**100.00**	

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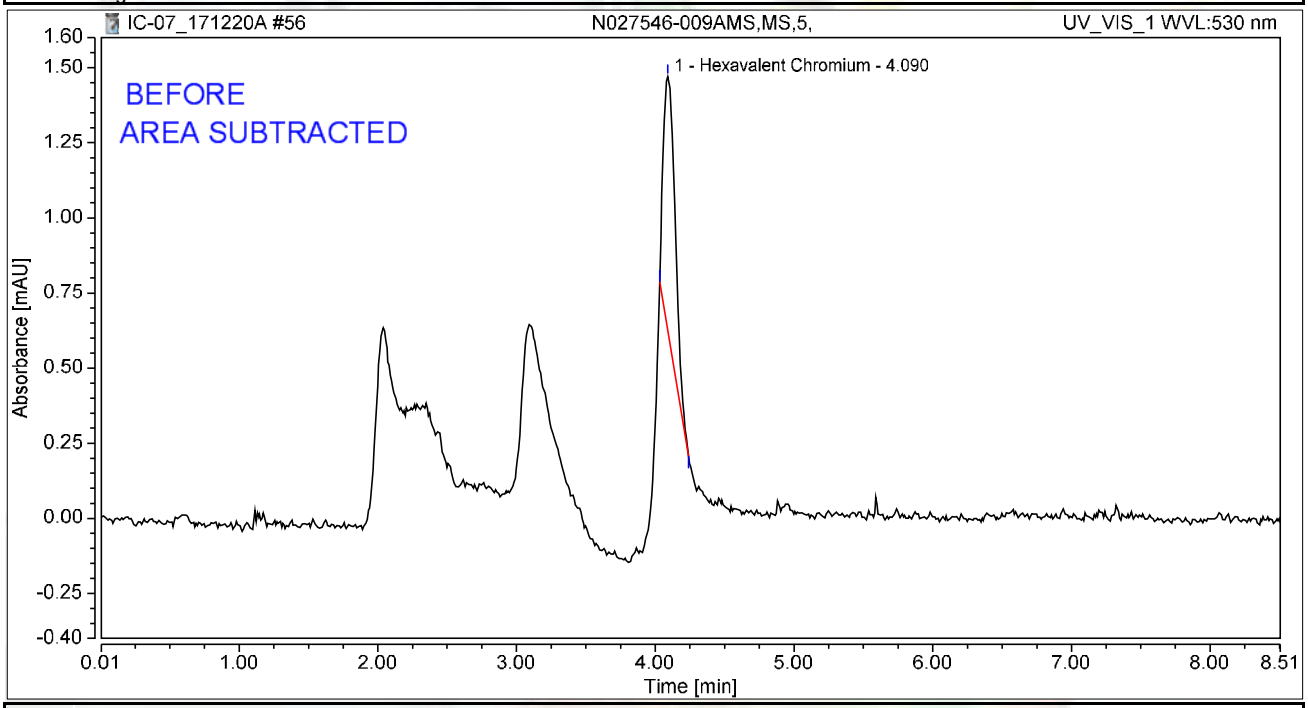
Chromatogram and Results

Injection Details

Injection Name:	**N027546-009AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 16:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.085	0.846	100.00	100.00	0.3398
Total:			**0.085**	**0.846**	**100.00**	**100.00**	

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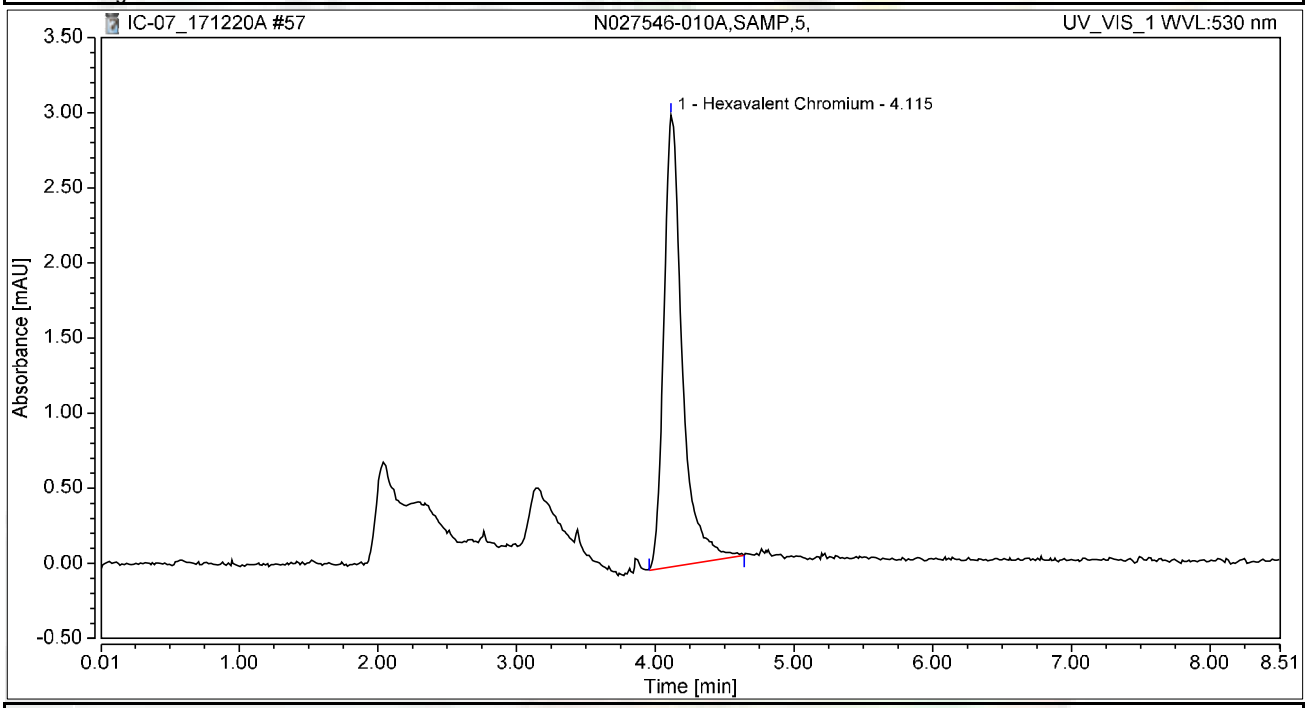
Chromatogram and Results

Injection Details

Injection Name:	**N027546-010A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 16:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

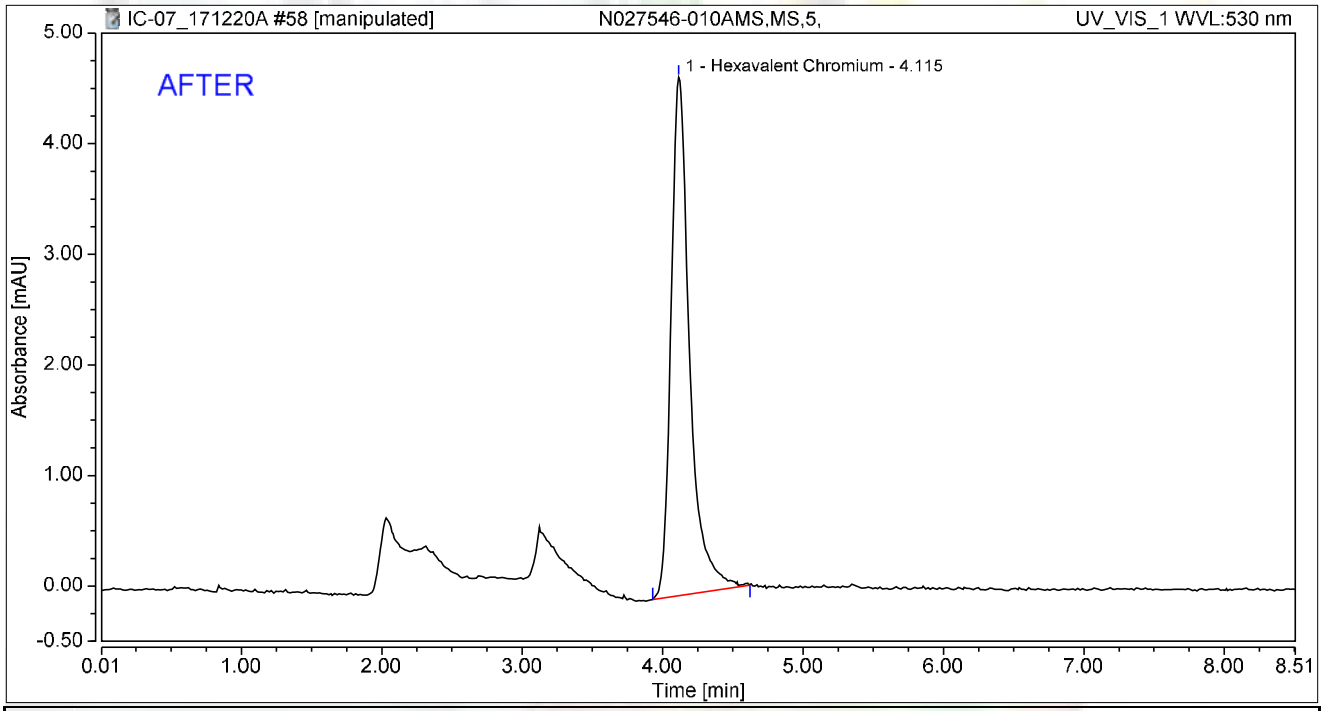
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.465	3.008	100.00	100.00	1.8515
Total:			**0.465**	**3.008**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-010AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 16:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.721	4.688	100.00	100.00	2.8730
Total:			**0.721**	**4.688**	**100.00**	**100.00**	

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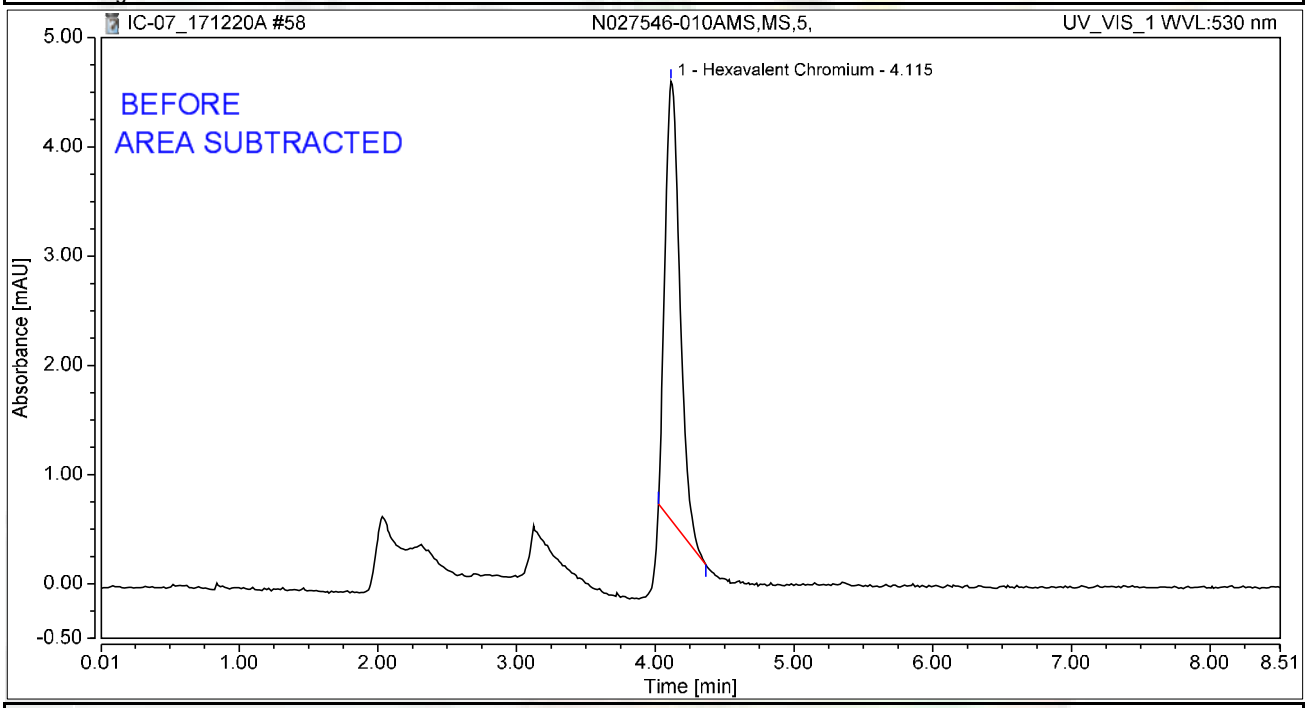
Chromatogram and Results

Injection Details

Injection Name:	**N027546-010AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 16:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.503	4.016	100.00	100.00	2.0045
Total:			**0.503**	**4.016**	**100.00**	**100.00**	

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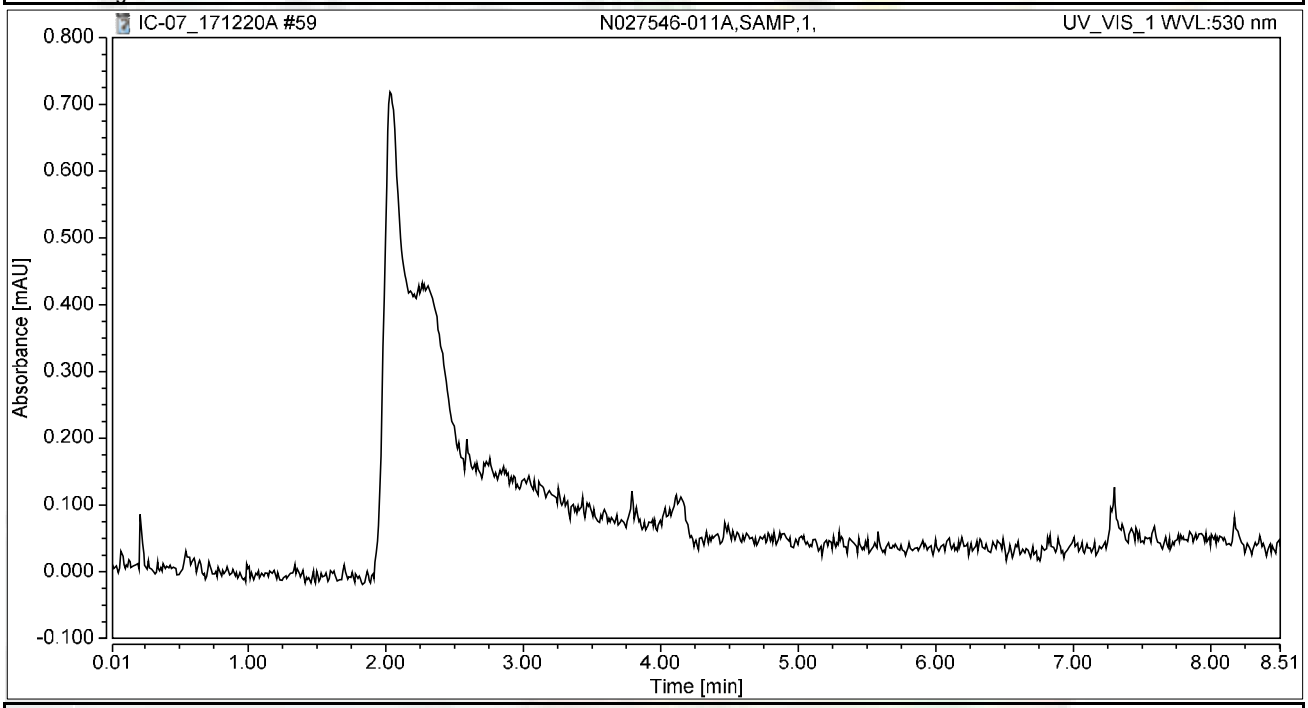
Chromatogram and Results

Injection Details

Injection Name:	**N027546-011A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 16:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

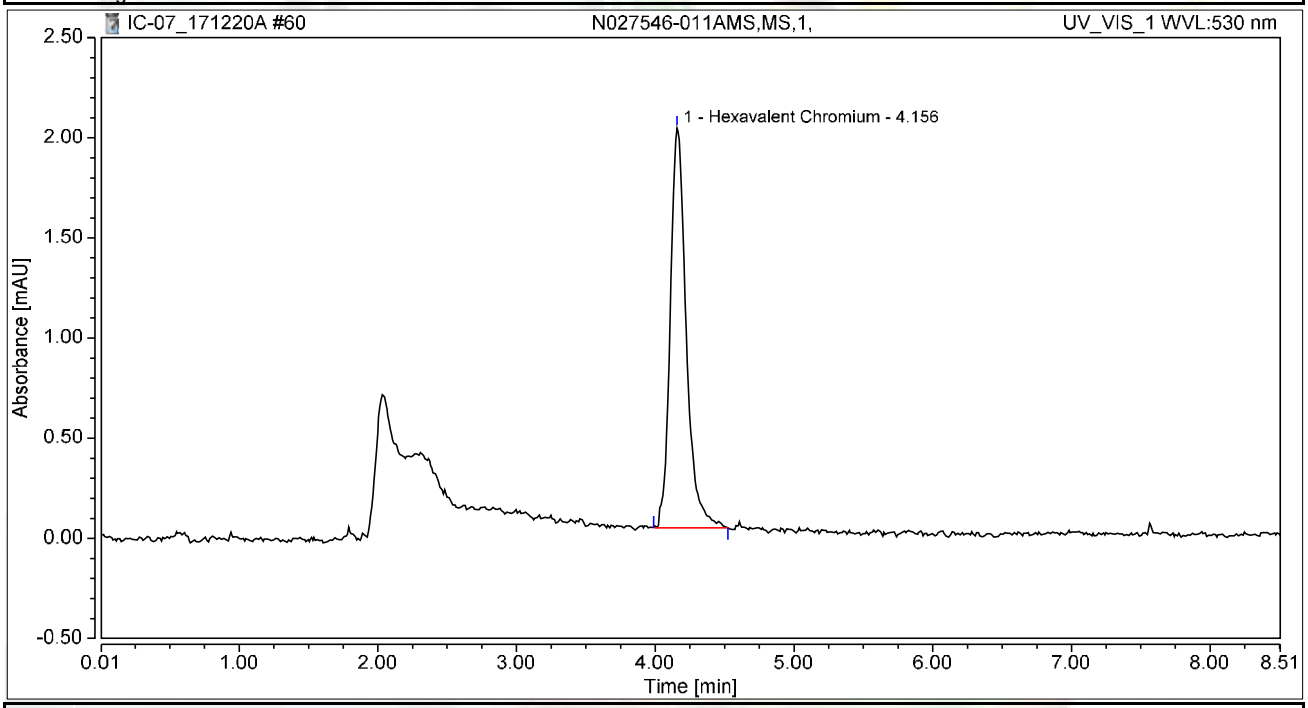
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 16:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

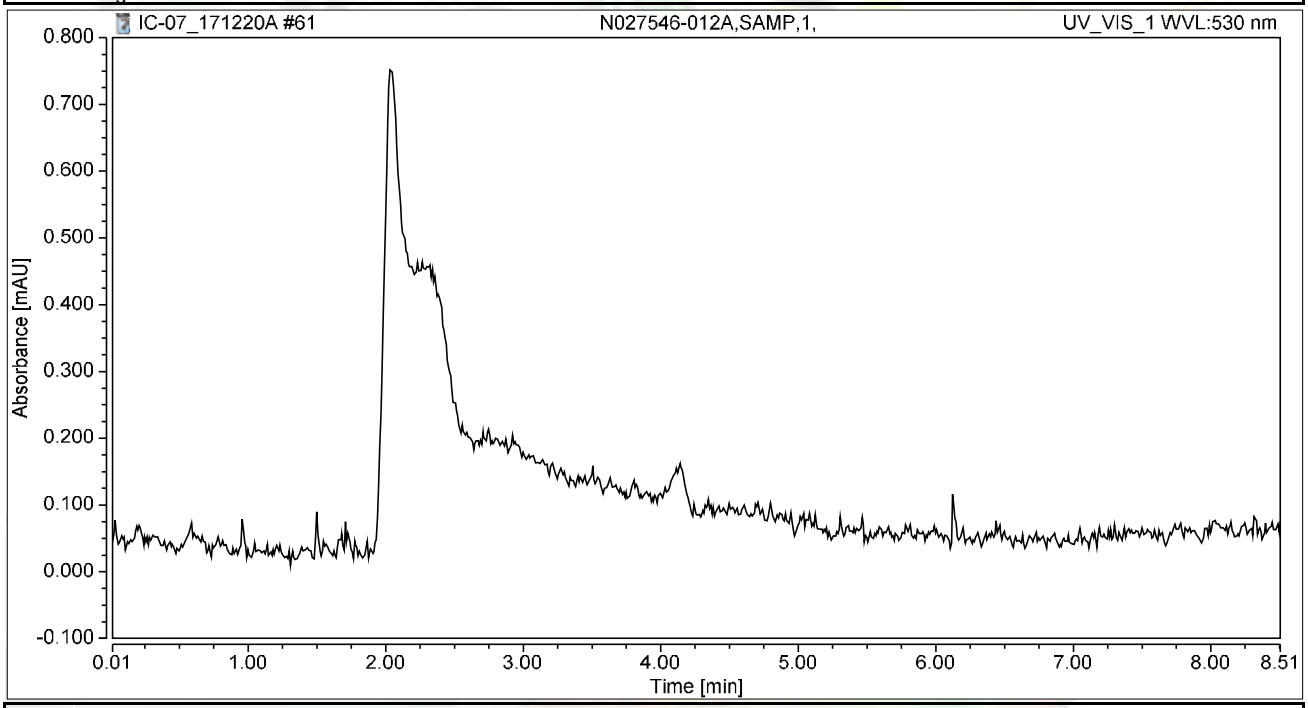
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.267	1.997	100.00	100.00	1.0627
Total:			**0.267**	**1.997**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-012A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 16:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

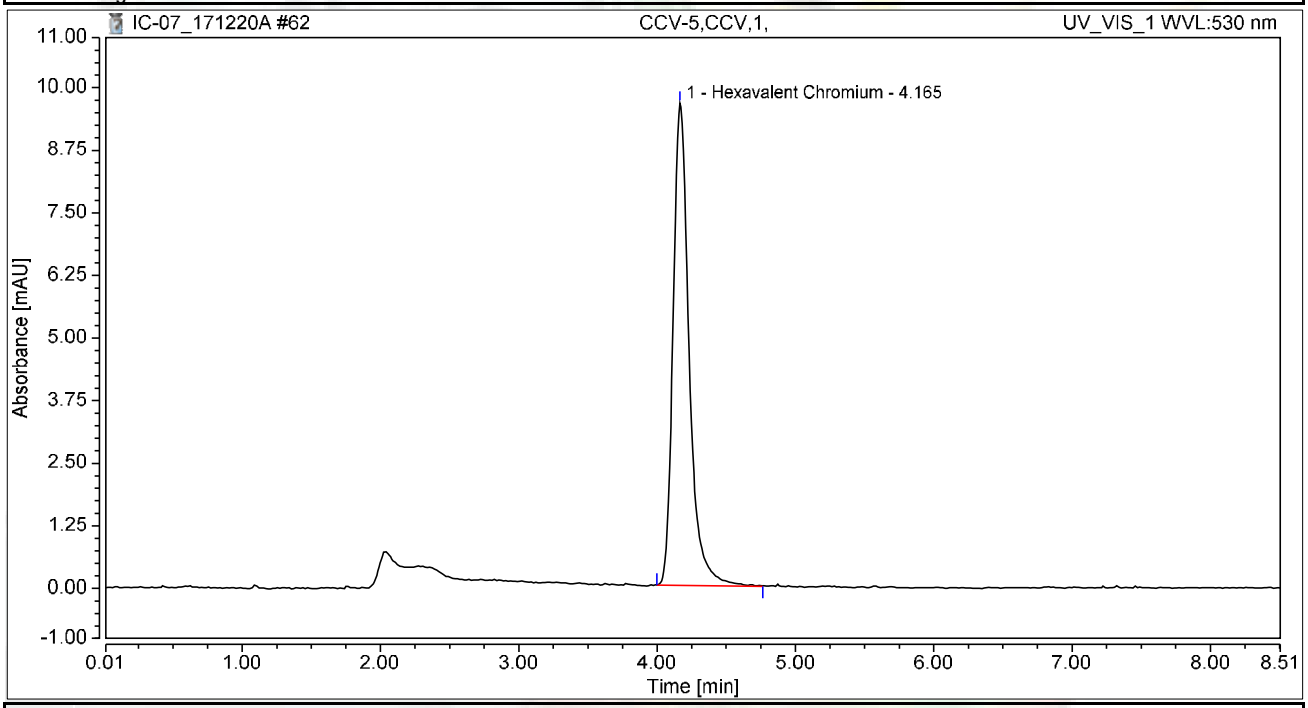
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 17:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

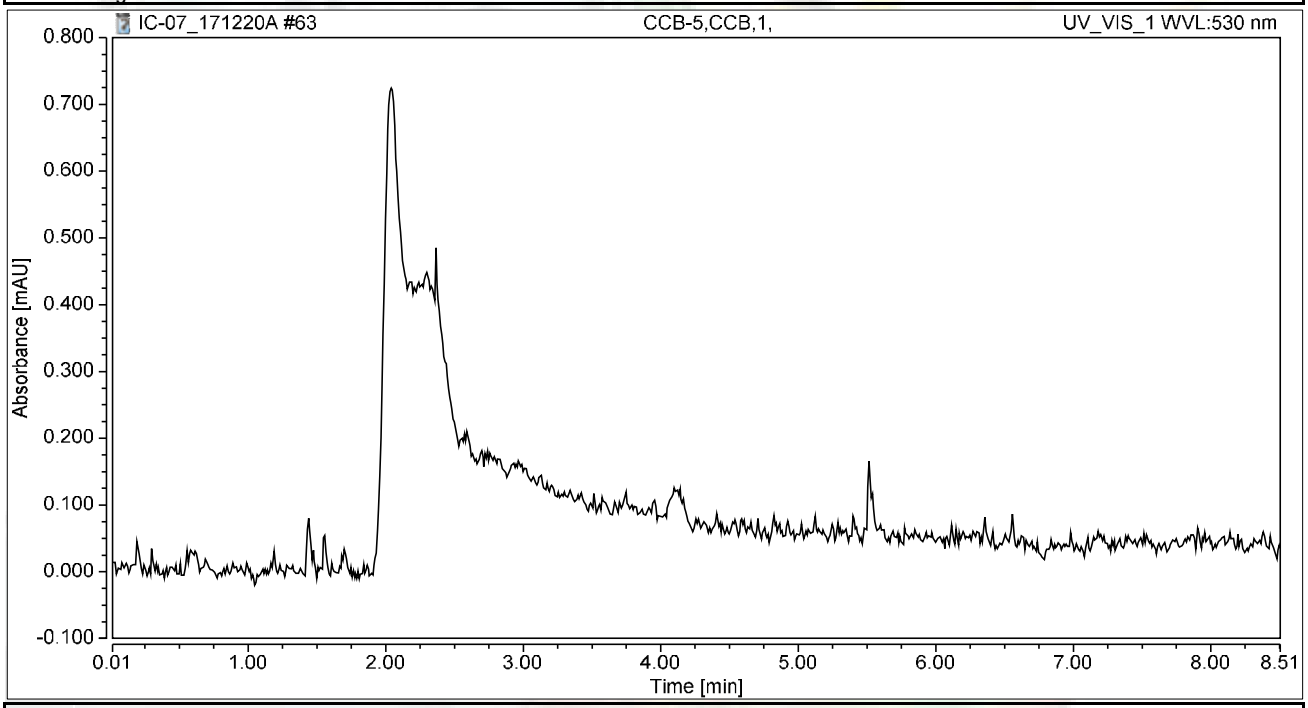
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.294	9.630	100.00	100.00	5.1520
Total:			**1.294**	**9.630**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 17:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

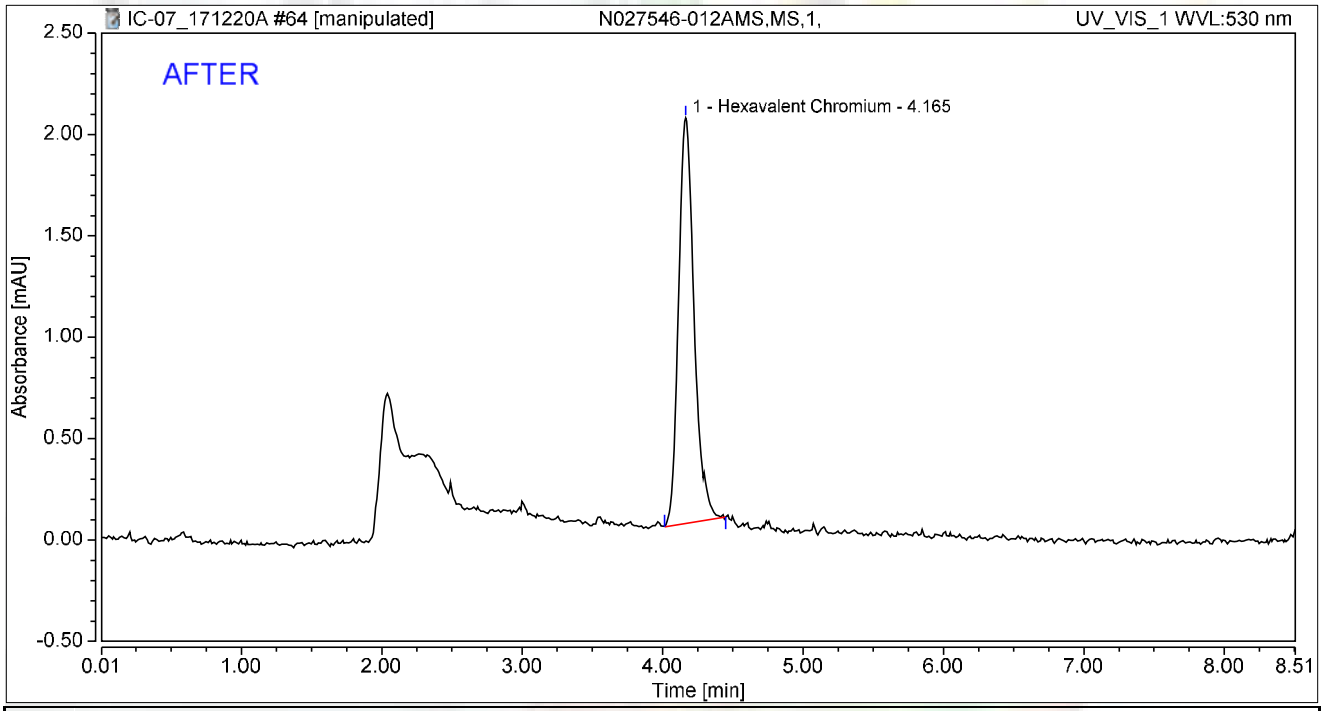
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 17:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.256	2.000	100.00	100.00	1.0207
Total:			**0.256**	**2.000**	**100.00**	**100.00**	

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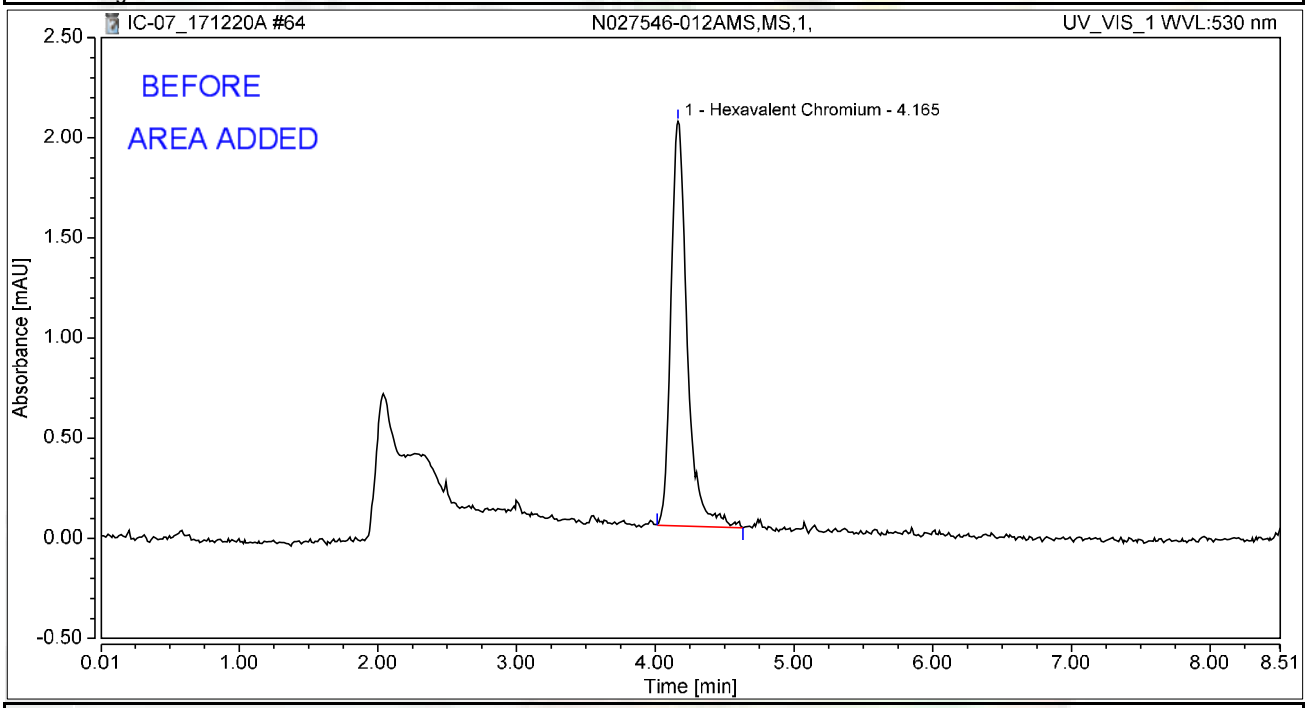
Chromatogram and Results

Injection Details

Injection Name:	**N027546-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 17:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.274	2.020	100.00	100.00	1.0932
Total:			**0.274**	**2.020**	**100.00**	**100.00**	

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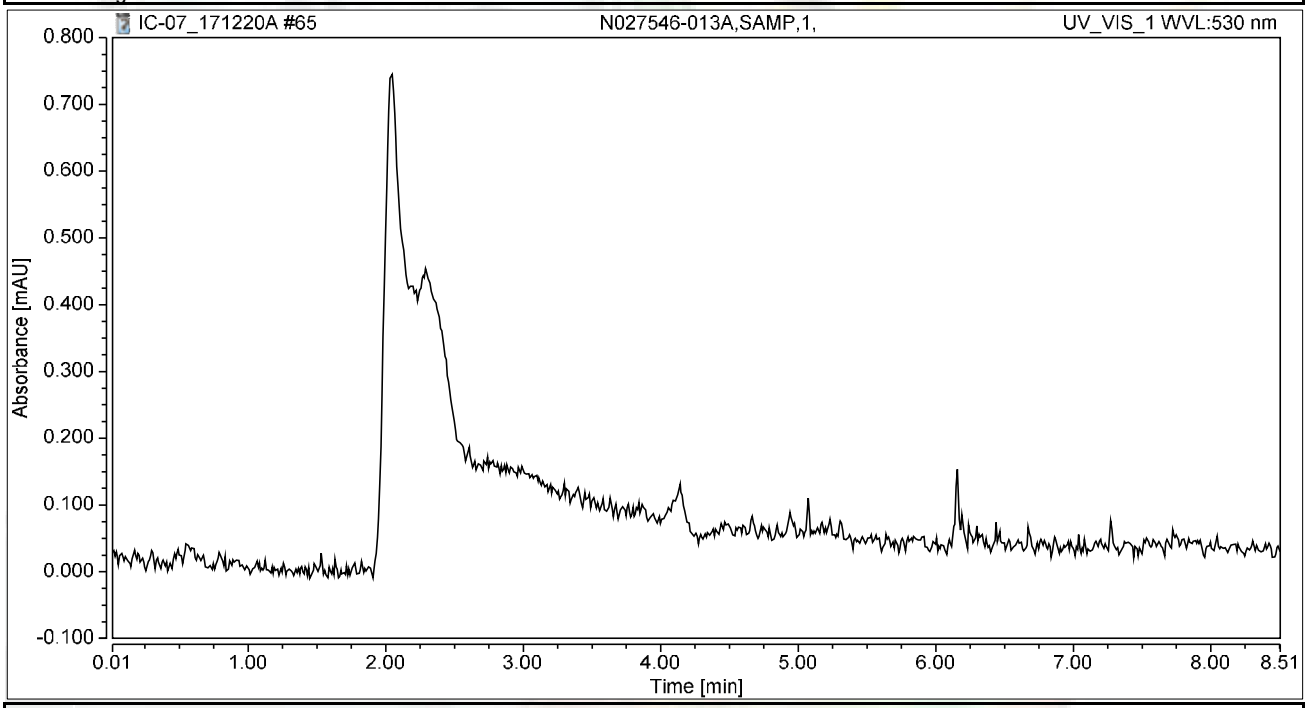
Chromatogram and Results

Injection Details

Injection Name:	**N027546-013A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 17:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

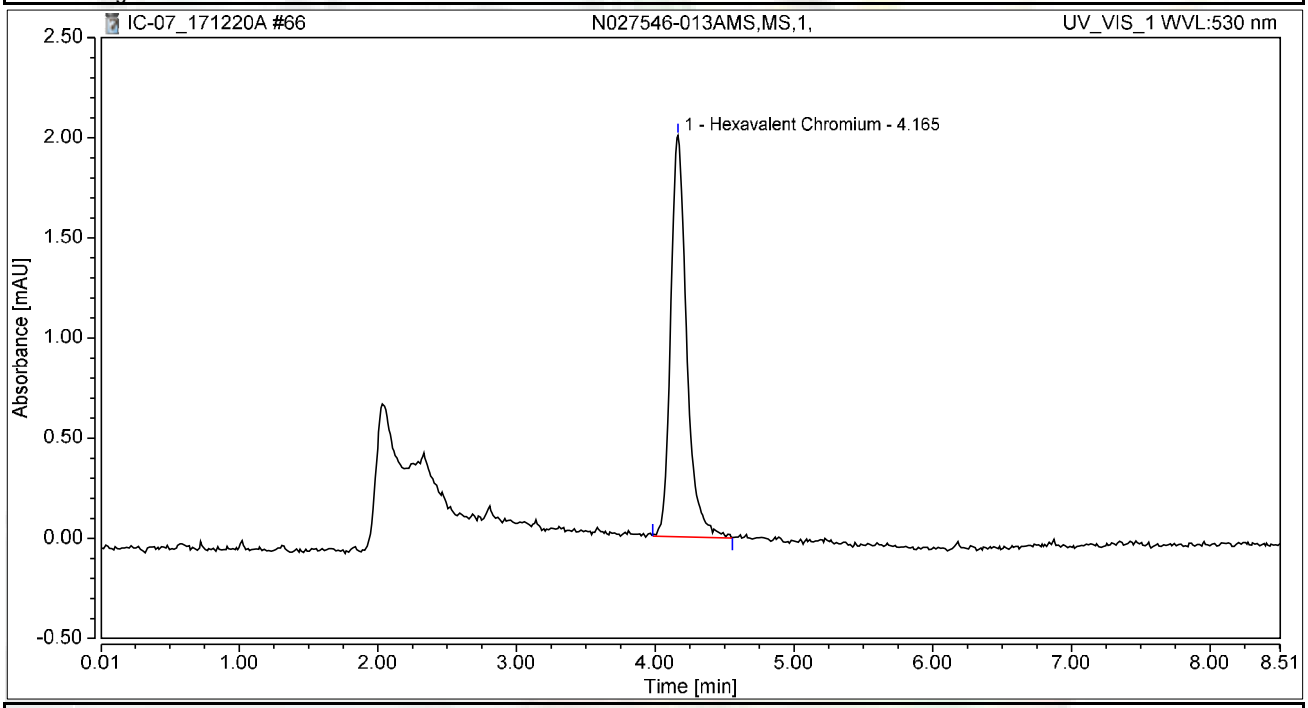
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 17:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

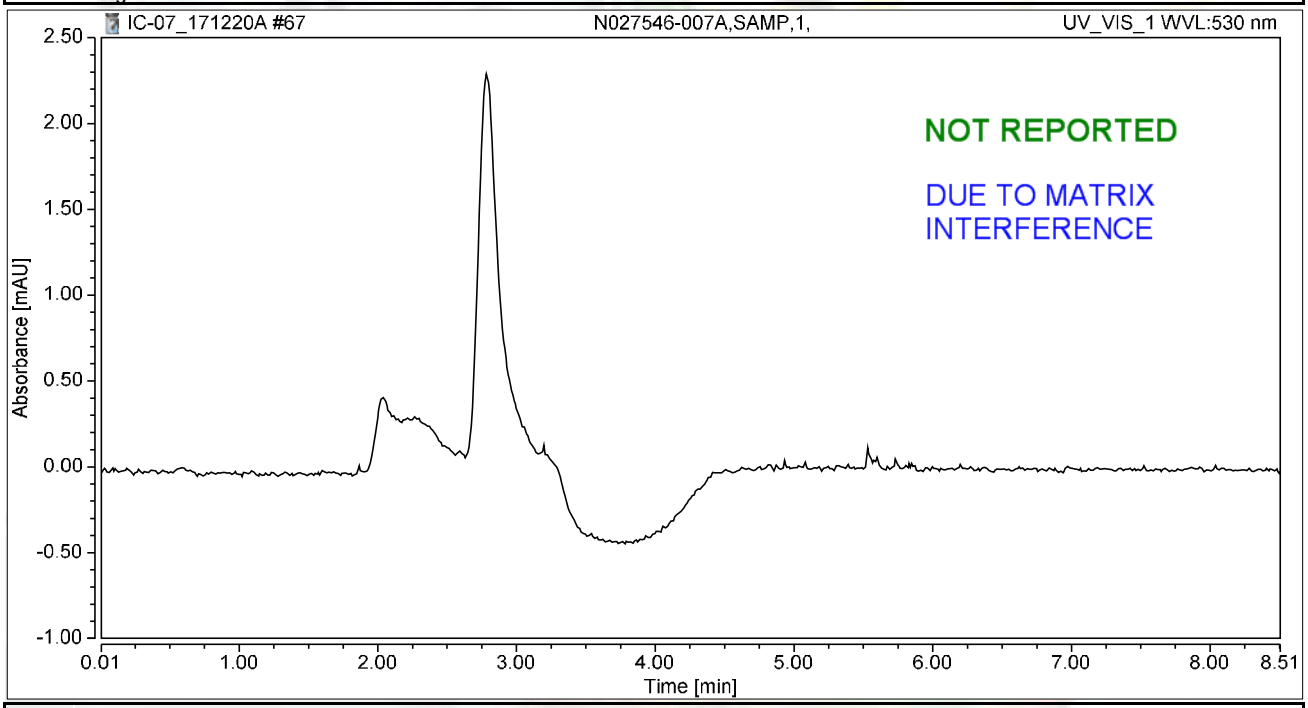
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.268	2.004	100.00	100.00	1.0668
Total:			**0.268**	**2.004**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 17:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

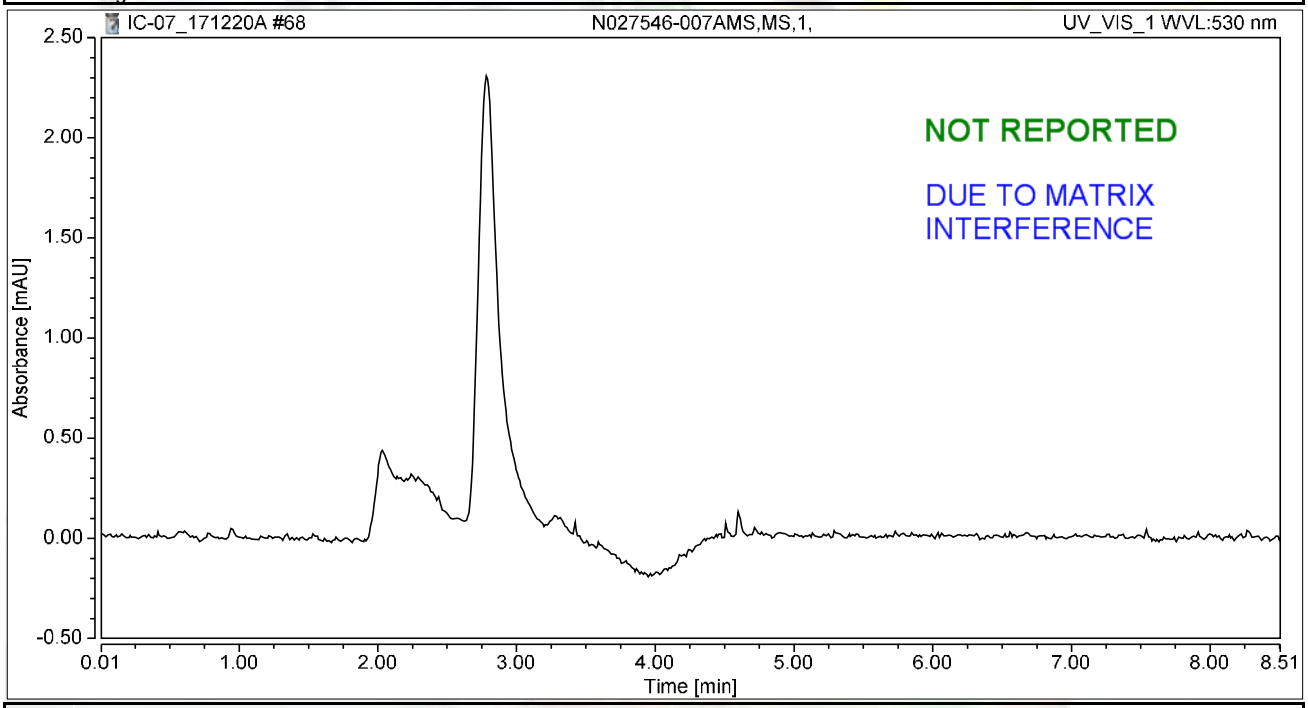
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 17:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

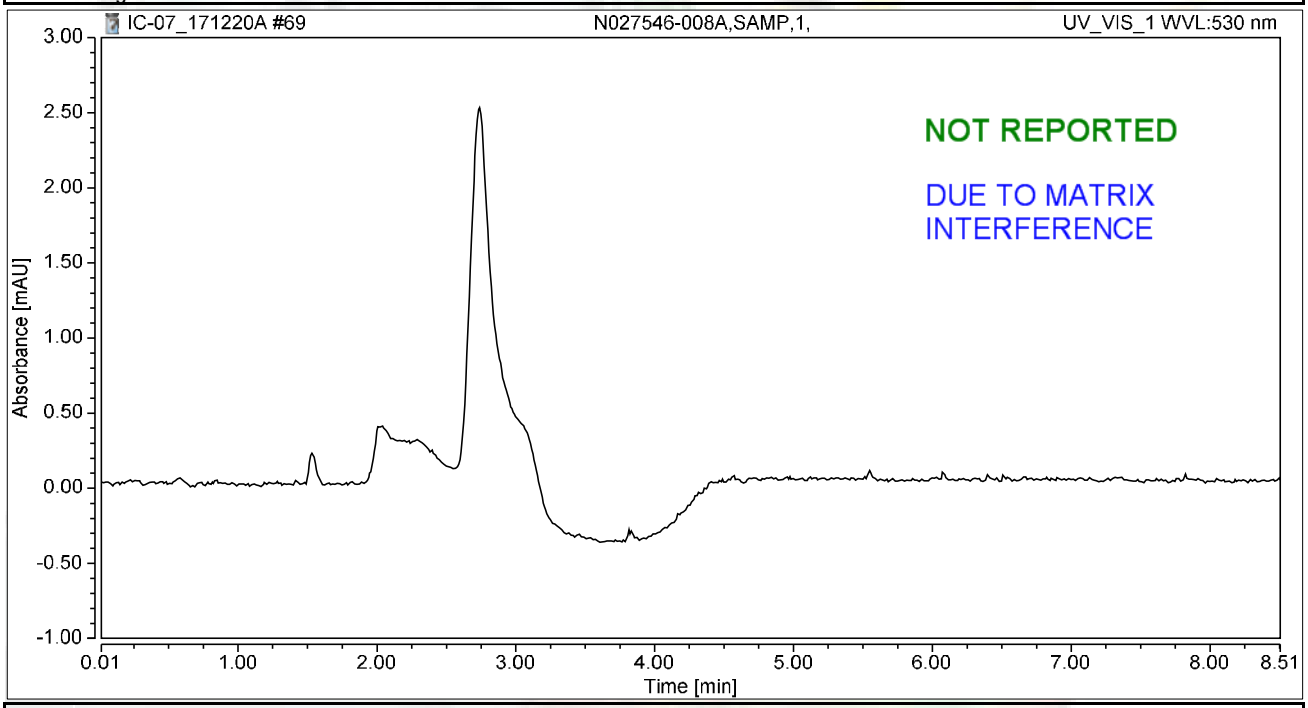
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-008A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 18:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

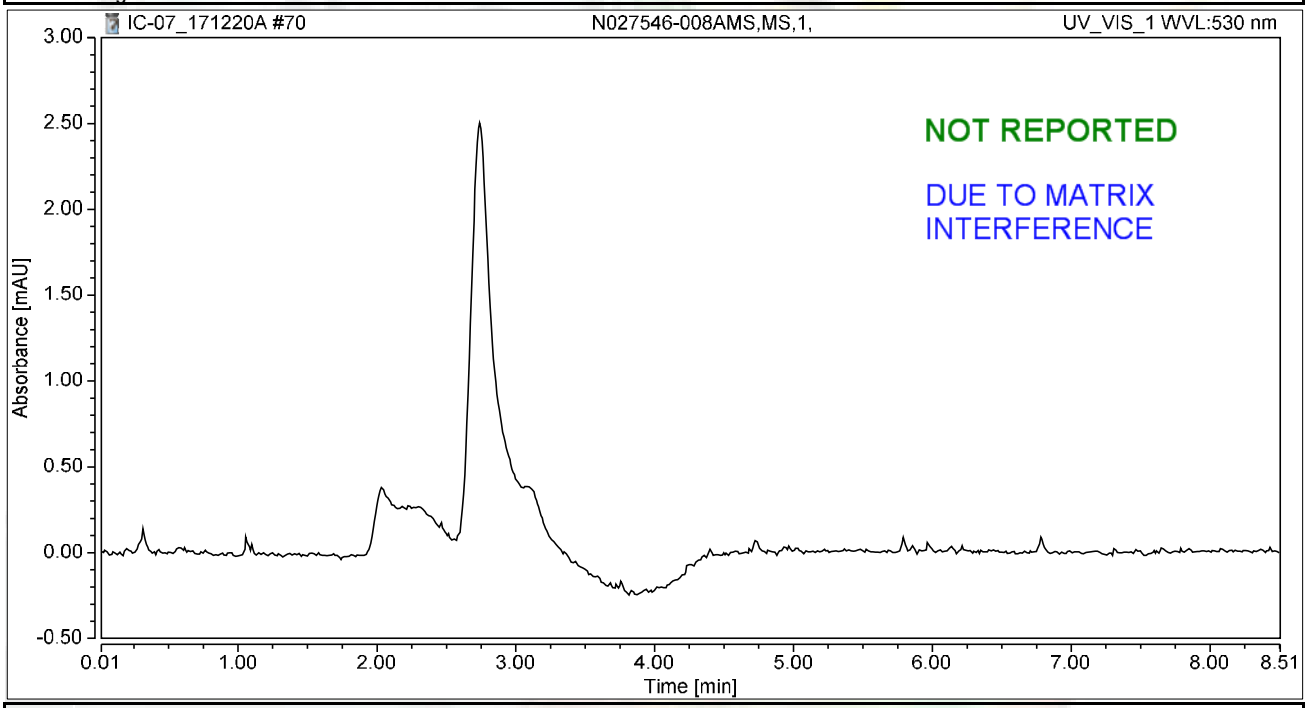
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-008AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 18:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

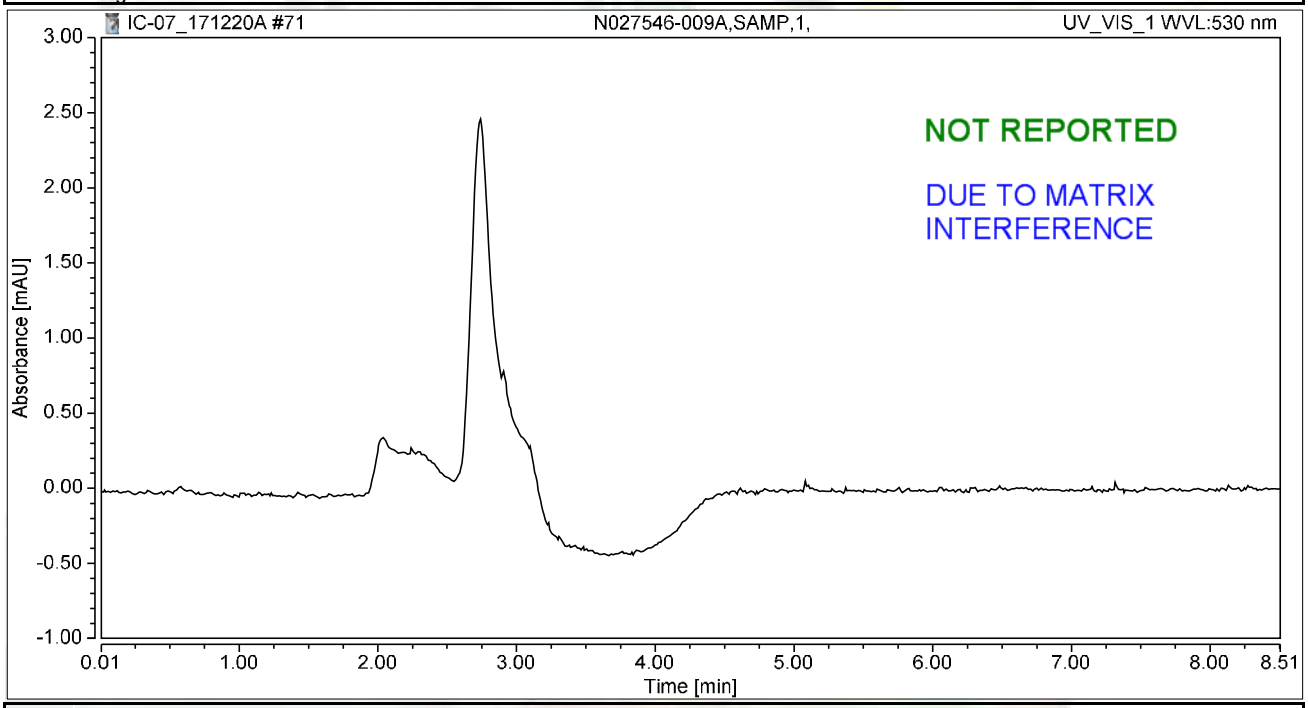
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 18:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

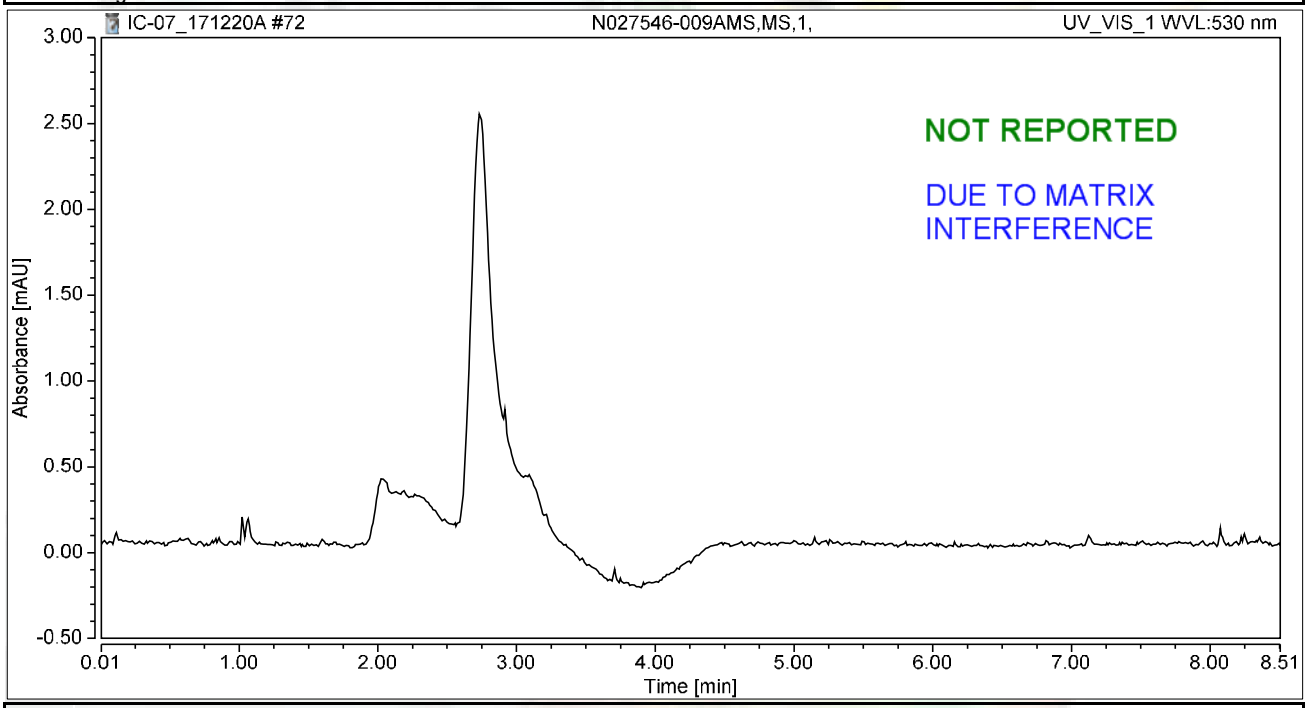
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 18:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

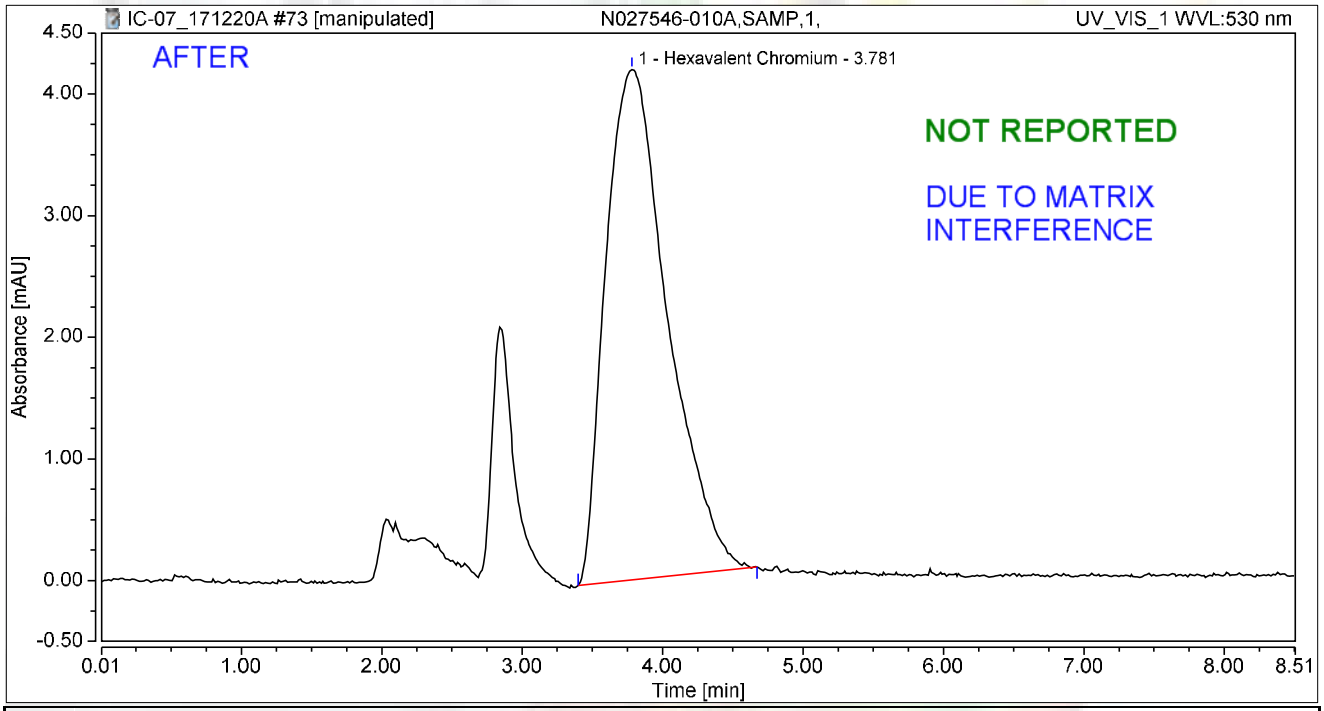
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 18:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.781	2.140	4.196	100.00	100.00	8.5229
Total:			**2.140**	**4.196**	**100.00**	**100.00**	

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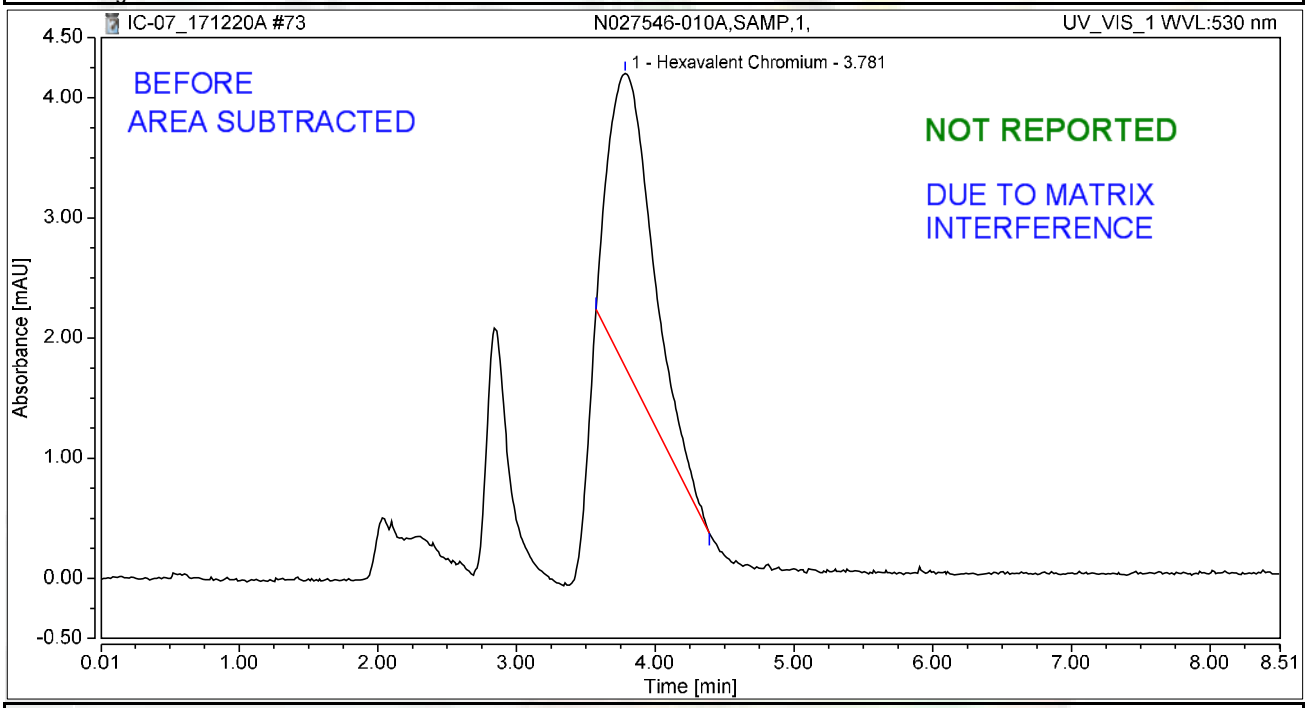
Chromatogram and Results

Injection Details

Injection Name:	**N027546-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 18:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.781	0.924	2.437	100.00	100.00	3.6813
Total:			**0.924**	**2.437**	**100.00**	**100.00**	

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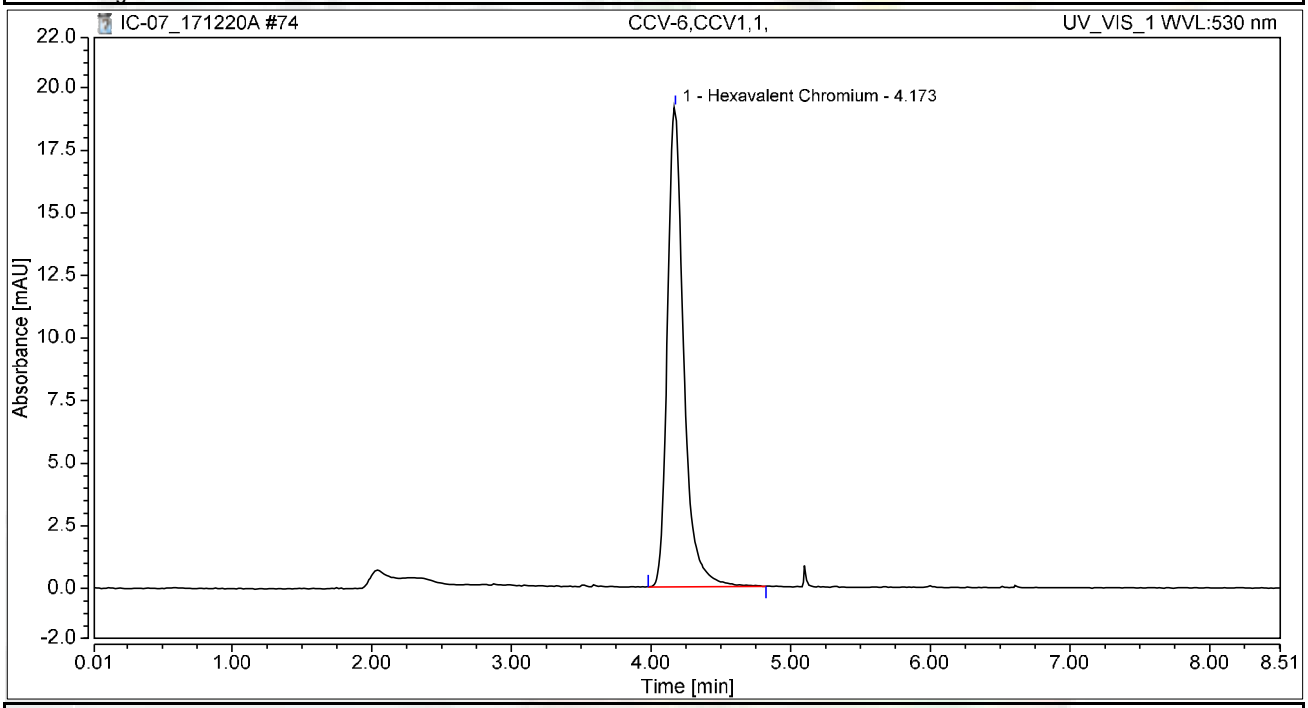
Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 18:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

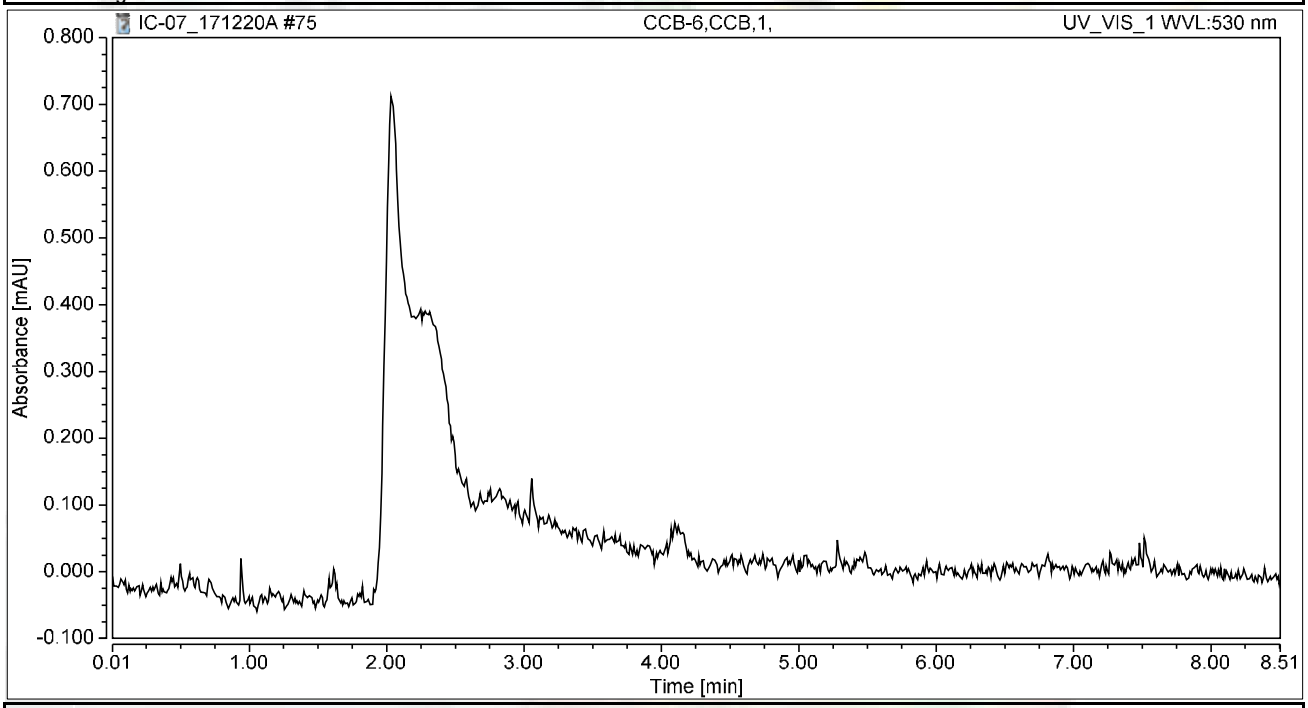
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.587	19.143	100.00	100.00	10.3035
Total:			**2.587**	**19.143**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 19:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

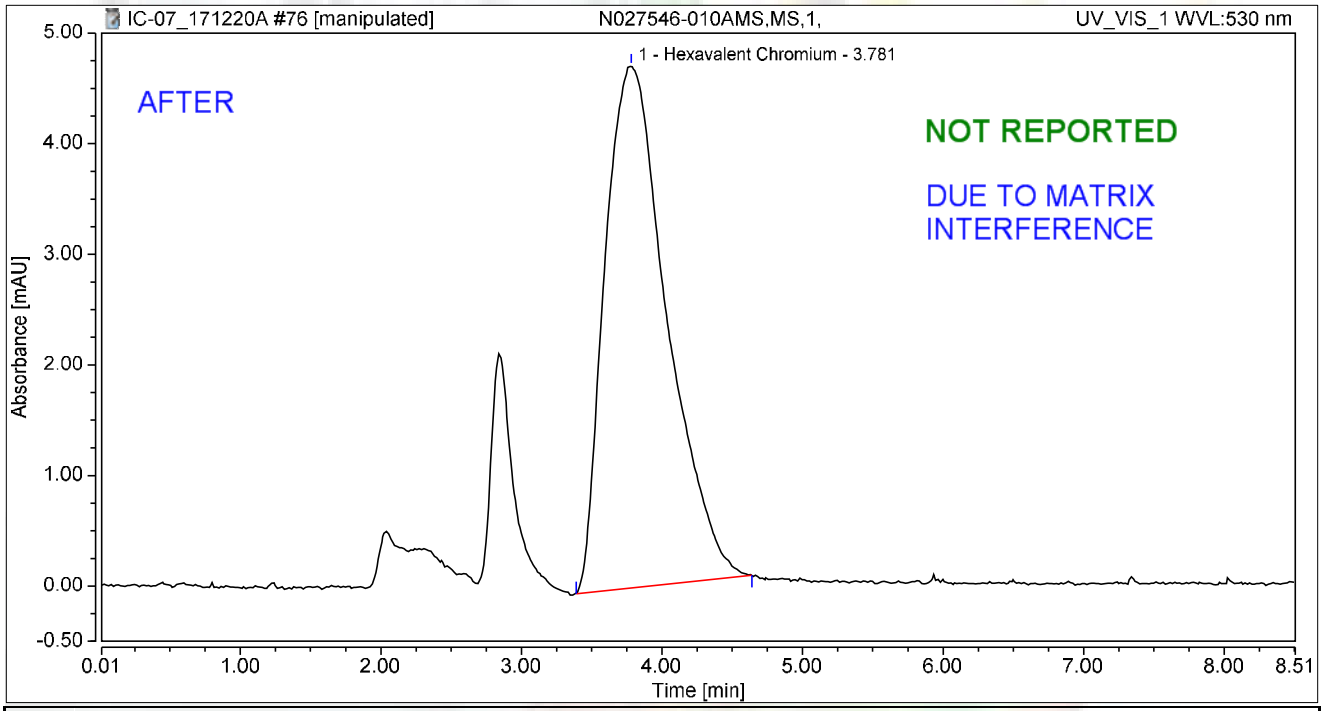
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-010AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 19:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.781	2.414	4.719	100.00	100.00	9.6134
Total:			**2.414**	**4.719**	**100.00**	**100.00**	

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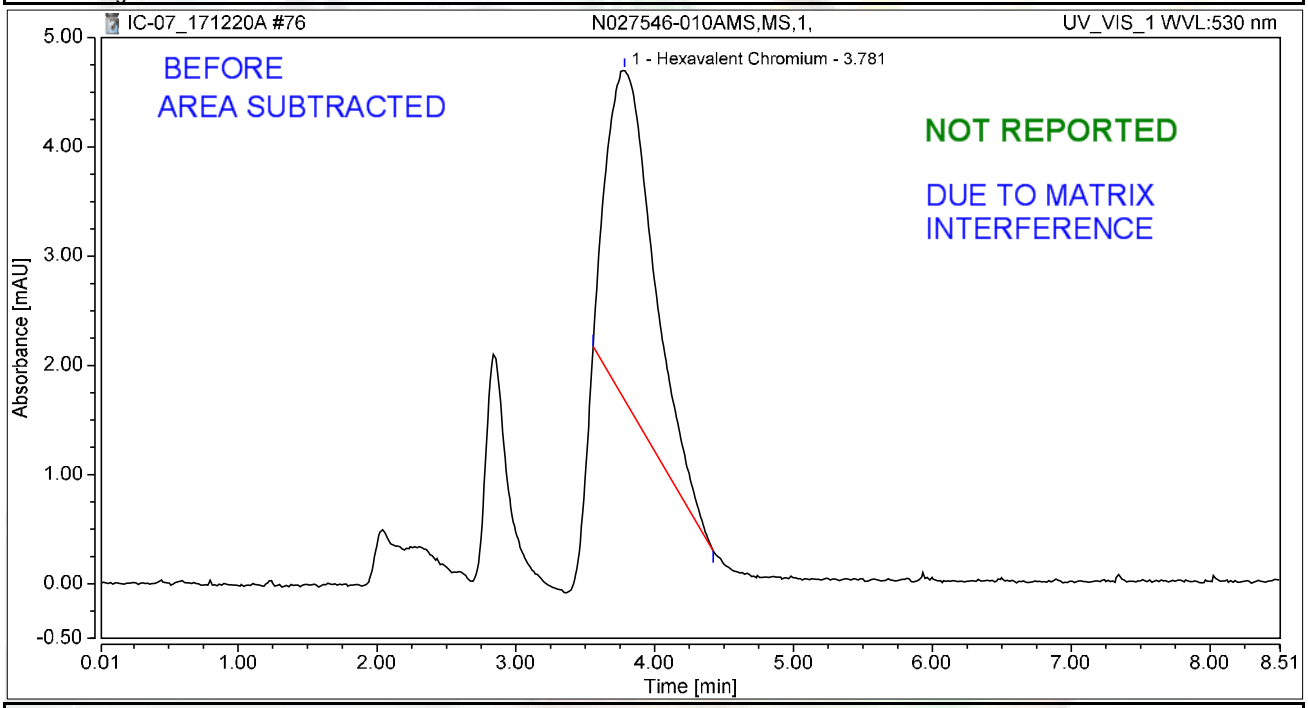
Chromatogram and Results

Injection Details

Injection Name:	**N027546-010AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 19:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.781	1.203	3.014	100.00	100.00	4.7930
Total:			**1.203**	**3.014**	**100.00**	**100.00**	

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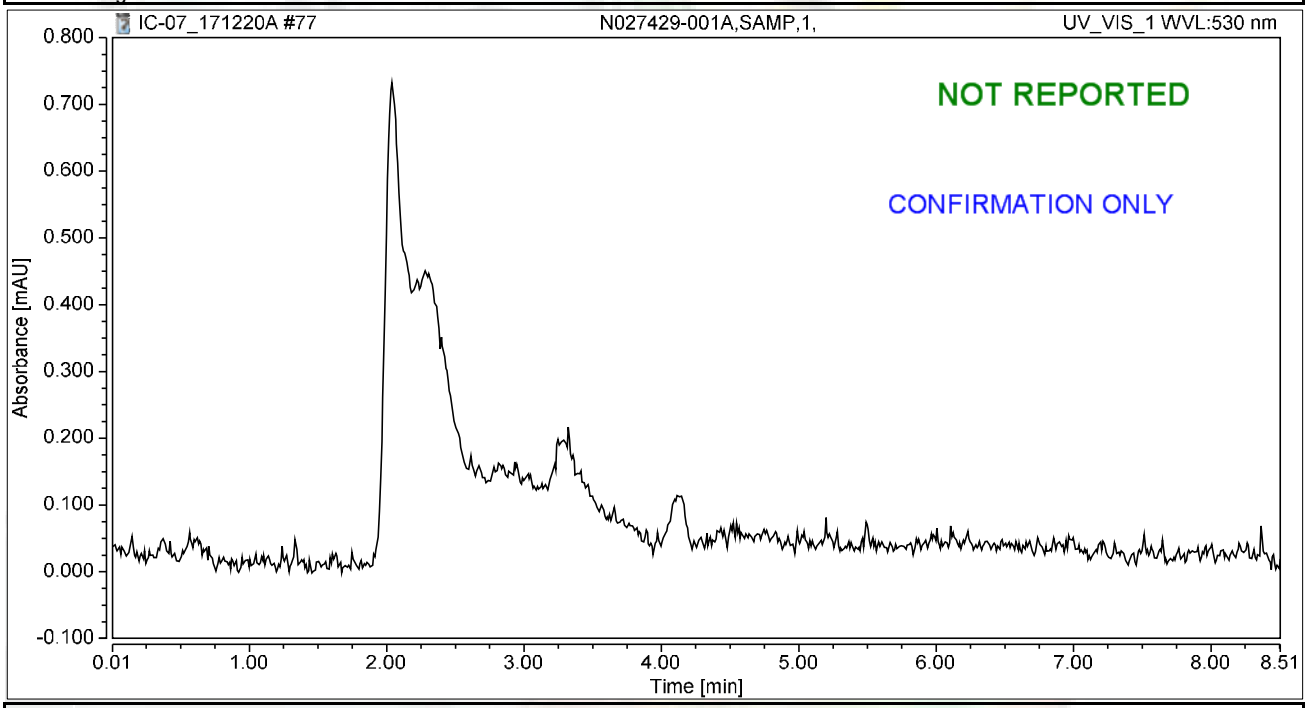
Chromatogram and Results

Injection Details

Injection Name:	**N027429-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 19:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

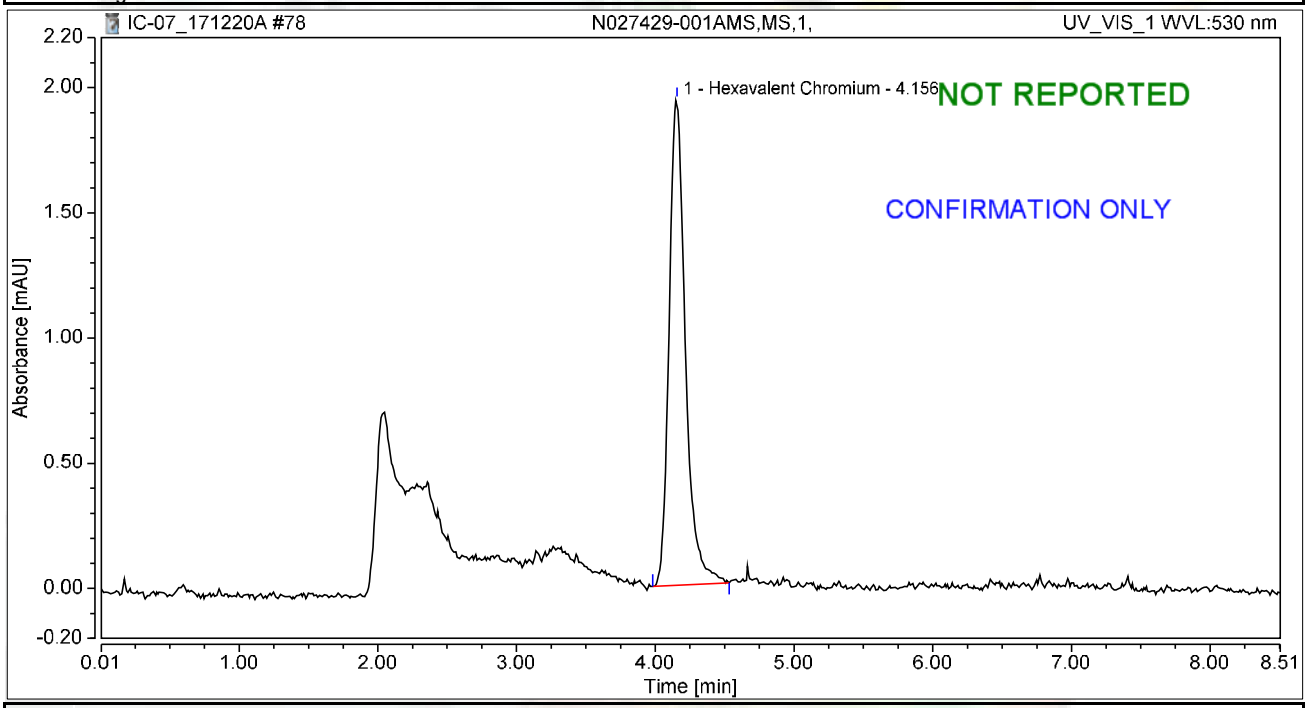
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 19:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

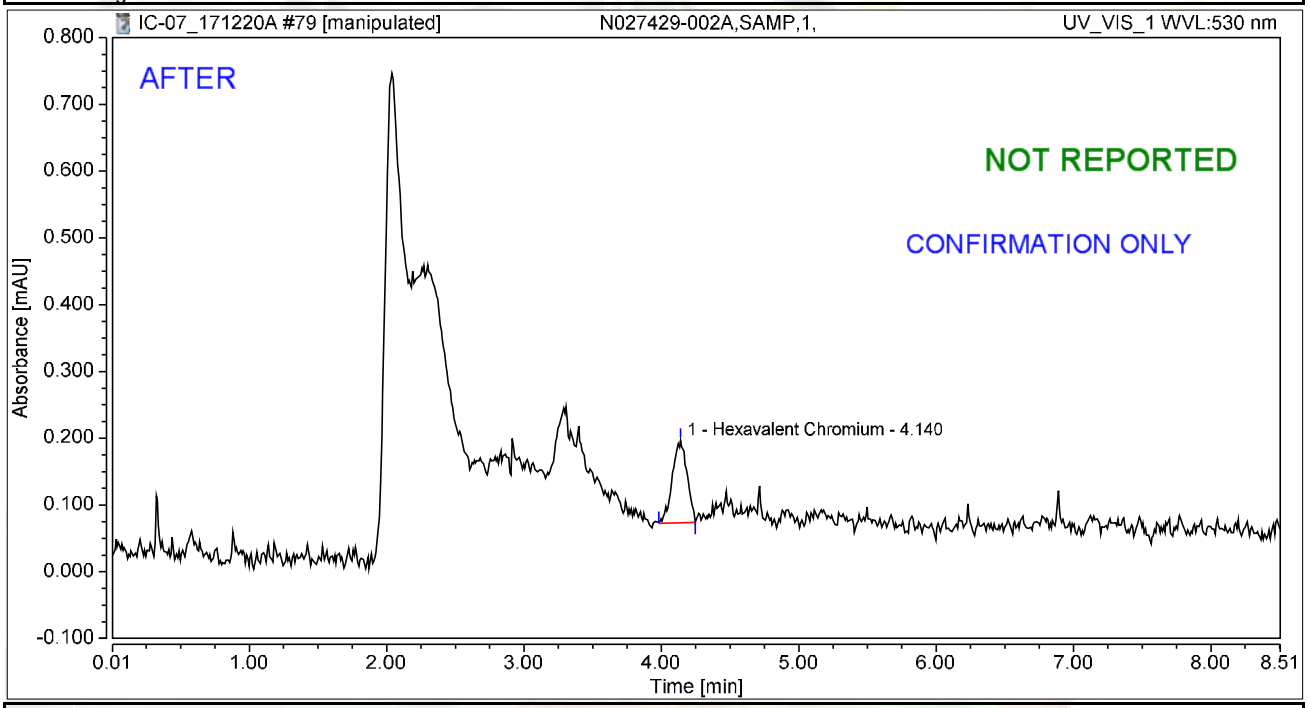
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.264	1.940	100.00	100.00	1.0510
Total:			**0.264**	**1.940**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027429-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 19:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.015	0.124	100.00	100.00	0.0608
Total:			**0.015**	**0.124**	**100.00**	**100.00**	

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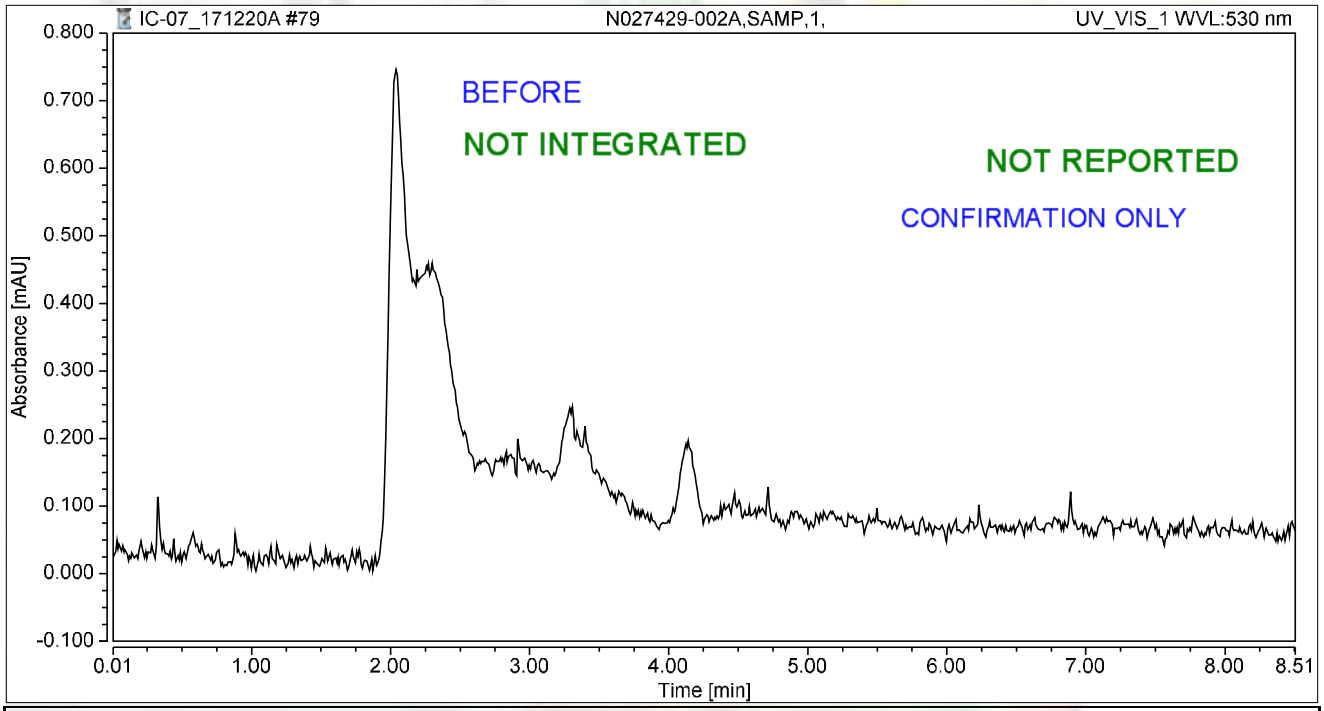
Chromatogram and Results

Injection Details

Injection Name:	**N027429-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 19:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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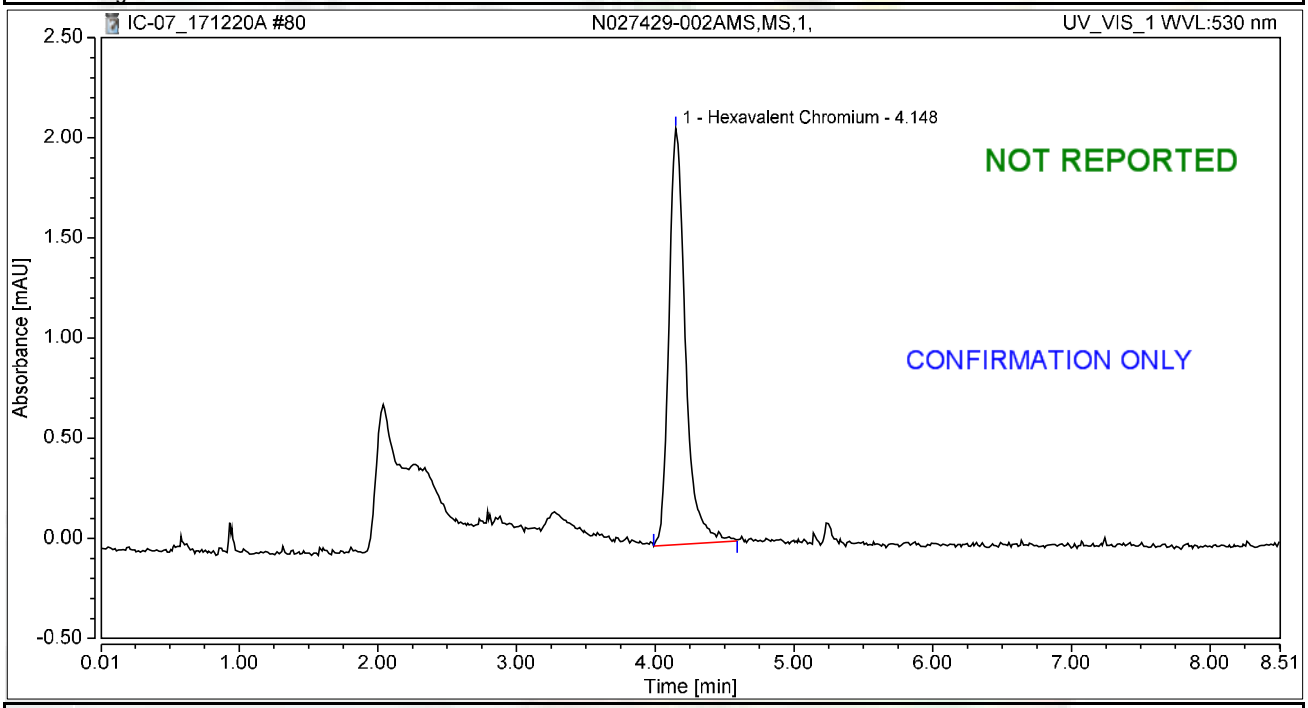
Chromatogram and Results

Injection Details

Injection Name:	**N027429-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 19:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

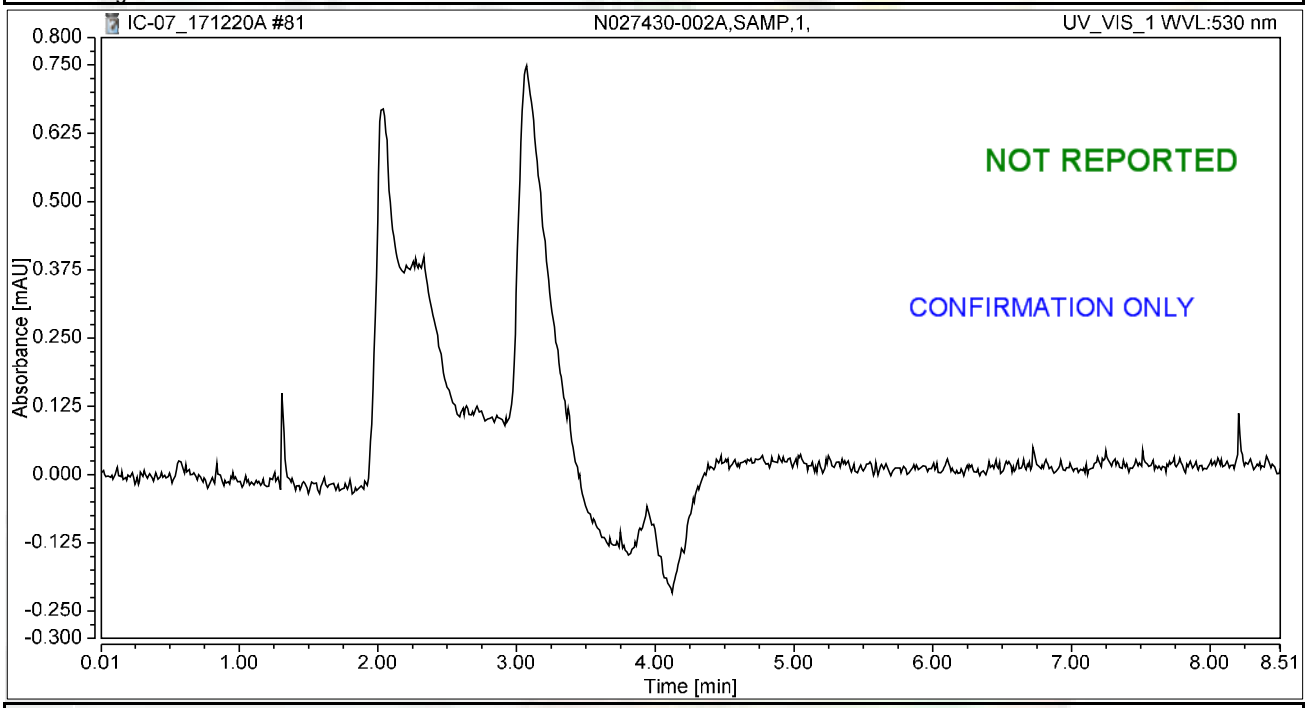
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.286	2.078	100.00	100.00	1.1399
Total:			**0.286**	**2.078**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 20:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

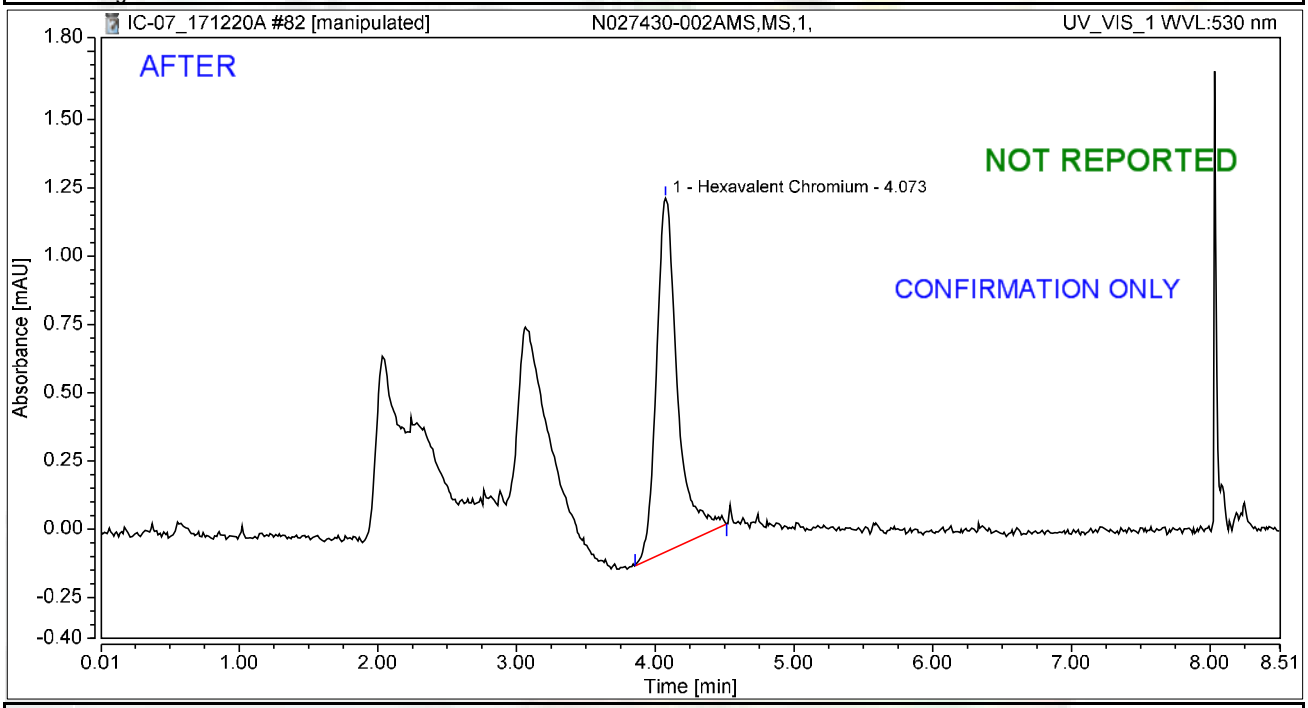
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 20:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	0.229	1.296	100.00	100.00	0.9101
Total:			**0.229**	**1.296**	**100.00**	**100.00**	

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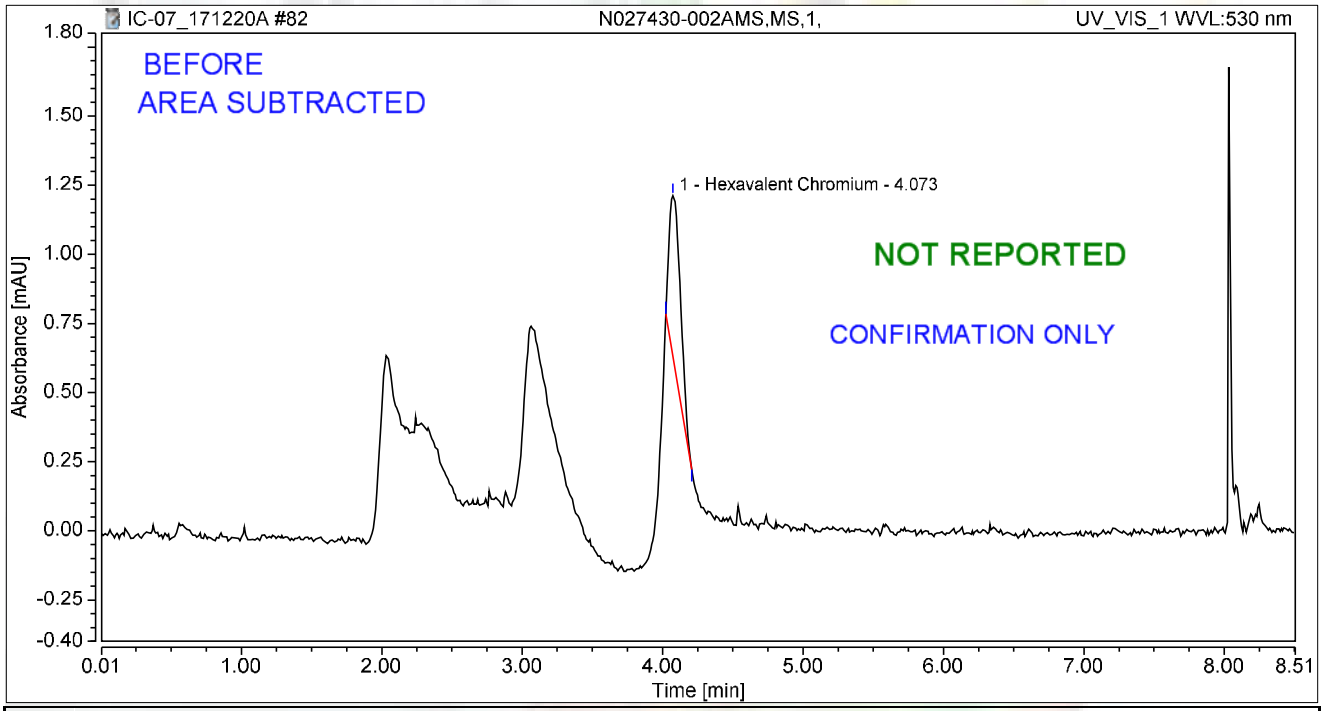
Chromatogram and Results

Injection Details

Injection Name:	**N027430-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 20:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	0.057	0.581	100.00	100.00	0.2283
Total:			**0.057**	**0.581**	**100.00**	**100.00**	

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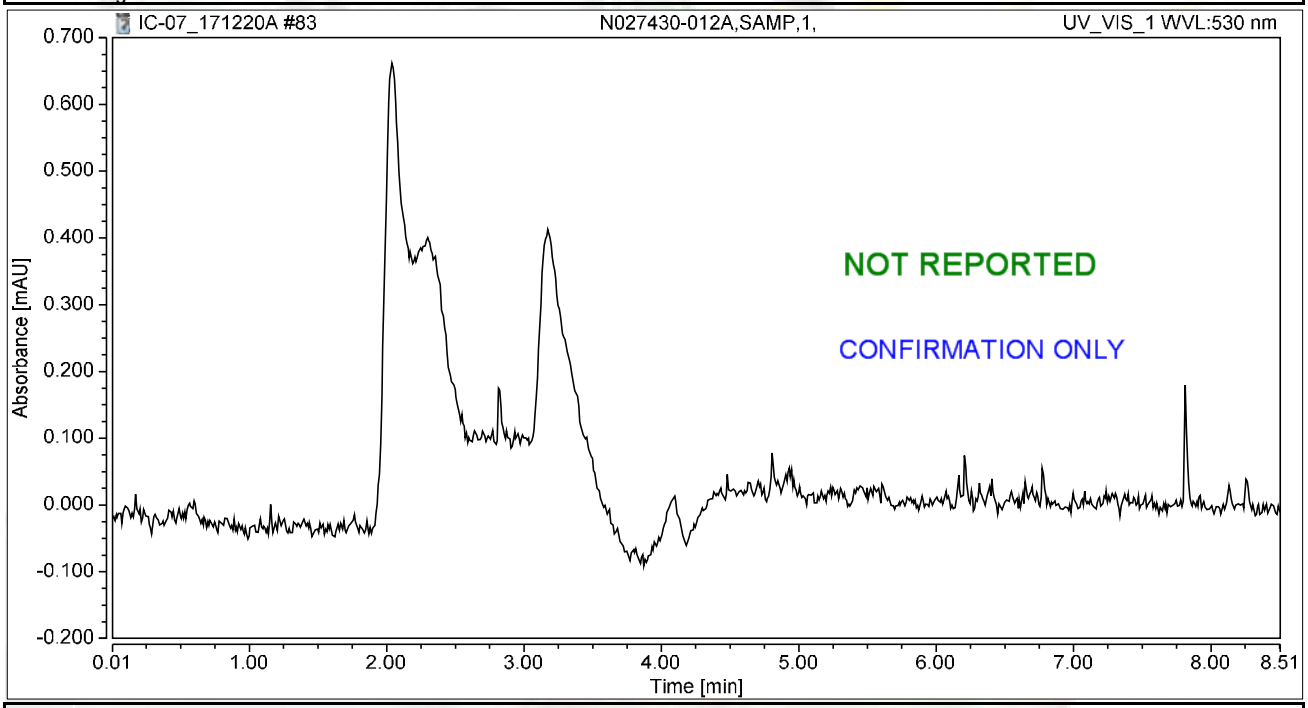
Chromatogram and Results

Injection Details

Injection Name:	**N027430-012A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 20:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

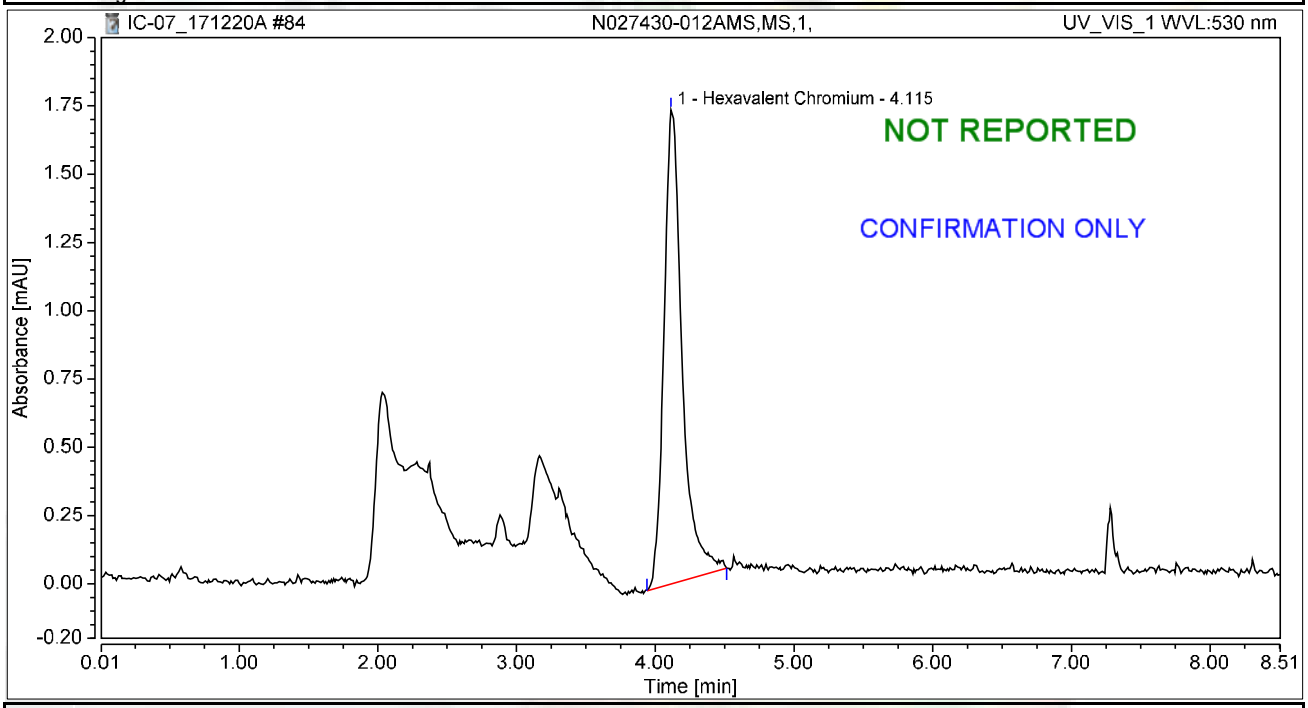
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027430-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 20:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

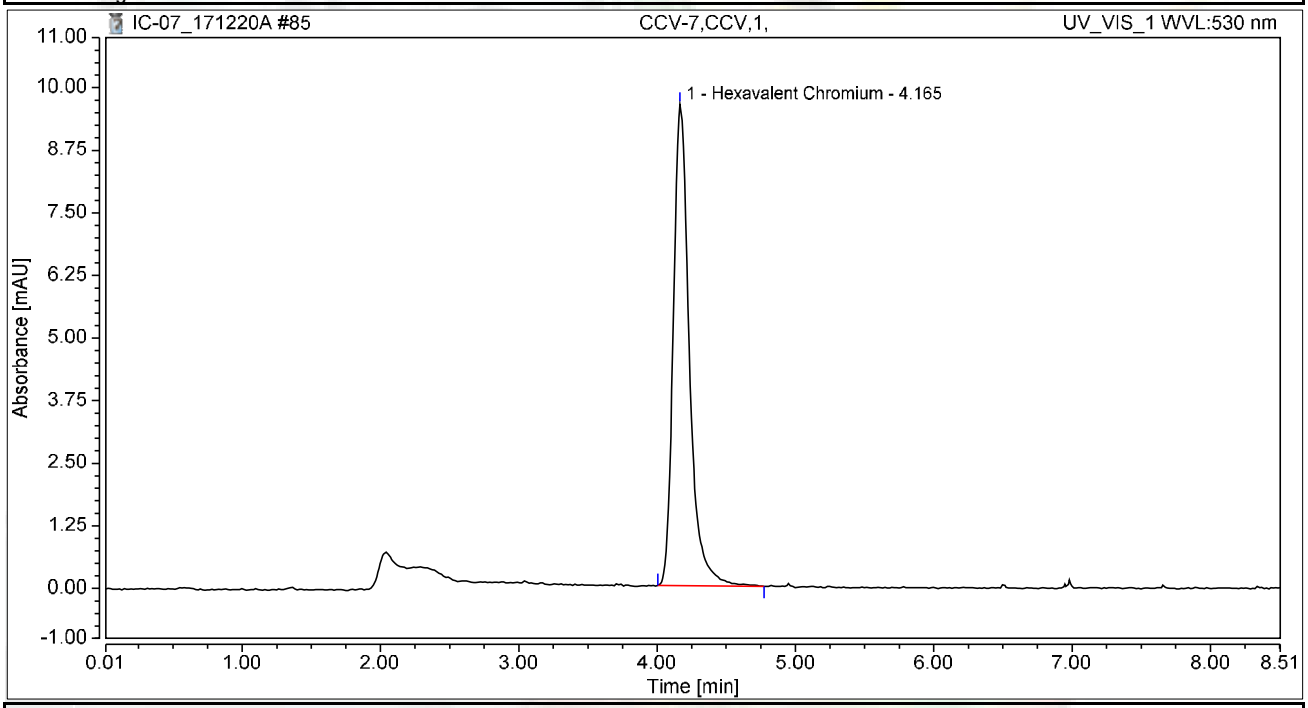
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.265	1.736	100.00	100.00	1.0534
Total:			**0.265**	**1.736**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 20:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

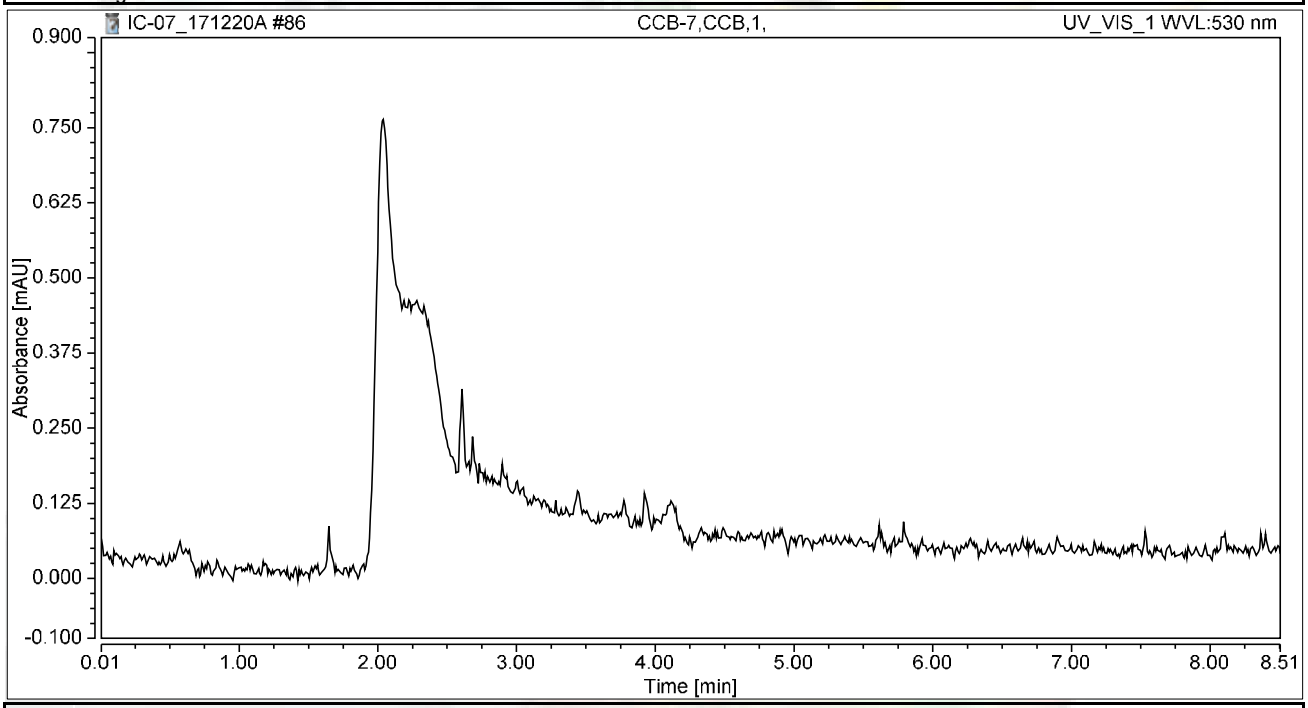
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.295	9.613	100.00	100.00	5.1558
Total:			**1.295**	**9.613**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Dec/17 20:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

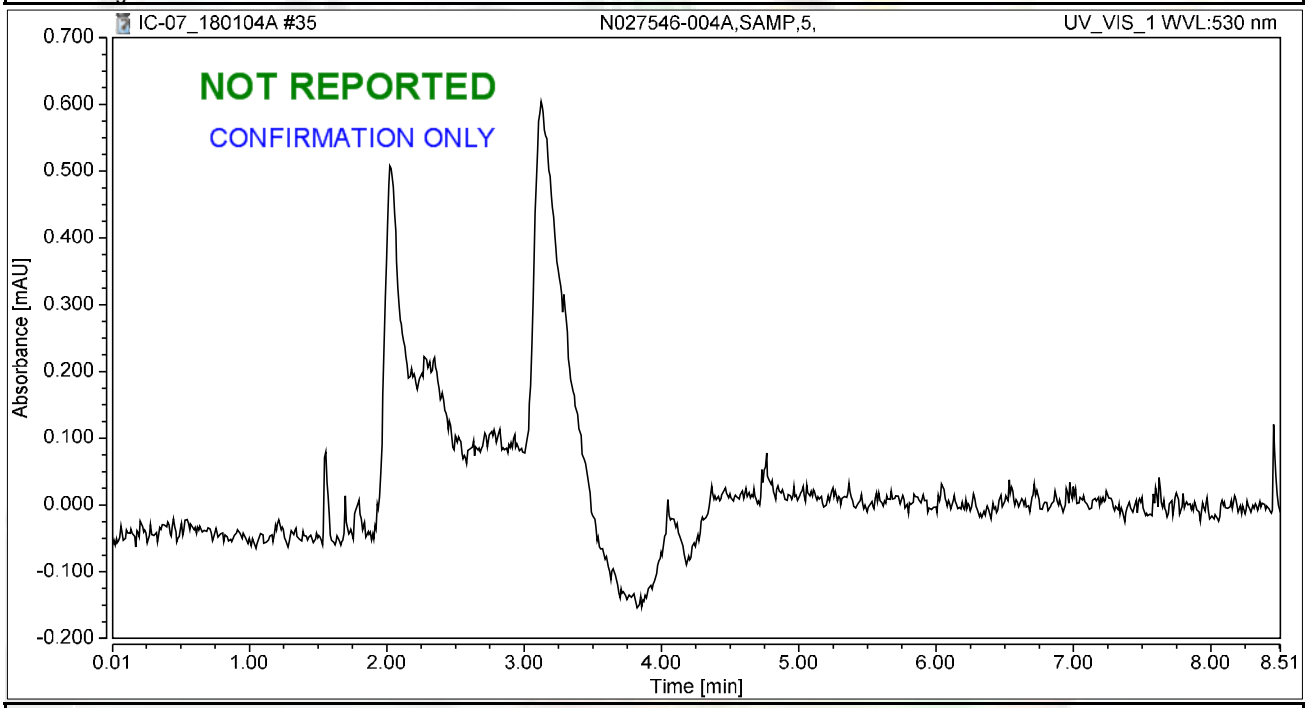
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Jan/18 13:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

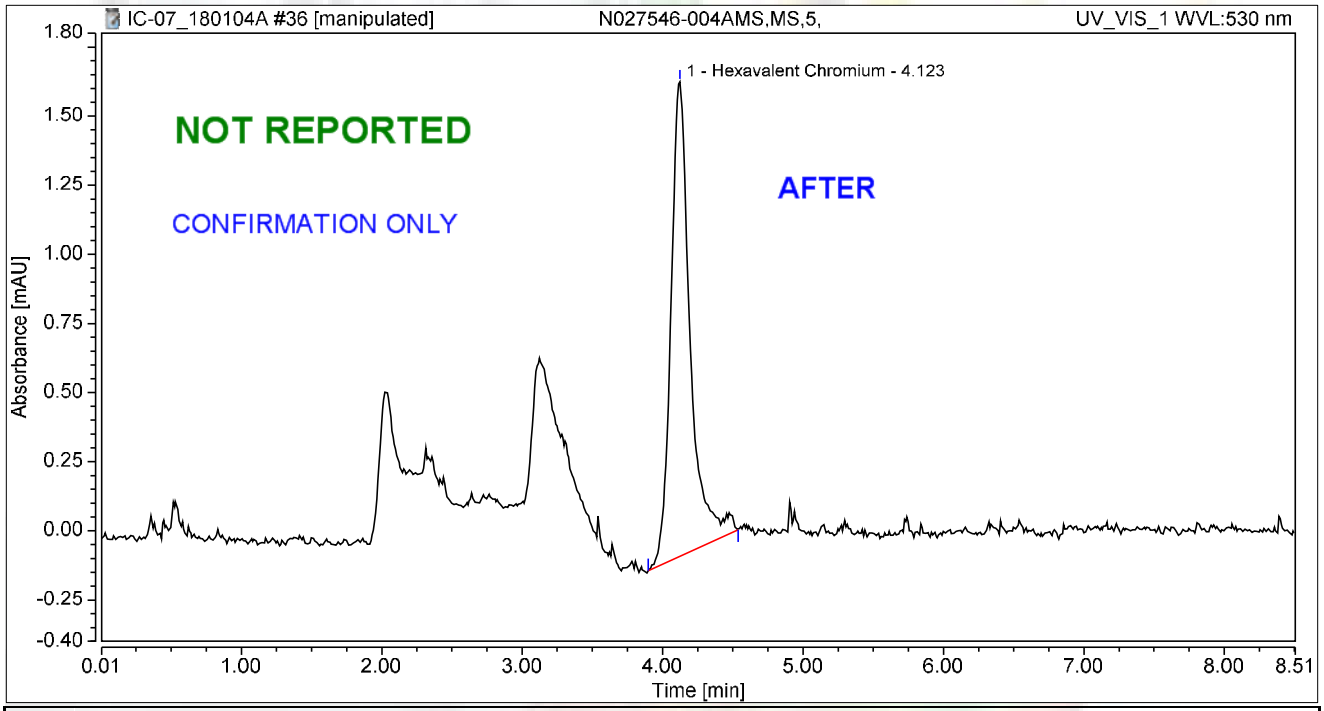
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027546-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Jan/18 13:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.274	1.716	100.00	100.00	1.0719
Total:			**0.274**	**1.716**	**100.00**	**100.00**	

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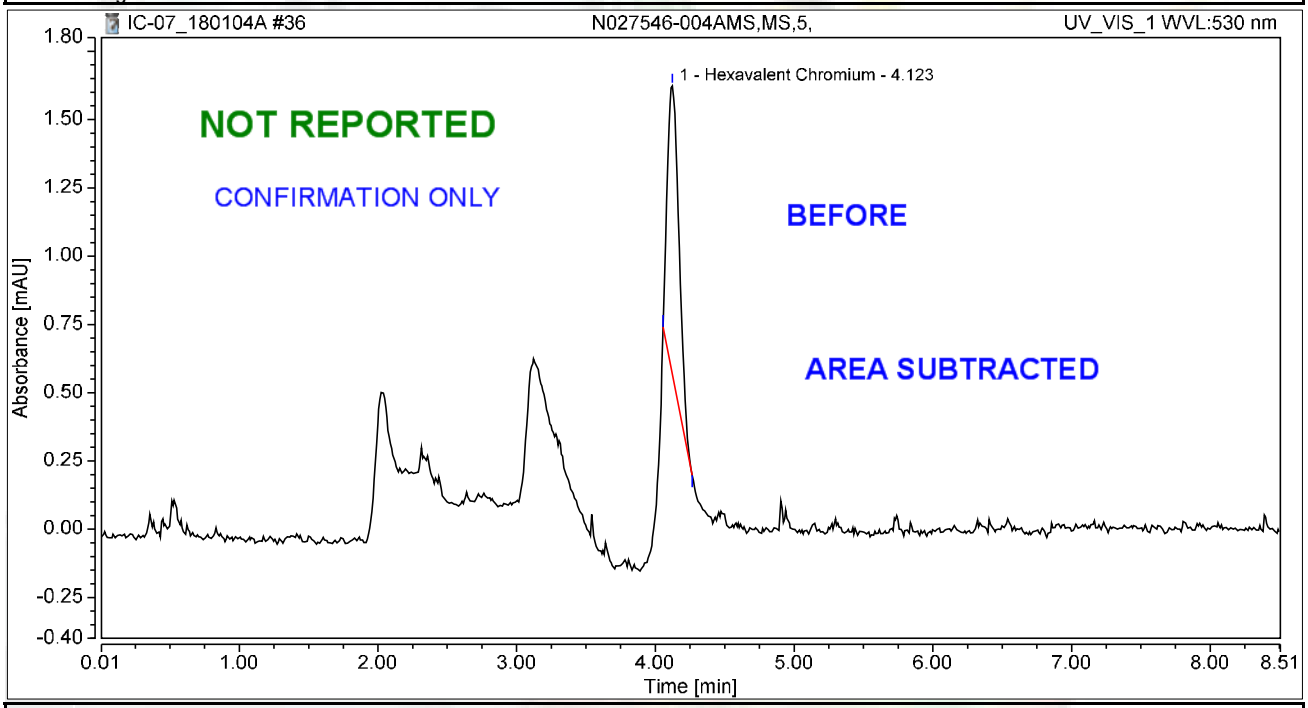
Chromatogram and Results

Injection Details

Injection Name:	**N027546-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Jan/18 13:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.103	1.056	100.00	100.00	0.4031
Total:			**0.103**	**1.056**	**100.00**	**100.00**	

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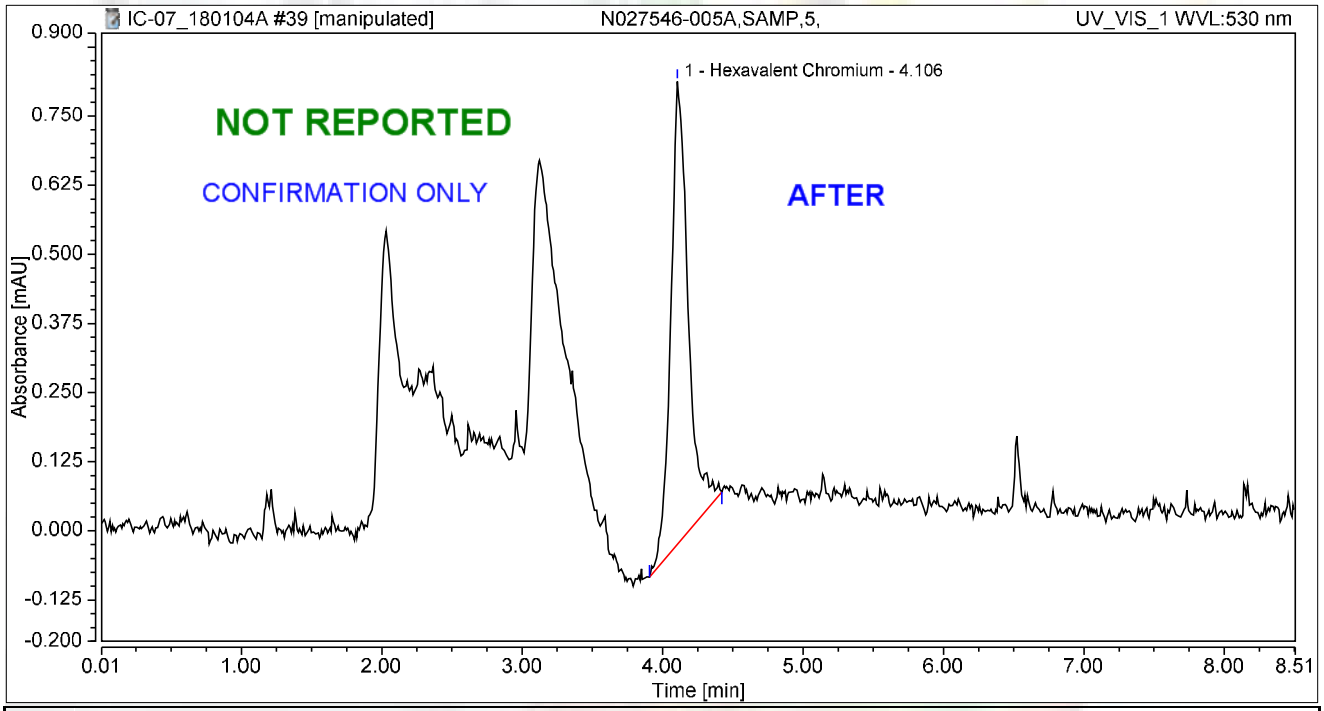
Chromatogram and Results

Injection Details

Injection Name:	**N027546-005A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Jan/18 14:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.120	0.837	100.00	100.00	0.4689
Total:			**0.120**	**0.837**	**100.00**	**100.00**	

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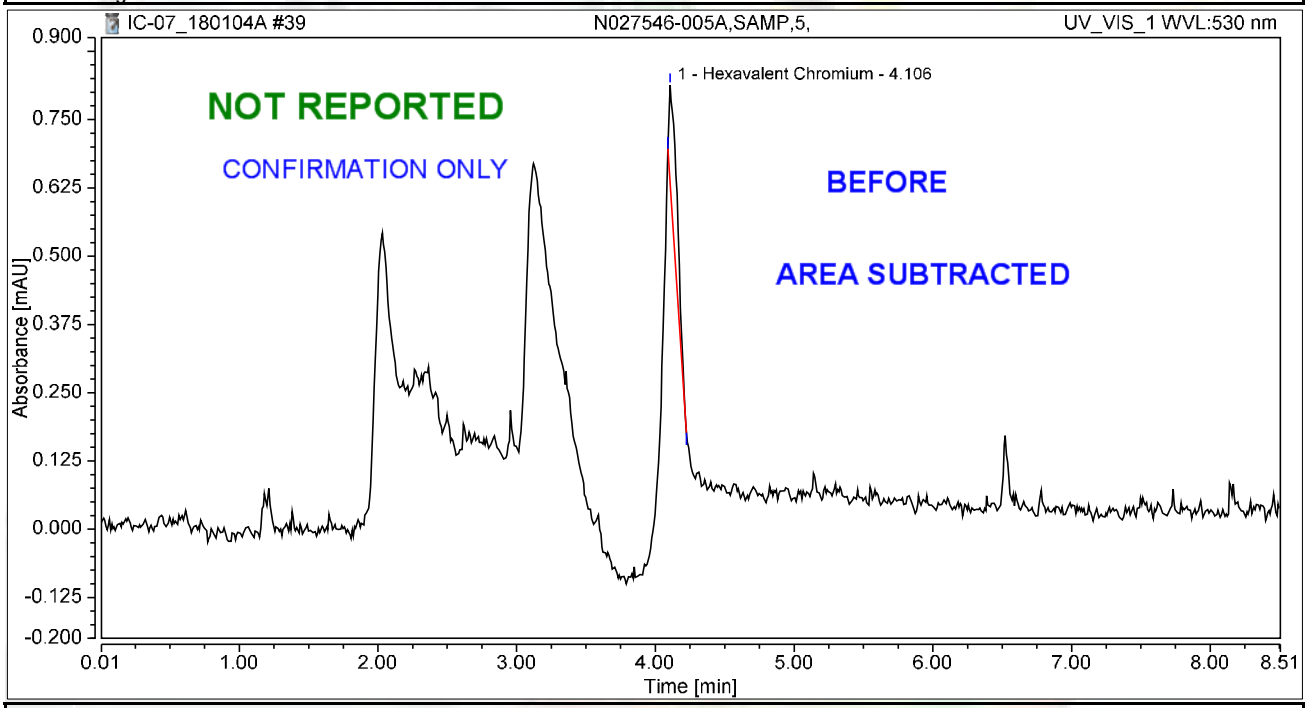
Chromatogram and Results

Injection Details

Injection Name:	**N027546-005A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Jan/18 14:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.015	0.181	100.00	100.00	0.0597
Total:			**0.015**	**0.181**	**100.00**	**100.00**	

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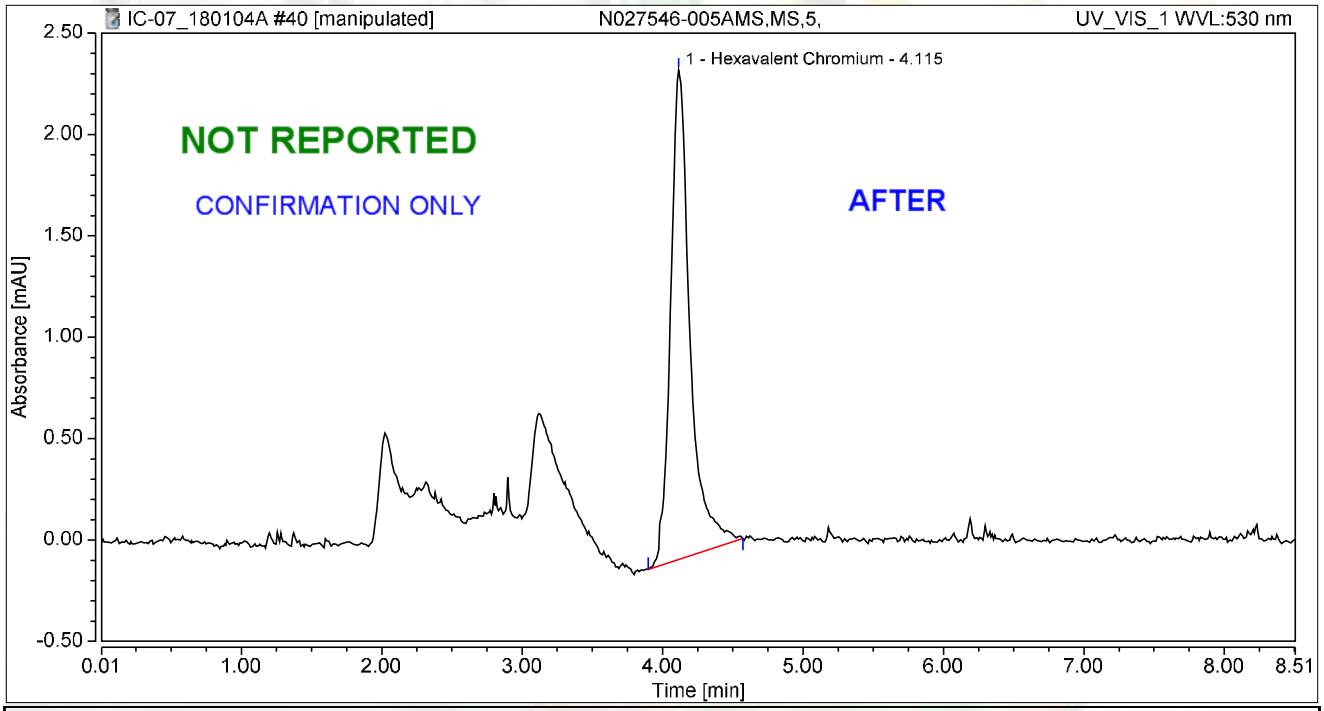
Chromatogram and Results

Injection Details

Injection Name:	**N027546-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Jan/18 14:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.388	2.413	100.00	100.00	1.5163
Total:			**0.388**	**2.413**	**100.00**	**100.00**	

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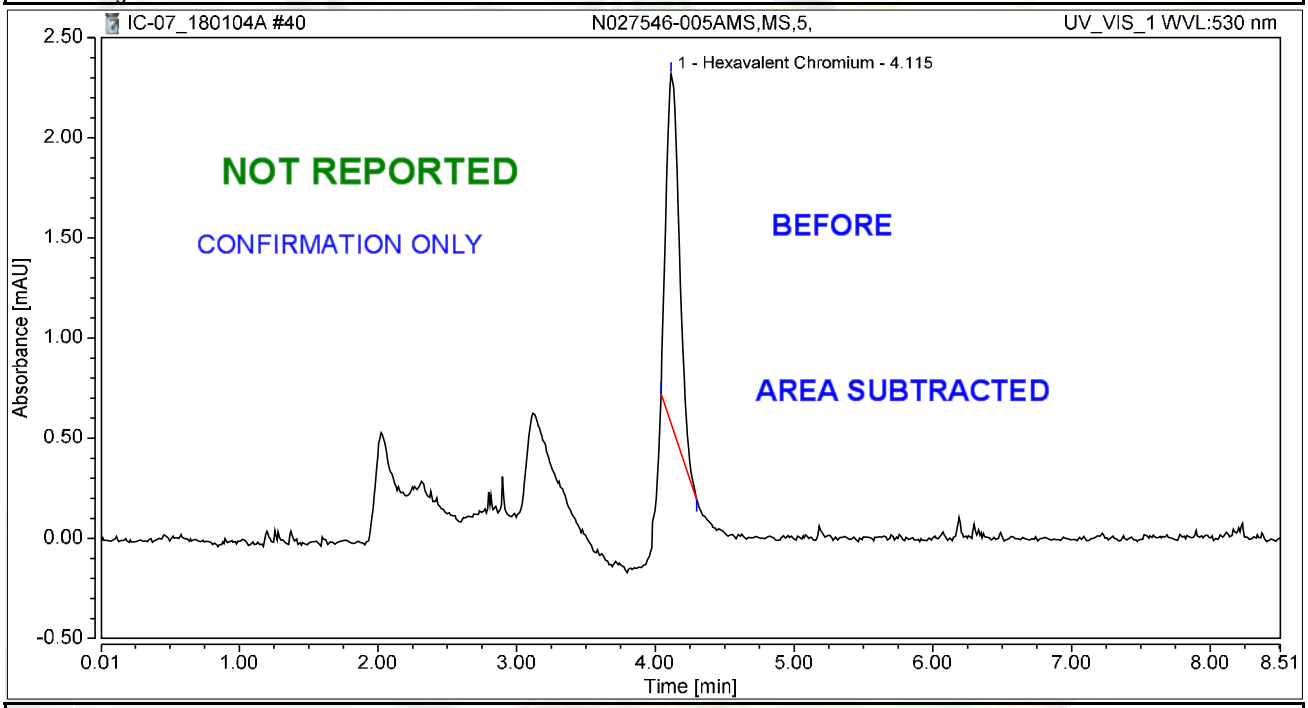
Chromatogram and Results

Injection Details

Injection Name:	**N027546-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Jan/18 14:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.196	1.748	100.00	100.00	0.7655
Total:			**0.196**	**1.748**	**100.00**	**100.00**	

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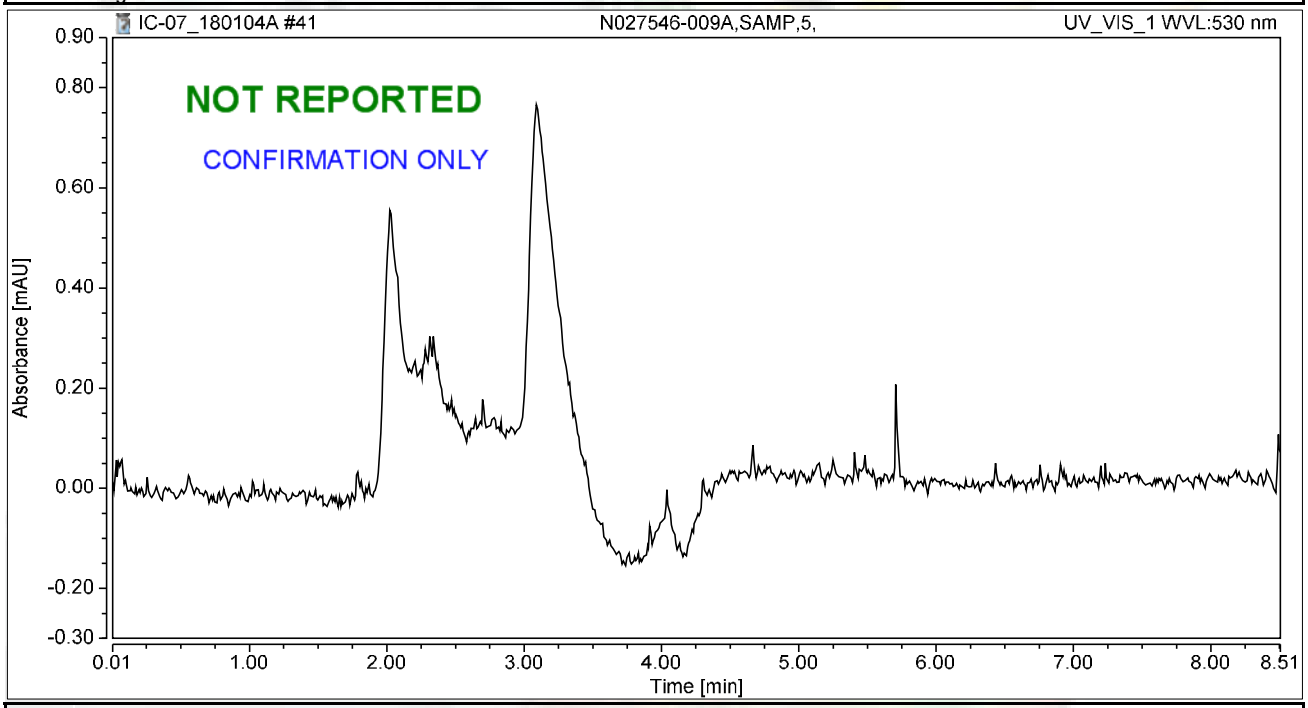
Chromatogram and Results

Injection Details

Injection Name:	**N027546-009A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Jan/18 14:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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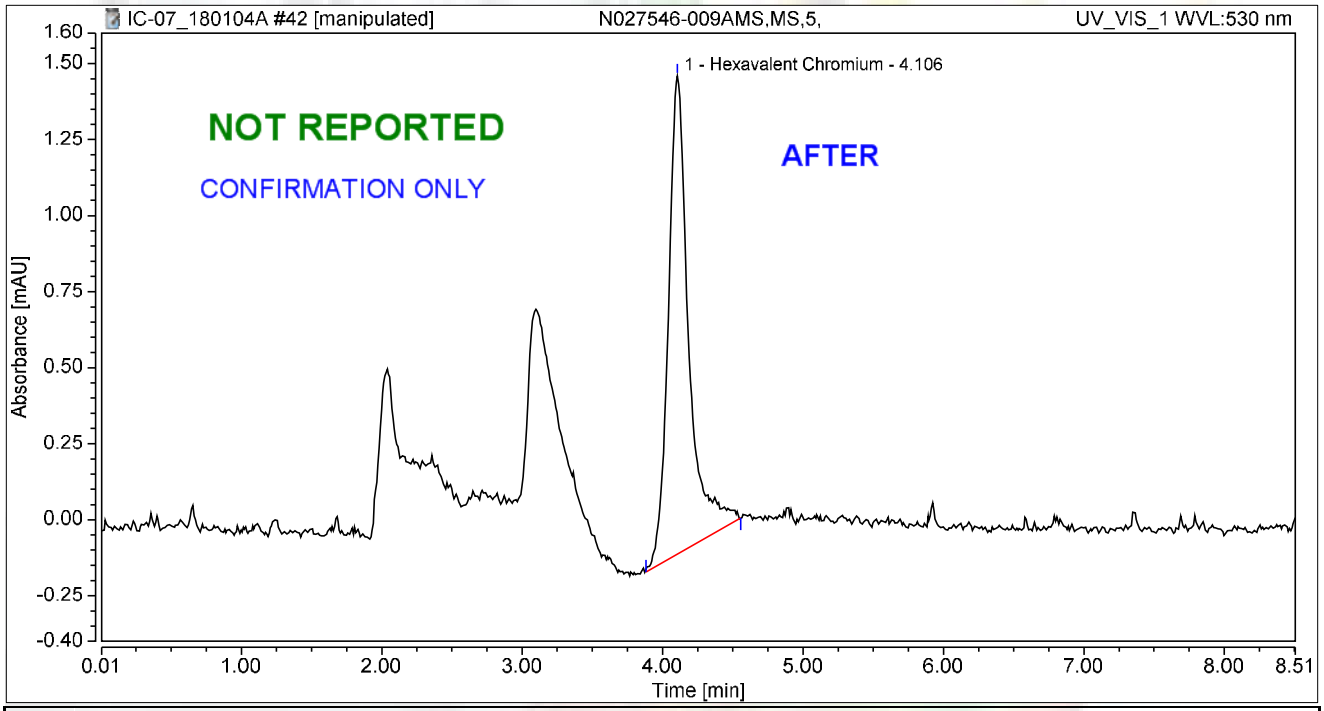
Chromatogram and Results

Injection Details

Injection Name:	**N027546-009AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Jan/18 14:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.265	1.572	100.00	100.00	1.0373
Total:			**0.265**	**1.572**	**100.00**	**100.00**	

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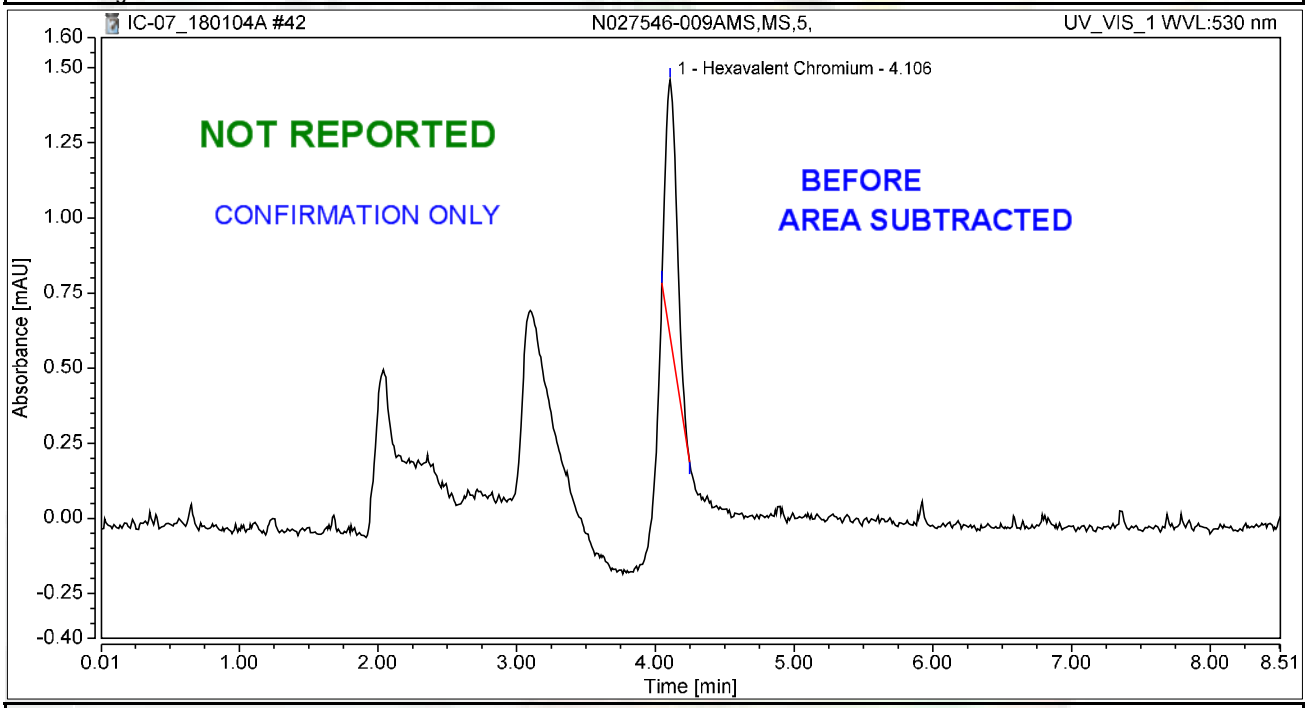
Chromatogram and Results

Injection Details

Injection Name:	**N027546-009AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Jan/18 14:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.080	0.850	100.00	100.00	0.3137
Total:			**0.080**	**0.850**	**100.00**	**100.00**	

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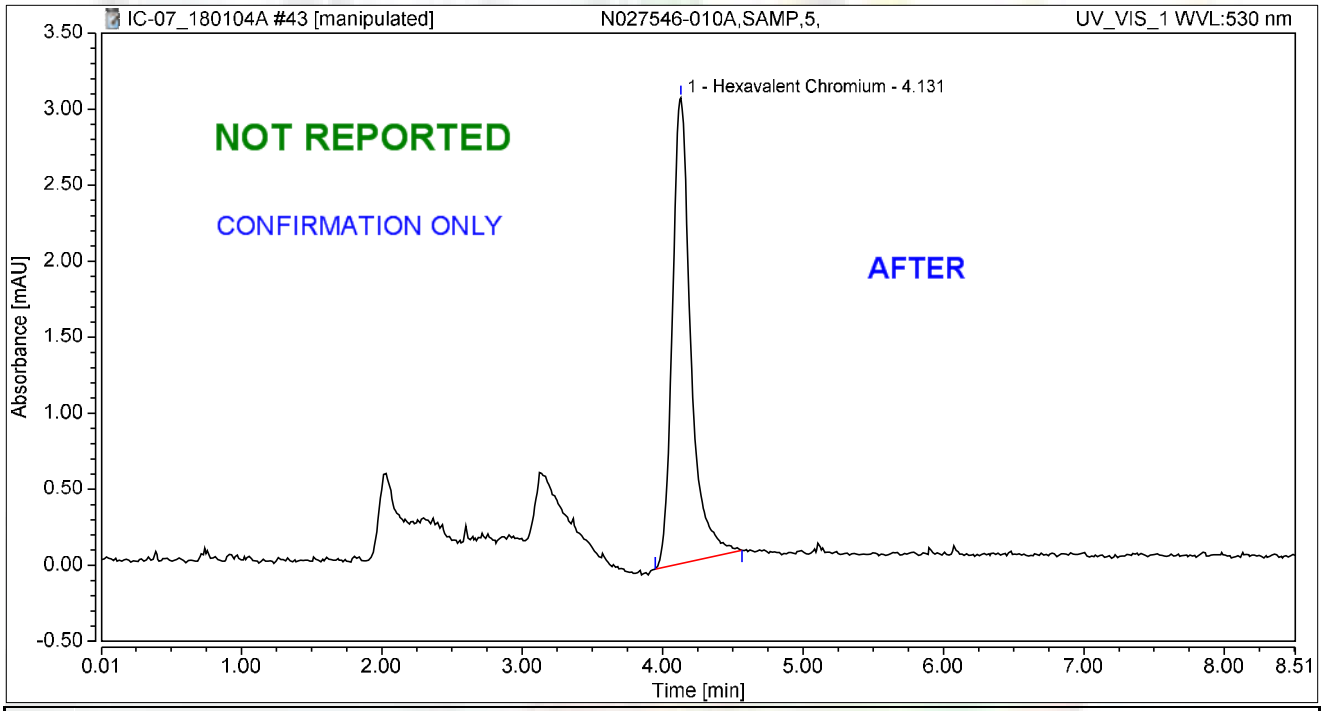
Chromatogram and Results

Injection Details

Injection Name:	**N027546-010A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Jan/18 14:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.468	3.064	100.00	100.00	1.8312
Total:			**0.468**	**3.064**	**100.00**	**100.00**	

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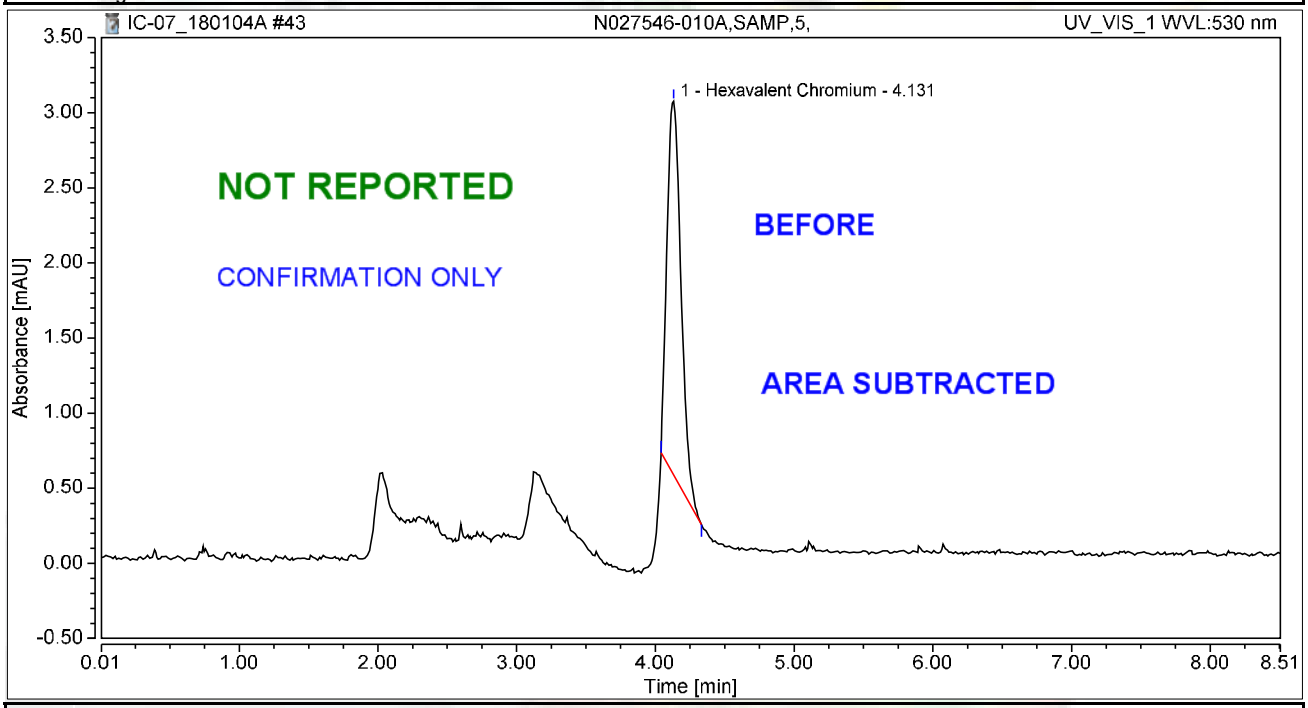
Chromatogram and Results

Injection Details

Injection Name:	**N027546-010A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Jan/18 14:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.293	2.488	100.00	100.00	1.1453
Total:			**0.293**	**2.488**	**100.00**	**100.00**	

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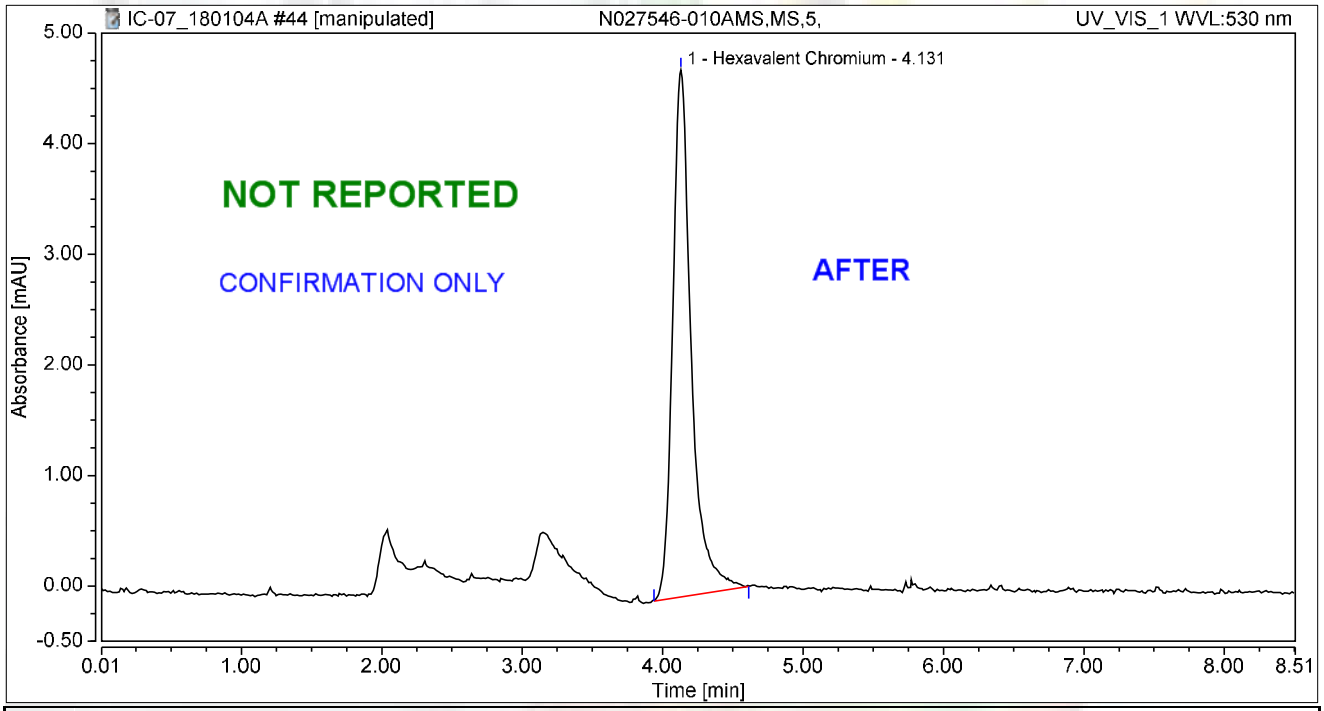
Chromatogram and Results

Injection Details

Injection Name:	**N027546-010AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Jan/18 15:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.731	4.768	100.00	100.00	2.8566
Total:			**0.731**	**4.768**	**100.00**	**100.00**	

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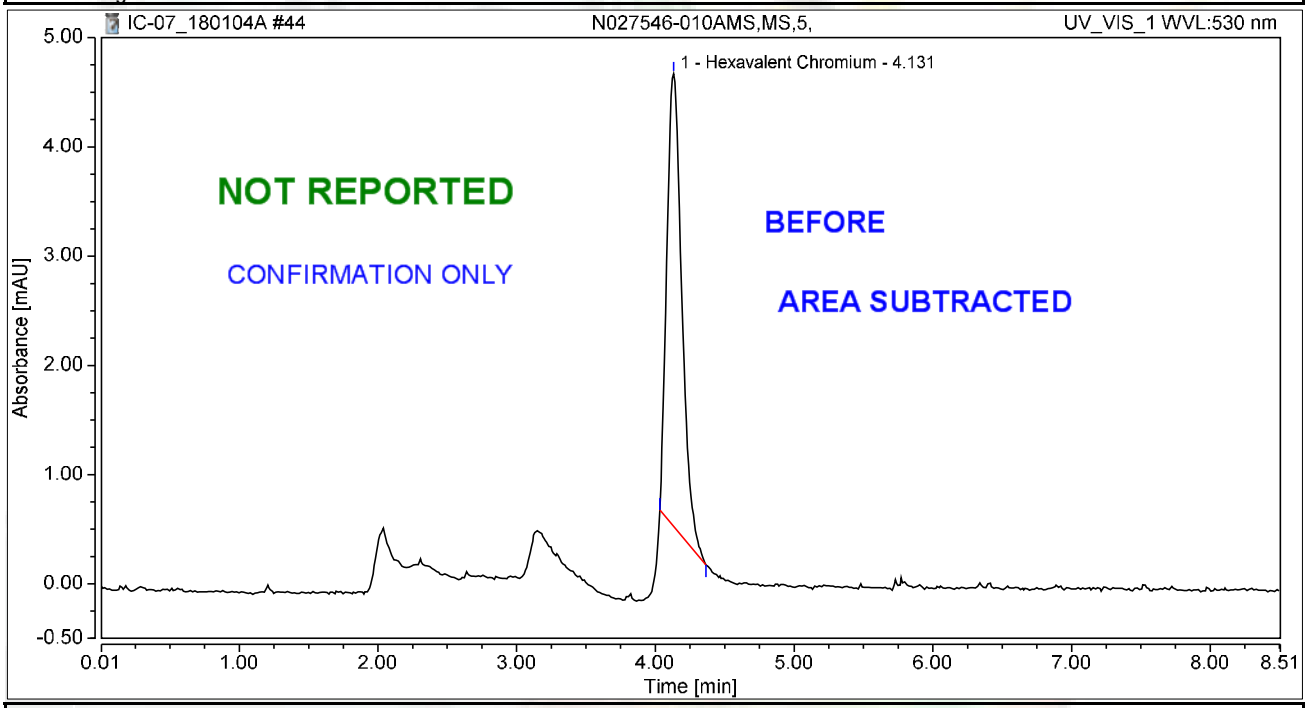
Chromatogram and Results

Injection Details

Injection Name:	**N027546-010AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Jan/18 15:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.520	4.143	100.00	100.00	2.0319
Total:			**0.520**	**4.143**	**100.00**	**100.00**	

rba 1/5/2018

RB 01/08/2018

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121068/R121069 **Analyst:** LSR

ASSET #: N027546 **Date Analyzed:** 12/18,12/19/17

Method: EPA 2320

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X			X		
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Silvia Ramit Date: 12/27/2017

2nd Level Reviewer RLB 01/08/2018 Date:

SAMPLE CALCULATION

Sample ID: **N027546-001D @ pH 7.49**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (11.975 mL)

= **0.02088 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (5.10) (0.02088 N) (1) * 1000

= 106.4880 mg**/L**

Reporting results in two significant figures,

= **110 mg/L** as CaCO3

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C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02088 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (5.10 mL) (0.02088) (1) * 1000

= 106.4880 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 106.4880 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **110 mg/L**

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LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.28	50	0.00	0.050	MBLK
LCS-1	8.69	50	0.10	4.70	LCS
N027524-001D	7.93	50	0.00	3.00	SAMP
N027524-002D	7.96	50	0.00	3.00	SAMP
N027524-003D	7.83	50	0.00	2.75	SAMP
N027524-004D	7.85	50	0.00	2.60	SAMP
N027524-005D	8.02	50	0.00	3.00	SAMP
N027524-006D	8.01	50	0.00	3.00	SAMP
N027524-007D	8.01	50	0.00	2.95	SAMP
N027524-008D	7.74	50	0.00	2.40	SAMP
N027524-009D	7.79	50	0.00	2.50	SAMP
N027524-010D	7.75	50	0.00	2.50	SAMP
N027524-011D	7.85	50	0.00	2.90	SAMP
N027524-012D	7.86	50	0.00	2.70	SAMP
N027524-013D	7.77	50	0.00	2.55	SAMP
N027546-001D	7.49	50	0.00	5.10	SAMP
N027546-002D	7.50	50	0.00	5.05	SAMP
N027546-003D	7.81	50	0.00	2.45	SAMP
N027546-004D	7.89	50	0.00	1.05	SAMP
N027546-005D	7.88	50	0.00	1.05	SAMP
N027546-006D	7.73	50	0.00	3.00	SAMP
N027546-007C	7.65	50	0.00	1.40	SAMP
N027524-001DDUP	7.98	50	0.00	3.00	DUP
N027546-001DMS	7.99	50	0.00	9.70	MS
N027546-001DMSD	8.00	50	0.00	9.70	MSD

Standardization:

Spike amt:	**5**	ml
Titrant used:	**11.975**	ml
N H2SO4	**0.02088**	Normal
Date Analyzed:	**12/18/17**	
Time:	**7:45 AM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-161205A**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R171214D**	

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Date Analyzed:	12/18/17		Reagents:					Standardization:					P = 0
Time Started:	7:45 AM			Sodium Carbonate:		CINV-161205A			Spike amt:	5	mL		P < 1/2 T
Analyzed By:	LSR			Hydrochloric Acid:		0			Titrant used:	11.975	mL		P = 1/2 T
				Sulfuric Acid:		R171214D							P > 1/2 T
									N H2SO4	0.02088	N		P = T

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.28				0.02088	0.00	0.05	0.05	1	0.00	1.04	
LCS-1	50	8.69				0.02088	0.10	4.60	4.70	1	2.09	98.12	
N027524-001D	50	7.93				0.02088	0.00	3.00	3.00	1	0.00	62.63	
N027524-002D	50	7.96				0.02088	0.00	3.00	3.00	1	0.00	62.63	
N027524-003D	50	7.83				0.02088	0.00	2.75	2.75	1	0.00	57.41	
N027524-004D	50	7.85				0.02088	0.00	2.60	2.60	1	0.00	54.28	
N027524-005D	50	8.02				0.02088	0.00	3.00	3.00	1	0.00	62.63	
N027524-006D	50	8.01				0.02088	0.00	3.00	3.00	1	0.00	62.63	
N027524-007D	50	8.01				0.02088	0.00	2.95	2.95	1	0.00	61.59	
N027524-008D	50	7.74				0.02088	0.00	2.40	2.40	1	0.00	50.10	
N027524-009D	50	7.79				0.02088	0.00	2.50	2.50	1	0.00	52.19	
N027524-010D	50	7.75				0.02088	0.00	2.50	2.50	1	0.00	52.19	
N027524-011D	50	7.85				0.02088	0.00	2.90	2.90	1	0.00	60.54	
N027524-012D	50	7.86				0.02088	0.00	2.70	2.70	1	0.00	56.37	
N027524-013D	50	7.77				0.02088	0.00	2.55	2.55	1	0.00	53.24	
N027546-001D	50	7.49				0.02088	0.00	5.10	5.10	1	0.00	106.47	
N027546-002D	50	7.5				0.02088	0.00	5.05	5.05	1	0.00	105.43	
N027546-003D	50	7.81				0.02088	0.00	2.45	2.45	1	0.00	51.15	
N027546-004D	50	7.89				0.02088	0.00	1.05	1.05	1	0.00	21.92	
N027546-005D	50	7.88				0.02088	0.00	1.05	1.05	1	0.00	21.92	
N027546-006D	50	7.73				0.02088	0.00	3.00	3.00	1	0.00	62.63	
N027546-007C	50	7.65				0.02088	0.00	1.40	1.40	1	0.00	29.23	
N027524-001DDU	50	7.98				0.02088	0.00	3.00	3.00	1	0.00	62.63	
N027546-001DMS	50	7.99				0.02088	0.00	9.70	9.70	1	0.00	202.51	
N027546-001DMS	50	8				0.02088	0.00	9.70	9.70	1	0.00	202.51	

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Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	12/18/17
Time:	7:45 AM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.04	1.04	1.04		P = 0
LCS-1	0.00	4.18	93.95	98.12	98.12		P < 1/2 T
N027524-001D	0.00	0.00	62.63	62.63	62.63		P = 0
N027524-002D	0.00	0.00	62.63	62.63	62.63		P = 0
N027524-003D	0.00	0.00	57.41	57.41	57.41		P = 0
N027524-004D	0.00	0.00	54.28	54.28	54.28		P = 0
N027524-005D	0.00	0.00	62.63	62.63	62.63		P = 0
N027524-006D	0.00	0.00	62.63	62.63	62.63		P = 0
N027524-007D	0.00	0.00	61.59	61.59	61.59		P = 0
N027524-008D	0.00	0.00	50.10	50.10	50.10		P = 0
N027524-009D	0.00	0.00	52.19	52.19	52.19		P = 0
N027524-010D	0.00	0.00	52.19	52.19	52.19		P = 0
N027524-011D	0.00	0.00	60.54	60.54	60.54		P = 0
N027524-012D	0.00	0.00	56.37	56.37	56.37		P = 0
N027524-013D	0.00	0.00	53.24	53.24	53.24		P = 0
N027546-001D	0.00	0.00	106.47	106.47	106.47		P = 0
N027546-002D	0.00	0.00	105.43	105.43	105.43		P = 0
N027546-003D	0.00	0.00	51.15	51.15	51.15		P = 0
N027546-004D	0.00	0.00	21.92	21.92	21.92		P = 0
N027546-005D	0.00	0.00	21.92	21.92	21.92		P = 0
N027546-006D	0.00	0.00	62.63	62.63	62.63		P = 0
N027546-007C	0.00	0.00	29.23	29.23	29.23		P = 0
N027524-001DDUP	0.00	0.00	62.63	62.63	62.63		P = 0
N027546-001DMS	0.00	0.00	202.51	202.51	202.51		P = 0
N027546-001DMSD	0.00	0.00	202.51	202.51	202.51		P = 0

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Alkalinity Preparation and Runlog

Matrix: H_2O

Date Extracted: 12/8/17
Time Extracted:
Extracted By: LSR

Date Analyzed: 12/18/17
Time Analyzed: 745
Analyzed By: LSR

Reagent Lot # / Reagent ID
Sodium Carbonate: CINV161205A
Hydrochloric Acid:
Sulfuric Acid: R171214D
Sodium Bicarbonate: CINV150601A

pH meter Calibration:
SLOPE: 97.6%
pH 7 – 7.02 CINV170615F
4 – 4.02 170615F
10 – 10.02 170823B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
STANDARDIZATION											
#1	50 mL	10.58	IWST171218A	5mL	0.05N	–	–	12.0	50/10	$N_{H_2SO_4} = \frac{(2.65\,g/L)(5\,mL)}{(53)(V\ titrant)}$	= 0.1208333333
#2	↓	10.63	↓	↓	↓	–	–	11.95	↓		= 0.1209302502
											Ave: 0.1208976917
1) MBLC	50mL	5.28	–	–	–	0.1208	0	0.050	50/50		
2) LCS		8.69	IWST171218B	1mL	0.05N		0.10	4.70			
3) N027524-1D		7.93					0	3.0			
4) 2D		7.96					0	3.0			
5) 3D		7.83					0	2.75			
6) 4D		7.85					0	2.60			
7) 5D		8.02					0	3.0			
8) 6D		8.01					0	3.0			
9) 7D		8.01					0	2.95		$P = \frac{(V\ pH\ 8.3)(N_{H_2SO_4})(50{,}000)}{V_{SX}}$	
10) 8D		7.74					0	2.40			
11) 9D		7.79					0	2.50			
12) 10D		7.75					0	2.50			
13) 11D		7.85					0	2.90		$T = \frac{(V\ pH\ 4.5)(N_{H_2SO_4})(50{,}000)}{V_{SX}}$	
14) 12D		7.86					0	2.70			
15) 13D		7.77					0	2.55			
16) N027546-001D		7.49					0	5.10			
17) 2D		7.50					0	5.05			
18) 3D		7.81					0	2.45			
19) 4D		7.89					0	1.05			
20) 5D		7.88					0	1.05			
MS 6D		7.73					0	3.0			
MSD 7C		7.65					0	1.40			
~~LCS~~ N027524-1D	DUP	7.98					0	3.0			
N027546-1D	MS	7.99	IWST171218B	1mL	0.05N		0	9.70			
	10 MSD	8.00					0	9.70			

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SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.19	50	0.00	0.050	MBLK
LCS-1	8.21	50	0.00	4.70	LCS
N027546-008D	7.70	50	0.00	1.80	SAMP
N027546-009D	7.71	50	0.00	1.90	SAMP
N027546-010D	7.63	50	0.00	1.70	SAMP
N027556-001D	7.75	50	0.00	3.60	SAMP
N027556-002D	7.73	50	0.00	3.60	SAMP
N027556-003D	7.77	50	0.00	3.50	SAMP
N027556-006D	7.69	50	0.00	3.60	SAMP
N027557-001C	7.68	50	0.00	1.65	SAMP
N027557-002C	7.71	50	0.00	1.65	SAMP
N027557-003C	7.67	50	0.00	2.40	SAMP
N027557-004C	8.07	50	0.00	1.80	SAMP
N027557-005D	8.27	50	0.00	2.20	SAMP
N027557-006D	10.51	50	1.50	2.00	SAMP
N027557-007D	7.72	50	0.00	1.30	SAMP
N027557-008D	7.85	50	0.00	4.15	SAMP
N027557-009D	7.70	50	0.00	2.75	SAMP
N027557-010D	7.72	50	0.00	2.65	SAMP
N027583-001D	7.74	50	0.00	3.10	SAMP
N027583-002D	7.79	50	0.00	2.80	SAMP
N027583-003D	7.71	50	0.00	3.20	SAMP
N027557-001CDUP	7.69	50	0.00	1.70	DUP
N027583-001DMS	8.42	50	0.05	7.70	MS
N027583-001DMSD	8.41	50	0.05	7.70	MSD

Standardization:

Spike amt:	**5**	ml
Titrant used:	**11.800**	ml
N H2SO4	**0.02119**	Normal
Date Analyzed:	**12/19/17**	
Time:	**8:35 AM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-161205A**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R171214D**	

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Date Analyzed:	12/19/17		**Reagents:**					**Standardization:**					**P = 0**
Time Started:	8:35 AM			Sodium Carbonate:		CINV-161205A			Spike amt:	5	**mL**		**P < 1/2 T**
Analyzed By:	**LSR**			Hydrochloric Acid:		0			Titrant used:	11.8	**mL**		**P = 1/2 T**
				Sulfuric Acid:		R171214D							**P > 1/2 T**
									N H2SO4	0.02119	**N**		**P = T**
Sample ID	**Sample Vol/Wt.**	**Sample pH**	**Std. Code**	**Spike Amount**	**Spike Conc.**	**Normality, Titrant**	**Vol. Used to pH 8.3, ml.**	**Vol. Used pH 8.3 to 4.5, ml.**	**Total Vol. Used, ml.**	**DF (50ml/Vsamp.)**	**P Alkalinity**	**T Alkalinity**	**Comments**
MB-1	50	5.19				0.02119	0.00	0.05	0.05	1	0.00	1.06	
LCS-1	50	8.21				0.02119	0.00	4.70	4.70	1	0.00	99.58	
N027546-008D	50	7.7				0.02119	0.00	1.80	1.80	1	0.00	38.14	
N027546-009D	50	7.71				0.02119	0.00	1.90	1.90	1	0.00	40.25	
N027546-010D	50	7.63				0.02119	0.00	1.70	1.70	1	0.00	36.02	
N027556-001D	50	7.75				0.02119	0.00	3.60	3.60	1	0.00	76.27	
N027556-002D	50	7.73				0.02119	0.00	3.60	3.60	1	0.00	76.27	
N027556-003D	50	7.77				0.02119	0.00	3.50	3.50	1	0.00	74.15	
N027556-006D	50	7.69				0.02119	0.00	3.60	3.60	1	0.00	76.27	
N027557-001C	50	7.68				0.02119	0.00	1.65	1.65	1	0.00	34.96	
N027557-002C	50	7.71				0.02119	0.00	1.65	1.65	1	0.00	34.96	
N027557-003C	50	7.67				0.02119	0.00	2.40	2.40	1	0.00	50.85	
N027557-004C	50	8.07				0.02119	0.00	1.80	1.80	1	0.00	38.14	
N027557-005D	50	8.27				0.02119	0.00	2.20	2.20	1	0.00	46.61	
N027557-006D	50	10.51				0.02119	1.50	0.50	2.00	1	31.78	42.37	
N027557-007D	50	7.72				0.02119	0.00	1.30	1.30	1	0.00	27.54	
N027557-008D	50	7.85				0.02119	0.00	4.15	4.15	1	0.00	87.92	
N027557-009D	50	7.7				0.02119	0.00	2.75	2.75	1	0.00	58.26	
N027557-010D	50	7.72				0.02119	0.00	2.65	2.65	1	0.00	56.14	
N027583-001D	50	7.74				0.02119	0.00	3.10	3.10	1	0.00	65.68	
N027583-002D	50	7.79				0.02119	0.00	2.80	2.80	1	0.00	59.32	
N027583-003D	50	7.71				0.02119	0.00	3.20	3.20	1	0.00	67.80	
N027557-001CDU	50	7.69				0.02119	0.00	1.70	1.70	1	0.00	36.02	
N027583-001DMS	50	8.42				0.02119	0.05	7.65	7.70	1	1.06	163.14	
N027583-001DMS	50	8.41				0.02119	0.05	7.65	7.70	1	1.06	163.14	

Julia Ramit 12/27/2017

RB 01/08/2018

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	12/19/17
Time:	8:35 AM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.06	1.06	1.06		P = 0
LCS-1	0.00	0.00	99.58	99.58	99.58		P = 0
N027546-008D	0.00	0.00	38.14	38.14	38.14		P = 0
N027546-009D	0.00	0.00	40.25	40.25	40.25		P = 0
N027546-010D	0.00	0.00	36.02	36.02	36.02		P = 0
N027556-001D	0.00	0.00	76.27	76.27	76.27		P = 0
N027556-002D	0.00	0.00	76.27	76.27	76.27		P = 0
N027556-003D	0.00	0.00	74.15	74.15	74.15		P = 0
N027556-006D	0.00	0.00	76.27	76.27	76.27		P = 0
N027557-001C	0.00	0.00	34.96	34.96	34.96		P = 0
N027557-002C	0.00	0.00	34.96	34.96	34.96		P = 0
N027557-003C	0.00	0.00	50.85	50.85	50.85		P = 0
N027557-004C	0.00	0.00	38.14	38.14	38.14		P = 0
N027557-005D	0.00	0.00	46.61	46.61	46.61		P = 0
N027557-006D	21.19	21.19	0.00	42.37	42.37		P > 1/2 T
N027557-007D	0.00	0.00	27.54	27.54	27.54		P = 0
N027557-008D	0.00	0.00	87.92	87.92	87.92		P = 0
N027557-009D	0.00	0.00	58.26	58.26	58.26		P = 0
N027557-010D	0.00	0.00	56.14	56.14	56.14		P = 0
N027583-001D	0.00	0.00	65.68	65.68	65.68		P = 0
N027583-002D	0.00	0.00	59.32	59.32	59.32		P = 0
N027583-003D	0.00	0.00	67.80	67.80	67.80		P = 0
N027557-001CDUP	0.00	0.00	36.02	36.02	36.02		P = 0
N027583-001DMS	0.00	2.12	161.02	163.14	163.14		P < 1/2 T
N027583-001DMSD	0.00	2.12	161.02	163.14	163.14		P < 1/2 T

Silvia Ramit 12/27/2017

RLB 01/08/2018

Alkalinity Preparation and Runlog

Book #6

Matrix: H_2O

Date Extracted: 12/19/17
Time Extracted:
Extracted By: LSR

Date Analyzed: 12/19/17
Time Analyzed: 835
Analyzed By: LSR

Reagent Lot # / Reagent ID
Sodium Carbonate: CINV161205A
Hydrochloric Acid: –
Sulfuric Acid: R171214D
Sodium Bicarbonate: CINV150601A

pH meter Calibration:
SLOPE: 97.7%
pH 7 - 6.97 CINV170615F
4 - 4.01 170615E
10 - 10.01 170888B

	Sample ID	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	A1	50/mL	10.64	1WST171219A	5mL	0.05N	–	–	11.80	50/50	$N_{H_2SO_4} = \frac{(2.65g/L)(5mL)}{(53)(V\ titrant)}$	= 0.02118644
	A2		10.66				–	–	11.80			
1)	MBLIC	50mL	5.19	–	–	–	0.02119	0	0.05	50/50		
2)	LCS		8.21	1WST171219B	1mL	0.05N		0	4.70			
3)	N027546-8D		7.70					0	1.80			
4)	9D		7.71					0	1.90			
5)	10D		7.63					0	1.70			
6)	N027556-1D		7.75					0	3.60			
7)	2D		7.73					0	3.60			
8)	3D		7.77					0	3.50			
9)	6D		7.69					0	3.60			
10)	N027557-1C		7.68					0	1.65		$P = \frac{(V\ pH\ 8.3)(N\ H_2SO_4)(50,000)}{V_{SX}}$	
11)	2C		7.71					0	1.65			
12)	3C		7.67					0	2.40			
13)	4C		8.07					0	1.80		$T = \frac{(V\ pH\ 4.5)(N\ H_2SO_4)(50,000)}{V_{SX}}$	
14)	5D		8.27					0	2.20			
15)	6D		10.51					1.50	2.00			
16)	7D		7.72					0	1.30			
17)	8D		7.85					0	4.15			
18)	9D		7.70					0	2.75			
19)	10D		7.72					0	2.65			
20)	N027583-1D		7.74					0	3.10			
	MS 2D		7.79					0	2.80			
	~~MSD~~ 3D		7.71					0	3.20			
	~~LCS~~ N027557-1C DUP		7.69					0	1.70			
	N027583-1D MS		8.42	1WST171219B	1mL	0.05N		0.05	7.70			
	1D MSD		8.41					0.05	7.70			

Julia Ramit 12/27/2017

RB 01/08/2018

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R121007
ASSET #: N027546

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/20/2017

Method:

[X] EPA 300.0
[ ] EPA 7199

[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SAmples were diluted due to precipitate formed with eluent.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/24/2017

2nd Level Reviewer: RB 01/08/2018 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R121065
ASSET #: N027546 / N027557

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/22/2017

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/27/2017

2nd Level Reviewer: RLB 01/08/2018 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Chloride concentration, in mg/L, in the orignal sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N027546-001D** concentration in mg/L is calculated as follows:

Chloride, mg/L = 4.457 * 500

= 2228.5

Reporting result in two significant values,

Chloride, mg/L = 2200

rba 12/28/2017

RB 01/08/2018

ANALYSIS RUN LOG

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 73
Created: 12/19/2017 9:53:44 AM by IC-05
Last Update: 12/20/2017 8:57:58 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
3	Std - 0	Standard	1000.0	Anions Default	Anions_171219	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171219	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171219	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171219	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171219	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171219	Finished
9	ICV,ICV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
10	ICB,ICB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
11	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
12	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
13	N027459-001E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
14	N027459-002E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
15	N027459-003C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
16	N027459-004C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
17	N027459-005C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
18	N027459-006C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
19	N027459-007C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
20	N027459-008E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
21	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
22	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
23	N027459-001EMS,MS,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
24	N027459-001EMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
25	N027459-008EMS,MS,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
26	N027459-004CDUP,DUP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
27	N027459-009C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
28	N027459-010C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
29	N027459-011C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
30	N027459-012C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
31	N027459-013C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
32	N027459-014C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
33	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
34	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
35	N027459-015C,SAMP,2	Unknown	1000.0	Anions Default	Anions_171219	Finished
36	N027459-016E,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
37	N027459-017E,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
38	N027459-018C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
39	N027459-019C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
40	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
41	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 73
Created: 12/19/2017 9:53:44 AM by IC-05
Last Update: 12/20/2017 8:57:58 AM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	12/19/2017 9:54:19 AM	BLANK
2	BLANK,BLANK,1	12/19/2017 10:09:37 AM	BLANK
3	Std - 0	12/19/2017 10:24:55 AM	IBLANK
4	Std - 1	12/19/2017 10:45:27 AM	STD-LOW
5	Std - 2	12/19/2017 11:00:45 AM	STD
6	Std - 3	12/19/2017 11:16:03 AM	STD
7	Std - 4	12/19/2017 11:31:21 AM	STD
8	Std - 5	12/19/2017 11:46:39 AM	STD-HIGH
9	ICV,ICV,1	12/19/2017 12:03:52 PM	ICV
10	ICB,ICB,1	12/19/2017 12:19:10 PM	ICB
11	MB-H2O,MBLK,1	12/19/2017 12:34:28 PM	METHOD BLANK
12	LCS-H2O,LCS,1	12/19/2017 12:49:45 PM	LCS
13	N027459-001E,SAMP,5	12/19/2017 1:05:03 PM	SAMP,2>10mL
14	N027459-002E,SAMP,5	12/19/2017 1:20:21 PM	SAMP,2>10mL
15	N027459-003C,SAMP,10	12/19/2017 1:35:39 PM	SAMP,1>10mL
16	N027459-004C,SAMP,10	12/19/2017 1:50:57 PM	SAMP,1>10mL
17	N027459-005C,SAMP,5	12/19/2017 2:06:15 PM	SAMP,2>10mL
18	N027459-006C,SAMP,5	12/19/2017 2:21:33 PM	SAMP,2>10mL
19	N027459-007C,SAMP,1	12/19/2017 2:36:51 PM	SAMP,10mL
20	N027459-008E,SAMP,5	12/19/2017 2:52:08 PM	SAMP,2>10mL
21	CCV-1,CCV,1	12/19/2017 3:07:26 PM	CCV
22	CCB-1,CCB,1	12/19/2017 3:22:44 PM	CCB
23	N027459-001EMS,MS,5	12/19/2017 3:38:02 PM	MS,2>10mL
24	N027459-001EMSD,MSD,5	12/19/2017 3:53:20 PM	MSD,2>10mL
25	N027459-008EMS,MS,5	12/19/2017 4:08:38 PM	MS,2>10mL
26	N027459-004CDUP,DUP,10	12/19/2017 4:23:56 PM	DUP,1>10mL
27	N027459-009C,SAMP,5	12/19/2017 4:39:14 PM	SAMP,2>10mL
28	N027459-010C,SAMP,5	12/19/2017 4:54:31 PM	SAMP,2>10mL
29	N027459-011C,SAMP,1	12/19/2017 5:09:49 PM	SAMP,10mL
30	N027459-012C,SAMP,1	12/19/2017 5:25:07 PM	SAMP,10mL
31	N027459-013C,SAMP,5	12/19/2017 5:40:25 PM	SAMP,2>10mL
32	N027459-014C,SAMP,5	12/19/2017 5:55:43 PM	SAMP,2>10mL
33	CCV-2,CCV,1	12/19/2017 6:11:01 PM	CCV
34	CCB-2,CCB,1	12/19/2017 6:26:19 PM	CCB
35	N027459-015C,SAMP,2	12/19/2017 6:41:37 PM	SAMP,5>10mL
36	N027459-016E,SAMP,1	12/19/2017 6:56:54 PM	SAMP,10mL
37	N027459-017E,SAMP,1	12/19/2017 7:12:13 PM	SAMP,10mL
38	N027459-018C,SAMP,10	12/19/2017 7:27:30 PM	SAMP,1>10mL
39	N027459-019C,SAMP,1	12/19/2017 7:42:48 PM	SAMP,10mL
40	LCS-2,LCS,1	12/19/2017 7:58:06 PM	LCS
41	MB-2,MBLK,1	12/19/2017 8:13:24 PM	METHOD BLANK

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 73
Created: 12/19/2017 9:53:44 AM by IC-05
Last Update: 12/20/2017 8:57:58 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027485-008D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
43	N027485-008DMS,MS,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
44	N027485-008DMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
45	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
46	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
47	N027523-001C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
48	N027523-001CMS,MS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
49	N027523-002C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
50	N027523-002CDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
51	N027485-001D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
52	N027485-002D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
53	N027485-003D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
54	N027485-004D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
55	N027485-005D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
56	N027485-006D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
57	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
58	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
59	N027485-007D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
60	N027485-009D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
61	N027485-010D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
62	N027485-011E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
63	N027485-012E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
64	N027523-003C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
65	N027523-004C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
66	N027523-005E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
67	N027523-006D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
68	N027523-007D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
69	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
70	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
71	N027523-008D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
72	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
73	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 73
Created: 12/19/2017 9:53:44 AM by IC-05
Last Update: 12/20/2017 8:57:58 AM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027485-008D,SAMP,5	12/19/2017 8:28:42 PM	SAMP,2>10mL
43	N027485-008DMS,MS,5	12/19/2017 8:43:59 PM	MS,2>10mL
44	N027485-008DMSD,MSD,5	12/19/2017 8:59:17 PM	MSD,2>10mL
45	CCV-3,CCV,1	12/19/2017 9:14:35 PM	CCV
46	CCB-3,CCB,1	12/19/2017 9:29:53 PM	CCB
47	N027523-001C,SAMP,1	12/19/2017 9:45:11 PM	SAMP,10mL
48	N027523-001CMS,MS,1	12/19/2017 10:00:28 PM	MS,10mL
49	N027523-002C,SAMP,1	12/19/2017 10:15:46 PM	SAMP,10mL
50	N027523-002CDUP,DUP,1	12/19/2017 10:31:04 PM	DUP,10mL
51	N027485-001D,SAMP,1	12/19/2017 10:46:22 PM	SAMP,10mL
52	N027485-002D,SAMP,10	12/19/2017 11:01:39 PM	SAMP,1>10mL
53	N027485-003D,SAMP,10	12/19/2017 11:16:57 PM	SAMP,1>10mL
54	N027485-004D,SAMP,5	12/19/2017 11:32:15 PM	SAMP,2>10mL
55	N027485-005D,SAMP,5	12/19/2017 11:47:33 PM	SAMP,2>10mL
56	N027485-006D,SAMP,5	12/20/2017 12:02:51 AM	SAMP,2>10mL
57	CCV-4,CCV,1	12/20/2017 12:18:09 AM	CCV
58	CCB-4,CCB,1	12/20/2017 12:33:27 AM	CCB
59	N027485-007D,SAMP,5	12/20/2017 12:48:44 AM	SAMP,2>10mL
60	N027485-009D,SAMP,1	12/20/2017 1:04:02 AM	SAMP,10mL
61	N027485-010D,SAMP,5	12/20/2017 1:19:20 AM	SAMP,2>10mL
62	N027485-011E,SAMP,5	12/20/2017 1:34:38 AM	SAMP,2>10mL
63	N027485-012E,SAMP,5	12/20/2017 1:49:56 AM	SAMP,2>10mL
64	N027523-003C,SAMP,1	12/20/2017 2:05:14 AM	SAMP,10mL
65	N027523-004C,SAMP,1	12/20/2017 2:20:32 AM	SAMP,10mL
66	N027523-005E,SAMP,5	12/20/2017 2:35:49 AM	SAMP,2>10mL
67	N027523-006D,SAMP,5	12/20/2017 2:51:08 AM	SAMP,2>10mL
68	N027523-007D,SAMP,5	12/20/2017 3:06:26 AM	SAMP,2>10mL
69	CCV-5,CCV,1	12/20/2017 3:21:44 AM	CCV
70	CCB-5,CCB,1	12/20/2017 3:37:02 AM	CCB
71	N027523-008D,SAMP,5	12/20/2017 3:52:19 AM	SAMP,2>10mL
72	CCV-6,CCV,1	12/20/2017 4:07:37 AM	CCV
73	CCB-6,CCB,1	12/20/2017 4:22:55 AM	CCB

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 79
Created: 12/20/2017 8:55:02 AM by IC-05
Last Update: 12/21/2017 5:58:25 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
3	Std - 0	Standard	1000.0	Anions Default	Anions_171219	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171219	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171219	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171219	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171219	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171219	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
14	N027631-001D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
15	N027632-001D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
16	N027631-001DDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
17	N027631-001DMS,MS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
18	N027631-001DMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
19	N027631-001D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
20	N027631-001DMS,MS,20	Unknown	1000.0	Anions Default	Anions_171219	Finished
21	N027631-001DMSD,MSD,20	Unknown	1000.0	Anions Default	Anions_171219	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
24	N027631-001DDUP,DUP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
25	N027631-001D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
26	N027632-001D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
27	N027523-012D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
28	N027523-009D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
29	N027523-012DDUP,DUP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
30	N027523-012DMS,MS,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
31	N027523-012DMSD,MSD,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
32	N027523-002C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
33	N027523-003C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
34	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
35	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
36	N027523-003CDUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
37	N027523-003CMS,MS,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
38	N027523-003CMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
39	N027523-002CMS,MS,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
40	N027523-001C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
41	N027523-001C,SAMP,20	Unknown	1000.0	Anions Default	Anions_171219	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 79
Created: 12/20/2017 8:55:02 AM by IC-05
Last Update: 12/21/2017 5:58:25 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	12/19/2017 9:54:19 AM	BLANK
2	BLANK,BLANK,1	12/19/2017 10:09:37 AM	BLANK
3	Std - 0	12/19/2017 10:24:55 AM	IBLANK
4	Std - 1	12/19/2017 10:45:27 AM	STD-LOW
5	Std - 2	12/19/2017 11:00:45 AM	STD
6	Std - 3	12/19/2017 11:16:03 AM	STD
7	Std - 4	12/19/2017 11:31:21 AM	STD
8	Std - 5	12/19/2017 11:46:39 AM	STD-HIGH
9	BLANK,BLANK,1	12/20/2017 8:56:34 AM	BLANK
10	CCV-1,CCV,1	12/20/2017 9:11:52 AM	CCV
11	CCB-1,CCB,1	12/20/2017 9:27:10 AM	CCB
12	MB-H2O,MBLK,1	12/20/2017 9:42:28 AM	METHOD BLANK
13	LCS-H2O,LCS,1	12/20/2017 9:57:45 AM	LCS
14	N027631-001D,SAMP,1	12/20/2017 10:13:03 AM	SAMP,10mL
15	N027632-001D,SAMP,10	12/20/2017 10:28:22 AM	SAMP,1>10mL
16	N027631-001DDUP,DUP,1	12/20/2017 10:43:39 AM	DUP,10mL
17	N027631-001DMS,MS,1	12/20/2017 10:58:57 AM	MS,10mL
18	N027631-001DMSD,MSD,1	12/20/2017 11:14:15 AM	MSD,10mL
19	N027631-001D,SAMP,10	12/20/2017 11:29:33 AM	SAMP,1>10mL
20	N027631-001DMS,MS,20	12/20/2017 11:44:51 AM	MS,0.5>10mL
21	N027631-001DMSD,MSD,20	12/20/2017 12:00:09 PM	MSD,0.5>10mL
22	CCV-2,CCV,1	12/20/2017 12:15:27 PM	CCV
23	CCB-2,CCB,1	12/20/2017 12:30:45 PM	CCB
24	N027631-001DDUP,DUP,10	12/20/2017 12:46:03 PM	DUP,1>10mL
25	N027631-001D,SAMP,50	12/20/2017 1:01:21 PM	SAMP,0.2>10mL
26	N027632-001D,SAMP,100	12/20/2017 1:16:38 PM	SAMP,0.1>10mL
27	N027523-012D,SAMP,10	12/20/2017 1:31:56 PM	SAMP,1>10mL
28	N027523-009D,SAMP,10	12/20/2017 1:47:14 PM	SAMP,1>10mL
29	N027523-012DDUP,DUP,10	12/20/2017 2:02:32 PM	DUP,1>10mL
30	N027523-012DMS,MS,10	12/20/2017 2:17:50 PM	MS,1>10mL
31	N027523-012DMSD,MSD,10	12/20/2017 2:33:07 PM	MSD,1>10mL
32	N027523-002C,SAMP,50	12/20/2017 2:48:25 PM	SAMP,0.2>10mL
33	N027523-003C,SAMP,50	12/20/2017 3:03:43 PM	SAMP,0.2>10mL
34	CCV-3,CCV,1	12/20/2017 3:19:01 PM	CCV
35	CCB-3,CCB,1	12/20/2017 3:34:18 PM	CCB
36	N027523-003CDUP,DUP,50	12/20/2017 3:49:36 PM	DUP,0.2>10mL
37	N027523-003CMS,MS,50	12/20/2017 4:04:54 PM	MS,0.2>10mL
38	N027523-003CMSD,MSD,50	12/20/2017 4:20:11 PM	MSD,0.2>10mL
39	N027523-002CMS,MS,50	12/20/2017 4:35:29 PM	MS,0.2>10mL
40	N027523-001C,SAMP,100	12/20/2017 4:50:47 PM	SAMP,0.1>10mL
41	N027523-001C,SAMP,20	12/20/2017 5:06:05 PM	SAMP,0.5>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 79
Created: 12/20/2017 8:55:02 AM by IC-05
Last Update: 12/21/2017 5:58:25 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027523-004C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
43	N027523-004C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
44	N027523-005E,SAMP,200	Unknown	1000.0	Anions Default	Anions_171219	Finished
45	N027523-005E,SAMP,20	Unknown	1000.0	Anions Default	Anions_171219	Finished
46	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
47	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
48	N027523-006D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171219	Finished
49	N027523-006D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
50	N027523-007D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171219	Finished
51	N027523-007D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
52	N027523-008D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171219	Finished
53	N027523-008D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
54	N027523-012D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
55	N027523-009D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171219	Finished
56	N027523-009D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
57	N027523-012D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171219	Finished
58	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
59	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
60	N027523-012D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171219	Finished
61	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
62	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
63	N027546-006D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
64	N027546-006DDUP,DUP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
65	N027546-006DMS,MS,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
66	N027546-006DMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
67	N027546-001D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
68	N027546-002D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
69	N027546-003D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
70	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
71	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
72	N027546-004D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
73	N027546-005D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
74	N027546-007C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
75	N027546-008D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
76	N027546-009D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
77	N027546-010D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
78	CCV-7,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
79	CCB-7,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 79
Created: 12/20/2017 8:55:02 AM by IC-05
Last Update: 12/21/2017 5:58:25 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027523-004C,SAMP,100	12/20/2017 5:21:23 PM	SAMP,0.1>10mL
43	N027523-004C,SAMP,10	12/20/2017 5:36:40 PM	SAMP,1>10mL
44	N027523-005E,SAMP,200	12/20/2017 5:51:58 PM	SAMP,0.05>10mL
45	N027523-005E,SAMP,20	12/20/2017 6:07:16 PM	SAMP,0.5>10mL
46	CCV-4,CCV,1	12/20/2017 6:22:34 PM	CCV
47	CCB-4,CCB,1	12/20/2017 6:37:52 PM	CCB
48	N027523-006D,SAMP,1000	12/20/2017 6:53:09 PM	SAMP,0.01>10mL
49	N027523-006D,SAMP,50	12/20/2017 7:08:27 PM	SAMP,0.2>10mL
50	N027523-007D,SAMP,1000	12/20/2017 7:23:45 PM	SAMP,0.01>10mL
51	N027523-007D,SAMP,50	12/20/2017 7:39:03 PM	SAMP,0.2>10mL
52	N027523-008D,SAMP,500	12/20/2017 7:54:20 PM	SAMP,0.02>10mL
53	N027523-008D,SAMP,50	12/20/2017 8:09:38 PM	SAMP,0.2>10mL
54	N027523-012D,SAMP,10	12/20/2017 8:24:56 PM	SAMP,1>10mL
55	N027523-009D,SAMP,2000	12/20/2017 8:40:14 PM	SAMP,0.005>10mL
56	N027523-009D,SAMP,100	12/20/2017 8:55:32 PM	SAMP,0.1>10mL
57	N027523-012D,SAMP,1000	12/20/2017 9:10:50 PM	SAMP,0.01>10mL
58	CCV-5,CCV,1	12/20/2017 9:26:08 PM	CCV
59	CCB-5,CCB,1	12/20/2017 9:41:27 PM	CCB
60	N027523-012D,SAMP,200	12/20/2017 9:56:45 PM	SAMP,0.05>10mL
61	LCS-2,LCS,1	12/20/2017 10:12:03 PM	LCS
62	MB-2,MBLK,1	12/20/2017 10:27:22 PM	METHOD BLANK
63	N027546-006D,SAMP,5	12/20/2017 10:42:40 PM	SAMP,2>10mL
64	N027546-006DDUP,DUP,5	12/20/2017 10:57:58 PM	DUP,2>10mL
65	N027546-006DMS,MS,5	12/20/2017 11:13:16 PM	MS,2>10mL
66	N027546-006DMSD,MSD,5	12/20/2017 11:28:34 PM	MSD,2>10mL
67	N027546-001D,SAMP,5	12/20/2017 11:43:52 PM	SAMP,2>10mL
68	N027546-002D,SAMP,5	12/20/2017 11:59:09 PM	SAMP,2>10mL
69	N027546-003D,SAMP,5	12/21/2017 12:14:27 AM	SAMP,2>10mL
70	CCV-6,CCV,1	12/21/2017 12:29:45 AM	CCV
71	CCB-6,CCB,1	12/21/2017 12:45:03 AM	CCB
72	N027546-004D,SAMP,5	12/21/2017 1:00:21 AM	SAMP,2>10mL
73	N027546-005D,SAMP,5	12/21/2017 1:15:39 AM	SAMP,2>10mL
74	N027546-007C,SAMP,5	12/21/2017 1:30:56 AM	SAMP,2>10mL
75	N027546-008D,SAMP,5	12/21/2017 1:46:14 AM	SAMP,2>10mL
76	N027546-009D,SAMP,5	12/21/2017 2:01:32 AM	SAMP,2>10mL
77	N027546-010D,SAMP,5	12/21/2017 2:16:50 AM	SAMP,2>10mL
78	CCV-7,CCV,1	12/21/2017 2:32:08 AM	CCV
79	CCB-7,CCB,1	12/21/2017 2:47:26 AM	CCB

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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 62
Created: 12/22/2017 10:31:12 AM by IC-05
Last Update: 12/22/2017 3:51:20 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
3	Std - 0	Standard	1000.0	Anions Default	Anions_171219	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171219	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171219	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171219	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171219	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171219	Finished
9	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
10	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
14	N027546-006D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171219	Finished
15	N027546-006DMS,MS,200	Unknown	1000.0	Anions Default	Anions_171219	Finished
16	N027546-006DMSD,MSD,200	Unknown	1000.0	Anions Default	Anions_171219	Finished
17	N027546-006D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171219	Finished
18	N027546-006DMS,MS,20	Unknown	1000.0	Anions Default	Anions_171219	Finished
19	N027546-006DMSD,MSD,20	Unknown	1000.0	Anions Default	Anions_171219	Finished
20	N027546-001D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171219	Finished
21	N027546-001DDUP,DUP,500	Unknown	1000.0	Anions Default	Anions_171219	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
24	N027546-001D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
25	N027546-001DDUP,DUP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
26	N027546-002D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171219	Finished
27	N027546-002D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
28	N027546-003D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171219	Finished
29	N027546-003D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
30	N027546-004D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171219	Finished
31	N027546-004D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
32	N027546-005D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171219	Finished
33	N027546-005D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
34	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
35	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
36	N027546-007C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171219	Finished
37	N027546-007C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
38	N027546-008D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171219	Finished
39	N027546-008D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
40	N027546-009D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171219	Finished
41	N027546-009D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 62
Created: 12/22/2017 10:31:12 AM by IC-05
Last Update: 12/22/2017 3:51:20 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	12/19/2017 9:54:19 AM	BLANK
2	BLANK,BLANK,1	12/19/2017 10:09:37 AM	BLANK
3	Std - 0	12/19/2017 10:24:55 AM	IBLANK
4	Std - 1	12/19/2017 10:45:27 AM	STD-LOW
5	Std - 2	12/19/2017 11:00:45 AM	STD
6	Std - 3	12/19/2017 11:16:03 AM	STD
7	Std - 4	12/19/2017 11:31:21 AM	STD
8	Std - 5	12/19/2017 11:46:39 AM	STD-HIGH
9	CCV-1,CCV,1	12/22/2017 11:04:19 AM	CCV
10	CCB-1,CCB,1	12/22/2017 11:19:37 AM	CCB
11	CCB-1,CCB,1	12/22/2017 11:34:55 AM	CCB
12	MB-H2O,MBLK,1	12/22/2017 11:50:13 AM	METHOD BLANK
13	LCS-H2O,LCS,1	12/22/2017 12:05:31 PM	LCS
14	N027546-006D,SAMP,200	12/22/2017 12:20:49 PM	SAMP,0.05>10mL
15	N027546-006DMS,MS,200	12/22/2017 12:36:07 PM	MS,0.05>10mL
16	N027546-006DMSD,MSD,200	12/22/2017 12:51:25 PM	MSD,0.05>10mL
17	N027546-006D,SAMP,20	12/22/2017 1:06:42 PM	SAMP,0.5>10mL
18	N027546-006DMS,MS,20	12/22/2017 1:22:00 PM	MS,0.5>10mL
19	N027546-006DMSD,MSD,20	12/22/2017 1:37:18 PM	MSD,0.5>10mL
20	N027546-001D,SAMP,500	12/22/2017 1:52:36 PM	SAMP,0.02>10mL
21	N027546-001DDUP,DUP,500	12/22/2017 2:07:54 PM	DUP,0.02>10mL
22	CCV-2,CCV,1	12/22/2017 2:23:11 PM	CCV
23	CCB-2,CCB,1	12/22/2017 2:38:29 PM	CCB
24	N027546-001D,SAMP,100	12/22/2017 2:53:47 PM	SAMP,0.1>10mL
25	N027546-001DDUP,DUP,100	12/22/2017 3:09:05 PM	DUP,0.1>10mL
26	N027546-002D,SAMP,500	12/22/2017 3:24:23 PM	SAMP,0.02>10mL
27	N027546-002D,SAMP,100	12/22/2017 3:39:41 PM	SAMP,0.1>10mL
28	N027546-003D,SAMP,500	12/22/2017 3:54:59 PM	SAMP,0.02>10mL
29	N027546-003D,SAMP,50	12/22/2017 4:10:17 PM	SAMP,0.2>10mL
30	N027546-004D,SAMP,2000	12/22/2017 4:25:35 PM	SAMP,0.005>10mL
31	N027546-004D,SAMP,100	12/22/2017 4:40:52 PM	SAMP,0.1>10mL
32	N027546-005D,SAMP,2000	12/22/2017 4:56:10 PM	SAMP,0.005>10mL
33	N027546-005D,SAMP,100	12/22/2017 5:11:28 PM	SAMP,0.1>10mL
34	CCV-3,CCV,1	12/22/2017 5:26:46 PM	CCV
35	CCB-3,CCB,1	12/22/2017 5:42:03 PM	CCB
36	N027546-007C,SAMP,2000	12/22/2017 5:57:21 PM	SAMP,0.005>10mL
37	N027546-007C,SAMP,100	12/22/2017 6:12:39 PM	SAMP,0.1>10mL
38	N027546-008D,SAMP,2000	12/22/2017 6:27:57 PM	SAMP,0.005>10mL
39	N027546-008D,SAMP,100	12/22/2017 6:43:15 PM	SAMP,0.1>10mL
40	N027546-009D,SAMP,2000	12/22/2017 6:58:32 PM	SAMP,0.005>10mL
41	N027546-009D,SAMP,100	12/22/2017 7:13:50 PM	SAMP,0.1>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 62
Created: 12/22/2017 10:31:12 AM by IC-05
Last Update: 12/22/2017 3:51:20 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027546-010D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171219	Finished
43	N027546-010D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
44	N027557-008D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
45	N027557-008DDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
46	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
47	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
48	N027557-008DMS,MS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
49	N027557-008DMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
50	N027557-001C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
51	N027557-002C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
52	N027557-003C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
53	N027557-004C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
54	N027557-005D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
55	N027557-006D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
56	N027557-007D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
57	N027557-009D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
58	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
59	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
60	N027557-010D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
61	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
62	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 62
Created: 12/22/2017 10:31:12 AM by IC-05
Last Update: 12/22/2017 3:51:20 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027546-010D,SAMP,1000	12/22/2017 7:29:08 PM	SAMP,0.01>10mL
43	N027546-010D,SAMP,100	12/22/2017 7:44:26 PM	SAMP,0.1>10mL
44	N027557-008D,SAMP,1	12/22/2017 7:59:44 PM	SAMP,10mL
45	N027557-008DDUP,DUP,1	12/22/2017 8:15:02 PM	DUP,10mL
46	CCV-4,CCV,1	12/22/2017 8:30:19 PM	CCV
47	CCB-4,CCB,1	12/22/2017 8:45:37 PM	CCB
48	N027557-008DMS,MS,1	12/22/2017 9:00:55 PM	MS,10mL
49	N027557-008DMSD,MSD,1	12/22/2017 9:16:13 PM	MSD,10mL
50	N027557-001C,SAMP,5	12/22/2017 9:31:31 PM	SAMP,2>10mL
51	N027557-002C,SAMP,5	12/22/2017 9:46:49 PM	SAMP,2>10mL
52	N027557-003C,SAMP,5	12/22/2017 10:02:06 PM	SAMP,2>10mL
53	N027557-004C,SAMP,5	12/22/2017 10:17:24 PM	SAMP,2>10mL
54	N027557-005D,SAMP,10	12/22/2017 10:32:42 PM	SAMP,1>10mL
55	N027557-006D,SAMP,1	12/22/2017 10:48:00 PM	SAMP,10mL
56	N027557-007D,SAMP,5	12/22/2017 11:03:18 PM	SAMP,2>10mL
57	N027557-009D,SAMP,1	12/22/2017 11:18:36 PM	SAMP,10mL
58	CCV-5,CCV,1	12/22/2017 11:33:53 PM	CCV
59	CCB-5,CCB,1	12/22/2017 11:49:11 PM	CCB
60	N027557-010D,SAMP,1	12/23/2017 12:04:29 AM	SAMP,10mL
61	CCV-6,CCV,1	12/23/2017 12:19:47 AM	CCV
62	CCB-6,CCB,1	12/23/2017 12:35:06 AM	CCB

INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 12/19/2017

Initial Calibration:

Bromide	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.05	0.25	0.5	1.25	2.5	R^2
Area,mAU*min	0.0000	0.0046	0.0160	0.0327	0.0765	0.1579	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814D

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RLB 01/08/2018

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 12/19/2017

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0744	0.1486	0.2949	0.7826	1.6401	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RLB 01/08/2018

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 12/19/2017

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0529	0.2187	0.4526	1.1609	2.4307	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RLB 01/08/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121007**
Client ID: **ICV**	Batch ID: **R121007**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2876173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.218	0.50	1.250	0	97.4	90	110				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121007**
Client ID: **CCV**	Batch ID: **R121007**	TestNo: **EPA 300.0**		Analysis Date: **12/20/2017**	SeqNo: **2876190**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.252	0.50	1.250	0	100	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121007**
Client ID: **CCV**	Batch ID: **R121007**	TestNo: **EPA 300.0**		Analysis Date: **12/21/2017**	SeqNo: **2876201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.253	0.50	1.250	0	100	90	110				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121007**
Client ID: **CCV**	Batch ID: **R121007**	TestNo: **EPA 300.0**		Analysis Date: **12/21/2017**	SeqNo: **2876209**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.240	0.50	1.250	0	99.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **ICV**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2878977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.982	0.50	2.000	0	99.1	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCV**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2878979**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.932	0.50	2.000	0	96.6	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCV**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2878989**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.914	0.50	2.000	0	95.7	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCV**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2878995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.939	0.50	2.000	0	96.9	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCV**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2879001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.937	0.50	2.000	0	96.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCV**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2879003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.938	0.50	2.000	0	96.9	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCV**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/23/2017**	SeqNo: **2879005**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.947	0.50	2.000	0	97.3	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV** SampType: **ICV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **121065**
Client ID: **ICV** Batch ID: **R121065** TestNo: **EPA 300.0** Analysis Date: **12/19/2017** SeqNo: **2879007**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.950	0.50	4.000	0	98.8	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **121065**
Client ID: **CCV** Batch ID: **R121065** TestNo: **EPA 300.0** Analysis Date: **12/22/2017** SeqNo: **2879009**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.943	0.50	4.000	0	98.6	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **121065**
Client ID: **CCV** Batch ID: **R121065** TestNo: **EPA 300.0** Analysis Date: **12/22/2017** SeqNo: **2879017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.939	0.50	4.000	0	98.5	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **121065**
Client ID: **CCV** Batch ID: **R121065** TestNo: **EPA 300.0** Analysis Date: **12/22/2017** SeqNo: **2879025**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.957	0.50	4.000	0	98.9	90	110				

Sample ID **CCV-4** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **121065**
Client ID: **CCV** Batch ID: **R121065** TestNo: **EPA 300.0** Analysis Date: **12/22/2017** SeqNo: **2879031**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.000	0.50	4.000	0	100	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCV**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2879033**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.904	0.50	4.000	0	97.6	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCV**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/23/2017**	SeqNo: **2879035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.956	0.50	4.000	0	98.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	**ICB**	SampType:	**ICB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**121007**
Client ID:	**ICB**	Batch ID:	**R121007**	TestNo:	**EPA 300.0**			Analysis Date:	**12/19/2017**	SeqNo:	**2876174**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-5**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**121007**
Client ID:	**CCB**	Batch ID:	**R121007**	TestNo:	**EPA 300.0**			Analysis Date:	**12/20/2017**	SeqNo:	**2876191**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-6**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**121007**
Client ID:	**CCB**	Batch ID:	**R121007**	TestNo:	**EPA 300.0**			Analysis Date:	**12/21/2017**	SeqNo:	**2876202**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-7**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**121007**
Client ID:	**CCB**	Batch ID:	**R121007**	TestNo:	**EPA 300.0**			Analysis Date:	**12/21/2017**	SeqNo:	**2876210**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **ICB**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2878978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCB**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2878981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCB**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2878990**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCB**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2878996**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCB**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2879002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCB**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2879004**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCB**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/23/2017**	SeqNo: **2879006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.206	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **ICB**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2879008**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCB**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2879011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCB**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2879018**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCB**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2879026**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCB**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2879032**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCB**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2879034**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCB**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/23/2017**	SeqNo: **2879036**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/20/2017

Sample Name		Retention Time	Evaluation
CCV-5	Bromide	5.774	
CCV-6	Bromide	5.777	
CCV-7	Bromide	5.777	
Average		5.776	
Applied RT Window		5.576 - 5.976	
LCS-R121007_BR	Bromide	5.774	PASS
MB-R121007_BR	Bromide	N.A.	N.A.
N027546-006D	Bromide	5.763	PASS
N027546-006DDUP	Bromide	5.757	PASS
N027546-006DMS	Bromide	5.774	PASS
N027546-006DMSD	Bromide	5.774	PASS
N027546-001D	Bromide	5.773	PASS
N027546-002D	Bromide	5.770	PASS
N027546-003D	Bromide	5.767	PASS
N027546-004D	Bromide	N.A.	N.A.
N027546-005D	Bromide	N.A.	N.A.
N027546-007C	Bromide	N.A.	N.A.
N027546-008D	Bromide	N.A.	N.A.
N027546-009D	Bromide	N.A.	N.A.
N027546-010D	Bromide	N.A.	N.A.

rba 12/28/2017

01/08/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/22/2017

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	10.004	
CCV-2	Sulfate	10.004	
CCV-3	Sulfate	10.074	
CCV-4	Sulfate	10.047	
CCV-5	Sulfate	10.060	
CCV-6	Sulfate	10.060	
	Average	10.042	
	Applied RT Window	9.842 - 10.242	
MB-R121065_SO4	Sulfate	N.A.	N.A.
LCS-R121065_SO4	Sulfate	10.004	PASS
N027546-006D	Sulfate	10.007	PASS
N027546-006DMS	Sulfate	10.010	PASS
N027546-006DMSD	Sulfate	10.010	PASS
N027546-001D	Sulfate	10.007	PASS
N027546-001DDUP	Sulfate	10.007	PASS
N027546-002D	Sulfate	10.073	PASS
N027546-003D	Sulfate	10.074	PASS
N027546-004D	Sulfate	10.077	PASS
N027546-005D	Sulfate	10.077	PASS
N027546-007C	Sulfate	10.073	PASS
N027546-008D	Sulfate	10.074	PASS
N027546-009D	Sulfate	10.050	PASS
N027546-010D	Sulfate	10.040	PASS

rba 12/28/2017

01/08/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/22/2017

Sample Name		Retention Time	Evaluation
CCV-1	Chloride	4.294	
CCV-2	Chloride	4.294	
CCV-3	Chloride	4.300	
CCV-4	Chloride	4.287	
CCV-5	Chloride	4.287	
CCV-6	Chloride	4.287	
	Average	4.292	
	Applied RT Window	4.092 - 4.492	
MB-R121065_CL	Chloride	N.A.	N.A.
LCS-R121065_CL	Chloride	4.294	PASS
N027546-006D	Chloride	4.293	PASS
N027546-006DMS	Chloride	4.297	PASS
N027546-006DMSD	Chloride	4.297	PASS
N027546-001D	Chloride	4.297	PASS
N027546-001DDUP	Chloride	4.297	PASS
N027546-002D	Chloride	4.297	PASS
N027546-003D	Chloride	4.300	PASS
N027546-004D	Chloride	4.300	PASS
N027546-005D	Chloride	4.300	PASS
N027546-007C	Chloride	4.300	PASS
N027546-008D	Chloride	4.300	PASS
N027546-009D	Chloride	4.304	PASS
N027546-010D	Chloride	4.287	PASS

rba 12/28/2017

RLB 01/08/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 5/23/2017 ; 5/24/2017; 5/25/2017
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Datafile	170523A D36	170523A D37	170523A D38	170524A D17	170524A D18	170525A D45	170525A D46					
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**MDL**	**LOD**	**PQL**
Fluoride	0.020	0.022	0.021	0.020	0.023	0.026	0.024	0.020	0.0021	**0.0065**	0.020	0.10
Chloride	0.133	0.136	0.136	0.133	0.141	0.133	0.136	0.025	0.0029	**0.0091**	0.020	0.50
Nitrite	0.030	0.028	0.027	0.028	0.028	0.027	0.027	0.020	0.0010	**0.0030**	0.010	0.05
Bromide	0.037	0.042	0.043	0.038	0.040	0.032	0.025	0.040	0.0062	**0.0196**	0.040	0.20
Nitrate	0.035	0.034	0.033	0.033	0.033	0.031	0.030	0.020	0.0016	**0.0050**	0.010	0.05
Phosphate	0.047	0.051	0.049	0.046	0.052	0.047	0.059	0.040	0.0043	**0.0135**	0.030	0.10
Sulfate	0.213	0.199	0.208	0.216	0.199	0.201	0.198	0.050	0.0073	**0.0229**	0.050	0.50

MDL/LOD & PQL Verification 2017

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)** Matrix: **WATER**
Method Number: EPA Method 300.0 Unit: mg/L
Analysis Date(s): 5/26/2017
Analyst: Ria Abes

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0065**	0.020	0.024	0.10	0.0906	**91**
Chloride	**0.0091**	0.020	0.130	0.50	0.5635	**113**
Nitrite	**0.0030**	0.010	0.023	0.05	0.0581	**116**
Bromide	**0.0196**	0.040	0.048	0.20	0.194	**97**
Nitrate	**0.0050**	0.010	0.023	0.05	0.0599	**120**
Phosphate	**0.0135**	0.030	0.043	0.10	0.1111	**111**
Sulfate	**0.0229**	0.050	0.195	0.50	0.6178	**124**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121037 **Analyst:** QBM

ASSET #: N027485, N027523, N027524, N027546 **Date Analyzed:** 12/22/2017

Method: **4500_NO3**

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 1/8/2018

2nd Level Reviewer RLB 01/08/2018 Date:

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121101 **Analyst:** QBM

ASSET #: N027546, N027556, N027557 **Date Analyzed:** 12/28/2017

Method: **4500_NO3**

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 1/8/2018

2nd Level Reviewer RLB 01/08/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N027546-001C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.7889	*	20
	=	15.778	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 16.0 mg/L

RLB 01/08/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

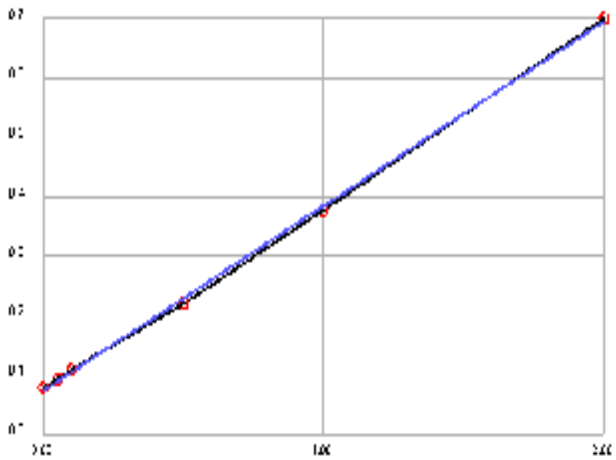
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.31x + 0.0754
Correlation	.99967

Calibrant	Energy	Set	Conc
1	0.0791	0.0000	0.0121
2	0.0937	0.0500	0.0592
3	0.1102	0.1000	0.1124
4	0.2213	0.5000	0.4708
5	0.3786	1.0000	0.9782
6	0.7007	2.0000	2.0173

Notes:

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

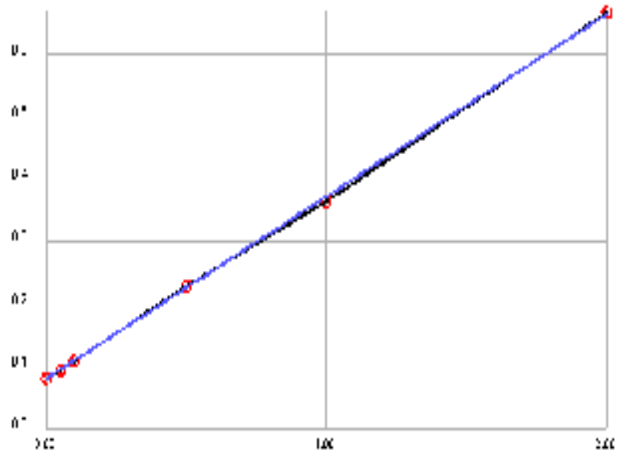
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.292x + 0.0792
Correlation	.999843

Calibrant	Energy	Set	Conc
1	0.0800	0.0000	0.0028
2	0.0940	0.0500	0.0507
3	0.1077	0.1000	0.0976
4	0.2296	0.5000	0.5152
5	0.3638	1.0000	0.9748
6	0.6657	2.0000	2.0089

Notes:

01/08/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **ICV**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877834**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.474	0.050	0.5000	0	94.9	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **CCV**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.502	0.050	0.5000	0	100	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **CCV**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.461	0.050	0.5000	0	92.2	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **CCV**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877867**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.457	0.050	0.5000	0	91.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **ICV**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.521	0.050	0.5000	0	104	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **CCV**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880075**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.523	0.050	0.5000	0	105	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **CCV**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880086**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.503	0.050	0.5000	0	101	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **CCV**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.459	0.050	0.5000	0	91.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **ICB**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **CCB**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **CCB**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877857**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121037**
Client ID: **CCB**	Batch ID: **R121037**	TestNo: **SM4500-NO3**		Analysis Date: **12/22/2017**	SeqNo: **2877869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **ICB**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880065**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **CCB**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **CCB**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **CCB**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880098**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 12-22-2017 16:49
Time end: 12-22-2017 19:51

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	19:08:19	0.0088		0.0781
2	<BLANK>	19:09:19	0.0085		0.0780
3	<CAL1>	19:10:14	0.0121	[0]	0.0791
4	<CAL2>	19:11:15	0.0592	[0.05]	0.0937
5	<CAL3>	19:12:11	0.1124	[0.1]	0.1102
6	<CAL4>	19:13:05	0.4708	[0.5]	0.2213
7	<CAL5>	19:14:06	0.9782	[1]	0.3786
8	<CAL6>	19:15:02	2.0173	[2]	0.7007
9	,BLANK,BLANK,1, NOT REPORTED	19:16:02	0.0450		0.0893
10	,ICV,ICV,1,	19:16:57	0.4743		0.2224
11	,ICB,ICB,1,	19:17:53	0.0105		0.0786
12	,MB-H2O,MBLK,1,	19:18:48	0.0150		0.0800
13	,LCS-H2O,LCS,1,	19:19:48	0.4760		0.2229
14	,N027485-012D,SAMP,20,	19:20:44	0.9979		0.3847
15	,N027523-005D,SAMP,5,	19:21:39	0.6869		0.2883
16	,N027523-005DMS,MS,5,	19:22:39	1.2063		0.4493
17	,N027523-005DMSD,MSD,5,	19:23:35	1.1557		0.4336
18	,N027523-008C,SAMP,1,	19:24:37	1.2044		0.4487
19	,N027523-008CDUP,DUP,1,	19:25:32	1.3125		0.4822
20	,BLANK, NOT REPORTED	19:26:26	0.0414		0.0882
21	,CCV-1,CCV,1, NOT REPORTED	19:27:28	0.5050		0.2319
22	,CCV-1,CCV,1,	19:28:23	0.5018		0.2309
23	,CCB-1,CCB,1,	19:29:25	0.0188		0.0812
24	,N027523-009C,SAMP,1,	19:30:19	0.0498		0.0908
25	,N027523-012C,SAMP,1,	19:31:14	0.4573		0.2171
26	,N027524-001C,SAMP,5,	19:32:16	0.6095		0.2643

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			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N027524-002C,SAMP,5,	19:33:10	0.7137		0.2966
28	,N027524-003C,SAMP,5,	19:34:05	0.5166		0.2355
29	,N027524-004C,SAMP,5,	19:35:07	0.5531		0.2468
30	,N027524-005C,SAMP,5,	19:35:49	0.5589		0.2486
31	,N027524-006C,SAMP,5,	19:36:39	0.5353		0.2413
32	,BLANK, NOT REPORTED	19:37:22	0.0101		0.0785
33	,CCV-2,CCV,1,	19:38:10	0.4611		0.2183
34	,CCV-2,CCV,1, NOT REPORTED	19:38:54	0.4472		0.2140
35	,CCB-2,CCB,1,	19:39:36	0.0017		0.0759
36	,N027524-007C,SAMP,5,	19:40:25	0.5202		0.2366
37	,N027524-008C,SAMP,5,	19:41:07	0.4763		0.2230
38	,N027524-009C,SAMP,5,	19:41:51	0.3814		0.1936
39	,N027524-010C,SAMP,5,	19:42:41	0.5160		0.2353
40	,N027524-011C,SAMP,5,	19:43:23	0.5011		0.2307
41	,N027524-012C,SAMP,5,	19:44:06	0.5089		0.2331
42	,N027524-013C,SAMP,5,	19:44:54	0.5389		0.2424
43	,N027546-001C,SAMP,20,	19:45:37	0.7889		0.3199
44	,N027546-002C,SAMP,20,	19:46:19	0.7511		0.3082
45	,BLANK, NOT REPORTED	19:47:09	-0.0008		0.0751
46	,CCV-3,CCV,1,	19:47:51	0.4569		0.2170
47	,CCV-3,CCV,1, NOT REPORTED	19:48:34	0.4363		0.2106
48	,CCB-3,CCB,1,	19:49:23	-0.0128		0.0714

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Time start: 12-28-2017 15:52
Time end: 12-28-2017 18:51

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	18:09:36	-0.0020		0.0786
2	<BLANK>	18:10:30	0.0004		0.0793
3	<CAL1>	18:11:25	0.0028	[0]	0.0800
4	<CAL2>	18:12:27	0.0507	[0.05]	0.0940
5	<CAL3>	18:13:21	0.0976	[0.1]	0.1077
6	<CAL4>	18:14:22	0.5152	[0.5]	0.2296
7	<CAL5>	18:15:18	0.9748	[1]	0.3638
8	<CAL6>	18:16:13	2.0089	[2]	0.6657
9	,BLANK,BLANK,1, NOT REPORTED	18:17:14	0.0298		0.0879
10	,ICV,ICV,1,	18:18:09	0.5210		0.2313
11	,ICB,ICB,1,	18:19:05	0.0052		0.0807
12	,MB-H2O,MBLK,1,	18:20:05	0.0004		0.0793
13	,LCS-H2O,LCS,1,	18:21:00	0.5035		0.2262
14	,N027546-003C,SAMP,2,	18:21:56	0.8248		0.3200
15	,N027546-003CMS,MS,2,	18:22:57	1.4208		0.4940
16	,N027546-003CMSD,MSD,2,	18:23:52	1.4064		0.4898
17	,N027546-004C,SAMP,1,	18:24:47	0.0603		0.0968
18	,N027546-004CDUP,DUP,1,	18:25:49	0.0213		0.0854
19	,N027546-005C,SAMP,1,	18:26:43	0.0723		0.1003
20	,BLANK, NOT REPORTED	18:27:39	-0.0092		0.0765
21	,CCV-1,CCV,1, NOT REPORTED	18:28:40	0.4754		0.2180
22	,CCV-1,CCV,1,	18:29:36	0.5227		0.2318
23	,CCB-1,CCB,1,	18:30:30	0.0045		0.0805
24	,N027546-006C,SAMP,5,	18:31:32	0.6744		0.2761
25	,N027546-008C,SAMP,1,	18:32:27	0.4713		0.2168
26	,N027546-009C,SAMP,1,	18:33:29	0.4908		0.2225

RB 01/08/2018

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N027546-010C,SAMP,1,	18:34:23	0.6566		0.2709
28	,N027556-001C,SAMP,5,	18:35:19	0.5789		0.2482
29	,N027556-002C,SAMP,5,	18:36:09	0.5501		0.2398
30	,N027556-003C,SAMP,5,	18:36:51	0.6124		0.2580
31	,N027556-004B,SAMP,5,	18:37:40	0.5484		0.2393
32	,BLANK, NOT REPORTED	18:38:22	-0.0055		0.0776
33	,CCV-2,CCV,1, NOT REPORTED	18:39:06	0.4919		0.2228
34	,CCV-2,CCV,1,	18:39:54	0.5025		0.2259
35	,CCB-2,CCB,1,	18:40:37	-0.0168		0.0743
36	,N027556-005B,SAMP,5,	18:41:27	0.5830		0.2494
37	,N027556-006C,SAMP,5,	18:42:09	0.5761		0.2474
38	,N027557-005C,SAMP,1,	18:42:52	0.0243		0.0863
39	,N027557-006C,SAMP,1,	18:43:34	0.0124		0.0828
40	,N027557-007C,SAMP,1,	18:44:24	0.8169		0.3177
41	,N027557-008C,SAMP,5,	18:45:06	0.6162		0.2591
42	,N027557-009C,SAMP,5,	18:45:49	0.4241		0.2030
43	,N027557-010C,SAMP,5,	18:46:37	0.4535		0.2116
44	,BLANK, NOT REPORTED	18:47:21	-0.0288		0.0708
45	,CCV-3,CCV,1, NOT REPORTED	18:48:04	0.4676		0.2157
46	,CCV-3,CCV,1,	18:48:52	0.4593		0.2133
47	,CCB-3,CCB,1,	18:49:35	-0.0017		0.0787

RB 01/08/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 12/22/2017
Time Analyzed: 4:44 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171220B
Color reagent: R171220C
2% Copper Sulfate: R171220A
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027485-012D		8.02							
N027523-005D		7.85							
N027523-008C		8.35							
N027523-009C		7.83							
N027523-012C		6.43							
N027524-001C		7.81							
N027524-002C		8.31							
N027524-003C		8.30							
N027524-004C		7.89							
N027524-005C		8.24							
N027524-006C		8.11							
N027524-007C		7.95							
N027524-008C		8.02							
N027524-009C		7.7							
N027524-010C		8.19							
N027524-011C		7.90							
N027524-012C		7.39							
N027524-013C		6.76							
N027546-001C		8.24							
N027546-002C		7.47							

Advanced Technology Laboratories, Inc.
Book # 1

RLB 01/08/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 12/28/2017
Time Analyzed: 3:47 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171220B
Color reagent: R171220C
2% Copper Sulfate: R171220A
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027546-003C		6.85							
N027546-004C		8.20							
N027546-005C		7.82							
N027546-006C		7.94							
N027546-008C		8.95							
N027546-009C		7.73							
N027546-010C		7.76							
N027556-001C		8.07							
N027556-002C		7.93							
N027556-003C		7.41							
N027556-004B		7.54							
N027556-005B		6.32							
N027556-006C		7.07							
N027557-005C		7.71							
N027557-006C		7.63							
N027557-007C		7.90							
N027557-008C		7.46							
N027557-009C		7.65							
N027557-010C		7.61							

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66081
ASSET #: N027546

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/19/2018

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)		X			X	
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.		X			X	
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X			X	
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of Ca in LLCCV2 failed, bias high. However Ca has high concentration, thus reported.
%Rec of Ca, Fe & Mg in N027523-009B PS/MS/MSD failed. However LCS passed criteria.
Dilution test failed for B, Fe & Mg.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/5/18

2nd Level Reviewer 01/05/2018 Date:

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66081
ASSET #: N027546

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 1/3/2018

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		X
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		X
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X			X	
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For Na run only.
%Rec of Na in N027523-012B PS/MS/MSD failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/5/18
2nd Level Reviewer 01/05/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Boron concentration, in ug/L , in the original sample as follows:

Boron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N027546-001B** , the concentration ir ug/L is calculated as follows:

Boron , ug/L = 1.64919 * 1 * (25/25) * 1000

Boron , ug/L = 1649.19

Reporting results in two significant figures,

Boron , ug/L = 1600

% RSD SUMMARY

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	B	0	0.26	15	PASS
Standard1	ICAL	1	B	0.1	1.13	15	PASS
Standard3	ICAL	1	B	1	1.19	15	PASS
Standard4	ICAL	1	B	2.5	0.29	15	PASS
Standard5	ICAL	1	B	3.75	0.44	15	PASS
Standard6	ICAL	1	B	5	0.45	15	PASS
Standard7	ICAL	1	B	10	0.59	15	PASS
ICV	ICV	1	B	5.1	0.28	15	PASS
ICB	ICB	1	B	0.032	8.5	15	PASS
LLICV	CCV1	1	B	0.11	1.62	20	PASS
ICSA1	ICSA	1	B	0.088	1.47	15	PASS
ICSAB1	ICSAB	1	B	1.17	0.43	15	PASS
CCV1	CCV	1	B	5.077	0.44	15	PASS
CCB1	CCB	1	B	0.041	16.48	15	<PQL
CCB1	CCB	1	B	0.013	11.56	15	PASS
CCV2	CCV	1	B	4.92	0.23	15	PASS
CCB2	CCB	1	B	0.031	17.11	15	<PQL
CCV3	CCV	1	B	5.2	0.21	15	PASS
CCB3	CCB	1	B	0.058	12.023	15	PASS
CCB3	CCB	1	B	0.021	7.91	15	PASS
CCV4	CCV	1	B	4.9	0.63	15	PASS
CCB4	CCB	1	B	0.0098	9.57	15	PASS
LLCCV1	CCV2	1	B	0.098	1.19	20	PASS
ICSA2	ICSA	1	B	0.084	1.79	15	PASS
ICSAB2	ICSAB	1	B	1.18	0.47	15	PASS
CCV5	CCV	1	B	5.13	0.54	15	PASS
CCB5	CCB	1	B	0.031	4.82	15	PASS
CCV6	CCV	1	B	4.93	0.59	15	PASS
CCB6	CCB	1	B	0.036	56.96	15	<PQL
MB-66081	MBLK	1	B	0.0046	15.62	15	<PQL
LCS1-66081	LCS	1	B	4.57	0.91	15	PASS
CCV7	CCV	1	B	4.81	0.42	15	PASS
CCB7	CCB	1	B	0.028	6.54	15	PASS
N027523-009B	SAMP	1	B	2.57	1.13	15	PASS
N027523-009B	SAMP	5	B	0.57	0.4	15	PASS
N027523-009B-PS	PS	1	B	7.36	0.97	15	PASS
N027523-009B-MS1	MS	1	B	7.48	1.037	15	PASS
N027523-009B-MSD1	MSD	1	B	7.52	0.66	15	PASS
N027523-012B	SAMP	1	B	4.86	0.52	15	PASS
N027546-001B	SAMP	1	B	1.65	0.8	15	PASS
N027546-002B	SAMP	1	B	1.55	0.36	15	PASS
N027546-003B	SAMP	1	B	0.86	0.47	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027546-004B	SAMP	1	B	2.19	0.54	15	PASS
CCV8	CCV	1	B	4.97	0.8	15	PASS
CCB8	CCB	1	B	0.032	9.49	15	PASS
LLCCV2	CCV2	1	B	0.1	3.18	20	PASS
ICSA3	ICSA	1	B	0.086	0.97	15	PASS
ICSAB3	ICSAB	1	B	1.15	0.53	15	PASS
N027546-005B	SAMP	1	B	2.25	0.54	15	PASS
N027546-006B	SAMP	1	B	0.33	0.44	15	PASS
N027546-007B	SAMP	1	B	0.96	0.63	15	PASS
N027546-008B	SAMP	1	B	1.75	0.3	15	PASS
N027546-009B	SAMP	1	B	1.82	0.28	15	PASS
N027546-010B	SAMP	1	B	1.33	0.54	15	PASS
CCV9	CCV	1	B	4.87	0.67	15	PASS
CCB9	CCB	1	B	0.025	10.58	15	PASS
CCV10	CCV	1	B	4.82	0.81	15	PASS
CCB10	CCB	1	B	0.035	8.23	15	PASS
CCV11	CCV	1	B	4.74	0.42	15	PASS
CCB11	CCB	1	B	0.046	7.74	15	PASS
CCB11	CCB	1	B	0.019	5.52	15	PASS
CCV12	CCV	1	B	4.85	0.53	15	PASS
CCB12	CCB	1	B	0.024	7.59	15	PASS
LLCCV3	CCV2	1	B	0.1	3.0087	20	PASS
ICSA4	ICSA	1	B	0.09	1.081	15	PASS
ICSAB4	ICSAB	1	B	1.13	0.64	15	PASS
CCV13	CCV	1	B	4.89	1.000094	15	PASS
CCB13	CCB	1	B	0.031	9.85	15	PASS
N027523-009B	SAMP	25	B	0.11	1.35	15	PASS
N027523-009B-PS	PS	5	B	1.56	0.69	15	PASS
N027523-009B-MS1	MS	5	B	1.65	0.29	15	PASS
N027523-009B-MSD1	MSD	5	B	1.66	0.61	15	PASS
CCV14	CCV	1	B	4.96	0.56	15	PASS
CCB14	CCB	1	B	0.027	1.84	15	PASS
CCV15	CCV	1	B	4.83	0.61	15	PASS
CCB15	CCB	1	B	0.029	4.2	15	PASS
CCV16	CCV	1	B	4.8	0.77	15	PASS
CCB16	CCB	1	B	0.047	12.42	15	PASS
CCB16	CCB	1	B	0.02	4.068	15	PASS
CCV17	CCV	1	B	5.24	1.23	15	PASS
CCB17	CCB	1	B	0.06	11.74	15	PASS
LLCCV4	CCV2	1	B	0.12	1.54	20	PASS
LLCCV4	CCV2	1	B	0.079	0.74	20	PASS
ICSA5	ICSA	1	B	0.085	1.33	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
ICSAB5	ICSAB	1	B	1.22	0.32	15	PASS
ICSAB5	ICSAB	1	B	1.022	2.62	15	PASS
CalBlk	IBLK	1	Ca	0	4.61	15	PASS
Standard1	ICAL	1	Ca	0.2	11.24	15	PASS
Standard2	ICAL	1	Ca	1	4.85	15	PASS
Standard3	ICAL	1	Ca	2	2.89	15	PASS
Standard4	ICAL	1	Ca	5	0.84	15	PASS
Standard5	ICAL	1	Ca	7.5	0.92	15	PASS
Standard6	ICAL	1	Ca	10	0.58	15	PASS
Standard7	ICAL	1	Ca	20	0.33	15	PASS
ICV	ICV	1	Ca	10.1	0.16	15	PASS
ICB	ICB	1	Ca	0.025	67.56	15	<PQL
LLICV	CCV1	1	Ca	0.23	11.41	20	PASS
ICSA1	ICSA	1	Ca	506.49	0.09	15	PASS
ICSAB1	ICSAB	1	Ca	555.54	0.11	15	PASS
CCV1	CCV	1	Ca	10.087	0.51	15	PASS
CCB1	CCB	1	Ca	-0.021	131.14	15	<PQL
CCB1	CCB	1	Ca	0.033	27.36	15	<PQL
CCV2	CCV	1	Ca	9.9	0.58	15	PASS
CCB2	CCB	1	Ca	0.0035	666.54	15	<PQL
CCV3	CCV	1	Ca	10.16	0.48	15	PASS
CCB3	CCB	1	Ca	0.00041	7555.71	15	<PQL
CCB3	CCB	1	Ca	0.018	110.92	15	<PQL
CCV4	CCV	1	Ca	9.88	0.11	15	PASS
CCB4	CCB	1	Ca	0.029	117.34	15	<PQL
LLCCV1	CCV2	1	Ca	0.22	13.79	20	PASS
ICSA2	ICSA	1	Ca	511.76	0.092	15	PASS
ICSAB2	ICSAB	1	Ca	558.43	0.18	15	PASS
CCV5	CCV	1	Ca	10.35	0.77	15	PASS
CCB5	CCB	1	Ca	0.0066	281.14	15	<PQL
CCV6	CCV	1	Ca	10.068	0.64	15	PASS
CCB6	CCB	1	Ca	-0.02	390.28	15	<PQL
MB-66081	MBLK	1	Ca	0.058	25.42	15	<PQL
LCS1-66081	LCS	1	Ca	9.35	1.23	15	PASS
CCV7	CCV	1	Ca	9.85	0.94	15	PASS
CCB7	CCB	1	Ca	0.031	61.44	15	<PQL
N027523-009B	SAMP	1	Ca	907.22	0.15	15	PASS
N027523-009B	SAMP	5	Ca	177.47	0.3	15	PASS
N027523-009B-PS	PS	1	Ca	899.1	0.47	15	PASS
N027523-009B-MS1	MS	1	Ca	943.25	0.15	15	PASS
N027523-009B-MSD1	MSD	1	Ca	947.11	0.089	15	PASS
N027523-012B	SAMP	1	Ca	255.94	0.25	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027546-001B	SAMP	1	Ca	315.25	0.43	15	PASS
N027546-002B	SAMP	1	Ca	298.79	0.16	15	PASS
N027546-003B	SAMP	1	Ca	148.09	0.091	15	PASS
N027546-004B	SAMP	1	Ca	400.47	0.3	15	PASS
CCV8	CCV	1	Ca	10.064	0.5	15	PASS
CCB8	CCB	1	Ca	0.048	44.45	15	<PQL
LLCCV2	CCV2	1	Ca	0.27	8.72	20	PASS
ICSA3	ICSA	1	Ca	497.08	0.11	15	PASS
ICSAB3	ICSAB	1	Ca	543.69	0.18	15	PASS
N027546-005B	SAMP	1	Ca	388.06	0.13	15	PASS
N027546-006B	SAMP	1	Ca	148.39	0.53	15	PASS
N027546-007B	SAMP	1	Ca	359.81	0.035	15	PASS
N027546-008B	SAMP	1	Ca	394.19	0.68	15	PASS
N027546-009B	SAMP	1	Ca	407.77	0.36	15	PASS
N027546-010B	SAMP	1	Ca	388.8	0.22	15	PASS
CCV9	CCV	1	Ca	10.13	0.85	15	PASS
CCB9	CCB	1	Ca	0.061	16.2	15	<PQL
CCV10	CCV	1	Ca	9.92	0.49	15	PASS
CCB10	CCB	1	Ca	0.063	30.0053	15	<PQL
CCV11	CCV	1	Ca	9.66	0.31	15	PASS
CCB11	CCB	1	Ca	0.049	17.31	15	<PQL
CCB11	CCB	1	Ca	0.053	25.75	15	<PQL
CCV12	CCV	1	Ca	9.88	0.73	15	PASS
CCB12	CCB	1	Ca	0.055	96.22	15	<PQL
LLCCV3	CCV2	1	Ca	0.26	4.53	20	PASS
ICSA4	ICSA	1	Ca	489.73	0.39	15	PASS
ICSAB4	ICSAB	1	Ca	536.67	0.25	15	PASS
CCV13	CCV	1	Ca	9.81	0.84	15	PASS
CCB13	CCB	1	Ca	0.061	71.21	15	<PQL
N027523-009B	SAMP	25	Ca	35.48	0.15	15	PASS
N027523-009B-PS	PS	5	Ca	181.45	0.17	15	PASS
N027523-009B-MS1	MS	5	Ca	195.86	0.27	15	PASS
N027523-009B-MSD1	MSD	5	Ca	196.09	0.23	15	PASS
CCV14	CCV	1	Ca	10.006	0.81	15	PASS
CCB14	CCB	1	Ca	0.021	202	15	<PQL
CCV15	CCV	1	Ca	9.48	0.87	15	PASS
CCB15	CCB	1	Ca	0.038	117.27	15	<PQL
CCV16	CCV	1	Ca	9.47	0.34	15	PASS
CCB16	CCB	1	Ca	0.0024	667.76	15	<PQL
CCB16	CCB	1	Ca	0.044	46.61	15	<PQL
CCV17	CCV	1	Ca	10.46	0.51	15	PASS
CCB17	CCB	1	Ca	-0.019	142.64	15	<PQL

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
LLCCV4	CCV2	1	Ca	0.27	10.024	20	PASS
LLCCV4	CCV2	1	Ca	0.16	3.77	20	PASS
ICSA5	ICSA	1	Ca	511.39	0.15	15	PASS
ICSAB5	ICSAB	1	Ca	561.62	0.28	15	PASS
ICSAB5	ICSAB	1	Ca	464.82	0.11	15	PASS
CalBlk	IBLK	1	Fe	0	4.28	15	PASS
Standard1	ICAL	1	Fe	0.02	0.87	15	PASS
Standard2	ICAL	1	Fe	0.05	0.44	15	PASS
Standard3	ICAL	1	Fe	2	0.44	15	PASS
Standard4	ICAL	1	Fe	5	0.75	15	PASS
Standard5	ICAL	1	Fe	7.5	0.33	15	PASS
Standard6	ICAL	1	Fe	10	1.027	15	PASS
Standard7	ICAL	1	Fe	20	0.18	15	PASS
ICV	ICV	1	Fe	10.27	0.25	15	PASS
ICB	ICB	1	Fe	0.00026	186.27	15	<PQL
LLICV	CCV1	1	Fe	0.022	2.86	20	PASS
ICSA1	ICSA	1	Fe	179.79	0.53	15	PASS
ICSAB1	ICSAB	1	Fe	187.59	0.075	15	PASS
CCV1	CCV	1	Fe	10.069	0.16	15	PASS
CCB1	CCB	1	Fe	-0.00017	84.95	15	<PQL
CCB1	CCB	1	Fe	0.00077	31.18	15	<PQL
CCV2	CCV	1	Fe	9.77	0.13	15	PASS
CCB2	CCB	1	Fe	0.0002	102.016	15	<PQL
CCV3	CCV	1	Fe	10.41	0.3	15	PASS
CCB3	CCB	1	Fe	-0.00038	191.48	15	<PQL
CCB3	CCB	1	Fe	-0.00056	180.67	15	<PQL
CCV4	CCV	1	Fe	9.84	0.095	15	PASS
CCB4	CCB	1	Fe	-0.00024	315.41	15	<PQL
LLCCV1	CCV2	1	Fe	0.023	3.26	20	PASS
ICSA2	ICSA	1	Fe	181.78	0.087	15	PASS
ICSAB2	ICSAB	1	Fe	188.99	0.08	15	PASS
CCV5	CCV	1	Fe	10.61	0.8	15	PASS
CCB5	CCB	1	Fe	-0.00035	70.82	15	<PQL
CCV6	CCV	1	Fe	9.94	0.081	15	PASS
CCB6	CCB	1	Fe	-0.00036	570.094	15	<PQL
MB-66081	MBLK	1	Fe	0.0004	41.095	15	<PQL
LCS1-66081	LCS	1	Fe	0.1	0.68	15	PASS
CCV7	CCV	1	Fe	9.65	0.12	15	PASS
CCB7	CCB	1	Fe	-0.00011	510.0072	15	<PQL
N027523-009B	SAMP	1	Fe	1.28	0.57	15	PASS
N027523-009B	SAMP	5	Fe	0.32	0.24	15	PASS
N027523-009B-PS	PS	1	Fe	1.42	0.42	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027523-009B-MS1	MS	1	Fe	1.48	0.49	15	PASS
N027523-009B-MSD1	MSD	1	Fe	1.48	0.61	15	PASS
N027523-012B	SAMP	1	Fe	0.039	1.31	15	PASS
N027546-001B	SAMP	1	Fe	0.0072	4.41	15	PASS
N027546-002B	SAMP	1	Fe	0.008	12.11	15	PASS
N027546-003B	SAMP	1	Fe	0.017	1.84	15	PASS
N027546-004B	SAMP	1	Fe	0.018	6.68	15	PASS
CCV8	CCV	1	Fe	10.27	0.49	15	PASS
CCB8	CCB	1	Fe	0.0003	205.79	15	<PQL
LLCCV2	CCV2	1	Fe	0.023	0.9	20	PASS
ICSA3	ICSA	1	Fe	176.99	0.26	15	PASS
ICSAB3	ICSAB	1	Fe	184.65	0.061	15	PASS
N027546-005B	SAMP	1	Fe	0.094	0.8	15	PASS
N027546-006B	SAMP	1	Fe	0.048	1.72	15	PASS
N027546-007B	SAMP	1	Fe	0.015	5.36	15	PASS
N027546-008B	SAMP	1	Fe	0.037	1.16	15	PASS
N027546-009B	SAMP	1	Fe	0.039	1.05	15	PASS
N027546-010B	SAMP	1	Fe	0.22	1.28	15	PASS
CCV9	CCV	1	Fe	10.19	0.37	15	PASS
CCB9	CCB	1	Fe	0.00067	27.46	15	<PQL
CCV10	CCV	1	Fe	10.15	0.17	15	PASS
CCB10	CCB	1	Fe	0.00061	54.82	15	<PQL
CCV11	CCV	1	Fe	9.7	0.18	15	PASS
CCB11	CCB	1	Fe	0.00057	19.74	15	<PQL
CCB11	CCB	1	Fe	0.00089	115.74	15	<PQL
CCV12	CCV	1	Fe	10.18	0.8	15	PASS
CCB12	CCB	1	Fe	0.0005	8.21	15	PASS
LLCCV3	CCV2	1	Fe	0.024	1.89	20	PASS
ICSA4	ICSA	1	Fe	175.82	1.053	15	PASS
ICSAB4	ICSAB	1	Fe	183.95	0.15	15	PASS
CCV13	CCV	1	Fe	10.15	0.56	15	PASS
CCB13	CCB	1	Fe	0.0011	103.41	15	<PQL
N027523-009B	SAMP	25	Fe	0.064	1.05	15	PASS
N027523-009B-PS	PS	5	Fe	0.33	0.28	15	PASS
N027523-009B-MS1	MS	5	Fe	0.36	0.27	15	PASS
N027523-009B-MSD1	MSD	5	Fe	0.36	0.96	15	PASS
CCV14	CCV	1	Fe	10.17	0.018	15	PASS
CCB14	CCB	1	Fe	-0.00054	87.53	15	<PQL
CCV15	CCV	1	Fe	9.94	0.59	15	PASS
CCB15	CCB	1	Fe	-0.0011	9.77	15	PASS
CCV16	CCV	1	Fe	9.92	0.5	15	PASS
CCB16	CCB	1	Fe	0.00074	80.4	15	<PQL

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB16	CCB	1	Fe	-0.0007	36.19	15	<PQL
CCV17	CCV	1	Fe	10.91	0.67	15	PASS
CCB17	CCB	1	Fe	-0.00067	75.16	15	<PQL
LLCCV4	CCV2	1	Fe	0.025	2.86	20	PASS
LLCCV4	CCV2	1	Fe	0.017	5.58	20	PASS
ICSA5	ICSA	1	Fe	187.83	0.26	15	PASS
ICSAB5	ICSAB	1	Fe	196.9	0.18	15	PASS
ICSAB5	ICSAB	1	Fe	200.61	1.075	15	PASS
CalBlk	IBLK	1	Mg	0	3.29	15	PASS
Standard1	ICAL	1	Mg	0.1	0.36	15	PASS
Standard2	ICAL	1	Mg	1	0.34	15	PASS
Standard3	ICAL	1	Mg	2	0.47	15	PASS
Standard4	ICAL	1	Mg	5	0.56	15	PASS
Standard5	ICAL	1	Mg	7.5	0.35	15	PASS
Standard6	ICAL	1	Mg	10	1.06	15	PASS
Standard7	ICAL	1	Mg	20	0.26	15	PASS
ICV	ICV	1	Mg	10.26	0.12	15	PASS
ICB	ICB	1	Mg	-0.00057	102.75	15	<PQL
LLICV	CCV1	1	Mg	0.1	1.00022	20	PASS
ICSA1	ICSA	1	Mg	475.94	0.47	15	PASS
ICSAB1	ICSAB	1	Mg	503.56	0.34	15	PASS
CCV1	CCV	1	Mg	10.004	0.13	15	PASS
CCB1	CCB	1	Mg	-0.00046	52.94	15	<PQL
CCB1	CCB	1	Mg	-0.00092	99.41	15	<PQL
CCV2	CCV	1	Mg	9.75	0.24	15	PASS
CCB2	CCB	1	Mg	-0.0016	36.99	15	<PQL
CCV3	CCV	1	Mg	10.39	0.35	15	PASS
CCB3	CCB	1	Mg	-0.00072	141.5	15	<PQL
CCB3	CCB	1	Mg	-0.00061	50.2	15	<PQL
CCV4	CCV	1	Mg	9.82	0.3	15	PASS
CCB4	CCB	1	Mg	-0.00072	76.36	15	<PQL
LLCCV1	CCV2	1	Mg	0.11	0.71	20	PASS
ICSA2	ICSA	1	Mg	481.22	0.14	15	PASS
ICSAB2	ICSAB	1	Mg	506.62	0.41	15	PASS
CCV5	CCV	1	Mg	10.57	0.75	15	PASS
CCB5	CCB	1	Mg	-0.00024	141.97	15	<PQL
CCV6	CCV	1	Mg	9.88	0.051	15	PASS
CCB6	CCB	1	Mg	0.00095	296.93	15	<PQL
MB-66081	MBLK	1	Mg	0.00016	117.51	15	<PQL
LCS1-66081	LCS	1	Mg	9.23	0.16	15	PASS
CCV7	CCV	1	Mg	9.68	0.057	15	PASS
CCB7	CCB	1	Mg	-0.001	43.7	15	<PQL

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027523-009B	SAMP	1	Mg	73.87	0.68	15	PASS
N027523-009B	SAMP	5	Mg	16.42	0.26	15	PASS
N027523-009B-PS	PS	1	Mg	81.78	0.48	15	PASS
N027523-009B-MS1	MS	1	Mg	83.85	0.65	15	PASS
N027523-009B-MSD1	MSD	1	Mg	84.11	0.16	15	PASS
N027523-012B	SAMP	1	Mg	86.54	0.11	15	PASS
N027546-001B	SAMP	1	Mg	20.16	0.29	15	PASS
N027546-002B	SAMP	1	Mg	19.52	0.16	15	PASS
N027546-003B	SAMP	1	Mg	18.75	0.12	15	PASS
N027546-004B	SAMP	1	Mg	5.85	0.8	15	PASS
CCV8	CCV	1	Mg	10.41	0.51	15	PASS
CCB8	CCB	1	Mg	-0.0014	63.1	15	<PQL
LLCCV2	CCV2	1	Mg	0.1	1.16	20	PASS
ICSA3	ICSA	1	Mg	476.52	0.15	15	PASS
ICSAB3	ICSAB	1	Mg	500.6	0.69	15	PASS
N027546-005B	SAMP	1	Mg	5.038	0.21	15	PASS
N027546-006B	SAMP	1	Mg	20.5	0.094	15	PASS
N027546-007B	SAMP	1	Mg	28.6	0.39	15	PASS
N027546-008B	SAMP	1	Mg	23.85	0.73	15	PASS
N027546-009B	SAMP	1	Mg	24.53	0.56	15	PASS
N027546-010B	SAMP	1	Mg	28.15	0.41	15	PASS
CCV9	CCV	1	Mg	10.32	0.48	15	PASS
CCB9	CCB	1	Mg	-0.0013	70.18	15	<PQL
CCV10	CCV	1	Mg	10.29	0.11	15	PASS
CCB10	CCB	1	Mg	-0.0014	65.99	15	<PQL
CCV11	CCV	1	Mg	9.82	0.36	15	PASS
CCB11	CCB	1	Mg	-0.0014	35.042	15	<PQL
CCB11	CCB	1	Mg	-0.0012	13.65	15	PASS
CCV12	CCV	1	Mg	10.34	0.82	15	PASS
CCB12	CCB	1	Mg	-0.00016	188.32	15	<PQL
LLCCV3	CCV2	1	Mg	0.1	0.81	20	PASS
ICSA4	ICSA	1	Mg	473.9	1.11	15	PASS
ICSAB4	ICSAB	1	Mg	500.15	0.67	15	PASS
CCV13	CCV	1	Mg	10.32	0.34	15	PASS
CCB13	CCB	1	Mg	0.00036	32.88	15	<PQL
N027523-009B	SAMP	25	Mg	3.45	0.073	15	PASS
N027523-009B-PS	PS	5	Mg	19.069	0.092	15	PASS
N027523-009B-MS1	MS	5	Mg	20.45	0.34	15	PASS
N027523-009B-MSD1	MSD	5	Mg	20.52	0.17	15	PASS
CCV14	CCV	1	Mg	10.25	0.18	15	PASS
CCB14	CCB	1	Mg	-0.00055	32.68	15	<PQL
CCV15	CCV	1	Mg	10.007	0.51	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB15	CCB	1	Mg	-0.00003	276.64	15	<PQL
CCV16	CCV	1	Mg	9.99	0.33	15	PASS
CCB16	CCB	1	Mg	0.00041	25.05	15	<PQL
CCB16	CCB	1	Mg	-0.00009	458.22	15	<PQL
CCV17	CCV	1	Mg	10.98	0.79	15	PASS
CCB17	CCB	1	Mg	-0.00063	95.52	15	<PQL
LLCCV4	CCV2	1	Mg	0.11	0.3	20	PASS
LLCCV4	CCV2	1	Mg	0.081	0.46	20	PASS
ICSA5	ICSA	1	Mg	504.98	0.32	15	PASS
ICSAB5	ICSAB	1	Mg	534.4	0.036	15	PASS
ICSAB5	ICSAB	1	Mg	447.75	1.72	15	PASS

RSD SUMMARY: 180103A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	38.46	15	<PQL
Standard1	ICAL	1	Na	0.1	5.37	15	PASS
Standard2	ICAL	1	Na	1	0.47	15	PASS
Standard3	ICAL	1	Na	5	0.35	15	PASS
Standard4	ICAL	1	Na	10	0.21	15	PASS
Standard5	ICAL	1	Na	20	0.11	15	PASS
Standard6	ICAL	1	Na	40	0.14	15	PASS
ICV	ICV	1	Na	9.97	0.32	15	PASS
ICB	ICB	1	Na	0.0031	68.95	15	<PQL
ICSA1	ICSA	1	Na	0.00057	457.55	15	<PQL
ICSAB1	ICSAB	1	Na	10.004	0.22	15	PASS
MB-66081	MBLK	1	Na	-0.019	20.5	15	<PQL
LCS2-66081	LCS	1	Na	20.37	0.3	15	PASS
N027523-009B	SAMP	100	Na	30.96	0.11	15	PASS
N027523-012B	SAMP	100	Na	33.3	0.15	15	PASS
N027546-001B	SAMP	100	Na	13.81	0.086	15	PASS
N027546-002B	SAMP	100	Na	13.7	0.019	15	PASS
N027546-003B	SAMP	100	Na	10.57	0.11	15	PASS
N027546-004B	SAMP	100	Na	33.56	0.4	15	PASS
N027546-005B	SAMP	100	Na	35.25	0.28	15	PASS
N027546-006B	SAMP	100	Na	3.49	0.15	15	PASS
CCV1	CCV	1	Na	9.87	0.5	15	PASS
CCB1	CCB	1	Na	-0.021	21.93	15	<PQL
N027546-007B	SAMP	100	Na	36.21	0.034	15	PASS
N027546-008B	SAMP	100	Na	44.93	0.21	15	PASS
N027546-009B	SAMP	100	Na	45.079	0.06	15	PASS
N027546-010B	SAMP	100	Na	27.88	0.13	15	PASS
N027523-012B	SAMP	500	Na	6.72	0.26	15	PASS
N027523-012B-PS	PS	100	Na	34.63	0.23	15	PASS
N027523-012B-MS2	MS	100	Na	37.19	0.15	15	PASS
N027523-012B-MSD2	MSD	100	Na	34.77	0.37	15	PASS
N027523-012B-MS2	MS	100	Na	34.84	0.25	15	PASS
N027546-007B	SAMP	500	Na	7.49	0.11	15	PASS
CCV2	CCV	1	Na	11.037	17.71	15	NR!
CCV2	CCV	1	Na	9.86	0.19	15	PASS
CCB2	CCB	1	Na	-0.011	30.77	15	<PQL
N027546-006B	SAMP	25	Na	14.41	0.27	15	PASS
N027546-008B	SAMP	500	Na	9.12	0.15	15	PASS
N027546-009B	SAMP	500	Na	9.21	0.11	15	PASS
CCV3	CCV	1	Na	9.81	0.27	15	PASS
CCB3	CCB	1	Na	-0.011	30.71	15	<PQL
CCV4	CCV	1	Na	10.097	0.35	15	PASS

RSD SUMMARY: 180103A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB4	CCB	1	Na	-0.029	10.59	15	PASS
CCV5	CCV	1	Na	10.033	0.31	15	PASS
CCB5	CCB	1	Na	-0.034	14.26	15	PASS
ICSA2	ICSA	1	Na	-0.038	14.39	15	PASS
ICSAB2	ICSAB	1	Na	10.15	0.17	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 171219A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201K/MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201K/-171030G/-171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/19/2017	10:23:34 AM
2	Standard1	ICAL	1	12/19/2017	10:28:24 AM
3	Standard2	ICAL	1	12/19/2017	10:33:45 AM
11	Standard3	ICAL	1	12/19/2017	10:39:04 AM
12	Standard4	ICAL	1	12/19/2017	10:44:25 AM
6	Standard5	ICAL	1	12/19/2017	10:51:46 AM
7	Standard6	ICAL	1	12/19/2017	10:59:06 AM
8	Standard7	ICAL	1	12/19/2017	11:06:41 AM
9	ICV	ICV	1	12/19/2017	11:10:28 AM
1	ICB	ICB	1	12/19/2017	11:21:16 AM
2	LLICV	CCV1	1	12/19/2017	11:26:34 AM
4	ICSA1	ICSA	1	12/19/2017	11:40:02 AM
5	ICSAB1	ICSAB	1	12/19/2017	11:47:34 AM
122	N027429-010B	SAMP	5	12/19/2017	11:55:06 AM
123	N027430-015B	SAMP	5	12/19/2017	12:02:00 PM
108	MB-65991	MBLK	1	12/19/2017	12:08:53 PM
109	LCS1-65991	LCS	1	12/19/2017	12:13:44 PM
110	N027437-001A	SAMP	1	12/19/2017	12:21:07 PM
111	N027437-002A	SAMP	1	12/19/2017	12:26:28 PM
112	N027437-002A	SAMP	5	12/19/2017	12:33:22 PM
113	N027437-002A-PS	PS	1	12/19/2017	12:38:43 PM
114	N027437-002AMS1	MS	1	12/19/2017	12:45:38 PM
115	N027437-002AMSD1	MSD	1	12/19/2017	12:52:31 PM
7	CCV1	CCV	1	12/19/2017	12:59:24 PM
1	CCB1	CCB	1	12/19/2017	01:06:15 PM
1	CCB1	CCB	1	12/19/2017	01:14:21 PM
116	N027437-003C	SAMP	1	12/19/2017	01:19:09 PM
117	N027437-004A	SAMP	1	12/19/2017	01:24:04 PM
118	N027437-005A	SAMP	1	12/19/2017	01:29:27 PM
38	MB-65994	MBLK	1	12/19/2017	01:34:18 PM
39	LCS1-65994	LCS	1	12/19/2017	01:39:09 PM
40	N027459-001C	SAMP	1	12/19/2017	01:46:29 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
41	N027459-001C	SAMP	5	12/19/2017	01:53:19 PM
42	N027459-001C-PS	PS	1	12/19/2017	01:58:11 PM
43	N027459-001C-MS1	MS	1	12/19/2017	02:05:02 PM
44	N027459-001C-MSD1	MSD	1	12/19/2017	02:11:54 PM
7	CCV2	CCV	1	12/19/2017	02:18:46 PM
1	CCB2	CCB	1	12/19/2017	02:25:37 PM
45	N027459-002C	SAMP	1	12/19/2017	02:30:56 PM
46	N027459-003B	SAMP	1	12/19/2017	02:37:46 PM
47	N027459-004B	SAMP	1	12/19/2017	02:44:38 PM
48	N027459-005B	SAMP	1	12/19/2017	02:51:28 PM
49	N027459-006B	SAMP	1	12/19/2017	02:58:20 PM
50	N027459-007B	SAMP	1	12/19/2017	03:05:13 PM
51	N027459-008C	SAMP	1	12/19/2017	03:12:46 PM
52	N027459-009B	SAMP	1	12/19/2017	03:20:08 PM
53	N027459-010B	SAMP	1	12/19/2017	03:26:58 PM
54	N027459-011B	SAMP	1	12/19/2017	03:33:50 PM
7	CCV3	CCV	1	12/19/2017	03:40:40 PM
1	CCB3	CCB	1	12/19/2017	03:48:03 PM
55	N027459-012B	SAMP	1	12/19/2017	03:53:21 PM
1	CCB3	CCB	1	12/19/2017	03:58:33 PM
55	N027459-012B	SAMP	1	12/19/2017	04:03:22 PM
56	N027459-013B	SAMP	1	12/19/2017	04:08:43 PM
57	N027459-014B	SAMP	1	12/19/2017	04:15:34 PM
58	N027459-015B	SAMP	1	12/19/2017	04:22:24 PM
59	N027459-016C	SAMP	1	12/19/2017	04:29:17 PM
60	N027459-017C	SAMP	1	12/19/2017	04:36:09 PM
61	N027459-018B	SAMP	1	12/19/2017	04:43:02 PM
62	N027459-019B	SAMP	1	12/19/2017	04:50:27 PM
63	MB-66042	MBLK	1	12/19/2017	04:57:19 PM
64	LCS1-66042	LCS	1	12/19/2017	05:02:10 PM
7	CCV4	CCV	1	12/19/2017	05:09:31 PM
1	CCB4	CCB	1	12/19/2017	05:34:54 PM
2	LLCCV1	CCV2	1	12/19/2017	05:39:42 PM
4	ICSA2	ICSA	1	12/19/2017	05:45:03 PM
5	ICSAB2	ICSAB	1	12/19/2017	05:52:35 PM
65	N027485-001B	SAMP	1	12/19/2017	06:00:08 PM
66	N027485-001B	SAMP	5	12/19/2017	06:05:00 PM
67	N027485-001B-PS	PS	1	12/19/2017	06:10:22 PM
68	N027485-001B-MS1	MS	1	12/19/2017	06:17:41 PM
69	N027485-001B-MSD1	MSD	1	12/19/2017	06:24:34 PM
70	N027485-002B	SAMP	1	12/19/2017	06:31:26 PM
71	N027485-003B	SAMP	1	12/19/2017	06:38:18 PM
72	N027485-004B	SAMP	1	12/19/2017	06:45:10 PM
73	N027485-005B	SAMP	1	12/19/2017	06:52:03 PM
74	N027485-006B	SAMP	1	12/19/2017	06:58:55 PM
7	CCV5	CCV	1	12/19/2017	07:05:47 PM
1	CCB5	CCB	1	12/19/2017	07:15:36 PM
75	N027485-007B	SAMP	1	12/19/2017	07:20:24 PM
76	N027485-008B	SAMP	1	12/19/2017	07:27:16 PM
77	N027485-009B	SAMP	1	12/19/2017	07:34:47 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
78	N027485-010B	SAMP	1	12/19/2017	07:41:39 PM
79	N027485-011C	SAMP	1	12/19/2017	07:48:31 PM
80	N027485-012C	SAMP	1	12/19/2017	07:55:53 PM
81	N027523-001B	SAMP	1	12/19/2017	08:03:16 PM
82	N027523-002B	SAMP	1	12/19/2017	08:10:40 PM
83	N027523-003B	SAMP	1	12/19/2017	08:16:01 PM
84	N027523-004B	SAMP	1	12/19/2017	08:21:22 PM
7	CCV6	CCV	1	12/19/2017	08:26:44 PM
1	CCB6	CCB	1	12/19/2017	08:33:35 PM
85	N027523-005C	SAMP	1	12/19/2017	08:38:25 PM
86	N027523-006C	SAMP	1	12/19/2017	08:45:18 PM
87	N027523-007C	SAMP	1	12/19/2017	08:52:10 PM
88	N027523-008B	SAMP	1	12/19/2017	08:59:02 PM
14	N027459-003B	SAMP	5	12/19/2017	09:05:54 PM
15	N027459-004B	SAMP	5	12/19/2017	09:12:43 PM
16	N027459-006B	SAMP	5	12/19/2017	09:19:32 PM
17	N027459-018B	SAMP	5	12/19/2017	09:24:22 PM
89	MB-66081	MBLK	1	12/19/2017	09:31:12 PM
90	LCS1-66081	LCS	1	12/19/2017	09:36:14 PM
7	CCV7	CCV	1	12/19/2017	09:43:36 PM
1	CCB7	CCB	1	12/19/2017	09:53:44 PM
91	N027523-009B	SAMP	1	12/19/2017	09:58:31 PM
92	N027523-009B	SAMP	5	12/19/2017	10:05:24 PM
93	N027523-009B-PS	PS	1	12/19/2017	10:12:17 PM
94	N027523-009B-MS1	MS	1	12/19/2017	10:19:10 PM
95	N027523-009B-MSD1	MSD	1	12/19/2017	10:26:03 PM
96	N027523-012B	SAMP	1	12/19/2017	10:32:56 PM
97	N027546-001B	SAMP	1	12/19/2017	10:39:51 PM
98	N027546-002B	SAMP	1	12/19/2017	10:47:14 PM
99	N027546-003B	SAMP	1	12/19/2017	10:54:08 PM
100	N027546-004B	SAMP	1	12/19/2017	11:01:01 PM
7	CCV8	CCV	1	12/19/2017	11:07:54 PM
1	CCB8	CCB	1	12/19/2017	11:15:16 PM
2	LLCCV2	CCV2	1	12/19/2017	11:20:35 PM
4	ICSA3	ICSA	1	12/19/2017	11:25:54 PM
5	ICSAB3	ICSAB	1	12/19/2017	11:33:27 PM
101	N027546-005B	SAMP	1	12/19/2017	11:40:59 PM
102	N027546-006B	SAMP	1	12/19/2017	11:47:52 PM
103	N027546-007B	SAMP	1	12/19/2017	11:55:15 PM
104	N027546-008B	SAMP	1	12/20/2017	12:02:08 AM
105	N027546-009B	SAMP	1	12/20/2017	12:09:00 AM
106	N027546-010B	SAMP	1	12/20/2017	12:15:53 AM
107	MB-66082	MBLK	1	12/20/2017	12:22:46 AM
108	LCS1-66082	LCS	1	12/20/2017	12:27:38 AM
109	N027557-001B	SAMP	1	12/20/2017	12:35:02 AM
110	N027557-001B	SAMP	5	12/20/2017	12:41:54 AM
7	CCV9	CCV	1	12/20/2017	12:46:48 AM
1	CCB9	CCB	1	12/20/2017	12:54:10 AM
111	N027557-001B-PS	PS	1	12/20/2017	12:59:28 AM
112	N027557-001B-MS1	MS	1	12/20/2017	01:06:23 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
113	N027557-001B-MSD1	MSD	1	12/20/2017	01:13:17 AM
114	N027557-002B	SAMP	1	12/20/2017	01:20:11 AM
115	N027557-003B	SAMP	1	12/20/2017	01:27:03 AM
116	N027557-004B	SAMP	1	12/20/2017	01:33:56 AM
117	N027557-005B	SAMP	1	12/20/2017	01:40:49 AM
118	N027557-006B	SAMP	1	12/20/2017	01:47:42 AM
119	N027557-007B	SAMP	1	12/20/2017	01:54:34 AM
120	N027557-008B	SAMP	1	12/20/2017	02:01:28 AM
7	CCV10	CCV	1	12/20/2017	02:06:50 AM
1	CCB10	CCB	1	12/20/2017	02:14:12 AM
121	N027557-009B	SAMP	1	12/20/2017	02:19:30 AM
122	N027557-010B	SAMP	1	12/20/2017	02:26:54 AM
123	MB-66080	MBLK	1	12/20/2017	02:32:17 AM
124	LCS1-66080	LCS	1	12/20/2017	02:37:09 AM
125	N027524-001E	SAMP	1	12/20/2017	02:44:33 AM
126	N027524-001E	SAMP	5	12/20/2017	02:51:26 AM
127	N027524-001E-PS	PS	1	12/20/2017	02:56:47 AM
128	N027524-001E-MS1	MS	1	12/20/2017	03:03:41 AM
129	N027524-001E-MSD1	MSD	1	12/20/2017	03:10:35 AM
130	N027524-002E	SAMP	1	12/20/2017	03:17:29 AM
7	CCV11	CCV	1	12/20/2017	03:24:21 AM
1	CCB11	CCB	1	12/20/2017	03:31:12 AM
131	N027524-003E	SAMP	1	12/20/2017	03:36:30 AM
1	CCB11	CCB	1	12/20/2017	03:47:23 AM
131	N027524-003E	SAMP	1	12/20/2017	03:52:10 AM
132	N027524-004E	SAMP	1	12/20/2017	03:59:04 AM
133	N027524-005E	SAMP	1	12/20/2017	04:05:57 AM
134	N027524-006E	SAMP	1	12/20/2017	04:12:49 AM
135	N027524-007E	SAMP	1	12/20/2017	04:17:42 AM
136	N027524-008E	SAMP	1	12/20/2017	04:22:35 AM
137	N027524-009E	SAMP	1	12/20/2017	04:29:28 AM
138	N027524-010E	SAMP	1	12/20/2017	04:36:21 AM
139	N027524-011E	SAMP	1	12/20/2017	04:43:14 AM
140	N027524-011E-MS1	MS	1	12/20/2017	04:50:07 AM
7	CCV12	CCV	1	12/20/2017	04:57:01 AM
1	CCB12	CCB	1	12/20/2017	05:07:37 AM
2	LLCCV3	CCV2	1	12/20/2017	05:12:57 AM
4	ICSA4	ICSA	1	12/20/2017	05:18:16 AM
5	ICSAB4	ICSAB	1	12/20/2017	05:25:48 AM
141	N027524-012E	SAMP	1	12/20/2017	05:33:21 AM
142	N027524-013E	SAMP	1	12/20/2017	05:40:14 AM
143	N027556-001E	SAMP	1	12/20/2017	05:47:07 AM
144	N027556-002E	SAMP	1	12/20/2017	05:54:00 AM
145	N027556-003E	SAMP	1	12/20/2017	06:00:53 AM
146	N027556-004D	SAMP	1	12/20/2017	06:07:46 AM
147	N027556-005D	SAMP	1	12/20/2017	06:14:39 AM
148	N027556-006E	SAMP	1	12/20/2017	06:21:32 AM
18	N027485-002B	SAMP	5	12/20/2017	06:28:25 AM
19	N027485-003B	SAMP	5	12/20/2017	06:35:15 AM
7	CCV13	CCV	1	12/20/2017	06:42:05 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CCB13	CCB	1	12/20/2017	06:49:25 AM
20	N027485-010B	SAMP	5	12/20/2017	06:54:44 AM
149	N027523-009B	SAMP	25	12/20/2017	07:43:23 AM
150	N027523-009B-PS	PS	5	12/20/2017	07:48:17 AM
151	N027523-009B-MS1	MS	5	12/20/2017	07:55:12 AM
152	N027523-009B-MSD1	MSD	5	12/20/2017	08:02:06 AM
153	N027557-005B	SAMP	5	12/20/2017	08:05:46 AM
154	N027557-007B	SAMP	5	12/20/2017	08:12:39 AM
38	MB-66083	MBLK	1	12/20/2017	08:19:33 AM
39	LCS1-66083	LCS	1	12/20/2017	08:23:38 AM
40	N027524-001F	SAMP	1	12/20/2017	08:29:29 AM
7	CCV14	CCV	1	12/20/2017	08:34:48 AM
1	CCB14	CCB	1	12/20/2017	08:47:22 AM
41	N027524-001F	SAMP	5	12/20/2017	08:51:40 AM
42	N027524-001F-PS	PS	1	12/20/2017	08:56:29 AM
43	N027524-001F-MS1	MS	1	12/20/2017	09:01:50 AM
44	N027524-001F-MSD1	MSD	1	12/20/2017	09:07:11 AM
45	N027524-002F	SAMP	1	12/20/2017	09:12:32 AM
46	N027524-003F	SAMP	1	12/20/2017	09:17:54 AM
47	N027524-004F	SAMP	1	12/20/2017	09:23:15 AM
48	N027524-005F	SAMP	1	12/20/2017	09:28:37 AM
49	N027524-006F	SAMP	1	12/20/2017	09:33:59 AM
50	N027524-007F	SAMP	1	12/20/2017	09:39:21 AM
7	CCV15	CCV	1	12/20/2017	09:50:33 AM
1	CCB15	CCB	1	12/20/2017	10:04:37 AM
51	N027524-008F	SAMP	1	12/20/2017	10:09:24 AM
52	N027524-009F	SAMP	1	12/20/2017	10:14:46 AM
53	N027524-010F	SAMP	1	12/20/2017	10:20:08 AM
54	N027524-011F	SAMP	1	12/20/2017	10:25:39 AM
55	N027524-012F	SAMP	1	12/20/2017	10:31:01 AM
56	N027524-013F	SAMP	1	12/20/2017	10:36:21 AM
57	N027556-001F	SAMP	1	12/20/2017	10:41:41 AM
58	N027556-002F	SAMP	1	12/20/2017	10:47:03 AM
59	N027556-003F	SAMP	1	12/20/2017	10:52:24 AM
60	N027556-006F	SAMP	1	12/20/2017	10:57:45 AM
7	CCV16	CCV	1	12/20/2017	11:03:06 AM
1	CCB16	CCB	1	12/20/2017	11:08:59 AM
1	CCB16	CCB	1	12/20/2017	11:17:02 AM
61	N027556-008E	SAMP	1	12/20/2017	11:20:47 AM
62	N027556-009E	SAMP	1	12/20/2017	11:25:39 AM
63	N027556-010F	SAMP	1	12/20/2017	11:31:31 AM
7	CCV17	CCV	1	12/20/2017	11:40:26 AM
1	CCB17	CCB	1	12/20/2017	11:46:17 AM
2	LLCCV4	CCV2	1	12/20/2017	11:51:05 AM
2	LLCCV4	CCV2	1	12/20/2017	12:04:06 PM
4	ICSA5	ICSA	1	12/20/2017	12:08:54 PM
5	ICSAB5	ICSAB	1	12/20/2017	12:14:57 PM
5	ICSAB5	ICSAB	1	12/20/2017	12:24:11 PM

INJECTION LOG: 180103A

Instrument ID: ICP-02

STANDARD CODE		
Standard1	MWST-170601A,0.025<50mL	MWST-171201R
Standard2	MWST-170601A,0.25<50mL	
Standard3	MWST-170601A,1.25<50mL	
Standard4	MWST-170601A,2.5<50mL	
Standard5	MWST-170601A,5<50mL	
Standard6	MWST-170601A,10<50mL	
ICV	MWST-171030L	
CCV	MWST-170601A,2.5<50mL	MWST-171201R
ICSA/ICSAB	MWST-170601L/MWST-170601B	MWST-171201p/ MWST-171201S
Int. Std. (Sc):	MSST-171009C/B	
PS Spike	MSST-130329D/E	

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	01/03/2018	06:39:20 AM
26	Standard1	ICAL	1	01/03/2018	06:42:39 AM
27	Standard2	ICAL	1	01/03/2018	06:45:55 AM
28	Standard3	ICAL	1	01/03/2018	06:49:43 AM
29	Standard4	ICAL	1	01/03/2018	06:53:33 AM
30	Standard5	ICAL	1	01/03/2018	06:57:26 AM
31	Standard6	ICAL	1	01/03/2018	07:01:30 AM
32	ICV	ICV	1	01/03/2018	07:05:49 AM
1	ICB	ICB	1	01/03/2018	07:09:44 AM
33	ICSA1	ICSA	1	01/03/2018	07:13:01 AM
34	ICSAB1	ICSAB	1	01/03/2018	07:16:19 AM
38	MB-66081	MBLK	1	01/03/2018	07:45:21 AM
39	LCS2-66081	LCS	1	01/03/2018	07:48:40 AM
40	N027523-009B	SAMP	100	01/03/2018	07:52:46 AM
41	N027523-012B	SAMP	100	01/03/2018	07:56:35 AM
42	N027546-001B	SAMP	100	01/03/2018	07:59:54 AM
43	N027546-002B	SAMP	100	01/03/2018	08:03:13 AM
44	N027546-003B	SAMP	100	01/03/2018	08:06:32 AM
45	N027546-004B	SAMP	100	01/03/2018	08:09:50 AM
46	N027546-005B	SAMP	100	01/03/2018	08:13:08 AM
47	N027546-006B	SAMP	100	01/03/2018	08:16:28 AM
29	CCV1	CCV	1	01/03/2018	08:19:47 AM
1	CCB1	CCB	1	01/03/2018	08:23:41 AM
48	N027546-007B	SAMP	100	01/03/2018	08:26:59 AM
49	N027546-008B	SAMP	100	01/03/2018	08:30:19 AM
50	N027546-009B	SAMP	100	01/03/2018	08:33:40 AM
51	N027546-010B	SAMP	100	01/03/2018	08:36:59 AM
52	N027523-012B	SAMP	500	01/03/2018	08:40:49 AM
53	N027523-012B-PS	PS	100	01/03/2018	08:44:07 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
54	N027523-012B-MS2	MS	100	01/03/2018	08:47:25 AM
55	N027523-012B-MSD2	MSD	100	01/03/2018	08:51:12 AM
54	N027523-012B-MS2	MS	100	01/03/2018	08:54:29 AM
56	N027546-007B	SAMP	500	01/03/2018	08:57:49 AM
29	CCV2	CCV	1	01/03/2018	09:01:08 AM
29	CCV2	CCV	1	01/03/2018	09:05:38 AM
1	CCB2	CCB	1	01/03/2018	09:09:31 AM
57	N027546-006B	SAMP	25	01/03/2018	09:12:49 AM
58	N027546-008B	SAMP	500	01/03/2018	09:16:38 AM
59	N027546-009B	SAMP	500	01/03/2018	09:19:59 AM
60	MB-66082	MBLK	1	01/03/2018	09:23:19 AM
61	LCS2-66082	LCS	1	01/03/2018	09:26:39 AM
62	N027557-001B	SAMP	100	01/03/2018	09:33:45 AM
63	N027557-002B	SAMP	100	01/03/2018	09:37:05 AM
64	N027557-003B	SAMP	100	01/03/2018	09:40:25 AM
65	N027557-004B	SAMP	100	01/03/2018	09:43:45 AM
66	N027557-005B	SAMP	100	01/03/2018	09:47:05 AM
29	CCV3	CCV	1	01/03/2018	09:50:24 AM
1	CCB3	CCB	1	01/03/2018	09:54:18 AM
67	N027557-006B	SAMP	100	01/03/2018	09:57:36 AM
68	N027557-007B	SAMP	100	01/03/2018	10:00:56 AM
69	N027557-008B	SAMP	100	01/03/2018	10:04:16 AM
70	N027557-009B	SAMP	100	01/03/2018	10:08:06 AM
71	N027557-010B	SAMP	100	01/03/2018	10:11:55 AM
72	N027557-002B	SAMP	500	01/03/2018	10:15:56 AM
73	N027557-002B-PS	PS	100	01/03/2018	10:19:16 AM
74	N027557-002B-MS2	MS	100	01/03/2018	10:22:36 AM
75	N027557-002B-MSD2	MSD	100	01/03/2018	10:26:28 AM
76	N027557-003B	SAMP	500	01/03/2018	10:30:18 AM
29	CCV4	CCV	1	01/03/2018	10:33:38 AM
1	CCB4	CCB	1	01/03/2018	10:37:33 AM
77	N027557-004B	SAMP	500	01/03/2018	10:40:50 AM
78	N027557-005B	SAMP	500	01/03/2018	10:44:11 AM
79	N027557-008B	SAMP	10	01/03/2018	10:47:31 AM
80	N027557-009B	SAMP	10	01/03/2018	10:51:22 AM
81	N027557-010B	SAMP	10	01/03/2018	10:55:13 AM
82	MB-66203	MBLK	1	01/03/2018	10:59:04 AM
83	LCS2-66203	LCS	1	01/03/2018	11:02:54 AM
84	N027689-001A	SAMP	1	01/03/2018	11:07:01 AM
85	N027689-001A	SAMP	5	01/03/2018	11:10:52 AM
86	N027689-001A-PS	PS	1	01/03/2018	11:14:42 AM
29	CCV5	CCV	1	01/03/2018	11:18:50 AM
1	CCB5	CCB	1	01/03/2018	11:22:44 AM
33	ICSA2	ICSA	1	01/03/2018	11:26:32 AM
34	ICSAB2	ICSAB	1	01/03/2018	11:30:22 AM
87	N027689-001A-MS2	MS	1	01/03/2018	11:34:17 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
88	N027689-001A-MSD2	MSD	1	01/03/2018	11:38:23 AM
89	MB-66126	MBLK	1	01/03/2018	11:42:29 AM
90	LCS2-66126	LCS	1	01/03/2018	11:46:19 AM
91	N027583-001E	SAMP	100	01/03/2018	11:50:26 AM
92	N027583-002E	SAMP	100	01/03/2018	11:53:46 AM
93	N027583-003E	SAMP	100	01/03/2018	11:57:06 AM
94	N027583-001E	SAMP	1	01/03/2018	12:01:37 PM
95	N027583-003E	SAMP	1	01/03/2018	12:06:51 PM
1	RINSE	RINSE	1	01/03/2018	12:13:14 PM
29	CCV6	CCV	1	01/03/2018	12:17:01 PM
1	CCB6	CCB	1	01/03/2018	12:20:55 PM
96	N027583-002E	SAMP	1	01/03/2018	12:24:42 PM
97	N027583-002E	SAMP	5	01/03/2018	12:29:55 PM
98	N027583-002E-PS	PS	1	01/03/2018	12:34:48 PM
99	N027583-002E-MS2	MS	1	01/03/2018	12:40:03 PM
101	N027583-002E	SAMP	500	01/03/2018	12:46:14 PM
102	N027583-002E-PS	PS	100	01/03/2018	12:49:33 PM
103	N027583-002E-MS2	MS	100	01/03/2018	12:52:55 PM
104	N027583-002E-MSD2	MSD	100	01/03/2018	12:56:17 PM
98	N027583-002E-PS	PS	1	01/03/2018	12:59:38 PM
99	N027583-002E-MS2	MS	1	01/03/2018	01:04:54 PM
29	CCV7	CCV	1	01/03/2018	01:10:10 PM
1	CCB7	CCB	1	01/03/2018	01:14:05 PM
100	N027583-002E-MSD2	MSD	1	01/03/2018	01:17:53 PM
29	CCV8	CCV	1	01/03/2018	01:23:08 PM
1	CCB8	CCB	1	01/03/2018	01:27:27 PM
33	ICSA3	ICSA	1	01/03/2018	01:30:44 PM
34	ICSAB3	ICSAB	1	01/03/2018	01:34:33 PM
29	CCV8	CCV	1	01/03/2018	01:47:43 PM
1	CCB8	CCB	1	01/03/2018	01:51:37 PM
33	ICSA3	ICSA	1	01/03/2018	01:55:24 PM
34	ICSAB3	ICSAB	1	01/03/2018	01:59:39 PM
34	ICSAB3	ICSAB	1	01/03/2018	02:21:06 PM
105	N027583-002E	SAMP	25	01/03/2018	02:29:43 PM
106	N027583-002E-PS	PS	5	01/03/2018	02:33:34 PM
107	N027583-002E-MS2	MS	5	01/03/2018	02:38:30 PM
108	N027583-002E-MSD2	MSD	5	01/03/2018	02:43:26 PM
29	CCV9	CCV	1	01/03/2018	02:48:21 PM
1	CCB9	CCB	1	01/03/2018	02:52:16 PM
33	ICSA4	ICSA	1	01/03/2018	02:56:04 PM
33	ICSA4	ICSA	1	01/03/2018	03:01:02 PM
34	ICSAB4	ICSAB	1	01/03/2018	03:04:21 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/15/2017 7:51:47**
Prep End Date: **12/15/2017 1:00:00**
Prep Batch **66081** Prep Code: **3010_W_DISS**

Reviewed/ Date: 01/05/2018
Initials/ Date: for
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**Db-2-5**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-66081	Aqueous		25	☐	0	0	25	1.000		
LCS2-66081	Aqueous		25	☐	0	0	25	1.000		
MB-66081	Aqueous		25	☐	0	0	25	1.000		
N027523-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-009B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-009B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-012B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-012B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-005B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9602	NITRIC ACID
9611	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/15/2017 7:51:47**
Prep End Date: **12/15/2017 1:00:00**
Prep Batch **66081** Prep Code: **3010_W_DISS**

Reviewed/ Date: for 01/05/2018
Initials/ Date: _____
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**Db-2-5**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027546-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-010B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9602	NITRIC ACID
9611	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 171219A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Boron								
CalBlk	12/19/2017	10:23:34 AM	B	249.677	5558	0.00	mg/L	
Standard1	12/19/2017	10:28:24 AM	B	249.677	3689	0.1000	mg/L	
Standard3	12/19/2017	10:39:04 AM	B	249.677	38154	1.000	mg/L	
Standard4	12/19/2017	10:44:25 AM	B	249.677	95676	2.500	mg/L	
Standard5	12/19/2017	10:51:46 AM	B	249.677	146881	3.750	mg/L	
Standard6	12/19/2017	10:59:06 AM	B	249.677	191523	5.000	mg/L	
Standard7	12/19/2017	11:06:41 AM	B	249.677	378948	10.000	mg/L	0.9999
Magnesium								
CalBlk	12/19/2017	10:23:34 AM	Mg	279.079	249	0.00	mg/L	
Standard1	12/19/2017	10:28:24 AM	Mg	279.079	1423	0.1000	mg/L	
Standard2	12/19/2017	10:33:45 AM	Mg	279.079	13161	1.000	mg/L	
Standard3	12/19/2017	10:39:04 AM	Mg	279.079	27739	2.000	mg/L	
Standard4	12/19/2017	10:44:25 AM	Mg	279.079	68479	5.000	mg/L	
Standard5	12/19/2017	10:51:46 AM	Mg	279.079	103673	7.500	mg/L	
Standard6	12/19/2017	10:59:06 AM	Mg	279.079	137290	10.000	mg/L	
Standard7	12/19/2017	11:06:41 AM	Mg	279.079	262216	20.000	mg/L	0.9997
Calcium								
CalBlk	12/19/2017	10:23:34 AM	Ca	227.546	-144	0.00	mg/L	
Standard1	12/19/2017	10:28:24 AM	Ca	227.546	62	0.2000	mg/L	
Standard2	12/19/2017	10:33:45 AM	Ca	227.546	278	1.000	mg/L	
Standard3	12/19/2017	10:39:04 AM	Ca	227.546	591	2.000	mg/L	
Standard4	12/19/2017	10:44:25 AM	Ca	227.546	1444	5.000	mg/L	
Standard5	12/19/2017	10:51:46 AM	Ca	227.546	2153	7.500	mg/L	
Standard6	12/19/2017	10:59:06 AM	Ca	227.546	2875	10.000	mg/L	
Standard7	12/19/2017	11:06:41 AM	Ca	227.546	5631	20.000	mg/L	0.9999
Iron								
CalBlk	12/19/2017	10:23:34 AM	Fe	273.953	-142	0.00	mg/L	
Standard1	12/19/2017	10:28:24 AM	Fe	273.953	491	0.0200	mg/L	
Standard2	12/19/2017	10:33:45 AM	Fe	273.953	1636	0.050	mg/L	
Standard3	12/19/2017	10:39:04 AM	Fe	273.953	44331	2.000	mg/L	
Standard4	12/19/2017	10:44:25 AM	Fe	273.953	109375	5.000	mg/L	
Standard5	12/19/2017	10:51:46 AM	Fe	273.953	165425	7.500	mg/L	
Standard6	12/19/2017	10:59:06 AM	Fe	273.953	218762	10.000	mg/L	
Standard7	12/19/2017	11:06:41 AM	Fe	273.953	417464	20.000	mg/L	0.9997

INITIAL CALIBRATION SUMMARY: 180103A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	01/03/2018	06:39:20 AM	Na	589.594	62	0.00	mg/L	
Standard1	01/03/2018	06:42:39 AM	Na	589.594	503	0.1000	mg/L	
Standard2	01/03/2018	06:45:55 AM	Na	589.594	4160	1.000	mg/L	
Standard3	01/03/2018	06:49:43 AM	Na	589.594	21022	5.000	mg/L	
Standard4	01/03/2018	06:53:33 AM	Na	589.594	42090	10.000	mg/L	
Standard5	01/03/2018	06:57:26 AM	Na	589.594	84190	20.000	mg/L	
Standard6	01/03/2018	07:01:30 AM	Na	589.594	167500	40.000	mg/L	1.0000

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **ICV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872867**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5099.945	100	5000	0	102	90	110				
Calcium	10101.951	500	10000	0	101	90	110				
Iron	10265.234	20	10000	0	103	90	110				
Magnesium	10256.827	100	10000	0	103	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **ZZZZZZ** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	107.330	100	100.0	0	107	80	120				
Calcium	225.252	500	200.0	0	113	80	120				
Iron	22.111	20	20.00	0	111	80	120				
Magnesium	101.031	100	100.0	0	101	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5077.114	100	5000	0	102	90	110				
Calcium	10087.496	500	10000	0	101	90	110				
Iron	10068.629	20	10000	0	101	90	110				
Magnesium	10003.649	100	10000	0	100	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4918.676	100	5000	0	98.4	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9904.520	500	10000	0	99.0	90	110				
Iron	9773.781	20	10000	0	97.7	90	110				
Magnesium	9754.873	100	10000	0	97.5	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5195.547	100	5000	0	104	90	110				
Calcium	10165.050	500	10000	0	102	90	110				
Iron	10413.547	20	10000	0	104	90	110				
Magnesium	10394.623	100	10000	0	104	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4895.955	100	5000	0	97.9	90	110				
Calcium	9876.655	500	10000	0	98.8	90	110				
Iron	9839.064	20	10000	0	98.4	90	110				
Magnesium	9818.277	100	10000	0	98.2	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **ZZZZZZ** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	98.336	100	100.0	0	98.3	70	130				
Calcium	220.353	500	200.0	0	110	70	130				
Iron	22.875	20	20.00	0	114	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	106.753	100	100.0	0	107	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872936**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5129.771	100	5000	0	103	90	110				
Calcium	10352.156	500	10000	0	104	90	110				
Iron	10606.001	20	10000	0	106	90	110				
Magnesium	10567.979	100	10000	0	106	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4927.431	100	5000	0	98.5	90	110				
Calcium	10068.129	500	10000	0	101	90	110				
Iron	9935.813	20	10000	0	99.4	90	110				
Magnesium	9882.452	100	10000	0	98.8	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872960**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4810.929	100	5000	0	96.2	90	110				
Calcium	9847.946	500	10000	0	98.5	90	110				
Iron	9653.480	20	10000	0	96.5	90	110				
Magnesium	9675.889	100	10000	0	96.8	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV8** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872972**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4965.895	100	5000	0	99.3	90	110				
Calcium	10063.850	500	10000	0	101	90	110				
Iron	10273.994	20	10000	0	103	90	110				
Magnesium	10406.273	100	10000	0	104	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **ZZZZZZ** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	103.773	100	100.0	0	104	70	130				
Calcium	266.163	500	200.0	0	133	70	130				S
Iron	23.330	20	20.00	0	117	70	130				
Magnesium	103.517	100	100.0	0	104	70	130				

Sample ID **CCV9** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873638**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4872.771	100	5000	0	97.5	90	110				
Calcium	10125.639	500	10000	0	101	90	110				
Iron	10186.375	20	10000	0	102	90	110				
Magnesium	10324.037	100	10000	0	103	90	110				

Sample ID **CCV10** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873650**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4823.347	100	5000	0	96.5	90	110				
Calcium	9918.903	500	10000	0	99.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

01/05/2018

Ca on LLCCV2 is biased high however, samples for this analyte are greater than the regular CCV concentration which passed QC criteria.

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV10** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873650**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10147.604	20	10000	0	101	90	110				
Magnesium	10289.389	100	10000	0	103	90	110				

Sample ID **CCV11** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873662**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4737.324	100	5000	0	94.7	90	110				
Calcium	9659.769	500	10000	0	96.6	90	110				
Iron	9699.493	20	10000	0	97.0	90	110				
Magnesium	9819.285	100	10000	0	98.2	90	110				

Sample ID **CCV12** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873676**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4853.109	100	5000	0	97.1	90	110				
Calcium	9875.510	500	10000	0	98.8	90	110				
Iron	10180.551	20	10000	0	102	90	110				
Magnesium	10344.144	100	10000	0	103	90	110				

Sample ID **LLCCV3** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **ZZZZZZ** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873678**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	100.097	100	100.0	0	100	70	130				
Calcium	258.351	500	200.0	0	129	70	130				
Iron	23.915	20	20.00	0	120	70	130				
Magnesium	103.278	100	100.0	0	103	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV13** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873691**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4892.170	100	5000	0	97.8	90	110				
Calcium	9814.263	500	10000	0	98.1	90	110				
Iron	10150.534	20	10000	0	102	90	110				
Magnesium	10319.095	100	10000	0	103	90	110				

Sample ID **CCV14** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873703**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4956.354	100	5000	0	99.1	90	110				
Calcium	10006.400	500	10000	0	100	90	110				
Iron	10171.821	20	10000	0	102	90	110				
Magnesium	10251.213	100	10000	0	103	90	110				

Sample ID **CCV15** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4827.137	100	5000	0	96.5	90	110				
Calcium	9477.839	500	10000	0	94.8	90	110				
Iron	9936.651	20	10000	0	99.4	90	110				
Magnesium	10006.673	100	10000	0	100	90	110				

Sample ID **CCV16** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4799.843	100	5000	0	96.0	90	110				
Calcium	9474.062	500	10000	0	94.7	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV16**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9916.966	20	10000	0	99.2	90	110				
Magnesium	9990.379	100	10000	0	99.9	90	110				

Sample ID **CCV17**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873733**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5240.337	100	5000	0	105	90	110				
Calcium	10458.405	500	10000	0	105	90	110				
Iron	10912.185	20	10000	0	109	90	110				
Magnesium	10979.376	100	10000	0	110	90	110				

Sample ID **LLCCV4**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	79.427	100	100.0	0	79.4	70	130				
Calcium	164.854	500	200.0	0	82.4	70	130				
Iron	17.487	20	20.00	0	87.4	70	130				
Magnesium	80.638	100	100.0	0	80.6	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **ICV**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9974.235	500	10000	0	99.7	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCV**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9865.611	500	10000	0	98.7	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCV**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883329**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9855.700	500	10000	0	98.6	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCV**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883341**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9806.224	500	10000	0	98.1	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCV**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883353**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10096.655	500	10000	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCV**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883365**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10032.975	500	10000	0	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872868**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	31.928	100									
Calcium	25.289	500									
Iron	0.264	20									
Magnesium	-0.57117	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	13.483	100									
Calcium	33.130	500									
Iron	0.775	20									
Magnesium	-0.917742	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	30.699	100									
Calcium	3.457	500									
Iron	0.203	20									
Magnesium	-1.651536	100									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	21.321	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	17.578	500									
Iron	-0.562511	20									
Magnesium	-0.614019	100									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	9.787	100									
Calcium	29.385	500									
Iron	-0.242624	20									
Magnesium	-0.716168	100									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872937**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	30.912	100									
Calcium	6.563	500									
Iron	-0.349232	20									
Magnesium	-0.244004	100									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	36.370	100									
Calcium	-20.165979	500									
Iron	-0.362088	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	0.953	100									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	28.308	100									
Calcium	31.182	500									
Iron	-0.109383	20									
Magnesium	-1.026871	100									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	31.732	100									
Calcium	48.382	500									
Iron	0.302	20									
Magnesium	-1.353948	100									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873639**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	25.230	100									
Calcium	61.218	500									
Iron	0.666	20									
Magnesium	-1.306078	100									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873651**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	35.337	100									
Calcium	63.322	500									
Iron	0.612	20									
Magnesium	-1.400694	100									

Sample ID **CCB11**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	19.326	100									
Calcium	53.447	500									
Iron	0.887	20									
Magnesium	-1.219422	100									

Sample ID **CCB12**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873677**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	24.142	100									
Calcium	54.893	500									
Iron	0.497	20									
Magnesium	-0.155927	100									

Sample ID **CCB13**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873692**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	30.685	100									
Calcium	60.610	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB13**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873692**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.102	20									
Magnesium	0.364	100									

Sample ID **CCB14**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873704**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	27.482	100									
Calcium	21.048	500									
Iron	-0.54473	20									
Magnesium	-0.548792	100									

Sample ID **CCB15**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873716**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	29.200	100									
Calcium	37.689	500									
Iron	-1.097273	20									
Magnesium	-0.032286	100									

Sample ID **CCB16**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873729**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	20.228	100									
Calcium	43.740	500									
Iron	-0.701584	20									
Magnesium	-0.088455	100									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCB17	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873734

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	59.735	100									
Calcium	-18.816967	500									
Iron	-0.670956	20									
Magnesium	-0.629145	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **ICB**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3.133	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCB**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883317**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-21.053637	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCB**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883330**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-11.230024	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCB**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883342**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-11.316633	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCB**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883354**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-28.545286	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCB**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-34.152588	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872870**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	498329.453	50	500000	0	99.7	80	120				
Boron	88.100	100									
Calcium	506490.713	500	500000	0	101	80	120				
Iron	179793.677	20	200000	0	89.9	80	120				
Magnesium	475935.929	100	500000	0	95.2	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSAB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	546782.249	50	500000	0	109	80	120				
Boron	1173.352	100	1000	0	117	80	120				
Calcium	555538.618	500	500000	0	111	80	120				
Iron	187588.653	20	200000	0	93.8	80	120				
Magnesium	503556.663	100	500000	0	101	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	505775.123	50	500000	0	101	80	120				
Boron	83.607	100									
Calcium	511760.390	500	500000	0	102	80	120				
Iron	181783.344	20	200000	0	90.9	80	120				
Magnesium	481219.806	100	500000	0	96.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSAB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	551426.519	50	500000	0	110	80	120				
Boron	1175.249	100	1000	0	118	80	120				
Calcium	558431.588	500	500000	0	112	80	120				
Iron	188992.776	20	200000	0	94.5	80	120				
Magnesium	506616.951	100	500000	0	101	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	494366.698	50	500000	0	98.9	80	120				
Boron	85.578	100									
Calcium	497081.940	500	500000	0	99.4	80	120				
Iron	176987.327	20	200000	0	88.5	80	120				
Magnesium	476524.153	100	500000	0	95.3	80	120				

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSAB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	541047.279	50	500000	0	108	80	120				
Boron	1146.351	100	1000	0	115	80	120				
Calcium	543688.104	500	500000	0	109	80	120				
Iron	184653.505	20	200000	0	92.3	80	120				
Magnesium	500595.553	100	500000	0	100	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873679**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	491037.277	50	500000	0	98.2	80	120				
Boron	90.141	100									
Calcium	489727.156	500	500000	0	97.9	80	120				
Iron	175817.995	20	200000	0	87.9	80	120				
Magnesium	473899.027	100	500000	0	94.8	80	120				

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSAB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873680**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	538707.628	50	500000	0	108	80	120				
Boron	1129.484	100	1000	0	113	80	120				
Calcium	536671.907	500	500000	0	107	80	120				
Iron	183946.460	20	200000	0	92.0	80	120				
Magnesium	500154.534	100	500000	0	100	80	120				

Sample ID **ICSA5**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	519089.326	50	500000	0	104	80	120				
Boron	85.383	100									
Calcium	511388.117	500	500000	0	102	80	120				
Iron	187834.978	20	200000	0	93.9	80	120				
Magnesium	504975.878	100	500000	0	101	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB5**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSAB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	473861.160	50	500000	0	94.8	80	120				
Boron	1022.046	100	1000	0	102	80	120				
Calcium	464818.220	500	500000	0	93.0	80	120				
Iron	200609.345	20	200000	0	100	80	120				
Magnesium	447746.521	100	500000	0	89.5	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **ICSA**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883304**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	0.570	500									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **ICSAB**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883305**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10004.420	500	10000	0	100	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **ICSA**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883367**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-37.59857	500									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **ICSAB**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10148.970	500	10000	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	98.9	65-125	PASS
Standard2	ICAL	1	1.053	105.31	65-125	PASS
Standard3	ICAL	1	1.046	104.59	65-125	PASS
Standard4	ICAL	1	1.074	107.38	65-125	PASS
Standard5	ICAL	1	0.99	98.63	65-125	PASS
Standard6	ICAL	1	0.93	93.39	65-125	PASS
Standard7	ICAL	1	0.95	94.61	65-125	PASS
ICV	ICV	1	0.94	94.18	65-125	PASS
ICB	ICB	1	1.015	101.49	65-125	PASS
LLICV	CCV1	1	1.034	103.35	65-125	PASS
ICSA1	ICSA	1	1.015	101.5	65-125	PASS
ICSAB1	ICSAB	1	0.82	81.74	65-125	PASS
CCV1	CCV	1	0.98	97.92	65-125	PASS
CCB1	CCB	1	1	99.98	65-125	PASS
CCB1	CCB	1	1.031	103.1	65-125	PASS
CCV2	CCV	1	1.03	102.97	65-125	PASS
CCB2	CCB	1	1.042	104.16	65-125	PASS
CCV3	CCV	1	0.98	97.7	65-125	PASS
CCB3	CCB	1	1.042	104.17	65-125	PASS
CCB3	CCB	1	1.022	102.22	65-125	PASS
CCV4	CCV	1	1.011	101.06	65-125	PASS
CCB4	CCB	1	1	99.81	65-125	PASS
LLCCV1	CCV2	1	1.033	103.33	65-125	PASS
ICSA2	ICSA	1	1.045	104.52	65-125	PASS
ICSAB2	ICSAB	1	0.84	84.43	65-125	PASS
CCV5	CCV	1	0.99	98.91	65-125	PASS
CCB5	CCB	1	1.0069	100.69	65-125	PASS
CCV6	CCV	1	1.028	102.84	65-125	PASS
CCB6	CCB	1	1.0096	100.96	65-125	PASS
MB-66081	MBLK	1	1.078	107.84	65-125	PASS
LCS1-66081	LCS	1	1.015	101.52	65-125	PASS
CCV7	CCV	1	1.037	103.74	65-125	PASS
CCB7	CCB	1	1.037	103.7	65-125	PASS
N027523-009B	SAMP	1	0.86	86.093	65-125	PASS
N027523-009B	SAMP	5	0.94	94.062	65-125	PASS
N027523-009B-PS	PS	1	0.87	87.39	65-125	PASS
N027523-009B-MS1	MS	1	0.89	89.3	65-125	PASS
N027523-009B-MSD1	MSD	1	0.9	89.63	65-125	PASS
N027523-012B	SAMP	1	0.88	87.87	65-125	PASS
N027546-001B	SAMP	1	0.94	94.32	65-125	PASS

INTERNAL STANDARD: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N027546-002B	SAMP	1	0.99	98.77	65-125	PASS
N027546-003B	SAMP	1	0.96	96.38	65-125	PASS
N027546-004B	SAMP	1	0.85	85.41	65-125	PASS
CCV8	CCV	1	1.072	107.21	65-125	PASS
CCB8	CCB	1	1.094	109.41	65-125	PASS
LLCCV2	CCV2	1	1.15	115.04	65-125	PASS
ICSA3	ICSA	1	1.15	114.65	65-125	PASS
ICSAB3	ICSAB	1	0.9	90.38	65-125	PASS
N027546-005B	SAMP	1	0.87	86.96	65-125	PASS
N027546-006B	SAMP	1	1.068	106.85	65-125	PASS
N027546-007B	SAMP	1	0.85	84.86	65-125	PASS
N027546-008B	SAMP	1	0.87	86.59	65-125	PASS
N027546-009B	SAMP	1	0.83	83.29	65-125	PASS
N027546-010B	SAMP	1	0.91	90.51	65-125	PASS
CCV9	CCV	1	1.075	107.45	65-125	PASS
CCB9	CCB	1	1.085	108.54	65-125	PASS
CCV10	CCV	1	1.088	108.83	65-125	PASS
CCB10	CCB	1	1.11	110.82	65-125	PASS
CCV11	CCV	1	1.11	110.54	65-125	PASS
CCB11	CCB	1	1.095	109.54	65-125	PASS
CCB11	CCB	1	1.1	110.07	65-125	PASS
CCV12	CCV	1	1.079	107.91	65-125	PASS
CCB12	CCB	1	1.11	110.73	65-125	PASS
LLCCV3	CCV2	1	1.17	116.58	65-125	PASS
ICSA4	ICSA	1	1.16	115.81	65-125	PASS
ICSAB4	ICSAB	1	0.91	91.32	65-125	PASS
CCV13	CCV	1	1.073	107.34	65-125	PASS
CCB13	CCB	1	1.097	109.65	65-125	PASS
N027523-009B	SAMP	25	1.03	103.02	65-125	PASS
N027523-009B-PS	PS	5	0.95	94.86	65-125	PASS
N027523-009B-MS1	MS	5	0.95	94.68	65-125	PASS
N027523-009B-MSD1	MSD	5	0.94	94.013	65-125	PASS
CCV14	CCV	1	1.074	107.42	65-125	PASS
CCB14	CCB	1	1.048	104.82	65-125	PASS
CCV15	CCV	1	1.029	102.92	65-125	PASS
CCB15	CCB	1	1.038	103.82	65-125	PASS
CCV16	CCV	1	1.033	103.32	65-125	PASS
CCB16	CCB	1	1.042	104.16	65-125	PASS
CCB16	CCB	1	1.043	104.26	65-125	PASS
CCV17	CCV	1	1.023	102.26	65-125	PASS
CCB17	CCB	1	1.012	101.22	65-125	PASS

INTERNAL STANDARD: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
LLCCV4	CCV2	1	1.12	111.89	65-125	PASS
LLCCV4	CCV2	1	1.047	104.73	65-125	PASS
ICSA5	ICSA	1	1.11	111.01	65-125	PASS
ICSAB5	ICSAB	1	0.88	87.76	65-125	PASS
ICSAB5	ICSAB	1	1.043	104.34	65-125	PASS

INTERNAL STANDARD: 180103A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	99.11	65-125	PASS
Standard2	ICAL	1	1.0002	100.02	65-125	PASS
Standard3	ICAL	1	0.98	97.82	65-125	PASS
Standard4	ICAL	1	0.96	95.77	65-125	PASS
Standard5	ICAL	1	0.95	95.12	65-125	PASS
Standard6	ICAL	1	0.94	94.22	65-125	PASS
ICV	ICV	1	0.96	95.99	65-125	PASS
ICB	ICB	1	1.0034	100.34	65-125	PASS
ICSA1	ICSA	1	1.0054	100.54	65-125	PASS
ICSAB1	ICSAB	1	0.96	96.016	65-125	PASS
MB-66081	MBLK	1	1.0076	100.76	65-125	PASS
LCS2-66081	LCS	1	1.032	103.21	65-125	PASS
N027523-009B	SAMP	100	1	99.59	65-125	PASS
N027523-012B	SAMP	100	0.99	99.16	65-125	PASS
N027546-001B	SAMP	100	0.99	99.22	65-125	PASS
N027546-002B	SAMP	100	0.99	99.17	65-125	PASS
N027546-003B	SAMP	100	0.99	99.34	65-125	PASS
N027546-004B	SAMP	100	0.99	98.86	65-125	PASS
N027546-005B	SAMP	100	0.99	98.6	65-125	PASS
N027546-006B	SAMP	100	1.016	101.63	65-125	PASS
CCV1	CCV	1	0.99	98.53	65-125	PASS
CCB1	CCB	1	1.045	104.49	65-125	PASS
N027546-007B	SAMP	100	0.99	99.29	65-125	PASS
N027546-008B	SAMP	100	0.99	99.16	65-125	PASS
N027546-009B	SAMP	100	1	99.62	65-125	PASS
N027546-010B	SAMP	100	0.99	99.15	65-125	PASS
N027523-012B	SAMP	500	1.0026	100.26	65-125	PASS
N027523-012B-PS	PS	100	0.99	98.99	65-125	PASS
N027523-012B-MS2	MS	100	0.98	97.64	65-125	PASS
N027523-012B-MSD2	MSD	100	0.98	97.67	65-125	PASS
N027523-012B-MS2	MS	100	0.97	97.43	65-125	PASS
N027546-007B	SAMP	500	0.98	98.11	65-125	PASS
CCV2	CCV	1	0.67	66.55	65-125	PASS
CCV2	CCV	1	0.99	98.59	65-125	PASS
CCB2	CCB	1	1.024	102.4	65-125	PASS
N027546-006B	SAMP	25	0.99	98.7	65-125	PASS
N027546-008B	SAMP	500	0.99	98.58	65-125	PASS
N027546-009B	SAMP	500	0.99	99.05	65-125	PASS
CCV3	CCV	1	0.99	99.42	65-125	PASS
CCB3	CCB	1	1.034	103.42	65-125	PASS

INTERNAL STANDARD: 180103A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCV4	CCV	1	1.018	101.76	65-125	PASS
CCB4	CCB	1	1.071	107.15	65-125	PASS
CCV5	CCV	1	1.024	102.42	65-125	PASS
CCB5	CCB	1	1.048	104.85	65-125	PASS
ICSA2	ICSA	1	1.073	107.25	65-125	PASS
ICSAB2	ICSAB	1	1.024	102.38	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N027546
Test Method: EPA 6010B
Analysis Date: 12/19/2017 & 1/3/2018

Matrix: Groundwater
Batch No.: 66081

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test failed for B, Fe & Mg.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027523-009B DT 5X	Boron	ug/L	2856.928	FAIL	2571.485	11.10%	10
N027523-009B DT 25X	Calcium	ug/L	886864.6	PASS	887365.2	0.06%	10
N027523-009B DT 5X	Iron	ug/L	1580.363	FAIL	1284.448	23.04%	10
N027523-009B DT 5X	Magnesium	ug/L	82117.39	FAIL	73868.66	11.17%	10
N027523-012B DT 500X	Sodium	ug/L	3360526	PASS	3330188	0.91%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N027523-009B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **66081**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/19/2017**	SeqNo: **2872964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	7362.720	100	5000	2571	95.8	80	120				
Iron	1416.523	20	100.0	1284	132	80	120				S
Magnesium	81784.069	100	10000	73870	79.2	80	120				S

Sample ID **N027523-009B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **66081**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2873695**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	907249.943	2500	10000	887400	199	80	120				S

Sample ID **N027523-012B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **ZZZZZZ**	Batch ID: **66081**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/3/2018**	SeqNo: **2883323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3463038.587	50000	20000	3330000	664	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

LOD & PQL VERIFICATION

Analytical Method: EPA 6010B / 200.7 **Matrix:** Water
Date of Analysis: 2/21/2017 **Units:** mg/L
Instrument Name: ICP2
Analyst: MI

Compound	MDL	LOD		PQL		
		Spike	Recovered	Spike	Recovered	% Recovery
Sodium	0.02621	0.10	0.08408	0.5	0.52080	104.2
Potassium	0.03815	0.10	0.13587	0.5	0.48231	96.5
Strontium	0.00545	0.02	0.02459	0.05	0.06052	121.0

Method Detection Limit

Analytical Method: EPA 6010B / 200.7
Digestion Method: EPA 3010A
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: mg/L

Analyte	1	2	3	4	5	6	7	SD	Ave	AMT SPIKED	%RSD	MDL	PQL
Potassium	0.15443	0.16201	0.14301	0.16141	0.16124	0.12965	0.14652	0.01215	0.15118	0.1000	8.0	0.03815	0.5
Sodium	0.11445	0.11459	0.11678	0.11286	0.11394	0.09515	0.10066	0.00835	0.10978	0.1000	7.6	0.02621	0.5
Strontium	0.02939	0.03046	0.0307	0.02962	0.03209	0.02708	0.02772	0.00174	0.02958	0.0250	5.9	0.00545	0.05

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66022
ASSET #: N027546

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 1/2/2018

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)		X			X	
Sample Information						
13. All samples are within linear dynamic range.		X			X	
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X			X	
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X			X	
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of V in LLCCV1 failed, bias low. V for rerun.
%Rec of Cr in LLCCV1 failed, bias high. However samples is >10 ppb, thus reported.
%RSD of Se in N02546-006B failed >15%. For rerun.
%RSD of As in LCCV1/2 & Se in LLCCV2 failed > 20%. However %Rec of LLCCV1 & 2 passed criteria.
%Rec of Ba & Cu in N027485-001B PS & Cr in N027485-001B PS/MS/MSD failed. However LCS passed criteria.
Cr in N025746-006B is over linear range. For further dilution.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/8/18

2nd Level Reviewer 01/08/2018 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66022
ASSET #: N027546

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 1/3/2018

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For V and Se in N027546-006B rerun only.
For dilution of Cr in N02546-006B only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/8/18

2nd Level Reviewer 01/08/2018 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66061 / 66022
ASSET #: N027546

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 1/3/2018

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.		X			X	
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X			X	
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?		X			X	
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?		X			X	
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X	X		X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%RSD of Se in LLICV, LLCCV1, LLCCV2 & As in LLCCV3 faield >20%. However %Rec of LLICV, LLCCV1, LLCCV2, LLCCV3 passed criteria.
Cr in N02546-001B & 002B is over linear range. For further dilution.
%RSD of Se in N02546-010B failed > 15%. For rerun.
For Confirmation:
N027546-004B (6020) = 1.4 :confirmation: 1.4 ug/L ; N027546-004A (218.6) = <1.0 ug/L :confirmation: 0.27
N027546-005B (6020) = 12 :confirmation: 13 ug/L ; N027546-005A (218.6) = 2.3 ug/L :confirmation: 9.9 ug/L
N027546-009B (6020) = 1.2 :confirmation: 1.1 ug/L ; N027546-009A (218.6) = <1.0 ug/L :confirmation: 0.05 ug/L
N027546-010B (6020) = 14 :confirmation: 14 ug/L ; N027546-010A (218.6) = 9.3 ug/L :confirmation: 9.8 ug/L

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/8/18
2nd Level Reviewer 01/08/2018 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66061
ASSET #: N027546

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 1/4/2018

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X			X	
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		X
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			X
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .			X			X
24. LCS compounds within control limits.			X			X
25. MS/MSD, RPD's are within control limits			X			X
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%RSD of Se in N027546-010B failed > 15%. Se for rerun.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/8/18

2nd Level Reviewer 01/08/2018 Date: _____

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66061
ASSET #: N027546

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 1/5/2018

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		X
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			X
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .			X			X
24. LCS compounds within control limits.			X			X
25. MS/MSD, RPD's are within control limits			X			X
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For rerun of Se in N027546-010B only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/8/18

2nd Level Reviewer 01/08/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N027546-003B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 12.0659 * 1 * (25/25)

Chromium , ug/L = 12.0659

Reporting results in two significant figures,

Chromium , ug/L = 12

% RSD SUMMARY

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	107 Ag [3]				111 Cd [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.054	7.26	15	PASS	0.1	6.53	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.44	1.48	15	PASS	0.49	2.49	15	PASS
Std3-5/50 ppb	ICAL	1	4.81	1.087	15	PASS	5.0048	0.78	15	PASS
Std4-10/100 ppb	ICAL	1	9.77	1.14	15	PASS	10.065	1.73	15	PASS
Std5-20/200 ppb	ICAL	1	19.69	0.96	15	PASS	20.26	0.23	15	PASS
Std6-40/400 ppb	ICAL	1	40.24	4.9	15	PASS	40.29	0.47	15	PASS
Std7-100/1000 ppb	ICAL	1	101.72	0.39	15	PASS	99.82	1.42	15	PASS
Std8-200/2000 ppb	ICAL	1	185.89	2.43	15	PASS	206	3.15	15	PASS
ICV	ICV	1	9.39	0.78	15	PASS	10.16	0.91	15	PASS
ICB	ICB	1	0.14	13.65	15	PASS	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.51	4.54	20	PASS	0.51	0.91	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	18.5	0.19	15	PASS	16.33	0.31	15	PASS
MB-66022	MBLK	1	0.17	13.57	15	PASS	<0.000	N/A	15	<PQL
LCS-66022	LCS	1	9.43	1.49	15	PASS	10.15	1.95	15	PASS
N027485-009B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-009B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-011C	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-011C	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-012C	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-012C	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027546-006B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027546-006B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV1	CCV	1	19.71	1.13	15	PASS	20.25	1.99	15	PASS
CCB1	CCB	1	0.17	14.13	15	PASS	<0.000	N/A	15	<PQL
N027485-001B	SAMP	1	<0.000	N/A	15	<PQL	0.012	134.037	15	<PQL
N027485-001B	SAMP	5	<0.000	N/A	15	<PQL	0.015	70.82	15	<PQL
N027485-001B	SAMP	25	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-001B-PS	PS	1	9.92	0.88	15	PASS	9.72	1.5	15	PASS
N027485-001B-PS	PS	5	2.19	0.94	15	PASS	<0.000	N/A	15	<PQL
N027485-001B-MS	MS	1	9.98	0.35	15	PASS	9.82	0.27	15	PASS
N027485-001B-MS	MS	1	2.2	0.33	15	PASS	<0.000	N/A	15	<PQL
N027485-001B-MSD	MSD	1	9.99	0.7	15	PASS	9.73	0.62	15	PASS
N027485-001B-MSD	MSD	5	2.21	0.78	15	PASS	<0.000	N/A	15	<PQL
N027485-002B	SAMP	1	0.45	2.71	15	PASS	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.4	0.74	15	PASS	20.32	2	15	PASS
CCB2	CCB	1	0.15	14.44	15	PASS	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.51	3.5	20	PASS	0.52	1.73	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	18.6	0.52	15	PASS	16.25	1.61	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	107 Ag [3]				111 Cd [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027485-002B	SAMP	5	0.18	7.64	15	PASS	<0.000	N/A	15	<PQL
N027485-003B	SAMP	1	0.44	2.19	15	PASS	<0.000	N/A	15	<PQL
N027485-003B	SAMP	5	0.11	7.67	15	PASS	<0.000	N/A	15	<PQL
N027485-004B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-004B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-005B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-005B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-006B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-006B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-007B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	19.7	1.15	15	PASS	20.27	0.91	15	PASS
CCB3	CCB	1	0.13	16.65	15	<PQL	<0.000	N/A	15	<PQL
N027485-007B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-008B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-008B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-010B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-010B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-009B	SAMP	25	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-011C	SAMP	25	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-012C	SAMP	25	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.52	1.99	20	PASS	0.54	3.082	20	PASS
CCV4	CCV	1	19.62	1.52	15	PASS	20.53	1.47	15	PASS
CCB4	CCB	1	0.13	19.4	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.51	0.78	20	PASS	0.51	2.27	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	18.82	1.15	15	PASS	16.5	1.0084	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	121 Sb [3]				137 Ba [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	3.25	15	PASS	0.11	10.41	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.49	0.65	15	PASS	0.5	2.062	15	PASS
Std3-5/50 ppb	ICAL	1	4.87	0.05	15	PASS	5.047	0.99	15	PASS
Std4-10/100 ppb	ICAL	1	9.65	1.055	15	PASS	10.2	0.49	15	PASS
Std5-20/200 ppb	ICAL	1	19.49	0.41	15	PASS	20.36	0.65	15	PASS
Std6-40/400 ppb	ICAL	1	38.55	0.74	15	PASS	40.45	1.25	15	PASS
Std7-100/1000 ppb	ICAL	1	100.14	1.052	15	PASS	99.73	1.33	15	PASS
Std8-200/2000 ppb	ICAL	1	200.29	0.59	15	PASS	206.78	2.12	15	PASS
ICV	ICV	1	9.6	0.97	15	PASS	9.96	0.79	15	PASS
ICB	ICB	1	0.095	10.48	15	PASS	0.0044	32.5	15	<PQL
LLICV	CCV1	1	0.57	1.31	20	PASS	1.066	4.16	20	PASS
ICSA1	ICSA	1	0.051	5.55	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.16	0.36	15	PASS	16.52	1.075	15	PASS
MB-66022	MBLK	1	0.039	4.73	15	PASS	0.0057	73.93	15	<PQL
LCS-66022	LCS	1	9.59	1.45	15	PASS	9.87	0.48	15	PASS
N027485-009B	SAMP	1	0.08	3.38	15	PASS	45.62	0.96	15	PASS
N027485-009B	SAMP	5	0.026	6.67	15	PASS	9.77	0.68	15	PASS
N027485-011C	SAMP	1	0.19	2.68	15	PASS	35.94	0.93	15	PASS
N027485-011C	SAMP	5	0.045	1.29	15	PASS	7.45	1.049	15	PASS
N027485-012C	SAMP	1	0.16	5.65	15	PASS	34.73	0.21	15	PASS
N027485-012C	SAMP	5	0.037	7.45	15	PASS	7.15	0.52	15	PASS
N027546-006B	SAMP	1	0.034	11.95	15	PASS	183.61	2.088	15	PASS
N027546-006B	SAMP	5	0.0063	37.64	15	<PQL	34.99	1.38	15	PASS
CCV1	CCV	1	19.13	1.075	15	PASS	20.086	1.24	15	PASS
CCB1	CCB	1	0.031	5.24	15	PASS	0.0077	55.5	15	<PQL
N027485-001B	SAMP	1	0.081	5.74	15	PASS	63.49	1.15	15	PASS
N027485-001B	SAMP	5	0.021	8.65	15	PASS	13.38	0.86	15	PASS
N027485-001B	SAMP	25	0.0055	39.73	15	<PQL	2.076	1.73	15	PASS
N027485-001B-PS	PS	1	10.13	0.82	15	PASS	71.04	0.47	15	PASS
N027485-001B-PS	PS	5	2.16	2.16	15	PASS	11.92	1.21	15	PASS
N027485-001B-MS	MS	1	10.067	0.62	15	PASS	71.28	1.3	15	PASS
N027485-001B-MS	MS	1	2.15	1.58	15	PASS	11.77	0.67	15	PASS
N027485-001B-MSD	MSD	1	10.2	0.57	15	PASS	71.93	0.71	15	PASS
N027485-001B-MSD	MSD	5	2.14	1.23	15	PASS	11.79	1.41	15	PASS
N027485-002B	SAMP	1	0.062	8.06	15	PASS	40.15	0.41	15	PASS
CCV2	CCV	1	19.16	1.43	15	PASS	20.95	0.54	15	PASS
CCB2	CCB	1	0.032	14.23	15	PASS	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.51	0.97	20	PASS	1.056	0.31	20	PASS
ICSA2	ICSA	1	0.02	12.12	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.039	0.78	15	PASS	16.83	0.93	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	121 Sb [3]				137 Ba [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027485-002B	SAMP	5	0.044	9.59	15	PASS	8.29	1.2	15	PASS
N027485-003B	SAMP	1	0.083	1.25	15	PASS	43.42	1.11	15	PASS
N027485-003B	SAMP	5	0.044	39.92	15	<PQL	9.23	0.43	15	PASS
N027485-004B	SAMP	1	0.44	1.96	15	PASS	38.3	0.39	15	PASS
N027485-004B	SAMP	5	0.1	2.43	15	PASS	8.086	2.046	15	PASS
N027485-005B	SAMP	1	0.13	3.11	15	PASS	49.0028	0.79	15	PASS
N027485-005B	SAMP	5	0.046	2.63	15	PASS	9.97	2.32	15	PASS
N027485-006B	SAMP	1	0.21	2.2	15	PASS	51.54	0.85	15	PASS
N027485-006B	SAMP	5	0.064	3.61	15	PASS	10.6	0.67	15	PASS
N027485-007B	SAMP	1	0.2	6.58	15	PASS	54.87	0.7	15	PASS
CCV3	CCV	1	18.72	0.79	15	PASS	20.98	0.74	15	PASS
CCB3	CCB	1	0.053	6.96	15	PASS	<0.000	N/A	15	<PQL
N027485-007B	SAMP	5	0.075	3.5	15	PASS	11.014	0.94	15	PASS
N027485-008B	SAMP	1	0.085	4.43	15	PASS	134.83	0.74	15	PASS
N027485-008B	SAMP	5	0.037	9.59	15	PASS	27.92	0.64	15	PASS
N027485-010B	SAMP	1	0.12	2.92	15	PASS	108.47	0.71	15	PASS
N027485-010B	SAMP	5	0.04	11.53	15	PASS	22.2	1.31	15	PASS
N027485-009B	SAMP	25	0.023	7.84	15	PASS	0.33	8.81	15	PASS
N027485-011C	SAMP	25	0.032	6.54	15	PASS	0.92	1.33	15	PASS
N027485-012C	SAMP	25	0.026	6.49	15	PASS	0.85	2.032	15	PASS
LLCCV2	CCV2	1	0.51	0.98	20	PASS	1.048	1.058	20	PASS
CCV4	CCV	1	19.073	0.79	15	PASS	20.43	0.83	15	PASS
CCB4	CCB	1	0.049	9.3	15	PASS	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.52	1.64	20	PASS	1.027	3.46	20	PASS
ICSA3	ICSA	1	0.0074	26.51	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.75	0.36	15	PASS	17.16	0.51	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	205 Tl [3]				208 Pb [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.094	0.9	15	PASS	0.1	2.49	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.48	2.57	15	PASS	0.5	2.027	15	PASS
Std3-5/50 ppb	ICAL	1	4.92	1.35	15	PASS	5.041	1.18	15	PASS
Std4-10/100 ppb	ICAL	1	9.99	0.13	15	PASS	10.15	0.29	15	PASS
Std5-20/200 ppb	ICAL	1	20.39	0.9	15	PASS	20.083	0.31	15	PASS
Std6-40/400 ppb	ICAL	1	41	1.098	15	PASS	40.54	1.59	15	PASS
Std7-100/1000 ppb	ICAL	1	99.53	1.23	15	PASS	100.31	1.93	15	PASS
Std8-200/2000 ppb	ICAL	1	200.62	1.79	15	PASS	199.72	1.43	15	PASS
ICV	ICV	1	9.92	0.33	15	PASS	10.05	0.16	15	PASS
ICB	ICB	1	0.15	4.68	15	PASS	0.015	12.65	15	PASS
LLICV	CCV1	1	0.52	0.65	20	PASS	1.055	1.7	20	PASS
ICSA1	ICSA	1	0.049	2.75	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	21.1	0.42	15	PASS	20.079	0.35	15	PASS
MB-66022	MBLK	1	0.072	2.089	15	PASS	0.0081	29.31	15	<PQL
LCS-66022	LCS	1	9.9	0.57	15	PASS	9.95	0.33	15	PASS
N027485-009B	SAMP	1	0.054	8.99	15	PASS	<0.000	N/A	15	<PQL
N027485-009B	SAMP	5	0.016	12.16	15	PASS	<0.000	N/A	15	<PQL
N027485-011C	SAMP	1	0.066	5.93	15	PASS	0.031	20.96	15	<PQL
N027485-011C	SAMP	5	0.017	7.85	15	PASS	0.011	37.72	15	<PQL
N027485-012C	SAMP	1	0.073	3.4	15	PASS	0.048	4.074	15	PASS
N027485-012C	SAMP	5	0.016	21.31	15	<PQL	0.016	11.82	15	PASS
N027546-006B	SAMP	1	0.056	24.33	15	<PQL	<0.000	N/A	15	<PQL
N027546-006B	SAMP	5	0.0087	25.65	15	<PQL	<0.000	N/A	15	<PQL
CCV1	CCV	1	20.33	1.2	15	PASS	20.059	0.46	15	PASS
CCB1	CCB	1	0.0056	21.35	15	<PQL	0.006	36.5	15	<PQL
N027485-001B	SAMP	1	0.84	0.75	15	PASS	<0.000	N/A	15	<PQL
N027485-001B	SAMP	5	0.17	1.54	15	PASS	0.0056	48.69	15	<PQL
N027485-001B	SAMP	25	0.033	0.24	15	PASS	<0.000	N/A	15	<PQL
N027485-001B-PS	PS	1	10.67	0.92	15	PASS	10.86	0.97	15	PASS
N027485-001B-PS	PS	5	2.16	1.45	15	PASS	1.62	1.75	15	PASS
N027485-001B-MS	MS	1	10.87	0.22	15	PASS	10.97	0.45	15	PASS
N027485-001B-MS	MS	1	2.18	0.81	15	PASS	1.61	0.48	15	PASS
N027485-001B-MSD	MSD	1	10.83	0.29	15	PASS	10.87	0.74	15	PASS
N027485-001B-MSD	MSD	5	2.19	0.31	15	PASS	1.6	0.47	15	PASS
N027485-002B	SAMP	1	0.72	18.57	15	NR!	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.43	1.9	15	PASS	19.98	1.86	15	PASS
CCB2	CCB	1	0.025	15.072	15	<PQL	0.0019	22.98	15	<PQL
LLCCV1	CCV2	1	0.49	0.76	20	PASS	1.052	1.98	20	PASS
ICSA2	ICSA	1	0.021	5.4	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.98	0.25	15	PASS	20.011	0.17	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	205 Tl [3]				208 Pb [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027485-002B	SAMP	5	0.12	3.35	15	PASS	<0.000	N/A	15	<PQL
N027485-003B	SAMP	1	0.61	2.57	15	PASS	<0.000	N/A	15	<PQL
N027485-003B	SAMP	5	0.13	2.97	15	PASS	<0.000	N/A	15	<PQL
N027485-004B	SAMP	1	0.12	19.59	15	<PQL	<0.000	N/A	15	<PQL
N027485-004B	SAMP	5	0.026	22.7	15	<PQL	<0.000	N/A	15	<PQL
N027485-005B	SAMP	1	0.5	0.76	15	PASS	<0.000	N/A	15	<PQL
N027485-005B	SAMP	5	0.094	3.31	15	PASS	<0.000	N/A	15	<PQL
N027485-006B	SAMP	1	0.24	2.77	15	PASS	<0.000	N/A	15	<PQL
N027485-006B	SAMP	5	0.039	3.61	15	PASS	<0.000	N/A	15	<PQL
N027485-007B	SAMP	1	0.21	2.77	15	PASS	<0.000	N/A	15	<PQL
CCV3	CCV	1	19.76	1.084	15	PASS	20.17	0.92	15	PASS
CCB3	CCB	1	0.0038	46.39	15	<PQL	0.0036	59.27	15	<PQL
N027485-007B	SAMP	5	0.041	3.32	15	PASS	<0.000	N/A	15	<PQL
N027485-008B	SAMP	1	0.062	2.92	15	PASS	<0.000	N/A	15	<PQL
N027485-008B	SAMP	5	0.01	20.1	15	<PQL	<0.000	N/A	15	<PQL
N027485-010B	SAMP	1	0.74	1.17	15	PASS	<0.000	N/A	15	<PQL
N027485-010B	SAMP	5	0.14	4.044	15	PASS	<0.000	N/A	15	<PQL
N027485-009B	SAMP	25	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-011C	SAMP	25	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-012C	SAMP	25	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.52	2.82	20	PASS	1.074	1.11	20	PASS
CCV4	CCV	1	19.44	0.93	15	PASS	19.92	1.51	15	PASS
CCB4	CCB	1	0.0056	37.26	15	<PQL	0.0055	32.52	15	<PQL
LLCCV2	CCV2	1	0.48	1.15	20	PASS	1.053	0.94	20	PASS
ICSA3	ICSA	1	0.071	2.45	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	21.071	0.49	15	PASS	20.12	0.55	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	51 V [2]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.066	41.35	15	<PQL	0.088	7.84	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.44	7.33	15	PASS	0.48	9.46	15	PASS
Std3-5/50 ppb	ICAL	1	5.039	0.84	15	PASS	5.13	1.74	15	PASS
Std4-10/100 ppb	ICAL	1	10.13	0.24	15	PASS	10.16	0.55	15	PASS
Std5-20/200 ppb	ICAL	1	20.42	1.38	15	PASS	20.65	1.6	15	PASS
Std6-40/400 ppb	ICAL	1	40.1	1.51	15	PASS	40.011	1.14	15	PASS
Std7-100/1000 ppb	ICAL	1	100.75	0.92	15	PASS	100.63	0.51	15	PASS
Std8-200/2000 ppb	ICAL	1	199.55	0.18	15	PASS	199.61	0.84	15	PASS
ICV	ICV	1	10.65	0.88	15	PASS	10.28	2.84	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.92	2.45	20	PASS	0.98	2.12	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	21.44	2.39	15	PASS	20.99	1.82	15	PASS
MB-66022	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-66022	LCS	1	10.26	0.76	15	PASS	9.95	1.57	15	PASS
N027485-009B	SAMP	1	16.32	1.11	15	PASS	1857.84	1.32	15	PASS
N027485-009B	SAMP	5	2.99	0.8	15	PASS	402.97	1.11	15	PASS
N027485-011C	SAMP	1	7.69	0.67	15	PASS	2358.79	0.33	15	PASS
N027485-011C	SAMP	5	1.22	2.44	15	PASS	502.029	0.25	15	PASS
N027485-012C	SAMP	1	7.38	0.69	15	PASS	2279.71	0.41	15	PASS
N027485-012C	SAMP	5	1.17	2.4	15	PASS	485.58	1.26	15	PASS
N027546-006B	SAMP	1	2.31	1.47	15	PASS	12.97	0.96	15	PASS
N027546-006B	SAMP	5	0.15	24.33	15	<PQL	3.17	1.15	15	PASS
CCV1	CCV	1	20.48	1.81	15	PASS	21.47	1.45	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.3	4.91	15	PASS
N027485-001B	SAMP	1	3.6	1.36	15	PASS	153.48	0.4	15	PASS
N027485-001B	SAMP	5	0.43	5.48	15	PASS	33.31	0.86	15	PASS
N027485-001B	SAMP	25	<0.000	N/A	15	<PQL	7.15	2.89	15	PASS
N027485-001B-PS	PS	1	13.88	0.49	15	PASS	156.63	0.29	15	PASS
N027485-001B-PS	PS	5	2.67	3.5	15	PASS	34.22	0.81	15	PASS
N027485-001B-MS	MS	1	14.1	0.93	15	PASS	157.98	0.86	15	PASS
N027485-001B-MS	MS	1	2.57	3.33	15	PASS	33.5	1.82	15	PASS
N027485-001B-MSD	MSD	1	13.85	0.82	15	PASS	156.22	0.64	15	PASS
N027485-001B-MSD	MSD	5	2.7	1.74	15	PASS	34.11	1.75	15	PASS
N027485-002B	SAMP	1	1.34	5.27	15	PASS	1587.65	1.96	15	PASS
CCV2	CCV	1	19.81	0.98	15	PASS	20.73	1.029	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.48	5.83	15	PASS
LLCCV1	CCV2	1	0.66	4.031	20	PASS	1.4	2.35	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.47	2.99	15	PASS
ICSAB2	ICSAB	1	20.58	1.15	15	PASS	20.36	1.36	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	51 V [2]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027485-002B	SAMP	5	<0.000	N/A	15	<PQL	357.83	0.76	15	PASS
N027485-003B	SAMP	1	1.51	2.67	15	PASS	1393.31	1.88	15	PASS
N027485-003B	SAMP	5	<0.000	N/A	15	<PQL	302.073	1.31	15	PASS
N027485-004B	SAMP	1	1.8	4.65	15	PASS	3417.5	1.45	15	PASS
N027485-004B	SAMP	5	0.02	106.95	15	<PQL	750.34	1.22	15	PASS
N027485-005B	SAMP	1	14.43	0.89	15	PASS	9.78	1.17	15	PASS
N027485-005B	SAMP	5	2.64	1.3	15	PASS	2.49	0.14	15	PASS
N027485-006B	SAMP	1	47.2	0.74	15	PASS	3.88	3.59	15	PASS
N027485-006B	SAMP	5	9.52	1.64	15	PASS	1.17	4.0076	15	PASS
N027485-007B	SAMP	1	51.16	1.11	15	PASS	4.12	1.47	15	PASS
CCV3	CCV	1	19.71	0.97	15	PASS	20.21	1.8	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.28	12.43	15	PASS
N027485-007B	SAMP	5	10.016	1.18	15	PASS	0.99	0.65	15	PASS
N027485-008B	SAMP	1	0.26	10.91	15	PASS	421.18	0.67	15	PASS
N027485-008B	SAMP	5	<0.000	N/A	15	<PQL	86.2	0.8	15	PASS
N027485-010B	SAMP	1	3.73	3.82	15	PASS	41.11	2.59	15	PASS
N027485-010B	SAMP	5	0.43	4.97	15	PASS	8.79	1.97	15	PASS
N027485-009B	SAMP	25	0.28	4.59	15	PASS	82.5	0.45	15	PASS
N027485-011C	SAMP	25	<0.000	N/A	15	<PQL	104.87	1.083	15	PASS
N027485-012C	SAMP	25	<0.000	N/A	15	<PQL	99.48	1.69	15	PASS
LLCCV2	CCV2	1	1.0023	2.95	20	PASS	1.0054	4.99	20	PASS
CCV4	CCV	1	19.54	1.52	15	PASS	20.2	0.72	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.28	6.74	15	PASS
LLCCV2	CCV2	1	0.61	6.3	20	PASS	1.24	1.75	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.45	1.69	15	PASS	20.27	1.46	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				59 Co [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.09	12.94	15	PASS	0.11	6.052	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.5	2.97	15	PASS	0.51	3.46	15	PASS
Std3-5/50 ppb	ICAL	1	5.21	2.89	15	PASS	5.075	0.18	15	PASS
Std4-10/100 ppb	ICAL	1	10.18	1.2	15	PASS	10.092	0.45	15	PASS
Std5-20/200 ppb	ICAL	1	20.75	1.44	15	PASS	20.46	1.19	15	PASS
Std6-40/400 ppb	ICAL	1	40.18	1.63	15	PASS	39.64	1.3	15	PASS
Std7-100/1000 ppb	ICAL	1	100.92	0.85	15	PASS	99.45	0.78	15	PASS
Std8-200/2000 ppb	ICAL	1	199.42	0.5	15	PASS	200.3	0.45	15	PASS
ICV	ICV	1	101.9	1.84	15	PASS	9.89	2.45	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.0049	19.98	15	<PQL
LLICV	CCV1	1	0.51	2.52	20	PASS	0.52	3.43	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	17.78	0.12	15	PASS	20.4	2.52	15	PASS
MB-66022	MBLK	1	<0.000	N/A	15	<PQL	0.00032	1.18	15	PASS
LCS-66022	LCS	1	99.84	1.38	15	PASS	9.63	2.5	15	PASS
N027485-009B	SAMP	1	2.21	1.56	15	PASS	<0.000	N/A	15	<PQL
N027485-009B	SAMP	5	0.47	1.1	15	PASS	<0.000	N/A	15	<PQL
N027485-011C	SAMP	1	3.58	1.74	15	PASS	0.13	5.55	15	PASS
N027485-011C	SAMP	5	0.78	5.67	15	PASS	0.028	25.96	15	<PQL
N027485-012C	SAMP	1	0.96	4.56	15	PASS	0.18	3.038	15	PASS
N027485-012C	SAMP	5	0.17	6.38	15	PASS	0.036	11.073	15	PASS
N027546-006B	SAMP	1	1.92	2.84	15	PASS	0.17	5.43	15	PASS
N027546-006B	SAMP	5	0.37	11.99	15	PASS	0.04	4.041	15	PASS
CCV1	CCV	1	20.9	1.56	15	PASS	21.057	0.36	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.002	90.35	15	<PQL
N027485-001B	SAMP	1	11.34	0.93	15	PASS	0.021	16.5	15	<PQL
N027485-001B	SAMP	5	2.43	1.25	15	PASS	0.0051	83.23	15	<PQL
N027485-001B	SAMP	25	0.52	8.07	15	PASS	0.0022	70.33	15	<PQL
N027485-001B-PS	PS	1	107.81	0.66	15	PASS	9.16	0.73	15	PASS
N027485-001B-PS	PS	5	23.52	0.3	15	PASS	2.04	0.87	15	PASS
N027485-001B-MS	MS	1	109.14	0.2	15	PASS	9.19	1.35	15	PASS
N027485-001B-MS	MS	1	23.23	2.32	15	PASS	1.99	3.9	15	PASS
N027485-001B-MSD	MSD	1	107.41	0.25	15	PASS	9.045	1.073	15	PASS
N027485-001B-MSD	MSD	5	23.68	1.34	15	PASS	2.0082	2.46	15	PASS
N027485-002B	SAMP	1	1.074	9.49	15	PASS	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.1	1.29	15	PASS	19.82	0.56	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.0015	55.79	15	<PQL
LLCCV1	CCV2	1	0.54	10.18	20	PASS	0.5	4.76	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	17.85	1.25	15	PASS	19.44	0.88	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				59 Co [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027485-002B	SAMP	5	0.22	3.52	15	PASS	<0.000	N/A	15	<PQL
N027485-003B	SAMP	1	5.65	2.51	15	PASS	<0.000	N/A	15	<PQL
N027485-003B	SAMP	5	1.19	5.97	15	PASS	<0.000	N/A	15	<PQL
N027485-004B	SAMP	1	4.12	1.63	15	PASS	<0.000	N/A	15	<PQL
N027485-004B	SAMP	5	0.91	3.21	15	PASS	<0.000	N/A	15	<PQL
N027485-005B	SAMP	1	161.63	1.046	15	PASS	<0.000	N/A	15	<PQL
N027485-005B	SAMP	5	35.96	0.42	15	PASS	<0.000	N/A	15	<PQL
N027485-006B	SAMP	1	5.79	0.51	15	PASS	<0.000	N/A	15	<PQL
N027485-006B	SAMP	5	1.26	0.31	15	PASS	<0.000	N/A	15	<PQL
N027485-007B	SAMP	1	6.94	1.9	15	PASS	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.37	1.62	15	PASS	20.27	2.48	15	PASS
CCB3	CCB	1	0.0054	239.51	15	<PQL	0.0026	8.069	15	PASS
N027485-007B	SAMP	5	1.48	3.37	15	PASS	<0.000	N/A	15	<PQL
N027485-008B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-008B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-010B	SAMP	1	307.3	1.78	15	PASS	0.088	12.3	15	PASS
N027485-010B	SAMP	5	65.096	2.12	15	PASS	0.027	32.3	15	<PQL
N027485-009B	SAMP	25	0.13	8.3	15	PASS	<0.000	N/A	15	<PQL
N027485-011C	SAMP	25	0.19	6.82	15	PASS	0.0073	34.58	15	<PQL
N027485-012C	SAMP	25	0.049	26.19	15	<PQL	0.01	37.24	15	<PQL
LLCCV2	CCV2	1	0.57	7.53	20	PASS	0.55	3.89	20	PASS
CCV4	CCV	1	20.72	1.28	15	PASS	20.034	0.79	15	PASS
CCB4	CCB	1	0.0076	36.7	15	<PQL	0.0016	25.55	15	<PQL
LLCCV2	CCV2	1	0.51	5.51	20	PASS	0.51	3.64	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	18.14	2.31	15	PASS	19.52	0.88	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	60 Ni [2]				63 Cu [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.086	33.12	15	<PQL	0.095	5.45	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.48	9.9	15	PASS	0.48	2.94	15	PASS
Std3-5/50 ppb	ICAL	1	4.98	2.28	15	PASS	4.93	1.23	15	PASS
Std4-10/100 ppb	ICAL	1	9.99	1.62	15	PASS	9.87	1.63	15	PASS
Std5-20/200 ppb	ICAL	1	20.013	1.22	15	PASS	19.71	0.89	15	PASS
Std6-40/400 ppb	ICAL	1	40.52	1.76	15	PASS	39.73	1.23	15	PASS
Std7-100/1000 ppb	ICAL	1	101.26	1.2	15	PASS	98.23	1.5	15	PASS
Std8-200/2000 ppb	ICAL	1	199.27	0.42	15	PASS	200.97	1.0071	15	PASS
ICV	ICV	1	10.35	1.31	15	PASS	10.2	0.99	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.99	5.2	20	PASS	0.95	5.45	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.46	2.98	15	PASS	18.65	2.36	15	PASS
MB-66022	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-66022	LCS	1	10.21	1.99	15	PASS	9.86	1.97	15	PASS
N027485-009B	SAMP	1	1.61	0.92	15	PASS	<0.000	N/A	15	<PQL
N027485-009B	SAMP	5	0.55	11.87	15	PASS	<0.000	N/A	15	<PQL
N027485-011C	SAMP	1	4.89	7.43	15	PASS	<0.000	N/A	15	<PQL
N027485-011C	SAMP	5	1.02	8.19	15	PASS	<0.000	N/A	15	<PQL
N027485-012C	SAMP	1	6.1	1.027	15	PASS	<0.000	N/A	15	<PQL
N027485-012C	SAMP	5	1.28	2.069	15	PASS	<0.000	N/A	15	<PQL
N027546-006B	SAMP	1	6.23	1.7	15	PASS	<0.000	N/A	15	<PQL
N027546-006B	SAMP	5	1.39	3.11	15	PASS	<0.000	N/A	15	<PQL
CCV1	CCV	1	20.64	1.21	15	PASS	20.22	1.71	15	PASS
CCB1	CCB	1	0.12	22.3	15	<PQL	<0.000	N/A	15	<PQL
N027485-001B	SAMP	1	1.33	0.52	15	PASS	<0.000	N/A	15	<PQL
N027485-001B	SAMP	5	0.35	3.34	15	PASS	<0.000	N/A	15	<PQL
N027485-001B	SAMP	25	0.091	24.16	15	<PQL	<0.000	N/A	15	<PQL
N027485-001B-PS	PS	1	11.24	1.57	15	PASS	7.99	1.75	15	PASS
N027485-001B-PS	PS	5	2.37	1.31	15	PASS	1.55	1.3	15	PASS
N027485-001B-MS	MS	1	11.27	0.68	15	PASS	8.25	1.79	15	PASS
N027485-001B-MS	MS	1	2.39	3.35	15	PASS	1.54	0.98	15	PASS
N027485-001B-MSD	MSD	1	11.3	1.025	15	PASS	8.13	0.99	15	PASS
N027485-001B-MSD	MSD	5	2.39	3.94	15	PASS	1.52	0.93	15	PASS
N027485-002B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.041	0.19	15	PASS	19.71	1.065	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.95	3.82	20	PASS	0.94	3.46	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.93	0.98	15	PASS	18.23	0.49	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	60 Ni [2]				63 Cu [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027485-002B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-003B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-003B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-004B	SAMP	1	0.19	22.41	15	<PQL	<0.000	N/A	15	<PQL
N027485-004B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-005B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-005B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-006B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-006B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-007B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	19.96	1.083	15	PASS	19.68	1.05	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-007B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-008B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-008B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-010B	SAMP	1	0.34	9.32	15	PASS	<0.000	N/A	15	<PQL
N027485-010B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-009B	SAMP	25	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-011C	SAMP	25	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027485-012C	SAMP	25	0.055	49	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	1.032	7.43	20	PASS	2.14	1.48	20	PASS
CCV4	CCV	1	19.64	1.24	15	PASS	20.04	1.25	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.28	12.86	15	PASS
LLCCV2	CCV2	1	0.85	4.92	20	PASS	1.21	2.36	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.58	1.92	15	PASS	18.25	0.69	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	66 Zn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.14	30.7	15	<PQL	0.11	14.87	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.57	5.34	15	PASS	0.51	8.74	15	PASS
Std3-5/50 ppb	ICAL	1	4.96	0.85	15	PASS	4.96	1.2	15	PASS
Std4-10/100 ppb	ICAL	1	9.74	1.082	15	PASS	10.052	1.38	15	PASS
Std5-20/200 ppb	ICAL	1	20.37	1.77	15	PASS	20.041	0.9	15	PASS
Std6-40/400 ppb	ICAL	1	40.76	1.095	15	PASS	40.24	0.33	15	PASS
Std7-100/1000 ppb	ICAL	1	100.67	1.35	15	PASS	100.34	1.054	15	PASS
Std8-200/2000 ppb	ICAL	1	199.49	0.63	15	PASS	199.77	0.87	15	PASS
ICV	ICV	1	102.28	0.91	15	PASS	9.85	2.48	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.022	45.66	15	<PQL
LLICV	CCV1	1	10.61	0.95	20	PASS	0.12	19.93	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	17.54	1.49	15	PASS	20.11	1.11	15	PASS
MB-66022	MBLK	1	<0.000	N/A	15	<PQL	0.015	41.54	15	<PQL
LCS-66022	LCS	1	102.047	1.079	15	PASS	10.068	2.38	15	PASS
N027485-009B	SAMP	1	<0.000	N/A	15	<PQL	37.56	0.47	15	PASS
N027485-009B	SAMP	5	<0.000	N/A	15	<PQL	8.13	2.65	15	PASS
N027485-011C	SAMP	1	4.33	1.96	15	PASS	1.95	2.66	15	PASS
N027485-011C	SAMP	5	1.57	4.51	15	PASS	0.43	13.065	15	PASS
N027485-012C	SAMP	1	2.61	5.43	15	PASS	1.91	7.15	15	PASS
N027485-012C	SAMP	5	0.45	18.11	15	<PQL	0.39	5.56	15	PASS
N027546-006B	SAMP	1	2.32	0.99	15	PASS	0.78	4.72	15	PASS
N027546-006B	SAMP	5	0.36	11.18	15	PASS	0.17	6.47	15	PASS
CCV1	CCV	1	20.27	2.094	15	PASS	19.84	1.99	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0076	123.65	15	<PQL
N027485-001B	SAMP	1	0.2	32.15	15	<PQL	3.88	2.69	15	PASS
N027485-001B	SAMP	5	0.22	47.23	15	<PQL	0.83	0.84	15	PASS
N027485-001B	SAMP	25	0.093	45.17	15	<PQL	0.18	16.8	15	NR!
N027485-001B-PS	PS	1	116.16	0.88	15	PASS	14.42	2.81	15	PASS
N027485-001B-PS	PS	5	26.44	1.12	15	PASS	2.92	5.068	15	PASS
N027485-001B-MS	MS	1	117.98	1.83	15	PASS	14.59	1.24	15	PASS
N027485-001B-MS	MS	1	26.93	1.4	15	PASS	3.0038	7.29	15	PASS
N027485-001B-MSD	MSD	1	115.8	0.35	15	PASS	14.43	0.082	15	PASS
N027485-001B-MSD	MSD	5	27.013	2.52	15	PASS	2.94	4.33	15	PASS
N027485-002B	SAMP	1	<0.000	N/A	15	<PQL	1.91	0.7	15	PASS
CCV2	CCV	1	20.13	0.57	15	PASS	20.31	0.5	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.012	84.62	15	<PQL
LLCCV1	CCV2	1	10.51	1.18	20	PASS	0.1	26.87	20	NR!
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	17.2	1.87	15	PASS	20.58	0.5	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	66 Zn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027485-002B	SAMP	5	<0.000	N/A	15	<PQL	0.47	3.49	15	PASS
N027485-003B	SAMP	1	<0.000	N/A	15	<PQL	2.18	6.62	15	PASS
N027485-003B	SAMP	5	<0.000	N/A	15	<PQL	0.45	10.24	15	PASS
N027485-004B	SAMP	1	<0.000	N/A	15	<PQL	3.77	4.029	15	PASS
N027485-004B	SAMP	5	<0.000	N/A	15	<PQL	0.85	4.0075	15	PASS
N027485-005B	SAMP	1	<0.000	N/A	15	<PQL	10.75	3.2	15	PASS
N027485-005B	SAMP	5	<0.000	N/A	15	<PQL	2.26	3.6	15	PASS
N027485-006B	SAMP	1	<0.000	N/A	15	<PQL	3.79	3.84	15	PASS
N027485-006B	SAMP	5	<0.000	N/A	15	<PQL	0.79	6.0084	15	PASS
N027485-007B	SAMP	1	<0.000	N/A	15	<PQL	3.37	1.82	15	PASS
CCV3	CCV	1	20.3	0.97	15	PASS	20.36	1.6	15	PASS
CCB3	CCB	1	0.026	72.36	15	<PQL	0.02	58.73	15	<PQL
N027485-007B	SAMP	5	<0.000	N/A	15	<PQL	0.65	3.96	15	PASS
N027485-008B	SAMP	1	2.94	2.0043	15	PASS	1.46	1.87	15	PASS
N027485-008B	SAMP	5	0.73	16.82	15	<PQL	0.33	16.86	15	NR!
N027485-010B	SAMP	1	41.037	2.54	15	PASS	2.00038	6.079	15	PASS
N027485-010B	SAMP	5	9.74	1.35	15	PASS	0.36	22.32	15	NR!
N027485-009B	SAMP	25	0.091	96.46	15	<PQL	1.63	0.14	15	PASS
N027485-011C	SAMP	25	0.36	22.13	15	<PQL	0.096	20.67	15	<PQL
N027485-012C	SAMP	25	0.14	32.57	15	<PQL	0.081	22.63	15	<PQL
LLCCV2	CCV2	1	10.8	3.17	20	PASS	0.14	13.54	20	PASS
CCV4	CCV	1	20.65	1.41	15	PASS	20.57	1.14	15	PASS
CCB4	CCB	1	0.027	87.82	15	<PQL	0.0053	212.48	15	<PQL
LLCCV2	CCV2	1	10.63	2.21	20	PASS	0.12	21.2	20	NR!
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	17.086	0.65	15	PASS	20.64	1.78	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				9 Be [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.084	49.29	15	<PQL	0.099	12.91	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.39	46.22	15	<PQL	0.49	2.28	15	PASS
Std3-5/50 ppb	ICAL	1	5.097	0.99	15	PASS	4.97	0.53	15	PASS
Std4-10/100 ppb	ICAL	1	10.24	2.87	15	PASS	9.99	2.27	15	PASS
Std5-20/200 ppb	ICAL	1	20.015	5.16	15	PASS	20.062	0.3	15	PASS
Std6-40/400 ppb	ICAL	1	40.99	3.14	15	PASS	40.47	1.67	15	PASS
Std7-100/1000 ppb	ICAL	1	101.39	0.86	15	PASS	99.8	2.065	15	PASS
Std8-200/2000 ppb	ICAL	1	199.09	1.82	15	PASS	206.29	1.87	15	PASS
ICV	ICV	1	9.94	3.45	15	PASS	9.68	2.45	15	PASS
ICB	ICB	1	0.0072	94.74	15	<PQL	0.016	36.2	15	<PQL
LLICV	CCV1	1	0.53	2.37	20	PASS	0.54	5.0042	20	PASS
ICSA1	ICSA	1	0.0039	475.63	15	<PQL	0.0072	13.92	15	PASS
ICSAB1	ICSAB	1	18.9	5.29	15	PASS	19.055	1.25	15	PASS
MB-66022	MBLK	1	0.01	220.46	15	<PQL	0.0044	52.8	15	<PQL
LCS-66022	LCS	1	9.42	2.84	15	PASS	9.83	1.095	15	PASS
N027485-009B	SAMP	1	24.31	2.72	15	PASS	0.01	58.45	15	<PQL
N027485-009B	SAMP	5	5.67	1.36	15	PASS	0.0034	96.03	15	<PQL
N027485-011C	SAMP	1	40.77	1.89	15	PASS	0.0086	9.25	15	PASS
N027485-011C	SAMP	5	8.58	6.38	15	PASS	0.0034	65.2	15	<PQL
N027485-012C	SAMP	1	39.82	1.21	15	PASS	0.0097	12.61	15	PASS
N027485-012C	SAMP	5	8.073	1.17	15	PASS	<0.000	N/A	15	<PQL
N027546-006B	SAMP	1	1.96	15.42	15	NR!	0.00083	263.98	15	<PQL
N027546-006B	SAMP	5	0.43	8.9	15	PASS	<0.000	N/A	15	<PQL
CCV1	CCV	1	21.048	3.39	15	PASS	20.077	1.13	15	PASS
CCB1	CCB	1	0.028	107.061	15	<PQL	0.0036	114.82	15	<PQL
N027485-001B	SAMP	1	4.85	2.94	15	PASS	0.0014	158.54	15	<PQL
N027485-001B	SAMP	5	1.048	4.2	15	PASS	<0.000	N/A	15	<PQL
N027485-001B	SAMP	25	0.29	33.82	15	<PQL	<0.000	N/A	15	<PQL
N027485-001B-PS	PS	1	13.92	3.37	15	PASS	10.63	1.66	15	PASS
N027485-001B-PS	PS	5	3.097	7.76	15	PASS	2.22	3.5	15	PASS
N027485-001B-MS	MS	1	14.36	7.72	15	PASS	10.77	0.64	15	PASS
N027485-001B-MS	MS	1	3.033	11.52	15	PASS	2.16	3.14	15	PASS
N027485-001B-MSD	MSD	1	13.45	3.03	15	PASS	10.63	0.48	15	PASS
N027485-001B-MSD	MSD	5	3.16	5.54	15	PASS	2.14	0.99	15	PASS
N027485-002B	SAMP	1	2.67	13.055	15	PASS	0.014	34.45	15	<PQL
CCV2	CCV	1	20.68	3.18	15	PASS	20.11	0.94	15	PASS
CCB2	CCB	1	0.017	98.13	15	<PQL	0.0044	69.26	15	<PQL
LLCCV1	CCV2	1	0.51	19.51	20	PASS	0.52	1.83	20	PASS
ICSA2	ICSA	1	0.036	55.23	15	<PQL	0.0037	124.21	15	<PQL
ICSAB2	ICSAB	1	19.019	0.9	15	PASS	19.42	1.45	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				9 Be [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027485-002B	SAMP	5	0.56	10.21	15	PASS	0.0035	108.094	15	<PQL
N027485-003B	SAMP	1	2.54	15.6	15	NR!	0.022	9.34	15	PASS
N027485-003B	SAMP	5	0.49	22.77	15	<PQL	0.0039	38.97	15	<PQL
N027485-004B	SAMP	1	13.67	3.82	15	PASS	0.0083	66.056	15	<PQL
N027485-004B	SAMP	5	2.95	16.34	15	NR!	0.00079	365.16	15	<PQL
N027485-005B	SAMP	1	0.55	36.8	15	NR!	0.02	12.62	15	PASS
N027485-005B	SAMP	5	0.11	41.36	15	<PQL	0.0055	72.75	15	<PQL
N027485-006B	SAMP	1	0.25	11.33	15	PASS	0.021	19.11	15	<PQL
N027485-006B	SAMP	5	0.056	40.38	15	<PQL	0.0027	70.54	15	<PQL
N027485-007B	SAMP	1	0.3	14.31	15	PASS	0.023	30.84	15	<PQL
CCV3	CCV	1	21.75	0.67	15	PASS	21.091	0.099	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.0085	30.098	15	<PQL
N027485-007B	SAMP	5	0.044	140.16	15	<PQL	0.0048	50	15	<PQL
N027485-008B	SAMP	1	3.75	2.31	15	PASS	0.0039	58.13	15	<PQL
N027485-008B	SAMP	5	1.13	12.34	15	PASS	0.0026	82.88	15	<PQL
N027485-010B	SAMP	1	2.35	14.55	15	PASS	0.01	19.72	15	<PQL
N027485-010B	SAMP	5	0.51	18.97	15	NR!	0.0028	140.98	15	<PQL
N027485-009B	SAMP	25	1.22	7.99	15	PASS	<0.000	N/A	15	<PQL
N027485-011C	SAMP	25	1.83	13	15	PASS	<0.000	N/A	15	<PQL
N027485-012C	SAMP	25	1.97	8.85	15	PASS	0.00094	368.76	15	<PQL
LLCCV2	CCV2	1	0.49	25.074	20	<PQL	0.55	5.025	20	PASS
CCV4	CCV	1	21.48	0.18	15	PASS	21.43	0.39	15	PASS
CCB4	CCB	1	0.016	233.047	15	<PQL	0.0017	116.3	15	<PQL
LLCCV2	CCV2	1	0.66	25.77	20	NR!	0.56	5.048	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.0053	14.36	15	PASS
ICSAB3	ICSAB	1	19.69	3.47	15	PASS	20.052	1.39	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	34.89	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.47	2.61	15	PASS
Std3-5/50 ppb	ICAL	1	4.72	1.34	15	PASS
Std4-10/100 ppb	ICAL	1	9.7	1.52	15	PASS
Std5-20/200 ppb	ICAL	1	19.52	1.059	15	PASS
Std6-40/400 ppb	ICAL	1	39.55	1.095	15	PASS
Std7-100/1000 ppb	ICAL	1	98.53	1.29	15	PASS
Std8-200/2000 ppb	ICAL	1	200.89	1.52	15	PASS
ICV	ICV	1	9.71	1.89	15	PASS
ICB	ICB	1	0.19	2.52	15	PASS
LLICV	CCV1	1	0.54	2.95	20	PASS
ICSA1	ICSA	1	0.085	24.13	15	<PQL
ICSAB1	ICSAB	1	21.99	1.74	15	PASS
MB-66022	MBLK	1	0.08	17.29	15	<PQL
LCS-66022	LCS	1	9.77	1.071	15	PASS
N027485-009B	SAMP	1	9.71	2.16	15	PASS
N027485-009B	SAMP	5	1.95	1.84	15	PASS
N027485-011C	SAMP	1	34.31	0.24	15	PASS
N027485-011C	SAMP	5	6.5	1.088	15	PASS
N027485-012C	SAMP	1	33.035	0.67	15	PASS
N027485-012C	SAMP	5	6.39	1.62	15	PASS
N027546-006B	SAMP	1	13.3	0.68	15	PASS
N027546-006B	SAMP	5	2.6	2.96	15	PASS
CCV1	CCV	1	19.24	0.9	15	PASS
CCB1	CCB	1	0.083	4.74	15	PASS
N027485-001B	SAMP	1	71.6	1.53	15	PASS
N027485-001B	SAMP	5	14.18	1.21	15	PASS
N027485-001B	SAMP	25	2.86	3.32	15	PASS
N027485-001B-PS	PS	1	80.45	0.35	15	PASS
N027485-001B-PS	PS	5	16.31	2.37	15	PASS
N027485-001B-MS	MS	1	81.35	1.069	15	PASS
N027485-001B-MS	MS	1	15.9	0.6	15	PASS
N027485-001B-MSD	MSD	1	81.93	0.74	15	PASS
N027485-001B-MSD	MSD	5	15.75	0.88	15	PASS
N027485-002B	SAMP	1	19.57	0.23	15	PASS
CCV2	CCV	1	19.79	2.46	15	PASS
CCB2	CCB	1	0.077	3.34	15	PASS
LLCCV1	CCV2	1	0.54	0.87	20	PASS
ICSA2	ICSA	1	0.045	14.34	15	PASS
ICSAB2	ICSAB	1	22.23	0.73	15	PASS

PERCENT RSD SUMMARY: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N027485-002B	SAMP	5	3.64	1.94	15	PASS
N027485-003B	SAMP	1	22.16	1.033	15	PASS
N027485-003B	SAMP	5	4.16	4.84	15	PASS
N027485-004B	SAMP	1	49.9	1.4	15	PASS
N027485-004B	SAMP	5	9.52	0.62	15	PASS
N027485-005B	SAMP	1	90.71	0.68	15	PASS
N027485-005B	SAMP	5	16.71	0.73	15	PASS
N027485-006B	SAMP	1	91.33	0.52	15	PASS
N027485-006B	SAMP	5	16.76	1.87	15	PASS
N027485-007B	SAMP	1	94.41	0.8	15	PASS
CCV3	CCV	1	19.35	0.035	15	PASS
CCB3	CCB	1	0.099	13.57	15	PASS
N027485-007B	SAMP	5	17.74	1.56	15	PASS
N027485-008B	SAMP	1	2.77	1.22	15	PASS
N027485-008B	SAMP	5	0.53	7.8	15	PASS
N027485-010B	SAMP	1	25.32	1.94	15	PASS
N027485-010B	SAMP	5	4.81	0.74	15	PASS
N027485-009B	SAMP	25	0.38	3.097	15	PASS
N027485-011C	SAMP	25	1.28	0.87	15	PASS
N027485-012C	SAMP	25	1.21	2.93	15	PASS
LLCCV2	CCV2	1	0.49	4.9	20	PASS
CCV4	CCV	1	19.22	0.65	15	PASS
CCB4	CCB	1	0.054	10.79	15	PASS
LLCCV2	CCV2	1	0.52	2.99	20	PASS
ICSA3	ICSA	1	0.02	12.34	15	PASS
ICSAB3	ICSAB	1	22.56	0.86	15	PASS

PERCENT RSD SUMMARY: 180103A

Instrument ID: ICPMS-02

Sample Name	Type	DF	51 V [2]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	9.78	15	PASS	0.1	6.73	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.52	1.24	15	PASS	0.5	6.12	15	PASS
Std3-5/50 ppb	ICAL	1	5	1.32	15	PASS	5.069	2.015	15	PASS
Std4-10/100 ppb	ICAL	1	10.05	0.97	15	PASS	10.14	1.94	15	PASS
Std5-20/200 ppb	ICAL	1	19.6	0.89	15	PASS	19.72	1.1	15	PASS
Std6-40/400 ppb	ICAL	1	38.93	1.62	15	PASS	39.61	1.099	15	PASS
Std7-100/1000 ppb	ICAL	1	99.71	1.81	15	PASS	100.25	1.51	15	PASS
Std8-200/2000 ppb	ICAL	1	200.4	1.35	15	PASS	199.97	1.058	15	PASS
ICV	ICV	1	9.89	1.093	15	PASS	10.082	1.096	15	PASS
ICB	ICB	1	0.0037	155.39	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.035	1.27	20	PASS	1.082	3.59	20	PASS
ICSA1	ICSA	1	0.0049	96.36	15	<PQL	0.068	9.66	15	PASS
ICSAB1	ICSAB	1	20.64	2.11	15	PASS	20.17	2.16	15	PASS
LLICV	CCV1	1	1.048	3.84	20	PASS	1.052	3.28	20	PASS
MB-66022	MBLK	1	0.017	73.57	15	<PQL	0.0068	75.97	15	<PQL
LCS-66022	LCS	1	10.25	0.65	15	PASS	10.29	0.72	15	PASS
N027485-009B	SAMP	1	16.43	0.57	15	PASS	1829.74	1.46	15	PASS
N027485-011C	SAMP	1	8.38	2.27	15	PASS	2449.94	1.23	15	PASS
N027485-012C	SAMP	1	7.94	0.66	15	PASS	2358.49	1.071	15	PASS
N027546-006B	SAMP	1	2.8	3.62	15	PASS	13.24	2.11	15	PASS
CCV1	CCV	1	20.38	2.35	15	PASS	20.56	2.29	15	PASS
CCB1	CCB	1	0.012	29.94	15	<PQL	0.091	5.85	15	PASS
N027485-001B	SAMP	1	4.15	0.57	15	PASS	159.52	1.92	15	PASS
N027485-001B	SAMP	5	0.88	2.2	15	PASS	33.68	1.75	15	PASS
N027485-001B-PS	PS	1	14.29	0.7	15	PASS	163.15	1.21	15	PASS
N027485-001B-MS	MS	1	14.41	3.28	15	PASS	162.58	2.65	15	PASS
N027485-001B-MSD	MSD	1	14.32	0.74	15	PASS	162.5	1.59	15	PASS
N027485-002B	SAMP	25	0.073	18.88	15	<PQL	73.32	1.0042	15	PASS
N027485-003B	SAMP	25	0.097	10.39	15	PASS	62.86	1.5	15	PASS
N027485-004B	SAMP	25	0.1	13.47	15	PASS	164.86	2.11	15	PASS
N027485-005B	SAMP	1	13.37	2.46	15	PASS	7.44	2.043	15	PASS
N027485-006B	SAMP	1	44.65	0.71	15	PASS	2.74	1.32	15	PASS
CCV2	CCV	1	20.7	3.21	15	PASS	20.68	3.039	15	PASS
CCB2	CCB	1	0.0083	120.55	15	<PQL	0.021	38.68	15	<PQL
N027485-007B	SAMP	1	47.38	1.46	15	PASS	3.31	1.99	15	PASS
N027485-010B	SAMP	5	0.88	3.38	15	PASS	8.99	1.56	15	PASS
CCV3	CCV	1	20.63	2.84	15	PASS	20.65	1.84	15	PASS
CCB3	CCB	1	0.0096	47.8	15	<PQL	0.011	47.67	15	<PQL
LLCCV1	CCV2	1	1.076	0.54	20	PASS	1.049	3.052	20	PASS
ICSA2	ICSA	1	0.0069	26.57	15	<PQL	0.08	17.45	15	<PQL

PERCENT RSD SUMMARY: 180103A

Instrument ID: ICPMS-02

Sample Name	Type	DF	51 V [2]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSAB2	ICSAB	1	21.51	1.58	15	PASS	20.81	1.77	15	PASS

PERCENT RSD SUMMARY: 180103A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	46.99	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.48	24.013	15	<PQL
Std3-5/50 ppb	ICAL	1	4.89	5.91	15	PASS
Std4-10/100 ppb	ICAL	1	10.019	2.51	15	PASS
Std5-20/200 ppb	ICAL	1	20.051	2.46	15	PASS
Std6-40/400 ppb	ICAL	1	40.54	2.71	15	PASS
Std7-100/1000 ppb	ICAL	1	100.17	2.85	15	PASS
Std8-200/2000 ppb	ICAL	1	199.8	2.39	15	PASS
ICV	ICV	1	10.16	6.71	15	PASS
ICB	ICB	1	0.046	70.68	15	<PQL
LLICV	CCV1	1	0.48	14.91	20	PASS
ICSA1	ICSA	1	0	N/A	15	<PQL
ICSAB1	ICSAB	1	19.17	1.083	15	PASS
LLICV	CCV1	1	0.53	25.62	20	NR!
MB-66022	MBLK	1	0.004	173.21	15	<PQL
LCS-66022	LCS	1	9.85	7.035	15	PASS
N027485-009B	SAMP	1	28.04	2.52	15	PASS
N027485-011C	SAMP	1	44.18	0.39	15	PASS
N027485-012C	SAMP	1	42.2	2.049	15	PASS
N027546-006B	SAMP	1	1.98	1.6	15	PASS
CCV1	CCV	1	19.89	2.39	15	PASS
CCB1	CCB	1	0.034	88.41	15	<PQL
N027485-001B	SAMP	1	5.1	1.96	15	PASS
N027485-001B	SAMP	5	1.068	6.59	15	PASS
N027485-001B-PS	PS	1	15.1	5.0071	15	PASS
N027485-001B-MS	MS	1	15.12	1.99	15	PASS
N027485-001B-MSD	MSD	1	15.43	3.23	15	PASS
N027485-002B	SAMP	25	0.11	4.0012	15	PASS
N027485-003B	SAMP	25	0.087	25.48	15	<PQL
N027485-004B	SAMP	25	0.61	4.55	15	PASS
N027485-005B	SAMP	1	0.42	1.7	15	PASS
N027485-006B	SAMP	1	0.25	15.34	15	<PQL
CCV2	CCV	1	19.55	4.55	15	PASS
CCB2	CCB	1	0.042	23.88	15	<PQL
N027485-007B	SAMP	1	0.29	10.6	15	PASS
N027485-010B	SAMP	5	0.48	11.26	15	PASS
CCV3	CCV	1	19.13	2.71	15	PASS
CCB3	CCB	1	0.04	69.52	15	<PQL
LLCCV1	CCV2	1	0.45	7.25	20	PASS
ICSA2	ICSA	1	0.0081	173.21	15	<PQL

PERCENT RSD SUMMARY: 180103A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment
ICSAB2	ICSAB	1	20.23	1.39	15	PASS

PERCENT RSD SUMMARY: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.087	1.99	15	PASS	0.11	6.37	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.51	1.93	15	PASS	0.51	5.98	15	PASS
Std3-5/50 ppb	ICAL	1	5.15	0.16	15	PASS	5.26	2.45	15	PASS
Std4-10/100 ppb	ICAL	1	10.16	1.63	15	PASS	10.39	2.54	15	PASS
Std5-20/200 ppb	ICAL	1	20.33	1.32	15	PASS	20.81	1.32	15	PASS
Std6-40/400 ppb	ICAL	1	40.33	1.33	15	PASS	41.22	1.63	15	PASS
Std7-100/1000 ppb	ICAL	1	99.78	2.18	15	PASS	102.038	1.6	15	PASS
Std8-200/2000 ppb	ICAL	1	198.76	1.082	15	PASS	198.63	1.33	15	PASS
ICV	ICV	1	10.11	3.032	15	PASS	103.16	2.51	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.062	0.78	20	PASS	0.56	5.42	20	PASS
ICSA1	ICSA	1	0.072	18.5	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.33	1.21	15	PASS	18.13	0.75	15	PASS
LLICV	CCV1	1	1.04	0.76	20	PASS	0.53	2.4	20	PASS
CCV1	CCV	1	20.19	0.95	15	PASS	20.54	1.65	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.21	1.093	15	PASS	20.85	1.12	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.36	2.28	15	PASS	20.72	2.72	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.052	2.76	20	PASS	0.51	6.22	20	PASS
ICSA2	ICSA	1	0.063	8.0034	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.15	1.56	15	PASS	18.075	1.9	15	PASS
CCV4	CCV	1	20.26	2.17	15	PASS	20.8	3.81	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
MB-66061	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV5	CCV	1	20.26	1.39	15	PASS	20.81	2.58	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-66061	LCS	1	10.088	0.55	15	PASS	103.32	0.58	15	PASS
N027523-001B	SAMP	1	14.08	1.73	15	PASS	8.29	1.59	15	PASS
N027523-001B	SAMP	5	3.0084	1.93	15	PASS	1.78	1.74	15	PASS
N027523-001B	SAMP	25	0.61	1.048	15	PASS	0.34	7.93	15	PASS
N027523-001B-PS	PS	1	24.024	0.27	15	PASS	110.74	0.89	15	PASS
N027523-001B-PS	PS	5	5.17	1.55	15	PASS	23.7	0.3	15	PASS
N027523-001B-MS	MS	1	24.18	1.0018	15	PASS	110.87	0.57	15	PASS
N027523-001B-MS	MS	5	5.28	1.27	15	PASS	24.019	0.65	15	PASS
N027523-001B-MSD	MSD	1	23.92	1.41	15	PASS	110.18	1.66	15	PASS
N027523-001B-MSD	MSD	5	5.18	2.5	15	PASS	23.73	2.45	15	PASS
CCV6	CCV	1	20.13	2.21	15	PASS	20.55	2.071	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
LLCCV2	CCV2	1	1.036	3.29	20	PASS	0.53	8.46	20	PASS
ICSA3	ICSA	1	0.068	0.83	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.14	0.51	15	PASS	18.23	0.86	15	PASS
N027523-002B	SAMP	1	21.15	1.32	15	PASS	32.71	1.36	15	PASS
N027523-002B	SAMP	5	4.3	1.15	15	PASS	6.95	1.13	15	PASS
N027523-003B	SAMP	1	12.43	0.83	15	PASS	0.92	2.22	15	PASS
N027523-003B	SAMP	5	2.65	1.66	15	PASS	0.19	14.66	15	PASS
N027523-004B	SAMP	1	23.31	2.025	15	PASS	0.52	24.46	15	NR!
N027523-004B	SAMP	5	4.96	1.89	15	PASS	0.13	15.52	15	<PQL
N027523-005C	SAMP	1	384.11	1.76	15	PASS	<0.000	N/A	15	<PQL
N027523-005C	SAMP	5	82.75	0.26	15	PASS	<0.000	N/A	15	<PQL
N027523-006C	SAMP	1	13.11	1.23	15	PASS	1.52	3.72	15	PASS
N027523-006C	SAMP	5	2.88	0.82	15	PASS	0.32	4.21	15	PASS
CCV7	CCV	1	20.1	1.055	15	PASS	20.45	1.66	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027523-007C	SAMP	1	13.048	1.66	15	PASS	1.49	3.69	15	PASS
N027523-007C	SAMP	5	3.11	0.82	15	PASS	0.34	2.39	15	PASS
N027523-008B	SAMP	1	2.56	1.4	15	PASS	1.33	7.75	15	PASS
N027523-008B	SAMP	5	0.52	2.2	15	PASS	0.26	4.079	15	PASS
N027523-009B	SAMP	1	1.46	2.53	15	PASS	1953.36	0.46	15	PASS
N027523-009B	SAMP	5	0.3	10.99	15	PASS	432.56	1.67	15	PASS
N027523-012B	SAMP	1	2.68	0.82	15	PASS	10.98	0.3	15	PASS
N027523-012B	SAMP	5	0.58	4.56	15	PASS	2.27	0.73	15	PASS
N027546-001B	SAMP	1	2112.93	1.4	15	PASS	0.15	16.32	15	<PQL
N027546-001B	SAMP	5	452.68	0.46	15	PASS	0.054	49.3	15	<PQL
CCV8	CCV	1	20.35	1.27	15	PASS	20.76	1.45	15	PASS
CCB8	CCB	1	0.0095	104.66	15	<PQL	0.00097	879.08	15	<PQL
N027546-002B	SAMP	1	2108.53	1.58	15	PASS	0.13	14.78	15	PASS
N027546-002B	SAMP	5	457.78	1.086	15	PASS	0.053	14.97	15	PASS
N027546-003B	SAMP	1	12.066	1.36	15	PASS	0.5	4.75	15	PASS
N027546-003B	SAMP	5	2.58	3.18	15	PASS	0.12	18.79	15	<PQL
N027546-004B	SAMP	1	1.39	2.27	15	PASS	20.77	0.32	15	PASS
N027546-004B	SAMP	5	0.29	3.33	15	PASS	4.5	1.12	15	PASS
N027546-005B	SAMP	1	12.48	0.77	15	PASS	18.95	0.95	15	PASS
N027546-005B	SAMP	5	2.74	2.85	15	PASS	4.18	1.98	15	PASS
N027546-007B	SAMP	1	<0.000	N/A	15	<PQL	14.06	2.25	15	PASS
N027546-007B	SAMP	5	<0.000	N/A	15	<PQL	3.12	1.86	15	PASS
CCV9	CCV	1	20.11	0.79	15	PASS	20.58	1.58	15	PASS
CCB9	CCB	1	0.0061	134.99	15	<PQL	<0.000	N/A	15	<PQL
N027546-008B	SAMP	1	0.62	5.24	15	PASS	67.87	2.67	15	PASS
N027546-008B	SAMP	5	0.14	10.41	15	PASS	14.84	1.62	15	PASS

PERCENT RSD SUMMARY: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027546-009B	SAMP	1	1.18	1.091	15	PASS	65.96	1.12	15	PASS
N027546-009B	SAMP	5	0.14	14.99	15	PASS	14.41	2.96	15	PASS
N027546-010B	SAMP	1	14.24	1.61	15	PASS	7.31	1.081	15	PASS
N027546-010B	SAMP	5	3.1	1.26	15	PASS	1.62	4.36	15	PASS
CCV10	CCV	1	20.081	1.48	15	PASS	20.56	1.45	15	PASS
CCB10	CCB	1	<0.000	N/A	15	<PQL	0.0068	282.71	15	<PQL
LLCCV3	CCV2	1	1.075	3.038	20	PASS	0.54	3.44	20	PASS
ICSA4	ICSA	1	0.078	18.24	15	<PQL	<0.000	N/A	15	<PQL
ICSAB4	ICSAB	1	20.11	1.97	15	PASS	17.98	2.41	15	PASS

PERCENT RSD SUMMARY: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	8.74	15	PASS	0.096	59.74	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.49	5.49	15	PASS	0.54	15.43	15	NR!
Std3-5/50 ppb	ICAL	1	4.92	0.87	15	PASS	5.057	4.3	15	PASS
Std4-10/100 ppb	ICAL	1	10.094	0.98	15	PASS	10.38	2.32	15	PASS
Std5-20/200 ppb	ICAL	1	19.69	1.69	15	PASS	19.58	3.33	15	PASS
Std6-40/400 ppb	ICAL	1	40.62	0.89	15	PASS	40.26	1.36	15	PASS
Std7-100/1000 ppb	ICAL	1	100.023	0.94	15	PASS	102.69	0.79	15	PASS
Std8-200/2000 ppb	ICAL	1	199.89	1.3	15	PASS	198.62	0.11	15	PASS
ICV	ICV	1	9.98	0.79	15	PASS	9.47	2.33	15	PASS
ICB	ICB	1	0.013	92.16	15	<PQL	0.013	401.11	15	<PQL
LLICV	CCV1	1	0.11	1.14	20	PASS	0.61	11.088	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	21.063	1.53	15	PASS	20.52	2.47	15	PASS
LLICV	CCV1	1	0.13	4.16	20	PASS	0.51	22.8	20	NR!
CCV1	CCV	1	20.023	0.41	15	PASS	20.3	0.57	15	PASS
CCB1	CCB	1	0.0086	54.78	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.88	1.3	15	PASS	19.66	2.17	15	PASS
CCB2	CCB	1	0.00028	2405.71	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	19.89	0.86	15	PASS	19.54	0.88	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.092	25.56	20	<PQL	0.5	26.12	20	NR!
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.72	1.29	15	PASS	19.48	2.64	15	PASS
CCV4	CCV	1	19.71	1.98	15	PASS	19.22	3.28	15	PASS
CCB4	CCB	1	0.0011	289.65	15	<PQL	<0.000	N/A	15	<PQL
MB-66061	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV5	CCV	1	19.78	0.92	15	PASS	19.79	3.21	15	PASS
CCB5	CCB	1	0.008	78.43	15	<PQL	<0.000	N/A	15	<PQL
LCS-66061	LCS	1	9.8	0.67	15	PASS	10.24	4.97	15	PASS
N027523-001B	SAMP	1	1.64	1.31	15	PASS	3.5	4.21	15	PASS
N027523-001B	SAMP	5	0.31	4.22	15	PASS	0.73	11.69	15	PASS
N027523-001B	SAMP	25	0.06	8.87	15	PASS	0.053	126.81	15	<PQL
N027523-001B-PS	PS	1	12.085	2.39	15	PASS	13.97	5.54	15	PASS
N027523-001B-PS	PS	5	2.52	1.98	15	PASS	2.9	14.04	15	PASS
N027523-001B-MS	MS	1	12.22	1.079	15	PASS	13.8	3.37	15	PASS
N027523-001B-MS	MS	5	2.56	0.8	15	PASS	2.94	7.21	15	PASS
N027523-001B-MSD	MSD	1	12	0.19	15	PASS	14.11	4.45	15	PASS
N027523-001B-MSD	MSD	5	2.5	3.088	15	PASS	2.96	3.84	15	PASS
CCV6	CCV	1	19.38	1.37	15	PASS	19.48	4.23	15	PASS
CCB6	CCB	1	0.00022	2797.49	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
LLCCV2	CCV2	1	0.11	3.024	20	PASS	0.53	24.077	20	NR!
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.54	0.67	15	PASS	19.3	2.74	15	PASS
N027523-002B	SAMP	1	11.0071	0.93	15	PASS	2.26	10.93	15	PASS
N027523-002B	SAMP	5	2.32	1.2	15	PASS	0.45	27.11	15	<PQL
N027523-003B	SAMP	1	1.79	6.1	15	PASS	7.99	3.75	15	PASS
N027523-003B	SAMP	5	0.42	10.82	15	PASS	1.7	9.83	15	PASS
N027523-004B	SAMP	1	0.72	6.74	15	PASS	4.0067	15.81	15	NR!
N027523-004B	SAMP	5	0.14	11.27	15	PASS	0.81	9.66	15	PASS
N027523-005C	SAMP	1	1.1	1.54	15	PASS	2.62	12.34	15	PASS
N027523-005C	SAMP	5	0.23	8.79	15	PASS	0.55	31.98	15	NR!
N027523-006C	SAMP	1	3.49	1.77	15	PASS	0.57	28	15	NR!
N027523-006C	SAMP	5	0.73	3.87	15	PASS	0.17	42.57	15	<PQL
CCV7	CCV	1	19.54	1.54	15	PASS	19.89	3.49	15	PASS
CCB7	CCB	1	0.007	150.35	15	<PQL	<0.000	N/A	15	<PQL
N027523-007C	SAMP	1	3.6	2.17	15	PASS	0.72	17.86	15	NR!
N027523-007C	SAMP	5	0.78	2.24	15	PASS	0.1	29.45	15	<PQL
N027523-008B	SAMP	1	1.49	4.034	15	PASS	1.049	21.57	15	NR!
N027523-008B	SAMP	5	0.3	11.14	15	PASS	0.12	45.23	15	<PQL
N027523-009B	SAMP	1	2.52	1.32	15	PASS	0.2	29.5	15	<PQL
N027523-009B	SAMP	5	0.48	11.45	15	PASS	<0.000	N/A	15	<PQL
N027523-012B	SAMP	1	12.8	1.0046	15	PASS	47.23	0.75	15	PASS
N027523-012B	SAMP	5	2.49	4.31	15	PASS	8.36	2.26	15	PASS
N027546-001B	SAMP	1	1.61	5.94	15	PASS	14.57	9.6	15	PASS
N027546-001B	SAMP	5	0.31	7.88	15	PASS	2.83	11.78	15	PASS
CCV8	CCV	1	19.57	1.057	15	PASS	19.6	2.063	15	PASS
CCB8	CCB	1	0.0013	412.87	15	<PQL	<0.000	N/A	15	<PQL
N027546-002B	SAMP	1	1.66	4.058	15	PASS	14.028	0.75	15	PASS
N027546-002B	SAMP	5	0.31	1.38	15	PASS	3.11	9.076	15	PASS
N027546-003B	SAMP	1	1.62	3.86	15	PASS	1.17	8.59	15	PASS
N027546-003B	SAMP	5	0.36	13.48	15	PASS	0.23	34.66	15	<PQL
N027546-004B	SAMP	1	2.22	2.61	15	PASS	1.9	6.26	15	PASS
N027546-004B	SAMP	5	0.46	8	15	PASS	0.25	31.89	15	<PQL
N027546-005B	SAMP	1	6.31	1.66	15	PASS	1.64	14.6	15	PASS
N027546-005B	SAMP	5	1.37	6.16	15	PASS	0.27	40.57	15	<PQL
N027546-007B	SAMP	1	1.61	0.92	15	PASS	0.02	212	15	<PQL
N027546-007B	SAMP	5	0.33	7.23	15	PASS	<0.000	N/A	15	<PQL
CCV9	CCV	1	19.68	0.84	15	PASS	19.93	2.53	15	PASS
CCB9	CCB	1	0.0031	221.64	15	<PQL	<0.000	N/A	15	<PQL
N027546-008B	SAMP	1	2.83	2.61	15	PASS	0.42	10.41	15	PASS
N027546-008B	SAMP	5	0.59	4.77	15	PASS	0.021	103.43	15	<PQL

PERCENT RSD SUMMARY: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027546-009B	SAMP	1	2.82	0.75	15	PASS	0.47	27.99	15	<PQL
N027546-009B	SAMP	5	0.58	6.96	15	PASS	0.062	22.92	15	<PQL
N027546-010B	SAMP	1	2.23	5.68	15	PASS	0.55	26.84	15	NR!
N027546-010B	SAMP	5	0.49	6.86	15	PASS	0.09	74.83	15	<PQL
CCV10	CCV	1	19.95	1.042	15	PASS	19.46	3.84	15	PASS
CCB10	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV3	CCV2	1	0.1	21.98	20	NR!	0.48	7.12	20	PASS
ICSA4	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB4	ICSAB	1	20.63	1.25	15	PASS	20.13	1.47	15	PASS

PERCENT RSD SUMMARY: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.091	14.8	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.47	3.67	15	PASS
Std3-5/50 ppb	ICAL	1	4.88	3.3	15	PASS
Std4-10/100 ppb	ICAL	1	9.81	0.67	15	PASS
Std5-20/200 ppb	ICAL	1	19.61	0.92	15	PASS
Std6-40/400 ppb	ICAL	1	39.46	1.052	15	PASS
Std7-100/1000 ppb	ICAL	1	98.96	0.36	15	PASS
Std8-200/2000 ppb	ICAL	1	200.68	0.56	15	PASS
ICV	ICV	1	10.3	0.9	15	PASS
ICB	ICB	1	0.12	9.59	15	PASS
LLICV	CCV1	1	0.55	0.69	20	PASS
ICSA1	ICSA	1	0.063	12.86	15	PASS
ICSAB1	ICSAB	1	22.18	0.98	15	PASS
LLICV	CCV1	1	0.56	2.94	20	PASS
CCV1	CCV	1	19.7	1.082	15	PASS
CCB1	CCB	1	0.064	10.17	15	PASS
CCV2	CCV	1	19.51	0.81	15	PASS
CCB2	CCB	1	0.049	24.054	15	<PQL
CCV3	CCV	1	19.57	0.62	15	PASS
CCB3	CCB	1	0.046	13.95	15	PASS
LLCCV1	CCV2	1	0.52	2.68	20	PASS
ICSA2	ICSA	1	0.024	15.76	15	<PQL
ICSAB2	ICSAB	1	22.028	1.32	15	PASS
CCV4	CCV	1	19.62	1.22	15	PASS
CCB4	CCB	1	0.055	2.76	15	PASS
MB-66061	MBLK	1	0.0016	325.77	15	<PQL
CCV5	CCV	1	19.74	1.28	15	PASS
CCB5	CCB	1	0.034	18.053	15	<PQL
LCS-66061	LCS	1	9.78	0.37	15	PASS
N027523-001B	SAMP	1	14.02	0.65	15	PASS
N027523-001B	SAMP	5	2.87	0.56	15	PASS
N027523-001B	SAMP	25	0.55	5.72	15	PASS
N027523-001B-PS	PS	1	25.89	2.5	15	PASS
N027523-001B-PS	PS	5	5.18	0.6	15	PASS
N027523-001B-MS	MS	1	25.67	1.53	15	PASS
N027523-001B-MS	MS	5	5.061	0.67	15	PASS
N027523-001B-MSD	MSD	1	25.64	0.46	15	PASS
N027523-001B-MSD	MSD	5	5.17	0.53	15	PASS
CCV6	CCV	1	19.61	2.052	15	PASS
CCB6	CCB	1	0.041	14.7	15	PASS

PERCENT RSD SUMMARY: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
LLCCV2	CCV2	1	0.51	9.48	20	PASS
ICSA3	ICSA	1	0.032	14.52	15	PASS
ICSAB3	ICSAB	1	22.5	1.86	15	PASS
N027523-002B	SAMP	1	16.72	1.014	15	PASS
N027523-002B	SAMP	5	3.33	2.45	15	PASS
N027523-003B	SAMP	1	17	1.5	15	PASS
N027523-003B	SAMP	5	3.49	2.68	15	PASS
N027523-004B	SAMP	1	5.94	2	15	PASS
N027523-004B	SAMP	5	1.16	1.31	15	PASS
N027523-005C	SAMP	1	14.31	1.9	15	PASS
N027523-005C	SAMP	5	2.86	1.6	15	PASS
N027523-006C	SAMP	1	25.12	1.4	15	PASS
N027523-006C	SAMP	5	5.11	2.17	15	PASS
CCV7	CCV	1	19.92	1.44	15	PASS
CCB7	CCB	1	0.044	22.57	15	<PQL
N027523-007C	SAMP	1	26.4	0.77	15	PASS
N027523-007C	SAMP	5	5.36	1.83	15	PASS
N027523-008B	SAMP	1	17.94	0.41	15	PASS
N027523-008B	SAMP	5	3.62	2.068	15	PASS
N027523-009B	SAMP	1	15.27	0.21	15	PASS
N027523-009B	SAMP	5	2.95	2.51	15	PASS
N027523-012B	SAMP	1	77.065	1.33	15	PASS
N027523-012B	SAMP	5	15.2	1.93	15	PASS
N027546-001B	SAMP	1	14.29	0.36	15	PASS
N027546-001B	SAMP	5	2.78	1.64	15	PASS
CCV8	CCV	1	19.89	0.75	15	PASS
CCB8	CCB	1	0.046	35.073	15	<PQL
N027546-002B	SAMP	1	14.22	1.25	15	PASS
N027546-002B	SAMP	5	2.82	1.33	15	PASS
N027546-003B	SAMP	1	13.8	2.025	15	PASS
N027546-003B	SAMP	5	2.76	1.62	15	PASS
N027546-004B	SAMP	1	57.86	1.43	15	PASS
N027546-004B	SAMP	5	11.14	1.25	15	PASS
N027546-005B	SAMP	1	63.84	0.68	15	PASS
N027546-005B	SAMP	5	12.9	1.083	15	PASS
N027546-007B	SAMP	1	10.45	1.4	15	PASS
N027546-007B	SAMP	5	2.12	2.25	15	PASS
CCV9	CCV	1	19.76	1.42	15	PASS
CCB9	CCB	1	0.043	16.63	15	<PQL
N027546-008B	SAMP	1	78.062	2.74	15	PASS
N027546-008B	SAMP	5	15.11	0.82	15	PASS

PERCENT RSD SUMMARY: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N027546-009B	SAMP	1	74.37	0.55	15	PASS
N027546-009B	SAMP	5	14.79	1.51	15	PASS
N027546-010B	SAMP	1	24.61	1.31	15	PASS
N027546-010B	SAMP	5	4.98	1.69	15	PASS
CCV10	CCV	1	19.84	0.17	15	PASS
CCB10	CCB	1	0.041	7.3	15	PASS
LLCCV3	CCV2	1	0.52	5.14	20	PASS
ICSA4	ICSA	1	0.044	17.2	15	<PQL
ICSAB4	ICSAB	1	22.13	0.35	15	PASS

PERCENT RSD SUMMARY: 180104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.099	8.45	15	PASS	0.087	16.74	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.5	8.88	15	PASS	0.54	24.23	15	NR!
Std3-5/50 ppb	ICAL	1	5.15	3.085	15	PASS	4.7	3.69	15	PASS
Std4-10/100 ppb	ICAL	1	10.15	1.49	15	PASS	10.18	0.99	15	PASS
Std5-20/200 ppb	ICAL	1	20.2	1.68	15	PASS	20.21	2.82	15	PASS
Std6-40/400 ppb	ICAL	1	40.018	1.57	15	PASS	40.44	1.66	15	PASS
Std7-100/1000 ppb	ICAL	1	99.93	0.79	15	PASS	101.14	4.26	15	PASS
Std8-200/2000 ppb	ICAL	1	194.85	2.015	15	PASS	199.32	0.71	15	PASS
ICV	ICV	1	9.95	3.19	15	PASS	9.88	4.46	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.034	57.9	15	<PQL
LLICV	CCV1	1	1.043	3.058	20	PASS	0.54	17.95	20	PASS
ICSA1	ICSA	1	0.083	22.44	15	<PQL	0.0084	86.61	15	<PQL
ICSAB1	ICSAB	1	20.088	0.4	15	PASS	20.45	1.57	15	PASS
LLICV	CCV1	1	1.031	2.23	20	PASS	0.62	8.45	20	PASS
N027523-004B	SAMP	1	22.94	0.59	15	PASS	4.011	6.9	15	PASS
N027523-006C	SAMP	1	12.82	2.1	15	PASS	0.85	8.17	15	PASS
N027523-007C	SAMP	1	13.03	1.43	15	PASS	0.72	19.49	15	NR!
N027523-008B	SAMP	1	2.57	1.25	15	PASS	1.024	6.53	15	PASS
CCV1	CCV	1	20.1	2.073	15	PASS	19.88	4.058	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0038	173.21	15	<PQL
N027523-007C	SAMP	1	12.96	1.52	15	PASS	0.67	19.25	15	NR!
N027523-007C	SAMP	1	13.049	0.77	15	PASS	0.74	1.74	15	PASS
N027546-010B	SAMP	1	13.81	0.35	15	PASS	0.52	30.094	15	NR!
N027523-009B	SAMP	25	0.047	15.7	15	<PQL	0	N/A	15	<PQL
N027546-001B	SAMP	25	93.91	2.35	15	PASS	0.59	14.096	15	PASS
N027546-002B	SAMP	25	95.051	1.82	15	PASS	0.64	20.7	15	NR!
CCV2	CCV	1	19.95	0.44	15	PASS	19.87	0.2	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.016	114.98	15	<PQL
LLCCV1	CCV2	1	1.025	4.7	20	PASS	0.59	4.42	20	PASS
ICSA2	ICSA	1	0.065	34.53	15	<PQL	0.03	98.028	15	<PQL
ICSAB2	ICSAB	1	20.21	1.13	15	PASS	20.23	2.85	15	PASS

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	62.85	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.44	23.2	15	<PQL
Std3-5/50 ppb	ICAL	1	5.14	7.8	15	PASS
Std4-10/100 ppb	ICAL	1	10.076	4.94	15	PASS
Std5-20/200 ppb	ICAL	1	20.42	2.29	15	PASS
Std6-40/400 ppb	ICAL	1	40.71	0.52	15	PASS
Std7-100/1000 ppb	ICAL	1	100.49	1.12	15	PASS
Std8-200/2000 ppb	ICAL	1	199.56	2.038	15	PASS
ICV	ICV	1	9.85	2.6	15	PASS
ICB	ICB	1	0.023	85.95	15	<PQL
LLICV	CCV1	1	0.47	15.5	20	PASS
ICSA1	ICSA	1	0.011	99.87	15	<PQL
ICSAB1	ICSAB	1	20.13	1.2	15	PASS
N027546-010B	SAMP	1	0.54	6.66	15	PASS
N027546-010B	SAMP	1	0.52	19.81	15	NR!
CCV1	CCV	1	19.5	1.55	15	PASS
CCB1	CCB	1	0.01	100.041	15	<PQL
CCV2	CCV	1	20.19	0.67	15	PASS
CCB2	CCB	1	0.024	49.037	15	<PQL
CCV3	CCV	1	19.34	3.29	15	PASS
CCB3	CCB	1	0.014	113.79	15	<PQL
LLCCV1	CCV2	1	0.44	9.9	20	PASS
ICSA2	ICSA	1	0.0067	173.21	15	<PQL
ICSAB2	ICSAB	1	20.86	1.58	15	PASS
CCV4	CCV	1	20.034	0.51	15	PASS
CCB4	CCB	1	0.042	66.45	15	<PQL
CCV5	CCV	1	19.45	0.79	15	PASS
CCB5	CCB	1	0.018	91.86	15	<PQL
CCV6	CCV	1	19.97	0.95	15	PASS
CCB6	CCB	1	0.015	86.6	15	<PQL
LLCCV2	CCV2	1	0.56	23.51	20	NR!
ICSA3	ICSA	1	0.0038	173.21	15	<PQL
ICSAB3	ICSAB	1	19.89	0.8	15	PASS
CCV7	CCV	1	20.75	1.53	15	PASS
CCB7	CCB	1	0.019	91.54	15	<PQL
CCV8	CCV	1	21.13	1.46	15	PASS
CCB8	CCB	1	0.0045	173.21	15	<PQL
CCV9	CCV	1	20.93	0.73	15	PASS
CCB9	CCB	1	0.023	91.15	15	<PQL
CCV10	CCV	1	20.67	3.23	15	PASS

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment
CCB10	CCB	1	0.014	115	15	<PQL
LLCCV3	CCV2	1	0.5	21.62	20	<PQL
ICSA4	ICSA	1	0.015	173.21	15	<PQL
ICSAB4	ICSAB	1	20.43	2.17	15	PASS
CCV11	CCV	1	21.2	1.34	15	PASS
CCB11	CCB	1	0.019	34.87	15	<PQL
CCV12	CCV	1	21.73	5.21	15	PASS
CCB12	CCB	1	0.016	44.26	15	<PQL
LLCCV4	CCV2	1	0.55	38.98	20	NR!
ICSA5	ICSA	1	0.029	137.58	15	<PQL
ICSAB5	ICSAB	1	20.96	1.67	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180102B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0102001.D	RINSE	RINSE	1	01/02/18 8:19 PM
B0102002.D	Cal Blank	IBLK	1	01/02/18 8:24 PM
B0102003.D	Std1-0.1/1 ppb	ICAL	1	01/02/18 8:30 PM
B0102004.D	Std2-0.5/5 ppb	ICAL	1	01/02/18 8:36 PM
B0102005.D	Std3-5/50 ppb	ICAL	1	01/02/18 8:42 PM
B0102006.D	Std4-10/100 ppb	ICAL	1	01/02/18 8:47 PM
B0102007.D	Std5-20/200 ppb	ICAL	1	01/02/18 8:53 PM
B0102008.D	Std6-40/400 ppb	ICAL	1	01/02/18 8:59 PM
B0102009.D	Std7-100/1000 ppb	ICAL	1	01/02/18 9:05 PM
B0102010.D	Std8-200/2000 ppb	ICAL	1	01/02/18 9:10 PM
B0102011.D	ICV	ICV	1	01/02/18 9:17 PM
B0102012.D	ICB	ICB	1	01/02/18 9:22 PM
B0102013.D	LLICV	CCV1	1	01/02/18 9:28 PM
B0102014.D	ICSA1	ICSA	1	01/02/18 9:33 PM
B0102015.D	ICSAB1	ICSAB	1	01/02/18 9:38 PM
B0102016.D	MB-66022	MBLK	1	01/02/18 9:46 PM
B0102017.D	LCS-66022	LCS	1	01/02/18 9:52 PM
B0102018.D	N027485-009B	SAMP	1	01/02/18 9:59 PM
B0102019.D	N027485-009B	SAMP	5	01/02/18 10:05 PM
B0102020.D	N027485-011C	SAMP	1	01/02/18 10:11 PM
B0102021.D	N027485-011C	SAMP	5	01/02/18 10:17 PM
B0102022.D	N027485-012C	SAMP	1	01/02/18 10:23 PM
B0102023.D	N027485-012C	SAMP	5	01/02/18 10:28 PM
B0102024.D	N027546-006B	SAMP	1	01/02/18 10:34 PM
B0102025.D	N027546-006B	SAMP	5	01/02/18 10:40 PM
B0102026.D	CCV1	CCV	1	01/02/18 10:46 PM
B0102027.D	CCB1	CCB	1	01/02/18 10:52 PM
B0102028.D	N027485-001B	SAMP	1	01/02/18 10:58 PM
B0102029.D	N027485-001B	SAMP	5	01/02/18 11:03 PM
B0102030.D	N027485-001B	SAMP	25	01/02/18 11:09 PM
B0102031.D	N027485-001B-PS	PS	1	01/02/18 11:15 PM
B0102032.D	N027485-001B-PS	PS	5	01/02/18 11:21 PM
B0102033.D	N027485-001B-MS	MS	1	01/02/18 11:27 PM
B0102034.D	N027485-001B-MS	MS	1	01/02/18 11:33 PM
B0102035.D	N027485-001B-MSD	MSD	1	01/02/18 11:39 PM
B0102036.D	N027485-001B-MSD	MSD	5	01/02/18 11:44 PM
B0102037.D	N027485-002B	SAMP	1	01/02/18 11:50 PM
B0102038.D	CCV2	CCV	1	01/02/18 11:56 PM
B0102039.D	CCB2	CCB	1	01/03/18 12:02 AM
B0102040.D	LLCCV1	CCV2	1	01/03/18 12:08 AM
B0102041.D	ICSA2	ICSA	1	01/03/18 12:13 AM
B0102042.D	ICSAB2	ICSAB	1	01/03/18 12:19 AM

INJECTION LOG: 180102B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0102043.D	N027485-002B	SAMP	5	01/03/18 12:25 AM
B0102044.D	N027485-003B	SAMP	1	01/03/18 12:31 AM
B0102045.D	N027485-003B	SAMP	5	01/03/18 12:37 AM
B0102046.D	N027485-004B	SAMP	1	01/03/18 12:43 AM
B0102047.D	N027485-004B	SAMP	5	01/03/18 12:48 AM
B0102048.D	N027485-005B	SAMP	1	01/03/18 12:54 AM
B0102049.D	N027485-005B	SAMP	5	01/03/18 1:00 AM
B0102050.D	N027485-006B	SAMP	1	01/03/18 1:06 AM
B0102051.D	N027485-006B	SAMP	5	01/03/18 1:12 AM
B0102052.D	N027485-007B	SAMP	1	01/03/18 1:17 AM
B0102053.D	CCV3	CCV	1	01/03/18 1:23 AM
B0102054.D	CCB3	CCB	1	01/03/18 1:29 AM
B0102055.D	N027485-007B	SAMP	5	01/03/18 1:35 AM
B0102056.D	N027485-008B	SAMP	1	01/03/18 1:41 AM
B0102057.D	N027485-008B	SAMP	5	01/03/18 1:47 AM
B0102058.D	N027485-010B	SAMP	1	01/03/18 1:53 AM
B0102059.D	N027485-010B	SAMP	5	01/03/18 1:58 AM
B0102060.D	N027485-009B	SAMP	25	01/03/18 2:04 AM
B0102061.D	N027485-011C	SAMP	25	01/03/18 2:10 AM
B0102062.D	N027485-012C	SAMP	25	01/03/18 2:16 AM
B0102063.D	RINSE	RINSE	1	01/03/18 2:22 AM
B0102064.D	LLCCV2	CCV2	1	01/03/18 2:28 AM
B0102065.D	CCV4	CCV	1	01/03/18 2:33 AM
B0102066.D	CCB4	CCB	1	01/03/18 2:39 AM
B0102067.D	LLCCV2	CCV2	1	01/03/18 2:45 AM
B0102068.D	ICSA3	ICSA	1	01/03/18 2:51 AM
B0102069.D	ICSAB3	ICSAB	1	01/03/18 2:57 AM
B0102070.D	MB-66163	MBLK	1	01/03/18 3:03 AM
B0102071.D	LCS-66163	LCS	1	01/03/18 3:08 AM
B0102072.D	N027615-001A	SAMP	1	01/03/18 3:14 AM
B0102073.D	N027615-001A	SAMP	5	01/03/18 3:20 AM
B0102074.D	N027615-001A-PS	PS	1	01/03/18 3:26 AM
B0102075.D	N027615-001A-MS	MS	1	01/03/18 3:32 AM
B0102076.D	N027615-001A-MSD	MSD	1	01/03/18 3:38 AM
B0102077.D	N027615-002A	SAMP	1	01/03/18 3:43 AM
B0102078.D	N027615-003A	SAMP	1	01/03/18 3:49 AM
B0102079.D	N027615-004A	SAMP	1	01/03/18 3:55 AM
B0102080.D	CCV5	CCV	1	01/03/18 4:01 AM
B0102081.D	CCB5	CCB	1	01/03/18 4:07 AM
B0102082.D	N027615-005A	SAMP	1	01/03/18 4:13 AM
B0102083.D	N027615-006A	SAMP	1	01/03/18 4:19 AM
B0102084.D	N027615-007A	SAMP	1	01/03/18 4:24 AM

INJECTION LOG: 180102B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0102085.D	N027615-008A	SAMP	1	01/03/18 4:30 AM
B0102086.D	N027689-001A	SAMP	1	01/03/18 4:36 AM
B0102087.D	MB-66170	MBLK	1	01/03/18 4:42 AM
B0102088.D	LCS-66170	LCS	1	01/03/18 4:48 AM
B0102089.D	N027662-001E	SAMP	1	01/03/18 4:53 AM
B0102090.D	N027662-001E	SAMP	5	01/03/18 4:59 AM
B0102091.D	N027662-001E-PS	PS	1	01/03/18 5:05 AM
B0102092.D	CCV6	CCV	1	01/03/18 5:11 AM
B0102093.D	CCB6	CCB	1	01/03/18 5:17 AM
B0102094.D	N027662-001E-MS	MS	1	01/03/18 5:23 AM
B0102095.D	N027662-001E-MSD	MSD	1	01/03/18 5:29 AM
B0102096.D	N027663-001E	SAMP	1	01/03/18 5:39 AM
B0102097.D	N027664-001E	SAMP	1	01/03/18 5:45 AM
B0102098.D	N027665-001E	SAMP	1	01/03/18 5:51 AM
B0102099.D	MB-66183	MBLK	1	01/03/18 5:57 AM
B0102100.D	LCS-66183	LCS	1	01/03/18 6:03 AM
B0102101.D	N027701-019A	SAMP	1	01/03/18 6:09 AM
B0102102.D	N027701-019A	SAMP	5	01/03/18 6:14 AM
B0102103.D	N027701-019A-PS	PS	1	01/03/18 6:20 AM
B0102104.D	CCV7	CCV	1	01/03/18 6:26 AM
B0102105.D	CCB7	CCB	1	01/03/18 6:32 AM
B0102106.D	N027701-019A-MS	MS	1	01/03/18 6:38 AM
B0102107.D	N027701-019A-MSD	MSD	1	01/03/18 6:44 AM
B0102108.D	N027701-020A	SAMP	1	01/03/18 6:52 AM
B0102109.D	N027701-021A	SAMP	1	01/03/18 6:58 AM
B0102110.D	N027701-022A	SAMP	1	01/03/18 7:04 AM
B0102111.D	N027701-023A	SAMP	1	01/03/18 7:10 AM
B0102112.D	N027701-024A	SAMP	1	01/03/18 7:15 AM
B0102113.D	N027701-025A	SAMP	1	01/03/18 7:21 AM
B0102114.D	N027701-026A	SAMP	1	01/03/18 7:27 AM
B0102115.D	N027701-027A	SAMP	1	01/03/18 7:32 AM
B0102116.D	CCV8	CCV	1	01/03/18 7:38 AM
B0102117.D	CCB8	CCB	1	01/03/18 7:43 AM
B0102118.D	LLCCV3	CCV2	1	01/03/18 7:49 AM
B0102119.D	ICSA4	ICSA	1	01/03/18 7:55 AM
B0102120.D	ICSAB4	ICSAB	1	01/03/18 8:00 AM
B0102121.D	N027701-028A	SAMP	1	01/03/18 8:06 AM
B0102122.D	N027701-029A	SAMP	1	01/03/18 8:11 AM
B0102123.D	N027701-030A	SAMP	1	01/03/18 8:17 AM
B0102124.D	N027701-031A	SAMP	1	01/03/18 8:22 AM
B0102125.D	N027701-032A	SAMP	1	01/03/18 8:28 AM
B0102126.D	N027701-033A	SAMP	1	01/03/18 8:33 AM

INJECTION LOG: 180102B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0102127.D	N027701-034A	SAMP	1	01/03/18 8:39 AM
B0102128.D	N027701-035A	SAMP	1	01/03/18 8:45 AM
B0102129.D	N027701-036A	SAMP	1	01/03/18 8:50 AM
B0102130.D	N027701-037A	SAMP	1	01/03/18 8:56 AM
B0102131.D	CCV9	CCV	1	01/03/18 9:01 AM
B0102132.D	CCB9	CCB	1	01/03/18 9:07 AM
B0102133.D	N027701-038A	SAMP	1	01/03/18 9:12 AM
B0102134.D	MB-66184	MBLK	1	01/03/18 9:18 AM
B0102135.D	LCS-66184	LCS	1	01/03/18 9:23 AM
B0102136.D	N027701-039A	SAMP	1	01/03/18 9:29 AM
B0102137.D	N027701-039A	SAMP	5	01/03/18 9:35 AM
B0102138.D	N027701-039A-PS	PS	1	01/03/18 9:40 AM
B0102139.D	N027701-039A-MS	MS	1	01/03/18 9:46 AM
B0102140.D	N027701-039A-MSD	MSD	1	01/03/18 9:52 AM
B0102141.D	N027701-040A	SAMP	1	01/03/18 9:57 AM
B0102142.D	N027701-041A	SAMP	1	01/03/18 10:03 AM
B0102143.D	CCV10	CCV	1	01/03/18 10:09 AM
B0102144.D	CCB10	CCB	1	01/03/18 10:14 AM
B0102145.D	N027701-042A	SAMP	1	01/03/18 10:20 AM
B0102146.D	N027767-005A	SAMP	1	01/03/18 10:25 AM
B0102147.D	LCS-66184	LCS	1	01/03/18 10:31 AM
B0102148.D	N027615-001A	SAMP	10	01/03/18 10:37 AM
B0102149.D	N027615-001A	SAMP	50	01/03/18 10:42 AM
B0102150.D	N027615-001A-PS	PS	10	01/03/18 10:48 AM
B0102151.D	N027615-001A-MS	MS	10	01/03/18 10:53 AM
B0102152.D	N027615-001A-MSD	MSD	10	01/03/18 10:59 AM
B0102153.D	CCV11	CCV	1	01/03/18 11:05 AM
B0102154.D	CCB11	CCB	1	01/03/18 11:10 AM
B0102155.D	LLCCV4	CCV2	1	01/03/18 11:16 AM
B0102156.D	ICSA5	ICSA	1	01/03/18 11:21 AM
B0102157.D	ICSAB5	ICSAB	1	01/03/18 11:27 AM

INJECTION LOG: 180103A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0103001.D	RINSE	RINSE	1	01/03/18 2:51 PM
A0103002.D	Cal Blank	IBLK	1	01/03/18 2:58 PM
A0103003.D	Std1-0.1/1 ppb	ICAL	1	01/03/18 3:03 PM
A0103004.D	Std2-0.5/5 ppb	ICAL	1	01/03/18 3:09 PM
A0103005.D	Std3-5/50 ppb	ICAL	1	01/03/18 3:14 PM
A0103006.D	Std4-10/100 ppb	ICAL	1	01/03/18 3:20 PM
A0103007.D	Std5-20/200 ppb	ICAL	1	01/03/18 3:26 PM
A0103008.D	Std6-40/400 ppb	ICAL	1	01/03/18 3:31 PM
A0103009.D	Std7-100/1000 ppb	ICAL	1	01/03/18 3:37 PM
A0103010.D	Std8-200/2000 ppb	ICAL	1	01/03/18 3:43 PM
A0103011.D	ICV	ICV	1	01/03/18 3:48 PM
A0103012.D	ICB	ICB	1	01/03/18 3:54 PM
A0103013.D	LLICV	CCV1	1	01/03/18 3:59 PM
A0103014.D	ICSA1	ICSA	1	01/03/18 4:06 PM
A0103015.D	ICSAB1	ICSAB	1	01/03/18 4:12 PM
A0103016.D	LLICV	CCV1	1	01/03/18 4:17 PM
A0103017.D	N027459-013B	SAMP	1	01/03/18 4:24 PM
A0103018.D	N027459-013A	SAMP	1	01/03/18 4:29 PM
A0103019.D	N027459-015A	SAMP	1	01/03/18 4:34 PM
A0103020.D	N027459-015B	SAMP	1	01/03/18 4:40 PM
A0103021.D	MB-66022	MBLK	1	01/03/18 4:59 PM
A0103022.D	LCS-66022	LCS	1	01/03/18 5:05 PM
A0103023.D	N027485-009B	SAMP	1	01/03/18 5:10 PM
A0103024.D	N027485-011C	SAMP	1	01/03/18 5:16 PM
A0103025.D	N027485-012C	SAMP	1	01/03/18 5:21 PM
A0103026.D	N027546-006B	SAMP	1	01/03/18 5:27 PM
A0103027.D	CCV1	CCV	1	01/03/18 5:32 PM
A0103028.D	CCB1	CCB	1	01/03/18 5:38 PM
A0103029.D	N027485-001B	SAMP	1	01/03/18 5:44 PM
A0103030.D	N027485-001B	SAMP	5	01/03/18 5:50 PM
A0103031.D	N027485-001B-PS	PS	1	01/03/18 5:56 PM
A0103032.D	N027485-001B-MS	MS	1	01/03/18 6:01 PM
A0103033.D	N027485-001B-MSD	MSD	1	01/03/18 6:07 PM
A0103034.D	N027485-002B	SAMP	25	01/03/18 6:12 PM
A0103035.D	N027485-003B	SAMP	25	01/03/18 6:18 PM
A0103036.D	N027485-004B	SAMP	25	01/03/18 6:24 PM
A0103037.D	N027485-005B	SAMP	1	01/03/18 6:29 PM
A0103038.D	N027485-006B	SAMP	1	01/03/18 6:35 PM
A0103039.D	CCV2	CCV	1	01/03/18 6:40 PM
A0103040.D	CCB2	CCB	1	01/03/18 6:46 PM
A0103041.D	N027485-007B	SAMP	1	01/03/18 6:51 PM
A0103042.D	N027485-010B	SAMP	5	01/03/18 6:57 PM

INJECTION LOG: 180103A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0103043.D	CCV3	CCV	1	01/03/18 7:02 PM
A0103044.D	CCB3	CCB	1	01/03/18 7:08 PM
A0103045.D	LLCCV1	CCV2	1	01/03/18 7:14 PM
A0103046.D	ICSA2	ICSA	1	01/03/18 7:20 PM
A0103047.D	ICSAB2	ICSAB	1	01/03/18 7:25 PM

INJECTION LOG: 180103B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0103001.D	RINSE	RINSE	1	01/03/18 7:33 PM
B0103002.D	Cal Blank	IBLK	1	01/03/18 7:39 PM
B0103003.D	Std1-0.1/1 ppb	ICAL	1	01/03/18 7:44 PM
B0103004.D	Std2-0.5/5 ppb	ICAL	1	01/03/18 7:50 PM
B0103005.D	Std3-5/50 ppb	ICAL	1	01/03/18 7:55 PM
B0103006.D	Std4-10/100 ppb	ICAL	1	01/03/18 8:01 PM
B0103007.D	Std5-20/200 ppb	ICAL	1	01/03/18 8:06 PM
B0103008.D	Std6-40/400 ppb	ICAL	1	01/03/18 8:12 PM
B0103009.D	Std7-100/1000 ppb	ICAL	1	01/03/18 8:17 PM
B0103010.D	Std8-200/2000 ppb	ICAL	1	01/03/18 8:23 PM
B0103011.D	ICV	ICV	1	01/03/18 8:28 PM
B0103012.D	ICB	ICB	1	01/03/18 8:34 PM
B0103013.D	LLICV	CCV1	1	01/03/18 8:40 PM
B0103014.D	ICSA1	ICSA	1	01/03/18 8:45 PM
B0103015.D	ICSAB1	ICSAB	1	01/03/18 8:51 PM
B0103016.D	LLICV	CCV1	1	01/03/18 8:56 PM
B0103017.D	MB-66060	MBLK	1	01/03/18 9:02 PM
B0103018.D	LCS-66060	LCS	1	01/03/18 9:07 PM
B0103019.D	N027524-001E	SAMP	1	01/03/18 9:13 PM
B0103020.D	N027524-001E	SAMP	5	01/03/18 9:18 PM
B0103021.D	N027524-001E	SAMP	25	01/03/18 9:24 PM
B0103022.D	N027524-001E-PS	PS	1	01/03/18 9:29 PM
B0103023.D	N027524-001E-PS	PS	5	01/03/18 9:35 PM
B0103024.D	N027524-001E-MS	MS	1	01/03/18 9:40 PM
B0103025.D	N027524-001E-MS	MS	5	01/03/18 9:46 PM
B0103026.D	N027524-001E-MSD	MSD	1	01/03/18 9:51 PM
B0103027.D	CCV1	CCV	1	01/03/18 9:57 PM
B0103028.D	CCB1	CCB	1	01/03/18 10:02 PM
B0103029.D	N027524-001E-MSD	MSD	5	01/03/18 10:08 PM
B0103030.D	N027524-002E	SAMP	1	01/03/18 10:14 PM
B0103031.D	N027524-002E	SAMP	5	01/03/18 10:19 PM
B0103032.D	N027524-003E	SAMP	1	01/03/18 10:25 PM
B0103033.D	N027524-003E	SAMP	5	01/03/18 10:30 PM
B0103034.D	N027524-004E	SAMP	1	01/03/18 10:36 PM
B0103035.D	N027524-004E	SAMP	5	01/03/18 10:41 PM
B0103036.D	N027524-005E	SAMP	1	01/03/18 10:47 PM
B0103037.D	N027524-005E	SAMP	5	01/03/18 10:52 PM
B0103038.D	N027524-006E	SAMP	1	01/03/18 10:58 PM
B0103039.D	CCV2	CCV	1	01/03/18 11:03 PM
B0103040.D	CCB2	CCB	1	01/03/18 11:09 PM
B0103041.D	N027524-006E	SAMP	5	01/03/18 11:14 PM
B0103042.D	N027524-007E	SAMP	1	01/03/18 11:20 PM

INJECTION LOG: 180103B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0103043.D	N027524-007E	SAMP	5	01/03/18 11:25 PM
B0103044.D	N027524-008E	SAMP	1	01/03/18 11:31 PM
B0103045.D	N027524-008E	SAMP	5	01/03/18 11:37 PM
B0103046.D	N027524-009E	SAMP	1	01/03/18 11:42 PM
B0103047.D	N027524-009E	SAMP	5	01/03/18 11:48 PM
B0103048.D	N027524-010E	SAMP	1	01/03/18 11:53 PM
B0103049.D	N027524-010E	SAMP	5	01/03/18 11:59 PM
B0103050.D	N027524-011E	SAMP	1	01/04/18 12:04 AM
B0103051.D	CCV3	CCV	1	01/04/18 12:10 AM
B0103052.D	CCB3	CCB	1	01/04/18 12:15 AM
B0103053.D	LLCCV1	CCV2	1	01/04/18 12:21 AM
B0103054.D	ICSA2	ICSA	1	01/04/18 12:26 AM
B0103055.D	ICSAB2	ICSAB	1	01/04/18 12:32 AM
B0103056.D	N027524-011E	SAMP	5	01/04/18 12:37 AM
B0103057.D	N027524-011E-MS	MS	1	01/04/18 12:43 AM
B0103058.D	N027524-011E-MS	MS	5	01/04/18 12:48 AM
B0103059.D	N027524-012E	SAMP	1	01/04/18 12:54 AM
B0103060.D	N027524-012E	SAMP	5	01/04/18 1:00 AM
B0103061.D	N027524-013E	SAMP	1	01/04/18 1:05 AM
B0103062.D	N027524-013E	SAMP	5	01/04/18 1:11 AM
B0103063.D	N027556-001E	SAMP	1	01/04/18 1:16 AM
B0103064.D	N027556-001E	SAMP	5	01/04/18 1:22 AM
B0103065.D	N027556-002E	SAMP	1	01/04/18 1:27 AM
B0103066.D	CCV4	CCV	1	01/04/18 1:33 AM
B0103067.D	CCB4	CCB	1	01/04/18 1:39 AM
B0103068.D	N027556-002E	SAMP	5	01/04/18 1:44 AM
B0103069.D	N027556-003E	SAMP	1	01/04/18 1:50 AM
B0103070.D	N027556-003E	SAMP	5	01/04/18 1:56 AM
B0103071.D	N027556-006E	SAMP	1	01/04/18 2:01 AM
B0103072.D	N027556-006E	SAMP	5	01/04/18 2:07 AM
B0103073.D	N027556-004D	SAMP	1	01/04/18 2:12 AM
B0103074.D	N027556-004D	SAMP	5	01/04/18 2:18 AM
B0103075.D	N027556-005D	SAMP	1	01/04/18 2:24 AM
B0103076.D	N027556-005D	SAMP	5	01/04/18 2:29 AM
B0103077.D	MB-66061	MBLK	1	01/04/18 2:35 AM
B0103078.D	CCV5	CCV	1	01/04/18 2:40 AM
B0103079.D	CCB5	CCB	1	01/04/18 2:46 AM
B0103080.D	LCS-66061	LCS	1	01/04/18 2:51 AM
B0103081.D	N027523-001B	SAMP	1	01/04/18 2:57 AM
B0103082.D	N027523-001B	SAMP	5	01/04/18 3:02 AM
B0103083.D	N027523-001B	SAMP	25	01/04/18 3:08 AM
B0103084.D	N027523-001B-PS	PS	1	01/04/18 3:13 AM

INJECTION LOG: 180103B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0103085.D	N027523-001B-PS	PS	5	01/04/18 3:19 AM
B0103086.D	N027523-001B-MS	MS	1	01/04/18 3:24 AM
B0103087.D	N027523-001B-MS	MS	5	01/04/18 3:30 AM
B0103088.D	N027523-001B-MSD	MSD	1	01/04/18 3:36 AM
B0103089.D	N027523-001B-MSD	MSD	5	01/04/18 3:41 AM
B0103090.D	CCV6	CCV	1	01/04/18 3:47 AM
B0103091.D	CCB6	CCB	1	01/04/18 3:52 AM
B0103092.D	LLCCV2	CCV2	1	01/04/18 3:58 AM
B0103093.D	ICSA3	ICSA	1	01/04/18 4:03 AM
B0103094.D	ICSAB3	ICSAB	1	01/04/18 4:09 AM
B0103095.D	N027523-002B	SAMP	1	01/04/18 4:14 AM
B0103096.D	N027523-002B	SAMP	5	01/04/18 4:20 AM
B0103097.D	N027523-003B	SAMP	1	01/04/18 4:26 AM
B0103098.D	N027523-003B	SAMP	5	01/04/18 4:31 AM
B0103099.D	N027523-004B	SAMP	1	01/04/18 4:37 AM
B0103100.D	N027523-004B	SAMP	5	01/04/18 4:42 AM
B0103101.D	N027523-005C	SAMP	1	01/04/18 4:48 AM
B0103102.D	N027523-005C	SAMP	5	01/04/18 4:53 AM
B0103103.D	N027523-006C	SAMP	1	01/04/18 4:59 AM
B0103104.D	N027523-006C	SAMP	5	01/04/18 5:04 AM
B0103105.D	CCV7	CCV	1	01/04/18 5:10 AM
B0103106.D	CCB7	CCB	1	01/04/18 5:16 AM
B0103107.D	N027523-007C	SAMP	1	01/04/18 5:21 AM
B0103108.D	N027523-007C	SAMP	5	01/04/18 5:27 AM
B0103109.D	N027523-008B	SAMP	1	01/04/18 5:32 AM
B0103110.D	N027523-008B	SAMP	5	01/04/18 5:38 AM
B0103111.D	N027523-009B	SAMP	1	01/04/18 5:43 AM
B0103112.D	N027523-009B	SAMP	5	01/04/18 5:49 AM
B0103113.D	N027523-012B	SAMP	1	01/04/18 5:55 AM
B0103114.D	N027523-012B	SAMP	5	01/04/18 6:00 AM
B0103115.D	N027546-001B	SAMP	1	01/04/18 6:06 AM
B0103116.D	N027546-001B	SAMP	5	01/04/18 6:11 AM
B0103117.D	CCV8	CCV	1	01/04/18 6:17 AM
B0103118.D	CCB8	CCB	1	01/04/18 6:22 AM
B0103119.D	N027546-002B	SAMP	1	01/04/18 6:28 AM
B0103120.D	N027546-002B	SAMP	5	01/04/18 6:34 AM
B0103121.D	N027546-003B	SAMP	1	01/04/18 6:39 AM
B0103122.D	N027546-003B	SAMP	5	01/04/18 6:45 AM
B0103123.D	N027546-004B	SAMP	1	01/04/18 6:50 AM
B0103124.D	N027546-004B	SAMP	5	01/04/18 6:56 AM
B0103125.D	N027546-005B	SAMP	1	01/04/18 7:01 AM
B0103126.D	N027546-005B	SAMP	5	01/04/18 7:07 AM

INJECTION LOG: 180103B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0103127.D	N027546-007B	SAMP	1	01/04/18 7:13 AM
B0103128.D	N027546-007B	SAMP	5	01/04/18 7:18 AM
B0103129.D	CCV9	CCV	1	01/04/18 7:24 AM
B0103130.D	CCB9	CCB	1	01/04/18 7:29 AM
B0103131.D	N027546-008B	SAMP	1	01/04/18 7:35 AM
B0103132.D	N027546-008B	SAMP	5	01/04/18 7:41 AM
B0103133.D	N027546-009B	SAMP	1	01/04/18 7:47 AM
B0103134.D	N027546-009B	SAMP	5	01/04/18 7:52 AM
B0103135.D	N027546-010B	SAMP	1	01/04/18 7:58 AM
B0103136.D	N027546-010B	SAMP	5	01/04/18 8:04 AM
B0103137.D	CCV10	CCV	1	01/04/18 8:09 AM
B0103138.D	CCB10	CCB	1	01/04/18 8:15 AM
B0103139.D	LLCCV3	CCV2	1	01/04/18 8:20 AM
B0103140.D	ICSA4	ICSA	1	01/04/18 8:26 AM
B0103141.D	ICSAB4	ICSAB	1	01/04/18 8:31 AM

INJECTION LOG: 180104A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0104001.D	RINSE	RINSE	1	01/04/18 11:21 AM
A0104002.D	Cal Blank	IBLK	1	01/04/18 11:26 AM
A0104003.D	Std1-0.1/1 ppb	ICAL	1	01/04/18 11:32 AM
A0104004.D	Std2-0.5/5 ppb	ICAL	1	01/04/18 11:37 AM
A0104005.D	Std3-5/50 ppb	ICAL	1	01/04/18 11:43 AM
A0104006.D	Std4-10/100 ppb	ICAL	1	01/04/18 11:49 AM
A0104007.D	Std5-20/200 ppb	ICAL	1	01/04/18 11:54 AM
A0104008.D	Std6-40/400 ppb	ICAL	1	01/04/18 12:00 PM
A0104009.D	Std7-100/1000 ppb	ICAL	1	01/04/18 12:05 PM
A0104010.D	Std8-200/2000 ppb	ICAL	1	01/04/18 12:11 PM
A0104011.D	ICV	ICV	1	01/04/18 12:17 PM
A0104012.D	ICB	ICB	1	01/04/18 12:22 PM
A0104013.D	LLICV	CCV1	1	01/04/18 12:28 PM
A0104014.D	ICSA1	ICSA	1	01/04/18 12:33 PM
A0104015.D	ICSAB1	ICSAB	1	01/04/18 12:39 PM
A0104016.D	LLICV	CCV1	1	01/04/18 12:44 PM
A0104017.D	N027524-011E-MS	MS	1	01/04/18 12:50 PM
A0104018.D	N027524-011E-MS	MS	5	01/04/18 12:55 PM
A0104019.D	N027556-001E	SAMP	5	01/04/18 1:01 PM
A0104020.D	N027556-002E	SAMP	5	01/04/18 1:06 PM
A0104021.D	N027556-003E	SAMP	5	01/04/18 1:12 PM
A0104022.D	N027556-006E	SAMP	5	01/04/18 1:18 PM
A0104023.D	N027523-004B	SAMP	1	01/04/18 1:23 PM
A0104024.D	N027523-006C	SAMP	1	01/04/18 1:29 PM
A0104025.D	N027523-007C	SAMP	1	01/04/18 1:34 PM
A0104026.D	N027523-008B	SAMP	1	01/04/18 1:40 PM
A0104027.D	CCV1	CCV	1	01/04/18 1:45 PM
A0104028.D	CCB1	CCB	1	01/04/18 1:51 PM
A0104029.D	N027523-007C	SAMP	1	01/04/18 1:58 PM
A0104030.D	N027523-007C	SAMP	1	01/04/18 2:04 PM
A0104031.D	N027546-010B	SAMP	1	01/04/18 2:09 PM
A0104032.D	N027523-009B	SAMP	25	01/04/18 2:15 PM
A0104033.D	N027546-001B	SAMP	25	01/04/18 2:20 PM
A0104034.D	N027546-002B	SAMP	25	01/04/18 2:26 PM
A0104035.D	N027523-001B	SAMP	1	01/04/18 2:32 PM
A0104036.D	N027523-001A	SAMP	1	01/04/18 2:38 PM
A0104037.D	N027523-002B	SAMP	1	01/04/18 2:43 PM
A0104038.D	N027523-002A	SAMP	1	01/04/18 2:49 PM
A0104039.D	CCV2	CCV	1	01/04/18 2:54 PM
A0104040.D	CCB2	CCB	1	01/04/18 3:00 PM
A0104041.D	LLCCV1	CCV2	1	01/04/18 3:05 PM
A0104042.D	ICSA2	ICSA	1	01/04/18 3:11 PM

INJECTION LOG: 180104A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0104043.D	ICSAB2	ICSAB	1	01/04/18 3:16 PM
A0104044.D	N027523-008B	SAMP	1	01/04/18 3:22 PM
A0104045.D	N027523-008A	SAMP	1	01/04/18 3:27 PM
A0104046.D	N027523-009B	SAMP	1	01/04/18 3:33 PM
A0104047.D	N027523-009A	SAMP	1	01/04/18 3:38 PM
A0104048.D	N027524-009E	SAMP	1	01/04/18 3:44 PM
A0104049.D	N027524-009A	SAMP	1	01/04/18 3:49 PM
A0104050.D	N027524-011E	SAMP	1	01/04/18 3:55 PM
A0104051.D	N027524-011A	SAMP	1	01/04/18 4:01 PM
A0104052.D	N027524-013E	SAMP	1	01/04/18 4:06 PM
A0104053.D	N027524-013A	SAMP	1	01/04/18 4:12 PM
A0104054.D	CCV3	CCV	1	01/04/18 4:17 PM
A0104055.D	CCB3	CCB	1	01/04/18 4:23 PM
A0104056.D	N027546-004B	SAMP	1	01/04/18 4:28 PM
A0104057.D	N027546-004A	SAMP	1	01/04/18 4:34 PM
A0104058.D	N027546-005B	SAMP	1	01/04/18 4:39 PM
A0104059.D	N027546-005A	SAMP	1	01/04/18 4:45 PM
A0104060.D	N027546-009B	SAMP	1	01/04/18 4:50 PM
A0104061.D	N027546-009A	SAMP	1	01/04/18 4:56 PM
A0104062.D	N027546-010B	SAMP	1	01/04/18 5:02 PM
A0104063.D	N027546-010A	SAMP	1	01/04/18 5:07 PM
A0104064.D	CCV4	CCV	1	01/04/18 5:13 PM
A0104065.D	CCB4	CCB	1	01/04/18 5:18 PM
A0104066.D	N027556-001E	SAMP	1	01/04/18 5:34 PM
A0104067.D	N027556-001A	SAMP	1	01/04/18 5:39 PM
A0104068.D	N027556-002E	SAMP	1	01/04/18 5:45 PM
A0104069.D	N027556-002A	SAMP	1	01/04/18 5:50 PM
A0104070.D	N027556-004D	SAMP	1	01/04/18 5:56 PM
A0104071.D	N027556-004A	SAMP	1	01/04/18 6:02 PM
A0104072.D	N027556-006E	SAMP	1	01/04/18 6:07 PM
A0104073.D	N027556-006A	SAMP	1	01/04/18 6:13 PM
A0104074.D	CCV5	CCV	1	01/04/18 6:18 PM
A0104075.D	CCB5	CCB	1	01/04/18 6:24 PM
A0104076.D	LLCCV2	CCV2	1	01/04/18 6:29 PM
A0104077.D	ICSA3	ICSA	1	01/04/18 6:35 PM
A0104078.D	ICSAB3	ICSAB	1	01/04/18 6:41 PM

INJECTION LOG: 180105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0105001.D	RINSE	RINSE	1	01/05/18 11:43 AM
B0105002.D	Cal Blank	IBLK	1	01/05/18 11:49 AM
B0105003.D	Std1-0.1/1 ppb	ICAL	1	01/05/18 11:54 AM
B0105004.D	Std2-0.5/5 ppb	ICAL	1	01/05/18 12:00 PM
B0105005.D	Std3-5/50 ppb	ICAL	1	01/05/18 12:05 PM
B0105006.D	Std4-10/100 ppb	ICAL	1	01/05/18 12:11 PM
B0105007.D	Std5-20/200 ppb	ICAL	1	01/05/18 12:16 PM
B0105008.D	Std6-40/400 ppb	ICAL	1	01/05/18 12:22 PM
B0105009.D	Std7-100/1000 ppb	ICAL	1	01/05/18 12:27 PM
B0105010.D	Std8-200/2000 ppb	ICAL	1	01/05/18 12:33 PM
B0105011.D	ICV	ICV	1	01/05/18 12:38 PM
B0105012.D	ICB	ICB	1	01/05/18 12:44 PM
B0105013.D	LLICV	CCV1	1	01/05/18 12:49 PM
B0105014.D	ICSA1	ICSA	1	01/05/18 12:55 PM
B0105015.D	ICSAB1	ICSAB	1	01/05/18 1:00 PM
B0105016.D	N027546-010B	SAMP	1	01/05/18 1:06 PM
B0105017.D	N027546-010B	SAMP	1	01/05/18 1:12 PM
B0105018.D	MB-66269	MBLK	1	01/05/18 1:17 PM
B0105019.D	LCS-66269	LCS	1	01/05/18 1:23 PM
B0105020.D	N027817-006C	SAMP	1	01/05/18 1:28 PM
B0105021.D	N027817-006C	SAMP	5	01/05/18 1:34 PM
B0105022.D	N027817-006C-DUP	DUP	1	01/05/18 1:39 PM
B0105023.D	N027817-006C-PS	PS	1	01/05/18 1:45 PM
B0105024.D	N027817-006C-MS	MS	1	01/05/18 1:50 PM
B0105025.D	N027817-006C-MSD	MSD	1	01/05/18 1:56 PM
B0105026.D	CCV1	CCV	1	01/05/18 2:03 PM
B0105027.D	CCB1	CCB	1	01/05/18 2:08 PM
B0105028.D	MB-66130	MBLK	1	01/05/18 2:14 PM
B0105029.D	LCS-66130	LCS	1	01/05/18 2:20 PM
B0105030.D	N027583-001E	SAMP	1	01/05/18 2:25 PM
B0105031.D	N027583-001E	SAMP	5	01/05/18 2:31 PM
B0105032.D	N027583-002E	SAMP	1	01/05/18 2:36 PM
B0105033.D	N027583-002E	SAMP	5	01/05/18 2:42 PM
B0105034.D	N027583-003E	SAMP	1	01/05/18 2:47 PM
B0105035.D	N027583-003E	SAMP	5	01/05/18 2:53 PM
B0105036.D	N027557-008E	SAMP	1	01/05/18 2:59 PM
B0105037.D	N027557-008E	SAMP	5	01/05/18 3:04 PM
B0105038.D	CCV2	CCV	1	01/05/18 3:10 PM
B0105039.D	CCB2	CCB	1	01/05/18 3:15 PM
B0105040.D	N027557-008E	SAMP	25	01/05/18 3:21 PM
B0105041.D	N027557-008E-PS	PS	1	01/05/18 3:26 PM
B0105042.D	N027557-008E-PS	PS	5	01/05/18 3:32 PM

INJECTION LOG: 180105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0105043.D	N027557-008E-MS	MS	1	01/05/18 3:39 PM
B0105044.D	N027557-008E-MSD	MSD	1	01/05/18 3:45 PM
B0105045.D	N027557-009E	SAMP	1	01/05/18 3:50 PM
B0105046.D	N027557-009E	SAMP	5	01/05/18 3:56 PM
B0105047.D	N027557-010E	SAMP	1	01/05/18 4:02 PM
B0105048.D	N027557-010E	SAMP	5	01/05/18 4:07 PM
B0105049.D	MB-66129	MBLK	1	01/05/18 4:13 PM
B0105050.D	CCV3	CCV	1	01/05/18 4:18 PM
B0105051.D	CCB3	CCB	1	01/05/18 4:24 PM
B0105052.D	LLCCV1	CCV2	1	01/05/18 4:29 PM
B0105053.D	ICSA2	ICSA	1	01/05/18 4:35 PM
B0105054.D	ICSAB2	ICSAB	1	01/05/18 4:39 PM
B0105055.D	LCS-66129	LCS	1	01/05/18 4:45 PM
B0105056.D	N027557-001B	SAMP	1	01/05/18 4:51 PM
B0105057.D	N027557-001B	SAMP	5	01/05/18 4:57 PM
B0105058.D	N027557-001B	SAMP	25	01/05/18 5:02 PM
B0105059.D	N027557-001B-PS	PS	1	01/05/18 5:08 PM
B0105060.D	N027557-001B-PS	PS	5	01/05/18 5:13 PM
B0105061.D	N027557-001B-MS	MS	1	01/05/18 5:19 PM
B0105062.D	N027557-001B-MS	MS	5	01/05/18 5:25 PM
B0105063.D	N027557-001B-MSD	MSD	1	01/05/18 5:30 PM
B0105064.D	N027557-001B-MSD	MSD	5	01/05/18 5:36 PM
B0105065.D	CCV4	CCV	1	01/05/18 5:41 PM
B0105066.D	CCB4	CCB	1	01/05/18 5:47 PM
B0105067.D	N027557-002B	SAMP	1	01/05/18 5:52 PM
B0105068.D	N027557-002B	SAMP	5	01/05/18 5:58 PM
B0105069.D	N027557-003B	SAMP	1	01/05/18 6:03 PM
B0105070.D	N027557-003B	SAMP	5	01/05/18 6:09 PM
B0105071.D	N027557-004B	SAMP	1	01/05/18 6:14 PM
B0105072.D	N027557-004B	SAMP	5	01/05/18 6:20 PM
B0105073.D	N027557-005B	SAMP	1	01/05/18 6:26 PM
B0105074.D	N027557-005B	SAMP	5	01/05/18 6:31 PM
B0105075.D	N027557-006B	SAMP	1	01/05/18 6:37 PM
B0105076.D	N027557-006B	SAMP	5	01/05/18 6:42 PM
B0105077.D	CCV5	CCV	1	01/05/18 6:48 PM
B0105078.D	CCB5	CCB	1	01/05/18 6:53 PM
B0105079.D	N027557-007B	SAMP	1	01/05/18 6:59 PM
B0105080.D	N027557-007B	SAMP	5	01/05/18 7:05 PM
B0105081.D	N027557-008B	SAMP	1	01/05/18 7:10 PM
B0105082.D	N027557-008B	SAMP	5	01/05/18 7:16 PM
B0105083.D	N027557-009B	SAMP	1	01/05/18 7:21 PM
B0105084.D	N027557-009B	SAMP	5	01/05/18 7:27 PM

INJECTION LOG: 180105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0105085.D	N027557-010B	SAMP	1	01/05/18 7:32 PM
B0105086.D	N027557-010B	SAMP	5	01/05/18 7:38 PM
B0105087.D	MB-66251	MBLK	1	01/05/18 7:43 PM
B0105088.D	LCS-66251	LCS	1	01/05/18 7:49 PM
B0105089.D	CCV6	CCV	1	01/05/18 7:54 PM
B0105090.D	CCB6	CCB	1	01/05/18 8:00 PM
B0105091.D	LLCCV2	CCV2	1	01/05/18 8:05 PM
B0105092.D	ICSA3	ICSA	1	01/05/18 8:11 PM
B0105093.D	ICSAB3	ICSAB	1	01/05/18 8:17 PM
B0105094.D	N027812-010B	SAMP	1	01/05/18 8:22 PM
B0105095.D	N027812-010B	SAMP	5	01/05/18 8:28 PM
B0105096.D	N027812-011B	SAMP	1	01/05/18 8:33 PM
B0105097.D	N027812-011B	SAMP	5	01/05/18 8:39 PM
B0105098.D	N027812-012B	SAMP	1	01/05/18 8:44 PM
B0105099.D	N027812-012B	SAMP	5	01/05/18 8:50 PM
B0105100.D	N027812-013B	SAMP	1	01/05/18 8:56 PM
B0105101.D	N027812-013B	SAMP	5	01/05/18 9:01 PM
B0105102.D	N027812-014B	SAMP	1	01/05/18 9:07 PM
B0105103.D	N027812-014B	SAMP	5	01/05/18 9:12 PM
B0105104.D	CCV7	CCV	1	01/05/18 9:19 PM
B0105105.D	CCB7	CCB	1	01/05/18 9:25 PM
B0105106.D	N027812-015B	SAMP	1	01/05/18 9:31 PM
B0105107.D	N027812-015B	SAMP	5	01/05/18 9:36 PM
B0105108.D	N027812-001B	SAMP	1	01/05/18 9:41 PM
B0105109.D	N027812-001B	SAMP	5	01/05/18 9:47 PM
B0105110.D	N027812-001B	SAMP	25	01/05/18 9:52 PM
B0105111.D	N027812-001B-PS	PS	1	01/05/18 9:58 PM
B0105112.D	N027812-001B-PS	PS	5	01/05/18 10:04 PM
B0105113.D	N027812-001B-MS	MS	1	01/05/18 10:09 PM
B0105114.D	N027812-001B-MS	MS	5	01/05/18 10:15 PM
B0105115.D	N027812-001B-MSD	MSD	1	01/05/18 10:21 PM
B0105116.D	CCV8	CCV	1	01/05/18 10:27 PM
B0105117.D	CCB8	CCB	1	01/05/18 10:32 PM
B0105118.D	N027812-001B-MSD	MSD	5	01/05/18 10:38 PM
B0105119.D	N027812-002B	SAMP	1	01/05/18 10:43 PM
B0105120.D	N027812-002B	SAMP	5	01/05/18 10:49 PM
B0105121.D	N027812-003B	SAMP	1	01/05/18 10:54 PM
B0105122.D	N027812-003B	SAMP	5	01/05/18 11:00 PM
B0105123.D	N027812-004B	SAMP	1	01/05/18 11:05 PM
B0105124.D	N027812-004B	SAMP	5	01/05/18 11:11 PM
B0105125.D	N027812-005B	SAMP	1	01/05/18 11:16 PM
B0105126.D	N027812-005B	SAMP	5	01/05/18 11:22 PM

INJECTION LOG: 180105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0105127.D	N027812-006B	SAMP	1	01/05/18 11:28 PM
B0105128.D	CCV9	CCV	1	01/05/18 11:33 PM
B0105129.D	CCB9	CCB	1	01/05/18 11:39 PM
B0105130.D	N027812-006B	SAMP	5	01/05/18 11:44 PM
B0105131.D	N027812-007B	SAMP	1	01/05/18 11:50 PM
B0105132.D	N027812-007B	SAMP	5	01/05/18 11:55 PM
B0105133.D	N027812-008B	SAMP	1	01/06/18 12:01 AM
B0105134.D	N027812-008B	SAMP	5	01/06/18 12:06 AM
B0105135.D	N027812-009B	SAMP	1	01/06/18 12:12 AM
B0105136.D	N027812-009B	SAMP	5	01/06/18 12:18 AM
B0105137.D	MB-66250	MBLK	1	01/06/18 12:23 AM
B0105138.D	LCS-66250	LCS	1	01/06/18 12:29 AM
B0105139.D	N027789-003C	SAMP	1	01/06/18 12:34 AM
B0105140.D	CCV10	CCV	1	01/06/18 12:41 AM
B0105141.D	CCB10	CCB	1	01/06/18 12:47 AM
B0105142.D	LLCCV3	CCV2	1	01/06/18 12:52 AM
B0105143.D	ICSA4	ICSA	1	01/06/18 12:56 AM
B0105144.D	ICSAB4	ICSAB	1	01/06/18 1:02 AM
B0105145.D	N027789-003C	SAMP	5	01/06/18 1:08 AM
B0105146.D	N027789-003C	SAMP	25	01/06/18 1:13 AM
B0105147.D	N027789-001E	SAMP	1	01/06/18 1:19 AM
B0105148.D	N027789-001E	SAMP	5	01/06/18 1:24 AM
B0105149.D	N027789-001E	SAMP	25	01/06/18 1:30 AM
B0105150.D	N027789-001E-PS	PS	1	01/06/18 1:35 AM
B0105151.D	N027789-001E-PS	PS	5	01/06/18 1:41 AM
B0105152.D	N027789-001E-MS	MS	1	01/06/18 1:46 AM
B0105153.D	N027789-001E-MS	MS	5	01/06/18 1:52 AM
B0105154.D	N027789-001E-MSD	MSD	1	01/06/18 1:58 AM
B0105155.D	CCV11	CCV	1	01/06/18 2:03 AM
B0105156.D	CCB11	CCB	1	01/06/18 2:09 AM
B0105157.D	N027789-001E-MSD	MSD	5	01/06/18 2:14 AM
B0105158.D	N027789-002E	SAMP	1	01/06/18 2:20 AM
B0105159.D	N027789-002E	SAMP	5	01/06/18 2:25 AM
B0105160.D	CCV12	CCV	1	01/06/18 2:31 AM
B0105161.D	CCB12	CCB	1	01/06/18 2:36 AM
B0105162.D	LLCCV4	CCV2	1	01/06/18 2:42 AM
B0105163.D	ICSA5	ICSA	1	01/06/18 2:47 AM
B0105164.D	ICSAB5	ICSAB	1	01/06/18 2:53 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/14/2017 8:00:00**
Prep End Date: **12/14/2017 1:00:00**
Prep Batch **66022** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 01/08/2018
Initials/ Date: 01/08/2018
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.6**	**02-1**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66022	Aqueous		25	☐	0	0	25	1.000		
MB-66022	Aqueous		25	☐	0	0	25	1.000		
N027485-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-010B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/14/2017 8:00:00**
Prep End Date: **12/14/2017 1:00:00**
Prep Batch **66022** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 01/08/2018
Initials/ Date: 01/08/2018
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.6**	**02-1**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027485-011C	Groundwater	<2	25	☐	0	0	25	1.000		
N027485-012C	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-006B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/18/2017 7:50:28**
Prep End Date: **12/18/2017 12:45:0**
Prep Batch **66061** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 01/08/2018
Initials/ Date: 01/08/2018
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.6**	**02-16**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66061	Aqueous		25	☐	0	0	25	1.000		
MB-66061	Aqueous		25	☐	0	0	25	1.000		
N027523-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027523-012B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/18/2017 7:50:28**
Prep End Date: **12/18/2017 12:45:0**
Reviewed/ Date: 01/08/2018
Initials/ Date: 01/08/2018

Prep Batch **66061** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.6**	**02-16**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027546-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027546-010B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 2 Jan 2018 10:47:44 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	164242.00	0.00	
24 Mg	658850.00	0.00	
25 Mg	87067.30	0.00	
26 Mg	100137.00	0.00	
59 Co	808018.00	0.00	
115 In	1349420.00	0.00	
206 Pb	386220.00	0.00	
207 Pb	336788.00	0.00	
208 Pb	824151.00	0.00	

RSD (%)

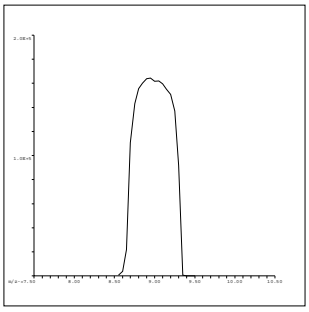
Element	Actual	Required	Flag
9 Be	0.81	5.00	
24 Mg	0.89	5.00	
25 Mg	0.86	5.00	
26 Mg	0.53	5.00	
59 Co	0.30	5.00	
115 In	1.05	5.00	
206 Pb	0.35	5.00	
207 Pb	0.67	5.00	
208 Pb	0.38	5.00	

Ion Ratio

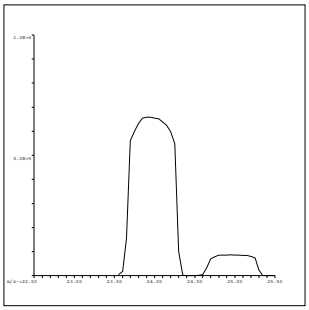
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

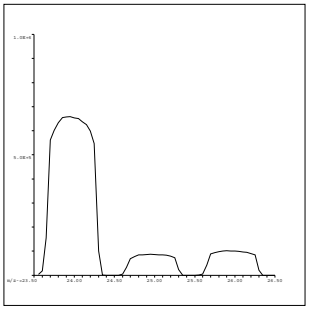
Element	Actual	Required	Flag



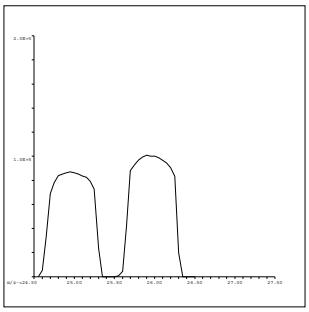
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



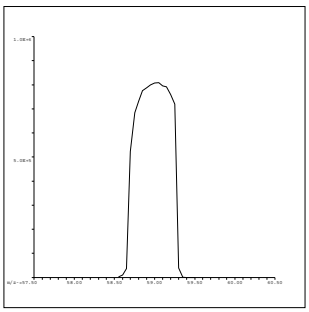
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



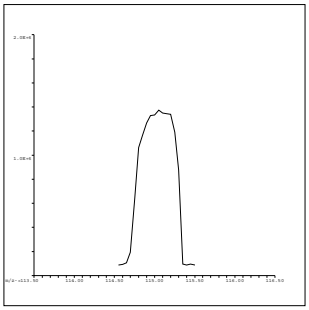
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



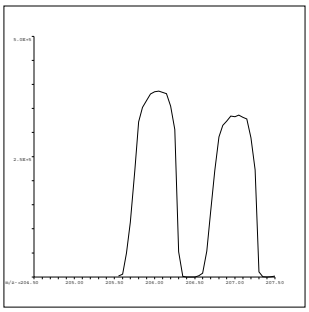
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



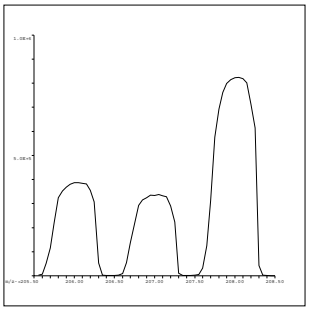
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



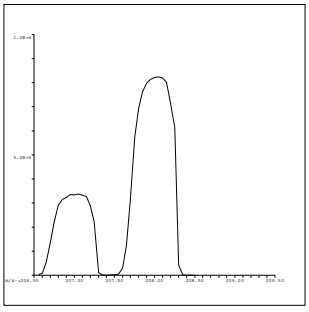
115 In
Mass Calib.
Actual: 115.10
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.05
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.05
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.05
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 3 Jan 2018 02:42:17 pm
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	204220.00	0.00	
24 Mg	732810.00	0.00	
25 Mg	96419.90	0.00	
26 Mg	112226.00	0.00	
59 Co	886097.00	0.00	
115 In	1405100.00	0.00	
206 Pb	374242.00	0.00	
207 Pb	328943.00	0.00	
208 Pb	805763.00	0.00	

RSD (%)

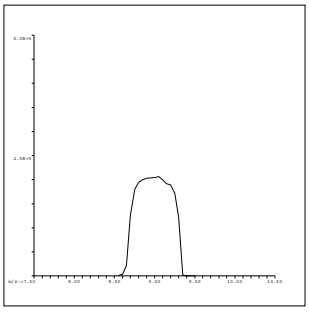
Element	Actual	Required	Flag
9 Be	1.55	5.00	
24 Mg	0.61	5.00	
25 Mg	0.73	5.00	
26 Mg	0.67	5.00	
59 Co	0.67	5.00	
115 In	1.03	5.00	
206 Pb	0.99	5.00	
207 Pb	1.37	5.00	
208 Pb	0.75	5.00	

Ion Ratio

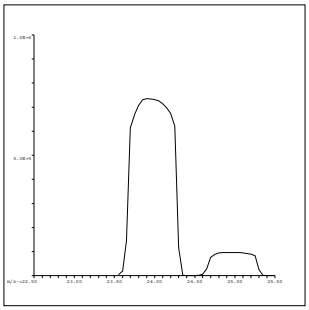
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

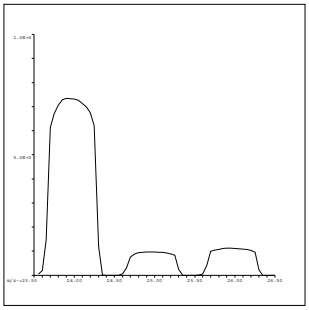
Element	Actual	Required	Flag



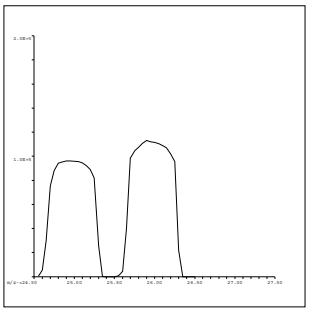
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



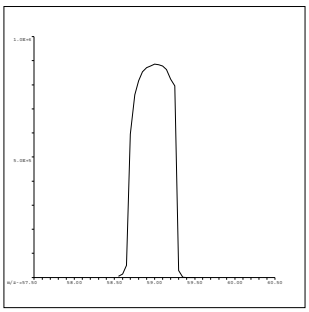
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



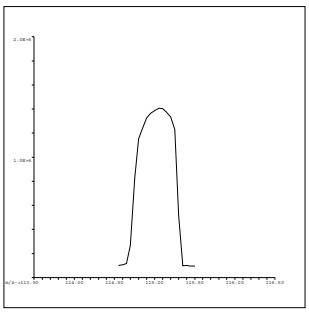
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



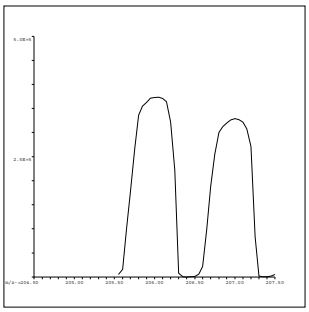
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



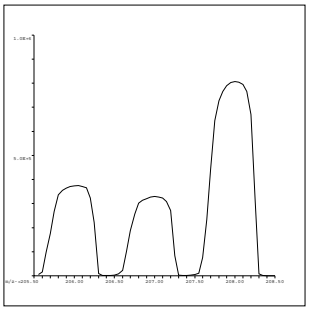
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



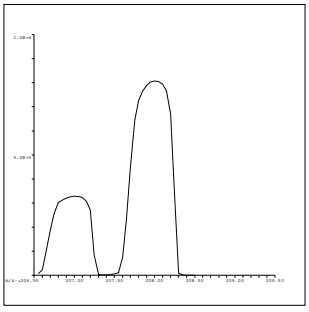
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.05
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 4 Jan 2018 11:09:16 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	151319.00	0.00	
24 Mg	639989.00	0.00	
25 Mg	84330.40	0.00	
26 Mg	98294.60	0.00	
59 Co	795774.00	0.00	
115 In	1397030.00	0.00	
206 Pb	362457.00	0.00	
207 Pb	315596.00	0.00	
208 Pb	771148.00	0.00	

RSD (%)

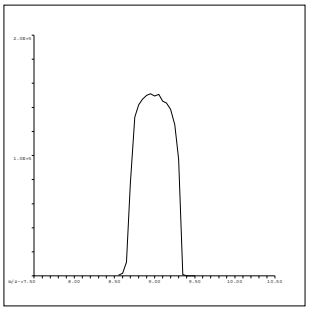
Element	Actual	Required	Flag
9 Be	1.08	5.00	
24 Mg	0.47	5.00	
25 Mg	0.62	5.00	
26 Mg	0.42	5.00	
59 Co	0.47	5.00	
115 In	0.78	5.00	
206 Pb	0.76	5.00	
207 Pb	0.56	5.00	
208 Pb	0.54	5.00	

Ion Ratio

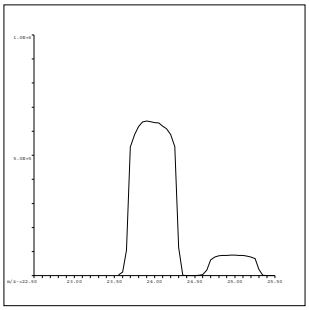
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

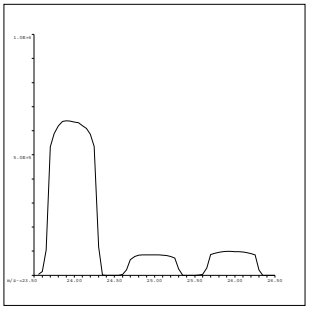
Element	Actual	Required	Flag



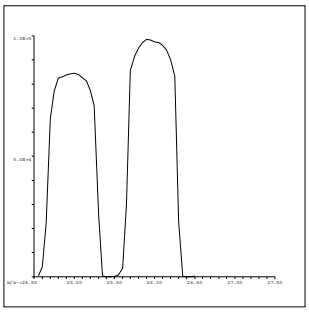
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



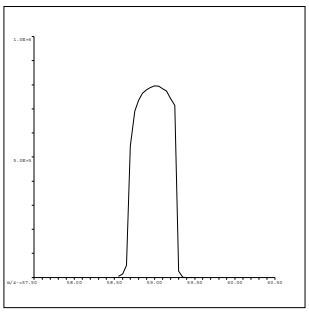
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



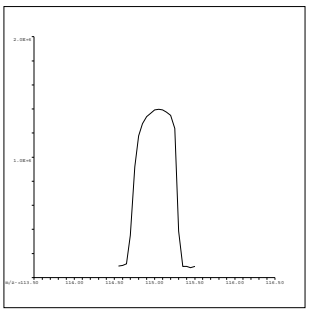
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



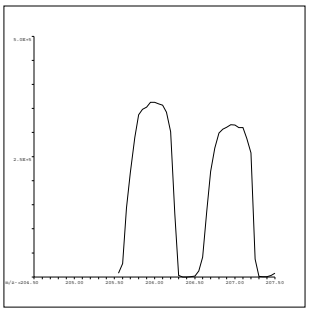
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



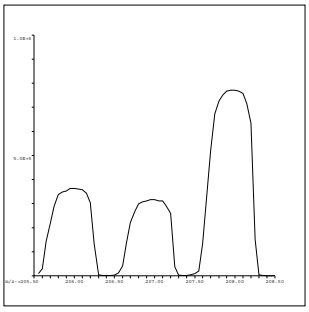
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



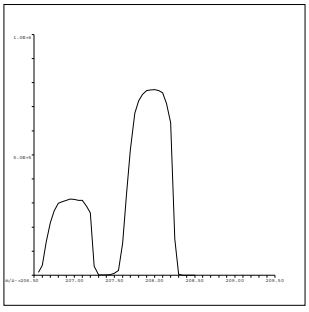
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 5 Jan 2018 09:19:59 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	271212.00	0.00	
24 Mg	1049440.00	0.00	
25 Mg	138898.00	0.00	
26 Mg	161197.00	0.00	
59 Co	1084180.00	0.00	
115 In	1544490.00	0.00	
206 Pb	403628.00	0.00	
207 Pb	351349.00	0.00	
208 Pb	869853.00	0.00	

RSD (%)

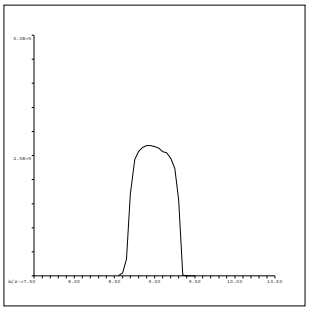
Element	Actual	Required	Flag
9 Be	0.37	5.00	
24 Mg	0.72	5.00	
25 Mg	0.49	5.00	
26 Mg	0.95	5.00	
59 Co	1.10	5.00	
115 In	0.56	5.00	
206 Pb	0.71	5.00	
207 Pb	0.92	5.00	
208 Pb	0.96	5.00	

Ion Ratio

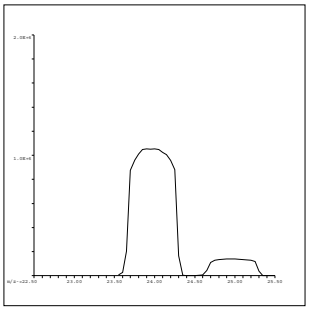
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

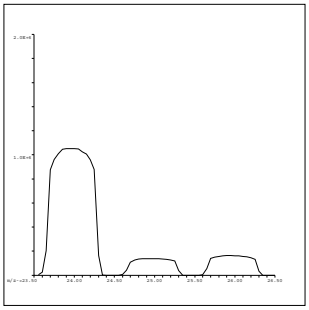
Element	Actual	Required	Flag



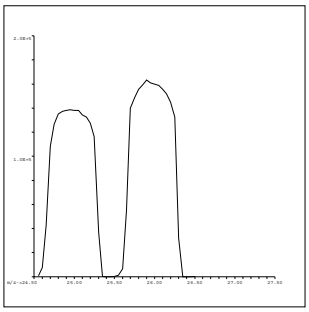
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



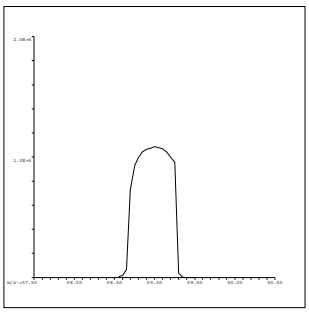
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



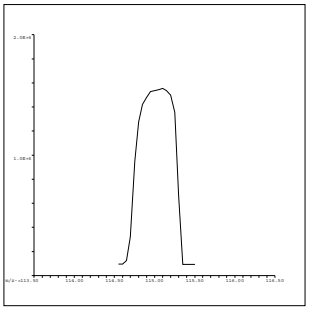
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



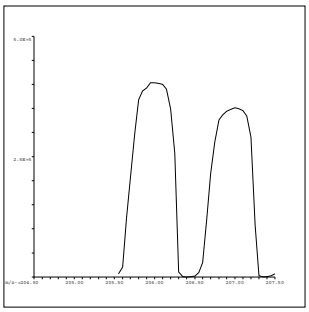
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



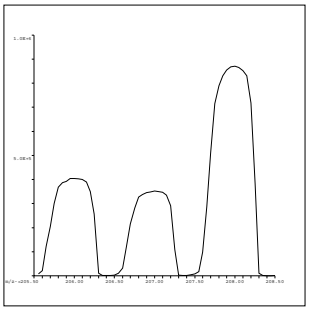
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



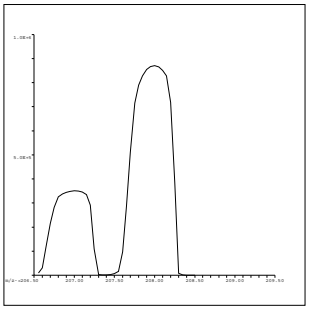
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180102B

Instrument ID: ICPMS-02

Analyte	Data File	B0102002.D	B0102003.D	B0102004.D	B0102005.D	B0102006.D	B0102007.D	B0102008.D	B0102009.D	B0102010.D	
	Acq. Date-Time	01/02/2018 08:24 PM	01/02/2018 08:30 PM	01/02/2018 08:36 PM	01/02/2018 08:42 PM	01/02/2018 08:47 PM	01/02/2018 08:53 PM	01/02/2018 08:59 PM	01/02/2018 09:05 PM	01/02/2018 09:10 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
6 Li (ISTD) [3]	CPS	1184720		1217043	1242922.6	1244722.1	1236093.4	1214841.6	1214189.9	1231118.4	
9 Be [3]	CPS	28.9		3351.6	34453.4	69313.2	138262.2	274051.1	675300.9	1415661.4	1.0000
45 Sc (ISTD) [2]	CPS	80897.7		83288.4	84719.8	85806.6	84869.9	87563	86766.9	87126.7	
59 Co [2]	CPS	11.9		5697.6	57852.9	116496.2	233600.1	466917.7	1160666.9	2347492.2	1.0000
55 Mn [2]	CPS	131.8		1785.1	17722.6	34913.3	70246.7	140180.7	348751.4	691873.1	1.0000
52 Cr [2]	CPS	937.5		3907	33332.7	65916.2	131442.1	261779.8	650929.7	1295527.7	1.0000
51 V [2]	CPS	2754.8		4906.5	26878.1	51781.9	100257	200302.6	494211.4	980051.7	1.0000
72 Ge (ISTD) [1]	CPS	65197.5		67326.1	69988.1	69723.9	68335.8	69998.5	69846.6	69432.4	
78 Se [1]	CPS	3.3		112.2	1469	2937.1	5620.1	11788.1	29098.1	56791.4	1.0000
72 Ge (ISTD) [2]	CPS	56305.4	57389.6	57952.5	58679.5	59176.9	59008.5	58734.2	59082.2	58642.8	
75 As [2]	CPS	12	80.9	340	3262.1	6651.2	13210.8	26392.5	66171.5	130756.6	1.0000
66 Zn [2]	CPS	260		914.4	5998.2	11610.5	23922.2	47381	117292.9	230468.3	1.0000
63 Cu [2]	CPS	4214.6		8446.4	47339.5	91025.3	176976.4	350531.3	865237.9	1752663.3	0.9999
60 Ni [2]	CPS	966.4		2451	16180.7	31731.8	62367.5	124645	311830	608164.6	1.0000
103 Rh (ISTD) [2]	CPS	1817292.6		1876026.3	1901275.6	1905202.9	1892549.5	1893181.8	1882968.8	1848322.8	
95 Mo [2]	CPS	57.8		2049.1	20249	41669.6	83246.3	168634.5	417775.8	836004.2	1.0000
103 Rh (ISTD) [3]	CPS	3775722.8		3798117.5	3836229.4	3849082.2	3832716.6	3823378.1	3765315.6	3730506.6	
107 Ag [3]	CPS	1118.2		14939.5	154493.9	313768.9	628355.1	1279221.2	3184292.6	5764410.3	0.9999
115 In (ISTD) [3]	CPS	3954056.4		3996528	4038976.4	4086986.9	4057822.3	4104545.1	4064312.4	4037997.7	
121 Sb [3]	CPS	212.2		12764.6	126056.1	252681.9	506482.7	1013070.4	2605721.8	5178084	1.0000
111 Cd [3]	CPS	336.9		3725.1	35183.1	71237.3	142049.3	285380	699516.8	1433943.2	1.0000
159 Tb (ISTD) [3]	CPS	5913717.1		5937076.5	6046709.2	6007765	6027729.7	6074968.8	6048387.6	6082542.3	
137 Ba [3]	CPS	-21.1		4743.7	48628.8	97675.6	195636.4	391665.4	961422.9	2005052.5	1.0000
209 Bi (ISTD) [3]	CPS	3875214.8		3896201.5	3929770.2	3909171.4	3960602.5	3964164.4	3950157.7	3956678.2	
208 Pb [3]	CPS	3145.6		49808.5	479224.6	956824.6	1914532.2	3864634.1	9523293.8	18990041.5	1.0000
205 Tl [3]	CPS	1866.9		35464.3	347349.5	700013.2	1445650.6	2907446.3	7029812.1	14190314.7	0.9999

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 180103A

Instrument ID: ICPMS-02

Analyte	Data File	A0103002.D	A0103003.D	A0103004.D	A0103005.D	A0103006.D	A0103007.D	A0103008.D	A0103009.D	A0103010.D	
	Acq. Date-Time	01/03/2018 02:58 PM	01/03/2018 03:03 PM	01/03/2018 03:09 PM	01/03/2018 03:14 PM	01/03/2018 03:20 PM	01/03/2018 03:26 PM	01/03/2018 03:31 PM	01/03/2018 03:37 PM	01/03/2018 03:43 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	121020.5	114444.1	114304.6	115716.8	115315.9	118086.5	119408.6	111956.8	111722.2	
52 Cr [2]	CPS	613.1	1507.7	5130.7	46966.6	93055.8	184731.9	374677.3	888155.2	1767558.3	1.0000
51 V [2]	CPS	281.1	1025.6	3888.4	35597	71025	141605	284093.8	681763.9	1367404	1.0000
72 Ge (ISTD) [1]	CPS	100990.1	99892.4	99980.4	99960.6	99535.7	101454.4	101587.8	98664.8	99459.8	
78 Se [1]	CPS	0	40	153.3	1582.4	3230.5	6590.5	13342.6	32019.3	64364.9	1.0000

STD1- not used/ for As only

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

Nancy 01/08/2018

INITIAL CALIBRATION SUMMARY: 180103B

Instrument ID: ICPMS-02

Analyte	Data File	B0103002.D	B0103003.D	B0103004.D	B0103005.D	B0103006.D	B0103007.D	B0103008.D	B0103009.D	B0103010.D	
	Acq. Date-Time	01/03/2018 07:39 PM	01/03/2018 07:44 PM	01/03/2018 07:50 PM	01/03/2018 07:55 PM	01/03/2018 08:01 PM	01/03/2018 08:06 PM	01/03/2018 08:12 PM	01/03/2018 08:17 PM	01/03/2018 08:23 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	104949.9		106896.9	106056.4	106836.5	104819.1	104454.4	103626.7	107178	
55 Mn [2]	CPS	206.8		2331.8	21963.7	43491	85243.7	168073.2	412396.7	830065.4	0.9999
52 Cr [2]	CPS	521		4852.9	44180.5	87233.9	170792.5	337101.3	826410	1702530.3	1.0000
72 Ge (ISTD) [1]	CPS	96495.5		97906	97411	98129.6	95443.9	95029.1	92259.4	96223.7	
78 Se [1]	CPS	13.3		182.2	1592.4	3279.3	6003.6	12279.5	30388.2	61287.5	0.9999
72 Ge (ISTD) [2]	CPS	78149.3	79622.9	78858.5	77689.7	78005.5	76794.1	76080.9	75090.9	75875.6	
75 As [2]	CPS	20.9	123.1	500	4761.2	9787.9	18784.2	38357.4	93190.7	188157.5	1.0000
103 Rh (ISTD) [2]	CPS	2361295		2380476.8	2347648.5	2373323	2309508.7	2291983.6	2237276	2266227.6	
95 Mo [2]	CPS	138.9		2725.9	26569.4	53851.3	104652.6	208819	510925.5	1049381.4	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 180104A

Instrument ID: ICPMS-02

Analyte	Data File	A0104002.D	A0104004.D	A0104005.D	A0104006.D	A0104007.D	A0104008.D	A0104009.D	A0104010.D	
	Acq. Date-Time	01/04/2018 11:26 AM	01/04/2018 11:37 AM	01/04/2018 11:43 AM	01/04/2018 11:49 AM	01/04/2018 11:54 AM	01/04/2018 12:00 PM	01/04/2018 12:05 PM	01/04/2018 12:11 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	94490.8	92448.4	94578.1	90701.3	91188.2	89529.2	87685.1	88869	
52 Cr [2]	CPS	403.1	4071.5	39454.8	74223.2	148164	287822.5	703452	1389655.2	1.0000
72 Ge (ISTD) [1]	CPS	87439.4	87441.6	86243.4	82045.8	83772.5	83479.2	81206.2	80706.5	
78 Se [1]	CPS	0	155.6	1332.3	2745.9	5564.5	11092	26989.9	52866.8	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 180105B

Instrument ID: ICPMS-02

Analyte	Data File	B0105002.D	B0105004.D	B0105005.D	B0105006.D	B0105007.D	B0105008.D	B0105009.D	B0105010.D	
	Acq. Date-Time	01/05/2018 11:49 AM	01/05/2018 12:00 PM	01/05/2018 12:05 PM	01/05/2018 12:11 PM	01/05/2018 12:16 PM	01/05/2018 12:22 PM	01/05/2018 12:27 PM	01/05/2018 12:33 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
72 Ge (ISTD) [1]	CPS	85800.3	87852.4	87543	88388.7	88069.4	88991.3	88217.8	90606.5	
78 Se [1]	CPS	0	128.9	1492.4	2952.6	5961.3	12010.4	29386.3	59937.9	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **ICV**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2882465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.598	0.50	10.00	0	96.0	90	110				
Arsenic	9.853	0.10	10.00	0	98.5	90	110				
Barium	9.961	1.0	10.00	0	99.6	90	110				
Beryllium	9.681	0.50	10.00	0	96.8	90	110				
Cadmium	10.160	0.50	10.00	0	102	90	110				
Cobalt	9.886	0.50	10.00	0	98.9	90	110				
Copper	10.199	1.0	10.00	0	102	90	110				
Lead	10.050	1.0	10.00	0	101	90	110				
Manganese	101.902	0.50	100.0	0	102	90	110				
Molybdenum	9.708	0.50	10.00	0	97.1	90	110				
Nickel	10.347	1.0	10.00	0	103	90	110				
Selenium	9.938	0.50	10.00	0	99.4	90	110				
Silver	9.386	0.50	10.00	0	93.9	90	110				
Thallium	9.924	0.50	10.00	0	99.2	90	110				
Zinc	102.280	10	100.0	0	102	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **ZZZZZZ**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2882467**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.569	0.50	0.5000	0	114	80	120				
Arsenic	0.116	0.10	0.1000	0	116	80	120				
Barium	1.066	1.0	1.000	0	107	80	120				
Beryllium	0.544	0.50	0.5000	0	109	80	120				
Cadmium	0.509	0.50	0.5000	0	102	80	120				
Cobalt	0.523	0.50	0.5000	0	105	80	120				
Copper	0.950	1.0	1.000	0	95.0	80	120				
Lead	1.055	1.0	1.000	0	106	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **ZZZZZZ**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2882467**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.513	0.50	0.5000	0	103	80	120				
Molybdenum	0.545	0.50	0.5000	0	109	80	120				
Nickel	0.987	1.0	1.000	0	98.7	80	120				
Selenium	0.528	0.50	0.5000	0	106	80	120				
Silver	0.505	0.50	0.5000	0	101	80	120				
Thallium	0.523	0.50	0.5000	0	105	80	120				
Zinc	10.609	10	10.00	0	106	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **CCV**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2882480**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	19.133	0.50	20.00	0	95.7	90	110				
Arsenic	19.841	0.10	20.00	0	99.2	90	110				
Barium	20.086	1.0	20.00	0	100	90	110				
Beryllium	20.077	0.50	20.00	0	100	90	110				
Cadmium	20.252	0.50	20.00	0	101	90	110				
Cobalt	21.057	0.50	20.00	0	105	90	110				
Copper	20.215	1.0	20.00	0	101	90	110				
Lead	20.059	1.0	20.00	0	100	90	110				
Manganese	20.898	0.50	20.00	0	104	90	110				
Molybdenum	19.241	0.50	20.00	0	96.2	90	110				
Nickel	20.644	1.0	20.00	0	103	90	110				
Selenium	21.048	0.50	20.00	0	105	90	110				
Silver	19.713	0.50	20.00	0	98.6	90	110				
Thallium	20.326	0.50	20.00	0	102	90	110				
Zinc	20.275	10	20.00	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **CCV**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2882492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	19.159	0.50	20.00	0	95.8	90	110				
Arsenic	20.313	0.10	20.00	0	102	90	110				
Barium	20.946	1.0	20.00	0	105	90	110				
Beryllium	20.112	0.50	20.00	0	101	90	110				
Cadmium	20.317	0.50	20.00	0	102	90	110				
Cobalt	19.824	0.50	20.00	0	99.1	90	110				
Copper	19.709	1.0	20.00	0	98.5	90	110				
Lead	19.984	1.0	20.00	0	99.9	90	110				
Manganese	20.102	0.50	20.00	0	101	90	110				
Molybdenum	19.786	0.50	20.00	0	98.9	90	110				
Nickel	20.041	1.0	20.00	0	100	90	110				
Selenium	20.679	0.50	20.00	0	103	90	110				
Silver	19.396	0.50	20.00	0	97.0	90	110				
Thallium	20.430	0.50	20.00	0	102	90	110				
Zinc	20.130	10	20.00	0	101	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **ZZZZZZ**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2882494**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.510	0.50	0.5000	0	102	70	130				
Arsenic	0.103	0.10	0.1000	0	103	70	130				
Barium	1.056	1.0	1.000	0	106	70	130				
Beryllium	0.521	0.50	0.5000	0	104	70	130				
Cadmium	0.516	0.50	0.5000	0	103	70	130				
Cobalt	0.501	0.50	0.5000	0	100	70	130				
Copper	0.939	1.0	1.000	0	93.9	70	130				
Lead	1.052	1.0	1.000	0	105	70	130				
Manganese	0.543	0.50	0.5000	0	109	70	130				
Molybdenum	0.545	0.50	0.5000	0	109	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121176
Client ID:	ZZZZZZ	Batch ID:	R121176	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2882494

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	0.949	1.0	1.000	0	94.9	70	130				
Selenium	0.506	0.50	0.5000	0	101	70	130				
Silver	0.506	0.50	0.5000	0	101	70	130				
Thallium	0.494	0.50	0.5000	0	98.8	70	130				
Zinc	10.509	10	10.00	0	105	70	130				

Sample ID	CCV3	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121176
Client ID:	CCV	Batch ID:	R121176	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2882507

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.357	0.10	20.00	0	102	90	110				
Manganese	20.370	0.50	20.00	0	102	90	110				
Molybdenum	19.349	0.50	20.00	0	96.7	90	110				
Selenium	21.753	0.50	20.00	0	109	90	110				

Sample ID	LLCCV2	SampType:	CCV2	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121176
Client ID:	ZZZZZZ	Batch ID:	R121176	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2882517

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.493	0.50	0.5000	0	98.6	70	130				

Sample ID	CCV4	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121176
Client ID:	CCV	Batch ID:	R121176	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2882518

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.570	0.10	20.00	0	103	90	110				
Manganese	20.724	0.50	20.00	0	104	90	110				
Molybdenum	19.221	0.50	20.00	0	96.1	90	110				
Selenium	21.478	0.50	20.00	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Reported analytes bracketed by CCV3/CCB3 to CCV4/CCB4/LLCCV2/ICSA3/ICSAB3 are just As Mn Mo & Se.

01/05/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121176**
Client ID: **ZZZZZZ** Batch ID: **R121176** TestNo: **EPA 6020** Analysis Date: **1/3/2018** SeqNo: **2882520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.118	0.10	0.1000	0	118	70	130				
Manganese	0.513	0.50	0.5000	0	103	70	130				
Molybdenum	0.516	0.50	0.5000	0	103	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **ICV**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883819**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.163	0.50	10.00	0	102	90	110				
Vanadium	9.885	1.0	10.00	0	98.9	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **ZZZZZZ**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.530	0.50	0.5000	0	106	80	120				
Vanadium	1.048	1.0	1.000	0	105	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **CCV**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.891	0.50	20.00	0	99.5	90	110				
Vanadium	20.380	1.0	20.00	0	102	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **CCV**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883847**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.555	0.50	20.00	0	97.8	90	110				
Vanadium	20.696	1.0	20.00	0	103	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **CCV**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883851**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.132	0.50	20.00	0	95.7	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **CCV**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883851**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	20.634	1.0	20.00	0	103	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **ZZZZZZ**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.454	0.50	0.5000	0	90.8	70	130				
Vanadium	1.076	1.0	1.000	0	108	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **ICV**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2884458**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.981	0.10	10.00	0	99.8	90	110				
Manganese	103.157	0.50	100.0	0	103	90	110				
Molybdenum	10.297	0.50	10.00	0	103	90	110				
Selenium	9.465	0.50	10.00	0	94.7	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **ZZZZZZ**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2884460**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.110	0.10	0.1000	0	110	80	120				
Manganese	0.557	0.50	0.5000	0	111	80	120				
Molybdenum	0.546	0.50	0.5000	0	109	80	120				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **ZZZZZZ**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2884463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.510	0.50	0.5000	0	102	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCV**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2884474**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.023	0.10	20.00	0	100	90	110				
Manganese	20.544	0.50	20.00	0	103	90	110				
Molybdenum	19.702	0.50	20.00	0	98.5	90	110				
Selenium	20.296	0.50	20.00	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCV**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2884486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.880	0.10	20.00	0	99.4	90	110				
Manganese	20.846	0.50	20.00	0	104	90	110				
Molybdenum	19.505	0.50	20.00	0	97.5	90	110				
Selenium	19.664	0.50	20.00	0	98.3	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCV**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884498**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.886	0.10	20.00	0	99.4	90	110				
Manganese	20.717	0.50	20.00	0	104	90	110				
Molybdenum	19.575	0.50	20.00	0	97.9	90	110				
Selenium	19.541	0.50	20.00	0	97.7	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **ZZZZZZ**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.092	0.10	0.1000	0	92.4	70	130				
Manganese	0.513	0.50	0.5000	0	103	70	130				
Molybdenum	0.516	0.50	0.5000	0	103	70	130				
Selenium	0.500	0.50	0.5000	0	100	70	130				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCV**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.710	0.10	20.00	0	98.5	90	110				
Manganese	20.801	0.50	20.00	0	104	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCV**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	19.615	0.50	20.00	0	98.1	90	110				
Selenium	19.223	0.50	20.00	0	96.1	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCV**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884525**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.776	0.10	20.00	0	98.9	90	110				
Manganese	20.814	0.50	20.00	0	104	90	110				
Molybdenum	19.743	0.50	20.00	0	98.7	90	110				
Selenium	19.787	0.50	20.00	0	98.9	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCV**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884537**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.379	0.10	20.00	0	96.9	90	110				
Manganese	20.554	0.50	20.00	0	103	90	110				
Molybdenum	19.609	0.50	20.00	0	98.0	90	110				
Selenium	19.478	0.50	20.00	0	97.4	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **ZZZZZZ**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884539**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.107	0.10	0.1000	0	107	70	130				
Manganese	0.529	0.50	0.5000	0	106	70	130				
Molybdenum	0.506	0.50	0.5000	0	101	70	130				
Selenium	0.528	0.50	0.5000	0	106	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCV**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884552**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.536	0.10	20.00	0	97.7	90	110				
Manganese	20.452	0.50	20.00	0	102	90	110				
Molybdenum	19.918	0.50	20.00	0	99.6	90	110				
Selenium	19.891	0.50	20.00	0	99.5	90	110				

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCV**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884564**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.570	0.10	20.00	0	97.9	90	110				
Manganese	20.760	0.50	20.00	0	104	90	110				
Molybdenum	19.889	0.50	20.00	0	99.4	90	110				
Selenium	19.599	0.50	20.00	0	98.0	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCV**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.683	0.10	20.00	0	98.4	90	110				
Manganese	20.582	0.50	20.00	0	103	90	110				
Molybdenum	19.759	0.50	20.00	0	98.8	90	110				
Selenium	19.927	0.50	20.00	0	99.6	90	110				

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCV**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884584**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.946	0.10	20.00	0	99.7	90	110				
Manganese	20.562	0.50	20.00	0	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCV**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884584**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	19.839	0.50	20.00	0	99.2	90	110				
Selenium	19.461	0.50	20.00	0	97.3	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **ZZZZZZ**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884586**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.103	0.10	0.1000	0	103	70	130				
Manganese	0.540	0.50	0.5000	0	108	70	130				
Molybdenum	0.515	0.50	0.5000	0	103	70	130				
Selenium	0.482	0.50	0.5000	0	96.4	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **ICV**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884984**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.883	0.50	10.00	0	98.8	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **ZZZZZZ**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884986**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.539	0.50	0.5000	0	108	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **CCV**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2885000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.877	0.50	20.00	0	99.4	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **CCV**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2885012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.866	0.50	20.00	0	99.3	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **ZZZZZZ**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2885014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.592	0.50	0.5000	0	118	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.846	0.50	10.00	0	98.5	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ZZZZZZ**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886585**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.473	0.50	0.5000	0	94.5	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886598**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.503	0.50	20.00	0	97.5	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886610**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	20.189	0.50	20.00	0	101	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.337	0.50	20.00	0	96.7	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	ZZZZZZ	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886624

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.435	0.50	0.5000	0	87.0	70	130				

Sample ID	CCV4	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	CCV	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886637

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	20.034	0.50	20.00	0	100	90	110				

Sample ID	CCV5	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	CCV	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886649

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.446	0.50	20.00	0	97.2	90	110				

Sample ID	CCV6	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	CCV	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886661

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.969	0.50	20.00	0	99.8	90	110				

Sample ID	LLCCV2	SampType:	CCV2	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	ZZZZZZ	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886663

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.555	0.50	0.5000	0	111	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886676**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	20.754	0.50	20.00	0	104	90	110				

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886688**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	21.126	0.50	20.00	0	106	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886700**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	20.930	0.50	20.00	0	105	90	110				

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886712**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	20.672	0.50	20.00	0	103	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ZZZZZZ**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886714**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.499	0.50	0.5000	0	99.8	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICV	SampType:	ICV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121175
Client ID:	ICV	Batch ID:	R121175	TestNo:	EPA 6020			Analysis Date:	1/2/2018	SeqNo:	2882369

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.283	1.0	10.00	0	103	90	110				

Sample ID	LLICV	SampType:	CCV1	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121175
Client ID:	ZZZZZZ	Batch ID:	R121175	TestNo:	EPA 6020			Analysis Date:	1/2/2018	SeqNo:	2882371

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.982	1.0	1.000	0	98.2	80	120				

Sample ID	CCV1	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121175
Client ID:	CCV	Batch ID:	R121175	TestNo:	EPA 6020			Analysis Date:	1/2/2018	SeqNo:	2882384

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.471	1.0	20.00	0	107	90	110				

Sample ID	CCV2	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121175
Client ID:	CCV	Batch ID:	R121175	TestNo:	EPA 6020			Analysis Date:	1/2/2018	SeqNo:	2882396

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.726	1.0	20.00	0	104	90	110				

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121175
Client ID:	ZZZZZZ	Batch ID:	R121175	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2882398

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.400	1.0	1.000	0	140	70	130				S

Cr in LLCCV1 is biased high. Cr for N027546-006 was not reported on this run. It was rerun on 1/3/18.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

01/08/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	CCV3	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121175
Client ID:	CCV	Batch ID:	R121175	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2882411

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.214	1.0	20.00	0	101	90	110				

Sample ID	CCV4	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121175
Client ID:	CCV	Batch ID:	R121175	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2882422

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.202	1.0	20.00	0	101	90	110				

Sample ID	LLCCV2	SampType:	CCV2	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121175
Client ID:	ZZZZZZ	Batch ID:	R121175	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2882424

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.239	1.0	1.000	0	124	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **ICV**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883782**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.082	1.0	10.00	0	101	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **ZZZZZZ**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.052	1.0	1.000	0	105	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **CCV**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883798**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.564	1.0	20.00	0	103	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **CCV**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883810**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.683	1.0	20.00	0	103	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **CCV**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883814**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.648	1.0	20.00	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **ZZZZZZ**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883816**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.049	1.0	1.000	0	105	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **ICV**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2884327**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.113	1.0	10.00	0	101	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **ZZZZZZ**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2884329**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.062	1.0	1.000	0	106	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCV**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2884343**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.194	1.0	20.00	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCV**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2884355**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.209	1.0	20.00	0	101	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCV**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884367**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.364	1.0	20.00	0	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **ZZZZZZ**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.052	1.0	1.000	0	105	70	130				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCV**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.257	1.0	20.00	0	101	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCV**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884394**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.261	1.0	20.00	0	101	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCV**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884406**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.128	1.0	20.00	0	101	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **ZZZZZZ**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884408**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.036	1.0	1.000	0	104	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCV**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884421**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.104	1.0	20.00	0	101	90	110				

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCV**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884433**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.352	1.0	20.00	0	102	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCV**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884445**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.112	1.0	20.00	0	101	90	110				

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCV**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.081	1.0	20.00	0	100	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **ZZZZZZ**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.075	1.0	1.000	0	107	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **ICV**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884938**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.948	1.0	10.00	0	99.5	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **ZZZZZZ**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.043	1.0	1.000	0	104	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **CCV**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.102	1.0	20.00	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **CCV**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.945	1.0	20.00	0	99.7	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **ZZZZZZ**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.025	1.0	1.000	0	102	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **ICB**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2882466**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.095	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.186	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Silver	0.136	0.50									
Thallium	0.146	0.50									
Zinc	ND	10									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **CCB**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2882481**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **CCB**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2882481**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	0.083	0.50									
Nickel	0.121	1.0									
Selenium	0.028	0.50									
Silver	0.170	0.50									
Thallium	ND	0.50									
Zinc	ND	10									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **CCB**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2882493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.032	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.077	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Silver	0.149	0.50									
Thallium	ND	0.50									
Zinc	ND	10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **CCB**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2882508**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.099	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **CCB**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2882519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.054	0.50									
Selenium	ND	0.50									

Reported analytes bracketed by CCV3/CCB3 to CCV4/CCB4/LLCCV2/ICSA3/ICSAB3 are just As Mn Mo & Se.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

01/08/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **ICB**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883820**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.046	0.50									
Vanadium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **CCB**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.034	0.50									
Vanadium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **CCB**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.042	0.50									
Vanadium	ND	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **CCB**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883852**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.040	0.50									
Vanadium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **ICB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2884459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.120	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2884475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.064	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2884487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.049	0.50									
Selenium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.046	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.055	0.50									
Selenium	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884526**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884538**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.041	0.50									
Selenium	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.044	0.50									
Selenium	ND	0.50									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884565**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.046	0.50									
Selenium	ND	0.50									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.043	0.50									
Selenium	ND	0.50									

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884585**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **CCB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884585**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.041	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **ICB**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884985**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.034	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **CCB**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2885001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **CCB**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2885013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICB	SampType:	ICB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	ICB	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886584

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	CCB1	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	CCB	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886599

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	CCB2	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	CCB	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886611

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	CCB3	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	CCB	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886623

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	CCB4	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	CCB	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886638

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.042	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	CCB5	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	CCB	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886650

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	CCB6	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	CCB	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886662

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	CCB7	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	CCB	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886677

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	CCB8	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	CCB	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886689

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	CCB9	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	CCB	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886701

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886713**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121175**
Client ID: **ICB**	Batch ID: **R121175**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2882370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121175**
Client ID: **CCB**	Batch ID: **R121175**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2882385**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.297	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121175**
Client ID: **CCB**	Batch ID: **R121175**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2882397**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.484	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121175**
Client ID: **CCB**	Batch ID: **R121175**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2882412**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.283	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121175**
Client ID: **CCB**	Batch ID: **R121175**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2882423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.283	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **ICB**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883783**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **CCB**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.091	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **CCB**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883811**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.021	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **CCB**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883815**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICB	SampType:	ICB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121203
Client ID:	ICB	Batch ID:	R121203	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2884328

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB1	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121203
Client ID:	CCB	Batch ID:	R121203	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2884344

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB2	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121203
Client ID:	CCB	Batch ID:	R121203	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2884356

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB3	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121203
Client ID:	CCB	Batch ID:	R121203	TestNo:	EPA 6020			Analysis Date:	1/4/2018	SeqNo:	2884368

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB4	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121203
Client ID:	CCB	Batch ID:	R121203	TestNo:	EPA 6020			Analysis Date:	1/4/2018	SeqNo:	2884383

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCB**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884395**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCB**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884407**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCB**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884422**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCB**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCB**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884446**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **CCB**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **ICB**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884939**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **CCB**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884955**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **CCB**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
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- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **ICSA**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2882468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.051	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.085	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Silver	ND	0.50									
Thallium	0.049	0.50									
Zinc	ND	10									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **ICSAB**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2882469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	20.158	0.50	20.00	0	101	80	120				
Arsenic	20.108	0.10	20.00	0	101	80	120				
Barium	16.516	1.0	20.00	0	82.6	80	120				
Beryllium	19.055	0.50	20.00	0	95.3	80	120				
Cadmium	16.332	0.50	20.00	0	81.7	80	120				
Cobalt	20.403	0.50	20.00	0	102	80	120				
Copper	18.648	1.0	20.00	0	93.2	80	120				
Lead	20.079	1.0	20.00	0	100	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **ICSAB**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2882469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	17.777	0.50	20.00	0	88.9	80	120				
Molybdenum	21.993	0.50	20.00	0	110	80	120				
Nickel	20.456	1.0	20.00	0	102	80	120				
Selenium	18.901	0.50	20.00	0	94.5	80	120				
Silver	18.500	0.50	20.00	0	92.5	80	120				
Thallium	21.103	0.50	20.00	0	106	80	120				
Zinc	17.542	10	20.00	0	87.7	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **ICSA**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2882495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Beryllium	ND	0.50									
Cadmium	ND	0.50									
Cobalt	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.045	0.50									
Nickel	ND	1.0									
Selenium	0.036	0.50									
Silver	ND	0.50									
Thallium	ND	0.50									
Zinc	ND	10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121176
Client ID:	ICSAB	Batch ID:	R121176	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2882496

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	20.039	0.50	20.00	0	100	80	120				
Arsenic	20.582	0.10	20.00	0	103	80	120				
Barium	16.828	1.0	20.00	0	84.1	80	120				
Beryllium	19.422	0.50	20.00	0	97.1	80	120				
Cadmium	16.250	0.50	20.00	0	81.2	80	120				
Cobalt	19.439	0.50	20.00	0	97.2	80	120				
Copper	18.226	1.0	20.00	0	91.1	80	120				
Lead	20.011	1.0	20.00	0	100	80	120				
Manganese	17.849	0.50	20.00	0	89.2	80	120				
Molybdenum	22.232	0.50	20.00	0	111	80	120				
Nickel	19.927	1.0	20.00	0	99.6	80	120				
Selenium	19.019	0.50	20.00	0	95.1	80	120				
Silver	18.602	0.50	20.00	0	93.0	80	120				
Thallium	20.980	0.50	20.00	0	105	80	120				
Zinc	17.198	10	20.00	0	86.0	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121176
Client ID:	ICSA	Batch ID:	R121176	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2882521

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121176
Client ID:	ICSAB	Batch ID:	R121176	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2882522

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.638	0.10	20.00	0	103	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Reported analytes bracketed by CCV3/CCB3 to CCV4/CCB4/LLCCV2/ICSA3/ICSAB3 are just As Mn Mo & Se.

01/08/20

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121176**
Client ID: **ICSAB**	Batch ID: **R121176**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2882522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	18.141	0.50	20.00	0	90.7	80	120				
Molybdenum	22.556	0.50	20.00	0	113	80	120				
Selenium	19.688	0.50	20.00	0	98.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **ICSA**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883822**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									
Vanadium	ND	1.0									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **ICSAB**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883823**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.171	0.50	20.00	0	95.9	80	120				
Vanadium	20.640	1.0	20.00	0	103	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **ICSA**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883854**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									
Vanadium	ND	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **ICSAB**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	20.232	0.50	20.00	0	101	80	120				
Vanadium	21.514	1.0	20.00	0	108	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **ICSA**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2884461**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.063	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **ICSAB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2884462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.063	0.10	20.00	0	105	80	120				
Manganese	18.133	0.50	20.00	0	90.7	80	120				
Molybdenum	22.178	0.50	20.00	0	111	80	120				
Selenium	20.522	0.50	20.00	0	103	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **ICSA**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **ICSAB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.724	0.10	20.00	0	104	80	120				
Manganese	18.075	0.50	20.00	0	90.4	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **ICSAB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	22.028	0.50	20.00	0	110	80	120				
Selenium	19.477	0.50	20.00	0	97.4	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **ICSA**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884540**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **ICSAB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884541**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.538	0.10	20.00	0	103	80	120				
Manganese	18.233	0.50	20.00	0	91.2	80	120				
Molybdenum	22.499	0.50	20.00	0	112	80	120				
Selenium	19.301	0.50	20.00	0	96.5	80	120				

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **ICSA**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884587**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.044	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121204**
Client ID: **ICSAB**	Batch ID: **R121204**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884588**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.631	0.10	20.00	0	103	80	120				
Manganese	17.976	0.50	20.00	0	89.9	80	120				
Molybdenum	22.134	0.50	20.00	0	111	80	120				
Selenium	20.127	0.50	20.00	0	101	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **ICSA**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884987**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **ICSAB**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884988**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	20.449	0.50	20.00	0	102	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **ICSA**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2885015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.030	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **ICSAB**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2885016**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	20.225	0.50	20.00	0	101	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	ICSA	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886586

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	ICSAB	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886587

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	20.130	0.50	20.00	0	101	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	ICSA	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886625

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	ICSAB	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886626

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	20.860	0.50	20.00	0	104	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	ICSA	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886664

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICSAB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.890	0.50	20.00	0	99.4	80	120				

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICSA**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICSAB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886716**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	20.435	0.50	20.00	0	102	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121175**
Client ID: **ICSA**	Batch ID: **R121175**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2882372**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121175**
Client ID: **ICSAB**	Batch ID: **R121175**	TestNo: **EPA 6020**		Analysis Date: **1/2/2018**	SeqNo: **2882373**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.994	1.0	20.00	0	105	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121175**
Client ID: **ICSA**	Batch ID: **R121175**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2882399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.469	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121175**
Client ID: **ICSAB**	Batch ID: **R121175**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2882400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.361	1.0	20.00	0	102	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121175**
Client ID: **ICSA**	Batch ID: **R121175**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2882425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121175**
Client ID: **ICSAB**	Batch ID: **R121175**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2882426**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.272	1.0	20.00	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **ICSA**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883785**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.068	1.0									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **ICSAB**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883786**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.174	1.0	20.00	0	101	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **ICSA**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883817**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.080	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121192**
Client ID: **ICSAB**	Batch ID: **R121192**	TestNo: **EPA 6020**		Analysis Date: **1/3/2018**	SeqNo: **2883818**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.812	1.0	20.00	0	104	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121203
Client ID:	ICSA	Batch ID:	R121203	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2884330

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.072	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121203
Client ID:	ICSAB	Batch ID:	R121203	TestNo:	EPA 6020			Analysis Date:	1/3/2018	SeqNo:	2884331

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.330	1.0	20.00	0	102	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121203
Client ID:	ICSA	Batch ID:	R121203	TestNo:	EPA 6020			Analysis Date:	1/4/2018	SeqNo:	2884370

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.063	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121203
Client ID:	ICSAB	Batch ID:	R121203	TestNo:	EPA 6020			Analysis Date:	1/4/2018	SeqNo:	2884371

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.154	1.0	20.00	0	101	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121203
Client ID:	ICSA	Batch ID:	R121203	TestNo:	EPA 6020			Analysis Date:	1/4/2018	SeqNo:	2884409

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.068	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **ICSAB**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.137	1.0	20.00	0	101	80	120				

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **ICSA**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884456**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.078	1.0									

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121203**
Client ID: **ICSAB**	Batch ID: **R121203**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884457**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.110	1.0	20.00	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **ICSA**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884941**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.083	1.0									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **ICSAB**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884942**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.088	1.0	20.00	0	100	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **ICSA**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.065	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121212**
Client ID: **ICSAB**	Batch ID: **R121212**	TestNo: **EPA 6020**		Analysis Date: **1/4/2018**	SeqNo: **2884970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.206	1.0	20.00	0	101	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [3]					115 In (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	3775722.8	3775722.8	100	PASS	70-125	3954056.4	3954056.4	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	3808721.3	3775722.8	100.87	PASS	70-125	3980253.4	3954056.4	100.66	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	3798117.5	3775722.8	100.59	PASS	70-125	3996528	3954056.4	101.07	PASS	70-125
Std3-5/50 ppb	ICAL	1	3836229.4	3775722.8	101.6	PASS	70-125	4038976.4	3954056.4	102.15	PASS	70-125
Std4-10/100 ppb	ICAL	1	3849082.2	3775722.8	101.94	PASS	70-125	4086986.9	3954056.4	103.36	PASS	70-125
Std5-20/200 ppb	ICAL	1	3832716.6	3775722.8	101.51	PASS	70-125	4057822.3	3954056.4	102.62	PASS	70-125
Std6-40/400 ppb	ICAL	1	3823378.1	3775722.8	101.26	PASS	70-125	4104545.1	3954056.4	103.81	PASS	70-125
Std7-100/1000 ppb	ICAL	1	3765315.6	3775722.8	99.72	PASS	70-125	4064312.4	3954056.4	102.79	PASS	70-125
Std8-200/2000 ppb	ICAL	1	3730506.6	3775722.8	98.8	PASS	70-125	4037997.7	3954056.4	102.12	PASS	70-125
ICV	ICV	1	3851464.7	3775722.8	102.01	PASS	70-125	4087564	3954056.4	103.38	PASS	70-125
ICB	ICB	1	3813599.1	3775722.8	101	PASS	70-125	4001392.5	3954056.4	101.2	PASS	70-125
LLICV	CCV1	1	3824182.8	3775722.8	101.28	PASS	70-125	4035018.2	3954056.4	102.05	PASS	70-125
ICSA1	ICSA	1	3415749	3775722.8	90.47	PASS	70-125	3680933.6	3954056.4	93.093	PASS	70-125
ICSAB1	ICSAB	1	3442515	3775722.8	91.17	PASS	70-125	3705867.6	3954056.4	93.72	PASS	70-125
MB-66022	MBLK	1	3968470.2	3775722.8	105.1	PASS	70-125	4143308.8	3954056.4	104.79	PASS	70-125
LCS-66022	LCS	1	3912285.4	3775722.8	103.62	PASS	70-125	4146248.4	3954056.4	104.86	PASS	70-125
N027485-009B	SAMP	1	3445970.7	3775722.8	91.27	PASS	70-125	3762248.6	3954056.4	95.15	PASS	70-125
N027485-009B	SAMP	5	3919798.3	3775722.8	103.82	PASS	70-125	4192923.4	3954056.4	106.04	PASS	70-125
N027485-011C	SAMP	1	3622027.8	3775722.8	95.93	PASS	70-125	3934835	3954056.4	99.51	PASS	70-125
N027485-011C	SAMP	5	3901040.9	3775722.8	103.32	PASS	70-125	4216698.4	3954056.4	106.64	PASS	70-125
N027485-012C	SAMP	1	3460093.4	3775722.8	91.64	PASS	70-125	3757767.4	3954056.4	95.036	PASS	70-125
N027485-012C	SAMP	5	3771938.5	3775722.8	99.9	PASS	70-125	4062484.1	3954056.4	102.74	PASS	70-125
N027546-006B	SAMP	1	3652579	3775722.8	96.74	PASS	70-125	3947101.1	3954056.4	99.82	PASS	70-125
N027546-006B	SAMP	5	3583150.6	3775722.8	94.9	PASS	70-125	3823727.3	3954056.4	96.7	PASS	70-125
CCV1	CCV	1	3655334.3	3775722.8	96.81	PASS	70-125	3902864	3954056.4	98.71	PASS	70-125
CCB1	CCB	1	3708503.4	3775722.8	98.22	PASS	70-125	3862621.5	3954056.4	97.69	PASS	70-125
N027485-001B	SAMP	1	3262600.1	3775722.8	86.41	PASS	70-125	3555069.2	3954056.4	89.91	PASS	70-125
N027485-001B	SAMP	5	3444694.1	3775722.8	91.23	PASS	70-125	3732283.9	3954056.4	94.39	PASS	70-125
N027485-001B	SAMP	25	3551442.4	3775722.8	94.06	PASS	70-125	3858371.5	3954056.4	97.58	PASS	70-125
N027485-001B-PS	PS	1	3314982.9	3775722.8	87.8	PASS	70-125	3650039.1	3954056.4	92.31	PASS	70-125
N027485-001B-PS	PS	5	3470656.8	3775722.8	91.92	PASS	70-125	3771151.4	3954056.4	95.37	PASS	70-125
N027485-001B-MS	MS	1	3220829.9	3775722.8	85.3	PASS	70-125	3546822.4	3954056.4	89.7	PASS	70-125
N027485-001B-MS	MS	1	3446011.4	3775722.8	91.27	PASS	70-125	3725193.1	3954056.4	94.21	PASS	70-125
N027485-001B-MSD	MSD	1	3217600.2	3775722.8	85.22	PASS	70-125	3554711.7	3954056.4	89.9	PASS	70-125
N027485-001B-MSD	MSD	5	3480131.3	3775722.8	92.17	PASS	70-125	3803936.7	3954056.4	96.2	PASS	70-125
N027485-002B	SAMP	1	2403664.4	3775722.8	63.66	NR!	70-125	2673388.9	3954056.4	67.61	NR!	70-125
CCV2	CCV	1	4074984.4	3775722.8	107.93	PASS	70-125	4240054.9	3954056.4	107.23	PASS	70-125
CCB2	CCB	1	3890360.5	3775722.8	103.04	PASS	70-125	4048968	3954056.4	102.4	PASS	70-125
LLCCV1	CCV2	1	3655047.1	3775722.8	96.8	PASS	70-125	3893882.7	3954056.4	98.48	PASS	70-125
ICSA2	ICSA	1	3142610.9	3775722.8	83.23	PASS	70-125	3455485.4	3954056.4	87.39	PASS	70-125
ICSAB2	ICSAB	1	3178898.6	3775722.8	84.19	PASS	70-125	3445848.8	3954056.4	87.15	PASS	70-125

INTERNAL STANDARD: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [3]					115 In (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027485-002B	SAMP	5	3081273.8	3775722.8	81.61	PASS	70-125	3381944.9	3954056.4	85.53	PASS	70-125
N027485-003B	SAMP	1	2349692.2	3775722.8	62.23	NR!	70-125	2608102.8	3954056.4	65.96	NR!	70-125
N027485-003B	SAMP	5	3126932	3775722.8	82.82	PASS	70-125	3393884	3954056.4	85.83	PASS	70-125
N027485-004B	SAMP	1	2372491.3	3775722.8	62.84	NR!	70-125	2626862.5	3954056.4	66.43	NR!	70-125
N027485-004B	SAMP	5	3185818	3775722.8	84.38	PASS	70-125	3501922.1	3954056.4	88.57	PASS	70-125
N027485-005B	SAMP	1	2273661.2	3775722.8	60.22	NR!	70-125	2512423.6	3954056.4	63.54	NR!	70-125
N027485-005B	SAMP	5	3031993.3	3775722.8	80.3	PASS	70-125	3319749.8	3954056.4	83.96	PASS	70-125
N027485-006B	SAMP	1	2270607.8	3775722.8	60.14	NR!	70-125	2519357	3954056.4	63.72	NR!	70-125
N027485-006B	SAMP	5	2944557.8	3775722.8	77.99	PASS	70-125	3210945.9	3954056.4	81.21	PASS	70-125
N027485-007B	SAMP	1	2186862.1	3775722.8	57.92	NR!	70-125	2438914.1	3954056.4	61.68	NR!	70-125
CCV3	CCV	1	3642317.5	3775722.8	96.47	PASS	70-125	3850291	3954056.4	97.38	PASS	70-125
CCB3	CCB	1	3571746.4	3775722.8	94.6	PASS	70-125	3757353.2	3954056.4	95.025	PASS	70-125
N027485-007B	SAMP	5	2786810.8	3775722.8	73.81	PASS	70-125	3077351.5	3954056.4	77.83	PASS	70-125
N027485-008B	SAMP	1	2876329	3775722.8	76.18	PASS	70-125	3145802.6	3954056.4	79.56	PASS	70-125
N027485-008B	SAMP	5	3130281.9	3775722.8	82.91	PASS	70-125	3408596.2	3954056.4	86.21	PASS	70-125
N027485-010B	SAMP	1	2356957.6	3775722.8	62.42	NR!	70-125	2601140.9	3954056.4	65.78	NR!	70-125
N027485-010B	SAMP	5	2826907.6	3775722.8	74.87	PASS	70-125	3093314.1	3954056.4	78.23	PASS	70-125
N027485-009B	SAMP	25	3011178.3	3775722.8	79.75	PASS	70-125	3288772.5	3954056.4	83.17	PASS	70-125
N027485-011C	SAMP	25	3068805	3775722.8	81.28	PASS	70-125	3356226.3	3954056.4	84.88	PASS	70-125
N027485-012C	SAMP	25	3072967.6	3775722.8	81.39	PASS	70-125	3360335	3954056.4	84.98	PASS	70-125
LLCCV2	CCV2	1	3050009.3	3775722.8	80.78	PASS	70-125	3297611	3954056.4	83.4	PASS	70-125
CCV4	CCV	1	3235109.6	3775722.8	85.68	PASS	70-125	3431619.1	3954056.4	86.79	PASS	70-125
CCB4	CCB	1	3159489.2	3775722.8	83.68	PASS	70-125	3371879.9	3954056.4	85.28	PASS	70-125
LLCCV2	CCV2	1	3228697	3775722.8	85.51	PASS	70-125	3493522.7	3954056.4	88.35	PASS	70-125
ICSA3	ICSA	1	4126116.5	3775722.8	109.28	PASS	70-125	4573179.4	3954056.4	115.66	PASS	70-125
ICSAB3	ICSAB	1	2763048	3775722.8	73.18	PASS	70-125	3066081.4	3954056.4	77.54	PASS	70-125

INTERNAL STANDARD: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					209 Bi (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	5913717.1	5913717.1	100	PASS	70-125	3875214.8	3875214.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	5979755.8	5913717.1	101.12	PASS	70-125	3907398.6	3875214.8	100.83	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	5937076.5	5913717.1	100.4	PASS	70-125	3896201.5	3875214.8	100.54	PASS	70-125
Std3-5/50 ppb	ICAL	1	6046709.2	5913717.1	102.25	PASS	70-125	3929770.2	3875214.8	101.41	PASS	70-125
Std4-10/100 ppb	ICAL	1	6007765	5913717.1	101.59	PASS	70-125	3909171.4	3875214.8	100.88	PASS	70-125
Std5-20/200 ppb	ICAL	1	6027729.7	5913717.1	101.93	PASS	70-125	3960602.5	3875214.8	102.2	PASS	70-125
Std6-40/400 ppb	ICAL	1	6074968.8	5913717.1	102.73	PASS	70-125	3964164.4	3875214.8	102.3	PASS	70-125
Std7-100/1000 ppb	ICAL	1	6048387.6	5913717.1	102.28	PASS	70-125	3950157.7	3875214.8	101.93	PASS	70-125
Std8-200/2000 ppb	ICAL	1	6082542.3	5913717.1	102.85	PASS	70-125	3956678.2	3875214.8	102.1	PASS	70-125
ICV	ICV	1	6046272.3	5913717.1	102.24	PASS	70-125	3947079.9	3875214.8	101.85	PASS	70-125
ICB	ICB	1	5975990.1	5913717.1	101.05	PASS	70-125	3922633.9	3875214.8	101.22	PASS	70-125
LLICV	CCV1	1	6124964.4	5913717.1	103.57	PASS	70-125	3945297.9	3875214.8	101.81	PASS	70-125
ICSA1	ICSA	1	5687649.1	5913717.1	96.18	PASS	70-125	3267142.8	3875214.8	84.31	PASS	70-125
ICSAB1	ICSAB	1	5675092.4	5913717.1	95.96	PASS	70-125	3291966.3	3875214.8	84.95	PASS	70-125
MB-66022	MBLK	1	6131596	5913717.1	103.68	PASS	70-125	3973110.9	3875214.8	102.53	PASS	70-125
LCS-66022	LCS	1	6225022.5	5913717.1	105.26	PASS	70-125	4034066.8	3875214.8	104.1	PASS	70-125
N027485-009B	SAMP	1	5472994.9	5913717.1	92.55	PASS	70-125	2811878.6	3875214.8	72.56	PASS	70-125
N027485-009B	SAMP	5	6138409.8	5913717.1	103.8	PASS	70-125	3482499	3875214.8	89.87	PASS	70-125
N027485-011C	SAMP	1	5784165.6	5913717.1	97.81	PASS	70-125	3106885.2	3875214.8	80.17	PASS	70-125
N027485-011C	SAMP	5	6134797.7	5913717.1	103.74	PASS	70-125	3559517.1	3875214.8	91.85	PASS	70-125
N027485-012C	SAMP	1	5560599.9	5913717.1	94.029	PASS	70-125	3002213.2	3875214.8	77.47	PASS	70-125
N027485-012C	SAMP	5	5970345.8	5913717.1	100.96	PASS	70-125	3492777.4	3875214.8	90.13	PASS	70-125
N027546-006B	SAMP	1	5870250.9	5913717.1	99.26	PASS	70-125	3254798.8	3875214.8	83.99	PASS	70-125
N027546-006B	SAMP	5	5721425.2	5913717.1	96.75	PASS	70-125	3439089.5	3875214.8	88.75	PASS	70-125
CCV1	CCV	1	5801886.4	5913717.1	98.11	PASS	70-125	3757031.5	3875214.8	96.95	PASS	70-125
CCB1	CCB	1	5765210.1	5913717.1	97.49	PASS	70-125	3732397.7	3875214.8	96.31	PASS	70-125
N027485-001B	SAMP	1	5402879.5	5913717.1	91.36	PASS	70-125	3000170.5	3875214.8	77.42	PASS	70-125
N027485-001B	SAMP	5	5634027.3	5913717.1	95.27	PASS	70-125	3409365.5	3875214.8	87.98	PASS	70-125
N027485-001B	SAMP	25	5740861.4	5913717.1	97.077	PASS	70-125	3664372.6	3875214.8	94.56	PASS	70-125
N027485-001B-PS	PS	1	5550142.3	5913717.1	93.85	PASS	70-125	3091239.6	3875214.8	79.77	PASS	70-125
N027485-001B-PS	PS	5	5652196.2	5913717.1	95.58	PASS	70-125	3429024.9	3875214.8	88.49	PASS	70-125
N027485-001B-MS	MS	1	5393541.1	5913717.1	91.2	PASS	70-125	2961653.2	3875214.8	76.43	PASS	70-125
N027485-001B-MS	MS	1	5658812.6	5913717.1	95.69	PASS	70-125	3401802.4	3875214.8	87.78	PASS	70-125
N027485-001B-MSD	MSD	1	5360215.4	5913717.1	90.64	PASS	70-125	2975377.2	3875214.8	76.78	PASS	70-125
N027485-001B-MSD	MSD	5	5699209.3	5913717.1	96.37	PASS	70-125	3419898	3875214.8	88.25	PASS	70-125
N027485-002B	SAMP	1	4111597.2	5913717.1	69.53	NR!	70-125	2124923.1	3875214.8	54.83	NR!	70-125
CCV2	CCV	1	6067086.2	5913717.1	102.59	PASS	70-125	3869408.8	3875214.8	99.85	PASS	70-125
CCB2	CCB	1	5960556.4	5913717.1	100.79	PASS	70-125	3801653.6	3875214.8	98.1	PASS	70-125
LLCCV1	CCV2	1	5715189.9	5913717.1	96.64	PASS	70-125	3647133.2	3875214.8	94.11	PASS	70-125
ICSA2	ICSA	1	5236403	5913717.1	88.55	PASS	70-125	3019773.9	3875214.8	77.93	PASS	70-125
ICSAB2	ICSAB	1	5264422.5	5913717.1	89.021	PASS	70-125	3039340.5	3875214.8	78.43	PASS	70-125

INTERNAL STANDARD: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					209 Bi (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027485-002B	SAMP	5	5207721.9	5913717.1	88.062	PASS	70-125	2940687.4	3875214.8	75.88	PASS	70-125
N027485-003B	SAMP	1	4049302.8	5913717.1	68.47	NR!	70-125	2073043.2	3875214.8	53.49	NR!	70-125
N027485-003B	SAMP	5	5067001.8	5913717.1	85.68	PASS	70-125	2861773.3	3875214.8	73.85	PASS	70-125
N027485-004B	SAMP	1	3972702.4	5913717.1	67.18	NR!	70-125	2066072.5	3875214.8	53.32	NR!	70-125
N027485-004B	SAMP	5	5132303.5	5913717.1	86.79	PASS	70-125	2880816.2	3875214.8	74.34	PASS	70-125
N027485-005B	SAMP	1	3727966.3	5913717.1	63.039	NR!	70-125	1850134.9	3875214.8	47.74	NR!	70-125
N027485-005B	SAMP	5	4891041.1	5913717.1	82.71	PASS	70-125	2691069.8	3875214.8	69.44	NR!	70-125
N027485-006B	SAMP	1	3779960	5913717.1	63.92	NR!	70-125	1859945.1	3875214.8	48	NR!	70-125
N027485-006B	SAMP	5	4768890.8	5913717.1	80.64	PASS	70-125	2638344.5	3875214.8	68.083	NR!	70-125
N027485-007B	SAMP	1	3637366.9	5913717.1	61.51	NR!	70-125	1798908.1	3875214.8	46.42	NR!	70-125
CCV3	CCV	1	5466808.7	5913717.1	92.44	PASS	70-125	3446836.3	3875214.8	88.95	PASS	70-125
CCB3	CCB	1	5401394.4	5913717.1	91.34	PASS	70-125	3440919.9	3875214.8	88.79	PASS	70-125
N027485-007B	SAMP	5	4654468.7	5913717.1	78.71	PASS	70-125	2589127.2	3875214.8	66.81	NR!	70-125
N027485-008B	SAMP	1	4784799.3	5913717.1	80.91	PASS	70-125	2706802.7	3875214.8	69.85	NR!	70-125
N027485-008B	SAMP	5	5095023.4	5913717.1	86.16	PASS	70-125	3123088.3	3875214.8	80.59	PASS	70-125
N027485-010B	SAMP	1	4009987.3	5913717.1	67.81	NR!	70-125	2148692.3	3875214.8	55.45	NR!	70-125
N027485-010B	SAMP	5	4674254.5	5913717.1	79.041	PASS	70-125	2743157	3875214.8	70.79	PASS	70-125
N027485-009B	SAMP	25	4961442.1	5913717.1	83.9	PASS	70-125	3042830.4	3875214.8	78.52	PASS	70-125
N027485-011C	SAMP	25	4960540.6	5913717.1	83.88	PASS	70-125	3165411.4	3875214.8	81.68	PASS	70-125
N027485-012C	SAMP	25	4988793.1	5913717.1	84.36	PASS	70-125	3207632.5	3875214.8	82.77	PASS	70-125
LLCCV2	CCV2	1	4932040	5913717.1	83.4	PASS	70-125	3216248.4	3875214.8	83	PASS	70-125
CCV4	CCV	1	5067239.5	5913717.1	85.69	PASS	70-125	3332812.1	3875214.8	86.003	PASS	70-125
CCB4	CCB	1	5087328.5	5913717.1	86.026	PASS	70-125	3245156	3875214.8	83.74	PASS	70-125
LLCCV2	CCV2	1	5196193.8	5913717.1	87.87	PASS	70-125	3317138	3875214.8	85.6	PASS	70-125
ICSA3	ICSA	1	7266103.2	5913717.1	122.87	PASS	70-125	4224426.8	3875214.8	109.01	PASS	70-125
ICSAB3	ICSAB	1	4737886	5913717.1	80.12	PASS	70-125	2728650.5	3875214.8	70.41	PASS	70-125

INTERNAL STANDARD: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	80897.7	80897.7	100	PASS	70-125	56305.4	56305.4	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	82706.8	80897.7	102.24	PASS	70-125	57389.6	56305.4	101.93	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	83288.4	80897.7	102.96	PASS	70-125	57952.5	56305.4	102.93	PASS	70-125
Std3-5/50 ppb	ICAL	1	84719.8	80897.7	104.72	PASS	70-125	58679.5	56305.4	104.22	PASS	70-125
Std4-10/100 ppb	ICAL	1	85806.6	80897.7	106.07	PASS	70-125	59176.9	56305.4	105.1	PASS	70-125
Std5-20/200 ppb	ICAL	1	84869.9	80897.7	104.91	PASS	70-125	59008.5	56305.4	104.8	PASS	70-125
Std6-40/400 ppb	ICAL	1	87563	80897.7	108.24	PASS	70-125	58734.2	56305.4	104.31	PASS	70-125
Std7-100/1000 ppb	ICAL	1	86766.9	80897.7	107.26	PASS	70-125	59082.2	56305.4	104.93	PASS	70-125
Std8-200/2000 ppb	ICAL	1	87126.7	80897.7	107.7	PASS	70-125	58642.8	56305.4	104.15	PASS	70-125
ICV	ICV	1	77479.4	80897.7	95.77	PASS	70-125	54271	56305.4	96.39	PASS	70-125
ICB	ICB	1	83460	80897.7	103.17	PASS	70-125	57492	56305.4	102.11	PASS	70-125
LLICV	CCV1	1	84278.7	80897.7	104.18	PASS	70-125	58523.5	56305.4	103.94	PASS	70-125
ICSA1	ICSA	1	83719.4	80897.7	103.49	PASS	70-125	54821.9	56305.4	97.37	PASS	70-125
ICSAB1	ICSAB	1	77064.2	80897.7	95.26	PASS	70-125	51291.4	56305.4	91.095	PASS	70-125
MB-66022	MBLK	1	85726.9	80897.7	105.97	PASS	70-125	58417.6	56305.4	103.75	PASS	70-125
LCS-66022	LCS	1	84538	80897.7	104.5	PASS	70-125	57919.2	56305.4	102.87	PASS	70-125
N027485-009B	SAMP	1	87990	80897.7	108.77	PASS	70-125	52900	56305.4	93.95	PASS	70-125
N027485-009B	SAMP	5	98824.3	80897.7	122.16	PASS	70-125	63111.5	56305.4	112.09	PASS	70-125
N027485-011C	SAMP	1	98206.4	80897.7	121.4	PASS	70-125	60073.6	56305.4	106.69	PASS	70-125
N027485-011C	SAMP	5	97760.6	80897.7	120.84	PASS	70-125	63045.7	56305.4	111.97	PASS	70-125
N027485-012C	SAMP	1	93302.2	80897.7	115.33	PASS	70-125	57368.1	56305.4	101.89	PASS	70-125
N027485-012C	SAMP	5	93929.5	80897.7	116.11	PASS	70-125	61244.4	56305.4	108.77	PASS	70-125
N027546-006B	SAMP	1	93213.7	80897.7	115.22	PASS	70-125	59538.1	56305.4	105.74	PASS	70-125
N027546-006B	SAMP	5	82783.1	80897.7	102.33	PASS	70-125	55816.4	56305.4	99.13	PASS	70-125
CCV1	CCV	1	71979.4	80897.7	88.98	PASS	70-125	50902.7	56305.4	90.4	PASS	70-125
CCB1	CCB	1	76955.5	80897.7	95.13	PASS	70-125	53645.5	56305.4	95.28	PASS	70-125
N027485-001B	SAMP	1	81142	80897.7	100.3	PASS	70-125	51975.7	56305.4	92.31	PASS	70-125
N027485-001B	SAMP	5	81016	80897.7	100.15	PASS	70-125	53745	56305.4	95.45	PASS	70-125
N027485-001B	SAMP	25	79471.1	80897.7	98.24	PASS	70-125	55154.8	56305.4	97.96	PASS	70-125
N027485-001B-PS	PS	1	83848.6	80897.7	103.65	PASS	70-125	52786.1	56305.4	93.75	PASS	70-125
N027485-001B-PS	PS	5	80911.3	80897.7	100.02	PASS	70-125	54210.8	56305.4	96.28	PASS	70-125
N027485-001B-MS	MS	1	80373.3	80897.7	99.35	PASS	70-125	51087.6	56305.4	90.73	PASS	70-125
N027485-001B-MS	MS	1	81509.5	80897.7	100.76	PASS	70-125	53767.1	56305.4	95.49	PASS	70-125
N027485-001B-MSD	MSD	1	81760	80897.7	101.07	PASS	70-125	51828.6	56305.4	92.049	PASS	70-125
N027485-001B-MSD	MSD	5	81411.1	80897.7	100.63	PASS	70-125	54785	56305.4	97.3	PASS	70-125
N027485-002B	SAMP	1	70275.5	80897.7	86.87	PASS	70-125	40624.7	56305.4	72.15	PASS	70-125
CCV2	CCV	1	92712.6	80897.7	114.6	PASS	70-125	62135.5	56305.4	110.35	PASS	70-125
CCB2	CCB	1	87837.2	80897.7	108.58	PASS	70-125	59579.6	56305.4	105.82	PASS	70-125
LLCCV1	CCV2	1	80273.7	80897.7	99.23	PASS	70-125	55165	56305.4	97.97	PASS	70-125
ICSA2	ICSA	1	74708	80897.7	92.35	PASS	70-125	49353.2	56305.4	87.65	PASS	70-125
ICSAB2	ICSAB	1	76525.8	80897.7	94.6	PASS	70-125	49854.8	56305.4	88.54	PASS	70-125

INTERNAL STANDARD: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027485-002B	SAMP	5	73221.2	80897.7	90.51	PASS	70-125	47804.3	56305.4	84.9	PASS	70-125
N027485-003B	SAMP	1	68505.7	80897.7	84.68	PASS	70-125	40328.5	56305.4	71.62	PASS	70-125
N027485-003B	SAMP	5	78865.7	80897.7	97.49	PASS	70-125	50311.7	56305.4	89.36	PASS	70-125
N027485-004B	SAMP	1	67804.1	80897.7	83.81	PASS	70-125	39487.6	56305.4	70.13	PASS	70-125
N027485-004B	SAMP	5	79041	80897.7	97.7	PASS	70-125	50474.5	56305.4	89.64	PASS	70-125
N027485-005B	SAMP	1	63386.8	80897.7	78.35	PASS	70-125	36468.2	56305.4	64.77	NR!	70-125
N027485-005B	SAMP	5	74197.8	80897.7	91.72	PASS	70-125	47392.2	56305.4	84.17	PASS	70-125
N027485-006B	SAMP	1	65333	80897.7	80.76	PASS	70-125	37291.3	56305.4	66.23	NR!	70-125
N027485-006B	SAMP	5	71522.8	80897.7	88.41	PASS	70-125	45593.5	56305.4	80.98	PASS	70-125
N027485-007B	SAMP	1	61141.9	80897.7	75.58	PASS	70-125	34934.9	56305.4	62.045	NR!	70-125
CCV3	CCV	1	76222.5	80897.7	94.22	PASS	70-125	52483.1	56305.4	93.21	PASS	70-125
CCB3	CCB	1	75158.7	80897.7	92.91	PASS	70-125	52419.5	56305.4	93.099	PASS	70-125
N027485-007B	SAMP	5	69909.1	80897.7	86.42	PASS	70-125	44040.4	56305.4	78.22	PASS	70-125
N027485-008B	SAMP	1	68417.8	80897.7	84.57	PASS	70-125	44907.2	56305.4	79.76	PASS	70-125
N027485-008B	SAMP	5	70970.7	80897.7	87.73	PASS	70-125	47788.7	56305.4	84.87	PASS	70-125
N027485-010B	SAMP	1	61747.5	80897.7	76.33	PASS	70-125	37792.5	56305.4	67.12	NR!	70-125
N027485-010B	SAMP	5	66400.8	80897.7	82.08	PASS	70-125	43253.8	56305.4	76.82	PASS	70-125
N027485-009B	SAMP	25	66985.4	80897.7	82.8	PASS	70-125	46067.1	56305.4	81.82	PASS	70-125
N027485-011C	SAMP	25	67464.9	80897.7	83.4	PASS	70-125	46754.5	56305.4	83.037	PASS	70-125
N027485-012C	SAMP	25	68006.1	80897.7	84.064	PASS	70-125	47106.7	56305.4	83.66	PASS	70-125
LLCCV2	CCV2	1	56409.8	80897.7	69.73	NR!	70-125	40420.9	56305.4	71.79	PASS	70-125
CCV4	CCV	1	69088.2	80897.7	85.4	PASS	70-125	47662.7	56305.4	84.65	PASS	70-125
CCB4	CCB	1	67610	80897.7	83.57	PASS	70-125	47224.7	56305.4	83.87	PASS	70-125
LLCCV2	CCV2	1	70101.4	80897.7	86.65	PASS	70-125	47607.1	56305.4	84.55	PASS	70-125
ICSA3	ICSA	1	86091	80897.7	106.42	PASS	70-125	58220.4	56305.4	103.4	PASS	70-125
ICSAB3	ICSAB	1	65804	80897.7	81.34	PASS	70-125	43019.6	56305.4	76.4	PASS	70-125

INTERNAL STANDARD: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					6 Li (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	65197.5	65197.5	100	PASS	70-125	1184720	1184720	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	67194.4	65197.5	103.06	PASS	70-125	1234369.5	1184720	104.19	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	67326.1	65197.5	103.26	PASS	70-125	1217043	1184720	102.73	PASS	70-125
Std3-5/50 ppb	ICAL	1	69988.1	65197.5	107.35	PASS	70-125	1242922.6	1184720	104.91	PASS	70-125
Std4-10/100 ppb	ICAL	1	69723.9	65197.5	106.94	PASS	70-125	1244722.1	1184720	105.07	PASS	70-125
Std5-20/200 ppb	ICAL	1	68335.8	65197.5	104.81	PASS	70-125	1236093.4	1184720	104.34	PASS	70-125
Std6-40/400 ppb	ICAL	1	69998.5	65197.5	107.36	PASS	70-125	1214841.6	1184720	102.54	PASS	70-125
Std7-100/1000 ppb	ICAL	1	69846.6	65197.5	107.13	PASS	70-125	1214189.9	1184720	102.49	PASS	70-125
Std8-200/2000 ppb	ICAL	1	69432.4	65197.5	106.5	PASS	70-125	1231118.4	1184720	103.92	PASS	70-125
ICV	ICV	1	60655.7	65197.5	93.034	PASS	70-125	1272466.9	1184720	107.41	PASS	70-125
ICB	ICB	1	68889.4	65197.5	105.66	PASS	70-125	1221895.3	1184720	103.14	PASS	70-125
LLICV	CCV1	1	70516	65197.5	108.16	PASS	70-125	1228412.7	1184720	103.69	PASS	70-125
ICSA1	ICSA	1	65429.3	65197.5	100.36	PASS	70-125	1223667.2	1184720	103.29	PASS	70-125
ICSAB1	ICSAB	1	57487.5	65197.5	88.17	PASS	70-125	1239628	1184720	104.63	PASS	70-125
MB-66022	MBLK	1	70796.3	65197.5	108.59	PASS	70-125	1290744.4	1184720	108.95	PASS	70-125
LCS-66022	LCS	1	70981.4	65197.5	108.87	PASS	70-125	1263784.6	1184720	106.67	PASS	70-125
N027485-009B	SAMP	1	56972.4	65197.5	87.38	PASS	70-125	894019.2	1184720	75.46	PASS	70-125
N027485-009B	SAMP	5	76523.1	65197.5	117.37	PASS	70-125	1307895.2	1184720	110.4	PASS	70-125
N027485-011C	SAMP	1	70501.3	65197.5	108.13	PASS	70-125	1218049.1	1184720	102.81	PASS	70-125
N027485-011C	SAMP	5	76470.3	65197.5	117.29	PASS	70-125	1350177.6	1184720	113.97	PASS	70-125
N027485-012C	SAMP	1	67732	65197.5	103.89	PASS	70-125	1193552.4	1184720	100.75	PASS	70-125
N027485-012C	SAMP	5	74336.1	65197.5	114.02	PASS	70-125	1291751.8	1184720	109.03	PASS	70-125
N027546-006B	SAMP	1	71200.2	65197.5	109.21	PASS	70-125	1266227.6	1184720	106.88	PASS	70-125
N027546-006B	SAMP	5	69425.8	65197.5	106.49	PASS	70-125	1119836.8	1184720	94.52	PASS	70-125
CCV1	CCV	1	58007.1	65197.5	88.97	PASS	70-125	1108736.8	1184720	93.59	PASS	70-125
CCB1	CCB	1	65760.8	65197.5	100.86	PASS	70-125	1101496.7	1184720	92.98	PASS	70-125
N027485-001B	SAMP	1	60724.7	65197.5	93.14	PASS	70-125	1058025.3	1184720	89.31	PASS	70-125
N027485-001B	SAMP	5	65569	65197.5	100.57	PASS	70-125	1130912.5	1184720	95.46	PASS	70-125
N027485-001B	SAMP	25	66851.6	65197.5	102.54	PASS	70-125	1126947.4	1184720	95.12	PASS	70-125
N027485-001B-PS	PS	1	62083	65197.5	95.22	PASS	70-125	1104695.8	1184720	93.25	PASS	70-125
N027485-001B-PS	PS	5	65770.8	65197.5	100.88	PASS	70-125	1113239.6	1184720	93.97	PASS	70-125
N027485-001B-MS	MS	1	58915.1	65197.5	90.36	PASS	70-125	1080099.3	1184720	91.17	PASS	70-125
N027485-001B-MS	MS	1	65542.1	65197.5	100.53	PASS	70-125	1119277	1184720	94.48	PASS	70-125
N027485-001B-MSD	MSD	1	60047.8	65197.5	92.1	PASS	70-125	1092921	1184720	92.25	PASS	70-125
N027485-001B-MSD	MSD	5	65381.8	65197.5	100.28	PASS	70-125	1126092	1184720	95.051	PASS	70-125
N027485-002B	SAMP	1	45994.4	65197.5	70.55	PASS	70-125	557760.7	1184720	47.08	NR!	70-125
CCV2	CCV	1	72317.2	65197.5	110.92	PASS	70-125	1328893.1	1184720	112.17	PASS	70-125
CCB2	CCB	1	72706.7	65197.5	111.52	PASS	70-125	1242086.3	1184720	104.84	PASS	70-125
LLCCV1	CCV2	1	68424	65197.5	104.95	PASS	70-125	1126602.3	1184720	95.094	PASS	70-125
ICSA2	ICSA	1	60724.7	65197.5	93.14	PASS	70-125	1065580.8	1184720	89.94	PASS	70-125
ICSAB2	ICSAB	1	60142.5	65197.5	92.25	PASS	70-125	1054332.9	1184720	88.99	PASS	70-125

INTERNAL STANDARD: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					6 Li (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027485-002B	SAMP	5	56326.8	65197.5	86.39	PASS	70-125	990643	1184720	83.62	PASS	70-125
N027485-003B	SAMP	1	45050.8	65197.5	69.099	NR!	70-125	547143.9	1184720	46.18	NR!	70-125
N027485-003B	SAMP	5	58095.1	65197.5	89.11	PASS	70-125	1012550.4	1184720	85.47	PASS	70-125
N027485-004B	SAMP	1	45680.3	65197.5	70.064	PASS	70-125	565497	1184720	47.73	NR!	70-125
N027485-004B	SAMP	5	60754.9	65197.5	93.19	PASS	70-125	1007432.1	1184720	85.035	PASS	70-125
N027485-005B	SAMP	1	41892.4	65197.5	64.25	NR!	70-125	371785.5	1184720	31.38	NR!	70-125
N027485-005B	SAMP	5	55932.2	65197.5	85.79	PASS	70-125	889058.4	1184720	75.044	PASS	70-125
N027485-006B	SAMP	1	41645.2	65197.5	63.88	NR!	70-125	374131.2	1184720	31.58	NR!	70-125
N027485-006B	SAMP	5	55389.2	65197.5	84.96	PASS	70-125	842998.7	1184720	71.16	PASS	70-125
N027485-007B	SAMP	1	39690.2	65197.5	60.88	NR!	70-125	358229.4	1184720	30.24	NR!	70-125
CCV3	CCV	1	64307.1	65197.5	98.63	PASS	70-125	987485.8	1184720	83.35	PASS	70-125
CCB3	CCB	1	63219.5	65197.5	96.97	PASS	70-125	975361.6	1184720	82.33	PASS	70-125
N027485-007B	SAMP	5	52584.4	65197.5	80.65	PASS	70-125	807153	1184720	68.13	NR!	70-125
N027485-008B	SAMP	1	54353.7	65197.5	83.37	PASS	70-125	822617.9	1184720	69.44	NR!	70-125
N027485-008B	SAMP	5	57984.9	65197.5	88.94	PASS	70-125	915636.3	1184720	77.29	PASS	70-125
N027485-010B	SAMP	1	44963.9	65197.5	68.97	NR!	70-125	550359.5	1184720	46.45	NR!	70-125
N027485-010B	SAMP	5	52739.2	65197.5	80.89	PASS	70-125	786791.4	1184720	66.41	NR!	70-125
N027485-009B	SAMP	25	55680.2	65197.5	85.4	PASS	70-125	839049.5	1184720	70.82	PASS	70-125
N027485-011C	SAMP	25	56020.3	65197.5	85.92	PASS	70-125	853431.7	1184720	72.037	PASS	70-125
N027485-012C	SAMP	25	56468.5	65197.5	86.61	PASS	70-125	860742	1184720	72.65	PASS	70-125
LLCCV2	CCV2	1	47990.3	65197.5	73.61	PASS	70-125	793016.5	1184720	66.94	NR!	70-125
CCV4	CCV	1	58253.5	65197.5	89.35	PASS	70-125	881428.3	1184720	74.4	PASS	70-125
CCB4	CCB	1	56376.8	65197.5	86.47	PASS	70-125	878309.5	1184720	74.14	PASS	70-125
LLCCV2	CCV2	1	57546.6	65197.5	88.27	PASS	70-125	894591.3	1184720	75.51	PASS	70-125
ICSA3	ICSA	1	66108.7	65197.5	101.4	PASS	70-125	1220087.8	1184720	102.99	PASS	70-125
ICSAB3	ICSAB	1	51084.1	65197.5	78.35	PASS	70-125	829976.9	1184720	70.057	PASS	70-125

INTERNAL STANDARD: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	1817292.6	1817292.6	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	1850066.6	1817292.6	101.8	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	1876026.3	1817292.6	103.23	PASS	70-125
Std3-5/50 ppb	ICAL	1	1901275.6	1817292.6	104.62	PASS	70-125
Std4-10/100 ppb	ICAL	1	1905202.9	1817292.6	104.84	PASS	70-125
Std5-20/200 ppb	ICAL	1	1892549.5	1817292.6	104.14	PASS	70-125
Std6-40/400 ppb	ICAL	1	1893181.8	1817292.6	104.18	PASS	70-125
Std7-100/1000 ppb	ICAL	1	1882968.8	1817292.6	103.61	PASS	70-125
Std8-200/2000 ppb	ICAL	1	1848322.8	1817292.6	101.71	PASS	70-125
ICV	ICV	1	1772719.4	1817292.6	97.55	PASS	70-125
ICB	ICB	1	1855180.4	1817292.6	102.09	PASS	70-125
LLICV	CCV1	1	1892163.1	1817292.6	104.12	PASS	70-125
ICSA1	ICSA	1	1653326.7	1817292.6	90.98	PASS	70-125
ICSAB1	ICSAB	1	1565327.8	1817292.6	86.14	PASS	70-125
MB-66022	MBLK	1	1908894.5	1817292.6	105.04	PASS	70-125
LCS-66022	LCS	1	1883533.3	1817292.6	103.65	PASS	70-125
N027485-009B	SAMP	1	1504358.3	1817292.6	82.78	PASS	70-125
N027485-009B	SAMP	5	1868966.7	1817292.6	102.84	PASS	70-125
N027485-011C	SAMP	1	1701796	1817292.6	93.64	PASS	70-125
N027485-011C	SAMP	5	1881890.5	1817292.6	103.55	PASS	70-125
N027485-012C	SAMP	1	1638703.4	1817292.6	90.17	PASS	70-125
N027485-012C	SAMP	5	1830069.3	1817292.6	100.7	PASS	70-125
N027546-006B	SAMP	1	1722847	1817292.6	94.8	PASS	70-125
N027546-006B	SAMP	5	1688593.2	1817292.6	92.92	PASS	70-125
CCV1	CCV	1	1677140.2	1817292.6	92.29	PASS	70-125
CCB1	CCB	1	1768217	1817292.6	97.3	PASS	70-125
N027485-001B	SAMP	1	1520342.5	1817292.6	83.66	PASS	70-125
N027485-001B	SAMP	5	1648292	1817292.6	90.7	PASS	70-125
N027485-001B	SAMP	25	1725611.3	1817292.6	94.96	PASS	70-125
N027485-001B-PS	PS	1	1560941.2	1817292.6	85.89	PASS	70-125
N027485-001B-PS	PS	5	1645806.2	1817292.6	90.56	PASS	70-125
N027485-001B-MS	MS	1	1494997.3	1817292.6	82.27	PASS	70-125
N027485-001B-MS	MS	1	1664759.6	1817292.6	91.61	PASS	70-125
N027485-001B-MSD	MSD	1	1496888.7	1817292.6	82.37	PASS	70-125
N027485-001B-MSD	MSD	5	1675337.2	1817292.6	92.19	PASS	70-125
N027485-002B	SAMP	1	1106993.3	1817292.6	60.91	NR!	70-125
CCV2	CCV	1	1922301.1	1817292.6	105.78	PASS	70-125
CCB2	CCB	1	1884395.4	1817292.6	103.69	PASS	70-125
LLCCV1	CCV2	1	1800264.7	1817292.6	99.063	PASS	70-125
ICSA2	ICSA	1	1505527	1817292.6	82.84	PASS	70-125
ICSAB2	ICSAB	1	1510517.1	1817292.6	83.12	PASS	70-125

INTERNAL STANDARD: 180102B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N027485-002B	SAMP	5	1439631.2	1817292.6	79.22	PASS	70-125
N027485-003B	SAMP	1	1087699	1817292.6	59.85	NR!	70-125
N027485-003B	SAMP	5	1460457.4	1817292.6	80.36	PASS	70-125
N027485-004B	SAMP	1	1086358.1	1817292.6	59.78	NR!	70-125
N027485-004B	SAMP	5	1492105.4	1817292.6	82.11	PASS	70-125
N027485-005B	SAMP	1	986420.6	1817292.6	54.28	NR!	70-125
N027485-005B	SAMP	5	1398738.9	1817292.6	76.97	PASS	70-125
N027485-006B	SAMP	1	1017285.9	1817292.6	55.98	NR!	70-125
N027485-006B	SAMP	5	1341694.8	1817292.6	73.83	PASS	70-125
N027485-007B	SAMP	1	969817.6	1817292.6	53.37	NR!	70-125
CCV3	CCV	1	1714749.6	1817292.6	94.36	PASS	70-125
CCB3	CCB	1	1671494.9	1817292.6	91.98	PASS	70-125
N027485-007B	SAMP	5	1282136.9	1817292.6	70.55	PASS	70-125
N027485-008B	SAMP	1	1333970.2	1817292.6	73.4	PASS	70-125
N027485-008B	SAMP	5	1484191.9	1817292.6	81.67	PASS	70-125
N027485-010B	SAMP	1	1070143.2	1817292.6	58.89	NR!	70-125
N027485-010B	SAMP	5	1291648.1	1817292.6	71.075	PASS	70-125
N027485-009B	SAMP	25	1442910.3	1817292.6	79.4	PASS	70-125
N027485-011C	SAMP	25	1463695.3	1817292.6	80.54	PASS	70-125
N027485-012C	SAMP	25	1476198.1	1817292.6	81.23	PASS	70-125
LLCCV2	CCV2	1	1392906.3	1817292.6	76.65	PASS	70-125
CCV4	CCV	1	1557533	1817292.6	85.71	PASS	70-125
CCB4	CCB	1	1524186.8	1817292.6	83.87	PASS	70-125
LLCCV2	CCV2	1	1552777.3	1817292.6	85.44	PASS	70-125
ICSA3	ICSA	1	1899684.8	1817292.6	104.53	PASS	70-125
ICSAB3	ICSAB	1	1287437.2	1817292.6	70.84	PASS	70-125

INTERNAL STANDARD: 180103A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	121020.5	121020.5	100	PASS	70-125	100990.1	100990.1	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	114444.1	121020.5	94.57	PASS	70-125	99892.4	100990.1	98.91	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	114304.6	121020.5	94.45	PASS	70-125	99980.4	100990.1	99	PASS	70-125
Std3-5/50 ppb	ICAL	1	115716.8	121020.5	95.62	PASS	70-125	99960.6	100990.1	98.98	PASS	70-125
Std4-10/100 ppb	ICAL	1	115315.9	121020.5	95.29	PASS	70-125	99535.7	100990.1	98.56	PASS	70-125
Std5-20/200 ppb	ICAL	1	118086.5	121020.5	97.58	PASS	70-125	101454.4	100990.1	100.46	PASS	70-125
Std6-40/400 ppb	ICAL	1	119408.6	121020.5	98.67	PASS	70-125	101587.8	100990.1	100.59	PASS	70-125
Std7-100/1000 ppb	ICAL	1	111956.8	121020.5	92.51	PASS	70-125	98664.8	100990.1	97.7	PASS	70-125
Std8-200/2000 ppb	ICAL	1	111722.2	121020.5	92.32	PASS	70-125	99459.8	100990.1	98.48	PASS	70-125
ICV	ICV	1	105976.3	121020.5	87.57	PASS	70-125	98375	100990.1	97.41	PASS	70-125
ICB	ICB	1	105787.7	121020.5	87.41	PASS	70-125	96128.8	100990.1	95.19	PASS	70-125
LLICV	CCV1	1	104940.8	121020.5	86.71	PASS	70-125	95018.5	100990.1	94.087	PASS	70-125
ICSA1	ICSA	1	110571.8	121020.5	91.37	PASS	70-125	99957.2	100990.1	98.98	PASS	70-125
ICSAB1	ICSAB	1	115894.7	121020.5	95.76	PASS	70-125	101127.4	100990.1	100.14	PASS	70-125
LLICV	CCV1	1	122770.1	121020.5	101.45	PASS	70-125	115330.5	100990.1	114.2	PASS	70-125
MB-66022	MBLK	1	100152.6	121020.5	82.76	PASS	70-125	84037.7	100990.1	83.21	PASS	70-125
LCS-66022	LCS	1	107528.3	121020.5	88.85	PASS	70-125	93883.9	100990.1	92.96	PASS	70-125
N027485-009B	SAMP	1	103318.3	121020.5	85.37	PASS	70-125	78410.8	100990.1	77.64	PASS	70-125
N027485-011C	SAMP	1	101973	121020.5	84.26	PASS	70-125	84281.8	100990.1	83.46	PASS	70-125
N027485-012C	SAMP	1	100392.5	121020.5	82.95	PASS	70-125	83508	100990.1	82.69	PASS	70-125
N027546-006B	SAMP	1	106617.6	121020.5	88.099	PASS	70-125	90719.3	100990.1	89.83	PASS	70-125
CCV1	CCV	1	112531.3	121020.5	92.99	PASS	70-125	96754.6	100990.1	95.81	PASS	70-125
CCB1	CCB	1	106337.2	121020.5	87.87	PASS	70-125	92121.9	100990.1	91.22	PASS	70-125
N027485-001B	SAMP	1	99984	121020.5	82.62	PASS	70-125	86697.7	100990.1	85.85	PASS	70-125
N027485-001B	SAMP	5	107514	121020.5	88.84	PASS	70-125	95023.8	100990.1	94.092	PASS	70-125
N027485-001B-PS	PS	1	102560.4	121020.5	84.75	PASS	70-125	89834.8	100990.1	88.95	PASS	70-125
N027485-001B-MS	MS	1	101091.2	121020.5	83.53	PASS	70-125	86341.7	100990.1	85.5	PASS	70-125
N027485-001B-MSD	MSD	1	102922.5	121020.5	85.046	PASS	70-125	84995.5	100990.1	84.16	PASS	70-125
N027485-002B	SAMP	25	108271.7	121020.5	89.47	PASS	70-125	97057.6	100990.1	96.11	PASS	70-125
N027485-003B	SAMP	25	107987.6	121020.5	89.23	PASS	70-125	94432.5	100990.1	93.51	PASS	70-125
N027485-004B	SAMP	25	108822.4	121020.5	89.92	PASS	70-125	99312.1	100990.1	98.34	PASS	70-125
N027485-005B	SAMP	1	90005.3	121020.5	74.37	PASS	70-125	67700.9	100990.1	67.037	NR!	70-125
N027485-006B	SAMP	1	90636.9	121020.5	74.89	PASS	70-125	65465.4	100990.1	64.82	NR!	70-125
CCV2	CCV	1	116941.4	121020.5	96.63	PASS	70-125	102889.6	100990.1	101.88	PASS	70-125
CCB2	CCB	1	110898.6	121020.5	91.64	PASS	70-125	98275.1	100990.1	97.31	PASS	70-125
N027485-007B	SAMP	1	88055.1	121020.5	72.76	PASS	70-125	64498.2	100990.1	63.87	NR!	70-125
N027485-010B	SAMP	5	106929.4	121020.5	88.36	PASS	70-125	90841.2	100990.1	89.95	PASS	70-125
CCV3	CCV	1	112094.4	121020.5	92.62	PASS	70-125	97708	100990.1	96.75	PASS	70-125
CCB3	CCB	1	106998.4	121020.5	88.41	PASS	70-125	94644.7	100990.1	93.72	PASS	70-125
LLCCV1	CCV2	1	101742.6	121020.5	84.071	PASS	70-125	77823.7	100990.1	77.061	PASS	70-125
ICSA2	ICSA	1	98579	121020.5	81.46	PASS	70-125	85784.2	100990.1	84.94	PASS	70-125

INTERNAL STANDARD: 180103A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
ICSAB2	ICSAB	1	108549.9	121020.5	89.7	PASS	70-125	92714.7	100990.1	91.81	PASS	70-125

INTERNAL STANDARD: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	104949.9	104949.9	100	PASS	70-125	78149.3	78149.3	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	108668.1	104949.9	103.54	PASS	70-125	79622.9	78149.3	101.89	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	106896.9	104949.9	101.86	PASS	70-125	78858.5	78149.3	100.91	PASS	70-125
Std3-5/50 ppb	ICAL	1	106056.4	104949.9	101.05	PASS	70-125	77689.7	78149.3	99.41	PASS	70-125
Std4-10/100 ppb	ICAL	1	106836.5	104949.9	101.8	PASS	70-125	78005.5	78149.3	99.82	PASS	70-125
Std5-20/200 ppb	ICAL	1	104819.1	104949.9	99.88	PASS	70-125	76794.1	78149.3	98.27	PASS	70-125
Std6-40/400 ppb	ICAL	1	104454.4	104949.9	99.53	PASS	70-125	76080.9	78149.3	97.35	PASS	70-125
Std7-100/1000 ppb	ICAL	1	103626.7	104949.9	98.74	PASS	70-125	75090.9	78149.3	96.086	PASS	70-125
Std8-200/2000 ppb	ICAL	1	107178	104949.9	102.12	PASS	70-125	75875.6	78149.3	97.091	PASS	70-125
ICV	ICV	1	100805.4	104949.9	96.051	PASS	70-125	74808.2	78149.3	95.72	PASS	70-125
ICB	ICB	1	99805.3	104949.9	95.098	PASS	70-125	74214.6	78149.3	94.97	PASS	70-125
LLICV	CCV1	1	101540.4	104949.9	96.75	PASS	70-125	75293.7	78149.3	96.35	PASS	70-125
ICSA1	ICSA	1	103550.6	104949.9	98.67	PASS	70-125	75532.8	78149.3	96.65	PASS	70-125
ICSAB1	ICSAB	1	109842.5	104949.9	104.66	PASS	70-125	78420.5	78149.3	100.35	PASS	70-125
LLICV	CCV1	1	116148.8	104949.9	110.67	PASS	70-125	85293.7	78149.3	109.14	PASS	70-125
CCV1	CCV	1	117261.7	104949.9	111.73	PASS	70-125	84189.5	78149.3	107.73	PASS	70-125
CCB1	CCB	1	110703.2	104949.9	105.48	PASS	70-125	80995.5	78149.3	103.64	PASS	70-125
CCV2	CCV	1	116382.6	104949.9	110.89	PASS	70-125	84068.6	78149.3	107.57	PASS	70-125
CCB2	CCB	1	113359.8	104949.9	108.01	PASS	70-125	82415.9	78149.3	105.46	PASS	70-125
CCV3	CCV	1	112289.4	104949.9	106.99	PASS	70-125	81127	78149.3	103.81	PASS	70-125
CCB3	CCB	1	107432.3	104949.9	102.37	PASS	70-125	78481.1	78149.3	100.42	PASS	70-125
LLCCV1	CCV2	1	105283.8	104949.9	100.32	PASS	70-125	78409.6	78149.3	100.33	PASS	70-125
ICSA2	ICSA	1	102891	104949.9	98.038	PASS	70-125	73966.9	78149.3	94.65	PASS	70-125
ICSAB2	ICSAB	1	109268.2	104949.9	104.11	PASS	70-125	77047.3	78149.3	98.59	PASS	70-125
CCV4	CCV	1	110190.5	104949.9	104.99	PASS	70-125	80337.6	78149.3	102.8	PASS	70-125
CCB4	CCB	1	106574.1	104949.9	101.55	PASS	70-125	77783.3	78149.3	99.53	PASS	70-125
MB-66061	MBLK	1	104001.5	104949.9	99.096	PASS	70-125	76945	78149.3	98.46	PASS	70-125
CCV5	CCV	1	106475.7	104949.9	101.45	PASS	70-125	78207.6	78149.3	100.08	PASS	70-125
CCB5	CCB	1	99956.8	104949.9	95.24	PASS	70-125	75053	78149.3	96.038	PASS	70-125
LCS-66061	LCS	1	100340.4	104949.9	95.61	PASS	70-125	74688.7	78149.3	95.57	PASS	70-125
N027523-001B	SAMP	1	97805.1	104949.9	93.19	PASS	70-125	70710.3	78149.3	90.48	PASS	70-125
N027523-001B	SAMP	5	101403.7	104949.9	96.62	PASS	70-125	73678.7	78149.3	94.28	PASS	70-125
N027523-001B	SAMP	25	100106.3	104949.9	95.38	PASS	70-125	74680	78149.3	95.56	PASS	70-125
N027523-001B-PS	PS	1	100294.6	104949.9	95.56	PASS	70-125	72275	78149.3	92.48	PASS	70-125
N027523-001B-PS	PS	5	101979.8	104949.9	97.17	PASS	70-125	74456	78149.3	95.27	PASS	70-125
N027523-001B-MS	MS	1	99734.5	104949.9	95.031	PASS	70-125	72441.4	78149.3	92.7	PASS	70-125
N027523-001B-MS	MS	5	101600.8	104949.9	96.81	PASS	70-125	74556	78149.3	95.4	PASS	70-125
N027523-001B-MSD	MSD	1	103767.3	104949.9	98.87	PASS	70-125	74629.6	78149.3	95.5	PASS	70-125
N027523-001B-MSD	MSD	5	102645.9	104949.9	97.8	PASS	70-125	75024.6	78149.3	96.002	PASS	70-125
CCV6	CCV	1	102839.8	104949.9	97.99	PASS	70-125	75506.8	78149.3	96.62	PASS	70-125
CCB6	CCB	1	97858.8	104949.9	93.24	PASS	70-125	72523.6	78149.3	92.8	PASS	70-125

INTERNAL STANDARD: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
LLCCV2	CCV2	1	99434.6	104949.9	94.74	PASS	70-125	73321.2	78149.3	93.82	PASS	70-125
ICSA3	ICSA	1	96566.2	104949.9	92.012	PASS	70-125	69749.6	78149.3	89.25	PASS	70-125
ICSAB3	ICSAB	1	105748	104949.9	100.76	PASS	70-125	75151.2	78149.3	96.16	PASS	70-125
N027523-002B	SAMP	1	107904.5	104949.9	102.82	PASS	70-125	77320.3	78149.3	98.94	PASS	70-125
N027523-002B	SAMP	5	103472.7	104949.9	98.59	PASS	70-125	75367.4	78149.3	96.44	PASS	70-125
N027523-003B	SAMP	1	103174.2	104949.9	98.31	PASS	70-125	74739.3	78149.3	95.64	PASS	70-125
N027523-003B	SAMP	5	104440.7	104949.9	99.51	PASS	70-125	76405.9	78149.3	97.77	PASS	70-125
N027523-004B	SAMP	1	94542	104949.9	90.083	PASS	70-125	70266.5	78149.3	89.91	PASS	70-125
N027523-004B	SAMP	5	101477.7	104949.9	96.69	PASS	70-125	74322.9	78149.3	95.1	PASS	70-125
N027523-005C	SAMP	1	101412.3	104949.9	96.63	PASS	70-125	72600.5	78149.3	92.9	PASS	70-125
N027523-005C	SAMP	5	105066.7	104949.9	100.11	PASS	70-125	76671.2	78149.3	98.11	PASS	70-125
N027523-006C	SAMP	1	93043.5	104949.9	88.66	PASS	70-125	63064.4	78149.3	80.7	PASS	70-125
N027523-006C	SAMP	5	103890.2	104949.9	98.99	PASS	70-125	74376.4	78149.3	95.17	PASS	70-125
CCV7	CCV	1	111274.6	104949.9	106.03	PASS	70-125	80549.1	78149.3	103.07	PASS	70-125
CCB7	CCB	1	102724.6	104949.9	97.88	PASS	70-125	75328.8	78149.3	96.39	PASS	70-125
N027523-007C	SAMP	1	97623.3	104949.9	93.019	PASS	70-125	65862.2	78149.3	84.28	PASS	70-125
N027523-007C	SAMP	5	107859.2	104949.9	102.77	PASS	70-125	76082.7	78149.3	97.36	PASS	70-125
N027523-008B	SAMP	1	96923.9	104949.9	92.35	PASS	70-125	67164.3	78149.3	85.94	PASS	70-125
N027523-008B	SAMP	5	104671.9	104949.9	99.74	PASS	70-125	75000.5	78149.3	95.97	PASS	70-125
N027523-009B	SAMP	1	92013.5	104949.9	87.67	PASS	70-125	58806.7	78149.3	75.25	PASS	70-125
N027523-009B	SAMP	5	100254.2	104949.9	95.53	PASS	70-125	69262.9	78149.3	88.63	PASS	70-125
N027523-012B	SAMP	1	94026.4	104949.9	89.59	PASS	70-125	61223.1	78149.3	78.34	PASS	70-125
N027523-012B	SAMP	5	102141.9	104949.9	97.32	PASS	70-125	73092.6	78149.3	93.53	PASS	70-125
N027546-001B	SAMP	1	94249.1	104949.9	89.8	PASS	70-125	65376.1	78149.3	83.66	PASS	70-125
N027546-001B	SAMP	5	102509.8	104949.9	97.67	PASS	70-125	74978	78149.3	95.94	PASS	70-125
CCV8	CCV	1	110517.4	104949.9	105.3	PASS	70-125	81111.8	78149.3	103.79	PASS	70-125
CCB8	CCB	1	106071	104949.9	101.07	PASS	70-125	78369.3	78149.3	100.28	PASS	70-125
N027546-002B	SAMP	1	91580	104949.9	87.26	PASS	70-125	63156	78149.3	80.81	PASS	70-125
N027546-002B	SAMP	5	97831.8	104949.9	93.22	PASS	70-125	72402	78149.3	92.65	PASS	70-125
N027546-003B	SAMP	1	95156	104949.9	90.67	PASS	70-125	66714.4	78149.3	85.37	PASS	70-125
N027546-003B	SAMP	5	100064	104949.9	95.34	PASS	70-125	71305	78149.3	91.24	PASS	70-125
N027546-004B	SAMP	1	85853.4	104949.9	81.8	PASS	70-125	56951.1	78149.3	72.87	PASS	70-125
N027546-004B	SAMP	5	97945	104949.9	93.33	PASS	70-125	68897.1	78149.3	88.16	PASS	70-125
N027546-005B	SAMP	1	87829.1	104949.9	83.69	PASS	70-125	58581.4	78149.3	74.96	PASS	70-125
N027546-005B	SAMP	5	100629.5	104949.9	95.88	PASS	70-125	71048.4	78149.3	90.91	PASS	70-125
N027546-007B	SAMP	1	85109.8	104949.9	81.096	PASS	70-125	56272.4	78149.3	72.006	PASS	70-125
N027546-007B	SAMP	5	99987.1	104949.9	95.27	PASS	70-125	71002.4	78149.3	90.85	PASS	70-125
CCV9	CCV	1	106342.6	104949.9	101.33	PASS	70-125	77542.2	78149.3	99.22	PASS	70-125
CCB9	CCB	1	104342.3	104949.9	99.42	PASS	70-125	77208.7	78149.3	98.8	PASS	70-125
N027546-008B	SAMP	1	82255.6	104949.9	78.38	PASS	70-125	54909.9	78149.3	70.26	PASS	70-125
N027546-008B	SAMP	5	98378.6	104949.9	93.74	PASS	70-125	69489.4	78149.3	88.92	PASS	70-125

INTERNAL STANDARD: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027546-009B	SAMP	1	85480.2	104949.9	81.45	PASS	70-125	56787.2	78149.3	72.67	PASS	70-125
N027546-009B	SAMP	5	97882.3	104949.9	93.27	PASS	70-125	69246.3	78149.3	88.61	PASS	70-125
N027546-010B	SAMP	1	88902.5	104949.9	84.71	PASS	70-125	60406.9	78149.3	77.3	PASS	70-125
N027546-010B	SAMP	5	98882.6	104949.9	94.22	PASS	70-125	70983.6	78149.3	90.83	PASS	70-125
CCV10	CCV	1	103184.4	104949.9	98.32	PASS	70-125	75485.9	78149.3	96.59	PASS	70-125
CCB10	CCB	1	97912.9	104949.9	93.29	PASS	70-125	73385.4	78149.3	93.9	PASS	70-125
LLCCV3	CCV2	1	95724.5	104949.9	91.21	PASS	70-125	72582.9	78149.3	92.88	PASS	70-125
ICSA4	ICSA	1	94498.4	104949.9	90.041	PASS	70-125	68954.9	78149.3	88.23	PASS	70-125
ICSAB4	ICSAB	1	101629	104949.9	96.84	PASS	70-125	72763.6	78149.3	93.11	PASS	70-125

INTERNAL STANDARD: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	96495.5	96495.5	100	PASS	70-125	2361295	2361295	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	99265.7	96495.5	102.87	PASS	70-125	2412742.6	2361295	102.18	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	97906	96495.5	101.46	PASS	70-125	2380476.8	2361295	100.81	PASS	70-125
Std3-5/50 ppb	ICAL	1	97411	96495.5	100.95	PASS	70-125	2347648.5	2361295	99.42	PASS	70-125
Std4-10/100 ppb	ICAL	1	98129.6	96495.5	101.69	PASS	70-125	2373323	2361295	100.51	PASS	70-125
Std5-20/200 ppb	ICAL	1	95443.9	96495.5	98.91	PASS	70-125	2309508.7	2361295	97.81	PASS	70-125
Std6-40/400 ppb	ICAL	1	95029.1	96495.5	98.48	PASS	70-125	2291983.6	2361295	97.065	PASS	70-125
Std7-100/1000 ppb	ICAL	1	92259.4	96495.5	95.61	PASS	70-125	2237276	2361295	94.75	PASS	70-125
Std8-200/2000 ppb	ICAL	1	96223.7	96495.5	99.72	PASS	70-125	2266227.6	2361295	95.97	PASS	70-125
ICV	ICV	1	93647.1	96495.5	97.048	PASS	70-125	2261079	2361295	95.76	PASS	70-125
ICB	ICB	1	93049.9	96495.5	96.43	PASS	70-125	2248405.4	2361295	95.22	PASS	70-125
LLICV	CCV1	1	94981.3	96495.5	98.43	PASS	70-125	2298756.9	2361295	97.35	PASS	70-125
ICSA1	ICSA	1	88512	96495.5	91.73	PASS	70-125	2083413.1	2361295	88.23	PASS	70-125
ICSAB1	ICSAB	1	95643.8	96495.5	99.12	PASS	70-125	2152443.9	2361295	91.16	PASS	70-125
LLICV	CCV1	1	107462.9	96495.5	111.37	PASS	70-125	2518581.5	2361295	106.66	PASS	70-125
CCV1	CCV	1	102743.2	96495.5	106.47	PASS	70-125	2484304.3	2361295	105.21	PASS	70-125
CCB1	CCB	1	100678.3	96495.5	104.33	PASS	70-125	2408437.1	2361295	102	PASS	70-125
CCV2	CCV	1	104004.2	96495.5	107.78	PASS	70-125	2488973.2	2361295	105.41	PASS	70-125
CCB2	CCB	1	102136.9	96495.5	105.85	PASS	70-125	2460544.2	2361295	104.2	PASS	70-125
CCV3	CCV	1	100049.7	96495.5	103.68	PASS	70-125	2418536.6	2361295	102.42	PASS	70-125
CCB3	CCB	1	95906.4	96495.5	99.39	PASS	70-125	2342793	2361295	99.22	PASS	70-125
LLCCV1	CCV2	1	99469.3	96495.5	103.08	PASS	70-125	2336490.1	2361295	98.95	PASS	70-125
ICSA2	ICSA	1	88845.8	96495.5	92.072	PASS	70-125	2041939.4	2361295	86.48	PASS	70-125
ICSAB2	ICSAB	1	93375.2	96495.5	96.77	PASS	70-125	2123709.7	2361295	89.94	PASS	70-125
CCV4	CCV	1	97977.5	96495.5	101.54	PASS	70-125	2369429.2	2361295	100.34	PASS	70-125
CCB4	CCB	1	95585.8	96495.5	99.057	PASS	70-125	2310055.6	2361295	97.83	PASS	70-125
MB-66061	MBLK	1	95325.4	96495.5	98.79	PASS	70-125	2249029.8	2361295	95.25	PASS	70-125
CCV5	CCV	1	93689.5	96495.5	97.092	PASS	70-125	2291661.5	2361295	97.051	PASS	70-125
CCB5	CCB	1	93292.5	96495.5	96.68	PASS	70-125	2242981.1	2361295	94.99	PASS	70-125
LCS-66061	LCS	1	91167.2	96495.5	94.48	PASS	70-125	2255651.8	2361295	95.53	PASS	70-125
N027523-001B	SAMP	1	88767.6	96495.5	91.99	PASS	70-125	1953239.5	2361295	82.72	PASS	70-125
N027523-001B	SAMP	5	91268.2	96495.5	94.58	PASS	70-125	2089120.5	2361295	88.47	PASS	70-125
N027523-001B	SAMP	25	93993.4	96495.5	97.41	PASS	70-125	2189686	2361295	92.73	PASS	70-125
N027523-001B-PS	PS	1	90491.2	96495.5	93.78	PASS	70-125	1978704.2	2361295	83.8	PASS	70-125
N027523-001B-PS	PS	5	92771.9	96495.5	96.14	PASS	70-125	2106451.9	2361295	89.21	PASS	70-125
N027523-001B-MS	MS	1	89990.3	96495.5	93.26	PASS	70-125	1964445.6	2361295	83.19	PASS	70-125
N027523-001B-MS	MS	5	92945.7	96495.5	96.32	PASS	70-125	2108138	2361295	89.28	PASS	70-125
N027523-001B-MSD	MSD	1	91171.6	96495.5	94.48	PASS	70-125	2033574.9	2361295	86.12	PASS	70-125
N027523-001B-MSD	MSD	5	92624.1	96495.5	95.99	PASS	70-125	2090799.7	2361295	88.54	PASS	70-125
CCV6	CCV	1	94335.2	96495.5	97.76	PASS	70-125	2227484.7	2361295	94.33	PASS	70-125
CCB6	CCB	1	90583.9	96495.5	93.87	PASS	70-125	2163617.9	2361295	91.63	PASS	70-125

INTERNAL STANDARD: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
LLCCV2	CCV2	1	92804.5	96495.5	96.17	PASS	70-125	2208307.7	2361295	93.52	PASS	70-125
ICSA3	ICSA	1	84317.7	96495.5	87.38	PASS	70-125	1918696	2361295	81.26	PASS	70-125
ICSAB3	ICSAB	1	94159.5	96495.5	97.58	PASS	70-125	2038270.7	2361295	86.32	PASS	70-125
N027523-002B	SAMP	1	96977.7	96495.5	100.5	PASS	70-125	2100778.6	2361295	88.97	PASS	70-125
N027523-002B	SAMP	5	99112.9	96495.5	102.71	PASS	70-125	2135124	2361295	90.42	PASS	70-125
N027523-003B	SAMP	1	94672.9	96495.5	98.11	PASS	70-125	2046281.7	2361295	86.66	PASS	70-125
N027523-003B	SAMP	5	95519.6	96495.5	98.99	PASS	70-125	2148186.4	2361295	90.97	PASS	70-125
N027523-004B	SAMP	1	91072.5	96495.5	94.38	PASS	70-125	1918751.7	2361295	81.26	PASS	70-125
N027523-004B	SAMP	5	93070.4	96495.5	96.45	PASS	70-125	2111281.7	2361295	89.41	PASS	70-125
N027523-005C	SAMP	1	88898.6	96495.5	92.13	PASS	70-125	1951000	2361295	82.62	PASS	70-125
N027523-005C	SAMP	5	93879.2	96495.5	97.29	PASS	70-125	2107107.8	2361295	89.24	PASS	70-125
N027523-006C	SAMP	1	73420	96495.5	76.086	PASS	70-125	1635249.4	2361295	69.25	NR!	70-125
N027523-006C	SAMP	5	90477.7	96495.5	93.76	PASS	70-125	2004057.9	2361295	84.87	PASS	70-125
CCV7	CCV	1	97755.1	96495.5	101.31	PASS	70-125	2337715.5	2361295	99.001	PASS	70-125
CCB7	CCB	1	94025.6	96495.5	97.44	PASS	70-125	2247371	2361295	95.18	PASS	70-125
N027523-007C	SAMP	1	76185.4	96495.5	78.95	PASS	70-125	1674733.3	2361295	70.92	PASS	70-125
N027523-007C	SAMP	5	93670.2	96495.5	97.072	PASS	70-125	2061928.5	2361295	87.32	PASS	70-125
N027523-008B	SAMP	1	84182.4	96495.5	87.24	PASS	70-125	1773995.7	2361295	75.13	PASS	70-125
N027523-008B	SAMP	5	92534	96495.5	95.89	PASS	70-125	2069686.7	2361295	87.65	PASS	70-125
N027523-009B	SAMP	1	66125.6	96495.5	68.53	NR!	70-125	1496547.8	2361295	63.38	NR!	70-125
N027523-009B	SAMP	5	84299.2	96495.5	87.36	PASS	70-125	1899892.9	2361295	80.46	PASS	70-125
N027523-012B	SAMP	1	70635.4	96495.5	73.2	PASS	70-125	1560913.1	2361295	66.1	NR!	70-125
N027523-012B	SAMP	5	88993.4	96495.5	92.23	PASS	70-125	1942163.9	2361295	82.25	PASS	70-125
N027546-001B	SAMP	1	78400.9	96495.5	81.25	PASS	70-125	1688825.1	2361295	71.52	PASS	70-125
N027546-001B	SAMP	5	90941.5	96495.5	94.24	PASS	70-125	2023201.1	2361295	85.68	PASS	70-125
CCV8	CCV	1	99341.1	96495.5	102.95	PASS	70-125	2370984.7	2361295	100.41	PASS	70-125
CCB8	CCB	1	97036.5	96495.5	100.56	PASS	70-125	2273057.7	2361295	96.26	PASS	70-125
N027546-002B	SAMP	1	75748.5	96495.5	78.5	PASS	70-125	1666239.8	2361295	70.56	PASS	70-125
N027546-002B	SAMP	5	86309.4	96495.5	89.44	PASS	70-125	1944409	2361295	82.35	PASS	70-125
N027546-003B	SAMP	1	79441	96495.5	82.33	PASS	70-125	1758696.5	2361295	74.48	PASS	70-125
N027546-003B	SAMP	5	87654.4	96495.5	90.84	PASS	70-125	1971608.4	2361295	83.5	PASS	70-125
N027546-004B	SAMP	1	63732.6	96495.5	66.047	NR!	70-125	1410875.3	2361295	59.75	NR!	70-125
N027546-004B	SAMP	5	81460.1	96495.5	84.42	PASS	70-125	1860840.2	2361295	78.81	PASS	70-125
N027546-005B	SAMP	1	66476.9	96495.5	68.89	NR!	70-125	1446831.2	2361295	61.27	NR!	70-125
N027546-005B	SAMP	5	85186.2	96495.5	88.28	PASS	70-125	1883713.7	2361295	79.77	PASS	70-125
N027546-007B	SAMP	1	66368.5	96495.5	68.78	NR!	70-125	1436800.9	2361295	60.85	NR!	70-125
N027546-007B	SAMP	5	84614.4	96495.5	87.69	PASS	70-125	1928356.7	2361295	81.67	PASS	70-125
CCV9	CCV	1	96433	96495.5	99.94	PASS	70-125	2279967.9	2361295	96.56	PASS	70-125
CCB9	CCB	1	92180.6	96495.5	95.53	PASS	70-125	2277296.5	2361295	96.44	PASS	70-125
N027546-008B	SAMP	1	58918	96495.5	61.058	NR!	70-125	1355322.1	2361295	57.4	NR!	70-125
N027546-008B	SAMP	5	81474.4	96495.5	84.43	PASS	70-125	1894561	2361295	80.23	PASS	70-125

INTERNAL STANDARD: 180103B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027546-009B	SAMP	1	63908.9	96495.5	66.23	NR!	70-125	1415734.6	2361295	59.96	NR!	70-125
N027546-009B	SAMP	5	82380	96495.5	85.37	PASS	70-125	1866600.5	2361295	79.05	PASS	70-125
N027546-010B	SAMP	1	69075.5	96495.5	71.58	PASS	70-125	1561329.3	2361295	66.12	NR!	70-125
N027546-010B	SAMP	5	86254.3	96495.5	89.39	PASS	70-125	1921033.6	2361295	81.36	PASS	70-125
CCV10	CCV	1	92328.6	96495.5	95.68	PASS	70-125	2212714.6	2361295	93.71	PASS	70-125
CCB10	CCB	1	88940.7	96495.5	92.17	PASS	70-125	2203148.5	2361295	93.3	PASS	70-125
LLCCV3	CCV2	1	86430.7	96495.5	89.57	PASS	70-125	2129717.7	2361295	90.19	PASS	70-125
ICSA4	ICSA	1	79587.7	96495.5	82.48	PASS	70-125	1916003.8	2361295	81.14	PASS	70-125
ICSAB4	ICSAB	1	83313.6	96495.5	86.34	PASS	70-125	1987090.9	2361295	84.15	PASS	70-125

INTERNAL STANDARD: 180104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	94490.8	94490.8	100	PASS	70-125	87439.4	87439.4	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	93808.1	94490.8	99.28	PASS	70-125	85215.2	87439.4	97.46	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	92448.4	94490.8	97.84	PASS	70-125	87441.6	87439.4	100	PASS	70-125
Std3-5/50 ppb	ICAL	1	94578.1	94490.8	100.09	PASS	70-125	86243.4	87439.4	98.63	PASS	70-125
Std4-10/100 ppb	ICAL	1	90701.3	94490.8	95.99	PASS	70-125	82045.8	87439.4	93.83	PASS	70-125
Std5-20/200 ppb	ICAL	1	91188.2	94490.8	96.5	PASS	70-125	83772.5	87439.4	95.81	PASS	70-125
Std6-40/400 ppb	ICAL	1	89529.2	94490.8	94.75	PASS	70-125	83479.2	87439.4	95.47	PASS	70-125
Std7-100/1000 ppb	ICAL	1	87685.1	94490.8	92.8	PASS	70-125	81206.2	87439.4	92.87	PASS	70-125
Std8-200/2000 ppb	ICAL	1	88869	94490.8	94.05	PASS	70-125	80706.5	87439.4	92.3	PASS	70-125
ICV	ICV	1	87629.3	94490.8	92.74	PASS	70-125	83747.2	87439.4	95.78	PASS	70-125
ICB	ICB	1	86463.2	94490.8	91.5	PASS	70-125	80584.5	87439.4	92.16	PASS	70-125
LLICV	CCV1	1	92071.9	94490.8	97.44	PASS	70-125	84025.9	87439.4	96.096	PASS	70-125
ICSA1	ICSA	1	89572.7	94490.8	94.8	PASS	70-125	79922.4	87439.4	91.4	PASS	70-125
ICSAB1	ICSAB	1	97496.7	94490.8	103.18	PASS	70-125	85805.3	87439.4	98.13	PASS	70-125
LLICV	CCV1	1	101097	94490.8	106.99	PASS	70-125	94167.5	87439.4	107.69	PASS	70-125
N027523-004B	SAMP	1	94988.8	94490.8	100.53	PASS	70-125	86260.7	87439.4	98.65	PASS	70-125
N027523-006C	SAMP	1	88461.9	94490.8	93.62	PASS	70-125	68553.4	87439.4	78.4	PASS	70-125
N027523-007C	SAMP	1	95107.7	94490.8	100.65	PASS	70-125	73409.6	87439.4	83.95	PASS	70-125
N027523-008B	SAMP	1	93111	94490.8	98.54	PASS	70-125	78588	87439.4	89.88	PASS	70-125
CCV1	CCV	1	104556.8	94490.8	110.65	PASS	70-125	92294.8	87439.4	105.55	PASS	70-125
CCB1	CCB	1	97634.7	94490.8	103.33	PASS	70-125	89384.9	87439.4	102.22	PASS	70-125
N027523-007C	SAMP	1	93550	94490.8	99.004	PASS	70-125	71484.4	87439.4	81.75	PASS	70-125
N027523-007C	SAMP	1	93229.7	94490.8	98.67	PASS	70-125	73148.5	87439.4	83.66	PASS	70-125
N027546-010B	SAMP	1	86613.5	94490.8	91.66	PASS	70-125	64756.5	87439.4	74.059	PASS	70-125
N027523-009B	SAMP	25	100953.7	94490.8	106.84	PASS	70-125	84239.5	87439.4	96.34	PASS	70-125
N027546-001B	SAMP	25	96532.9	94490.8	102.16	PASS	70-125	85370.8	87439.4	97.63	PASS	70-125
N027546-002B	SAMP	25	93395.1	94490.8	98.84	PASS	70-125	82618.8	87439.4	94.49	PASS	70-125
CCV2	CCV	1	96854	94490.8	102.5	PASS	70-125	87455.9	87439.4	100.02	PASS	70-125
CCB2	CCB	1	91202.5	94490.8	96.52	PASS	70-125	82751	87439.4	94.64	PASS	70-125
LLCCV1	CCV2	1	94340.9	94490.8	99.84	PASS	70-125	85738.9	87439.4	98.055	PASS	70-125
ICSA2	ICSA	1	89819.7	94490.8	95.057	PASS	70-125	77807	87439.4	88.98	PASS	70-125
ICSAB2	ICSAB	1	95138.4	94490.8	100.69	PASS	70-125	82752.8	87439.4	94.64	PASS	70-125

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	85800.3	85800.3	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	88563	85800.3	103.22	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	87852.4	85800.3	102.39	PASS	70-125
Std3-5/50 ppb	ICAL	1	87543	85800.3	102.03	PASS	70-125
Std4-10/100 ppb	ICAL	1	88388.7	85800.3	103.02	PASS	70-125
Std5-20/200 ppb	ICAL	1	88069.4	85800.3	102.64	PASS	70-125
Std6-40/400 ppb	ICAL	1	88991.3	85800.3	103.72	PASS	70-125
Std7-100/1000 ppb	ICAL	1	88217.8	85800.3	102.82	PASS	70-125
Std8-200/2000 ppb	ICAL	1	90606.5	85800.3	105.6	PASS	70-125
ICV	ICV	1	94889.9	85800.3	110.59	PASS	70-125
ICB	ICB	1	88646.8	85800.3	103.32	PASS	70-125
LLICV	CCV1	1	95674	85800.3	111.51	PASS	70-125
ICSA1	ICSA	1	95132.7	85800.3	110.88	PASS	70-125
ICSAB1	ICSAB	1	102558.6	85800.3	119.53	PASS	70-125
N027546-010B	SAMP	1	65181.6	85800.3	75.97	PASS	70-125
N027546-010B	SAMP	1	88857.9	85800.3	103.56	PASS	70-125
CCV1	CCV	1	89281.5	85800.3	104.06	PASS	70-125
CCB1	CCB	1	96172.1	85800.3	112.09	PASS	70-125
CCV2	CCV	1	102059.8	85800.3	118.95	PASS	70-125
CCB2	CCB	1	98424.6	85800.3	114.71	PASS	70-125
CCV3	CCV	1	101738.4	85800.3	118.58	PASS	70-125
CCB3	CCB	1	97514.6	85800.3	113.65	PASS	70-125
LLCCV1	CCV2	1	105588.8	85800.3	123.06	PASS	70-125
ICSA2	ICSA	1	100313.3	85800.3	116.91	PASS	70-125
ICSAB2	ICSAB	1	69571.9	85800.3	81.086	PASS	70-125
CCV4	CCV	1	103304.4	85800.3	120.4	PASS	70-125
CCB4	CCB	1	96884.5	85800.3	112.92	PASS	70-125
CCV5	CCV	1	98339.7	85800.3	114.61	PASS	70-125
CCB5	CCB	1	92389.6	85800.3	107.68	PASS	70-125
CCV6	CCV	1	92386.4	85800.3	107.68	PASS	70-125
CCB6	CCB	1	88619	85800.3	103.29	PASS	70-125
LLCCV2	CCV2	1	95427.5	85800.3	111.22	PASS	70-125
ICSA3	ICSA	1	88680.3	85800.3	103.36	PASS	70-125
ICSAB3	ICSAB	1	97458.4	85800.3	113.59	PASS	70-125
CCV7	CCV	1	94187.9	85800.3	109.78	PASS	70-125
CCB7	CCB	1	88458.3	85800.3	103.1	PASS	70-125
CCV8	CCV	1	70488.1	85800.3	82.15	PASS	70-125
CCB8	CCB	1	74042.6	85800.3	86.3	PASS	70-125
CCV9	CCV	1	78288.9	85800.3	91.25	PASS	70-125
CCB9	CCB	1	73219.1	85800.3	85.34	PASS	70-125
CCV10	CCV	1	88289.7	85800.3	102.9	PASS	70-125

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria
CCB10	CCB	1	93399.6	85800.3	108.86	PASS	70-125
LLCCV3	CCV2	1	96745.6	85800.3	112.76	PASS	70-125
ICSA4	ICSA	1	90769.3	85800.3	105.79	PASS	70-125
ICSAB4	ICSAB	1	92153.7	85800.3	107.4	PASS	70-125
CCV11	CCV	1	95503.3	85800.3	111.31	PASS	70-125
CCB11	CCB	1	88653.8	85800.3	103.33	PASS	70-125
CCV12	CCV	1	93373.1	85800.3	108.83	PASS	70-125
CCB12	CCB	1	86339.3	85800.3	100.63	PASS	70-125
LLCCV4	CCV2	1	88921.8	85800.3	103.64	PASS	70-125
ICSA5	ICSA	1	81087.1	85800.3	94.51	PASS	70-125
ICSAB5	ICSAB	1	89051.6	85800.3	103.79	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N027546
Test Method: EPA 6020
Analysis Date: 1/2/2018 & 1/3/2018

Matrix: Groundwater
Batch No.: 66022

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to several analytes. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027485-001B DT 5X	Antimony	ug/L	0	NA	0.080783	100.00%	10
N027485-001B DT 5X	Arsenic	ug/L	4.167261	PASS	3.880644	7.39%	10
N027485-001B DT 5X	Barium	ug/L	66.88578	PASS	63.4934	5.34%	10
N027485-001B DT 5X	Beryllium	ug/L	0	NA	0		10
N027485-001B DT 5X	Cadmium	ug/L	0	NA	0		10
N027485-001B DT 5X	Chromium	ug/L	166.5403	PASS	153.4845	8.51%	10
N027485-001B DT 5X	Cobalt	ug/L	0	NA	0		10
N027485-001B DT 5X	Copper	ug/L	0	NA	0		10
N027485-001B DT 5X	Lead	ug/L	0	NA	0		10
N027485-001B DT 5X	Manganese	ug/L	12.14933	NA	11.33695	7.17%	10
N027485-001B DT 5X	Molybdenum	ug/L	70.89813	PASS	71.5957	0.97%	10
N027485-001B DT 5X	Nickel	ug/L	1.761321	NA	1.329626	32.47%	10
N027485-001B DT 5X	Selenium	ug/L	5.237942	NA	4.852845	7.94%	10
N027485-001B DT 5X	Silver	ug/L	0	NA	0		10
N027485-001B DT 5X	Thallium	ug/L	0.852488	NA	0.844473	0.95%	10
N027485-001B DT 5X	Vanadium	ug/L	4.423244	NA	4.151798	6.54%	10
N027485-001B DT 5X	Zinc	ug/L	0	NA	0		10

Note: NA - Not applicable

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N027546
Test Method: EPA 6020
Analysis Date: 1/3/2018

Matrix: Groundwater
Batch No.: 66061

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr, Mn & Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027523-001B DT 5X	Arsenic	ug/L	1.554926	NA	1.643608	5.40%	10
N027523-001B DT 5X	Chromium	ug/L	15.04223	NA	14.08012	6.83%	10
N027523-001B DT 5X	Manganese	ug/L	8.923825	NA	8.292973	7.61%	10
N027523-001B DT 5X	Molybdenum	ug/L	14.32985	PASS	14.01999	2.21%	10
N027523-001B DT 5X	Selenium	ug/L	3.642209	NA	3.503002	3.97%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027485-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121176
Client ID:	ZZZZZZ	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2882485

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.129	0.50	10.00	0.08078	100	80	120				
Arsenic	14.416	0.10	10.00	3.881	105	80	120				
Barium	71.040	1.0	10.00	63.49	75.5	80	120				S
Beryllium	10.629	0.50	10.00	0	106	80	120				
Cadmium	9.723	0.50	10.00	0	97.2	80	120				
Cobalt	9.156	0.50	10.00	0	91.6	80	120				
Copper	7.991	1.0	10.00	0	79.9	80	120				S
Lead	10.860	1.0	10.00	0	109	80	120				
Manganese	107.813	0.50	100.0	11.34	96.5	80	120				
Molybdenum	80.454	0.50	10.00	71.60	88.6	80	120				
Nickel	11.239	1.0	10.00	1.330	99.1	80	120				
Selenium	13.923	0.50	10.00	4.853	90.7	80	120				
Silver	9.920	0.50	10.00	0	99.2	80	120				
Thallium	10.668	0.50	10.00	0.8445	98.2	80	120				
Zinc	116.163	10	100.0	0	116	80	120				

Sample ID	N027485-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121192
Client ID:	ZZZZZZ	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883839

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	14.290	1.0	10.00	4.152	101	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027523-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121204
Client ID:	ZZZZZZ	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884531

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.085	0.10	10.00	1.644	104	80	120				
Manganese	110.738	0.50	100.0	8.293	102	80	120				
Molybdenum	25.889	0.50	10.00	14.02	119	80	120				
Selenium	13.974	0.50	10.00	3.503	105	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N027485-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121175
Client ID:	ZZZZZZ	Batch ID:	66022	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/2/2018	SeqNo:	2882389

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	156.633	1.0	10.00	153.5	31.5	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N027523-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121203
Client ID:	ZZZZZZ	Batch ID:	66061	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2884400

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	24.024	1.0	10.00	14.08	99.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

EPA 7470A
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66079
ASSET #: N027546

Instrument ID: AA-01
Analyst: MG
Date Analyzed: 12/15/2017

Method:

- [ ] EPA 6010B / 200.7
- [ ] EPA 6020 / 200.8
- [X] EPA 7470A / 7471A/245.1
- [ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)			X			
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.			X			
7. Are ICSA and AB within ± 20% of expected value?			X			
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)			X			
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).			X			
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/5/18

2nd Level Reviewer 01/05/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

WORKORDER NO: N027546
TEST METHOD: EPA 7470
MATRIX: Groundwater

FORMULA:

Calculate the Mercury concentration in ug/L in the sample is as follows:

Mercury, ug/L = A * DF

where:
A = ug/L, instrument calculated concentration
DF = Dilution factor

For Sample **N027546-006B** , the concentration in ug/L is calculated as follows:

Mercury, ug/L = 0.00065 * 1

Mercury, ug/L = 0

Reporting results in two significant figures,

Mercury, ug/L = 0.000

Since reporting limit is 0.2 ug/L,

Mercury, ug/L = ND

% RSD SUMMARY

RSD SUMMARY: 171215WB

Instrument ID: AA-01

Sample Name	Type	DF	Concentration	RSD	Criteria	Comment
Calibration Zero	IBLK	1	0	11.79	20	PASS
Standard #1	ICAL	1	0.2	3.92	20	PASS
Standard #2	ICAL	1	1	0.61	20	PASS
Standard #3	ICAL	1	5	0.2	20	PASS
Standard #4	ICAL	1	10	0.67	20	PASS
Standard #5	ICAL	1	20	0.59	20	PASS
ICV	ICV	1	10.32876	0.14	20	PASS
ICB	ICB	1	-0.07397	13.28	20	PASS
MB-66079	MBLK	1	0.0442	10.09	20	PASS
LCS-66079	LCS	1	4.65959	0.88	20	PASS
N027546-006B-MS	MS	1	4.64384	0.48	20	PASS
N027546-006B-MSD	MSD	1	4.48952	0.46	20	PASS
N027546-006B	SAMP	1	0.00065	106.15	20	<PQL
CCV1	CCV	1	9.41711	0.91	20	PASS
CCB1	CCB	1	0.00212	275.47	20	<PQL
CCV2	CCV	1	9.56051	0.38	20	PASS
CCB2	CCB	1	-0.02168	4.89	20	PASS

ANALYSIS RUN LOG

INJECTION LOG: 171215WB

Instrument ID: AA-01

Sample ID	Type	DF	Date	Time	Comments
Calibration Zero	IBLK	1	12/15/2017	14:06:10	Reported
Standard #1	ICAL	1	12/15/2017	14:08:52	Reported
Standard #2	ICAL	1	12/15/2017	14:11:34	Reported
Standard #3	ICAL	1	12/15/2017	14:14:17	Reported
Standard #4	ICAL	1	12/15/2017	14:17:00	Reported
Standard #5	ICAL	1	12/15/2017	14:19:45	Reported
ICV	ICV	1	12/15/2017	14:22:28	Reported
ICB	ICB	1	12/15/2017	14:25:09	Reported
MB-66079	MBLK	1	12/15/2017	14:27:51	Reported
MB-66031 TCLP	MBLK	1	12/15/2017	14:30:34	Reported
LCS-66079	LCS	1	12/15/2017	14:33:18	Reported
N027546-006B-MS	MS	1	12/15/2017	14:36:01	Reported
N027546-006B-MSD	MSD	1	12/15/2017	14:38:42	Reported
N027546-006B	SAMP	1	12/15/2017	14:41:25	Reported
N027460-001A	SAMP	1	12/15/2017	14:44:07	Reported
N027556-001E	SAMP	1	12/15/2017	14:46:51	Reported
N027556-002E	SAMP	1	12/15/2017	14:49:35	Reported
N027556-003E	SAMP	1	12/15/2017	14:52:19	Reported
CCV1	CCV	1	12/15/2017	14:55:03	Reported
CCB1	CCB	1	12/15/2017	14:57:45	Reported
N027556-006E	SAMP	1	12/15/2017	15:00:27	Reported
N027501-001A	SAMP	1	12/15/2017	15:03:09	Reported
N027501-002A	SAMP	1	12/15/2017	15:05:52	Reported
N027501-003A	SAMP	1	12/15/2017	15:08:35	Reported
CCV2	CCV	1	12/15/2017	15:11:18	Reported
CCB2	CCB	1	12/15/2017	15:14:00	Reported

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/15/2017 7:47:13**
Prep End Date: **12/15/2017 11:00:0**

Reviewed/ Date: 01/05/2018
Initials/ Date: for

Prep Batch **66079** Prep Code: **7470_PR** Technician: **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-1-39**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66079	Aqueous		25	☐	0	0	50	2.000		
MB-66031 TCLP	Extract		25	☐	0	0	50	2.000		
MB-66079	Aqueous		25	☐	0	0	50	2.000		
N027460-001A	Extract	<2	25	☐	0	0	50	2.000		
N027546-006B	Groundwater	<2	25	☐	0	0	50	2.000		
N027546-006B-MS	Groundwater	<2	25	☐	0	0	50	2.000		
N027546-006B-MS	Groundwater	<2	25	☐	0	0	50	2.000		
N027556-001E	Groundwater	<2	25	☐	0	0	50	2.000		
N027556-002E	Groundwater	<2	25	☐	0	0	50	2.000		
N027556-003E	Groundwater	<2	25	☐	0	0	50	2.000		
N027556-006E	Groundwater	<2	25	☐	0	0	50	2.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8541	Potassium Persulfate
8755	POTASSIUM PERMANGANATE
9306	SODIUM CHLORIDE
9307	HYDROXYGLAMINE HCl
9465	sulfuric acid
9602	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171211	500 ppb Hg ICAL/CCV	ICAL/CCV	0.25
2MWST-171211	500 ppb Hg ICV/LCS/LCSD/MS/MSD	ICV/LCS/MS/M	0.25

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 171215WB

Instrument ID: AA-01

	Stock	Working
Standard Concentration:	1,000 PPM	500 PPB
ICAL Standard:	2MSST-160906C	2MWST-171211A

Comments:

Calibration Acceptance Criteria: > 0.995 Correlation

Sample ID	Date	Time	Concentration	Units	Ave Absorbance	Comments	R
Calibration Zero	12/15/2017	14:06:10	0	PPB	93.39749	Reported	
Standard #1	12/15/2017	14:08:52	0.2	PPB	183.36534	Reported	
Standard #2	12/15/2017	14:11:34	1	PPB	627.39758	Reported	
Standard #3	12/15/2017	14:14:17	5	PPB	2841.47037	Reported	
Standard #4	12/15/2017	14:17:00	10	PPB	5587.23497	Reported	
Standard #5	12/15/2017	14:19:45	20	PPB	11084.33383	Reported	1.000

* Please note that the instrument printout for the 'Average Absorbance' were represented in three significant figures. The exact values are represented in the ICAL Summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID **ICV**	SampType: **ICV**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120869**
Client ID: **ICV**	Batch ID: **R120869**	TestNo: **EPA 7470A**		Analysis Date: **12/15/2017**	SeqNo: **2868851**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.329	0.20	10.00	0	103	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120869**
Client ID: **CCV**	Batch ID: **R120869**	TestNo: **EPA 7470A**		Analysis Date: **12/15/2017**	SeqNo: **2868863**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	9.417	0.20	10.00	0	94.2	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120869**
Client ID: **CCV**	Batch ID: **R120869**	TestNo: **EPA 7470A**		Analysis Date: **12/15/2017**	SeqNo: **2868869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	9.561	0.20	10.00	0	95.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027546
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 7470_W_DISS

Sample ID **ICB**	SampType: **ICB**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120869**
Client ID: **ICB**	Batch ID: **R120869**	TestNo: **EPA 7470A**		Analysis Date: **12/15/2017**	SeqNo: **2868852**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	-0.07397	0.20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120869**
Client ID: **CCB**	Batch ID: **R120869**	TestNo: **EPA 7470A**		Analysis Date: **12/15/2017**	SeqNo: **2868864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.002	0.20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **7470_W_DIS**	Units: **µg/L**	Prep Date:	RunNo: **120869**
Client ID: **CCB**	Batch ID: **R120869**	TestNo: **EPA 7470A**		Analysis Date: **12/15/2017**	SeqNo: **2868870**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	-0.02168	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limits

Method Name:	Mercury
Method Number:	EPA Method 7470/245.1
Date of Analysis:	4/5/2016
Analyst:	Claire Ignacio/ Amy Mata
Matrix:	Water
Spike Concentration:	0.2 ug/L

Compound	#1	#2	#3	#4	#5	#6	#7	SD	MDL	LOD	PQL
Mercury, ug/L	0.29	0.30	0.29	0.24	0.30	0.24	0.30	0.028	0.0870	0.10	0.20

LOD: **0.10 ug/L**
LOQ: **0.20 ug/L**

LOD Verification @ 0.10 ug/L

Spike Amount: ug/L	0.100
Actual Amount: ug/L	0.130
% Recovery:	**130%**

LOQ Verification @ 0.20 ug/L

Spike Amount: ug/L	0.200
Actual Amount: ug/L	0.210
% Recovery:	**105%**

January 09, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027557

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 14, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Litucas for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (13 ug/L) and hexavalent chromium (10 ug/L) for sample N027557-002 (TW-05-LF-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (4.0 ug/L) and hexavalent chromium (2.8 ug/L) for sample N027557-004 (TW-04-LF-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 300.0:

Dilution was necessary for some samples due to precipitation upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N027557-001B-MS1 and N027557-001B-MSD1 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N027557-002B-MS2 and N027557-002B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (13 ug/L) and hexavalent chromium (10 ug/L) for sample N027557-002 (TW-05-LF-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 13 and 10 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (4.0 ug/L) and hexavalent chromium (2.8 ug/L) for sample N027557-004 (TW-04-LF-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 3.9 and 2.5 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Dilution was necessary on some analytes for samples N027557-003, -004 and -005 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Molybdenum in QC samples N027557-001B-MS and N027557-001B-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027557
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027557-001A	TW-05-3V-Q417	Groundwater	12/14/2017 10:41:00 AM	12/14/2017	1/9/2018
N027557-001B	TW-05-3V-Q417	Groundwater	12/14/2017 10:41:00 AM	12/14/2017	1/9/2018
N027557-001C	TW-05-3V-Q417	Groundwater	12/14/2017 10:41:00 AM	12/14/2017	1/9/2018
N027557-002A	TW-05-LF-Q417	Groundwater	12/14/2017 9:18:00 AM	12/14/2017	1/9/2018
N027557-002B	TW-05-LF-Q417	Groundwater	12/14/2017 9:18:00 AM	12/14/2017	1/9/2018
N027557-002C	TW-05-LF-Q417	Groundwater	12/14/2017 9:18:00 AM	12/14/2017	1/9/2018
N027557-003A	TW-04-3V-Q417	Groundwater	12/14/2017 1:25:00 PM	12/14/2017	1/9/2018
N027557-003B	TW-04-3V-Q417	Groundwater	12/14/2017 1:25:00 PM	12/14/2017	1/9/2018
N027557-003C	TW-04-3V-Q417	Groundwater	12/14/2017 1:25:00 PM	12/14/2017	1/9/2018
N027557-004A	TW-04-LF-Q417	Groundwater	12/14/2017 9:35:00 AM	12/14/2017	1/9/2018
N027557-004B	TW-04-LF-Q417	Groundwater	12/14/2017 9:35:00 AM	12/14/2017	1/9/2018
N027557-004C	TW-04-LF-Q417	Groundwater	12/14/2017 9:35:00 AM	12/14/2017	1/9/2018
N027557-005A	PGE-08-Q417	Groundwater	12/14/2017 1:40:00 PM	12/14/2017	1/9/2018
N027557-005B	PGE-08-Q417	Groundwater	12/14/2017 1:40:00 PM	12/14/2017	1/9/2018
N027557-005C	PGE-08-Q417	Groundwater	12/14/2017 1:40:00 PM	12/14/2017	1/9/2018
N027557-005D	PGE-08-Q417	Groundwater	12/14/2017 1:40:00 PM	12/14/2017	1/9/2018
N027557-006A	MW-66BR-270-Q417	Groundwater	12/14/2017 8:35:00 AM	12/14/2017	1/9/2018
N027557-006B	MW-66BR-270-Q417	Groundwater	12/14/2017 8:35:00 AM	12/14/2017	1/9/2018
N027557-006C	MW-66BR-270-Q417	Groundwater	12/14/2017 8:35:00 AM	12/14/2017	1/9/2018
N027557-006D	MW-66BR-270-Q417	Groundwater	12/14/2017 8:35:00 AM	12/14/2017	1/9/2018
N027557-007A	MW-60BR-245-3V-Q417	Groundwater	12/14/2017 2:25:00 PM	12/14/2017	1/9/2018
N027557-007B	MW-60BR-245-3V-Q417	Groundwater	12/14/2017 2:25:00 PM	12/14/2017	1/9/2018
N027557-007C	MW-60BR-245-3V-Q417	Groundwater	12/14/2017 2:25:00 PM	12/14/2017	1/9/2018
N027557-007D	MW-60BR-245-3V-Q417	Groundwater	12/14/2017 2:25:00 PM	12/14/2017	1/9/2018
N027557-008A	PM-03-Q417	Groundwater	12/14/2017 9:10:00 AM	12/14/2017	1/9/2018
N027557-008B	PM-03-Q417	Groundwater	12/14/2017 9:10:00 AM	12/14/2017	1/9/2018
N027557-008C	PM-03-Q417	Groundwater	12/14/2017 9:10:00 AM	12/14/2017	1/9/2018
N027557-008D	PM-03-Q417	Groundwater	12/14/2017 9:10:00 AM	12/14/2017	1/9/2018
N027557-008E	PM-03-Q417	Groundwater	12/14/2017 9:10:00 AM	12/14/2017	1/9/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027557
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027557-009A	MW-920-Q417	Groundwater	12/14/2017 8:55:00 AM	12/14/2017	1/9/2018
N027557-009B	MW-920-Q417	Groundwater	12/14/2017 8:55:00 AM	12/14/2017	1/9/2018
N027557-009C	MW-920-Q417	Groundwater	12/14/2017 8:55:00 AM	12/14/2017	1/9/2018
N027557-009D	MW-920-Q417	Groundwater	12/14/2017 8:55:00 AM	12/14/2017	1/9/2018
N027557-009E	MW-920-Q417	Groundwater	12/14/2017 8:55:00 AM	12/14/2017	1/9/2018
N027557-010A	PM-04-Q417	Groundwater	12/14/2017 8:45:00 AM	12/14/2017	1/9/2018
N027557-010B	PM-04-Q417	Groundwater	12/14/2017 8:45:00 AM	12/14/2017	1/9/2018
N027557-010C	PM-04-Q417	Groundwater	12/14/2017 8:45:00 AM	12/14/2017	1/9/2018
N027557-010D	PM-04-Q417	Groundwater	12/14/2017 8:45:00 AM	12/14/2017	1/9/2018
N027557-010E	PM-04-Q417	Groundwater	12/14/2017 8:45:00 AM	12/14/2017	1/9/2018
N027557-011A	MW-739-Q417	Groundwater	12/14/2017 3:30:00 PM	12/14/2017	1/9/2018
N027557-012A	MW-740-Q417	Groundwater	12/14/2017 1:30:00 PM	12/14/2017	1/9/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-05-3V-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 10:41:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171215A**	QC Batch: **R120873**			PrepDate			Analyst: **LR**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	12/15/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-05-LF-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 9:18:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171215A**	QC Batch: **R120873**			PrepDate			Analyst: **LR**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	12/15/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-3V-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 1:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171215A**	QC Batch: **R120873**			PrepDate			Analyst: **LR**
Specific Conductance	19000	0.10	0.10		umhos/cm	1	12/15/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-LF-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 9:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171215A**	QC Batch: **R120873**			PrepDate			Analyst: **LR**
Specific Conductance	22000	0.10	0.10		umhos/cm	1	12/15/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-005

Client Sample ID: PGE-08-Q417
Collection Date: 12/14/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171215A**	QC Batch: **R120873**			PrepDate			Analyst: **LR**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	12/15/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66BR-270-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 8:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171215A**	QC Batch: **R120873**			PrepDate			Analyst: **LR**
Specific Conductance	2900	0.10	0.10		umhos/cm	1	12/15/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 2:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171215A**	QC Batch: **R120873**			PrepDate			Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	12/15/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PM-03-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 9:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171215A**	QC Batch: **R120873**			PrepDate			Analyst: **LR**
Specific Conductance	1300	0.10	0.10		umhos/cm	1	12/15/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-920-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 8:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171215A**	QC Batch: **R120873**			PrepDate			Analyst: **LR**
Specific Conductance	2000	0.10	0.10		umhos/cm	1	12/15/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PM-04-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 8:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171215A**	QC Batch: **R120873**			PrepDate			Analyst: **LR**
Specific Conductance	2000	0.10	0.10		umhos/cm	1	12/15/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N027557-004CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120873
Client ID:	ZZZZZZ	Batch ID:	R120873	TestNo:	EPA 120.1			Analysis Date:	12/15/2017	SeqNo:	2869126

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	21700.000	0.10						21800	0.460	10	

Sample ID	N027557-005DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120873
Client ID:	ZZZZZZ	Batch ID:	R120873	TestNo:	EPA 120.1			Analysis Date:	12/15/2017	SeqNo:	2869128

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	16880.000	0.10						16870	0.0593	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-05-3V-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 10:41:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171220E**	QC Batch: **66145**			PrepDate	**12/20/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	7400	100	100		mg/L	1	12/20/2017 01:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-05-LF-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 9:18:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171220E**	QC Batch: **66145**			PrepDate	**12/20/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	7600	100	100		mg/L	1	12/20/2017 01:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-3V-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 1:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171220E**	QC Batch: **66145**			PrepDate	**12/20/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	12000	100	100		mg/L	1	12/20/2017 01:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-LF-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 9:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171220E**	QC Batch: **66145**				PrepDate	**12/20/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	15000	200	200		mg/L	1	12/20/2017 01:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PGE-08-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 1:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171220E**	QC Batch: **66145**			PrepDate	**12/20/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	11000	100	100		mg/L	1	12/20/2017 01:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66BR-270-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 8:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171220E**	QC Batch: **66145**				PrepDate	**12/20/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1400	20	20		mg/L	1	12/20/2017 01:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 2:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171220E**	QC Batch: **66145**				PrepDate	**12/20/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	8600	100	100		mg/L	1	12/20/2017 01:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PM-03-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 9:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171220E**	QC Batch: **66145**			PrepDate	**12/20/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	780	10	10		mg/L	1	12/20/2017 01:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-920-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 8:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171220E**	QC Batch: **66145**			PrepDate	**12/20/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1300	17	17		mg/L	1	12/20/2017 01:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PM-04-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 8:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171220E**	QC Batch: **66145**			PrepDate	**12/20/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1200	17	17		mg/L	1	12/20/2017 01:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-66145	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/20/2017	RunNo:	120999
Client ID:	LCSW	Batch ID:	66145	TestNo:	SM2540C			Analysis Date:	12/20/2017	SeqNo:	2875587

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	956.000	10	1000	0	95.6	80	120				

Sample ID	MB-66145	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/20/2017	RunNo:	120999
Client ID:	PBW	Batch ID:	66145	TestNo:	SM2540C			Analysis Date:	12/20/2017	SeqNo:	2875588

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N027557-004CDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/20/2017	RunNo:	120999
Client ID:	ZZZZZZ	Batch ID:	66145	TestNo:	SM2540C			Analysis Date:	12/20/2017	SeqNo:	2875593

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	15320.000	200						14740	3.86	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-001

Client Sample ID: TW-05-3V-Q417
Collection Date: 12/14/2017 10:41:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171221A** QC Batch: **R121028**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	14	0.17	1.0		µg/L	5	12/21/2017 11:34 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180105C** QC Batch: **66129**				PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	12	0.019	1.0		µg/L	1	1/5/2018 04:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-05-LF-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 9:18:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171221A** QC Batch: **R121028**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	10	0.17	1.0		µg/L	5	12/21/2017 11:53 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180105C** QC Batch: **66129**				PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	13	0.019	1.0		µg/L	1	1/5/2018 05:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-003

Client Sample ID: TW-04-3V-Q417
Collection Date: 12/14/2017 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171221A** QC Batch: **R121028**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	8.2	0.17	1.0		µg/L	5	12/21/2017 12:12 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A	**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66129**				PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	8.3	0.019	1.0		µg/L	1	1/5/2018 06:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-LF-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 9:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171221A**	QC Batch: **R121028**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	2.8	0.17	1.0		µg/L	5	12/21/2017 12:31 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180105C**	QC Batch: **66129**			PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	4.0	0.019	1.0		µg/L	1	1/5/2018 06:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PGE-08-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 1:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_171221A** QC Batch: **R121028**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/21/2017 12:50 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66129**				PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 06:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66BR-270-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 8:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_171221A** QC Batch: **R121028**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/21/2017 10:47 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66129**				PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 06:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-007

Client Sample ID: MW-60BR-245-3V-Q417
Collection Date: 12/14/2017 2:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171221A**	QC Batch: **R121028**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	690	3.3	20		µg/L	100	12/21/2017 01:28 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180105C**	QC Batch: **66129**			PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	830	0.096	5.0		µg/L	5	1/5/2018 07:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-008

Client Sample ID: PM-03-Q417
Collection Date: 12/14/2017 9:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171221A** QC Batch: **R121028**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	9.4	0.033	0.20		µg/L	1	12/21/2017 01:37 PM
TOTAL METALS BY ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_180105E** QC Batch: **66130**				PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	10	0.019	1.0		µg/L	1	1/5/2018 02:59 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180105C** QC Batch: **66129**				PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	9.6	0.019	1.0		µg/L	1	1/5/2018 07:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-009

Client Sample ID: MW-920-Q417
Collection Date: 12/14/2017 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171221A** QC Batch: **R121028**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	18	0.066	0.40		µg/L	2	12/21/2017 03:56 PM
TOTAL METALS BY ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_180105E** QC Batch: **66130**				PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	18	0.019	1.0		µg/L	1	1/5/2018 03:50 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180105C** QC Batch: **66129**				PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	18	0.019	1.0		µg/L	1	1/5/2018 07:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-010

Client Sample ID: PM-04-Q417
Collection Date: 12/14/2017 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171221A** QC Batch: **R121028**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	18	0.066	0.40		µg/L	2	12/21/2017 04:14 PM
TOTAL METALS BY ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_180105E** QC Batch: **66130**				PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	18	0.019	1.0		µg/L	1	1/5/2018 04:02 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180105C** QC Batch: **66129**				PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	18	0.019	1.0		µg/L	1	1/5/2018 07:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-739-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171221A**	QC Batch: **R121028**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/21/2017 02:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-740-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 1:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171221A**	QC Batch: **R121028**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/21/2017 02:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_CRPGE

Sample ID	**MB-66130**	SampType:	**MBLK**	TestCode:	**200.8_W_CR**	Units:	**µg/L**	Prep Date:	**12/19/2017**	RunNo:	**121244**
Client ID:	**PBW**	Batch ID:	**66130**	TestNo:	**EPA 200.8**			Analysis Date:	**1/5/2018**	SeqNo:	**2886754**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	**LCS-66130**	SampType:	**LCS**	TestCode:	**200.8_W_CR**	Units:	**µg/L**	Prep Date:	**12/19/2017**	RunNo:	**121244**
Client ID:	**LCSW**	Batch ID:	**66130**	TestNo:	**EPA 200.8**			Analysis Date:	**1/5/2018**	SeqNo:	**2886755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.844	1.0	10.00	0	98.4	85	115				

Sample ID	**N027557-008E-MS**	SampType:	**MS**	TestCode:	**200.8_W_CR**	Units:	**µg/L**	Prep Date:	**12/19/2017**	RunNo:	**121244**
Client ID:	**ZZZZZZ**	Batch ID:	**66130**	TestNo:	**EPA 200.8**			Analysis Date:	**1/5/2018**	SeqNo:	**2886769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.652	1.0	10.00	10.09	95.6	75	125				

Sample ID	**N027557-008E-MSD**	SampType:	**MSD**	TestCode:	**200.8_W_CR**	Units:	**µg/L**	Prep Date:	**12/19/2017**	RunNo:	**121244**
Client ID:	**ZZZZZZ**	Batch ID:	**66130**	TestNo:	**EPA 200.8**			Analysis Date:	**1/5/2018**	SeqNo:	**2886770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.512	1.0	10.00	10.09	94.2	75	125	19.65	0.717	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R121028	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121028
Client ID:	PBW	Batch ID:	R121028	TestNo:	EPA 218.6			Analysis Date:	12/21/2017	SeqNo:	2877335

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	LCS-R121028	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121028
Client ID:	LCSW	Batch ID:	R121028	TestNo:	EPA 218.6			Analysis Date:	12/21/2017	SeqNo:	2877336

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.222	0.20	5.000	0	104	90	110				

Sample ID	N027557-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121028
Client ID:	ZZZZZZ	Batch ID:	R121028	TestNo:	EPA 218.6			Analysis Date:	12/21/2017	SeqNo:	2877341

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	18.770	1.0	5.000	13.63	103	90	110				

Sample ID	N027557-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121028
Client ID:	ZZZZZZ	Batch ID:	R121028	TestNo:	EPA 218.6			Analysis Date:	12/21/2017	SeqNo:	2877343

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	15.727	1.0	5.000	10.47	105	90	110				

Sample ID	N027557-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121028
Client ID:	ZZZZZZ	Batch ID:	R121028	TestNo:	EPA 218.6			Analysis Date:	12/21/2017	SeqNo:	2877345

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.655	1.0	5.000	8.196	109	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027557-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **ZZZZZZ**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877347**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.216	1.0	5.000	2.766	109	90	110				

Sample ID **N027557-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **ZZZZZZ**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877349**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.746	1.0	5.000	0	94.9	90	110				

Sample ID **N027557-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **ZZZZZZ**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877354**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.658	0.20	5.000	9.413	105	90	110				

Sample ID **N027557-008AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **ZZZZZZ**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877355**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.836	0.20	5.000	9.413	108	90	110	14.66	1.21	20	

Sample ID **N027557-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **ZZZZZZ**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877357**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.072	0.20	1.000	0	107	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027557-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **ZZZZZZ**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877359**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.078	0.20	1.000	0	108	90	110				

Sample ID **N027557-007ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **ZZZZZZ**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877362**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	689.610	20						689.1	0.0798	20	

Sample ID **N027557-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **ZZZZZZ**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877363**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1223.820	20	500.0	689.1	107	90	110				

Sample ID **N027557-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **ZZZZZZ**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.023	0.20	1.000	0	102	90	110				

Sample ID **N027557-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **ZZZZZZ**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	28.376	0.40	10.00	17.99	104	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027557-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121028
Client ID:	ZZZZZZ	Batch ID:	R121028	TestNo:	EPA 218.6			Analysis Date:	12/21/2017	SeqNo:	2877368

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	28.265	0.40	10.00	17.84	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66129	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/19/2017	RunNo:	121242
Client ID:	PBW	Batch ID:	66129	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886467

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66129	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/19/2017	RunNo:	121242
Client ID:	LCSW	Batch ID:	66129	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886473

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.103	1.0	10.00	0	101	85	115				

Sample ID	N027557-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/19/2017	RunNo:	121242
Client ID:	ZZZZZZ	Batch ID:	66129	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886479

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	22.583	1.0	10.00	12.28	103	75	125				

Sample ID	N027557-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/19/2017	RunNo:	121242
Client ID:	ZZZZZZ	Batch ID:	66129	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886481

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	22.664	1.0	10.00	12.28	104	75	125	22.58	0.360	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-05-3V-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 10:41:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	35	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-05-LF-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 9:18:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	35	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-3V-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 1:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	51	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-LF-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 9:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	38	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PGE-08-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 1:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	47	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66BR-270-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 8:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	42	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 2:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	28	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PM-03-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 9:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	88	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-920-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 8:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	58	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PM-04-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 8:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	56	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R121069**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121069**
Client ID: **LCSW**	Batch ID: **R121069**	TestNo: **SM 2320 B**		Analysis Date: **12/19/2017**	SeqNo: **2879204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	99.576	5.0	100.0	0	99.6	85	115				

Sample ID **MB-R121069**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121069**
Client ID: **PBW**	Batch ID: **R121069**	TestNo: **SM 2320 B**		Analysis Date: **12/19/2017**	SeqNo: **2879205**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N027557-001CDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121069**
Client ID: **ZZZZZZ**	Batch ID: **R121069**	TestNo: **SM 2320 B**		Analysis Date: **12/19/2017**	SeqNo: **2879214**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	36.017	5.0						34.96	2.99	30	

Sample ID **N027583-001DMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121069**
Client ID: **ZZZZZZ**	Batch ID: **R121069**	TestNo: **SM 2320 B**		Analysis Date: **12/19/2017**	SeqNo: **2879225**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	163.136	5.0	100.0	65.68	97.5	75	125				

Sample ID **N027583-001DMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121069**
Client ID: **ZZZZZZ**	Batch ID: **R121069**	TestNo: **SM 2320 B**		Analysis Date: **12/19/2017**	SeqNo: **2879226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	163.136	5.0	100.0	65.68	97.5	75	125	163.1	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-001

Client Sample ID: TW-05-3V-Q417
Collection Date: 12/14/2017 10:41:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/22/2017 09:31 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**				PrepDate			Analyst: **RAB**
Chloride	4300	9.1	500		mg/L	1000	12/26/2017 05:10 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**				PrepDate			Analyst: **RAB**
Sulfate	550	1.1	25		mg/L	50	12/26/2017 05:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-002

Client Sample ID: TW-05-LF-Q417
Collection Date: 12/14/2017 9:18:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/22/2017 09:46 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**			PrepDate				Analyst: **RAB**
Chloride	4300	9.1	500		mg/L	1000	12/26/2017 05:40 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**			PrepDate				Analyst: **RAB**
Sulfate	520	1.1	25		mg/L	50	12/26/2017 05:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-003

Client Sample ID: TW-04-3V-Q417
Collection Date: 12/14/2017 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/22/2017 10:02 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**			PrepDate				Analyst: **RAB**
Chloride	7200	18	1000		mg/L	2000	12/26/2017 06:42 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**			PrepDate				Analyst: **RAB**
Sulfate	1100	2.3	50		mg/L	100	12/26/2017 06:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-004

Client Sample ID: TW-04-LF-Q417
Collection Date: 12/14/2017 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/22/2017 10:17 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**			PrepDate				Analyst: **RAB**
Chloride	7700	9.1	500		mg/L	1000	12/26/2017 07:12 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**			PrepDate				Analyst: **RAB**
Sulfate	950	2.3	50		mg/L	100	12/26/2017 07:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-005

Client Sample ID: PGE-08-Q417
Collection Date: 12/14/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Bromide	ND	0.20	5.0		mg/L	10	12/22/2017 10:32 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**			PrepDate				Analyst: **RAB**
Chloride	6500	18	1000		mg/L	2000	12/26/2017 07:43 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**			PrepDate				Analyst: **RAB**
Sulfate	1800	4.6	100		mg/L	200	12/26/2017 07:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-006

Client Sample ID: MW-66BR-270-Q417
Collection Date: 12/14/2017 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/22/2017 10:48 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**			PrepDate				Analyst: **RAB**
Chloride	870	1.8	100		mg/L	200	12/26/2017 04:09 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**			PrepDate				Analyst: **RAB**
Sulfate	68	0.23	5.0		mg/L	10	12/26/2017 04:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference
	Results are wet unless otherwise specified
DO	Surrogate Diluted Out

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-007

Client Sample ID: MW-60BR-245-3V-Q417
Collection Date: 12/14/2017 2:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/22/2017 11:03 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**			PrepDate				Analyst: **RAB**
Chloride	5200	9.1	500		mg/L	1000	12/26/2017 08:13 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**			PrepDate				Analyst: **RAB**
Sulfate	740	2.3	50		mg/L	100	12/26/2017 08:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-008

Client Sample ID: PM-03-Q417
Collection Date: 12/14/2017 9:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/22/2017 07:59 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**			PrepDate				Analyst: **RAB**
Chloride	330	0.91	50		mg/L	100	12/26/2017 02:06 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**			PrepDate				Analyst: **RAB**
Sulfate	62	0.23	5.0		mg/L	10	12/26/2017 02:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-009

Client Sample ID: MW-920-Q417
Collection Date: 12/14/2017 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/22/2017 11:18 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**			PrepDate				Analyst: **RAB**
Chloride	560	1.8	100		mg/L	200	12/26/2017 08:44 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**			PrepDate				Analyst: **RAB**
Sulfate	120	0.23	5.0		mg/L	10	12/26/2017 08:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-010

Client Sample ID: PM-04-Q417
Collection Date: 12/14/2017 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/23/2017 12:04 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**				PrepDate			Analyst: **RAB**
Chloride	550	1.8	100		mg/L	200	12/26/2017 09:45 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**				PrepDate			Analyst: **RAB**
Sulfate	110	0.23	5.0		mg/L	10	12/26/2017 10:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference
	Results are wet unless otherwise specified
DO	Surrogate Diluted Out

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	MB-R121065_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	PBW	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2879042

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	LCS-R121065_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	LCSW	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2879043

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.193	0.50	1.250	0	95.4	90	110				

Sample ID	N027557-008DDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	ZZZZZZ	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2879049

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.126	0.50						0.1438	0	20	

Sample ID	N027557-008DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	ZZZZZZ	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2879052

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.417	0.50	1.250	0.1438	102	80	120				

Sample ID	N027557-008DMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	ZZZZZZ	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2879053

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.495	0.50	1.250	0.1438	108	80	120	1.417	5.40	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R121079_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121079
Client ID:	PBW	Batch ID:	R121079	TestNo:	EPA 300.0			Analysis Date:	12/26/2017	SeqNo:	2879572

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R121079_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121079
Client ID:	LCSW	Batch ID:	R121079	TestNo:	EPA 300.0			Analysis Date:	12/26/2017	SeqNo:	2879573

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.968	0.50	2.000	0	98.4	90	110				

Sample ID	N027583-001DDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121079
Client ID:	ZZZZZZ	Batch ID:	R121079	TestNo:	EPA 300.0			Analysis Date:	12/26/2017	SeqNo:	2879575

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2136.850	250						2119	0.822	20	

Sample ID	N027557-008DMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121079
Client ID:	ZZZZZZ	Batch ID:	R121079	TestNo:	EPA 300.0			Analysis Date:	12/26/2017	SeqNo:	2879581

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	527.060	50	200.0	331.8	97.6	80	120				

Sample ID	N027557-008DMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121079
Client ID:	ZZZZZZ	Batch ID:	R121079	TestNo:	EPA 300.0			Analysis Date:	12/26/2017	SeqNo:	2879582

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	530.070	50	200.0	331.8	99.1	80	120	527.1	0.569	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N027557-006DMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121079
Client ID:	ZZZZZZ	Batch ID:	R121079	TestNo:	EPA 300.0			Analysis Date:	12/26/2017	SeqNo:	2879586

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1280.480	100	400.0	869.3	103	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R121079_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121079
Client ID:	PBW	Batch ID:	R121079	TestNo:	EPA 300.0			Analysis Date:	12/26/2017	SeqNo:	2879605

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R121079_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121079
Client ID:	LCSW	Batch ID:	R121079	TestNo:	EPA 300.0			Analysis Date:	12/26/2017	SeqNo:	2879606

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.883	0.50	4.000	0	97.1	90	110				

Sample ID	N027583-001DDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121079
Client ID:	ZZZZZZ	Batch ID:	R121079	TestNo:	EPA 300.0			Analysis Date:	12/26/2017	SeqNo:	2879610

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	457.860	25						461.8	0.858	20	

Sample ID	N027557-008DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121079
Client ID:	ZZZZZZ	Batch ID:	R121079	TestNo:	EPA 300.0			Analysis Date:	12/26/2017	SeqNo:	2879616

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	101.648	5.0	40.00	62.29	98.4	80	120				

Sample ID	N027557-008DMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121079
Client ID:	ZZZZZZ	Batch ID:	R121079	TestNo:	EPA 300.0			Analysis Date:	12/26/2017	SeqNo:	2879617

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	101.578	5.0	40.00	62.29	98.2	80	120	101.6	0.0689	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N027557-006DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121079
Client ID:	ZZZZZZ	Batch ID:	R121079	TestNo:	EPA 300.0			Analysis Date:	12/26/2017	SeqNo:	2879619

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	108.477	5.0	40.00	68.22	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PGE-08-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 1:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66BR-270-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 8:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 2:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.82	0.022	0.050		mg/L	1	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PM-03-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 9:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	3.1	0.11	0.25		mg/L	5	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-920-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 8:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	2.1	0.11	0.25		mg/L	5	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PM-04-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 8:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	2.3	0.11	0.25		mg/L	5	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R121101	**MBLK**	**4500N03F_W**	**mg/L**		**121101**
Client ID: **PBW**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-R121101	**LCS**	**4500N03F_W**	**mg/L**		**121101**
Client ID: **LCSW**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.504	0.050	0.5000	0	101	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027546-003CMS	**MS**	**4500N03F_W**	**mg/L**		**121101**
Client ID: **ZZZZZZ**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.842	0.10	1.000	1.650	119	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027546-003CMSD	**MSD**	**4500N03F_W**	**mg/L**		**121101**
Client ID: **ZZZZZZ**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880070**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.813	0.10	1.000	1.650	116	75	125	2.842	1.02	20	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027546-004CDUP	**DUP**	**4500N03F_W**	**mg/L**		**121101**
Client ID: **ZZZZZZ**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880072**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0.06030	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-001

Client Sample ID: TW-05-3V-Q417
Collection Date: 12/14/2017 10:41:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_171219B** QC Batch: **66082** PrepDate **12/15/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	1400	38	100		ug/L	1	12/20/2017 12:35 AM
Calcium	340000	28	500		ug/L	1	12/20/2017 12:35 AM
Iron	21	1.8	20		ug/L	1	12/20/2017 12:35 AM
Magnesium	20000	4.4	100		ug/L	1	12/20/2017 12:35 AM
Sodium	2700000	2600	50000		ug/L	100	1/3/2018 09:33 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-002

Client Sample ID: TW-05-LF-Q417
Collection Date: 12/14/2017 9:18:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66082**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	1400	38	100		ug/L	1	12/20/2017 01:20 AM
Calcium	340000	28	500		ug/L	1	12/20/2017 01:20 AM
Iron	260	1.8	20		ug/L	1	12/20/2017 01:20 AM
Magnesium	19000	4.4	100		ug/L	1	12/20/2017 01:20 AM
Sodium	2700000	2600	50000		ug/L	100	1/3/2018 09:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-003

Client Sample ID: TW-04-3V-Q417
Collection Date: 12/14/2017 1:25:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_171219B** QC Batch: **66082** PrepDate **12/15/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	1900	38	100		ug/L	1	12/20/2017 01:27 AM
Calcium	380000	28	500		ug/L	1	12/20/2017 01:27 AM
Iron	ND	1.8	20		ug/L	1	12/20/2017 01:27 AM
Magnesium	34000	4.4	100		ug/L	1	12/20/2017 01:27 AM
Sodium	5000000	13000	250000		ug/L	500	1/3/2018 10:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-004

Client Sample ID: TW-04-LF-Q417
Collection Date: 12/14/2017 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66082**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	2100	38	100		ug/L	1	12/20/2017 01:33 AM
Calcium	170000	28	500		ug/L	1	12/20/2017 01:33 AM
Iron	68	1.8	20		ug/L	1	12/20/2017 01:33 AM
Magnesium	5000	4.4	100		ug/L	1	12/20/2017 01:33 AM
Sodium	4800000	13000	250000		ug/L	500	1/3/2018 10:40 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-005

Client Sample ID: PGE-08-Q417
Collection Date: 12/14/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66082**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	3200	38	100		ug/L	1	12/20/2017 01:40 AM
Calcium	810000	140	2500		ug/L	5	12/20/2017 08:05 AM
Iron	67	1.8	20		ug/L	1	12/20/2017 01:40 AM
Magnesium	16000	4.4	100		ug/L	1	12/20/2017 01:40 AM
Sodium	4100000	13000	250000		ug/L	500	1/3/2018 10:44 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-006

Client Sample ID: MW-66BR-270-Q417
Collection Date: 12/14/2017 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66082**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	1300	38	100		ug/L	1	12/20/2017 01:47 AM
Calcium	31000	28	500		ug/L	1	12/20/2017 01:47 AM
Iron	27	1.8	20		ug/L	1	12/20/2017 01:47 AM
Magnesium	1200	4.4	100		ug/L	1	12/20/2017 01:47 AM
Sodium	590000	2600	50000		ug/L	100	1/3/2018 09:57 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 2:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66082**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	1700	38	100		ug/L	1	12/20/2017 01:54 AM
Calcium	560000	140	2500		ug/L	5	12/20/2017 08:12 AM
Iron	560	1.8	20		ug/L	1	12/20/2017 01:54 AM
Magnesium	17000	4.4	100		ug/L	1	12/20/2017 01:54 AM
Sodium	3100000	2600	50000		ug/L	100	1/3/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-008

Client Sample ID: PM-03-Q417
Collection Date: 12/14/2017 9:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66082**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	220	38	100		ug/L	1	12/20/2017 02:01 AM
Calcium	85000	28	500		ug/L	1	12/20/2017 02:01 AM
Iron	ND	1.8	20		ug/L	1	12/20/2017 02:01 AM
Magnesium	17000	4.4	100		ug/L	1	12/20/2017 02:01 AM
Sodium	160000	260	5000		ug/L	10	1/3/2018 10:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-009

Client Sample ID: MW-920-Q417
Collection Date: 12/14/2017 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66082**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	270	38	100		ug/L	1	12/20/2017 02:19 AM
Calcium	100000	28	500		ug/L	1	12/20/2017 02:19 AM
Iron	ND	1.8	20		ug/L	1	12/20/2017 02:19 AM
Magnesium	18000	4.4	100		ug/L	1	12/20/2017 02:19 AM
Sodium	280000	260	5000		ug/L	10	1/3/2018 10:51 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-010

Client Sample ID: PM-04-Q417
Collection Date: 12/14/2017 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66082**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	250	38	100		ug/L	1	12/20/2017 02:26 AM
Calcium	98000	28	500		ug/L	1	12/20/2017 02:26 AM
Iron	ND	1.8	20		ug/L	1	12/20/2017 02:26 AM
Magnesium	18000	4.4	100		ug/L	1	12/20/2017 02:26 AM
Sodium	280000	260	5000		ug/L	10	1/3/2018 10:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-66082**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/15/2017**	RunNo: **120943**
Client ID: **PBW**	Batch ID: **66082**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2873634**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	37.244	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-66082**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/15/2017**	RunNo: **120943**
Client ID: **LCSW**	Batch ID: **66082**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2873635**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4658.679	100	5000	0	93.2	85	115				
Calcium	9582.309	500	10000	0	95.8	85	115				
Iron	104.850	20	100.0	0	105	85	115				
Magnesium	9551.975	100	10000	0	95.5	85	115				

Sample ID **N027557-001B-MS1**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/15/2017**	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **66082**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2873641**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5966.278	100	5000	1351	92.3	75	125				
Calcium	346443.581	500	10000	341600	48.8	75	125				S
Iron	99.622	20	100.0	20.63	79.0	75	125				
Magnesium	28203.170	100	10000	20470	77.3	75	125				

Sample ID **N027557-001B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/15/2017**	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **66082**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2873642**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5962.786	100	5000	1351	92.2	75	125	5966	0.0585	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027557-001B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	120943		
Client ID:	ZZZZZZ	Batch ID:	66082	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2873642		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	345282.820	500	10000	341600	37.2	75	125	346400	0.336	20	S
Iron	98.876	20	100.0	20.63	78.2	75	125	99.62	0.752	20	
Magnesium	28175.681	100	10000	20470	77.1	75	125	28200	0.0975	20	

Sample ID	MB-66082	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	121185		
Client ID:	PBW	Batch ID:	66082	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883334		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID	LCS2-66082	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	121185		
Client ID:	LCSW	Batch ID:	66082	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883335		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20304.796	500	20000	0	102	85	115				

Sample ID	N027557-002B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	121185		
Client ID:	ZZZZZZ	Batch ID:	66082	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883350		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2778496.996	50000	20000	2722000	283	75	125				S

Sample ID	N027557-002B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	121185		
Client ID:	ZZZZZZ	Batch ID:	66082	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883351		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2790015.609	50000	20000	2722000	340	75	125	2778000	0.414	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-001

Client Sample ID: TW-05-3V-Q417
Collection Date: 12/14/2017 10:41:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66129**			PrepDate	**12/19/2017**		Analyst: **CEI**
Manganese	2.2	0.056	0.50		µg/L	1	1/5/2018 04:51 PM
Molybdenum	28	0.039	0.50		µg/L	1	1/5/2018 04:51 PM
Selenium	0.65	0.028	0.50		µg/L	1	1/8/2018 11:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-002

Client Sample ID: TW-05-LF-Q417
Collection Date: 12/14/2017 9:18:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66129**			PrepDate	**12/19/2017**		Analyst: **CEI**
Manganese	19	0.056	0.50		µg/L	1	1/5/2018 05:52 PM
Molybdenum	31	0.039	0.50		µg/L	1	1/5/2018 05:52 PM
Selenium	0.62	0.028	0.50		µg/L	1	1/8/2018 10:51 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-3V-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 1:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66129**			PrepDate	**12/19/2017**		Analyst: **CEI**
Manganese	64	0.056	0.50		µg/L	1	1/5/2018 06:03 PM
Molybdenum	64	0.19	2.5		µg/L	5	1/5/2018 06:09 PM
Selenium	0.68	0.028	0.50		µg/L	1	1/8/2018 11:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-LF-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 9:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180105D**	QC Batch: **66129**				PrepDate	**12/19/2017**	Analyst: **CEI**
Manganese	86	0.056	0.50		µg/L	1	1/5/2018 06:14 PM
Molybdenum	110	0.19	2.5		µg/L	5	1/5/2018 06:20 PM
Selenium	0.64	0.028	0.50		µg/L	1	1/8/2018 11:31 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PGE-08-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 1:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66129**			PrepDate	**12/19/2017**		Analyst: **CEI**
Manganese	630	0.28	2.5		µg/L	5	1/5/2018 06:31 PM
Molybdenum	110	0.19	2.5		µg/L	5	1/5/2018 06:31 PM
Selenium	ND	0.028	0.50		µg/L	1	1/5/2018 06:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-006

Client Sample ID: MW-66BR-270-Q417
Collection Date: 12/14/2017 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180108A**	QC Batch: **66129**			PrepDate	**12/19/2017**		Analyst: **CEI**
Arsenic	0.13	0.025	0.10		µg/L	1	1/8/2018 11:08 AM
Manganese	50	0.056	0.50		µg/L	1	1/5/2018 06:37 PM
Molybdenum	6.0	0.039	0.50		µg/L	1	1/5/2018 06:37 PM
Selenium	ND	0.028	0.50		µg/L	1	1/5/2018 06:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 2:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180105D**	QC Batch: **66129**				PrepDate	**12/19/2017**	Analyst: **CEI**
Arsenic	2.9	0.025	0.10		µg/L	1	1/5/2018 06:59 PM
Manganese	42	0.056	0.50		µg/L	1	1/5/2018 06:59 PM
Molybdenum	36	0.039	0.50		µg/L	1	1/5/2018 06:59 PM
Selenium	1.9	0.028	0.50		µg/L	1	1/5/2018 06:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PM-03-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 9:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180105D**	QC Batch: **66129**				PrepDate	**12/19/2017**	Analyst: **CEI**
Manganese	ND	0.056	0.50		µg/L	1	1/5/2018 07:10 PM
Molybdenum	5.5	0.039	0.50		µg/L	1	1/5/2018 07:10 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/5/2018 07:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-009

Client Sample ID: MW-920-Q417
Collection Date: 12/14/2017 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66129**			PrepDate	**12/19/2017**	Analyst: **CEI**	
Manganese	ND	0.056	0.50		µg/L	1	1/5/2018 07:21 PM
Molybdenum	5.6	0.039	0.50		µg/L	1	1/5/2018 07:21 PM
Selenium	1.3	0.028	0.50		µg/L	1	1/5/2018 07:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PM-04-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 8:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180105D**	QC Batch: **66129**				PrepDate	**12/19/2017**	Analyst: **CEI**
Manganese	ND	0.056	0.50		µg/L	1	1/5/2018 07:32 PM
Molybdenum	5.7	0.039	0.50		µg/L	1	1/5/2018 07:32 PM
Selenium	1.4	0.028	0.50		µg/L	1	1/8/2018 11:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66129**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/19/2017**	RunNo: **121243**
Client ID: **PBW**	Batch ID: **66129**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/5/2018**	SeqNo: **2886621**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-66129**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/19/2017**	RunNo: **121243**
Client ID: **LCSW**	Batch ID: **66129**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/5/2018**	SeqNo: **2886627**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.448	0.10	10.00	0	94.5	85	115				
Manganese	98.446	0.50	100.0	0	98.4	85	115				
Molybdenum	9.819	0.50	10.00	0	98.2	85	115				
Selenium	10.096	0.50	10.00	0	101	85	115				

Sample ID **N027557-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/19/2017**	RunNo: **121243**
Client ID: **ZZZZZZ**	Batch ID: **66129**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/5/2018**	SeqNo: **2886633**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.945	0.10	10.00	3.196	107	75	125				
Manganese	97.830	0.50	100.0	2.217	95.6	75	125				
Molybdenum	41.470	0.50	10.00	28.00	135	75	125				S

Sample ID **N027557-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/19/2017**	RunNo: **121243**
Client ID: **ZZZZZZ**	Batch ID: **66129**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/5/2018**	SeqNo: **2886635**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.980	0.10	10.00	3.196	108	75	125	13.94	0.255	20	
Manganese	98.329	0.50	100.0	2.217	96.1	75	125	97.83	0.509	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027557-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/19/2017	RunNo:	121243
Client ID:	ZZZZZZ	Batch ID:	66129	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886635

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	40.862	0.50	10.00	28.00	129	75	125	41.47	1.48	20	S

Sample ID	N027557-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/19/2017	RunNo:	121243
Client ID:	ZZZZZZ	Batch ID:	66129	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2888827

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	11.509	0.50	10.00	0.6513	109	75	125				

Sample ID	N027557-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/19/2017	RunNo:	121243
Client ID:	ZZZZZZ	Batch ID:	66129	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2888829

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	11.237	0.50	10.00	0.6513	106	75	125	11.51	2.40	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition (Y N): 1. Chilled ✓; 2. Headspace; 3. Container Intact; 4. Seal Present; 5. IR number 2; 6. Method of Cooling: Ice; Sample Temp: 3.2 / 2.6
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	
Title: Geologist II	Phone: 916-786-3302 Fax:		
Signature: 12/14/2017	Sampled By: Gantt Jeffers	Matrix: Ground x Sediment; Potable Soil; NPDES Other Solid; Surface	Courier:
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.		Tracking No.:
Project Name: PG&E Topock - GMP	Signature: Date: 12/14/2017		
Project Number: RC000753.801B			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM; 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3; 500 mL poly	Dissolved metals (SW6010B FF); 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3; 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4; 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0); 1 liter poly	Specific Conductance (EPA 120.1); 1 liter poly	Total Dissolved Solids (SM2540C); 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B); 1 liter poly	Total Chromium (EPA 200.8); HNO3; 500 mL poly				Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027557 -01	TW-05-3V-Q417	12/14/2017	10:41			X				X						X		X	X	X	X					E	4	P	BN	
2	-02	TW-05-LF-Q417	12/14/2017	9:18			X				X						X		X	X	X	X					E	4	P	BN	
3	-03	TW-04-3V-Q417	12/14/2017	13:25			X				X						X		X	X	X	X					E	4	P	BN	
4	-04	TW-04-LF-Q417	12/14/2017	9:35			X				X						X		X	X	X	X					E	4	P	BN	
5	-05	PGE-08-Q417	12/14/2017	13:40		X					X						X		X	X	X	X					E	4	P	BNS	
6	-06	MW-66BR-270-Q417	12/14/2017	8:35		X			X		X								X	X	X	X					E	4	P	BNS	
7	-07	MW-60BR-245-3V-Q417	12/14/2017	14:25		X			X		X								X	X	X	X					E	4	P	BNS	
8	-08	PM-03-Q417	12/14/2017	9:10		X					X						X		X	X	X	X	X				E	5	P	BNS	
9	-09	MW-920-Q417	12/14/2017	8:55		X					X						X		X	X	X	X	X				E	5	P	BNS	
10	-10	PM-04-Q417	12/14/2017	8:45		X					X						X		X	X	X	X	X				E	5	P	BNS	

Relinquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
G. Jeffers	12.14.17 1600		12/14/17 1600
	12/14/17 1612		12/14/17 1612

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B = (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition (Y N): 1. Chilled Y; 2. Headspace; 3. Container Intact; 4. Seal Present; 5. IR number 2; 6. Method of Cooling: ice
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Sample Temp: 2.9°C
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	
Title: Geologist II	Phone: 916-786-3302 Fax:		
Signature: Date: 12/14/2017	Sampled By: Gantt Jeffers		

I hereby authorize ASSET Labs to perform the tests indicated below.

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Project Name: PG&E Topock - GMP
Signature: Date: 12/14/2017
Project Number: RC000753.801B

Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM — 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3 — 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 — 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3 — 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3 — 500 mL poly	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3 — 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3 — 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500NO3 F); H2SO4 — 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) — 1 liter poly	Specific Conductance (EPA 120.1) — 1 liter poly	Total Dissolved Solids (SM2540C) — 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) — 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027557 -11	MW-739-Q417	12/14/2017	15:30		X																	E	1	P	B	
2	-12	MW-740-Q417	12/14/2017	13:30		X																	E	1	P	B	
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											

Courier:
Tracking No.:

Reliquished by (Signature and Printed Name): G. Jeffers	Date/Time: 12.14.17 1600	Reliquished by (Signature and Printed Name):	Date/Time: 12/14/17 1600
Reliquished by (Signature and Printed Name):	Date/Time: 12/14/17 1812	Reliquished by (Signature and Printed Name):	Date/Time: 12/14/17 1812
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages. 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B = (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/14/2017	Workorder:	N027557
Rep sample Temp (Deg C):	3.1/2.6/2.9	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: N/A Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 12/21/2017

Reviewed By: 12/26/2017

ASSET Laboratories

WORK ORDER Summary

20-Dec-17

WorkOrder: N027557

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/14/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027557-001A	TW-05-3V-Q417	12/14/2017 10:41:00 AM	12/29/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027557-001B			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027557-001C			12/29/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/29/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/29/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/29/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N027557-002A	TW-05-LF-Q417	12/14/2017 9:18:00 AM	12/29/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027557-002B			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027557-002C			12/29/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/29/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/29/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

20-Dec-17

WorkOrder: N027557

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/14/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027557-002C	TW-05-LF-Q417	12/14/2017 9:18:00 AM	12/29/2017	Groundwater	SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N027557-003A	TW-04-3V-Q417	12/14/2017 1:25:00 PM	12/29/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027557-003B			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027557-003C			12/29/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/29/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/29/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/29/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N027557-004A	TW-04-LF-Q417	12/14/2017 9:35:00 AM	12/29/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027557-004B			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

20-Dec-17

WorkOrder: N027557

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/14/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027557-004B	TW-04-LF-Q417	12/14/2017 9:35:00 AM	12/29/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027557-004C			12/29/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/29/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/29/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/29/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N027557-005A	PGE-08-Q417	12/14/2017 1:40:00 PM	12/29/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027557-005B			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027557-005C			12/29/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027557-005D			12/29/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/29/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/29/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/29/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

20-Dec-17

WorkOrder: N027557

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/14/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027557-006A	MW-66BR-270-Q417	12/14/2017 8:35:00 AM	12/29/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027557-006B			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027557-006C			12/29/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027557-006D			12/29/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/29/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/29/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/29/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N027557-007A	MW-60BR-245-3V-Q417	12/14/2017 2:25:00 PM	12/29/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027557-007B			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027557-007C			12/29/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

20-Dec-17

WorkOrder: N027557

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/14/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027557-007D	MW-60BR-245-3V-Q417	12/14/2017 2:25:00 PM	12/29/2017	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/29/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/29/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/29/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N027557-008A	PM-03-Q417	12/14/2017 9:10:00 AM	12/29/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027557-008B			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027557-008C			12/29/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027557-008D			12/29/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/29/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/29/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/29/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N027557-008E			12/29/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

20-Dec-17

WorkOrder: N027557

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/14/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027557-008E	PM-03-Q417	12/14/2017 9:10:00 AM	12/29/2017	Groundwater	EPA 200.8	TOTAL METALS BY ICPMS	☐	☐	☐	WW
N027557-009A	MW-920-Q417	12/14/2017 8:55:00 AM	12/29/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027557-009B			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027557-009C			12/29/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027557-009D			12/29/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/29/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/29/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/29/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N027557-009E			12/29/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 200.8	TOTAL METALS BY ICPMS	☐	☐	☐	WW
N027557-010A	PM-04-Q417	12/14/2017 8:45:00 AM	12/29/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027557-010B			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

20-Dec-17

WorkOrder: N027557

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/14/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027557-010B	PM-04-Q417	12/14/2017 8:45:00 AM	12/29/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027557-010C			12/29/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027557-010D			12/29/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/29/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/29/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/29/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N027557-010E			12/29/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 200.8	TOTAL METALS BY ICPMS	☐	☐	☐	WW
N027557-011A	MW-739-Q417	12/14/2017 3:30:00 PM	12/29/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027557-012A	MW-740-Q417	12/14/2017 1:30:00 PM	12/29/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027557-013A	FOLDER	12/29/2017	12/29/2017		EDD	RWQCB	☐	☐	☐	LAB
			12/29/2017		Folder	Folder	☐	☐	☐	LAB
			12/29/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP

Project No.: RC000753.801B

ASSET Laboratories Work Order:

N027557

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

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January 09, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027557

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on December 14, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Litucas for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (13 ug/L) and hexavalent chromium (10 ug/L) for sample N027557-002 (TW-05-LF-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (4.0 ug/L) and hexavalent chromium (2.8 ug/L) for sample N027557-004 (TW-04-LF-Q417) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 300.0:

Dilution was necessary for some samples due to precipitation upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N027557-001B-MS1 and N027557-001B-MSD1 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N027557-002B-MS2 and N027557-002B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (13 ug/L) and hexavalent chromium (10 ug/L) for sample N027557-002 (TW-05-LF-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 13 and 10 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (4.0 ug/L) and hexavalent chromium (2.8 ug/L) for sample N027557-004 (TW-04-LF-Q417) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 3.9 and 2.5 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Dilution was necessary on some analytes for samples N027557-003, -004 and -005 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Molybdenum in QC samples N027557-001B-MS and N027557-001B-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *09-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027557
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027557-001A	TW-05-3V-Q417	Groundwater	12/14/2017 10:41:00 AM	12/14/2017	1/9/2018
N027557-001B	TW-05-3V-Q417	Groundwater	12/14/2017 10:41:00 AM	12/14/2017	1/9/2018
N027557-001C	TW-05-3V-Q417	Groundwater	12/14/2017 10:41:00 AM	12/14/2017	1/9/2018
N027557-002A	TW-05-LF-Q417	Groundwater	12/14/2017 9:18:00 AM	12/14/2017	1/9/2018
N027557-002B	TW-05-LF-Q417	Groundwater	12/14/2017 9:18:00 AM	12/14/2017	1/9/2018
N027557-002C	TW-05-LF-Q417	Groundwater	12/14/2017 9:18:00 AM	12/14/2017	1/9/2018
N027557-003A	TW-04-3V-Q417	Groundwater	12/14/2017 1:25:00 PM	12/14/2017	1/9/2018
N027557-003B	TW-04-3V-Q417	Groundwater	12/14/2017 1:25:00 PM	12/14/2017	1/9/2018
N027557-003C	TW-04-3V-Q417	Groundwater	12/14/2017 1:25:00 PM	12/14/2017	1/9/2018
N027557-004A	TW-04-LF-Q417	Groundwater	12/14/2017 9:35:00 AM	12/14/2017	1/9/2018
N027557-004B	TW-04-LF-Q417	Groundwater	12/14/2017 9:35:00 AM	12/14/2017	1/9/2018
N027557-004C	TW-04-LF-Q417	Groundwater	12/14/2017 9:35:00 AM	12/14/2017	1/9/2018
N027557-005A	PGE-08-Q417	Groundwater	12/14/2017 1:40:00 PM	12/14/2017	1/9/2018
N027557-005B	PGE-08-Q417	Groundwater	12/14/2017 1:40:00 PM	12/14/2017	1/9/2018
N027557-005C	PGE-08-Q417	Groundwater	12/14/2017 1:40:00 PM	12/14/2017	1/9/2018
N027557-005D	PGE-08-Q417	Groundwater	12/14/2017 1:40:00 PM	12/14/2017	1/9/2018
N027557-006A	MW-66BR-270-Q417	Groundwater	12/14/2017 8:35:00 AM	12/14/2017	1/9/2018
N027557-006B	MW-66BR-270-Q417	Groundwater	12/14/2017 8:35:00 AM	12/14/2017	1/9/2018
N027557-006C	MW-66BR-270-Q417	Groundwater	12/14/2017 8:35:00 AM	12/14/2017	1/9/2018
N027557-006D	MW-66BR-270-Q417	Groundwater	12/14/2017 8:35:00 AM	12/14/2017	1/9/2018
N027557-007A	MW-60BR-245-3V-Q417	Groundwater	12/14/2017 2:25:00 PM	12/14/2017	1/9/2018
N027557-007B	MW-60BR-245-3V-Q417	Groundwater	12/14/2017 2:25:00 PM	12/14/2017	1/9/2018
N027557-007C	MW-60BR-245-3V-Q417	Groundwater	12/14/2017 2:25:00 PM	12/14/2017	1/9/2018
N027557-007D	MW-60BR-245-3V-Q417	Groundwater	12/14/2017 2:25:00 PM	12/14/2017	1/9/2018
N027557-008A	PM-03-Q417	Groundwater	12/14/2017 9:10:00 AM	12/14/2017	1/9/2018
N027557-008B	PM-03-Q417	Groundwater	12/14/2017 9:10:00 AM	12/14/2017	1/9/2018
N027557-008C	PM-03-Q417	Groundwater	12/14/2017 9:10:00 AM	12/14/2017	1/9/2018
N027557-008D	PM-03-Q417	Groundwater	12/14/2017 9:10:00 AM	12/14/2017	1/9/2018
N027557-008E	PM-03-Q417	Groundwater	12/14/2017 9:10:00 AM	12/14/2017	1/9/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N027557
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027557-009A	MW-920-Q417	Groundwater	12/14/2017 8:55:00 AM	12/14/2017	1/9/2018
N027557-009B	MW-920-Q417	Groundwater	12/14/2017 8:55:00 AM	12/14/2017	1/9/2018
N027557-009C	MW-920-Q417	Groundwater	12/14/2017 8:55:00 AM	12/14/2017	1/9/2018
N027557-009D	MW-920-Q417	Groundwater	12/14/2017 8:55:00 AM	12/14/2017	1/9/2018
N027557-009E	MW-920-Q417	Groundwater	12/14/2017 8:55:00 AM	12/14/2017	1/9/2018
N027557-010A	PM-04-Q417	Groundwater	12/14/2017 8:45:00 AM	12/14/2017	1/9/2018
N027557-010B	PM-04-Q417	Groundwater	12/14/2017 8:45:00 AM	12/14/2017	1/9/2018
N027557-010C	PM-04-Q417	Groundwater	12/14/2017 8:45:00 AM	12/14/2017	1/9/2018
N027557-010D	PM-04-Q417	Groundwater	12/14/2017 8:45:00 AM	12/14/2017	1/9/2018
N027557-010E	PM-04-Q417	Groundwater	12/14/2017 8:45:00 AM	12/14/2017	1/9/2018
N027557-011A	MW-739-Q417	Groundwater	12/14/2017 3:30:00 PM	12/14/2017	1/9/2018
N027557-012A	MW-740-Q417	Groundwater	12/14/2017 1:30:00 PM	12/14/2017	1/9/2018

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-001

Client Sample ID: TW-05-3V-Q417
Collection Date: 12/14/2017 10:41:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171215A**	QC Batch: **R120873**			PrepDate			Analyst: **LR**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	12/15/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-05-LF-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 9:18:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171215A**	QC Batch: **R120873**			PrepDate			Analyst: **LR**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	12/15/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-003

Client Sample ID: TW-04-3V-Q417
Collection Date: 12/14/2017 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171215A**	QC Batch: **R120873**			PrepDate			Analyst: **LR**
Specific Conductance	19000	0.10	0.10		umhos/cm	1	12/15/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-004

Client Sample ID: TW-04-LF-Q417
Collection Date: 12/14/2017 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171215A**	QC Batch: **R120873**			PrepDate			Analyst: **LR**
Specific Conductance	22000	0.10	0.10		umhos/cm	1	12/15/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-005

Client Sample ID: PGE-08-Q417
Collection Date: 12/14/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171215A**	QC Batch: **R120873**			PrepDate			Analyst: **LR**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	12/15/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66BR-270-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 8:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171215A**	QC Batch: **R120873**			PrepDate			Analyst: **LR**
Specific Conductance	2900	0.10	0.10		umhos/cm	1	12/15/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 2:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171215A**	QC Batch: **R120873**			PrepDate			Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	12/15/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-008

Client Sample ID: PM-03-Q417
Collection Date: 12/14/2017 9:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171215A**	QC Batch: **R120873**			PrepDate			Analyst: **LR**
Specific Conductance	1300	0.10	0.10		umhos/cm	1	12/15/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-009

Client Sample ID: MW-920-Q417
Collection Date: 12/14/2017 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171215A**	QC Batch: **R120873**			PrepDate			Analyst: **LR**
Specific Conductance	2000	0.10	0.10		umhos/cm	1	12/15/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-010

Client Sample ID: PM-04-Q417
Collection Date: 12/14/2017 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_171215A**	QC Batch: **R120873**			PrepDate			Analyst: **LR**
Specific Conductance	2000	0.10	0.10		umhos/cm	1	12/15/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N027557-004CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120873
Client ID:	ZZZZZZ	Batch ID:	R120873	TestNo:	EPA 120.1			Analysis Date:	12/15/2017	SeqNo:	2869126

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	21700.000	0.10						21800	0.460	10	

Sample ID	N027557-005DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	120873
Client ID:	ZZZZZZ	Batch ID:	R120873	TestNo:	EPA 120.1			Analysis Date:	12/15/2017	SeqNo:	2869128

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	16880.000	0.10						16870	0.0593	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-001

Client Sample ID: TW-05-3V-Q417
Collection Date: 12/14/2017 10:41:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171220E**	QC Batch: **66145**				PrepDate	**12/20/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	7400	100	100		mg/L	1	12/20/2017 01:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-05-LF-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 9:18:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171220E**	QC Batch: **66145**			PrepDate	**12/20/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	7600	100	100		mg/L	1	12/20/2017 01:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-3V-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 1:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171220E**	QC Batch: **66145**			PrepDate	**12/20/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	12000	100	100		mg/L	1	12/20/2017 01:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-004

Client Sample ID: TW-04-LF-Q417
Collection Date: 12/14/2017 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171220E**	QC Batch: **66145**				PrepDate	**12/20/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	15000	200	200		mg/L	1	12/20/2017 01:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PGE-08-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 1:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171220E**	QC Batch: **66145**			PrepDate	**12/20/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	11000	100	100		mg/L	1	12/20/2017 01:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66BR-270-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 8:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171220E**	QC Batch: **66145**				PrepDate	**12/20/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1400	20	20		mg/L	1	12/20/2017 01:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 2:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171220E**	QC Batch: **66145**			PrepDate	**12/20/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	8600	100	100		mg/L	1	12/20/2017 01:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PM-03-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 9:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171220E**	QC Batch: **66145**				PrepDate	**12/20/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	780	10	10		mg/L	1	12/20/2017 01:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-920-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 8:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171220E**	QC Batch: **66145**			PrepDate	**12/20/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1300	17	17		mg/L	1	12/20/2017 01:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PM-04-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 8:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_171220E**	QC Batch: **66145**			PrepDate	**12/20/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1200	17	17		mg/L	1	12/20/2017 01:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-66145	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/20/2017	RunNo:	120999
Client ID:	LCSW	Batch ID:	66145	TestNo:	SM2540C			Analysis Date:	12/20/2017	SeqNo:	2875587

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	956.000	10	1000	0	95.6	80	120				

Sample ID	MB-66145	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/20/2017	RunNo:	120999
Client ID:	PBW	Batch ID:	66145	TestNo:	SM2540C			Analysis Date:	12/20/2017	SeqNo:	2875588

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N027557-004CDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	12/20/2017	RunNo:	120999
Client ID:	ZZZZZZ	Batch ID:	66145	TestNo:	SM2540C			Analysis Date:	12/20/2017	SeqNo:	2875593

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	15320.000	200						14740	3.86	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-001

Client Sample ID: TW-05-3V-Q417
Collection Date: 12/14/2017 10:41:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171221A** QC Batch: **R121028**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	14	0.17	1.0		µg/L	5	12/21/2017 11:34 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180105C** QC Batch: **66129**				PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	12	0.019	1.0		µg/L	1	1/5/2018 04:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-002

Client Sample ID: TW-05-LF-Q417
Collection Date: 12/14/2017 9:18:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171221A** QC Batch: **R121028**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	10	0.17	1.0		µg/L	5	12/21/2017 11:53 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180105C** QC Batch: **66129**				PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	13	0.019	1.0		µg/L	1	1/5/2018 05:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-003

Client Sample ID: TW-04-3V-Q417
Collection Date: 12/14/2017 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171221A** QC Batch: **R121028**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	8.2	0.17	1.0		µg/L	5	12/21/2017 12:12 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A	**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66129**				PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	8.3	0.019	1.0		µg/L	1	1/5/2018 06:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-LF-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 9:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171221A** QC Batch: **R121028**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	2.8	0.17	1.0		µg/L	5	12/21/2017 12:31 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66129**				PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	4.0	0.019	1.0		µg/L	1	1/5/2018 06:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-005

Client Sample ID: PGE-08-Q417
Collection Date: 12/14/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171221A** QC Batch: **R121028**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	12/21/2017 12:50 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66129**				PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 06:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66BR-270-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 8:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_171221A** QC Batch: **R121028**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/21/2017 10:47 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66129**				PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 06:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 2:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171221A**	QC Batch: **R121028**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	690	3.3	20		µg/L	100	12/21/2017 01:28 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180105C**	QC Batch: **66129**			PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	830	0.096	5.0		µg/L	5	1/5/2018 07:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-008

Client Sample ID: PM-03-Q417
Collection Date: 12/14/2017 9:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171221A** QC Batch: **R121028**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	9.4	0.033	0.20		µg/L	1	12/21/2017 01:37 PM
TOTAL METALS BY ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_180105E** QC Batch: **66130**				PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	10	0.019	1.0		µg/L	1	1/5/2018 02:59 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180105C** QC Batch: **66129**				PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	9.6	0.019	1.0		µg/L	1	1/5/2018 07:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-009

Client Sample ID: MW-920-Q417
Collection Date: 12/14/2017 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171221A** QC Batch: **R121028**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	18	0.066	0.40		µg/L	2	12/21/2017 03:56 PM
TOTAL METALS BY ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_180105E** QC Batch: **66130**				PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	18	0.019	1.0		µg/L	1	1/5/2018 03:50 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180105C** QC Batch: **66129**				PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	18	0.019	1.0		µg/L	1	1/5/2018 07:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-010

Client Sample ID: PM-04-Q417
Collection Date: 12/14/2017 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171221A** QC Batch: **R121028**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	18	0.066	0.40		µg/L	2	12/21/2017 04:14 PM
TOTAL METALS BY ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_180105E** QC Batch: **66130**				PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	18	0.019	1.0		µg/L	1	1/5/2018 04:02 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180105C** QC Batch: **66129**				PrepDate	**12/19/2017**		Analyst: **CEI**
Chromium	18	0.019	1.0		µg/L	1	1/5/2018 07:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-739-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171221A**	QC Batch: **R121028**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/21/2017 02:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-740-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 1:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_171221A**	QC Batch: **R121028**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	12/21/2017 02:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_CRPGE

Sample ID	MB-66130	SampType:	MBLK	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	12/19/2017	RunNo:	121244
Client ID:	PBW	Batch ID:	66130	TestNo:	EPA 200.8			Analysis Date:	1/5/2018	SeqNo:	2886754

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66130	SampType:	LCS	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	12/19/2017	RunNo:	121244
Client ID:	LCSW	Batch ID:	66130	TestNo:	EPA 200.8			Analysis Date:	1/5/2018	SeqNo:	2886755

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.844	1.0	10.00	0	98.4	85	115				

Sample ID	N027557-008E-MS	SampType:	MS	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	12/19/2017	RunNo:	121244
Client ID:	ZZZZZZ	Batch ID:	66130	TestNo:	EPA 200.8			Analysis Date:	1/5/2018	SeqNo:	2886769

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.652	1.0	10.00	10.09	95.6	75	125				

Sample ID	N027557-008E-MSD	SampType:	MSD	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:	12/19/2017	RunNo:	121244
Client ID:	ZZZZZZ	Batch ID:	66130	TestNo:	EPA 200.8			Analysis Date:	1/5/2018	SeqNo:	2886770

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.512	1.0	10.00	10.09	94.2	75	125	19.65	0.717	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R121028	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121028		
Client ID:	PBW	Batch ID:	R121028	TestNo:	EPA 218.6			Analysis Date:	12/21/2017	SeqNo:	2877335		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		ND	0.20										

Sample ID	LCS-R121028	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121028		
Client ID:	LCSW	Batch ID:	R121028	TestNo:	EPA 218.6			Analysis Date:	12/21/2017	SeqNo:	2877336		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		5.222	0.20	5.000	0	104	90	110					

Sample ID	N027557-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121028		
Client ID:	ZZZZZZ	Batch ID:	R121028	TestNo:	EPA 218.6			Analysis Date:	12/21/2017	SeqNo:	2877341		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		18.770	1.0	5.000	13.63	103	90	110					

Sample ID	N027557-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121028		
Client ID:	ZZZZZZ	Batch ID:	R121028	TestNo:	EPA 218.6			Analysis Date:	12/21/2017	SeqNo:	2877343		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		15.727	1.0	5.000	10.47	105	90	110					

Sample ID	N027557-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121028		
Client ID:	ZZZZZZ	Batch ID:	R121028	TestNo:	EPA 218.6			Analysis Date:	12/21/2017	SeqNo:	2877345		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		13.655	1.0	5.000	8.196	109	90	110					

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027557-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **ZZZZZZ**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877347**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.216	1.0	5.000	2.766	109	90	110				

Sample ID **N027557-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **ZZZZZZ**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877349**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.746	1.0	5.000	0	94.9	90	110				

Sample ID **N027557-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **ZZZZZZ**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877354**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.658	0.20	5.000	9.413	105	90	110				

Sample ID **N027557-008AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **ZZZZZZ**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877355**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.836	0.20	5.000	9.413	108	90	110	14.66	1.21	20	

Sample ID **N027557-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **ZZZZZZ**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877357**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.072	0.20	1.000	0	107	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027557-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121028**
Client ID: **ZZZZZZ** Batch ID: **R121028** TestNo: **EPA 218.6** Analysis Date: **12/21/2017** SeqNo: **2877359**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.078	0.20	1.000	0	108	90	110				

Sample ID **N027557-007ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121028**
Client ID: **ZZZZZZ** Batch ID: **R121028** TestNo: **EPA 218.6** Analysis Date: **12/21/2017** SeqNo: **2877362**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	689.610	20						689.1	0.0798	20	

Sample ID **N027557-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121028**
Client ID: **ZZZZZZ** Batch ID: **R121028** TestNo: **EPA 218.6** Analysis Date: **12/21/2017** SeqNo: **2877363**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1223.820	20	500.0	689.1	107	90	110				

Sample ID **N027557-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121028**
Client ID: **ZZZZZZ** Batch ID: **R121028** TestNo: **EPA 218.6** Analysis Date: **12/21/2017** SeqNo: **2877364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.023	0.20	1.000	0	102	90	110				

Sample ID **N027557-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121028**
Client ID: **ZZZZZZ** Batch ID: **R121028** TestNo: **EPA 218.6** Analysis Date: **12/21/2017** SeqNo: **2877366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	28.376	0.40	10.00	17.99	104	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027557-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121028
Client ID:	ZZZZZZ	Batch ID:	R121028	TestNo:	EPA 218.6			Analysis Date:	12/21/2017	SeqNo:	2877368

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	28.265	0.40	10.00	17.84	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66129	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/19/2017	RunNo:	121242
Client ID:	PBW	Batch ID:	66129	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886467

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66129	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/19/2017	RunNo:	121242
Client ID:	LCSW	Batch ID:	66129	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886473

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.103	1.0	10.00	0	101	85	115				

Sample ID	N027557-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/19/2017	RunNo:	121242
Client ID:	ZZZZZZ	Batch ID:	66129	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886479

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	22.583	1.0	10.00	12.28	103	75	125				

Sample ID	N027557-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	12/19/2017	RunNo:	121242
Client ID:	ZZZZZZ	Batch ID:	66129	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886481

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	22.664	1.0	10.00	12.28	104	75	125	22.58	0.360	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-05-3V-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 10:41:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	35	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-05-LF-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 9:18:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	35	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-3V-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 1:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	51	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-004

Client Sample ID: TW-04-LF-Q417
Collection Date: 12/14/2017 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	38	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PGE-08-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 1:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	47	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66BR-270-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 8:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	42	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 2:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	28	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PM-03-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 9:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	88	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-920-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 8:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	58	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PM-04-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 8:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_171219E**	QC Batch: **R121069**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	56	1.2	5.0		mg/L	1	12/19/2017 08:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R121069**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121069**
Client ID: **LCSW**	Batch ID: **R121069**	TestNo: **SM 2320 B**		Analysis Date: **12/19/2017**	SeqNo: **2879204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	99.576	5.0	100.0	0	99.6	85	115				

Sample ID **MB-R121069**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121069**
Client ID: **PBW**	Batch ID: **R121069**	TestNo: **SM 2320 B**		Analysis Date: **12/19/2017**	SeqNo: **2879205**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N027557-001CDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121069**
Client ID: **ZZZZZZ**	Batch ID: **R121069**	TestNo: **SM 2320 B**		Analysis Date: **12/19/2017**	SeqNo: **2879214**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	36.017	5.0						34.96	2.99	30	

Sample ID **N027583-001DMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121069**
Client ID: **ZZZZZZ**	Batch ID: **R121069**	TestNo: **SM 2320 B**		Analysis Date: **12/19/2017**	SeqNo: **2879225**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	163.136	5.0	100.0	65.68	97.5	75	125				

Sample ID **N027583-001DMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121069**
Client ID: **ZZZZZZ**	Batch ID: **R121069**	TestNo: **SM 2320 B**		Analysis Date: **12/19/2017**	SeqNo: **2879226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	163.136	5.0	100.0	65.68	97.5	75	125	163.1	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-001

Client Sample ID: TW-05-3V-Q417
Collection Date: 12/14/2017 10:41:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/22/2017 09:31 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**				PrepDate			Analyst: **RAB**
Chloride	4300	9.1	500		mg/L	1000	12/26/2017 05:10 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**				PrepDate			Analyst: **RAB**
Sulfate	550	1.1	25		mg/L	50	12/26/2017 05:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-002

Client Sample ID: TW-05-LF-Q417
Collection Date: 12/14/2017 9:18:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/22/2017 09:46 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**				PrepDate			Analyst: **RAB**
Chloride	4300	9.1	500		mg/L	1000	12/26/2017 05:40 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**				PrepDate			Analyst: **RAB**
Sulfate	520	1.1	25		mg/L	50	12/26/2017 05:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-003

Client Sample ID: TW-04-3V-Q417
Collection Date: 12/14/2017 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/22/2017 10:02 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**				PrepDate			Analyst: **RAB**
Chloride	7200	18	1000		mg/L	2000	12/26/2017 06:42 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**				PrepDate			Analyst: **RAB**
Sulfate	1100	2.3	50		mg/L	100	12/26/2017 06:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-004

Client Sample ID: TW-04-LF-Q417
Collection Date: 12/14/2017 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/22/2017 10:17 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**				PrepDate			Analyst: **RAB**
Chloride	7700	9.1	500		mg/L	1000	12/26/2017 07:12 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**				PrepDate			Analyst: **RAB**
Sulfate	950	2.3	50		mg/L	100	12/26/2017 07:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-005

Client Sample ID: PGE-08-Q417
Collection Date: 12/14/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Bromide	ND	0.20	5.0		mg/L	10	12/22/2017 10:32 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**				PrepDate			Analyst: **RAB**
Chloride	6500	18	1000		mg/L	2000	12/26/2017 07:43 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**				PrepDate			Analyst: **RAB**
Sulfate	1800	4.6	100		mg/L	200	12/26/2017 07:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-006

Client Sample ID: MW-66BR-270-Q417
Collection Date: 12/14/2017 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/22/2017 10:48 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**				PrepDate			Analyst: **RAB**
Chloride	870	1.8	100		mg/L	200	12/26/2017 04:09 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**				PrepDate			Analyst: **RAB**
Sulfate	68	0.23	5.0		mg/L	10	12/26/2017 04:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-007

Client Sample ID: MW-60BR-245-3V-Q417
Collection Date: 12/14/2017 2:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	12/22/2017 11:03 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**			PrepDate				Analyst: **RAB**
Chloride	5200	9.1	500		mg/L	1000	12/26/2017 08:13 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**			PrepDate				Analyst: **RAB**
Sulfate	740	2.3	50		mg/L	100	12/26/2017 08:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-008

Client Sample ID: PM-03-Q417
Collection Date: 12/14/2017 9:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**			PrepDate				Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/22/2017 07:59 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**			PrepDate				Analyst: **RAB**
Chloride	330	0.91	50		mg/L	100	12/26/2017 02:06 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**			PrepDate				Analyst: **RAB**
Sulfate	62	0.23	5.0		mg/L	10	12/26/2017 02:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-009

Client Sample ID: MW-920-Q417
Collection Date: 12/14/2017 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/22/2017 11:18 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**				PrepDate			Analyst: **RAB**
Chloride	560	1.8	100		mg/L	200	12/26/2017 08:44 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**				PrepDate			Analyst: **RAB**
Sulfate	120	0.23	5.0		mg/L	10	12/26/2017 08:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-010

Client Sample ID: PM-04-Q417
Collection Date: 12/14/2017 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171222A** QC Batch: **R121065**				PrepDate			Analyst: **RAB**
Bromide	ND	0.020	0.50		mg/L	1	12/23/2017 12:04 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**				PrepDate			Analyst: **RAB**
Chloride	550	1.8	100		mg/L	200	12/26/2017 09:45 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_171226A** QC Batch: **R121079**				PrepDate			Analyst: **RAB**
Sulfate	110	0.23	5.0		mg/L	10	12/26/2017 10:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	MB-R121065_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	PBW	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2879042

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	LCS-R121065_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	LCSW	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2879043

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.193	0.50	1.250	0	95.4	90	110				

Sample ID	N027557-008DDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	ZZZZZZ	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2879049

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.126	0.50						0.1438	0	20	

Sample ID	N027557-008DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	ZZZZZZ	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2879052

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.417	0.50	1.250	0.1438	102	80	120				

Sample ID	N027557-008DMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	121065
Client ID:	ZZZZZZ	Batch ID:	R121065	TestNo:	EPA 300.0			Analysis Date:	12/22/2017	SeqNo:	2879053

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.495	0.50	1.250	0.1438	108	80	120	1.417	5.40	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R121079_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121079
Client ID:	PBW	Batch ID:	R121079	TestNo:	EPA 300.0			Analysis Date:	12/26/2017	SeqNo:	2879572

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R121079_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121079
Client ID:	LCSW	Batch ID:	R121079	TestNo:	EPA 300.0			Analysis Date:	12/26/2017	SeqNo:	2879573

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.968	0.50	2.000	0	98.4	90	110				

Sample ID	N027583-001DDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121079
Client ID:	ZZZZZZ	Batch ID:	R121079	TestNo:	EPA 300.0			Analysis Date:	12/26/2017	SeqNo:	2879575

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2136.850	250						2119	0.822	20	

Sample ID	N027557-008DMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121079
Client ID:	ZZZZZZ	Batch ID:	R121079	TestNo:	EPA 300.0			Analysis Date:	12/26/2017	SeqNo:	2879581

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	527.060	50	200.0	331.8	97.6	80	120				

Sample ID	N027557-008DMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121079
Client ID:	ZZZZZZ	Batch ID:	R121079	TestNo:	EPA 300.0			Analysis Date:	12/26/2017	SeqNo:	2879582

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	530.070	50	200.0	331.8	99.1	80	120	527.1	0.569	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N027557-006DMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121079
Client ID:	ZZZZZZ	Batch ID:	R121079	TestNo:	EPA 300.0			Analysis Date:	12/26/2017	SeqNo:	2879586

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1280.480	100	400.0	869.3	103	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R121079_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121079
Client ID:	PBW	Batch ID:	R121079	TestNo:	EPA 300.0			Analysis Date:	12/26/2017	SeqNo:	2879605

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R121079_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121079
Client ID:	LCSW	Batch ID:	R121079	TestNo:	EPA 300.0			Analysis Date:	12/26/2017	SeqNo:	2879606

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.883	0.50	4.000	0	97.1	90	110				

Sample ID	N027583-001DDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121079
Client ID:	ZZZZZZ	Batch ID:	R121079	TestNo:	EPA 300.0			Analysis Date:	12/26/2017	SeqNo:	2879610

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	457.860	25						461.8	0.858	20	

Sample ID	N027557-008DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121079
Client ID:	ZZZZZZ	Batch ID:	R121079	TestNo:	EPA 300.0			Analysis Date:	12/26/2017	SeqNo:	2879616

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	101.648	5.0	40.00	62.29	98.4	80	120				

Sample ID	N027557-008DMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121079
Client ID:	ZZZZZZ	Batch ID:	R121079	TestNo:	EPA 300.0			Analysis Date:	12/26/2017	SeqNo:	2879617

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	101.578	5.0	40.00	62.29	98.2	80	120	101.6	0.0689	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N027557-006DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121079
Client ID:	ZZZZZZ	Batch ID:	R121079	TestNo:	EPA 300.0			Analysis Date:	12/26/2017	SeqNo:	2879619

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	108.477	5.0	40.00	68.22	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PGE-08-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 1:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66BR-270-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 8:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**		PrepDate			Analyst: **QBM**	
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 2:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.82	0.022	0.050		mg/L	1	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PM-03-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 9:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	3.1	0.11	0.25		mg/L	5	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-920-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 8:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	2.1	0.11	0.25		mg/L	5	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PM-04-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 8:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_171228B**	QC Batch: **R121101**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	2.3	0.11	0.25		mg/L	5	12/28/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R121101	**MBLK**	**4500N03F_W**	**mg/L**		**121101**
Client ID: **PBW**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-R121101	**LCS**	**4500N03F_W**	**mg/L**		**121101**
Client ID: **LCSW**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.504	0.050	0.5000	0	101	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027546-003CMS	**MS**	**4500N03F_W**	**mg/L**		**121101**
Client ID: **ZZZZZZ**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.842	0.10	1.000	1.650	119	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027546-003CMSD	**MSD**	**4500N03F_W**	**mg/L**		**121101**
Client ID: **ZZZZZZ**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880070**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.813	0.10	1.000	1.650	116	75	125	2.842	1.02	20	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N027546-004CDUP	**DUP**	**4500N03F_W**	**mg/L**		**121101**
Client ID: **ZZZZZZ**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880072**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0.06030	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-001

Client Sample ID: TW-05-3V-Q417
Collection Date: 12/14/2017 10:41:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_171219B** QC Batch: **66082** PrepDate **12/15/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	1400	38	100		ug/L	1	12/20/2017 12:35 AM
Calcium	340000	28	500		ug/L	1	12/20/2017 12:35 AM
Iron	21	1.8	20		ug/L	1	12/20/2017 12:35 AM
Magnesium	20000	4.4	100		ug/L	1	12/20/2017 12:35 AM
Sodium	2700000	2600	50000		ug/L	100	1/3/2018 09:33 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-002

Client Sample ID: TW-05-LF-Q417
Collection Date: 12/14/2017 9:18:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66082**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	1400	38	100		ug/L	1	12/20/2017 01:20 AM
Calcium	340000	28	500		ug/L	1	12/20/2017 01:20 AM
Iron	260	1.8	20		ug/L	1	12/20/2017 01:20 AM
Magnesium	19000	4.4	100		ug/L	1	12/20/2017 01:20 AM
Sodium	2700000	2600	50000		ug/L	100	1/3/2018 09:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-003

Client Sample ID: TW-04-3V-Q417
Collection Date: 12/14/2017 1:25:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_171219B** QC Batch: **66082** PrepDate **12/15/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Boron	1900	38	100		ug/L	1	12/20/2017 01:27 AM
Calcium	380000	28	500		ug/L	1	12/20/2017 01:27 AM
Iron	ND	1.8	20		ug/L	1	12/20/2017 01:27 AM
Magnesium	34000	4.4	100		ug/L	1	12/20/2017 01:27 AM
Sodium	5000000	13000	250000		ug/L	500	1/3/2018 10:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-004

Client Sample ID: TW-04-LF-Q417
Collection Date: 12/14/2017 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66082**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	2100	38	100		ug/L	1	12/20/2017 01:33 AM
Calcium	170000	28	500		ug/L	1	12/20/2017 01:33 AM
Iron	68	1.8	20		ug/L	1	12/20/2017 01:33 AM
Magnesium	5000	4.4	100		ug/L	1	12/20/2017 01:33 AM
Sodium	4800000	13000	250000		ug/L	500	1/3/2018 10:40 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-005

Client Sample ID: PGE-08-Q417
Collection Date: 12/14/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66082**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	3200	38	100		ug/L	1	12/20/2017 01:40 AM
Calcium	810000	140	2500		ug/L	5	12/20/2017 08:05 AM
Iron	67	1.8	20		ug/L	1	12/20/2017 01:40 AM
Magnesium	16000	4.4	100		ug/L	1	12/20/2017 01:40 AM
Sodium	4100000	13000	250000		ug/L	500	1/3/2018 10:44 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-006

Client Sample ID: MW-66BR-270-Q417
Collection Date: 12/14/2017 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66082**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	1300	38	100		ug/L	1	12/20/2017 01:47 AM
Calcium	31000	28	500		ug/L	1	12/20/2017 01:47 AM
Iron	27	1.8	20		ug/L	1	12/20/2017 01:47 AM
Magnesium	1200	4.4	100		ug/L	1	12/20/2017 01:47 AM
Sodium	590000	2600	50000		ug/L	100	1/3/2018 09:57 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-007

Client Sample ID: MW-60BR-245-3V-Q417
Collection Date: 12/14/2017 2:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66082**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	1700	38	100		ug/L	1	12/20/2017 01:54 AM
Calcium	560000	140	2500		ug/L	5	12/20/2017 08:12 AM
Iron	560	1.8	20		ug/L	1	12/20/2017 01:54 AM
Magnesium	17000	4.4	100		ug/L	1	12/20/2017 01:54 AM
Sodium	3100000	2600	50000		ug/L	100	1/3/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-008

Client Sample ID: PM-03-Q417
Collection Date: 12/14/2017 9:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66082**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	220	38	100		ug/L	1	12/20/2017 02:01 AM
Calcium	85000	28	500		ug/L	1	12/20/2017 02:01 AM
Iron	ND	1.8	20		ug/L	1	12/20/2017 02:01 AM
Magnesium	17000	4.4	100		ug/L	1	12/20/2017 02:01 AM
Sodium	160000	260	5000		ug/L	10	1/3/2018 10:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-009

Client Sample ID: MW-920-Q417
Collection Date: 12/14/2017 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66082**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	270	38	100		ug/L	1	12/20/2017 02:19 AM
Calcium	100000	28	500		ug/L	1	12/20/2017 02:19 AM
Iron	ND	1.8	20		ug/L	1	12/20/2017 02:19 AM
Magnesium	18000	4.4	100		ug/L	1	12/20/2017 02:19 AM
Sodium	280000	260	5000		ug/L	10	1/3/2018 10:51 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-010

Client Sample ID: PM-04-Q417
Collection Date: 12/14/2017 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_171219B**	QC Batch: **66082**			PrepDate	**12/15/2017**		Analyst: **CEI**
Boron	250	38	100		ug/L	1	12/20/2017 02:26 AM
Calcium	98000	28	500		ug/L	1	12/20/2017 02:26 AM
Iron	ND	1.8	20		ug/L	1	12/20/2017 02:26 AM
Magnesium	18000	4.4	100		ug/L	1	12/20/2017 02:26 AM
Sodium	280000	260	5000		ug/L	10	1/3/2018 10:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-66082**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/15/2017**	RunNo: **120943**
Client ID: **PBW**	Batch ID: **66082**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2873634**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									
Calcium	37.244	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-66082**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/15/2017**	RunNo: **120943**
Client ID: **LCSW**	Batch ID: **66082**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2873635**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4658.679	100	5000	0	93.2	85	115				
Calcium	9582.309	500	10000	0	95.8	85	115				
Iron	104.850	20	100.0	0	105	85	115				
Magnesium	9551.975	100	10000	0	95.5	85	115				

Sample ID **N027557-001B-MS1**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/15/2017**	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **66082**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2873641**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5966.278	100	5000	1351	92.3	75	125				
Calcium	346443.581	500	10000	341600	48.8	75	125				S
Iron	99.622	20	100.0	20.63	79.0	75	125				
Magnesium	28203.170	100	10000	20470	77.3	75	125				

Sample ID **N027557-001B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **12/15/2017**	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **66082**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2873642**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5962.786	100	5000	1351	92.2	75	125	5966	0.0585	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	N027557-001B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	120943		
Client ID:	ZZZZZZ	Batch ID:	66082	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	12/20/2017	SeqNo:	2873642		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	345282.820	500	10000	341600	37.2	75	125	346400	0.336	20	S
Iron	98.876	20	100.0	20.63	78.2	75	125	99.62	0.752	20	
Magnesium	28175.681	100	10000	20470	77.1	75	125	28200	0.0975	20	

Sample ID	MB-66082	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	121185		
Client ID:	PBW	Batch ID:	66082	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883334		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID	LCS2-66082	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	121185		
Client ID:	LCSW	Batch ID:	66082	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883335		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20304.796	500	20000	0	102	85	115				

Sample ID	N027557-002B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	121185		
Client ID:	ZZZZZZ	Batch ID:	66082	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883350		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2778496.996	50000	20000	2722000	283	75	125				S

Sample ID	N027557-002B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	12/15/2017	RunNo:	121185		
Client ID:	ZZZZZZ	Batch ID:	66082	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/3/2018	SeqNo:	2883351		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2790015.609	50000	20000	2722000	340	75	125	2778000	0.414	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-001

Client Sample ID: TW-05-3V-Q417
Collection Date: 12/14/2017 10:41:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66129**			PrepDate	**12/19/2017**		Analyst: **CEI**
Manganese	2.2	0.056	0.50		µg/L	1	1/5/2018 04:51 PM
Molybdenum	28	0.039	0.50		µg/L	1	1/5/2018 04:51 PM
Selenium	0.65	0.028	0.50		µg/L	1	1/8/2018 11:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-002

Client Sample ID: TW-05-LF-Q417
Collection Date: 12/14/2017 9:18:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66129**			PrepDate	**12/19/2017**		Analyst: **CEI**
Manganese	19	0.056	0.50		µg/L	1	1/5/2018 05:52 PM
Molybdenum	31	0.039	0.50		µg/L	1	1/5/2018 05:52 PM
Selenium	0.62	0.028	0.50		µg/L	1	1/8/2018 10:51 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-3V-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 1:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66129**			PrepDate	**12/19/2017**		Analyst: **CEI**
Manganese	64	0.056	0.50		µg/L	1	1/5/2018 06:03 PM
Molybdenum	64	0.19	2.5		µg/L	5	1/5/2018 06:09 PM
Selenium	0.68	0.028	0.50		µg/L	1	1/8/2018 11:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-LF-Q417
Lab Order:	N027557	**Collection Date:**	12/14/2017 9:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027557-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180105D**	QC Batch: **66129**			PrepDate	**12/19/2017**		Analyst: **CEI**
Manganese	86	0.056	0.50		µg/L	1	1/5/2018 06:14 PM
Molybdenum	110	0.19	2.5		µg/L	5	1/5/2018 06:20 PM
Selenium	0.64	0.028	0.50		µg/L	1	1/8/2018 11:31 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-005

Client Sample ID: PGE-08-Q417
Collection Date: 12/14/2017 1:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66129**			PrepDate	**12/19/2017**		Analyst: **CEI**
Manganese	630	0.28	2.5		µg/L	5	1/5/2018 06:31 PM
Molybdenum	110	0.19	2.5		µg/L	5	1/5/2018 06:31 PM
Selenium	ND	0.028	0.50		µg/L	1	1/5/2018 06:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-006

Client Sample ID: MW-66BR-270-Q417
Collection Date: 12/14/2017 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180108A**	QC Batch: **66129**			PrepDate	**12/19/2017**		Analyst: **CEI**
Arsenic	0.13	0.025	0.10		µg/L	1	1/8/2018 11:08 AM
Manganese	50	0.056	0.50		µg/L	1	1/5/2018 06:37 PM
Molybdenum	6.0	0.039	0.50		µg/L	1	1/5/2018 06:37 PM
Selenium	ND	0.028	0.50		µg/L	1	1/5/2018 06:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-007

Client Sample ID: MW-60BR-245-3V-Q417
Collection Date: 12/14/2017 2:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66129**			PrepDate	**12/19/2017**		Analyst: **CEI**
Arsenic	2.9	0.025	0.10		µg/L	1	1/5/2018 06:59 PM
Manganese	42	0.056	0.50		µg/L	1	1/5/2018 06:59 PM
Molybdenum	36	0.039	0.50		µg/L	1	1/5/2018 06:59 PM
Selenium	1.9	0.028	0.50		µg/L	1	1/5/2018 06:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-008

Client Sample ID: PM-03-Q417
Collection Date: 12/14/2017 9:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66129**			PrepDate	**12/19/2017**		Analyst: **CEI**
Manganese	ND	0.056	0.50		µg/L	1	1/5/2018 07:10 PM
Molybdenum	5.5	0.039	0.50		µg/L	1	1/5/2018 07:10 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/5/2018 07:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-009

Client Sample ID: MW-920-Q417
Collection Date: 12/14/2017 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66129**			PrepDate	**12/19/2017**		Analyst: **CEI**
Manganese	ND	0.056	0.50		µg/L	1	1/5/2018 07:21 PM
Molybdenum	5.6	0.039	0.50		µg/L	1	1/5/2018 07:21 PM
Selenium	1.3	0.028	0.50		µg/L	1	1/5/2018 07:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027557
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N027557-010

Client Sample ID: PM-04-Q417
Collection Date: 12/14/2017 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66129**			PrepDate	**12/19/2017**		Analyst: **CEI**
Manganese	ND	0.056	0.50		µg/L	1	1/5/2018 07:32 PM
Molybdenum	5.7	0.039	0.50		µg/L	1	1/5/2018 07:32 PM
Selenium	1.4	0.028	0.50		µg/L	1	1/8/2018 11:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66129**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/19/2017**	RunNo: **121243**
Client ID: **PBW**	Batch ID: **66129**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/5/2018**	SeqNo: **2886621**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-66129**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/19/2017**	RunNo: **121243**
Client ID: **LCSW**	Batch ID: **66129**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/5/2018**	SeqNo: **2886627**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.448	0.10	10.00	0	94.5	85	115				
Manganese	98.446	0.50	100.0	0	98.4	85	115				
Molybdenum	9.819	0.50	10.00	0	98.2	85	115				
Selenium	10.096	0.50	10.00	0	101	85	115				

Sample ID **N027557-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/19/2017**	RunNo: **121243**
Client ID: **ZZZZZZ**	Batch ID: **66129**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/5/2018**	SeqNo: **2886633**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.945	0.10	10.00	3.196	107	75	125				
Manganese	97.830	0.50	100.0	2.217	95.6	75	125				
Molybdenum	41.470	0.50	10.00	28.00	135	75	125				S

Sample ID **N027557-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **12/19/2017**	RunNo: **121243**
Client ID: **ZZZZZZ**	Batch ID: **66129**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/5/2018**	SeqNo: **2886635**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.980	0.10	10.00	3.196	108	75	125	13.94	0.255	20	
Manganese	98.329	0.50	100.0	2.217	96.1	75	125	97.83	0.509	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027557-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/19/2017	RunNo:	121243
Client ID:	ZZZZZZ	Batch ID:	66129	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886635

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	40.862	0.50	10.00	28.00	129	75	125	41.47	1.48	20	S

Sample ID	N027557-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/19/2017	RunNo:	121243
Client ID:	ZZZZZZ	Batch ID:	66129	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2888827

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	11.509	0.50	10.00	0.6513	109	75	125				

Sample ID	N027557-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	12/19/2017	RunNo:	121243
Client ID:	ZZZZZZ	Batch ID:	66129	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2888829

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	11.237	0.50	10.00	0.6513	106	75	125	11.51	2.40	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes		EDD Requirement	QA/QC
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:		Excel EDD	RTNE
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:		Geotracker	RWQCB ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#	Labspec	CalTrans
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200	Fax:	Others ✓	LEVEL III
Title: Geologist II	Phone: 916-786-3302 Fax:			Specify: RWQCB	LEVEL IV
				Global ID:	Regulatory
					Specify State:

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number		R
6. Method of Cooling:	ice	
Sample Temp	3.2°C / 2-62	

Signature: 12/14/2017
I hereby authorize ASSET Labs to perform the tests indicated below.

Sampled By: Gantt Jeffers
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.
Signature: Date: 12/14/2017

Project Name: PG&E Topock - GMP
Project Number: RC000753.801B

Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface

Courier:
Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM; 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3; 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03 F); H2SO4; 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0); 1 liter poly	Specific Conductance (EPA 120.1); 1 liter poly	Total Dissolved Solids (SM2540C); 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B); 1 liter poly	Total Chromium (EPA 200.8); HNO3; 500 mL poly				Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027557 -01	TW-05-3V-Q417	12/14/2017	10:41			X				X							X	X	X	X					E	4	P	BN	
2	-02	TW-05-LF-Q417	12/14/2017	9:18			X				X							X	X	X	X					E	4	P	BN	
3	-03	TW-04-3V-Q417	12/14/2017	13:25			X				X							X	X	X	X					E	4	P	BN	
4	-04	TW-04-LF-Q417	12/14/2017	9:35			X				X							X	X	X	X					E	4	P	BN	
5	-05	PGE-08-Q417	12/14/2017	13:40		X					X							X	X	X	X	X				E	4	P	BNS	
6	-06	MW-66BR-270-Q417	12/14/2017	8:35		X			X		X								X	X	X	X				E	4	P	BNS	
7	-07	MW-60BR-245-3V-Q417	12/14/2017	14:25		X			X		X								X	X	X	X				E	4	P	BNS	
8	-08	PM-03-Q417	12/14/2017	9:10		X					X							X	X	X	X	X	X			E	5	P	BNS	
9	-09	MW-920-Q417	12/14/2017	8:55		X					X							X	X	X	X	X	X			E	5	P	BNS	
10	-10	PM-04-Q417	12/14/2017	8:45		X					X							X	X	X	X	X	X			E	5	P	BNS	

Relinquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
G. Jeffers	12.14.17 1600		12/14/17 1600
	12/14/17 1612		12/14/17 1612
	Date/Time:		Date/Time:

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B = (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET LABORATORIES
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Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition (Y N): 1. Chilled Y; 2. Headspace; 3. Container Intact; 4. Seal Present; 5. IR number 2; 6. Method of Cooling: ice
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Sample Temp: 2.9°C
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:	
Title: Geologist II	Phone: 916-786-3302 Fax:		
Signature: Date: 12/14/2017	Sampled By: Gantt Jeffers		

I hereby authorize ASSET Labs to perform the tests indicated below.

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Project Name: PG&E Topock - GMP
Project Number: RC000753.801B
Signature: Date: 12/14/2017

Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; 2x250 mL poly	Oxygen and Deuterium Stable Isotopes SFIRM; 250 mL poly	Metals Dissolved (SW6020 FF) (As, Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) Potassium; HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (B, Ca, Fe, Na); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mg, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Metals Dissolved (SW6010B FF) (B, Ca, Cu, Fe, Na, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Ag, As, Ba, Be, Cd, Co, Cr, Mn, Mo, Pb, Sb, Se, Tl, V, Zn); HNO3; 500 mL poly	Dissolved metals (SW6010B FF) (Cu, Ni); HNO3; 500 mL poly	Metals Dissolved (SW6020 FF) (Cr, Mg, Mn, Mo, Se); HNO3; 500 mL poly	Mercury, Dissolved (EPA 7470A); HNO3; 500 mL poly	Nitrate/Nitrite as Nitrogen (SM4500NO3 F); H2SO4; 250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0); 1 liter poly	Specific Conductance (EPA 120.1); 1 liter poly	Total Dissolved Solids (SM2540C); 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B); 1 liter poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027557 -11	MW-739-Q417	12/14/2017	15:30		X																E	1	P	B	
2	-12	MW-740-Q417	12/14/2017	13:30		X																E	1	P	B	
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										

Courier:
Tracking No.:

Reliquished by (Signature and Printed Name): G. Jeffers	Date/Time: 12.14.17 1600	Reliquished by (Signature and Printed Name):	Date/Time: 12/14/17 1600
Reliquished by (Signature and Printed Name):	Date/Time: 12/14/17 1812	Reliquished by (Signature and Printed Name):	Date/Time: 12/14/17 1812
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
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9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B = (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	12/14/2017	Workorder:	N027557
Rep sample Temp (Deg C):	3.1/2.6/2.9	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: N/A Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 12/21/2017 Reviewed By: 12/26/2017

ASSET Laboratories

WORK ORDER Summary

20-Dec-17

WorkOrder: N027557

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/14/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027557-001A	TW-05-3V-Q417	12/14/2017 10:41:00 AM	12/29/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027557-001B			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027557-001C			12/29/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/29/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/29/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/29/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N027557-002A	TW-05-LF-Q417	12/14/2017 9:18:00 AM	12/29/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027557-002B			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027557-002C			12/29/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/29/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/29/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR

WORK ORDER Summary

20-Dec-17

WorkOrder: N027557

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/14/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027557-002C	TW-05-LF-Q417	12/14/2017 9:18:00 AM	12/29/2017	Groundwater	SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N027557-003A	TW-04-3V-Q417	12/14/2017 1:25:00 PM	12/29/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027557-003B			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027557-003C			12/29/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/29/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/29/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/29/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N027557-004A	TW-04-LF-Q417	12/14/2017 9:35:00 AM	12/29/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027557-004B			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

WORK ORDER Summary

20-Dec-17

WorkOrder: N027557

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/14/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027557-004B	TW-04-LF-Q417	12/14/2017 9:35:00 AM	12/29/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027557-004C			12/29/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/29/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/29/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/29/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N027557-005A	PGE-08-Q417	12/14/2017 1:40:00 PM	12/29/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027557-005B			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027557-005C			12/29/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027557-005D			12/29/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/29/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/29/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/29/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR

WORK ORDER Summary

20-Dec-17

WorkOrder: N027557

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/14/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027557-006A	MW-66BR-270-Q417	12/14/2017 8:35:00 AM	12/29/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027557-006B			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027557-006C			12/29/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027557-006D			12/29/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/29/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/29/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/29/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N027557-007A	MW-60BR-245-3V-Q417	12/14/2017 2:25:00 PM	12/29/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027557-007B			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027557-007C			12/29/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

WORK ORDER Summary

20-Dec-17

WorkOrder: N027557

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/14/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027557-007D	MW-60BR-245-3V-Q417	12/14/2017 2:25:00 PM	12/29/2017	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/29/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/29/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/29/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N027557-008A	PM-03-Q417	12/14/2017 9:10:00 AM	12/29/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027557-008B			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027557-008C			12/29/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027557-008D			12/29/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/29/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/29/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/29/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N027557-008E			12/29/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

20-Dec-17

WorkOrder: N027557

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/14/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027557-008E	PM-03-Q417	12/14/2017 9:10:00 AM	12/29/2017	Groundwater	EPA 200.8	TOTAL METALS BY ICPMS	☐	☐	☐	WW
N027557-009A	MW-920-Q417	12/14/2017 8:55:00 AM	12/29/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027557-009B			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027557-009C			12/29/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027557-009D			12/29/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/29/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/29/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/29/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N027557-009E			12/29/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 200.8	TOTAL METALS BY ICPMS	☐	☐	☐	WW
N027557-010A	PM-04-Q417	12/14/2017 8:45:00 AM	12/29/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027557-010B			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			12/29/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

WORK ORDER Summary

20-Dec-17

WorkOrder: N027557

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 12/14/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027557-010B	PM-04-Q417	12/14/2017 8:45:00 AM	12/29/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027557-010C			12/29/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027557-010D			12/29/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			12/29/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			12/29/2017			Total Dissolved Solids Prep	☐	☐	☐	LSR
			12/29/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			12/29/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N027557-010E			12/29/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/29/2017		EPA 200.8	TOTAL METALS BY ICPMS	☐	☐	☐	WW
N027557-011A	MW-739-Q417	12/14/2017 3:30:00 PM	12/29/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027557-012A	MW-740-Q417	12/14/2017 1:30:00 PM	12/29/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027557-013A	FOLDER	12/29/2017	12/29/2017		EDD	RWQCB	☐	☐	☐	LAB
			12/29/2017		Folder	Folder	☐	☐	☐	LAB
			12/29/2017		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N027557

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 200.8, EPA 6010B_Dissolved, EPA 6020_Dissolved
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	EPA 120.1, SM 2540C, SM 2320 B

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R120873 **Analyst:** LSR

ASSET #: N027557 **Date Analyzed:** 12/15/2017

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 12/26/2017

2nd Level Reviewer: RLB 01/08/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 12/15/17 1700
Analyst: LSR

Standard	Std ID	Reading	Comments
9.43 µS/cm	CIW-171018A	9.31 @ 21.5°C	% Rec: (90-110%)
1412	171121A	1410 @ 21.6°C	
99847	171018B	9940 @ 21.5°C	
99	171121B	10040 @ 21.4°C	

	Sample ID	Matrix	Reading	Comments
1	NO27556-001D	H_2O	6560 @ 21.1°C	
2	2D		6610 @ 21.0°C	
3	3D		6590 @ 20.9C	
4	4C		4450 @ 20.9°C	
5	5C		3950 @ 20.9C	
6	6D		6650 @ 20.9C	
7	NO27557-001C		12110 @ 20.9C	
8	2C		12020 @ 20.6C	
9	3C		19000 @ 20.8C	
10	4C		21800 @ 20.5C	
Dup	4CDUP		21700 @ 20.5C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: 12/15/17 CONT'D Silvia Ramit 12/26/2017
Analyst: LSR RB 01/08/2018

Standard	Std ID	Reading	Comments
1413	CIW-170615G	1455 @ 21.9°C	% Rec: (90-110%)
10000	170822F	9920 @ 21.9°C	
9967	170831B	9620 @ 21.5°C	

	Sample ID	Matrix	Reading	Comments
1	NO27557-005D	H_2O	16870 @ 20.4°C	
2	5D DUP		16880 @ 20.5°C	
3	6D		2920 @ 20.7°C	1413 CIW 170615G
4	7D		14230 @ 20.6°C	= 1440 @ 22.0°C
5	8D		1318 @ 20.7°C	10000 CIW 170822F
6	9D		2030 @ 20.6°C	= 10090 @ 21.8°C
7	10D		2010 @ 20.6°C	9967 CIW 170831B
8	NO27583-001D		6570 @ 20.3°C	= 9870 @ 21.6°C
9	2D		6870 @ 20.1°C	
10	3D		6740 @ 20.0°C	
Dup	NO27570-001E		14410 @ 20.8C	Accept: 10% water, 20% soil
	Std Chk: 1EDUP		14380 @ 20.7°C	% Rec: (90-110%)

Logbook # 6

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66145 **Analyst:** LSR

ASSET #: N027557 **Date Analyzed:** 12/20/2017

Method: EPA 160.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Silvia Ramit Date: 12/28/2017

2nd Level Reviewer RLB 01/08/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N027557-001C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(60.6969 - 60.6226)*1000000}{10}$$

= 7430 mg/L

Reporting result in two significant figures,

TDS = 7400 mg/L

Julia Ramit 12/28/2017

RLB 01/08/2018

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/20/2017 1:04:52**
Prep End Date:

Reviewed/ Date: RB 01/08/2018

Initials/ Date: Lilia Ramit 12/28/2017

Prep Batch **66145** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit** Prep Factor Units **mL / mL**

Sample ID	Matrix	Cond pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66145	Water		100	☐	0	0	100	1.000		
MB-66145	Water		100	☐	0	0	100	1.000		
N027557-001C	Groundwater	12110	100/100	☐	0	0	100	1.000		
N027557-002C	Groundwater	12020	100/10	☐	0	0	100	1.000		
N027557-003C	Groundwater	19000	100/10	☐	0	0	100	1.000		
N027557-004C	Groundwater	2180	100/5	☐	0	0	100	1.000		
N027557-004C-DU	Groundwater	1	100/1	☐	0	0	100	1.000		
N027557-005D	Groundwater	16870	100/10	☐	0	0	100	1.000		
N027557-006D	Groundwater	2920	100/50	☐	0	0	100	1.000		
N027557-007D	Groundwater	14230	100/10	☐	0	0	100	1.000		
N027557-008D	Groundwater	7318	100	☐	0	0	100	1.000		
N027557-009D	Groundwater	2030	100/60	☐	0	0	100	1.000		
N027557-010D	Groundwater	2010	100/60	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/20/2017 1:04:52**
Prep End Date: **12/21/2017 11:55:0**

Reviewed/ Date: RB 01/08/2018
Initials/ Date: Lilia Ramit 12/28/2017

Prep Batch **66145** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66145	Water		100	☐	0	0	100	1.000		
MB-66145	Water		100	☐	0	0	100	1.000		
N027557-001C	Groundwater		10	☐	0	0	100	10.000		
N027557-002C	Groundwater		10	☐	0	0	100	10.000		
N027557-003C	Groundwater		10	☐	0	0	100	10.000		
N027557-004C	Groundwater		5	☐	0	0	100	20.000		
N027557-004C-DU	Groundwater		5	☐	0	0	100	20.000		
N027557-005D	Groundwater		10	☐	0	0	100	10.000		
N027557-006D	Groundwater		50	☐	0	0	100	2.000		
N027557-007D	Groundwater		10	☐	0	0	100	10.000		
N027557-008D	Groundwater		100	☐	0	0	100	1.000		
N027557-009D	Groundwater		60	☐	0	0	100	1.667		
N027557-010D	Groundwater		60	☐	0	0	100	1.667		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9667	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171218A	1000 ppm NaCl	LCS	100

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/20/17 KL	MB 66145	100	70.7409 70.7412	76.7411 70.7410	
IX	LCS 66145	100	76.58 50 76.58 54	76.6813 76.6810	
IF	NO27557-001C	10	60.6227 60.6226	60.6972 60.6969	
16	2C	10	49.3547 49.3548	49.4315 49.4313	
M	3C	10	49.0607 49.0603	49.1814 49.1817	
C	4C	5	50.3704 50.3702	50.4410 50.4409	
S	4C DUP	5	45.7288 45.7285	45.8048 45.8051	
1L	5D	10	62.4146 62.4147	62.5281 62.5282	
15	6D	50	48.8857 48.8856	48.9554 48.9555	
T	7D	10	46.0429 46.0426	46.1287 46.1291	

Alicia Ramit 12/28/2017 ASSET Laboratories Logbook#9

RB 01/08/2018

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
12/20/17 CC ~~XX~~	N027557-008D	100	~~49.6349~~ 49.6347 70.0718 70.0718 WR 12/20	70.1502 70.1503	
15	9D	60	61.5234 61.5231	61.5988 61.5992	
8	10D	60	53.6975 53.6975	53.7680 53.7683	
Julia Ramit	12/28/2017				

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00022
ORELAP/NELAP Cert 4...

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
12/21/2017									
MB-66145	100	70.7412	70.741	-2	1	-2			MBLK
LCS-66145	100	76.5854	76.681	956	1	956			LCS
N027557-001C	10	60.6226	60.6969	743	10	7430	12110	0.614	SAMP
N027557-002C	10	49.3548	49.4313	765	10	7650	12020	0.636	SAMP
N027557-003C	10	49.0603	49.1817	1214	10	12140	19000	0.639	SAMP
N027557-004C	5	50.3702	50.4439	737	20	14740	21800	0.676	SAMP
N027557-004CDUP	5	45.7285	45.8051	766	20	15320	21800	0.703	DUP
N027557-005D	10	62.4147	62.5282	1135	10	11350	16870	0.673	SAMP
N027557-006D	50	48.8856	48.9555	699	2	1398	2920	0.479	SAMP
N027557-007D	10	46.0426	46.1291	865	10	8650	14230	0.608	SAMP
N027557-008D	100	70.0718	70.1503	785	1	785	1318	0.596	SAMP
N027557-009D	60	61.5231	61.5992	761	1.66666667	1268.33333	2030	0.625	SAMP
N027557-010D	60	53.6975	53.7683	708	1.66666667	1180	2010	0.587	SAMP

Julia Ramit 12/28/2017

EPA 200.8

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66130
ASSET #: N027557

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 1/4/2018

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).		X			X	
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments: biased high @ 125.6% however, ICSAB1 recovery passed criteria

%Rec of Sc [2] IS in ICSAB1 failed. However within 70-125% criteria, thus reported.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: ~

2nd Level Reviewer 01/09/2018 Date: ~

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 200.8
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N027557-008E** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 10.0927 * 1 * (25/25)

Chromium , ug/L = 10.0927

Reporting results in two significant figures,

Chromium , ug/L = 10

% RSD SUMMARY

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	8.21	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.52	4.41	15	PASS
Std3-5/50 ppb	ICAL	1	5.14	2.72	15	PASS
Std4-10/100 ppb	ICAL	1	10.26	0.94	15	PASS
Std5-20/200 ppb	ICAL	1	20.35	0.82	15	PASS
Std6-40/400 ppb	ICAL	1	40.88	0.85	15	PASS
Std7-100/1000 ppb	ICAL	1	99.2	1.61	15	PASS
Std8-200/2000 ppb	ICAL	1	200.17	1.048	15	PASS
ICV	ICV	1	9.99	0.75	15	PASS
ICB	ICB	1	0.0011	473.23	15	<PQL
LLICV	CCV1	1	1.03	3.65	20	PASS
ICSA1	ICSA	1	0.057	12.27	15	PASS
ICSAB1	ICSAB	1	19.91	1.63	15	PASS
CCV1	CCV	1	20.62	1.32	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL
MB-66130	MBLK	1	<0.000	N/A	15	<PQL
LCS-66130	LCS	1	9.84	2.051	15	PASS
N027583-001E	SAMP	1	2.12	2.33	15	PASS
N027583-001E	SAMP	5	0.45	3.36	15	PASS
N027583-002E	SAMP	1	1.016	6.68	15	PASS
N027583-002E	SAMP	5	0.21	1.068	15	PASS
N027583-003E	SAMP	1	2.22	0.48	15	PASS
N027583-003E	SAMP	5	0.46	1.58	15	PASS
N027557-008E	SAMP	1	10.093	0.8	15	PASS
N027557-008E	SAMP	5	2.17	1.45	15	PASS
CCV2	CCV	1	20.36	2.3	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL
N027557-008E	SAMP	25	0.43	3.85	15	PASS
N027557-008E-PS	PS	1	19.98	1.46	15	PASS
N027557-008E-PS	PS	5	4.18	3.24	15	PASS
N027557-008E-MS	MS	1	19.65	2.16	15	PASS
N027557-008E-MSD	MSD	1	19.51	2.38	15	PASS
N027557-009E	SAMP	1	17.91	0.73	15	PASS
N027557-009E	SAMP	5	3.67	1.38	15	PASS
N027557-010E	SAMP	1	17.91	0.62	15	PASS
N027557-010E	SAMP	5	3.7	1.83	15	PASS
CCV3	CCV	1	20.27	1.78	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.036	2.27	20	PASS
ICSA2	ICSA	1	0.074	15.044	15	<PQL

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment
ICSAB2	ICSAB	1	21.11	2.071	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0105001.D	RINSE	RINSE	1	01/05/18 11:43 AM
B0105002.D	Cal Blank	IBLK	1	01/05/18 11:49 AM
B0105003.D	Std1-0.1/1 ppb	ICAL	1	01/05/18 11:54 AM
B0105004.D	Std2-0.5/5 ppb	ICAL	1	01/05/18 12:00 PM
B0105005.D	Std3-5/50 ppb	ICAL	1	01/05/18 12:05 PM
B0105006.D	Std4-10/100 ppb	ICAL	1	01/05/18 12:11 PM
B0105007.D	Std5-20/200 ppb	ICAL	1	01/05/18 12:16 PM
B0105008.D	Std6-40/400 ppb	ICAL	1	01/05/18 12:22 PM
B0105009.D	Std7-100/1000 ppb	ICAL	1	01/05/18 12:27 PM
B0105010.D	Std8-200/2000 ppb	ICAL	1	01/05/18 12:33 PM
B0105011.D	ICV	ICV	1	01/05/18 12:38 PM
B0105012.D	ICB	ICB	1	01/05/18 12:44 PM
B0105013.D	LLICV	CCV1	1	01/05/18 12:49 PM
B0105014.D	ICSA1	ICSA	1	01/05/18 12:55 PM
B0105015.D	ICSAB1	ICSAB	1	01/05/18 1:00 PM
B0105016.D	N027546-010B	SAMP	1	01/05/18 1:06 PM
B0105017.D	N027546-010B	SAMP	1	01/05/18 1:12 PM
B0105018.D	MB-66269	MBLK	1	01/05/18 1:17 PM
B0105019.D	LCS-66269	LCS	1	01/05/18 1:23 PM
B0105020.D	N027817-006C	SAMP	1	01/05/18 1:28 PM
B0105021.D	N027817-006C	SAMP	5	01/05/18 1:34 PM
B0105022.D	N027817-006C-DUP	DUP	1	01/05/18 1:39 PM
B0105023.D	N027817-006C-PS	PS	1	01/05/18 1:45 PM
B0105024.D	N027817-006C-MS	MS	1	01/05/18 1:50 PM
B0105025.D	N027817-006C-MSD	MSD	1	01/05/18 1:56 PM
B0105026.D	CCV1	CCV	1	01/05/18 2:03 PM
B0105027.D	CCB1	CCB	1	01/05/18 2:08 PM
B0105028.D	MB-66130	MBLK	1	01/05/18 2:14 PM
B0105029.D	LCS-66130	LCS	1	01/05/18 2:20 PM
B0105030.D	N027583-001E	SAMP	1	01/05/18 2:25 PM
B0105031.D	N027583-001E	SAMP	5	01/05/18 2:31 PM
B0105032.D	N027583-002E	SAMP	1	01/05/18 2:36 PM
B0105033.D	N027583-002E	SAMP	5	01/05/18 2:42 PM
B0105034.D	N027583-003E	SAMP	1	01/05/18 2:47 PM
B0105035.D	N027583-003E	SAMP	5	01/05/18 2:53 PM
B0105036.D	N027557-008E	SAMP	1	01/05/18 2:59 PM
B0105037.D	N027557-008E	SAMP	5	01/05/18 3:04 PM
B0105038.D	CCV2	CCV	1	01/05/18 3:10 PM
B0105039.D	CCB2	CCB	1	01/05/18 3:15 PM
B0105040.D	N027557-008E	SAMP	25	01/05/18 3:21 PM
B0105041.D	N027557-008E-PS	PS	1	01/05/18 3:26 PM
B0105042.D	N027557-008E-PS	PS	5	01/05/18 3:32 PM

INJECTION LOG: 180105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0105043.D	N027557-008E-MS	MS	1	01/05/18 3:39 PM
B0105044.D	N027557-008E-MSD	MSD	1	01/05/18 3:45 PM
B0105045.D	N027557-009E	SAMP	1	01/05/18 3:50 PM
B0105046.D	N027557-009E	SAMP	5	01/05/18 3:56 PM
B0105047.D	N027557-010E	SAMP	1	01/05/18 4:02 PM
B0105048.D	N027557-010E	SAMP	5	01/05/18 4:07 PM
B0105049.D	MB-66129	MBLK	1	01/05/18 4:13 PM
B0105050.D	CCV3	CCV	1	01/05/18 4:18 PM
B0105051.D	CCB3	CCB	1	01/05/18 4:24 PM
B0105052.D	LLCCV1	CCV2	1	01/05/18 4:29 PM
B0105053.D	ICSA2	ICSA	1	01/05/18 4:35 PM
B0105054.D	ICSAB2	ICSAB	1	01/05/18 4:39 PM
B0105055.D	LCS-66129	LCS	1	01/05/18 4:45 PM
B0105056.D	N027557-001B	SAMP	1	01/05/18 4:51 PM
B0105057.D	N027557-001B	SAMP	5	01/05/18 4:57 PM
B0105058.D	N027557-001B	SAMP	25	01/05/18 5:02 PM
B0105059.D	N027557-001B-PS	PS	1	01/05/18 5:08 PM
B0105060.D	N027557-001B-PS	PS	5	01/05/18 5:13 PM
B0105061.D	N027557-001B-MS	MS	1	01/05/18 5:19 PM
B0105062.D	N027557-001B-MS	MS	5	01/05/18 5:25 PM
B0105063.D	N027557-001B-MSD	MSD	1	01/05/18 5:30 PM
B0105064.D	N027557-001B-MSD	MSD	5	01/05/18 5:36 PM
B0105065.D	CCV4	CCV	1	01/05/18 5:41 PM
B0105066.D	CCB4	CCB	1	01/05/18 5:47 PM
B0105067.D	N027557-002B	SAMP	1	01/05/18 5:52 PM
B0105068.D	N027557-002B	SAMP	5	01/05/18 5:58 PM
B0105069.D	N027557-003B	SAMP	1	01/05/18 6:03 PM
B0105070.D	N027557-003B	SAMP	5	01/05/18 6:09 PM
B0105071.D	N027557-004B	SAMP	1	01/05/18 6:14 PM
B0105072.D	N027557-004B	SAMP	5	01/05/18 6:20 PM
B0105073.D	N027557-005B	SAMP	1	01/05/18 6:26 PM
B0105074.D	N027557-005B	SAMP	5	01/05/18 6:31 PM
B0105075.D	N027557-006B	SAMP	1	01/05/18 6:37 PM
B0105076.D	N027557-006B	SAMP	5	01/05/18 6:42 PM
B0105077.D	CCV5	CCV	1	01/05/18 6:48 PM
B0105078.D	CCB5	CCB	1	01/05/18 6:53 PM
B0105079.D	N027557-007B	SAMP	1	01/05/18 6:59 PM
B0105080.D	N027557-007B	SAMP	5	01/05/18 7:05 PM
B0105081.D	N027557-008B	SAMP	1	01/05/18 7:10 PM
B0105082.D	N027557-008B	SAMP	5	01/05/18 7:16 PM
B0105083.D	N027557-009B	SAMP	1	01/05/18 7:21 PM
B0105084.D	N027557-009B	SAMP	5	01/05/18 7:27 PM

INJECTION LOG: 180105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0105085.D	N027557-010B	SAMP	1	01/05/18 7:32 PM
B0105086.D	N027557-010B	SAMP	5	01/05/18 7:38 PM
B0105087.D	MB-66251	MBLK	1	01/05/18 7:43 PM
B0105088.D	LCS-66251	LCS	1	01/05/18 7:49 PM
B0105089.D	CCV6	CCV	1	01/05/18 7:54 PM
B0105090.D	CCB6	CCB	1	01/05/18 8:00 PM
B0105091.D	LLCCV2	CCV2	1	01/05/18 8:05 PM
B0105092.D	ICSA3	ICSA	1	01/05/18 8:11 PM
B0105093.D	ICSAB3	ICSAB	1	01/05/18 8:17 PM
B0105094.D	N027812-010B	SAMP	1	01/05/18 8:22 PM
B0105095.D	N027812-010B	SAMP	5	01/05/18 8:28 PM
B0105096.D	N027812-011B	SAMP	1	01/05/18 8:33 PM
B0105097.D	N027812-011B	SAMP	5	01/05/18 8:39 PM
B0105098.D	N027812-012B	SAMP	1	01/05/18 8:44 PM
B0105099.D	N027812-012B	SAMP	5	01/05/18 8:50 PM
B0105100.D	N027812-013B	SAMP	1	01/05/18 8:56 PM
B0105101.D	N027812-013B	SAMP	5	01/05/18 9:01 PM
B0105102.D	N027812-014B	SAMP	1	01/05/18 9:07 PM
B0105103.D	N027812-014B	SAMP	5	01/05/18 9:12 PM
B0105104.D	CCV7	CCV	1	01/05/18 9:19 PM
B0105105.D	CCB7	CCB	1	01/05/18 9:25 PM
B0105106.D	N027812-015B	SAMP	1	01/05/18 9:31 PM
B0105107.D	N027812-015B	SAMP	5	01/05/18 9:36 PM
B0105108.D	N027812-001B	SAMP	1	01/05/18 9:41 PM
B0105109.D	N027812-001B	SAMP	5	01/05/18 9:47 PM
B0105110.D	N027812-001B	SAMP	25	01/05/18 9:52 PM
B0105111.D	N027812-001B-PS	PS	1	01/05/18 9:58 PM
B0105112.D	N027812-001B-PS	PS	5	01/05/18 10:04 PM
B0105113.D	N027812-001B-MS	MS	1	01/05/18 10:09 PM
B0105114.D	N027812-001B-MS	MS	5	01/05/18 10:15 PM
B0105115.D	N027812-001B-MSD	MSD	1	01/05/18 10:21 PM
B0105116.D	CCV8	CCV	1	01/05/18 10:27 PM
B0105117.D	CCB8	CCB	1	01/05/18 10:32 PM
B0105118.D	N027812-001B-MSD	MSD	5	01/05/18 10:38 PM
B0105119.D	N027812-002B	SAMP	1	01/05/18 10:43 PM
B0105120.D	N027812-002B	SAMP	5	01/05/18 10:49 PM
B0105121.D	N027812-003B	SAMP	1	01/05/18 10:54 PM
B0105122.D	N027812-003B	SAMP	5	01/05/18 11:00 PM
B0105123.D	N027812-004B	SAMP	1	01/05/18 11:05 PM
B0105124.D	N027812-004B	SAMP	5	01/05/18 11:11 PM
B0105125.D	N027812-005B	SAMP	1	01/05/18 11:16 PM
B0105126.D	N027812-005B	SAMP	5	01/05/18 11:22 PM

INJECTION LOG: 180105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0105127.D	N027812-006B	SAMP	1	01/05/18 11:28 PM
B0105128.D	CCV9	CCV	1	01/05/18 11:33 PM
B0105129.D	CCB9	CCB	1	01/05/18 11:39 PM
B0105130.D	N027812-006B	SAMP	5	01/05/18 11:44 PM
B0105131.D	N027812-007B	SAMP	1	01/05/18 11:50 PM
B0105132.D	N027812-007B	SAMP	5	01/05/18 11:55 PM
B0105133.D	N027812-008B	SAMP	1	01/06/18 12:01 AM
B0105134.D	N027812-008B	SAMP	5	01/06/18 12:06 AM
B0105135.D	N027812-009B	SAMP	1	01/06/18 12:12 AM
B0105136.D	N027812-009B	SAMP	5	01/06/18 12:18 AM
B0105137.D	MB-66250	MBLK	1	01/06/18 12:23 AM
B0105138.D	LCS-66250	LCS	1	01/06/18 12:29 AM
B0105139.D	N027789-003C	SAMP	1	01/06/18 12:34 AM
B0105140.D	CCV10	CCV	1	01/06/18 12:41 AM
B0105141.D	CCB10	CCB	1	01/06/18 12:47 AM
B0105142.D	LLCCV3	CCV2	1	01/06/18 12:52 AM
B0105143.D	ICSA4	ICSA	1	01/06/18 12:56 AM
B0105144.D	ICSAB4	ICSAB	1	01/06/18 1:02 AM
B0105145.D	N027789-003C	SAMP	5	01/06/18 1:08 AM
B0105146.D	N027789-003C	SAMP	25	01/06/18 1:13 AM
B0105147.D	N027789-001E	SAMP	1	01/06/18 1:19 AM
B0105148.D	N027789-001E	SAMP	5	01/06/18 1:24 AM
B0105149.D	N027789-001E	SAMP	25	01/06/18 1:30 AM
B0105150.D	N027789-001E-PS	PS	1	01/06/18 1:35 AM
B0105151.D	N027789-001E-PS	PS	5	01/06/18 1:41 AM
B0105152.D	N027789-001E-MS	MS	1	01/06/18 1:46 AM
B0105153.D	N027789-001E-MS	MS	5	01/06/18 1:52 AM
B0105154.D	N027789-001E-MSD	MSD	1	01/06/18 1:58 AM
B0105155.D	CCV11	CCV	1	01/06/18 2:03 AM
B0105156.D	CCB11	CCB	1	01/06/18 2:09 AM
B0105157.D	N027789-001E-MSD	MSD	5	01/06/18 2:14 AM
B0105158.D	N027789-002E	SAMP	1	01/06/18 2:20 AM
B0105159.D	N027789-002E	SAMP	5	01/06/18 2:25 AM
B0105160.D	CCV12	CCV	1	01/06/18 2:31 AM
B0105161.D	CCB12	CCB	1	01/06/18 2:36 AM
B0105162.D	LLCCV4	CCV2	1	01/06/18 2:42 AM
B0105163.D	ICSA5	ICSA	1	01/06/18 2:47 AM
B0105164.D	ICSAB5	ICSAB	1	01/06/18 2:53 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/19/2017 11:11:2**
Prep End Date: **12/19/2018 5:00:00**
Prep Batch **66130** Prep Code: **200.8_PR**

Reviewed/ Date: 01/09/2018
Initials/ Date: 01/09/2018
Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.7**	**02-10**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66130	Aqueous		25	☐	0	0	25	1.000		
MB-66130	Aqueous		25	☐	0	0	25	1.000		
N027557-008E	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-008E-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-008E-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-009E	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-010E	Groundwater	<2	25	☐	0	0	25	1.000		
N027583-001E	Groundwater	<2	25	☐	0	0	25	1.000		
N027583-002E	Groundwater	<2	25	☐	0	0	25	1.000		
N027583-003E	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 5 Jan 2018 09:19:59 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	271212.00	0.00	
24 Mg	1049440.00	0.00	
25 Mg	138898.00	0.00	
26 Mg	161197.00	0.00	
59 Co	1084180.00	0.00	
115 In	1544490.00	0.00	
206 Pb	403628.00	0.00	
207 Pb	351349.00	0.00	
208 Pb	869853.00	0.00	

RSD (%)

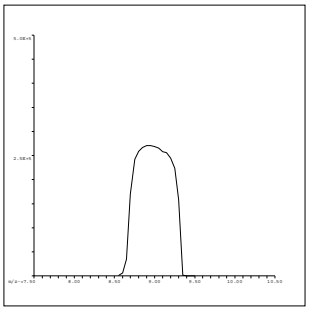
Element	Actual	Required	Flag
9 Be	0.37	5.00	
24 Mg	0.72	5.00	
25 Mg	0.49	5.00	
26 Mg	0.95	5.00	
59 Co	1.10	5.00	
115 In	0.56	5.00	
206 Pb	0.71	5.00	
207 Pb	0.92	5.00	
208 Pb	0.96	5.00	

Ion Ratio

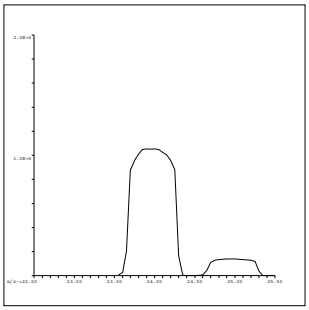
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

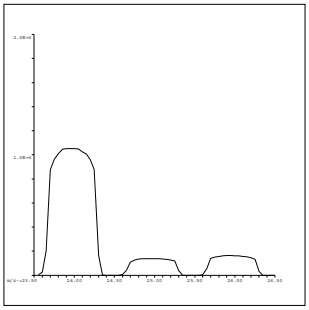
Element	Actual	Required	Flag



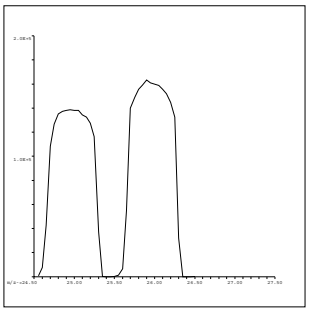
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



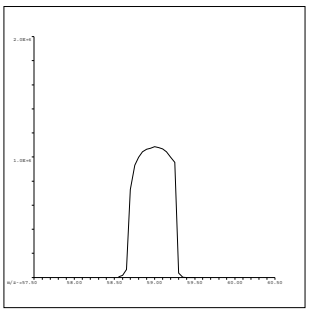
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



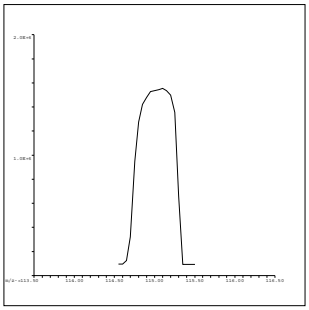
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



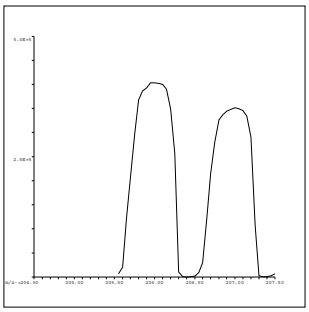
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



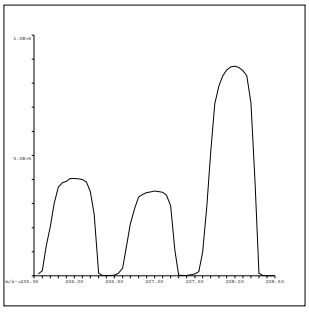
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



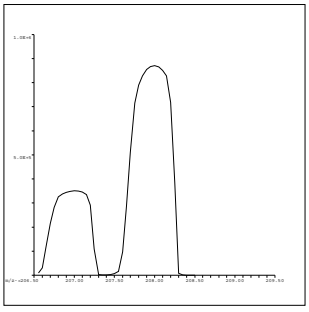
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180105B

Instrument ID: ICPMS-02

Analyte	Data File	B0105002.D	B0105004.D	B0105005.D	B0105006.D	B0105007.D	B0105008.D	B0105009.D	B0105010.D	
	Acq. Date-Time	01/05/2018 11:49 AM	01/05/2018 12:00 PM	01/05/2018 12:05 PM	01/05/2018 12:11 PM	01/05/2018 12:16 PM	01/05/2018 12:22 PM	01/05/2018 12:27 PM	01/05/2018 12:33 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	98689.2	103014	103257.9	103971.1	104715.8	105546	106915	107843.3	
52 Cr [2]	CPS	418.9	4875.2	44614.8	89300.4	177835	359660.9	883326.5	1797867.3	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_CRPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **ICV**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/5/2018**	SeqNo: **2886737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.989	1.0	10.00	0	99.9	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **ZZZZZZ**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/5/2018**	SeqNo: **2886739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.030	1.0	1.000	0	103	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **CCV**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/5/2018**	SeqNo: **2886752**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.615	1.0	20.00	0	103	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **CCV**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/5/2018**	SeqNo: **2886764**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.358	1.0	20.00	0	102	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **CCV**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/5/2018**	SeqNo: **2886776**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.272	1.0	20.00	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_CRPGE

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **ZZZZZZ**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/5/2018**	SeqNo: **2886778**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.036	1.0	1.000	0	104	70	130				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **CCV**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/5/2018**	SeqNo: **2887602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.139	1.0	20.00	0	101	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **CCV**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/5/2018**	SeqNo: **2887614**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.288	1.0	20.00	0	101	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **CCV**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/5/2018**	SeqNo: **2887626**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.531	1.0	20.00	0	103	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **ZZZZZZ**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/5/2018**	SeqNo: **2887628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.014	1.0	1.000	0	101	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_CRPGE

Sample ID	CCV7	SampType:	CCV	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:		RunNo:	121244
Client ID:	CCV	Batch ID:	R121244	TestNo:	EPA 200.8			Analysis Date:	1/5/2018	SeqNo:	2887641

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.366	1.0	20.00	0	102	90	110				

Sample ID	CCV8	SampType:	CCV	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:		RunNo:	121244
Client ID:	CCV	Batch ID:	R121244	TestNo:	EPA 200.8			Analysis Date:	1/5/2018	SeqNo:	2887653

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.301	1.0	20.00	0	107	90	110				

Sample ID	CCV9	SampType:	CCV	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:		RunNo:	121244
Client ID:	CCV	Batch ID:	R121244	TestNo:	EPA 200.8			Analysis Date:	1/5/2018	SeqNo:	2887665

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.100	1.0	20.00	0	106	90	110				

Sample ID	CCV10	SampType:	CCV	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:		RunNo:	121244
Client ID:	CCV	Batch ID:	R121244	TestNo:	EPA 200.8			Analysis Date:	1/6/2018	SeqNo:	2887677

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.273	1.0	20.00	0	101	90	110				

Sample ID	LLCCV3	SampType:	CCV2	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:		RunNo:	121244
Client ID:	ZZZZZZ	Batch ID:	R121244	TestNo:	EPA 200.8			Analysis Date:	1/6/2018	SeqNo:	2887679

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.036	1.0	1.000	0	104	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_CRPGE

Sample ID **CCV11**	SampType: **CCV**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **CCV**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/6/2018**	SeqNo: **2887692**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.421	1.0	20.00	0	102	90	110				

Sample ID **CCV12**	SampType: **CCV**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **CCV**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/6/2018**	SeqNo: **2887697**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.485	1.0	20.00	0	102	90	110				

Sample ID **LLCCV4**	SampType: **CCV2**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **ZZZZZZ**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/6/2018**	SeqNo: **2887699**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.047	1.0	1.000	0	105	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_CRPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **ICB**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/5/2018**	SeqNo: **2886738**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **CCB**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/5/2018**	SeqNo: **2886753**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **CCB**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/5/2018**	SeqNo: **2886765**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **CCB**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/5/2018**	SeqNo: **2886777**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **CCB**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/5/2018**	SeqNo: **2887603**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_CRPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **CCB**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/5/2018**	SeqNo: **2887615**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **CCB**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/5/2018**	SeqNo: **2887627**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **CCB**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/5/2018**	SeqNo: **2887642**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **CCB**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/5/2018**	SeqNo: **2887654**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **CCB**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/5/2018**	SeqNo: **2887666**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_CRPGE

Sample ID **CCB10**	SampType: **CCB**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **CCB**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/6/2018**	SeqNo: **2887678**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB11**	SampType: **CCB**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **CCB**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/6/2018**	SeqNo: **2887693**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.034	1.0									

Sample ID **CCB12**	SampType: **CCB**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID: **CCB**	Batch ID: **R121244**	TestNo: **EPA 200.8**		Analysis Date: **1/6/2018**	SeqNo: **2887698**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_CRPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:		RunNo:	121244
Client ID:	ICSA	Batch ID:	R121244	TestNo:	EPA 200.8			Analysis Date:	1/5/2018	SeqNo:	2886740

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.057	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:		RunNo:	121244
Client ID:	ICSAB	Batch ID:	R121244	TestNo:	EPA 200.8			Analysis Date:	1/5/2018	SeqNo:	2886741

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.914	1.0	20.00	0	99.6	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:		RunNo:	121244
Client ID:	ICSA	Batch ID:	R121244	TestNo:	EPA 200.8			Analysis Date:	1/5/2018	SeqNo:	2886779

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.074	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:		RunNo:	121244
Client ID:	ICSAB	Batch ID:	R121244	TestNo:	EPA 200.8			Analysis Date:	1/5/2018	SeqNo:	2886780

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.112	1.0	20.00	0	106	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:		RunNo:	121244
Client ID:	ICSA	Batch ID:	R121244	TestNo:	EPA 200.8			Analysis Date:	1/5/2018	SeqNo:	2887629

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.085	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_CRPGE

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:		RunNo:	121244
Client ID:	ICSAB	Batch ID:	R121244	TestNo:	EPA 200.8			Analysis Date:	1/5/2018	SeqNo:	2887630

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.193	1.0	20.00	0	101	80	120				

Sample ID	ICSA4	SampType:	ICSA	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:		RunNo:	121244
Client ID:	ICSA	Batch ID:	R121244	TestNo:	EPA 200.8			Analysis Date:	1/6/2018	SeqNo:	2887680

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.071	1.0									

Sample ID	ICSAB4	SampType:	ICSAB	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:		RunNo:	121244
Client ID:	ICSAB	Batch ID:	R121244	TestNo:	EPA 200.8			Analysis Date:	1/6/2018	SeqNo:	2887681

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.310	1.0	20.00	0	102	80	120				

Sample ID	ICSA5	SampType:	ICSA	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:		RunNo:	121244
Client ID:	ICSA	Batch ID:	R121244	TestNo:	EPA 200.8			Analysis Date:	1/6/2018	SeqNo:	2887700

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.095	1.0									

Sample ID	ICSAB5	SampType:	ICSAB	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:		RunNo:	121244
Client ID:	ICSAB	Batch ID:	R121244	TestNo:	EPA 200.8			Analysis Date:	1/6/2018	SeqNo:	2887701

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.542	1.0	20.00	0	103	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	98689.2	98689.2	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	103050.7	98689.2	104.42	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	103014	98689.2	104.38	PASS	70-125
Std3-5/50 ppb	ICAL	1	103257.9	98689.2	104.63	PASS	70-125
Std4-10/100 ppb	ICAL	1	103971.1	98689.2	105.35	PASS	70-125
Std5-20/200 ppb	ICAL	1	104715.8	98689.2	106.11	PASS	70-125
Std6-40/400 ppb	ICAL	1	105546	98689.2	106.95	PASS	70-125
Std7-100/1000 ppb	ICAL	1	106915	98689.2	108.34	PASS	70-125
Std8-200/2000 ppb	ICAL	1	107843.3	98689.2	109.28	PASS	70-125
ICV	ICV	1	110378.5	98689.2	111.84	PASS	70-125
ICB	ICB	1	100697.6	98689.2	102.04	PASS	70-125
LLICV	CCV1	1	110692.6	98689.2	112.16	PASS	70-125
ICSA1	ICSA	1	114002.4	98689.2	115.52	PASS	70-125
ICSAB1	ICSAB	1	123987.3	98689.2	125.63	Failed NR!	70-125
CCV1	CCV	1	108740.1	98689.2	110.18	PASS	70-125
CCB1	CCB	1	111191.4	98689.2	112.67	PASS	70-125
MB-66130	MBLK	1	107764.9	98689.2	109.2	PASS	70-125
LCS-66130	LCS	1	111685.9	98689.2	113.17	PASS	70-125
N027583-001E	SAMP	1	98961	98689.2	100.28	PASS	70-125
N027583-001E	SAMP	5	112142.9	98689.2	113.63	PASS	70-125
N027583-002E	SAMP	1	102835.8	98689.2	104.2	PASS	70-125
N027583-002E	SAMP	5	112813.4	98689.2	114.31	PASS	70-125
N027583-003E	SAMP	1	105461.3	98689.2	106.86	PASS	70-125
N027583-003E	SAMP	5	112081.1	98689.2	113.57	PASS	70-125
N027557-008E	SAMP	1	105796.1	98689.2	107.2	PASS	70-125
N027557-008E	SAMP	5	108887.6	98689.2	110.33	PASS	70-125
CCV2	CCV	1	114371.9	98689.2	115.89	PASS	70-125
CCB2	CCB	1	108325.1	98689.2	109.76	PASS	70-125
N027557-008E	SAMP	25	105740.2	98689.2	107.14	PASS	70-125
N027557-008E-PS	PS	1	103545.5	98689.2	104.92	PASS	70-125
N027557-008E-PS	PS	5	106912.1	98689.2	108.33	PASS	70-125
N027557-008E-MS	MS	1	109738.6	98689.2	111.2	PASS	70-125
N027557-008E-MSD	MSD	1	110771.3	98689.2	112.24	PASS	70-125
N027557-009E	SAMP	1	103647.2	98689.2	105.02	PASS	70-125
N027557-009E	SAMP	5	109645.8	98689.2	111.1	PASS	70-125
N027557-010E	SAMP	1	103281.4	98689.2	104.65	PASS	70-125
N027557-010E	SAMP	5	107532.5	98689.2	108.96	PASS	70-125
CCV3	CCV	1	110649.1	98689.2	112.12	PASS	70-125
CCB3	CCB	1	104844	98689.2	106.24	PASS	70-125
LLCCV1	CCV2	1	113176.7	98689.2	114.68	PASS	70-125
ICSA2	ICSA	1	118402.6	98689.2	119.98	PASS	70-125

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
ICSAB2	ICSAB	1	99365.8	98689.2	100.69	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N027557
Test Method: EPA 200.8
Analysis Date: 1/4/2018

Matrix: Groundwater
Batch No.: 66130

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027557-008E DT 5X	Chromium	ug/L	10.86664	NA	10.09274	7.67%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_CRPGE

Sample ID	**N027557-008E-PS**	SampType: **PS**	TestCode: **200.8_W_CR**	Units: **µg/L**	Prep Date:	RunNo: **121244**
Client ID:	**ZZZZZZ**	Batch ID: **66130**	TestNo: **EPA 200.8**		Analysis Date: **1/5/2018**	SeqNo: **2886767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.978	1.0	10.00	10.09	98.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R121028
ASSET #: N027557

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 12/21/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments: **Dilution was necessary for N027557-001A to -005A due to matrix interference.**

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/27/2017

2nd Level Reviewer: RLB 01/08/2018 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N027557-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 2.7262 * 5$$

$$Cr^{+6}, \mu g/L = 13.63$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 14}$$

rba 12/27/2017

RB 01/08/2018

ANALYSIS RUN LOG

INJECTION LOG: 171128A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/28/17 10:57 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/28/17 11:08 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/28/17 11:17 AM	Reported
13	MB-R120468	MBLK	1	Hexavalent Chromium	11/28/17 11:27 AM	Reported
14	LCS-R120468	LCS	1	Hexavalent Chromium	11/28/17 11:36 AM	Reported
15	N027215-001A	SAMP	1	Hexavalent Chromium	11/28/17 11:47 AM	Reported
16	N027215-002A	SAMP	1	Hexavalent Chromium	11/28/17 11:59 AM	Reported
17	N027215-003A	SAMP	1	Hexavalent Chromium	11/28/17 12:08 PM	Reported
18	N027215-004A	SAMP	1	Hexavalent Chromium	11/28/17 12:18 PM	Reported
19	N027215-005A	SAMP	1	Hexavalent Chromium	11/28/17 12:27 PM	Reported
20	N027215-002ADUP	DUP	1	Hexavalent Chromium	11/28/17 12:37 PM	Reported
21	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 12:46 PM	Not Reported
22	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 12:56 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	11/28/17 1:05 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/28/17 1:14 PM	Reported
25	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:04 PM	Not Reported
26	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:16 PM	Not Reported
27	N027215-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:29 PM	Reported
28	N027215-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:41 PM	Reported
29	CCV-2	CCV	1	Hexavalent Chromium	11/28/17 2:50 PM	Reported
30	CCB-2	CCB	1	Hexavalent Chromium	11/28/17 3:00 PM	Reported



Injection Log Summary

Sequence Details

Name:	**IC-07_171128A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**28/Nov/17 15:47:35**
No. of Injections:	**33**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		11/28/2017 10:57	Finished	ICV @5ppb, IWST-171002A
11	PQL@0.2ppb,CCV2,1	12	1000	Unknown		11/28/2017 11:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		11/28/2017 11:17	Finished	ICB R171114C
13	MB-H2O,MBLK,1	14	1000	Unknown		11/28/2017 11:27	Finished	MB R171114C
14	LCS-H2O,LCS,1	15	1000	Unknown		11/28/2017 11:36	Finished	LCS, IWST-171002B
15	N027215-001A,SAMP	17	1000	Unknown		11/28/2017 11:47	Finished	SAMP,10mL
16	N027215-002A,SAMP	18	1000	Unknown		11/28/2017 11:59	Finished	SAMP,10mL
17	N027215-003A,SAMP	19	1000	Unknown		11/28/2017 12:08	Finished	SAMP,10mL
18	N027215-004A,SAMP	20	1000	Unknown		11/28/2017 12:18	Finished	SAMP,10mL
19	N027215-005A,SAMP	21	1000	Unknown		11/28/2017 12:27	Finished	SAMP,10mL
20	N027215-002ADUP,D	22	1000	Unknown		11/28/2017 12:37	Finished	DUP,10mL
21	N027157-001AMS,MS	23	1000	Unknown		11/28/2017 12:46	Finished	MS (5ppb), IWST-171002B,10
22	N027157-001AMSD,M	24	1000	Unknown		11/28/2017 12:56	Finished	MSD (5ppb), IWST-171002B,1(
23	CCV-1,CCV1,1,	25	1000	Unknown		11/28/2017 13:05	Finished	CCV @10ppb, IWST-171002A
24	CCB-1,CCB,1,	26	1000	Unknown		11/28/2017 13:14	Finished	CCB R171031A
25	N027157-001AMS,MS	28	1000	Unknown		11/28/2017 14:04	Finished	MS (5ppb), IWST-171002B,10
26	N027157-001AMSD,M	29	1000	Unknown		11/28/2017 14:16	Finished	MSD (5ppb), IWST-171002B,1(
27	N027215-001AMS,MS	31	1000	Unknown		11/28/2017 14:29	Finished	MS (5ppb), IWST-171002B,10
28	N027215-001AMSD,M	32	1000	Unknown		11/28/2017 14:41	Finished	MSD (5ppb), IWST-171002B,1(
29	CCV-2,CCV,1,	33	1000	Unknown		11/28/2017 14:50	Finished	CCV @5ppb, IWST-171002A
30	CCB-2,CCB,1,	34	1000	Unknown		11/28/2017 15:00	Finished	CCB R171031A
31	SHUTDOWN	35	1000	Unknown		11/28/2017 15:09	Finished	
32	Eluent: R171128A	36	1000	Unknown		n.a.	Finished	Eluent
33	PCR: R171128B	37	1000	Unknown		n.a.	Finished	Post-Column Reagent

rba 11/29/2017

INJECTION LOG: 171221A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/21/17 8:52 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/21/17 9:03 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/21/17 9:12 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/21/17 9:22 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/21/17 9:31 AM	Reported
15	MB-R121028	MBLK	1	Hexavalent Chromium	12/21/17 9:41 AM	Reported
16	LCS-R121028	LCS	1	Hexavalent Chromium	12/21/17 9:50 AM	Reported
17	N027557-001A	SAMP	1	Hexavalent Chromium	12/21/17 10:00 AM	Not Reported
18	N027557-002A	SAMP	1	Hexavalent Chromium	12/21/17 10:09 AM	Not Reported
19	N027557-003A	SAMP	1	Hexavalent Chromium	12/21/17 10:19 AM	Not Reported
20	N027557-004A	SAMP	1	Hexavalent Chromium	12/21/17 10:28 AM	Not Reported
21	N027557-005A	SAMP	1	Hexavalent Chromium	12/21/17 10:38 AM	Not Reported
22	N027557-006A	SAMP	1	Hexavalent Chromium	12/21/17 10:47 AM	Reported
23	N027557-007A	SAMP	1	Hexavalent Chromium	12/21/17 10:56 AM	Not Reported
24	N027557-008A	SAMP	1	Hexavalent Chromium	12/21/17 11:06 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/21/17 11:15 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/21/17 11:25 AM	Reported
27	N027557-001A	SAMP	5	Hexavalent Chromium	12/21/17 11:34 AM	Reported
28	N027557-001AMS	MS	5	Hexavalent Chromium	12/21/17 11:44 AM	Reported
29	N027557-002A	SAMP	5	Hexavalent Chromium	12/21/17 11:53 AM	Reported
30	N027557-002AMS	MS	5	Hexavalent Chromium	12/21/17 12:03 PM	Reported
31	N027557-003A	SAMP	5	Hexavalent Chromium	12/21/17 12:12 PM	Reported
32	N027557-003AMS	MS	5	Hexavalent Chromium	12/21/17 12:22 PM	Reported
33	N027557-004A	SAMP	5	Hexavalent Chromium	12/21/17 12:31 PM	Reported
34	N027557-004AMS	MS	5	Hexavalent Chromium	12/21/17 12:41 PM	Reported
35	N027557-005A	SAMP	5	Hexavalent Chromium	12/21/17 12:50 PM	Reported
36	N027557-005AMS	MS	5	Hexavalent Chromium	12/21/17 12:59 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/21/17 1:09 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/21/17 1:18 PM	Reported
39	N027557-007A	SAMP	100	Hexavalent Chromium	12/21/17 1:28 PM	Reported
40	N027557-008A	SAMP	1	Hexavalent Chromium	12/21/17 1:37 PM	Reported
41	N027557-008AMS	MS	1	Hexavalent Chromium	12/21/17 1:47 PM	Reported
42	N027557-008AMSD	MSD	1	Hexavalent Chromium	12/21/17 1:56 PM	Reported

INJECTION LOG: 171221A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027557-009A	SAMP	1	Hexavalent Chromium	12/21/17 2:06 PM	Not Reported
44	N027557-009AMS	MS	1	Hexavalent Chromium	12/21/17 2:15 PM	Not Reported
45	N027557-011A	SAMP	1	Hexavalent Chromium	12/21/17 2:29 PM	Reported
46	N027557-011AMS	MS	1	Hexavalent Chromium	12/21/17 2:40 PM	Reported
47	N027557-012A	SAMP	1	Hexavalent Chromium	12/21/17 2:49 PM	Reported
48	N027557-012AMS	MS	1	Hexavalent Chromium	12/21/17 2:59 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/21/17 3:08 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/21/17 3:18 PM	Reported
51	N027557-007ADUP	DUP	100	Hexavalent Chromium	12/21/17 3:27 PM	Reported
52	N027557-007AMS	MS	100	Hexavalent Chromium	12/21/17 3:37 PM	Reported
53	N027557-006AMS	MS	1	Hexavalent Chromium	12/21/17 3:46 PM	Reported
54	N027557-009A	SAMP	2	Hexavalent Chromium	12/21/17 3:56 PM	Reported
55	N027557-009AMS	MS	2	Hexavalent Chromium	12/21/17 4:05 PM	Reported
56	N027557-010A	SAMP	2	Hexavalent Chromium	12/21/17 4:14 PM	Reported
57	N027557-010AMS	MS	2	Hexavalent Chromium	12/21/17 4:24 PM	Reported
58	N027557-001AMS	MS	1	Hexavalent Chromium	12/21/17 4:33 PM	Not Reported
59	N027557-002AMS	MS	1	Hexavalent Chromium	12/21/17 4:43 PM	Not Reported
60	N027557-003AMS	MS	1	Hexavalent Chromium	12/21/17 4:52 PM	Not Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/21/17 5:02 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/21/17 5:11 PM	Reported
63	N027557-004AMS	MS	1	Hexavalent Chromium	12/21/17 5:21 PM	Not Reported
64	N027557-005AMS	MS	1	Hexavalent Chromium	12/21/17 5:30 PM	Not Reported
65	CCV-6	CCV1	1	Hexavalent Chromium	12/21/17 5:40 PM	Reported
66	CCB-6	CCB	1	Hexavalent Chromium	12/21/17 5:49 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171221A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**22/Dec/17 11:51:33**
No. of Injections:	**69**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/21/2017 08:52	Finished	BLANK
11	BLANK	2	1000	Unknown		12/21/2017 09:03	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/21/2017 09:12	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/21/2017 09:22	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/21/2017 09:31	Finished	CCB R171129A
15	MB-H2O,MBLK,1,	6	1000	Unknown		12/21/2017 09:41	Finished	MB R171129A
16	LCS-H2O,LCS,1,	7	1000	Unknown		12/21/2017 09:50	Finished	LCS, IWST-171002B
17	N027557-001A,SAMF	8	1000	Unknown		12/21/2017 10:00	Finished	SAMP,10mL
18	N027557-002A,SAMF	9	1000	Unknown		12/21/2017 10:09	Finished	SAMP,10mL
19	N027557-003A,SAMF	10	1000	Unknown		12/21/2017 10:19	Finished	SAMP,10mL
20	N027557-004A,SAMF	11	1000	Unknown		12/21/2017 10:28	Finished	SAMP,10mL
21	N027557-005A,SAMF	12	1000	Unknown		12/21/2017 10:38	Finished	SAMP,10mL
22	N027557-006A,SAMF	13	1000	Unknown		12/21/2017 10:47	Finished	SAMP,10mL
23	N027557-007A,SAMF	14	1000	Unknown		12/21/2017 10:56	Finished	SAMP,10mL
24	N027557-008A,SAMF	15	1000	Unknown		12/21/2017 11:06	Finished	SAMP,10mL
25	CCV-2,CCV1,1,	16	1000	Unknown		12/21/2017 11:15	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	17	1000	Unknown		12/21/2017 11:25	Finished	CCB R171129A
27	N027557-001A,SAMF	18	1000	Unknown		12/21/2017 11:34	Finished	SAMP,2>10mL
28	N027557-001AMS,MS	19	1000	Unknown		12/21/2017 11:44	Finished	MS (1ppb), IWST-171002B,2>1
29	N027557-002A,SAMF	20	1000	Unknown		12/21/2017 11:53	Finished	SAMP,2>10mL
30	N027557-002AMS,MS	21	1000	Unknown		12/21/2017 12:03	Finished	MS (1ppb), IWST-171002B,2>1
31	N027557-003A,SAMF	22	1000	Unknown		12/21/2017 12:12	Finished	SAMP,2>10mL
32	N027557-003AMS,MS	23	1000	Unknown		12/21/2017 12:22	Finished	MS (1ppb), IWST-171002B,2>1
33	N027557-004A,SAMF	24	1000	Unknown		12/21/2017 12:31	Finished	SAMP,2>10mL
34	N027557-004AMS,MS	25	1000	Unknown		12/21/2017 12:41	Finished	MS (1ppb), IWST-171002B,2>1
35	N027557-005A,SAMF	26	1000	Unknown		12/21/2017 12:50	Finished	SAMP,2>10mL
36	N027557-005AMS,MS	27	1000	Unknown		12/21/2017 12:59	Finished	MS (1ppb), IWST-171002B,2>1
37	CCV-3,CCV,1,	28	1000	Unknown		12/21/2017 13:09	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	29	1000	Unknown		12/21/2017 13:18	Finished	CCB R171129A
39	N027557-007A,SAMF	30	1000	Unknown		12/21/2017 13:28	Finished	SAMP,0.1>10mL
40	N027557-008A,SAMF	31	1000	Unknown		12/21/2017 13:37	Finished	SAMP,10mL
41	N027557-008AMS,MS	32	1000	Unknown		12/21/2017 13:47	Finished	MS (5ppb), IWST-171002B,10
42	N027557-008AMSD,M	33	1000	Unknown		12/21/2017 13:56	Finished	MSD (5ppb), IWST-171002B,1(
43	N027557-009A,SAMF	34	1000	Unknown		12/21/2017 14:06	Finished	SAMP,10mL
44	N027557-009AMS,MS	35	1000	Unknown		12/21/2017 14:15	Finished	MS (1ppb), IWST-171002B,10
45	N027557-011A,SAMF	1	1000	Unknown		12/21/2017 14:29	Finished	SAMP,10mL
46	N027557-011AMS,MS	2	1000	Unknown		12/21/2017 14:40	Finished	MS (1ppb), IWST-171002B,10
47	N027557-012A,SAMF	3	1000	Unknown		12/21/2017 14:49	Finished	SAMP,10mL
48	N027557-012AMS,MS	4	1000	Unknown		12/21/2017 14:59	Finished	MS (1ppb), IWST-171002B,10
49	CCV-4,CCV1,1,	5	1000	Unknown		12/21/2017 15:08	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	6	1000	Unknown		12/21/2017 15:18	Finished	CCB R171129A
51	N027557-007ADUP,D	7	1000	Unknown		12/21/2017 15:27	Finished	DUP,0.1>10mL
52	N027557-007AMS,MS	8	1000	Unknown		12/21/2017 15:37	Finished	MS (5ppb), IWST-171002B,0.1
53	N027557-006AMS,MS	9	1000	Unknown		12/21/2017 15:46	Finished	MS (1ppb), IWST-171002B,10
54	N027557-009A,SAMF	10	1000	Unknown		12/21/2017 15:56	Finished	SAMP,5>10mL
55	N027557-009AMS,MS	11	1000	Unknown		12/21/2017 16:05	Finished	MS (5ppb), IWST-171002B,5>1
56	N027557-010A,SAMF	12	1000	Unknown		12/21/2017 16:14	Finished	SAMP,5>10mL
57	N027557-010AMS,MS	13	1000	Unknown		12/21/2017 16:24	Finished	MS (5ppb), IWST-171002B,5>1
58	N027557-001AMS,MS	14	1000	Unknown		12/21/2017 16:33	Finished	MS (1ppb), IWST-171002B,10
59	N027557-002AMS,MS	15	1000	Unknown		12/21/2017 16:43	Finished	MS (1ppb), IWST-171002B,10
60	N027557-003AMS,MS	16	1000	Unknown		12/21/2017 16:52	Finished	MS (1ppb), IWST-171002B,10

61	CCV-5,CCV,1,	17	1000	Unknown		12/21/2017 17:02	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	18	1000	Unknown		12/21/2017 17:11	Finished	CCB R171129A
63	N027557-004AMS,MS	19	1000	Unknown		12/21/2017 17:21	Finished	MS (1ppb), IWST-171002B,10
64	N027557-005AMS,MS	20	1000	Unknown		12/21/2017 17:30	Finished	MS (1ppb), IWST-171002B,10
65	CCV-6,CCV1,1,	21	1000	Unknown		12/21/2017 17:40	Finished	CCV @10ppb, IWST-171002A
66	CCB-6,CCB,1,	22	1000	Unknown		12/21/2017 17:49	Finished	CCB R171129A
67	SHUTDOWN	23	1000	Unknown		12/21/2017 17:59	Finished	
68	Eluent: R171219A	24	1000	Unknown		n.a.	Finished	Eluent
69	PCR: R171219B	25	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 12/15/17
Time Prepared: 1316
Prepared By: ME

Reagent ID:
Sulfuric Acid: 4465 lot 96665
Diphenylcarbazide: CLW-170620A
NH4OH + NH4SO4 eluent: M7121914
NH4OH + NH4SO4 buffer: M7112914

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	NO27557-3A	9.53	—	250 mL	250 mL		2/2 M7112914
2)	4A	9.57	—				1/2
3)	4A	9.57	—				2/2
4)	5A	9.54	—				
5)	6A	9.66	—				
6)	7A	9.52	—				
7)	8A	9.52	—				
8)	9A	9.51	—				
9)	10A	9.47	—				
10)	11A	9.62	—				
11)	12A	9.56	—				
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 12/18/17
Time Prepared: 1175
Prepared By: MBA

stop: 9.67
pH 4: 4.02 @ 25.0°C
7: 7.02 @ 25.0°C
10: 10.02 @ 25.0°C
MB: 7.15 @ 25.0°C

Reagent ID:
Sulfuric Acid: 4465 lot 96665
Diphenylcarbazide: CLW-170620A
NH4OH + NH4SO4 eluent: same as M7121914A
NH4OH + NH4SO4 buffer: M7112914

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	NO27583-02A	9.39	-	~250mL	~250mL		M7112914A
2)	2A	9.41	-				
3)	3A	9.43	-				
4)	4A	9.57					
5)	5A	9.57					
6)	6A	9.48					
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 13

mba 12/27/2017

RB 01/08/2018

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 11/28/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0529	0.2484	1.2584	2.5328	3.7596	5.0155	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-171002A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RLB 01/08/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **ICV**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2877329**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.092	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **ZZZZZZ**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2877330**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.185	0.20	0.2000	0	92.6	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **CCV**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877332**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.187	0.20	5.000	0	104	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **ZZZZZZ**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877333**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.217	0.20	0.2000	0	109	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **ZZZZZZ**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877338**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.324	0.20	10.00	0	103	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **CCV**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877350**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.128	0.20	5.000	0	103	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **ZZZZZZ**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877360**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.252	0.20	10.00	0	103	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **CCV**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.099	0.20	5.000	0	102	95	105				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **ZZZZZZ**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877371**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.261	0.20	10.00	0	103	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **ICB**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **11/28/2017**	SeqNo: **2877331**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **CCB**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877334**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **CCB**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **CCB**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877351**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **CCB**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877361**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **CCB**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121028**
Client ID: **CCB**	Batch ID: **R121028**	TestNo: **EPA 218.6**		Analysis Date: **12/21/2017**	SeqNo: **2877372**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/21/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.165	
CCV-2	4.173	
CCV-3	4.173	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.165	
Average	4.168	
Actual RT Window	4.088 - 4.248	
Applied RT Window	3.968 - 4.368	
MB-R121028	N.A.	N.A.
LCS-R121028	4.165	PASS
N027557-001A	3.840	FAIL
N027557-002A	3.840	FAIL
N027557-003A	N.A.	N.A.
N027557-004A	N.A.	N.A.
N027557-005A	N.A.	N.A.
N027557-006A	N.A.	N.A.
N027557-007A	3.673	FAIL
N027557-008A	4.148	PASS
N027557-001A	4.123	PASS
N027557-001AMS	4.123	PASS
N027557-002A	4.123	PASS
N027557-002AMS	4.123	PASS
N027557-003A	4.090	PASS
N027557-003AMS	4.090	PASS
N027557-004A	4.081	PASS
N027557-004AMS	4.090	PASS
N027557-005A	N.A.	N.A.
N027557-005AMS	4.106	PASS
N027557-007A	4.165	PASS
N027557-008A	4.148	PASS
N027557-008AMS	4.148	PASS

rba 12/27/2017

RVB 01/08/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 12/21/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.165	
CCV-2	4.173	
CCV-3	4.173	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.165	
Average	4.168	
Actual RT Window	4.088 - 4.248	
Applied RT Window	3.968 - 4.368	
N027557-008AMSD	4.148	PASS
N027557-009A	4.140	PASS
N027557-009AMS	4.140	PASS
N027557-011A	N.A.	N.A.
N027557-011AMS	4.165	PASS
N027557-012A	N.A.	N.A.
N027557-012AMS	4.165	PASS
N027557-007ADUP	4.165	PASS
N027557-007AMS	4.165	PASS
N027557-006AMS	4.115	PASS
N027557-009A	4.148	PASS
N027557-009AMS	4.148	PASS
N027557-010A	4.148	PASS
N027557-010AMS	4.148	PASS
N027557-001AMS	3.823	FAIL
N027557-002AMS	3.840	FAIL
N027557-003AMS	N.A.	N.A.
N027557-004AMS	N.A.	N.A.
N027557-005AMS	N.A.	N.A.

 01/08/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 Unit: ug/L
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

MDL/LOD & PQL Verification 2017

Method Name: **Hexavalent Chromium by IC**
Method Number: EPA Method 218.6
Analysis Date(s): 5/31/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: µg/L

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.103

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.194	**97**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 171128A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/28/17 10:57 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/28/17 11:08 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/28/17 11:17 AM	Reported
13	MB-R120468	MBLK	1	Hexavalent Chromium	11/28/17 11:27 AM	Reported
14	LCS-R120468	LCS	1	Hexavalent Chromium	11/28/17 11:36 AM	Reported
15	N027215-001A	SAMP	1	Hexavalent Chromium	11/28/17 11:47 AM	Reported
16	N027215-002A	SAMP	1	Hexavalent Chromium	11/28/17 11:59 AM	Reported
17	N027215-003A	SAMP	1	Hexavalent Chromium	11/28/17 12:08 PM	Reported
18	N027215-004A	SAMP	1	Hexavalent Chromium	11/28/17 12:18 PM	Reported
19	N027215-005A	SAMP	1	Hexavalent Chromium	11/28/17 12:27 PM	Reported
20	N027215-002ADUP	DUP	1	Hexavalent Chromium	11/28/17 12:37 PM	Reported
21	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 12:46 PM	Not Reported
22	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 12:56 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	11/28/17 1:05 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/28/17 1:14 PM	Reported
25	N027157-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:04 PM	Not Reported
26	N027157-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:16 PM	Not Reported
27	N027215-001AMS	MS	1	Hexavalent Chromium	11/28/17 2:29 PM	Reported
28	N027215-001AMSD	MSD	1	Hexavalent Chromium	11/28/17 2:41 PM	Reported
29	CCV-2	CCV	1	Hexavalent Chromium	11/28/17 2:50 PM	Reported
30	CCB-2	CCB	1	Hexavalent Chromium	11/28/17 3:00 PM	Reported

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Injection Log Summary

Sequence Details

Name:	**IC-07_171128A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**28/Nov/17 15:47:35**
No. of Injections:	**33**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		11/28/2017 10:57	Finished	ICV @5ppb, IWST-171002A
11	PQL@0.2ppb,CCV2,	12	1000	Unknown		11/28/2017 11:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		11/28/2017 11:17	Finished	ICB R171114C
13	MB-H2O,MBLK,1	14	1000	Unknown		11/28/2017 11:27	Finished	MB R171114C
14	LCS-H2O,LCS,1	15	1000	Unknown		11/28/2017 11:36	Finished	LCS, IWST-171002B
15	N027215-001A,SAMF	17	1000	Unknown		11/28/2017 11:47	Finished	SAMP,10mL
16	N027215-002A,SAMF	18	1000	Unknown		11/28/2017 11:59	Finished	SAMP,10mL
17	N027215-003A,SAMF	19	1000	Unknown		11/28/2017 12:08	Finished	SAMP,10mL
18	N027215-004A,SAMF	20	1000	Unknown		11/28/2017 12:18	Finished	SAMP,10mL
19	N027215-005A,SAMF	21	1000	Unknown		11/28/2017 12:27	Finished	SAMP,10mL
20	N027215-002ADUP,D	22	1000	Unknown		11/28/2017 12:37	Finished	DUP,10mL
21	N027157-001AMS,MS	23	1000	Unknown		11/28/2017 12:46	Finished	MS (5ppb), IWST-171002B,10
22	N027157-001AMSD,M	24	1000	Unknown		11/28/2017 12:56	Finished	MSD (5ppb), IWST-171002B,1
23	CCV-1,CCV1,1,	25	1000	Unknown		11/28/2017 13:05	Finished	CCV @10ppb, IWST-171002A
24	CCB-1,CCB,1,	26	1000	Unknown		11/28/2017 13:14	Finished	CCB R171031A
25	N027157-001AMS,MS	28	1000	Unknown		11/28/2017 14:04	Finished	MS (5ppb), IWST-171002B,10
26	N027157-001AMSD,M	29	1000	Unknown		11/28/2017 14:16	Finished	MSD (5ppb), IWST-171002B,1
27	N027215-001AMS,MS	31	1000	Unknown		11/28/2017 14:29	Finished	MS (5ppb), IWST-171002B,10
28	N027215-001AMSD,M	32	1000	Unknown		11/28/2017 14:41	Finished	MSD (5ppb), IWST-171002B,1
29	CCV-2,CCV,1,	33	1000	Unknown		11/28/2017 14:50	Finished	CCV @5ppb, IWST-171002A
30	CCB-2,CCB,1,	34	1000	Unknown		11/28/2017 15:00	Finished	CCB R171031A
31	SHUTDOWN	35	1000	Unknown		11/28/2017 15:09	Finished	
32	Eluent: R171128A	36	1000	Unknown		n.a.	Finished	Eluent
33	PCR: R171128B	37	1000	Unknown		n.a.	Finished	Post-Column Reagent

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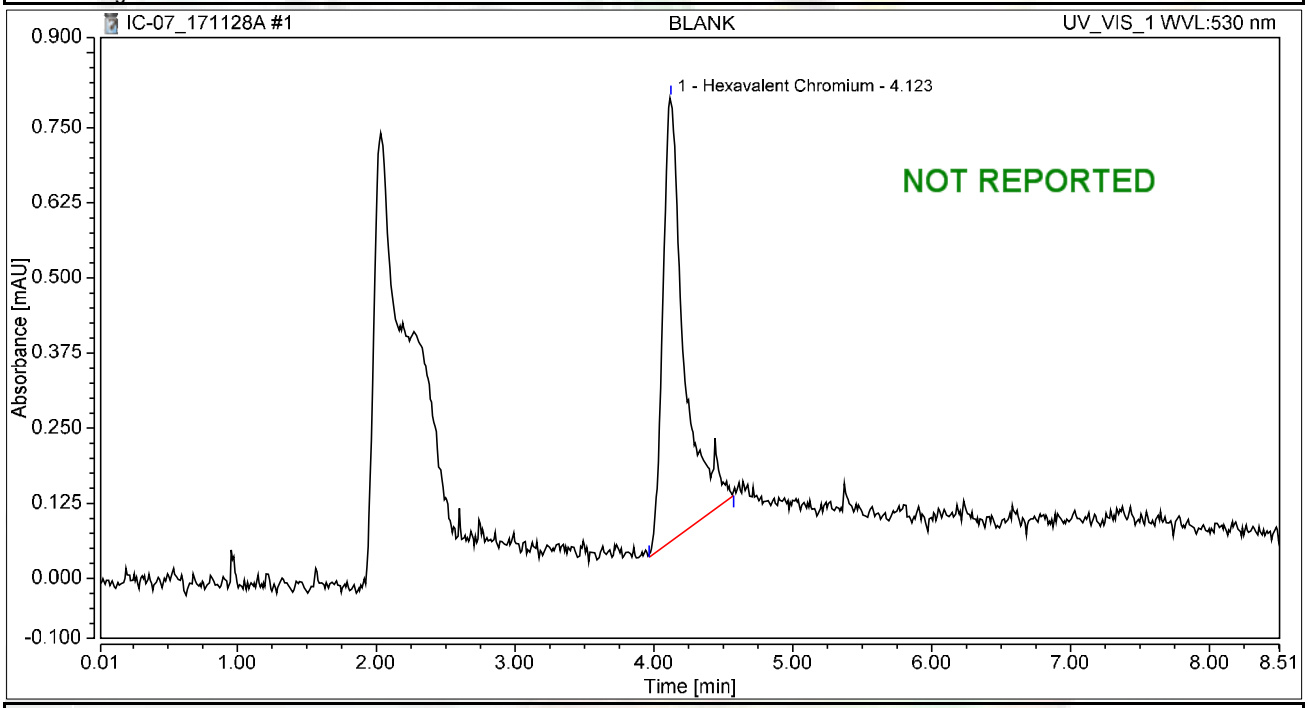
Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

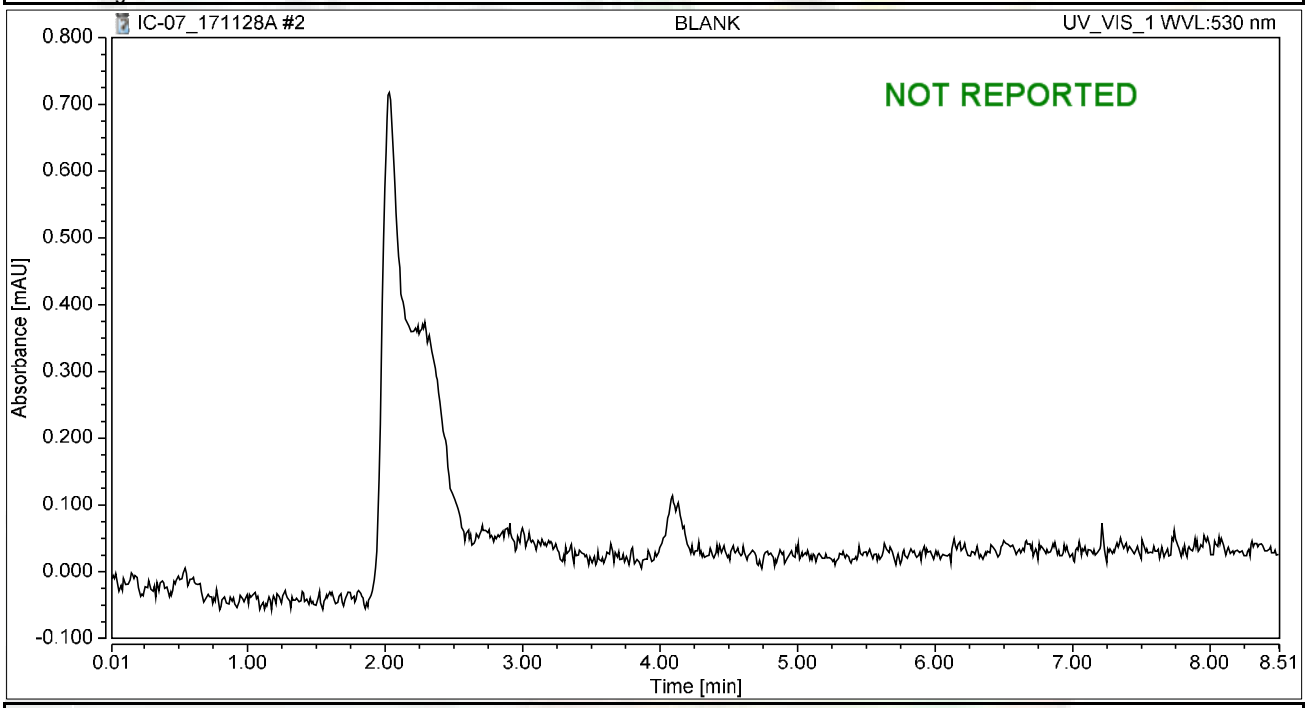
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.130	0.738	100.00	100.00	0.5193
Total:			**0.130**	**0.738**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

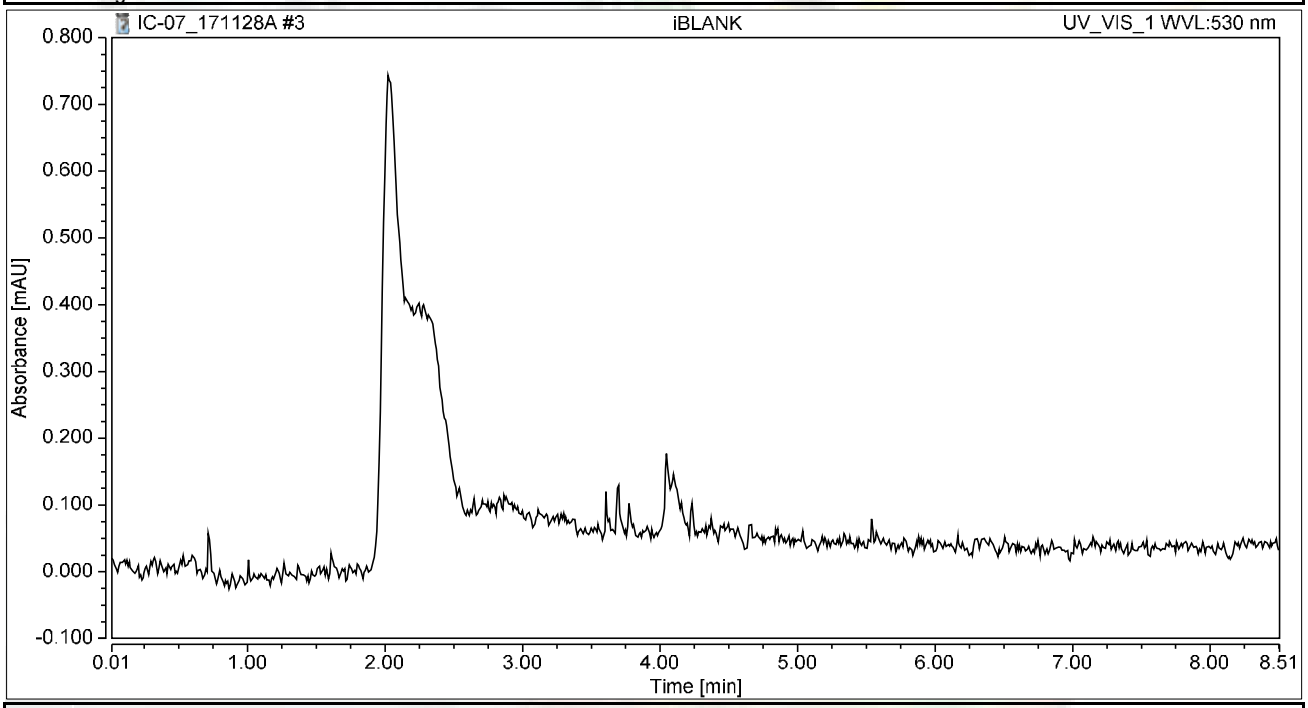
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

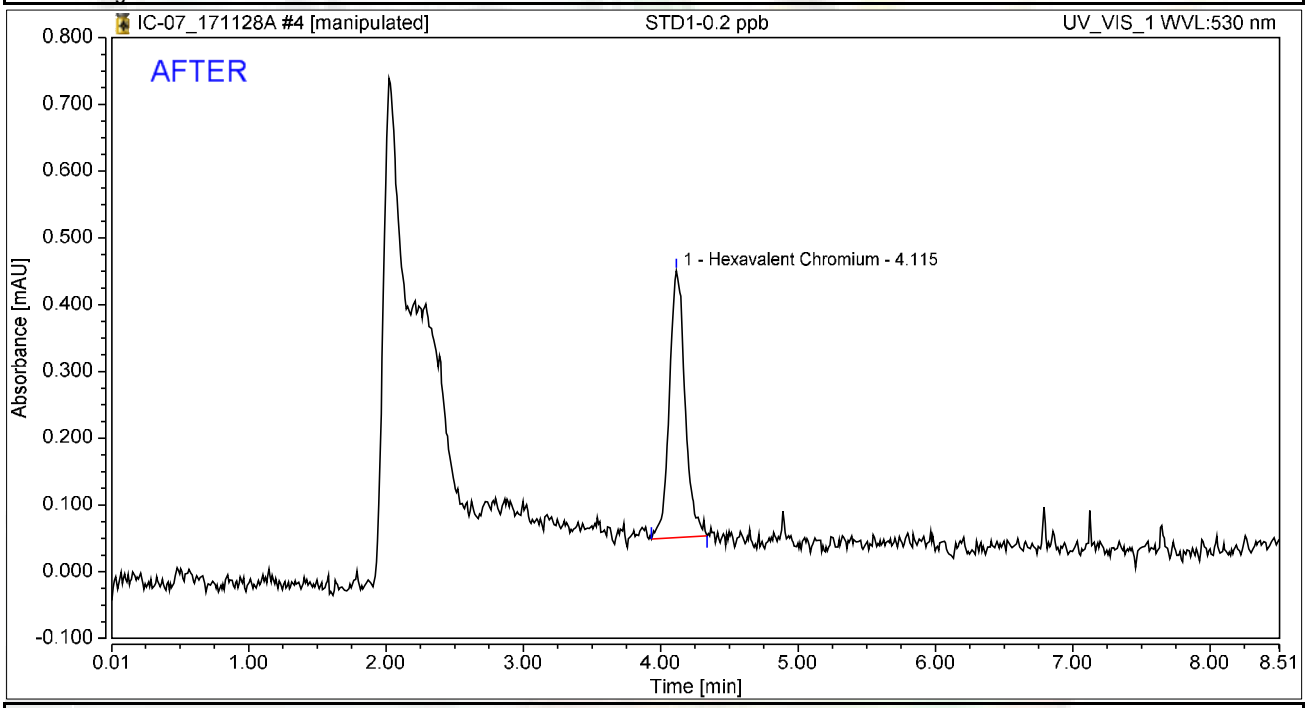
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.053	0.400	100.00	100.00	0.2108
Total:			**0.053**	**0.400**	**100.00**	**100.00**	

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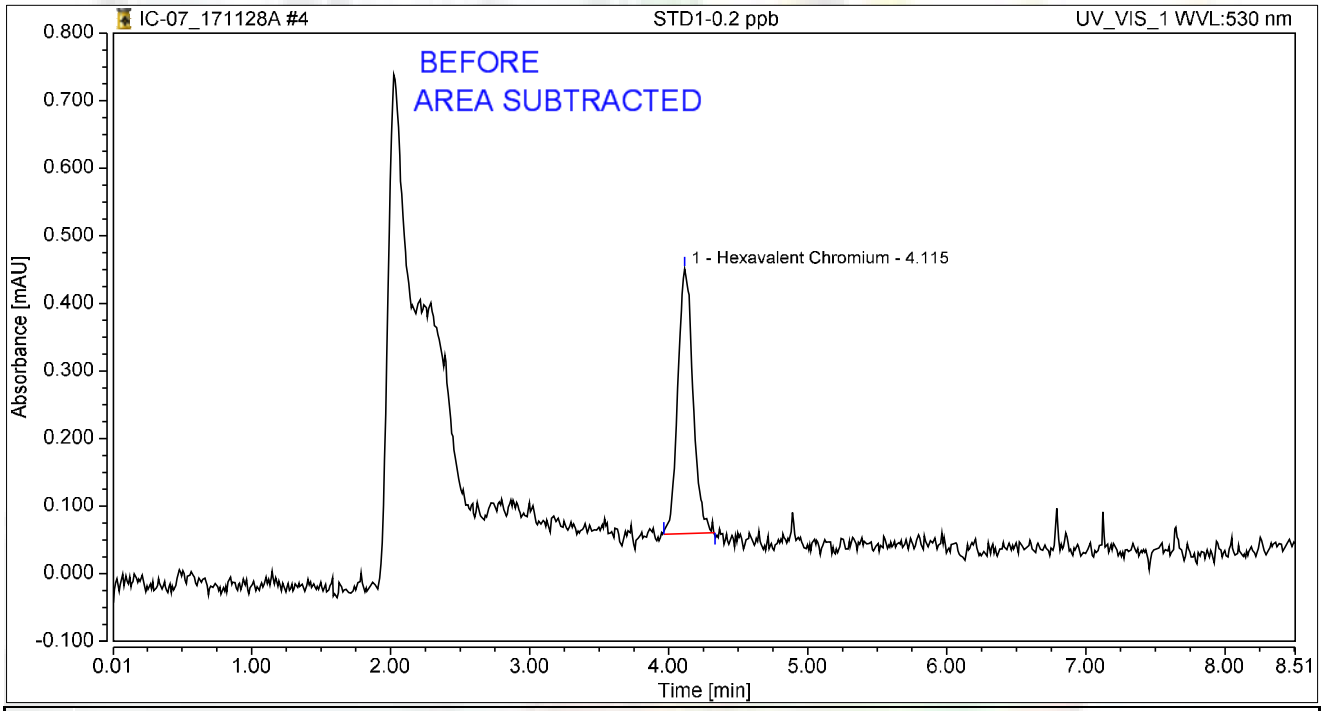
Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.050	0.391	100.00	100.00	0.1957
Total:			**0.050**	**0.391**	**100.00**	**100.00**	

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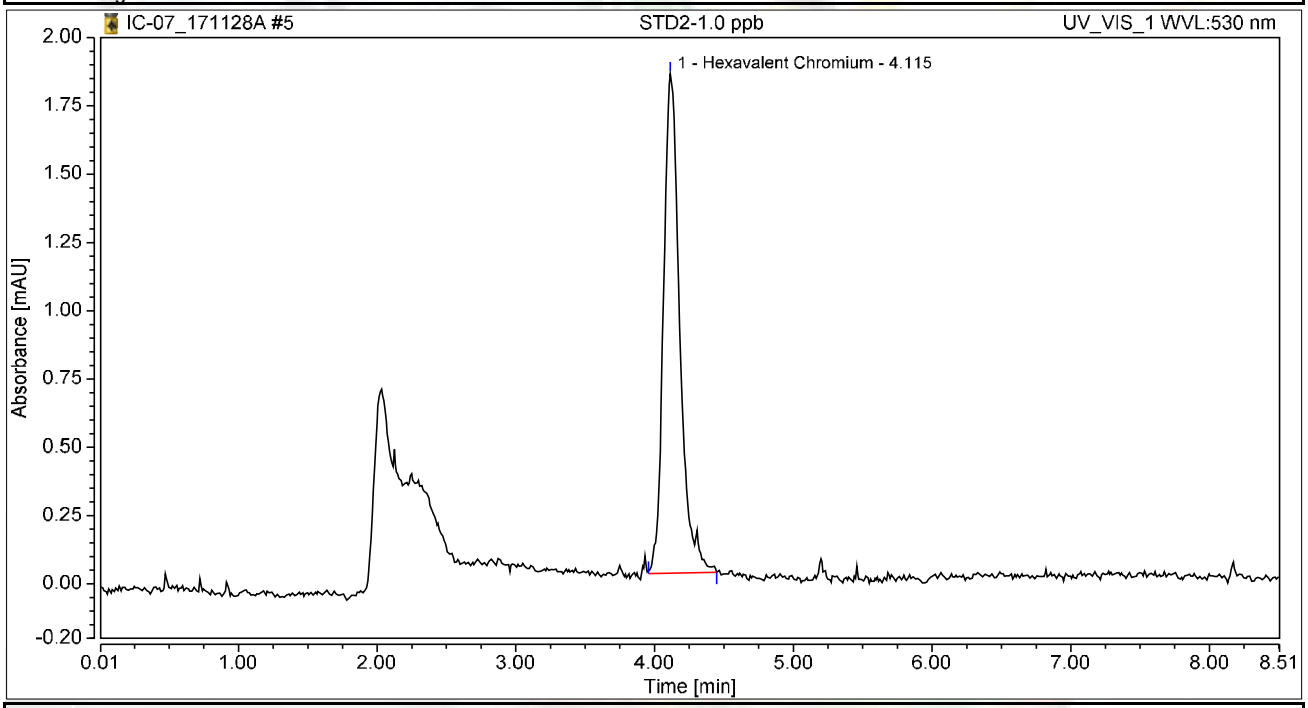
Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

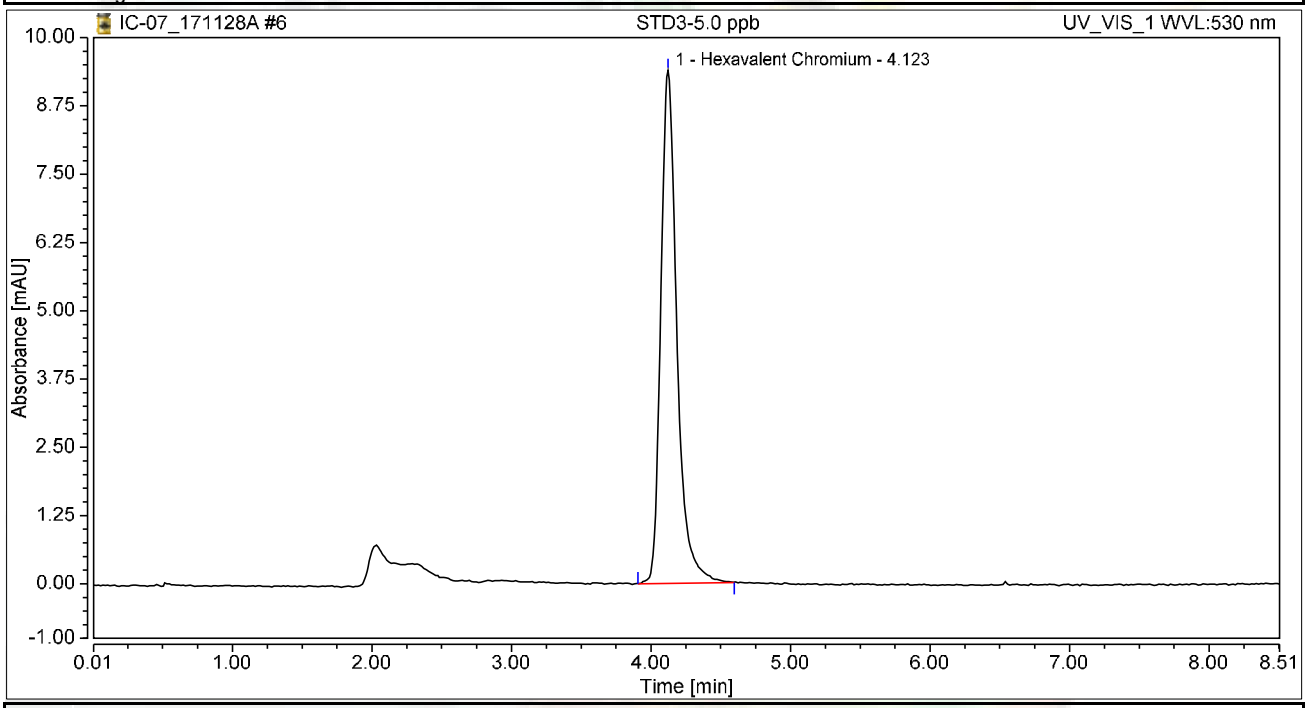
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.248	1.827	100.00	100.00	0.9892
Total:			**0.248**	**1.827**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

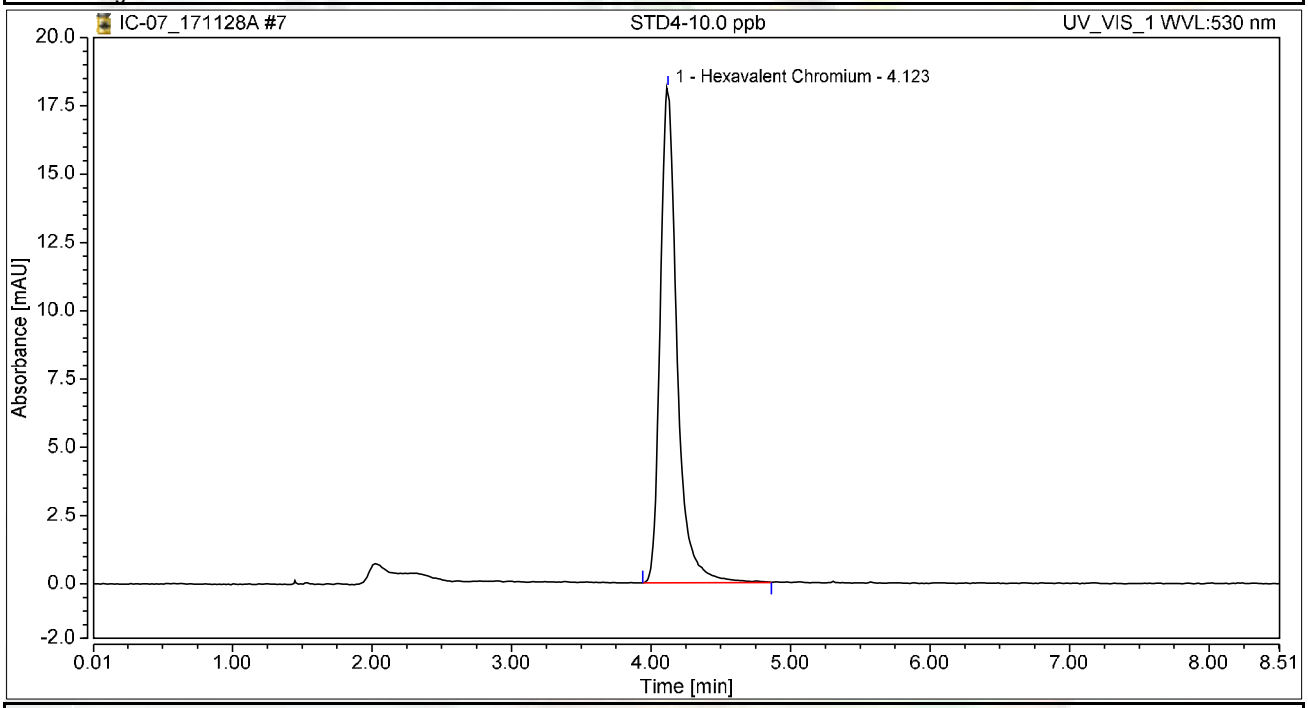
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.258	9.388	100.00	100.00	5.0118
Total:			**1.258**	**9.388**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

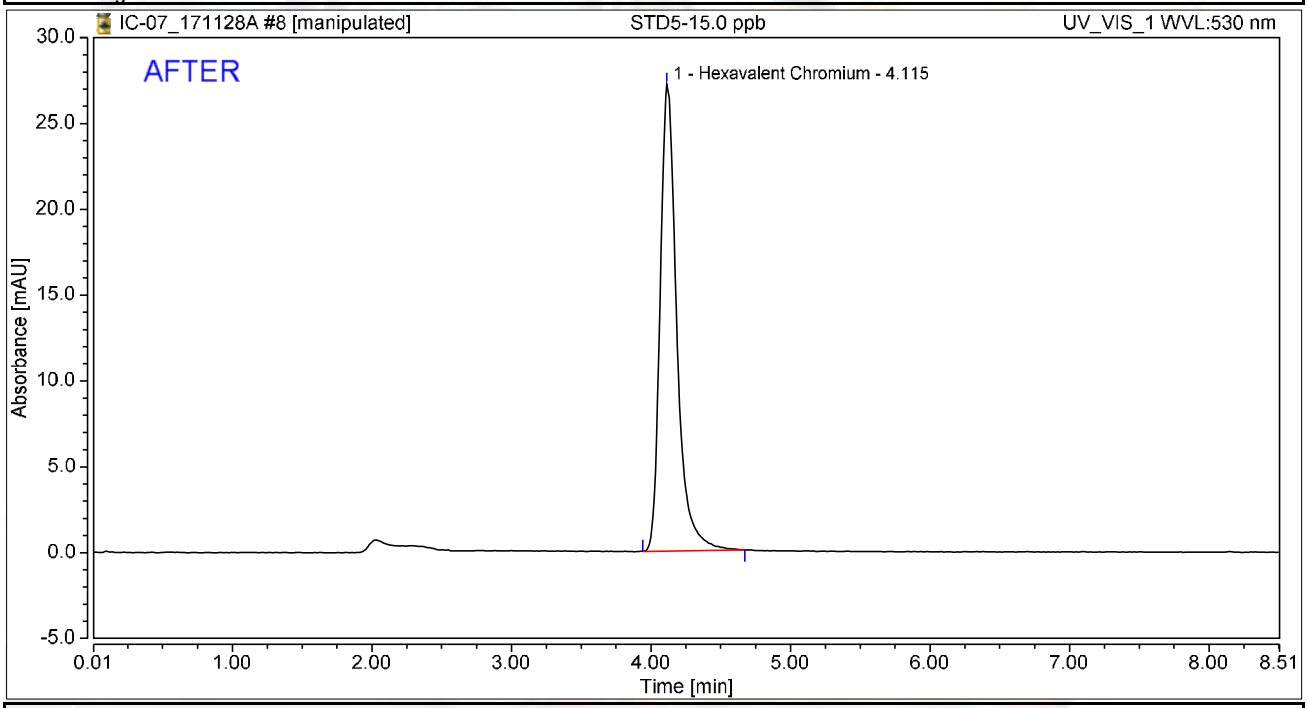
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	2.533	18.115	100.00	100.00	10.0869
Total:			**2.533**	**18.115**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	3.760	27.183	100.00	100.00	14.9728
Total:			**3.760**	**27.183**	**100.00**	**100.00**	

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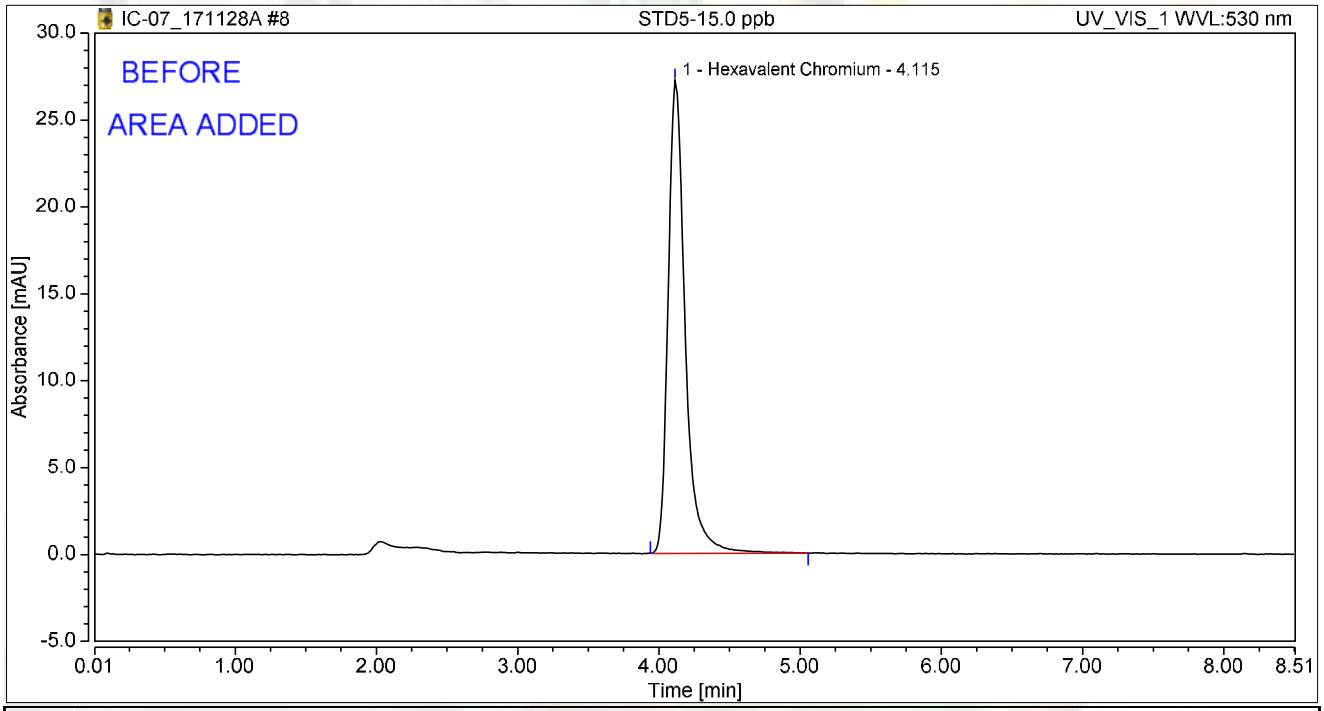
Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	3.807	27.204	100.00	100.00	14.9839
Total:			**3.807**	**27.204**	**100.00**	**100.00**	

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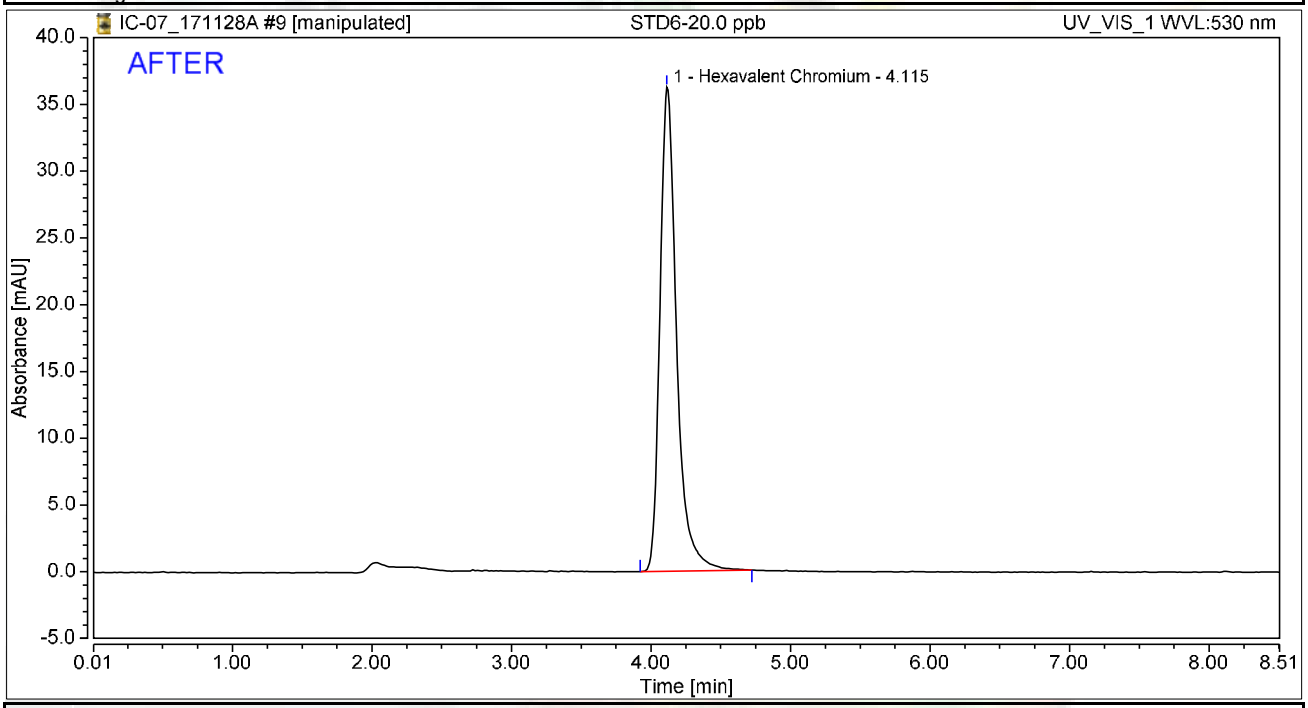
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	5.015	36.251	100.00	100.00	19.9744
Total:			**5.015**	**36.251**	**100.00**	**100.00**	

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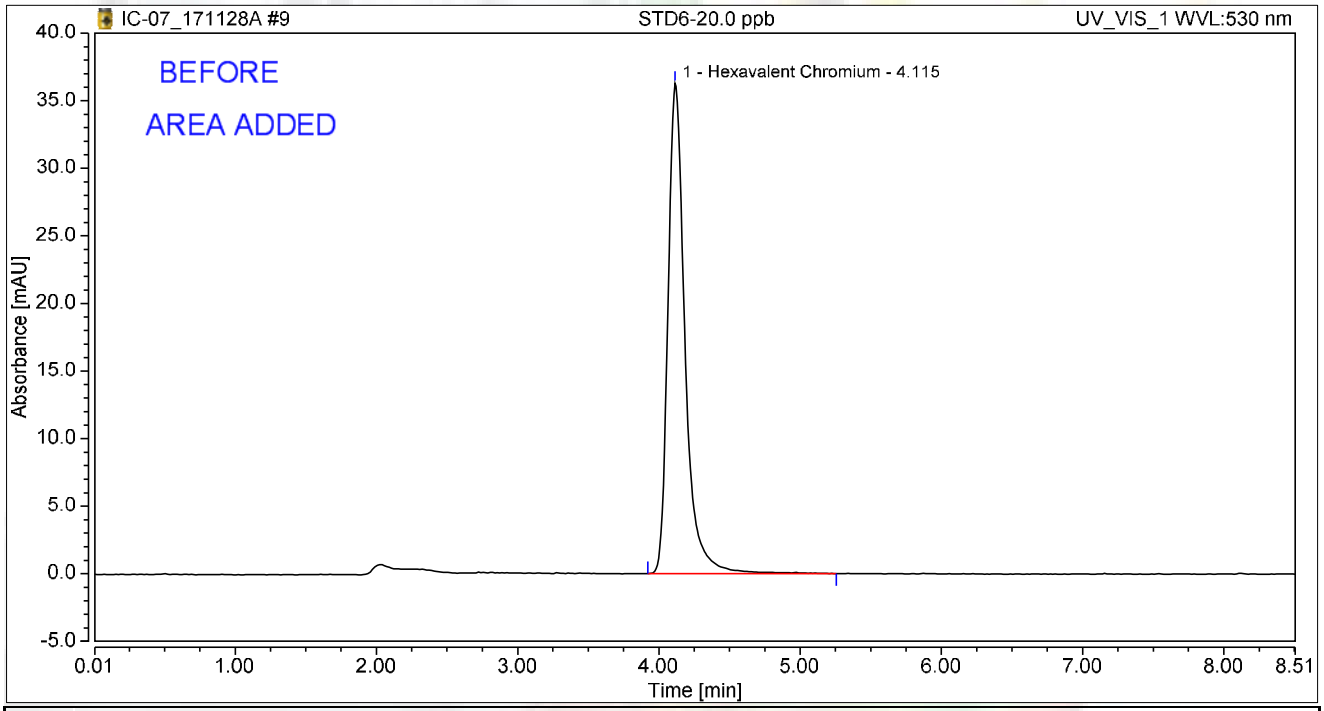
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	5.092	36.279	100.00	100.00	20.0407
Total:			**5.092**	**36.279**	**100.00**	**100.00**	

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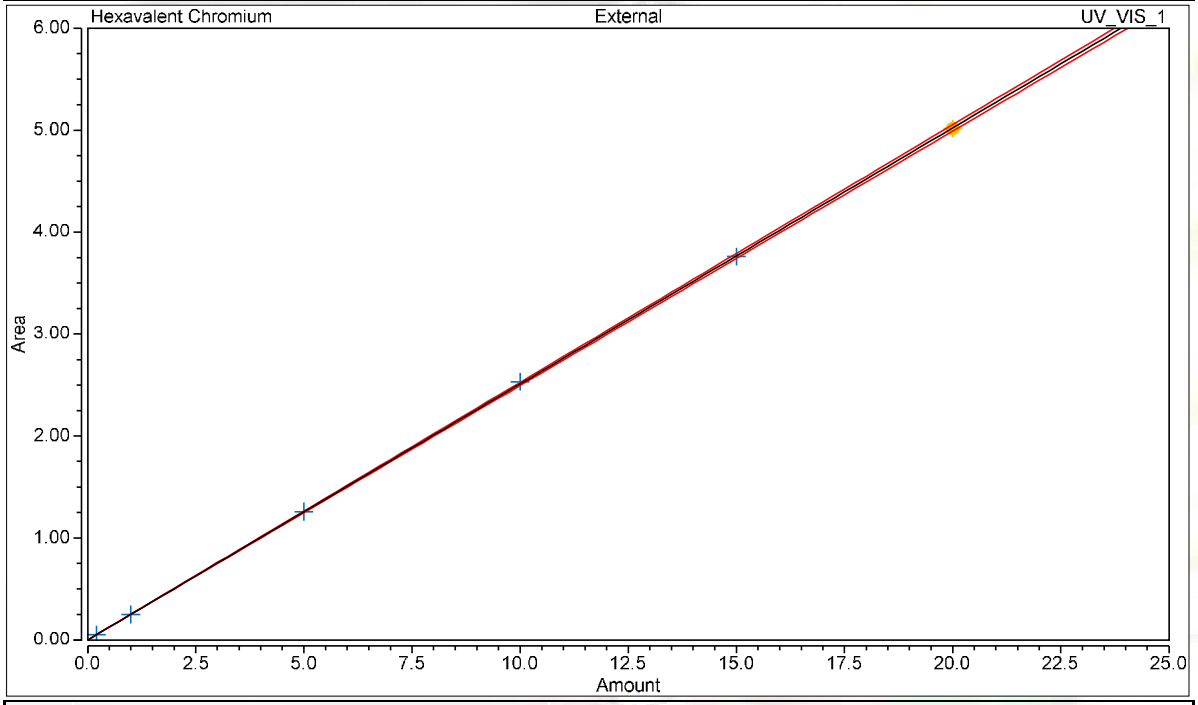
Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2511
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99997

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

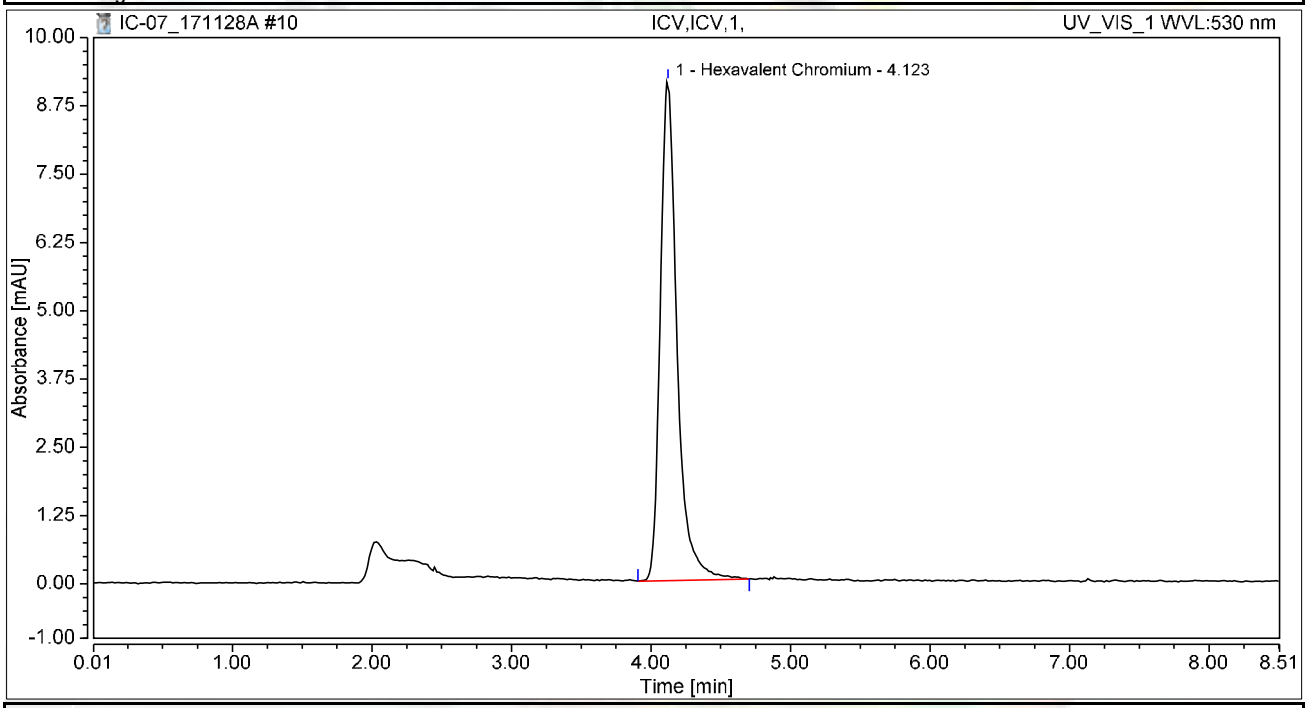
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0529	0.053	0.400
5	STD2-1.0 ppb	02	1.0000	0.2484	0.248	1.827
6	STD3-5.0 ppb	03	5.0000	1.2584	1.258	9.388
7	STD4-10.0 ppb	04	10.0000	2.5328	2.533	18.115
8	STD5-15.0 ppb	05	15.0000	3.7596	3.760	27.183
9	STD6-20.0 ppb	06	20.0000	5.0155	5.015	36.251

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 10:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

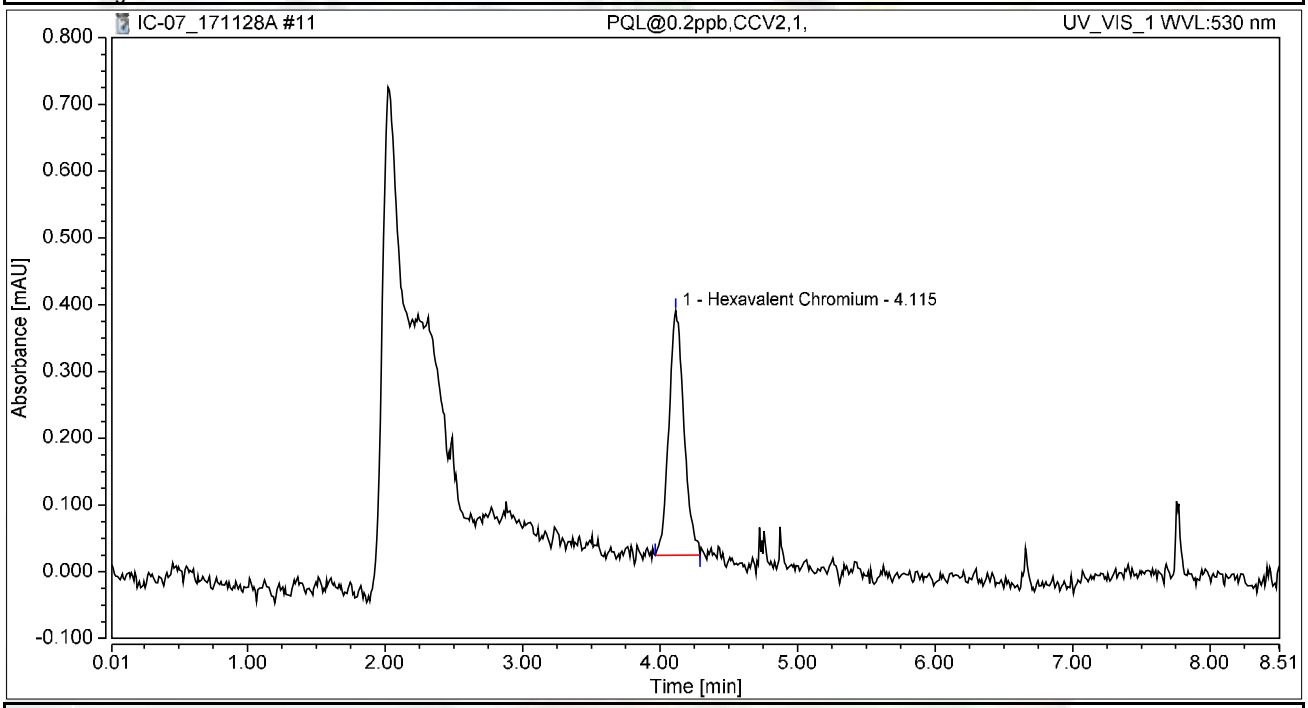
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.279	9.143	100.00	100.00	5.0922
Total:			**1.279**	**9.143**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

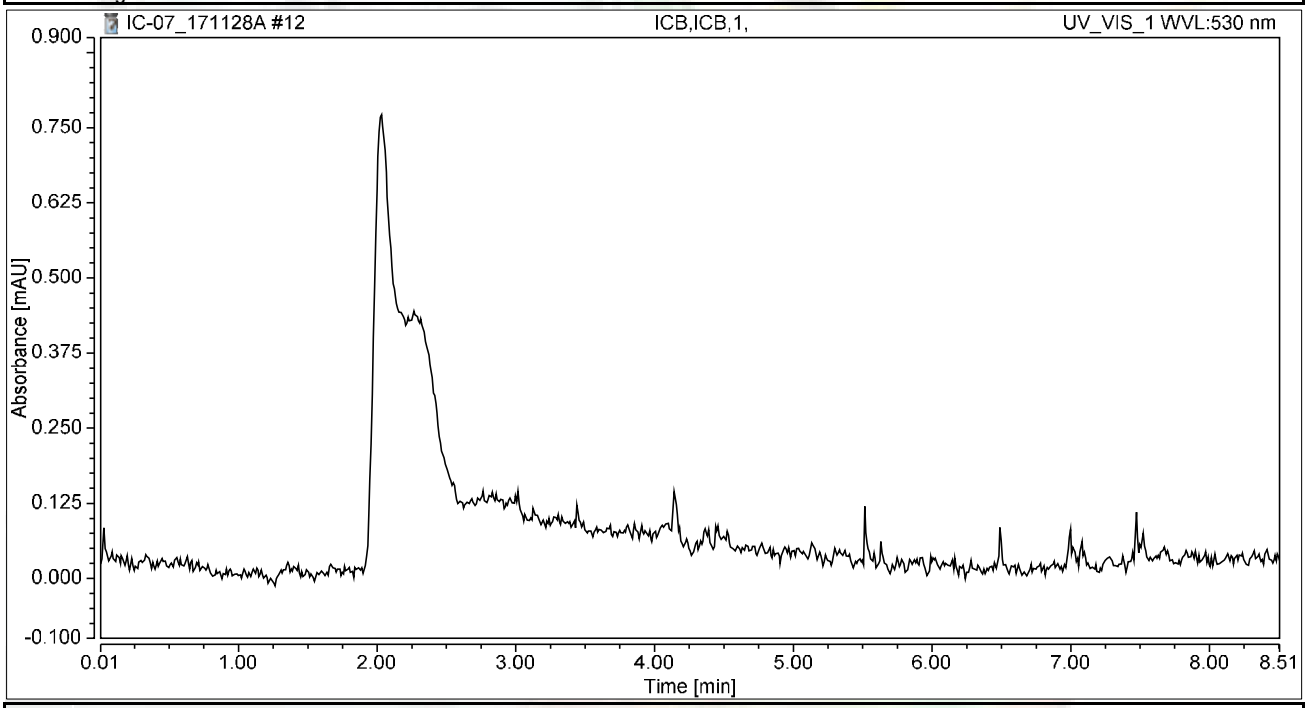
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.046	0.367	100.00	100.00	0.1851
Total:			**0.046**	**0.367**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Nov/17 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 171221A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/28/17 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/28/17 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/28/17 9:51 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:29 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/28/17 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	12/21/17 8:52 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	12/21/17 9:03 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	12/21/17 9:12 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/21/17 9:22 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	12/21/17 9:31 AM	Reported
15	MB-R121028	MBLK	1	Hexavalent Chromium	12/21/17 9:41 AM	Reported
16	LCS-R121028	LCS	1	Hexavalent Chromium	12/21/17 9:50 AM	Reported
17	N027557-001A	SAMP	1	Hexavalent Chromium	12/21/17 10:00 AM	Not Reported
18	N027557-002A	SAMP	1	Hexavalent Chromium	12/21/17 10:09 AM	Not Reported
19	N027557-003A	SAMP	1	Hexavalent Chromium	12/21/17 10:19 AM	Not Reported
20	N027557-004A	SAMP	1	Hexavalent Chromium	12/21/17 10:28 AM	Not Reported
21	N027557-005A	SAMP	1	Hexavalent Chromium	12/21/17 10:38 AM	Not Reported
22	N027557-006A	SAMP	1	Hexavalent Chromium	12/21/17 10:47 AM	Reported
23	N027557-007A	SAMP	1	Hexavalent Chromium	12/21/17 10:56 AM	Not Reported
24	N027557-008A	SAMP	1	Hexavalent Chromium	12/21/17 11:06 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	12/21/17 11:15 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	12/21/17 11:25 AM	Reported
27	N027557-001A	SAMP	5	Hexavalent Chromium	12/21/17 11:34 AM	Reported
28	N027557-001AMS	MS	5	Hexavalent Chromium	12/21/17 11:44 AM	Reported
29	N027557-002A	SAMP	5	Hexavalent Chromium	12/21/17 11:53 AM	Reported
30	N027557-002AMS	MS	5	Hexavalent Chromium	12/21/17 12:03 PM	Reported
31	N027557-003A	SAMP	5	Hexavalent Chromium	12/21/17 12:12 PM	Reported
32	N027557-003AMS	MS	5	Hexavalent Chromium	12/21/17 12:22 PM	Reported
33	N027557-004A	SAMP	5	Hexavalent Chromium	12/21/17 12:31 PM	Reported
34	N027557-004AMS	MS	5	Hexavalent Chromium	12/21/17 12:41 PM	Reported
35	N027557-005A	SAMP	5	Hexavalent Chromium	12/21/17 12:50 PM	Reported
36	N027557-005AMS	MS	5	Hexavalent Chromium	12/21/17 12:59 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	12/21/17 1:09 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	12/21/17 1:18 PM	Reported
39	N027557-007A	SAMP	100	Hexavalent Chromium	12/21/17 1:28 PM	Reported
40	N027557-008A	SAMP	1	Hexavalent Chromium	12/21/17 1:37 PM	Reported
41	N027557-008AMS	MS	1	Hexavalent Chromium	12/21/17 1:47 PM	Reported
42	N027557-008AMSD	MSD	1	Hexavalent Chromium	12/21/17 1:56 PM	Reported

INJECTION LOG: 171221A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027557-009A	SAMP	1	Hexavalent Chromium	12/21/17 2:06 PM	Not Reported
44	N027557-009AMS	MS	1	Hexavalent Chromium	12/21/17 2:15 PM	Not Reported
45	N027557-011A	SAMP	1	Hexavalent Chromium	12/21/17 2:29 PM	Reported
46	N027557-011AMS	MS	1	Hexavalent Chromium	12/21/17 2:40 PM	Reported
47	N027557-012A	SAMP	1	Hexavalent Chromium	12/21/17 2:49 PM	Reported
48	N027557-012AMS	MS	1	Hexavalent Chromium	12/21/17 2:59 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	12/21/17 3:08 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	12/21/17 3:18 PM	Reported
51	N027557-007ADUP	DUP	100	Hexavalent Chromium	12/21/17 3:27 PM	Reported
52	N027557-007AMS	MS	100	Hexavalent Chromium	12/21/17 3:37 PM	Reported
53	N027557-006AMS	MS	1	Hexavalent Chromium	12/21/17 3:46 PM	Reported
54	N027557-009A	SAMP	2	Hexavalent Chromium	12/21/17 3:56 PM	Reported
55	N027557-009AMS	MS	2	Hexavalent Chromium	12/21/17 4:05 PM	Reported
56	N027557-010A	SAMP	2	Hexavalent Chromium	12/21/17 4:14 PM	Reported
57	N027557-010AMS	MS	2	Hexavalent Chromium	12/21/17 4:24 PM	Reported
58	N027557-001AMS	MS	1	Hexavalent Chromium	12/21/17 4:33 PM	Not Reported
59	N027557-002AMS	MS	1	Hexavalent Chromium	12/21/17 4:43 PM	Not Reported
60	N027557-003AMS	MS	1	Hexavalent Chromium	12/21/17 4:52 PM	Not Reported
61	CCV-5	CCV	1	Hexavalent Chromium	12/21/17 5:02 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	12/21/17 5:11 PM	Reported
63	N027557-004AMS	MS	1	Hexavalent Chromium	12/21/17 5:21 PM	Not Reported
64	N027557-005AMS	MS	1	Hexavalent Chromium	12/21/17 5:30 PM	Not Reported
65	CCV-6	CCV1	1	Hexavalent Chromium	12/21/17 5:40 PM	Reported
66	CCB-6	CCB	1	Hexavalent Chromium	12/21/17 5:49 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_171221A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**22/Dec/17 11:51:33**
No. of Injections:	**69**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/28/2017 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		11/28/2017 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/28/2017 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	11/28/2017 09:51	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	11/28/2017 10:01	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	11/28/2017 10:10	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	11/28/2017 10:20	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	11/28/2017 10:29	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	11/28/2017 10:39	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		12/21/2017 08:52	Finished	BLANK
11	BLANK	2	1000	Unknown		12/21/2017 09:03	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		12/21/2017 09:12	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		12/21/2017 09:22	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		12/21/2017 09:31	Finished	CCB R171129A
15	MB-H2O,MBLK,1,	6	1000	Unknown		12/21/2017 09:41	Finished	MB R171129A
16	LCS-H2O,LCS,1,	7	1000	Unknown		12/21/2017 09:50	Finished	LCS, IWST-171002B
17	N027557-001A,SAMF	8	1000	Unknown		12/21/2017 10:00	Finished	SAMP,10mL
18	N027557-002A,SAMF	9	1000	Unknown		12/21/2017 10:09	Finished	SAMP,10mL
19	N027557-003A,SAMF	10	1000	Unknown		12/21/2017 10:19	Finished	SAMP,10mL
20	N027557-004A,SAMF	11	1000	Unknown		12/21/2017 10:28	Finished	SAMP,10mL
21	N027557-005A,SAMF	12	1000	Unknown		12/21/2017 10:38	Finished	SAMP,10mL
22	N027557-006A,SAMF	13	1000	Unknown		12/21/2017 10:47	Finished	SAMP,10mL
23	N027557-007A,SAMF	14	1000	Unknown		12/21/2017 10:56	Finished	SAMP,10mL
24	N027557-008A,SAMF	15	1000	Unknown		12/21/2017 11:06	Finished	SAMP,10mL
25	CCV-2,CCV1,1,	16	1000	Unknown		12/21/2017 11:15	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	17	1000	Unknown		12/21/2017 11:25	Finished	CCB R171129A
27	N027557-001A,SAMF	18	1000	Unknown		12/21/2017 11:34	Finished	SAMP,2>10mL
28	N027557-001AMS,MS	19	1000	Unknown		12/21/2017 11:44	Finished	MS (1ppb), IWST-171002B,2>1
29	N027557-002A,SAMF	20	1000	Unknown		12/21/2017 11:53	Finished	SAMP,2>10mL
30	N027557-002AMS,MS	21	1000	Unknown		12/21/2017 12:03	Finished	MS (1ppb), IWST-171002B,2>1
31	N027557-003A,SAMF	22	1000	Unknown		12/21/2017 12:12	Finished	SAMP,2>10mL
32	N027557-003AMS,MS	23	1000	Unknown		12/21/2017 12:22	Finished	MS (1ppb), IWST-171002B,2>1
33	N027557-004A,SAMF	24	1000	Unknown		12/21/2017 12:31	Finished	SAMP,2>10mL
34	N027557-004AMS,MS	25	1000	Unknown		12/21/2017 12:41	Finished	MS (1ppb), IWST-171002B,2>1
35	N027557-005A,SAMF	26	1000	Unknown		12/21/2017 12:50	Finished	SAMP,2>10mL
36	N027557-005AMS,MS	27	1000	Unknown		12/21/2017 12:59	Finished	MS (1ppb), IWST-171002B,2>1
37	CCV-3,CCV,1,	28	1000	Unknown		12/21/2017 13:09	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	29	1000	Unknown		12/21/2017 13:18	Finished	CCB R171129A
39	N027557-007A,SAMF	30	1000	Unknown		12/21/2017 13:28	Finished	SAMP,0.1>10mL
40	N027557-008A,SAMF	31	1000	Unknown		12/21/2017 13:37	Finished	SAMP,10mL
41	N027557-008AMS,MS	32	1000	Unknown		12/21/2017 13:47	Finished	MS (5ppb), IWST-171002B,10
42	N027557-008AMSD,M	33	1000	Unknown		12/21/2017 13:56	Finished	MSD (5ppb), IWST-171002B,10
43	N027557-009A,SAMF	34	1000	Unknown		12/21/2017 14:06	Finished	SAMP,10mL
44	N027557-009AMS,MS	35	1000	Unknown		12/21/2017 14:15	Finished	MS (1ppb), IWST-171002B,10
45	N027557-011A,SAMF	1	1000	Unknown		12/21/2017 14:29	Finished	SAMP,10mL
46	N027557-011AMS,MS	2	1000	Unknown		12/21/2017 14:40	Finished	MS (1ppb), IWST-171002B,10
47	N027557-012A,SAMF	3	1000	Unknown		12/21/2017 14:49	Finished	SAMP,10mL
48	N027557-012AMS,MS	4	1000	Unknown		12/21/2017 14:59	Finished	MS (1ppb), IWST-171002B,10
49	CCV-4,CCV1,1,	5	1000	Unknown		12/21/2017 15:08	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	6	1000	Unknown		12/21/2017 15:18	Finished	CCB R171129A
51	N027557-007ADUP,D	7	1000	Unknown		12/21/2017 15:27	Finished	DUP,0.1>10mL
52	N027557-007AMS,MS	8	1000	Unknown		12/21/2017 15:37	Finished	MS (5ppb), IWST-171002B,0.1
53	N027557-006AMS,MS	9	1000	Unknown		12/21/2017 15:46	Finished	MS (1ppb), IWST-171002B,10
54	N027557-009A,SAMF	10	1000	Unknown		12/21/2017 15:56	Finished	SAMP,5>10mL
55	N027557-009AMS,MS	11	1000	Unknown		12/21/2017 16:05	Finished	MS (5ppb), IWST-171002B,5>1
56	N027557-010A,SAMF	12	1000	Unknown		12/21/2017 16:14	Finished	SAMP,5>10mL
57	N027557-010AMS,MS	13	1000	Unknown		12/21/2017 16:24	Finished	MS (5ppb), IWST-171002B,5>1
58	N027557-001AMS,MS	14	1000	Unknown		12/21/2017 16:33	Finished	MS (1ppb), IWST-171002B,10
59	N027557-002AMS,MS	15	1000	Unknown		12/21/2017 16:43	Finished	MS (1ppb), IWST-171002B,10
60	N027557-003AMS,MS	16	1000	Unknown		12/21/2017 16:52	Finished	MS (1ppb), IWST-171002B,10

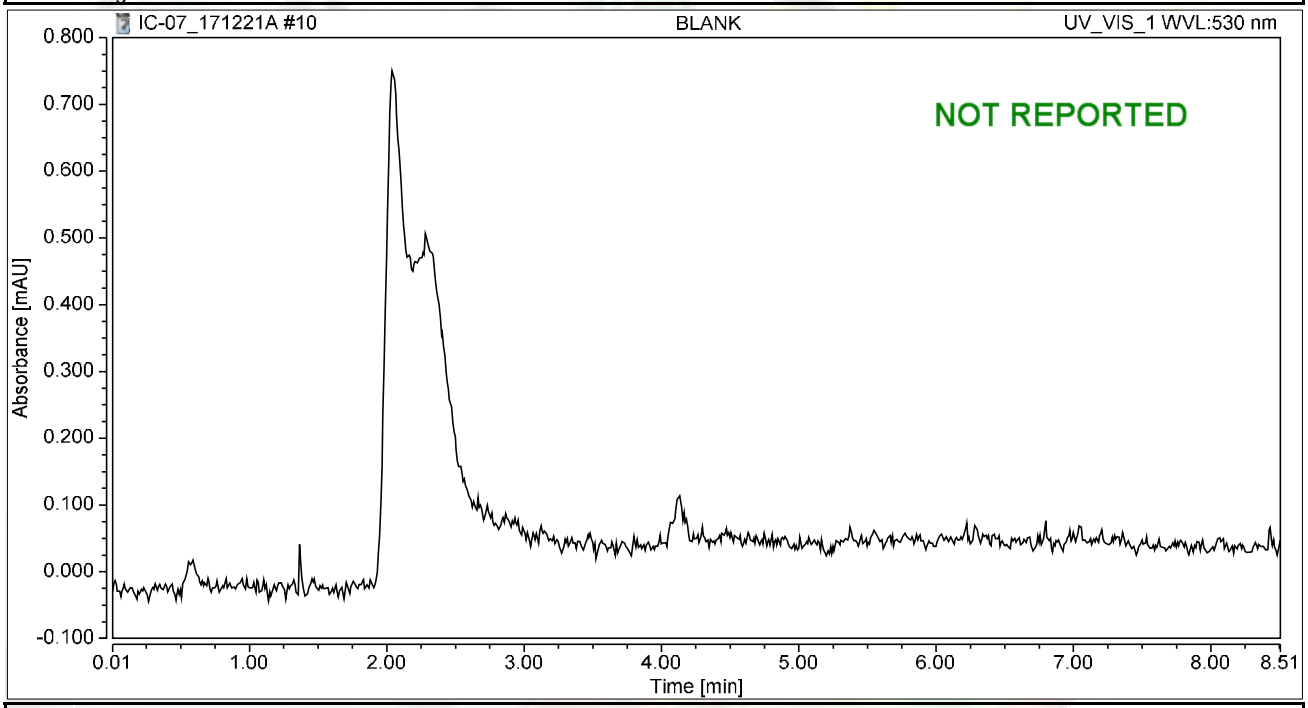
61	CCV-5,CCV,1,	17	1000	Unknown		12/21/2017 17:02	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	18	1000	Unknown		12/21/2017 17:11	Finished	CCB R171129A
63	N027557-004AMS,MS	19	1000	Unknown		12/21/2017 17:21	Finished	MS (1ppb), IWST-171002B,10
64	N027557-005AMS,MS	20	1000	Unknown		12/21/2017 17:30	Finished	MS (1ppb), IWST-171002B,10
65	CCV-6,CCV1,1,	21	1000	Unknown		12/21/2017 17:40	Finished	CCV @10ppb, IWST-171002A
66	CCB-6,CCB,1,	22	1000	Unknown		12/21/2017 17:49	Finished	CCB R171129A
67	SHUTDOWN	23	1000	Unknown		12/21/2017 17:59	Finished	
68	Eluent: R171219A	24	1000	Unknown		n.a.	Finished	Eluent
69	PCR: R171219B	25	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 08:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

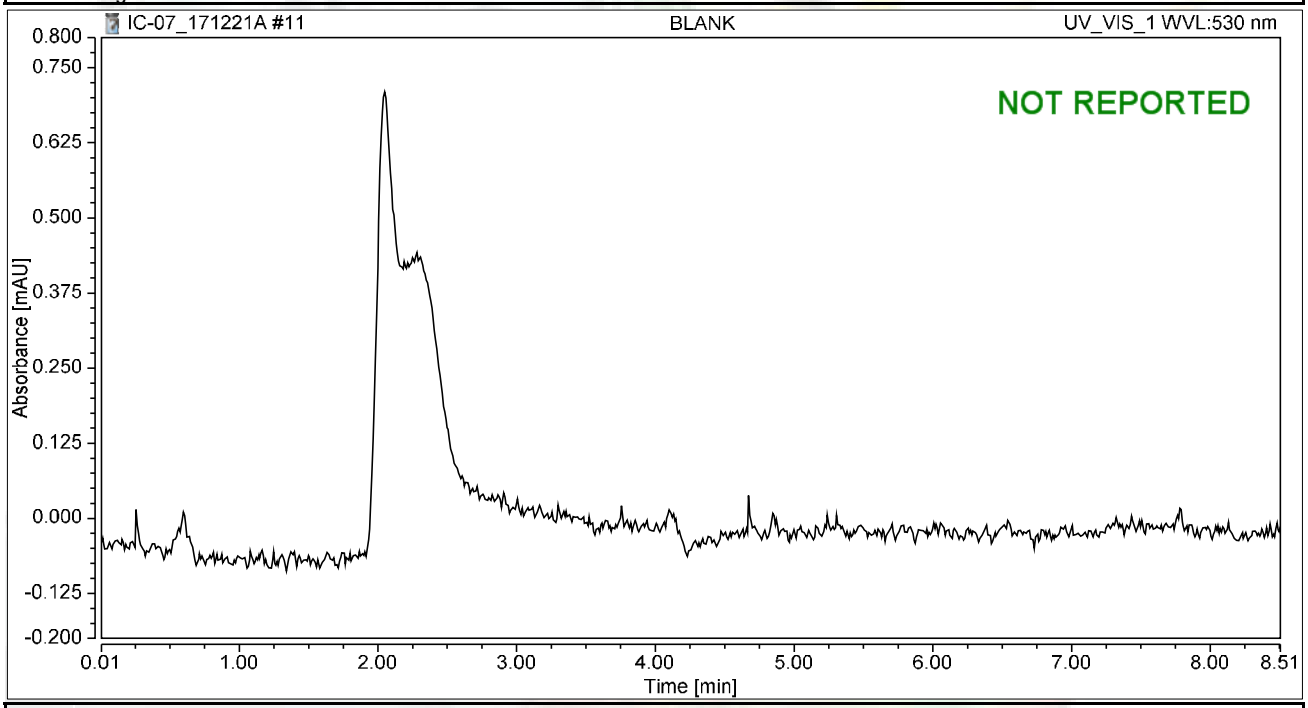
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 09:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

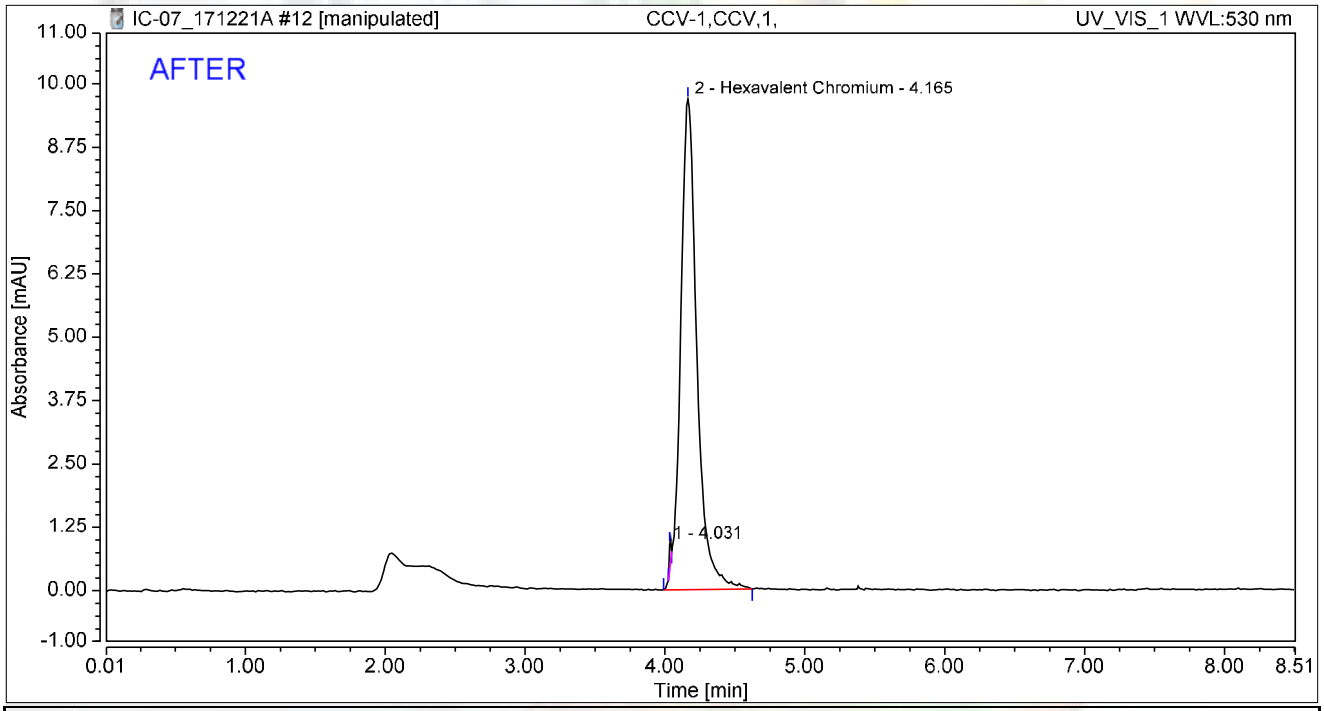
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 09:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		4.031	0.008	0.531	0.62	5.20	n.a.
2	Hexavalent Chromium	4.165	1.302	9.673	99.38	94.80	5.1870
Total:			**1.310**	**10.204**	**100.00**	**100.00**	

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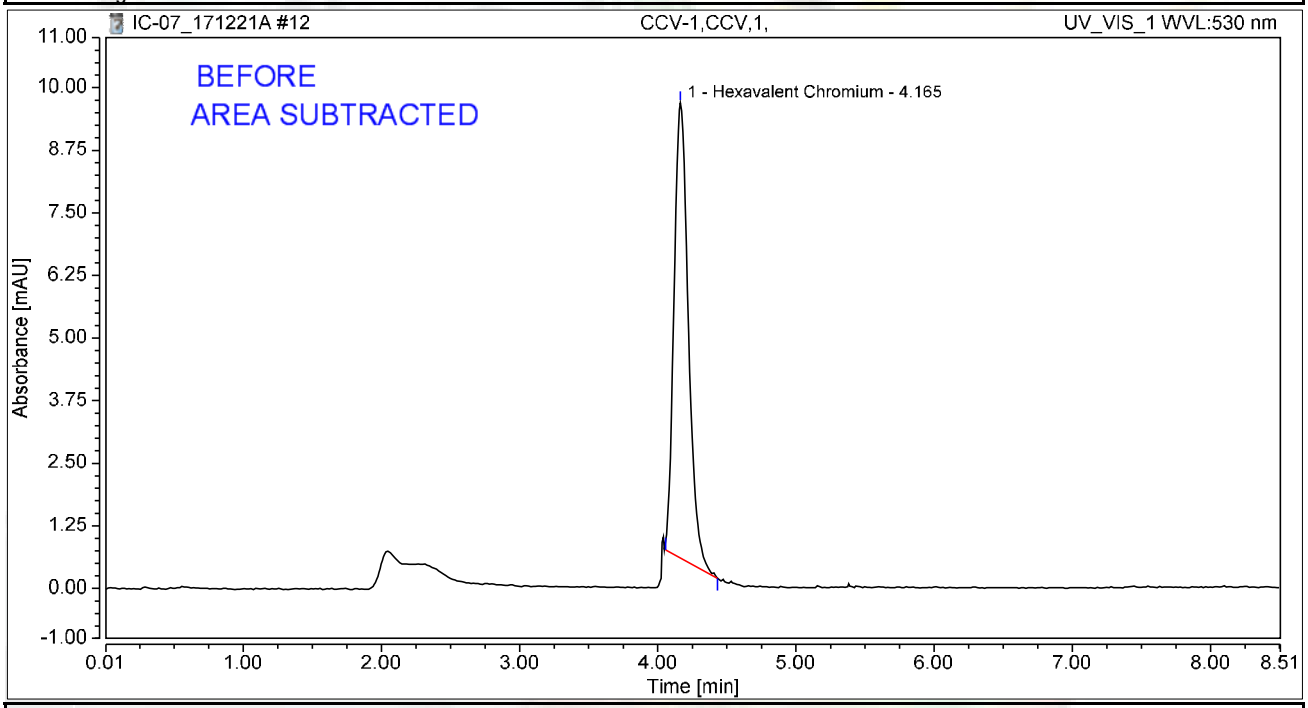
Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 09:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.094	9.088	100.00	100.00	4.3563
Total:			**1.094**	**9.088**	**100.00**	**100.00**	

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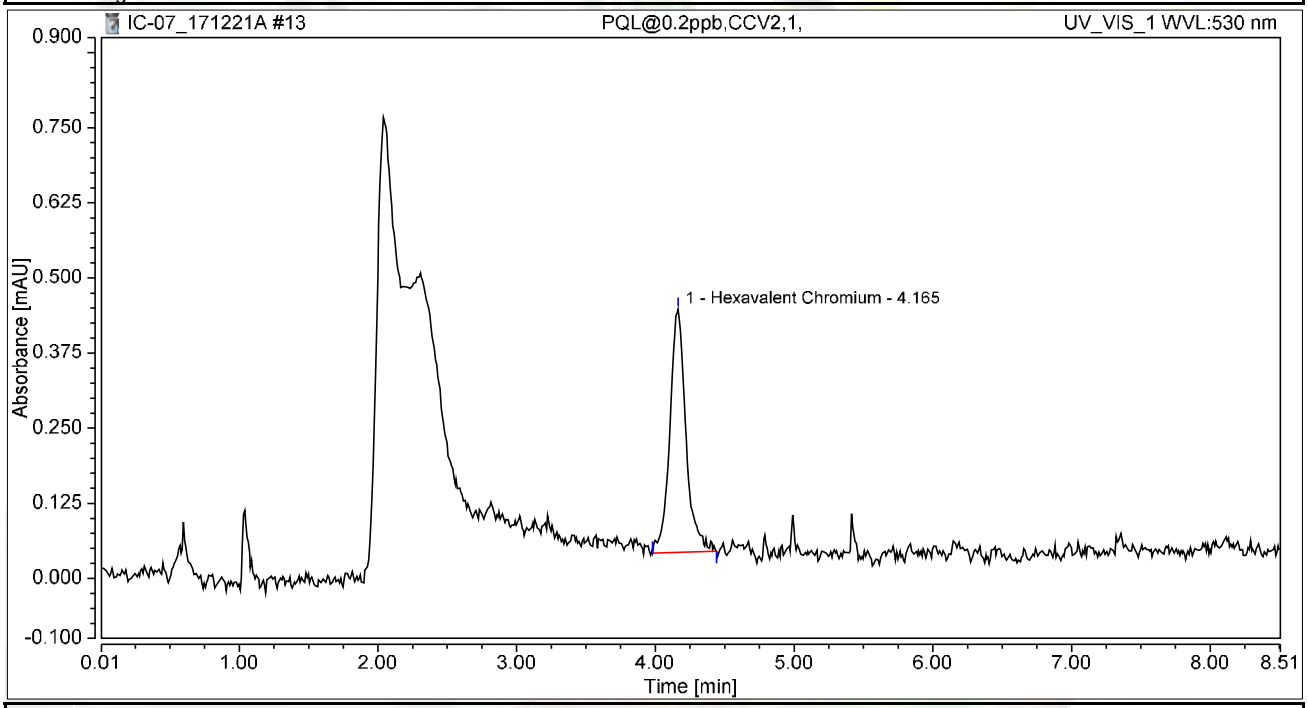
Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 09:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

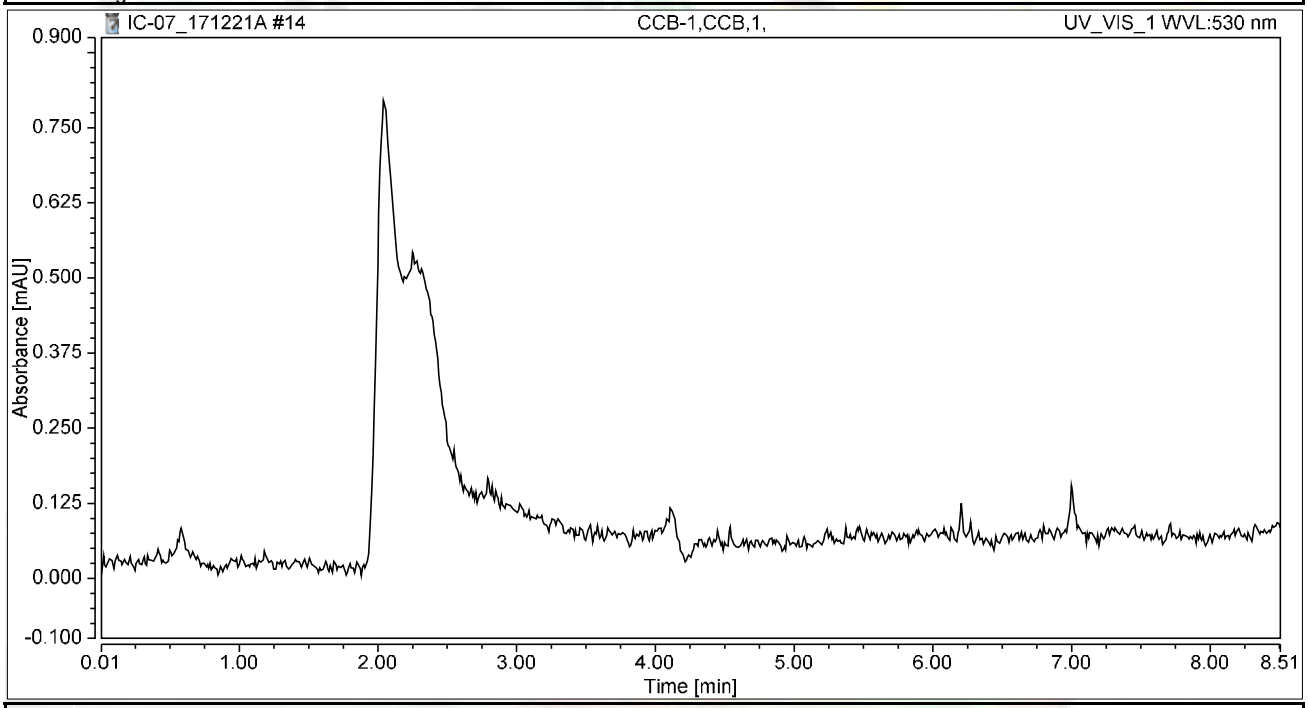
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.055	0.405	100.00	100.00	0.2174
Total:			**0.055**	**0.405**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 09:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

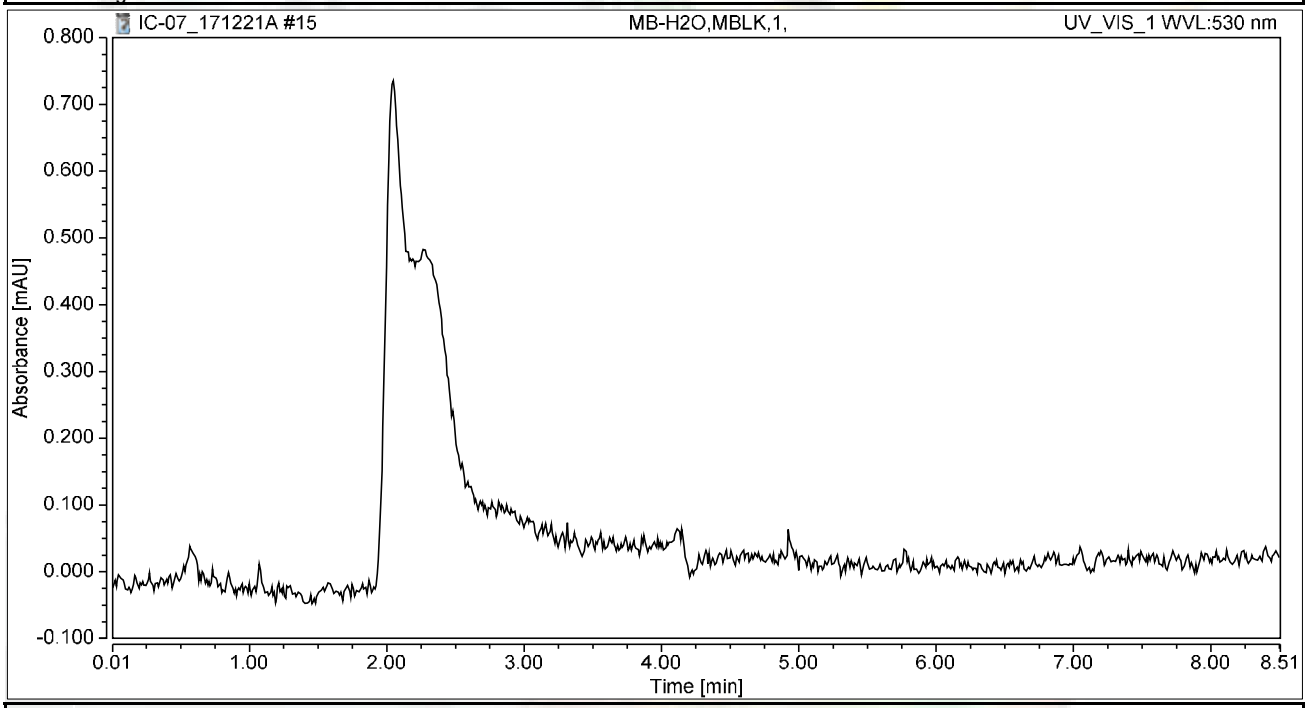
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 09:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

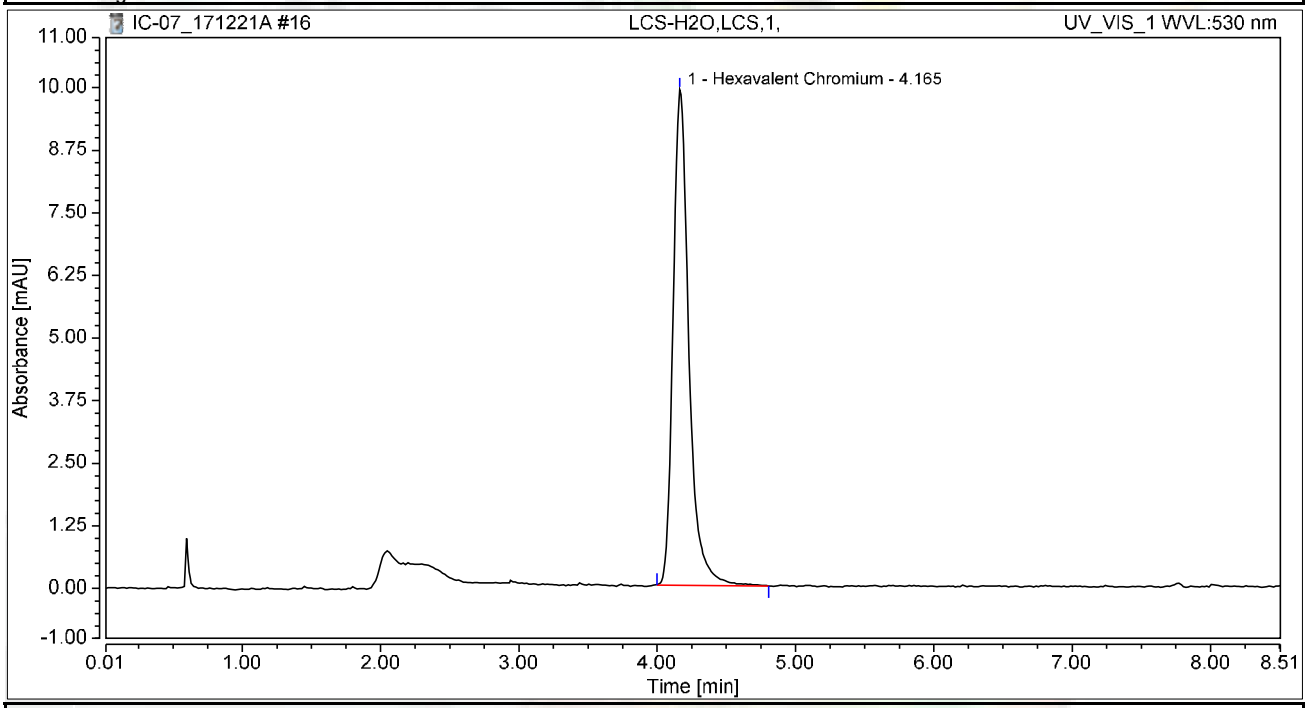
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 09:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

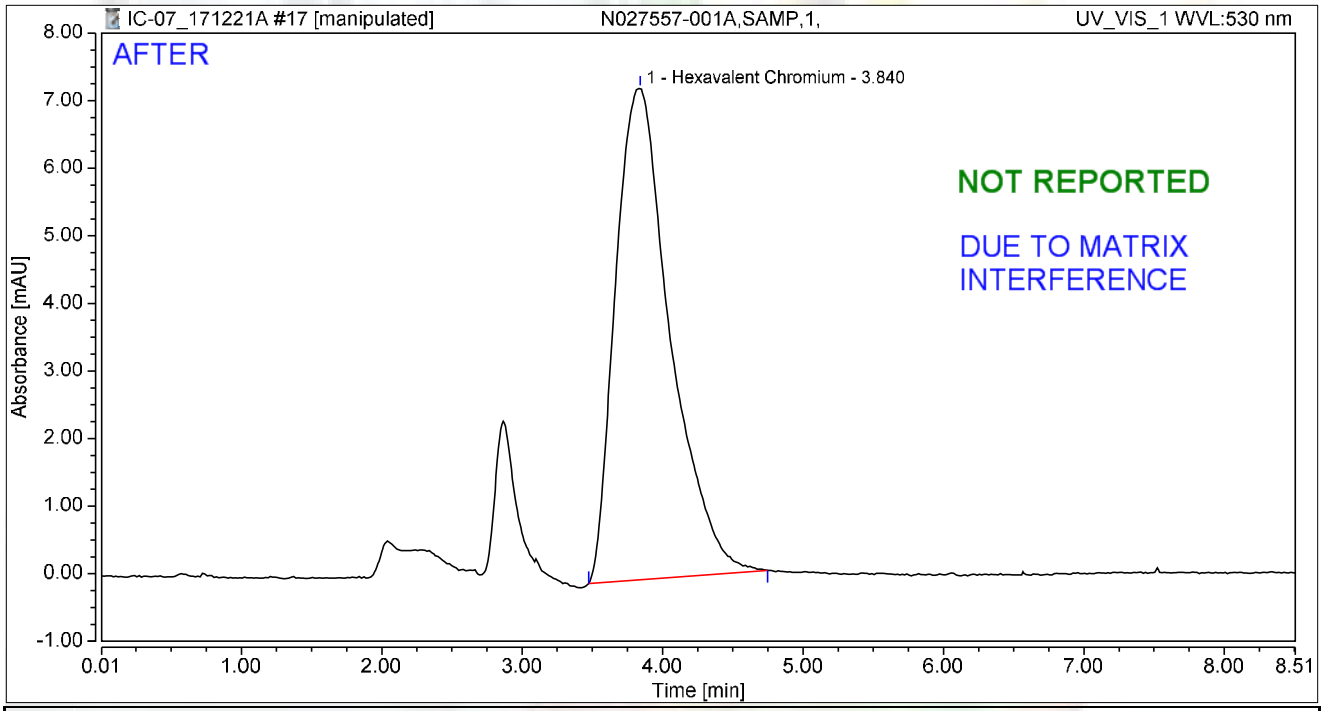
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.311	9.894	100.00	100.00	5.2222
Total:			**1.311**	**9.894**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027557-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 10:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.840	3.279	7.267	100.00	100.00	13.0592
Total:			**3.279**	**7.267**	**100.00**	**100.00**	

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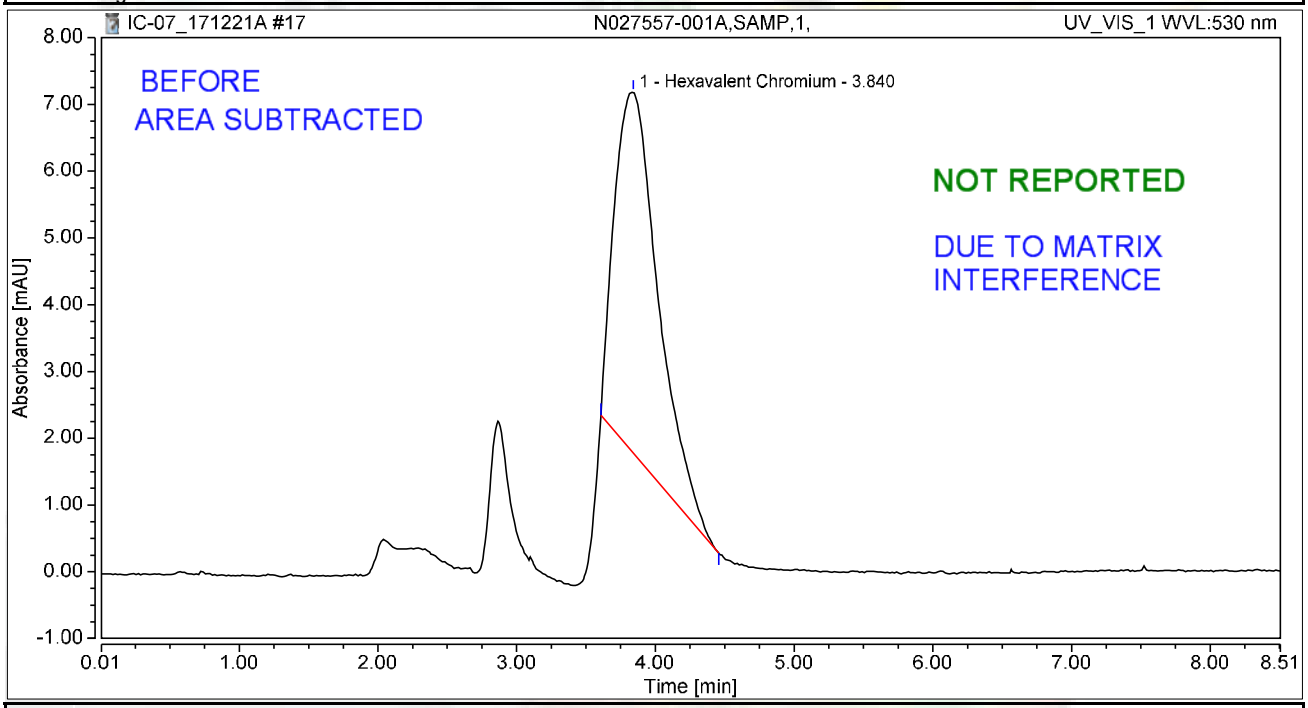
Chromatogram and Results

Injection Details

Injection Name:	**N027557-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 10:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.840	1.972	5.404	100.00	100.00	7.8523
Total:			**1.972**	**5.404**	**100.00**	**100.00**	

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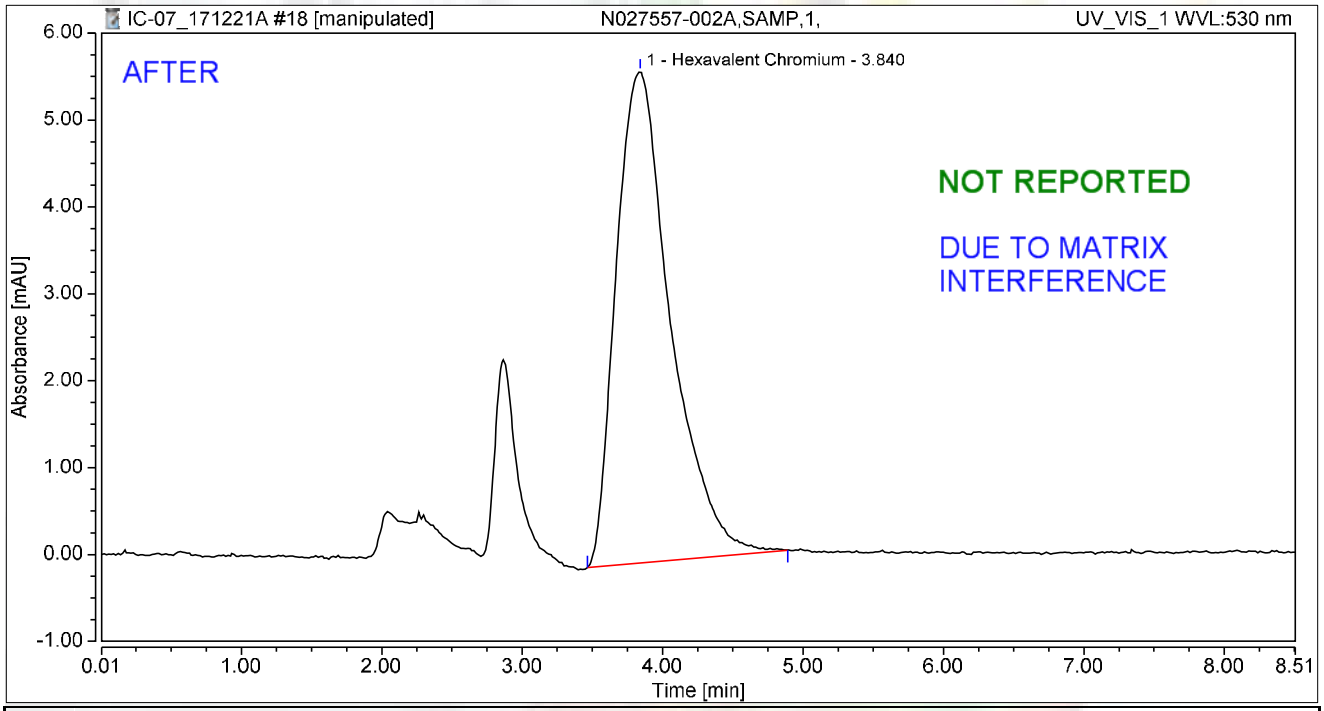
Chromatogram and Results

Injection Details

Injection Name:	**N027557-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 10:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.840	2.548	5.661	100.00	100.00	10.1482
Total:			**2.548**	**5.661**	**100.00**	**100.00**	

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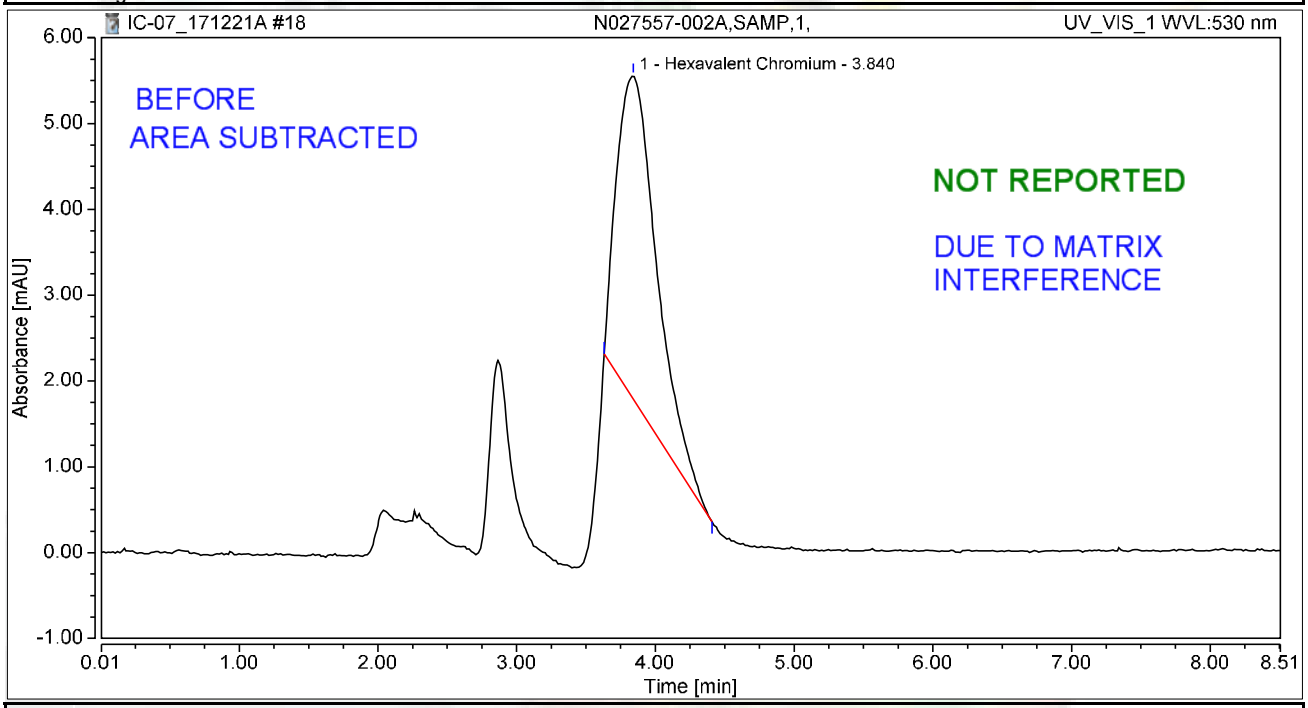
Chromatogram and Results

Injection Details

Injection Name:	**N027557-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 10:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.840	1.262	3.770	100.00	100.00	5.0272
Total:			**1.262**	**3.770**	**100.00**	**100.00**	

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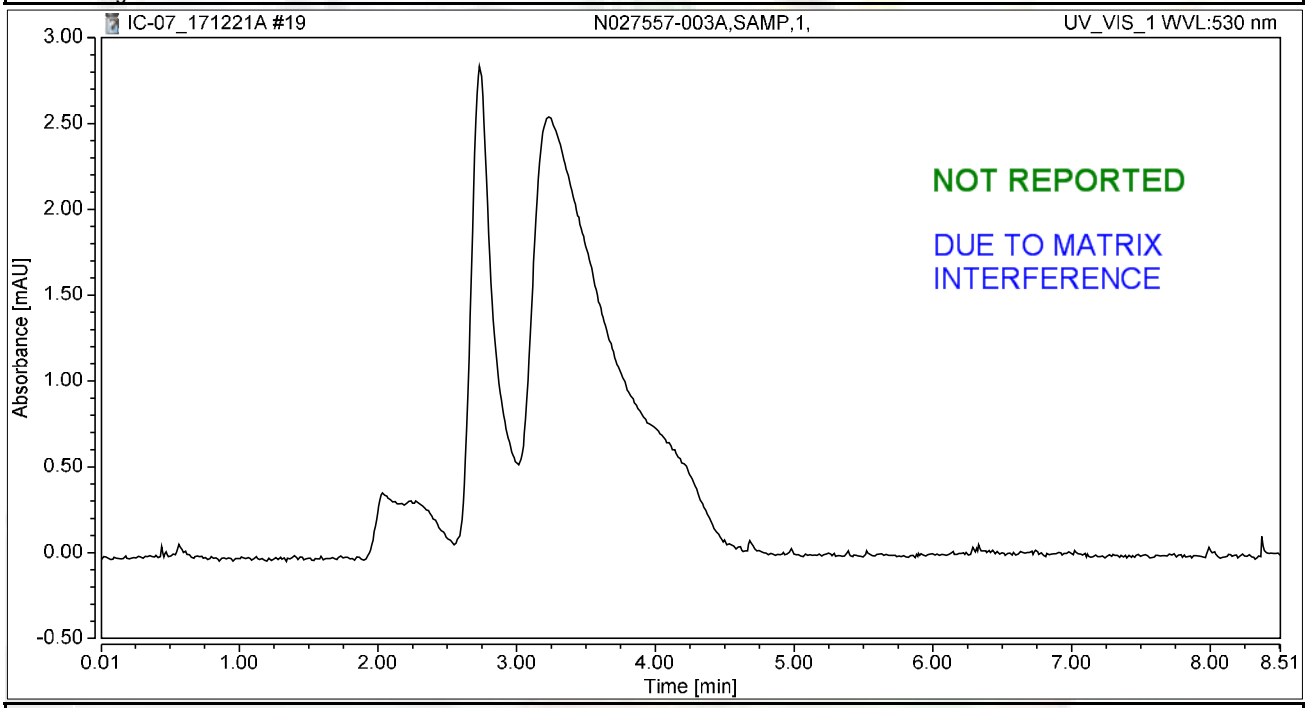
Chromatogram and Results

Injection Details

Injection Name:	**N027557-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 10:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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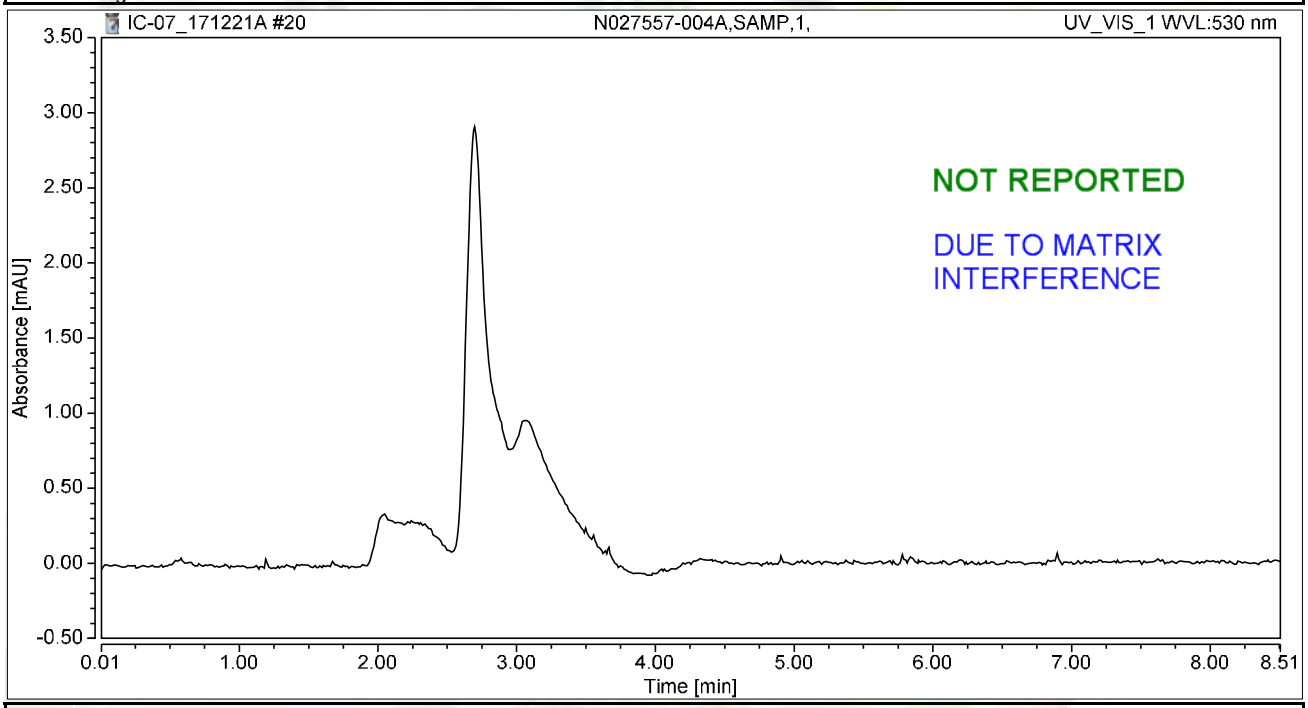
Chromatogram and Results

Injection Details

Injection Name:	**N027557-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 10:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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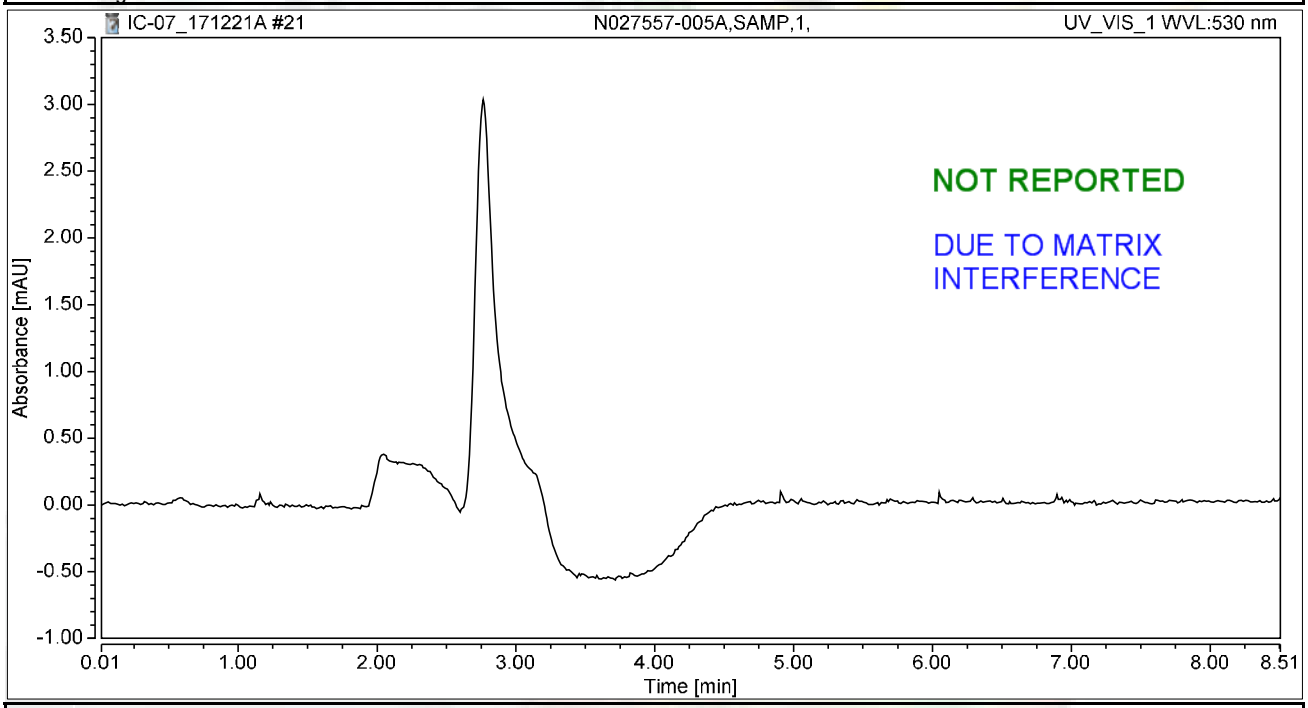
Chromatogram and Results

Injection Details

Injection Name:	**N027557-005A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 10:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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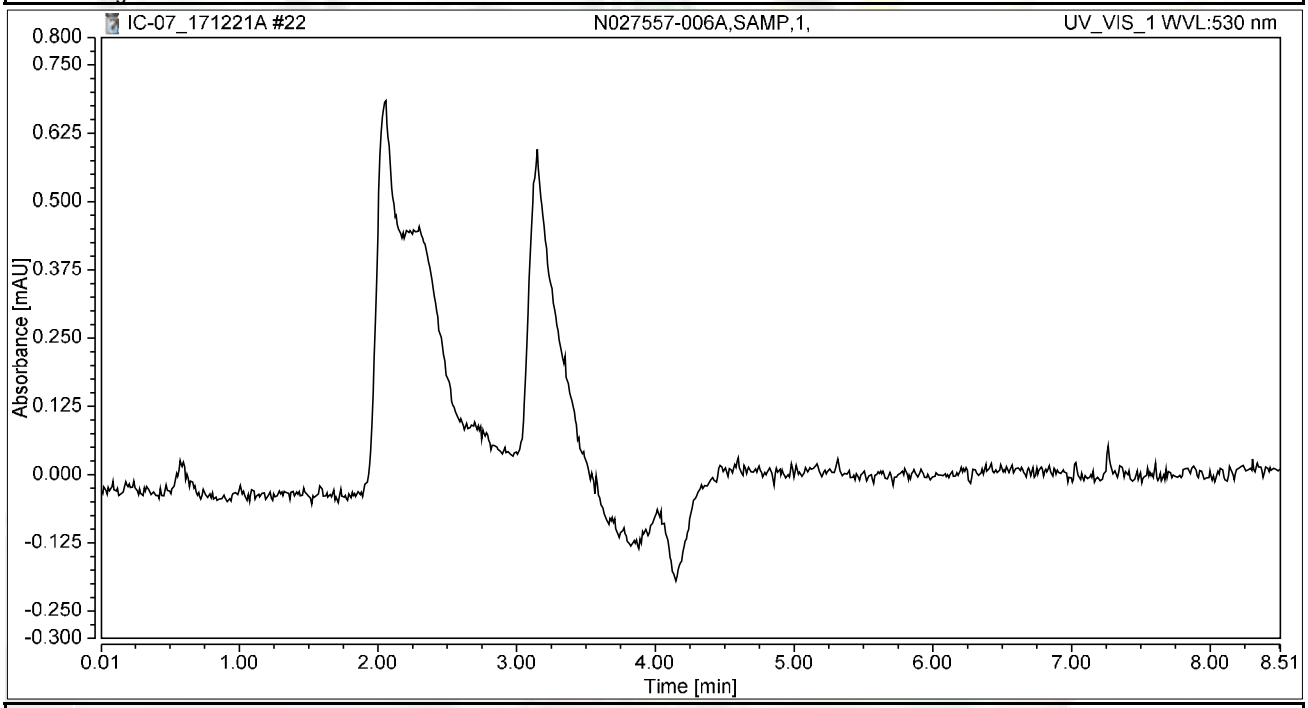
Chromatogram and Results

Injection Details

Injection Name:	**N027557-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 10:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

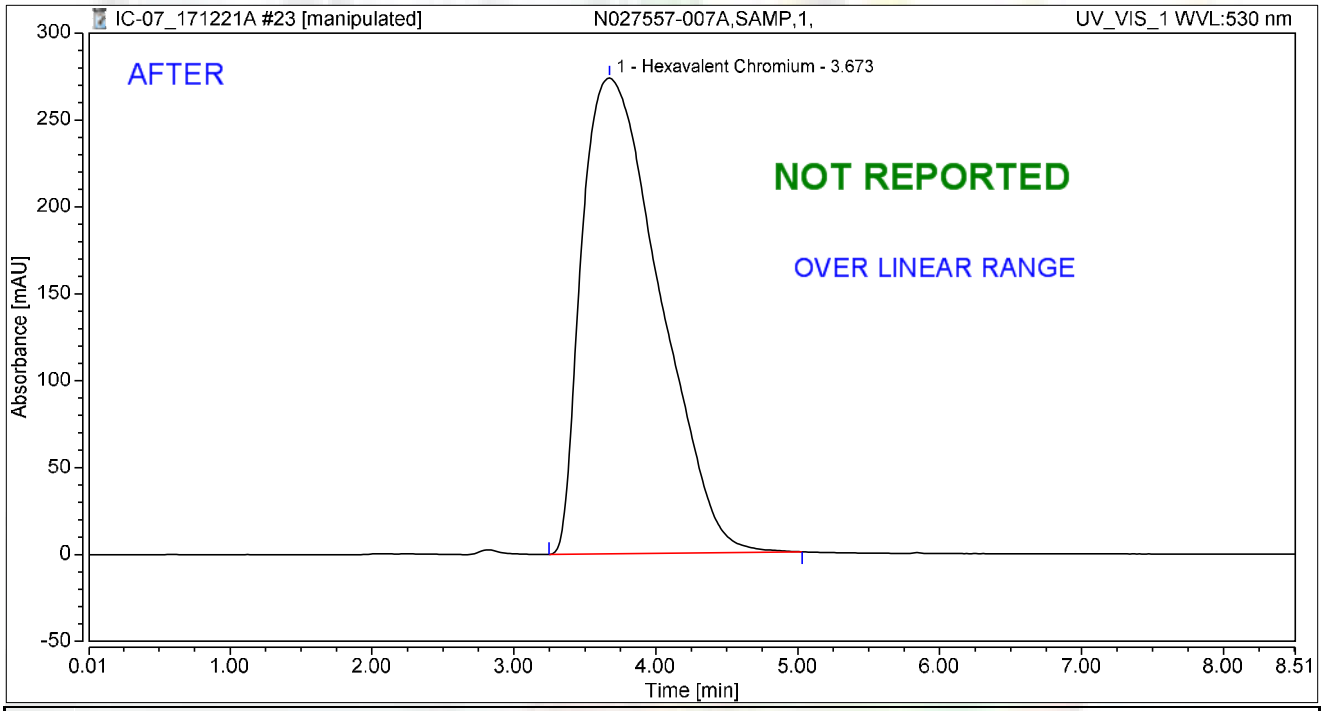
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027557-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 10:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.673	173.761	273.814	100.00	100.00	692.0115
Total:			**173.761**	**273.814**	**100.00**	**100.00**	

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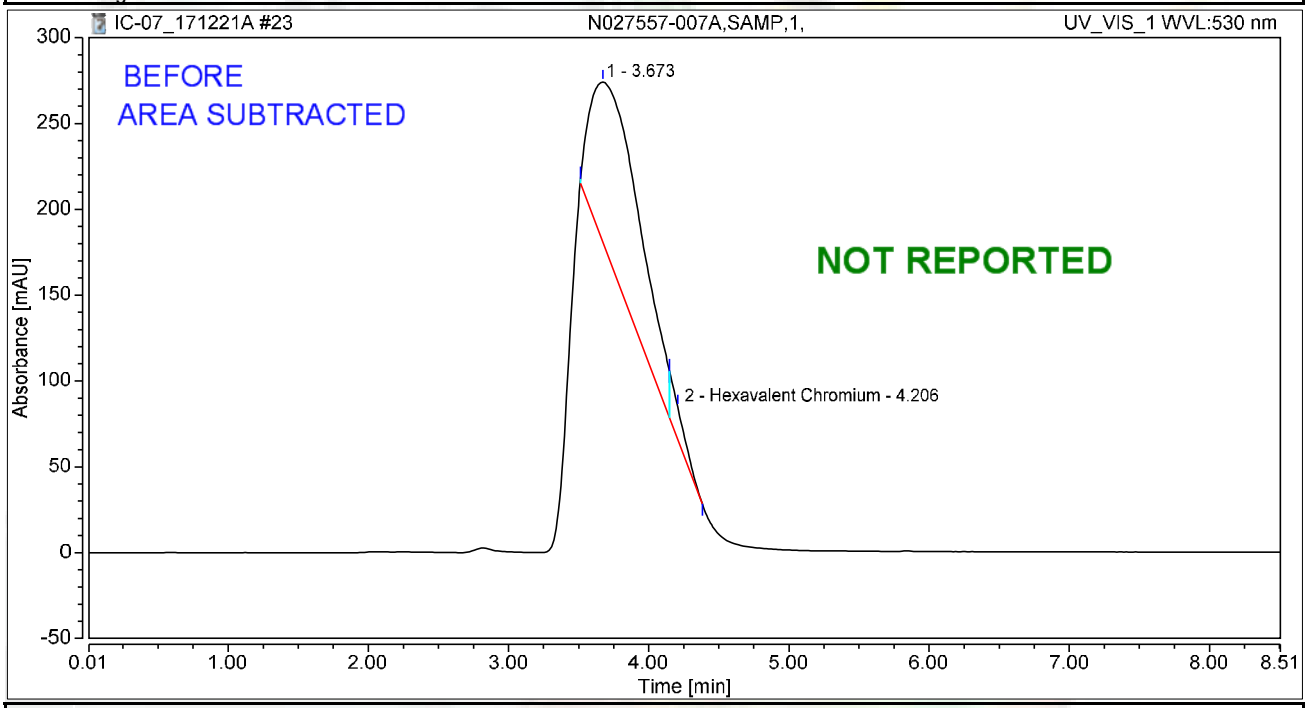
Chromatogram and Results

Injection Details

Injection Name:	**N027557-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 10:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.673	43.044	93.138	94.13	83.14	n.a.
2	Hexavalent Chromium	4.206	2.683	18.882	5.87	16.86	10.6854
Total:			**45.727**	**112.021**	**100.00**	**100.00**	

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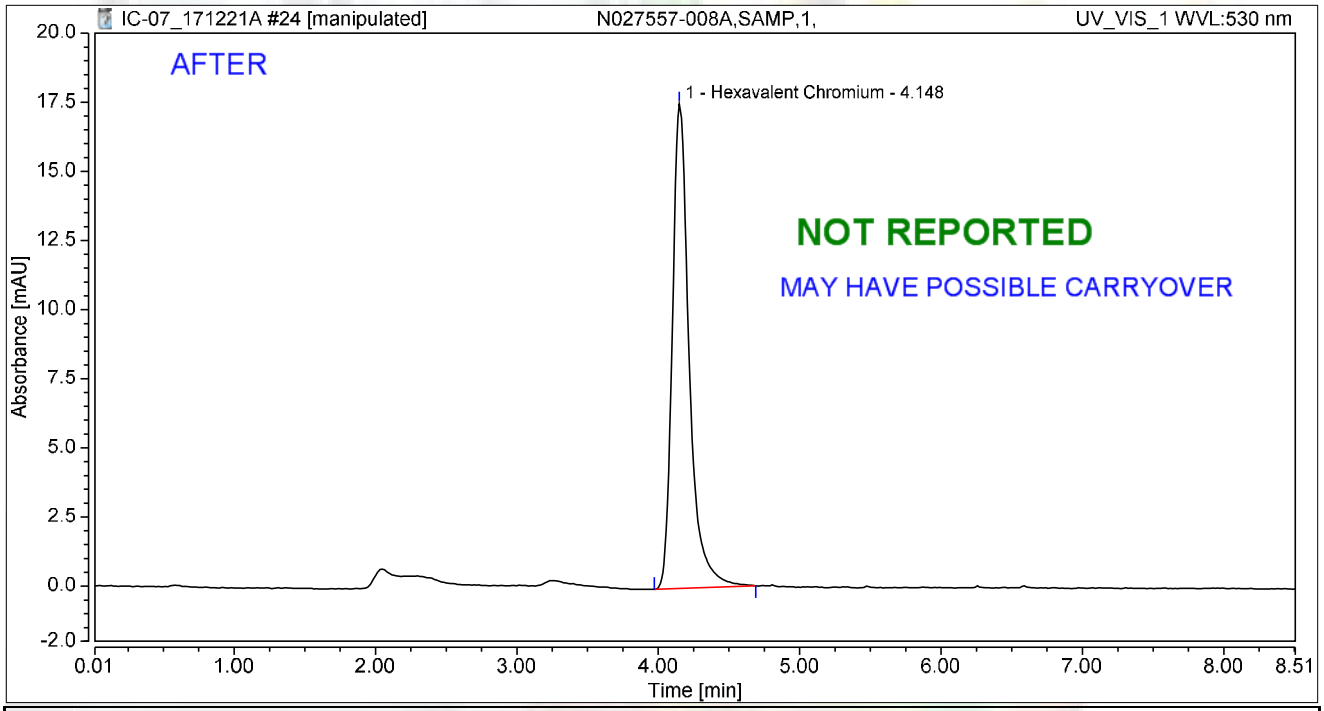
Chromatogram and Results

Injection Details

Injection Name:	**N027557-008A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 11:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.433	17.538	100.00	100.00	9.6876
Total:			**2.433**	**17.538**	**100.00**	**100.00**	

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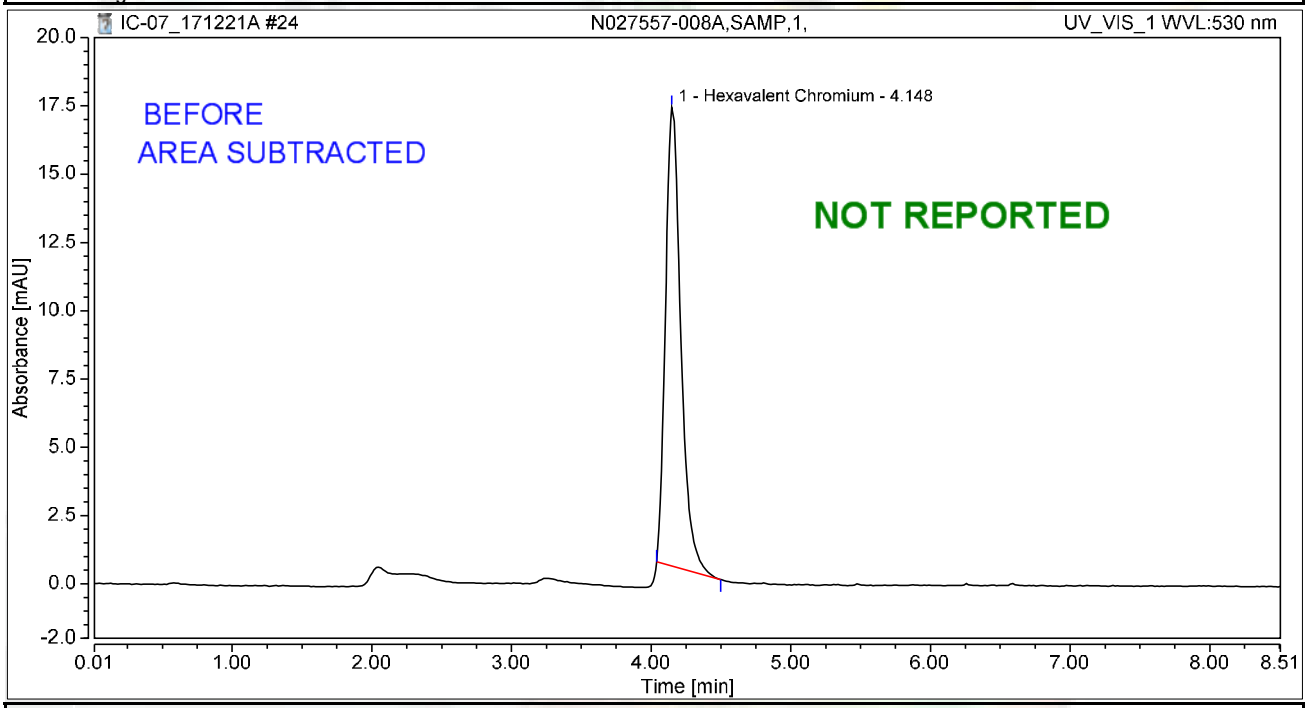
Chromatogram and Results

Injection Details

Injection Name:	**N027557-008A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 11:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.152	16.795	100.00	100.00	8.5715
Total:			**2.152**	**16.795**	**100.00**	**100.00**	

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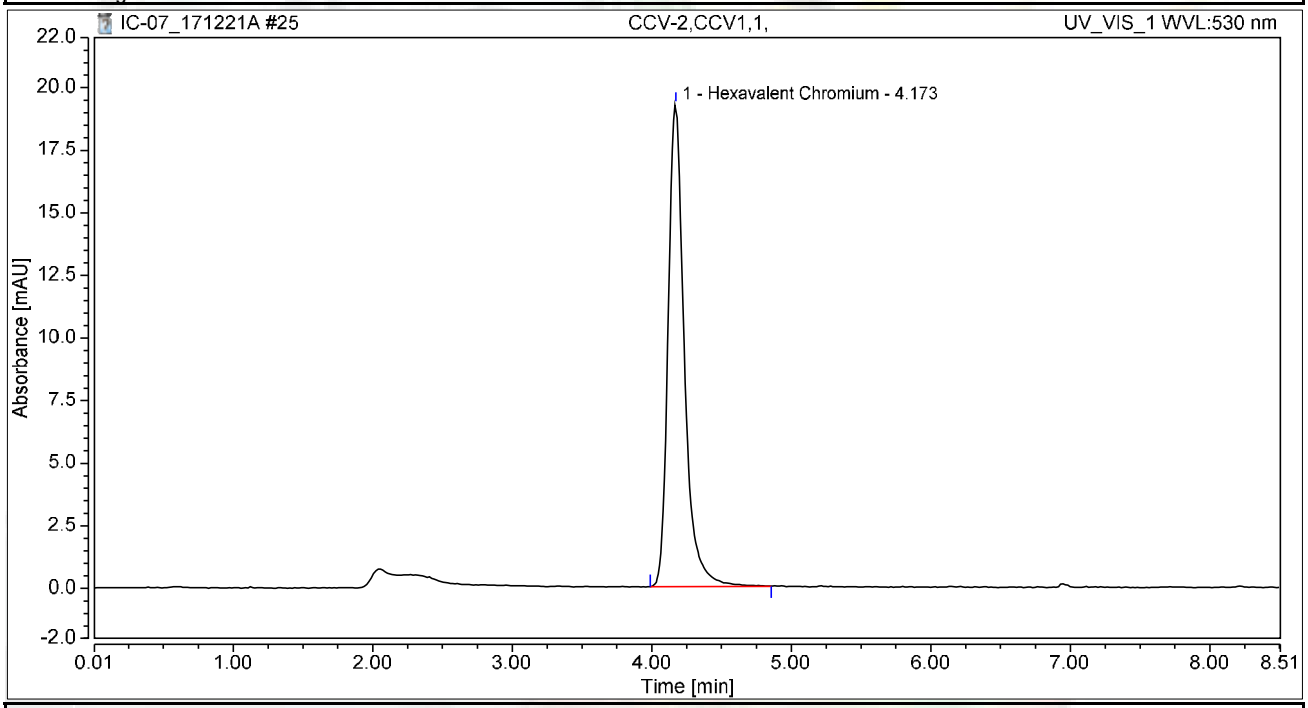
Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 11:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

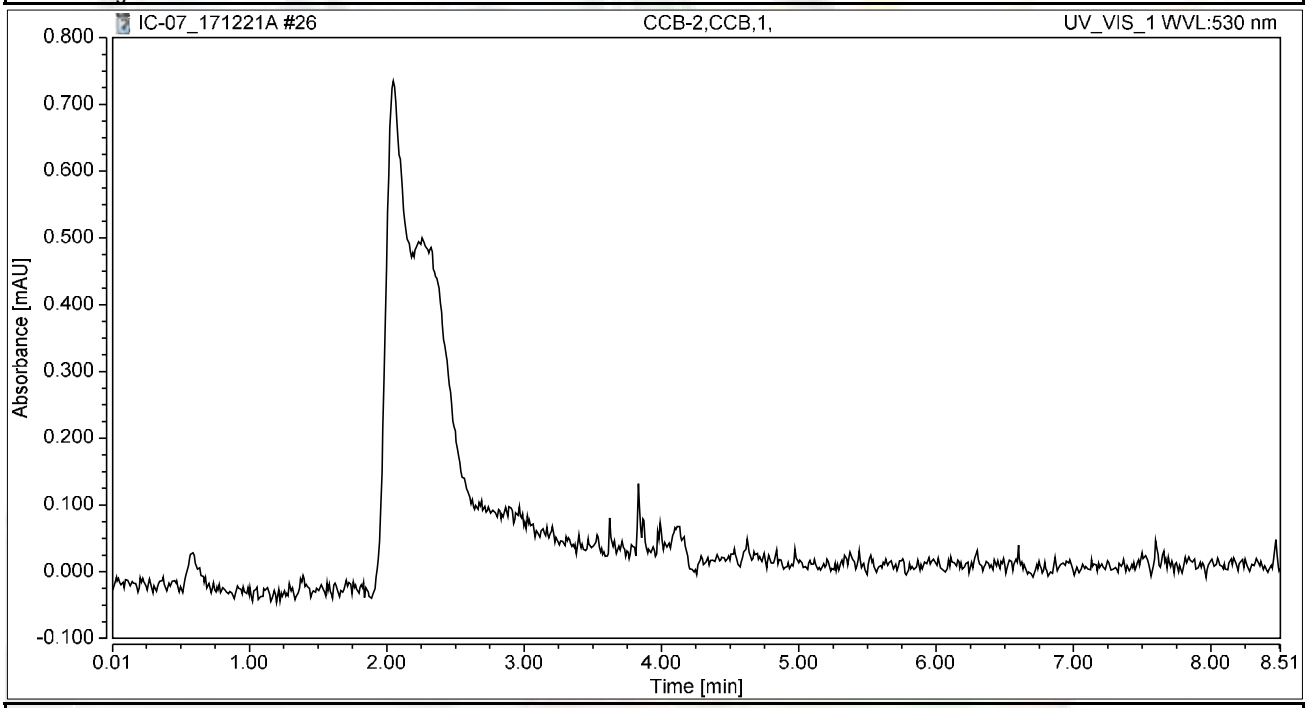
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.592	19.259	100.00	100.00	10.3240
Total:			**2.592**	**19.259**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 11:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

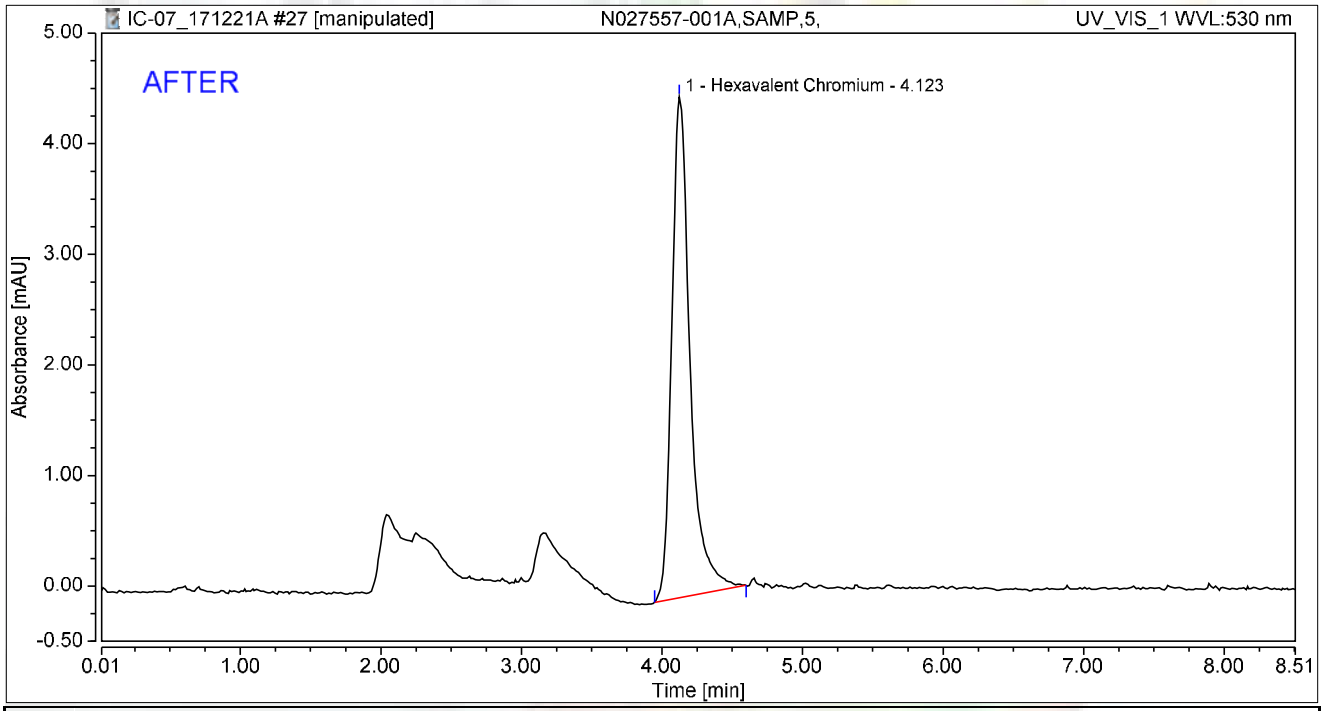
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027557-001A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 11:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.685	4.531	100.00	100.00	2.7262
Total:			**0.685**	**4.531**	**100.00**	**100.00**	

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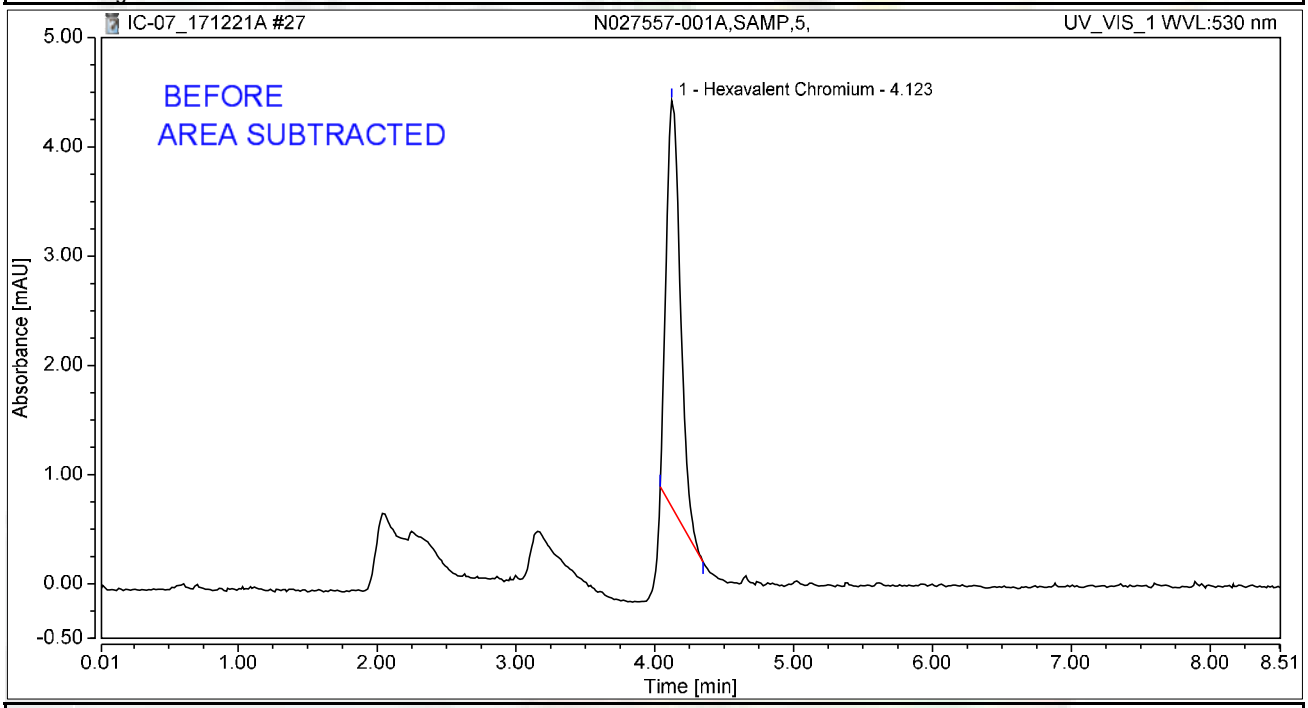
Chromatogram and Results

Injection Details

Injection Name:	**N027557-001A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 11:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.444	3.721	100.00	100.00	1.7676
Total:			**0.444**	**3.721**	**100.00**	**100.00**	

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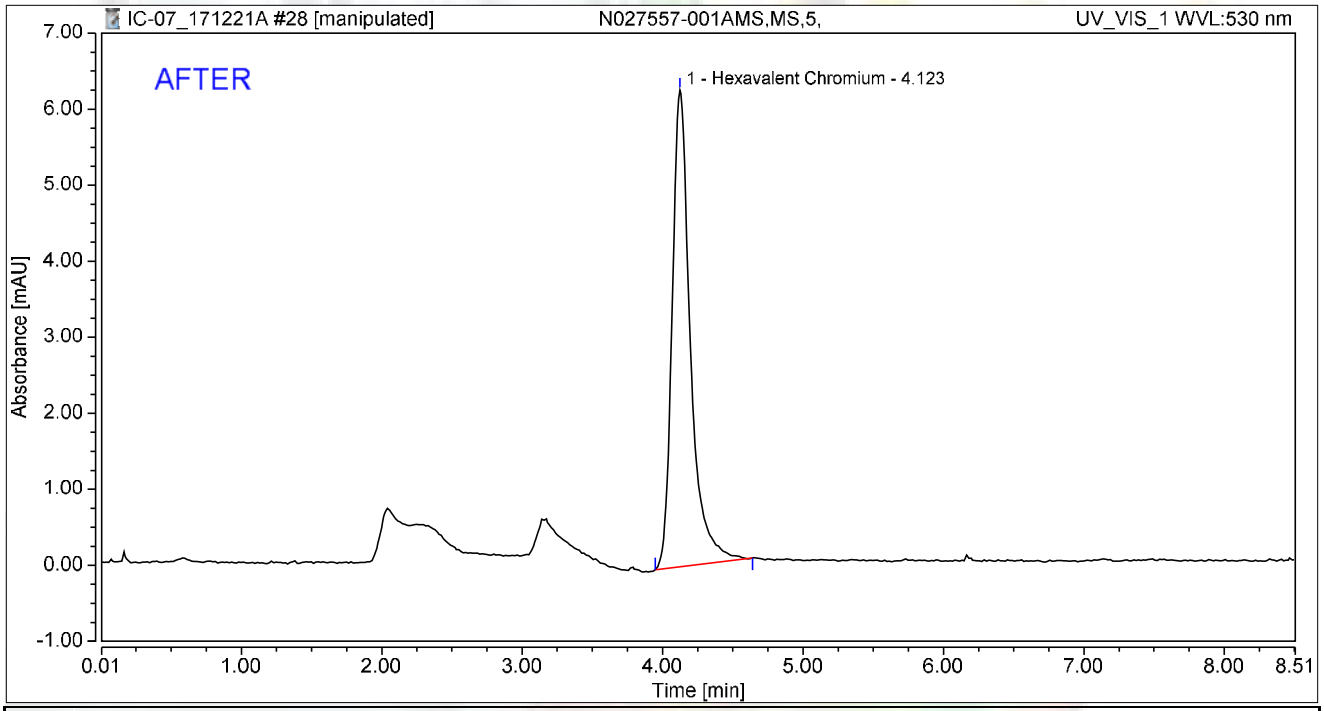
Chromatogram and Results

Injection Details

Injection Name:	**N027557-001AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 11:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.943	6.269	100.00	100.00	3.7539
Total:			**0.943**	**6.269**	**100.00**	**100.00**	

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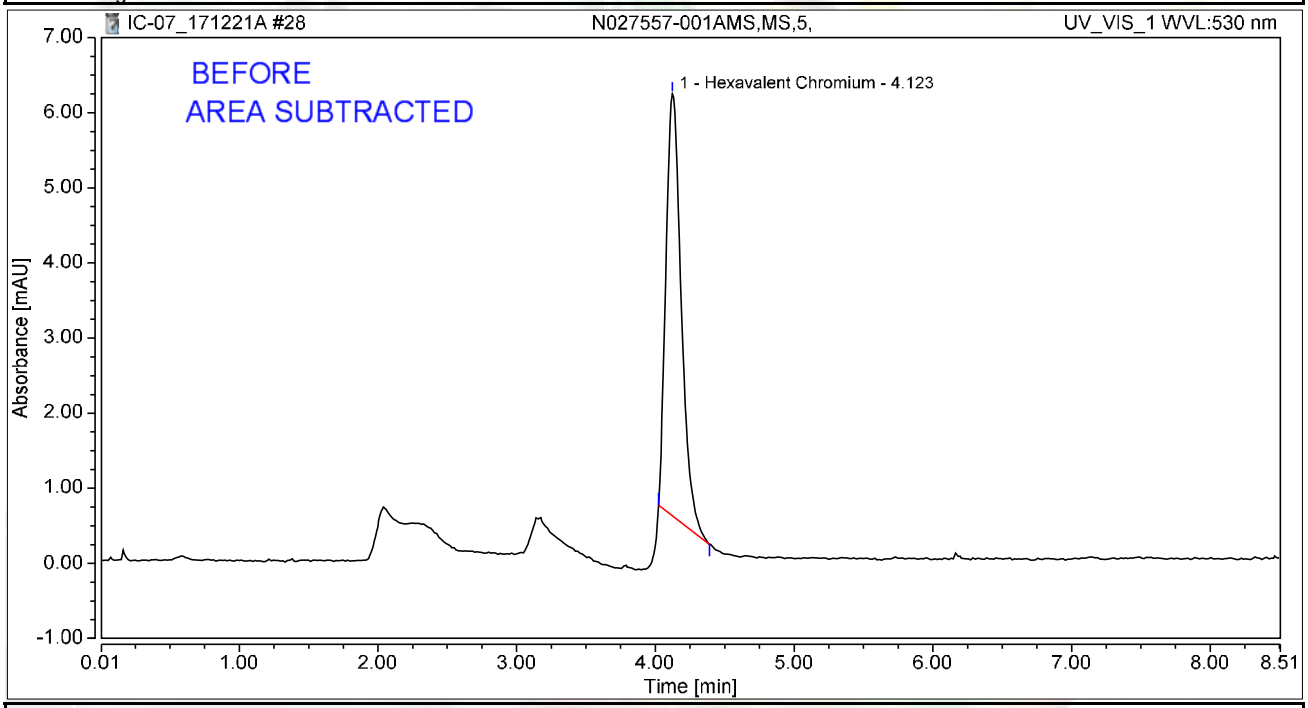
Chromatogram and Results

Injection Details

Injection Name:	**N027557-001AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 11:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.719	5.615	100.00	100.00	2.8652
Total:			**0.719**	**5.615**	**100.00**	**100.00**	

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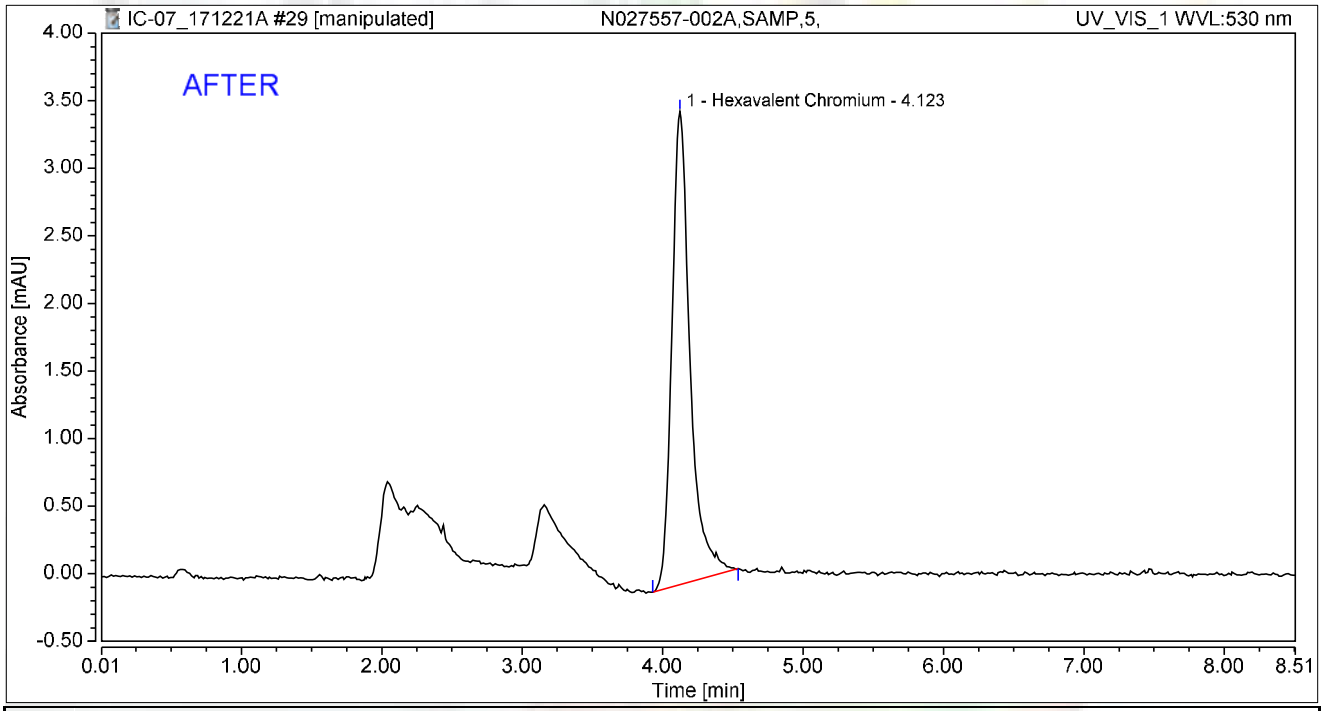
Chromatogram and Results

Injection Details

Injection Name:	**N027557-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 11:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.526	3.499	100.00	100.00	2.0948
Total:			**0.526**	**3.499**	**100.00**	**100.00**	

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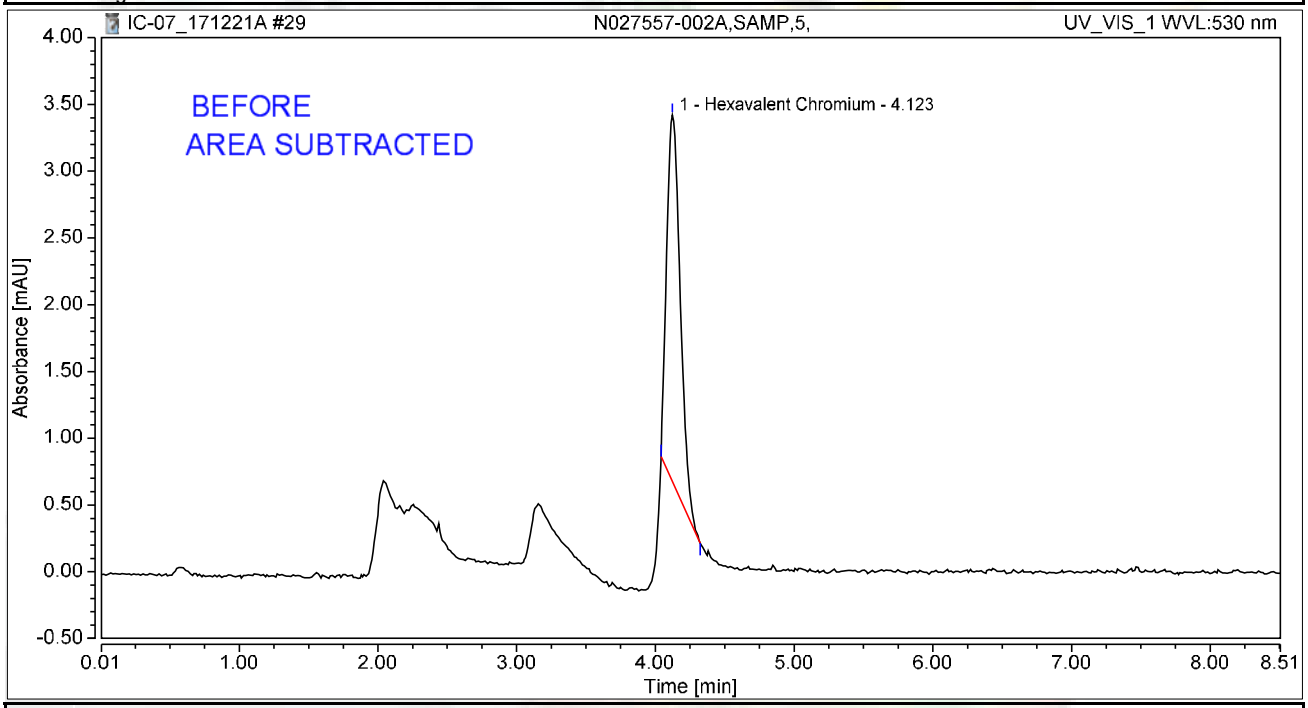
Chromatogram and Results

Injection Details

Injection Name:	**N027557-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 11:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.313	2.746	100.00	100.00	1.2456
Total:			**0.313**	**2.746**	**100.00**	**100.00**	

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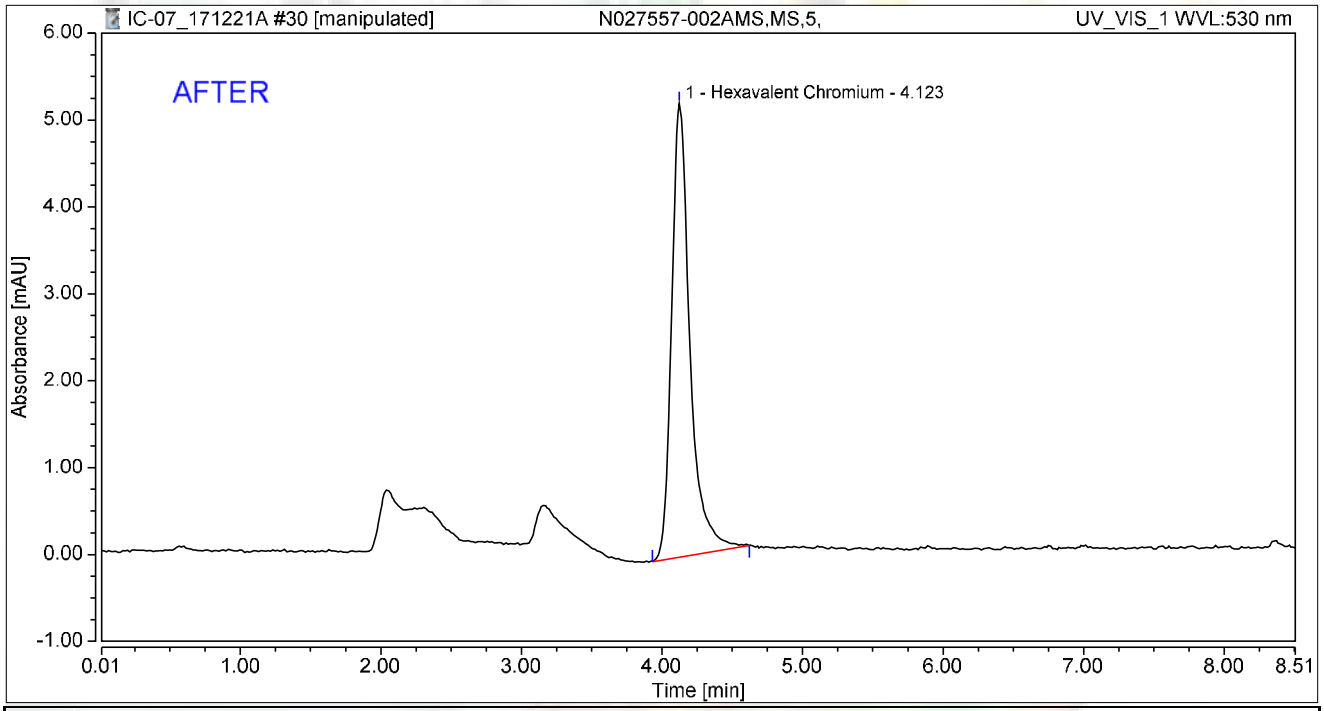
Chromatogram and Results

Injection Details

Injection Name:	**N027557-002AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 12:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.790	5.223	100.00	100.00	3.1454
Total:			**0.790**	**5.223**	**100.00**	**100.00**	

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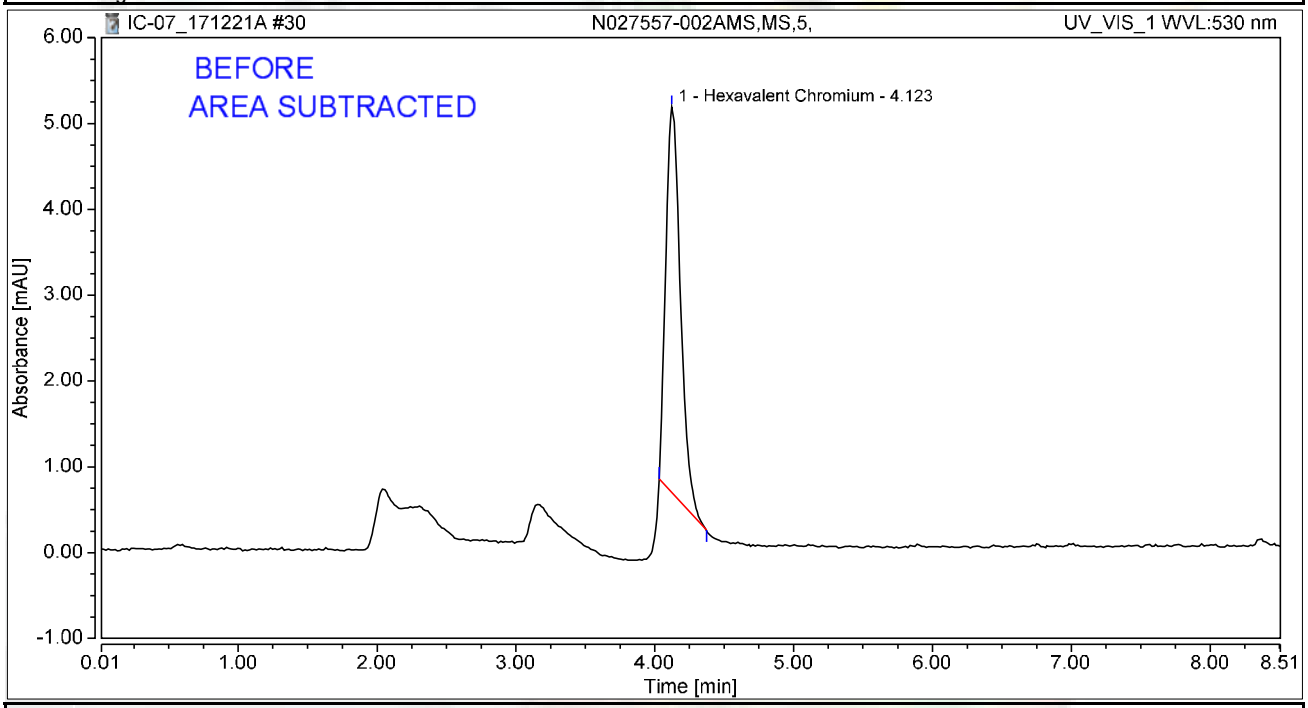
Chromatogram and Results

Injection Details

Injection Name:	**N027557-002AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 12:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.554	4.489	100.00	100.00	2.2051
Total:			**0.554**	**4.489**	**100.00**	**100.00**	

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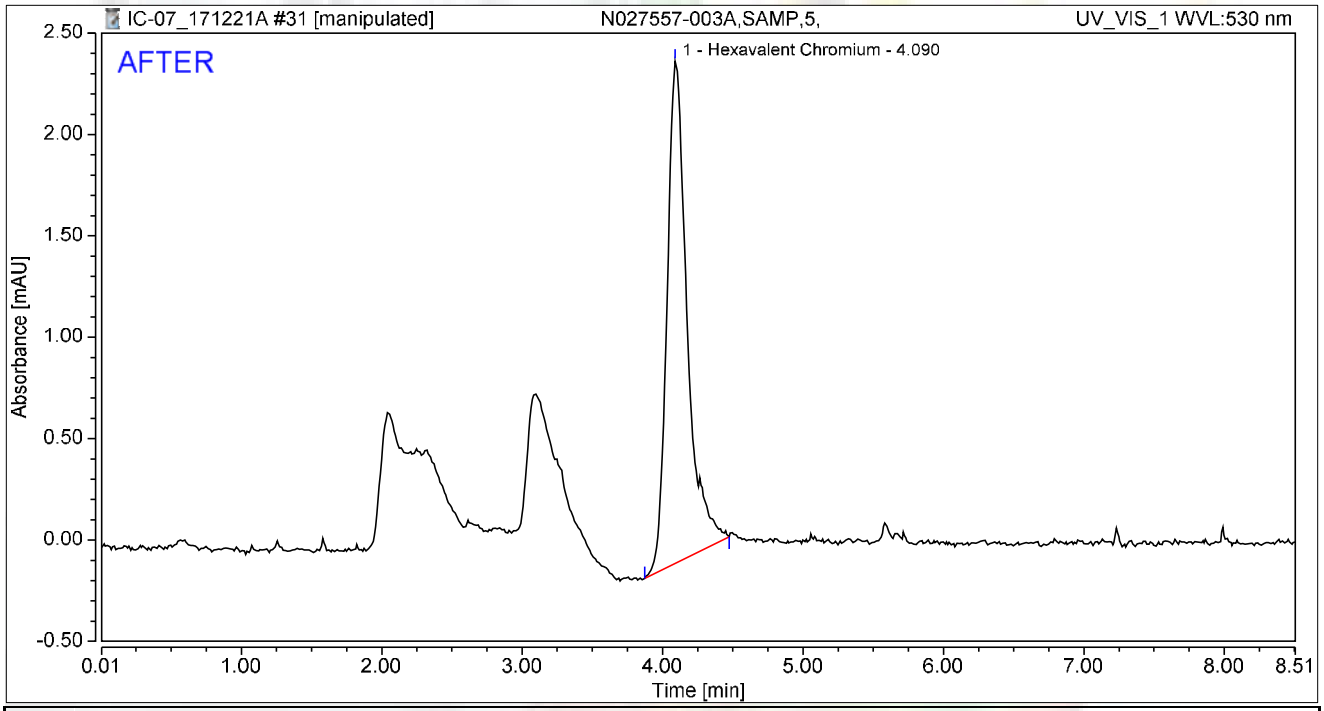
Chromatogram and Results

Injection Details

Injection Name:	**N027557-003A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 12:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.412	2.477	100.00	100.00	1.6393
Total:			**0.412**	**2.477**	**100.00**	**100.00**	

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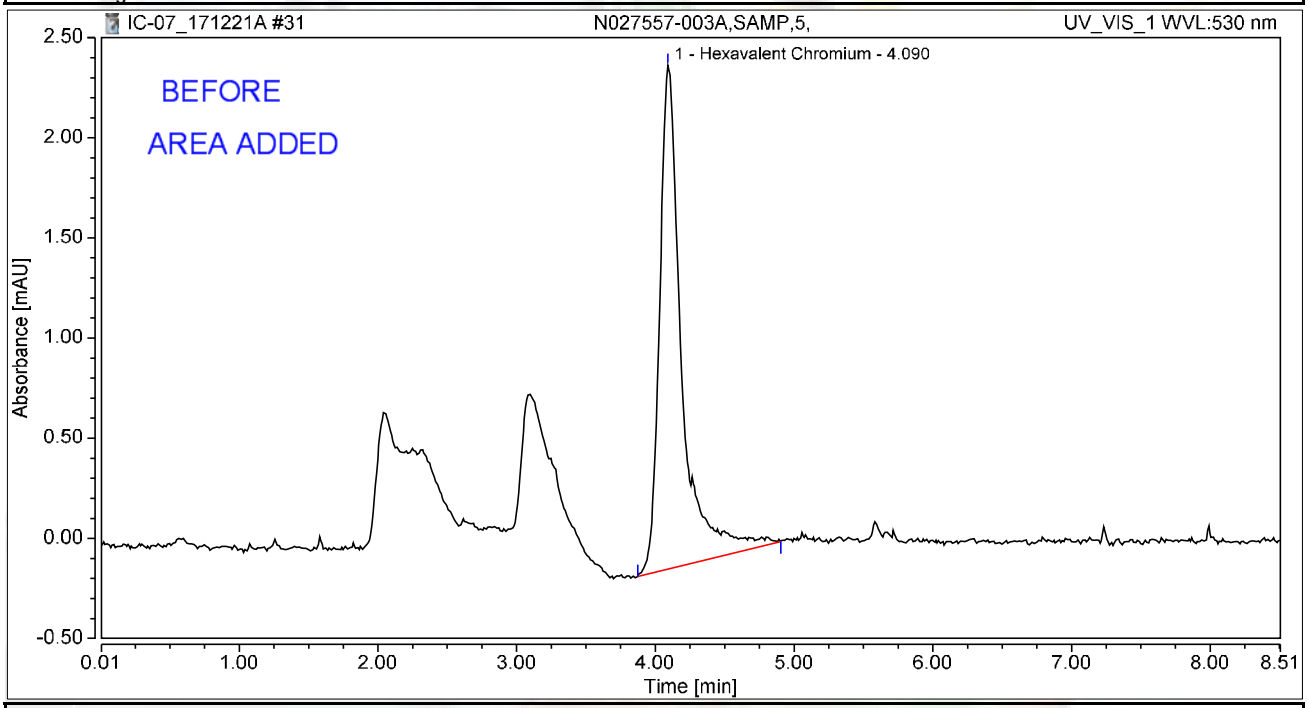
Chromatogram and Results

Injection Details

Injection Name:	**N027557-003A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 12:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.468	2.515	100.00	100.00	1.8621
Total:			**0.468**	**2.515**	**100.00**	**100.00**	

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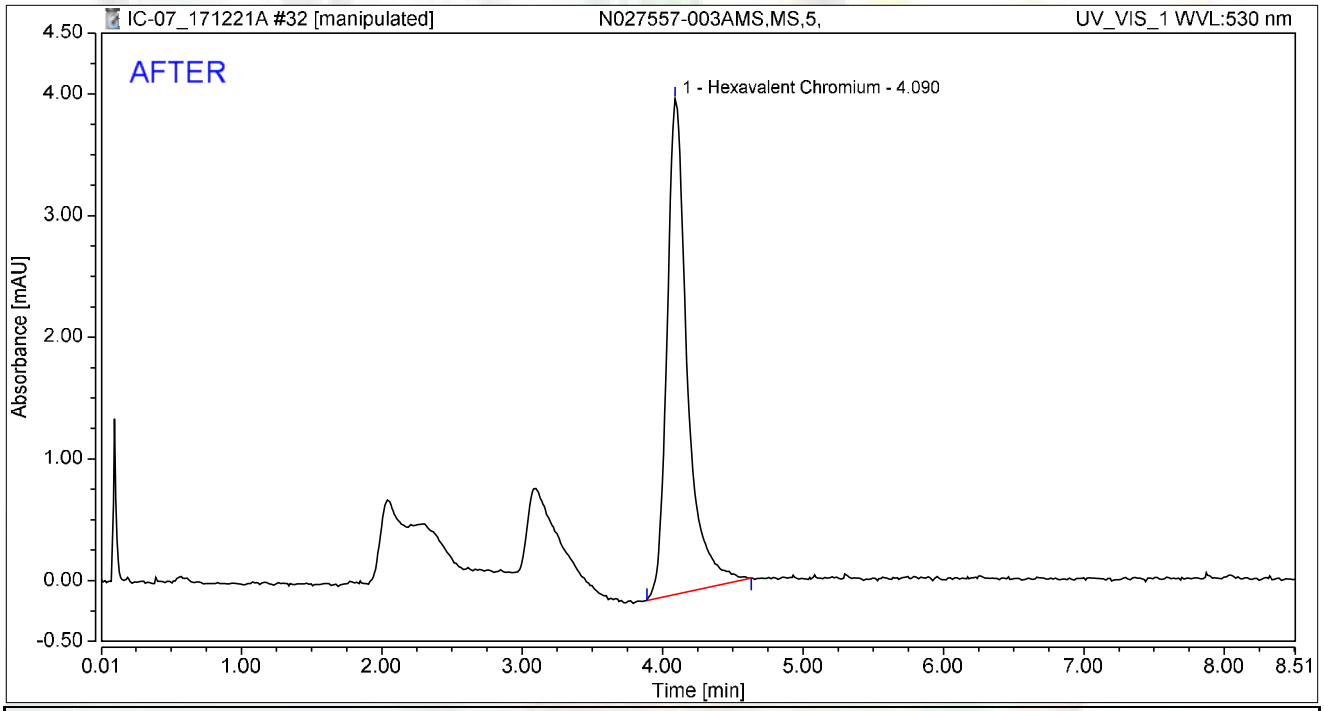
Chromatogram and Results

Injection Details

Injection Name:	**N027557-003AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 12:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.686	4.073	100.00	100.00	2.7310
Total:			**0.686**	**4.073**	**100.00**	**100.00**	

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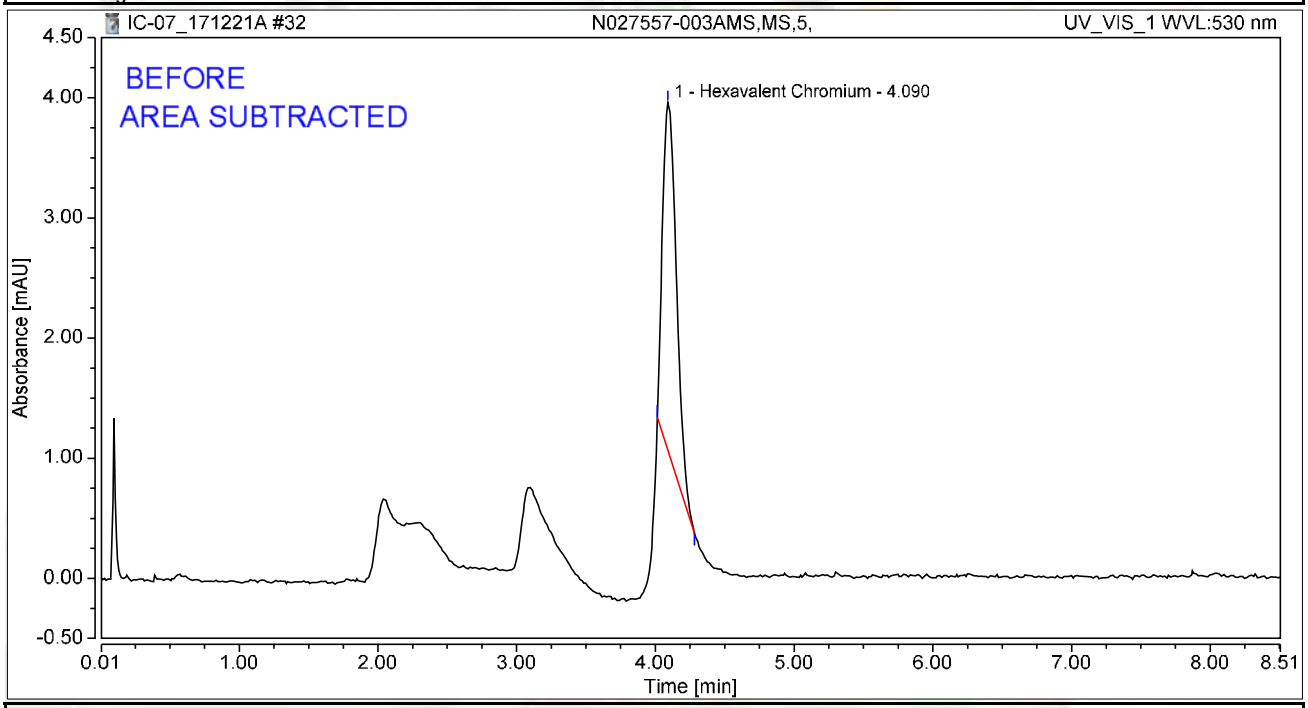
Chromatogram and Results

Injection Details

Injection Name:	**N027557-003AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 12:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.338	2.888	100.00	100.00	1.3466
Total:			**0.338**	**2.888**	**100.00**	**100.00**	

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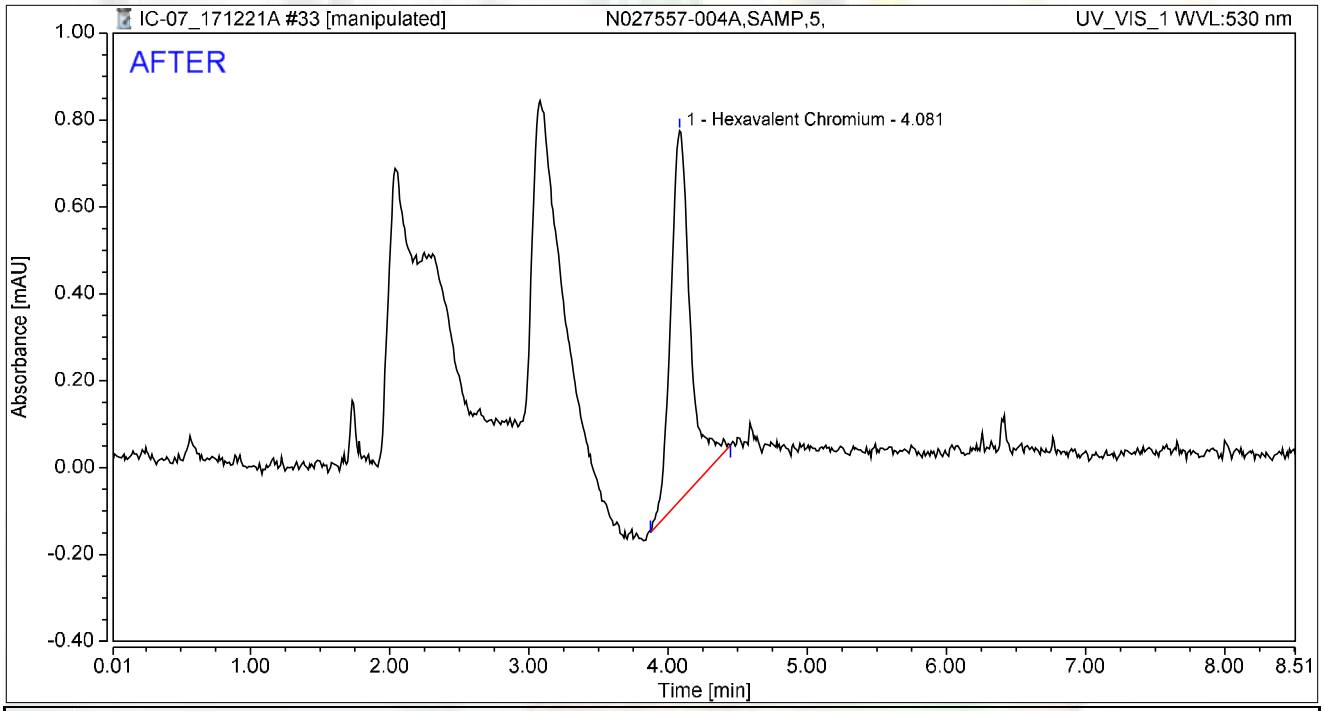
Chromatogram and Results

Injection Details

Injection Name:	**N027557-004A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 12:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.139	0.852	100.00	100.00	0.5532
Total:			**0.139**	**0.852**	**100.00**	**100.00**	

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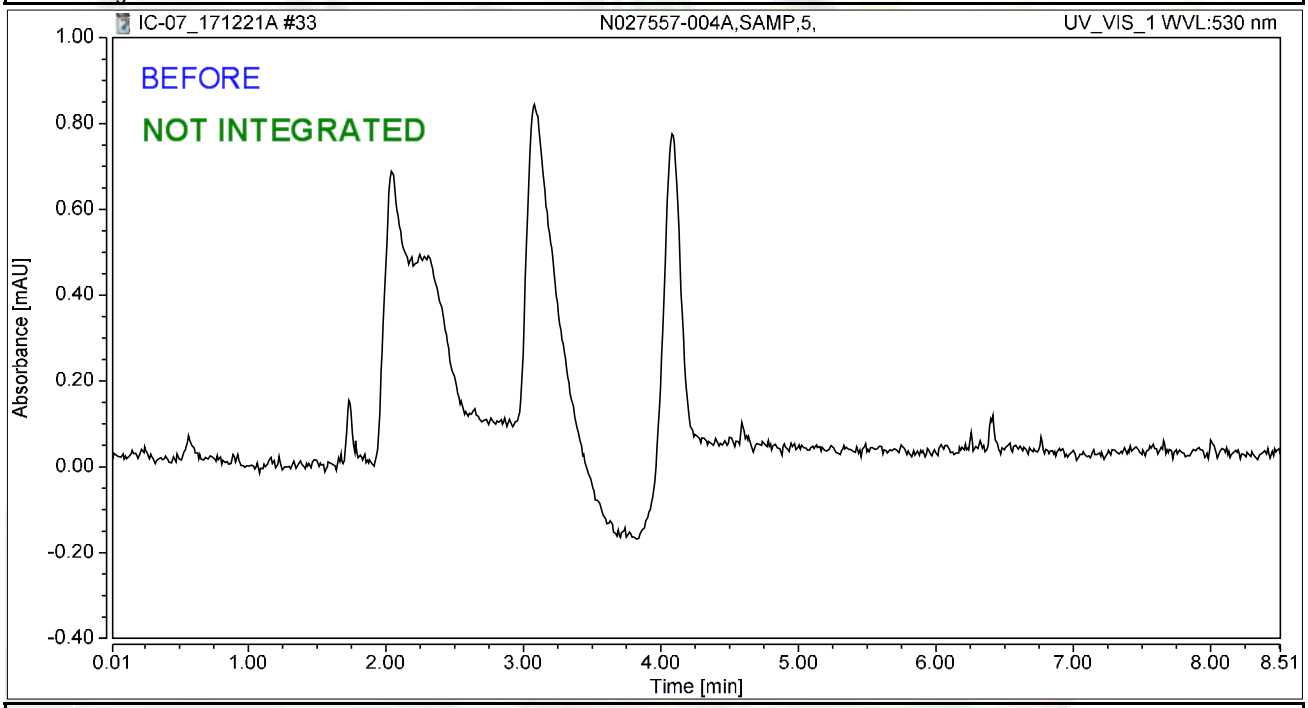
Chromatogram and Results

Injection Details

Injection Name:	**N027557-004A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 12:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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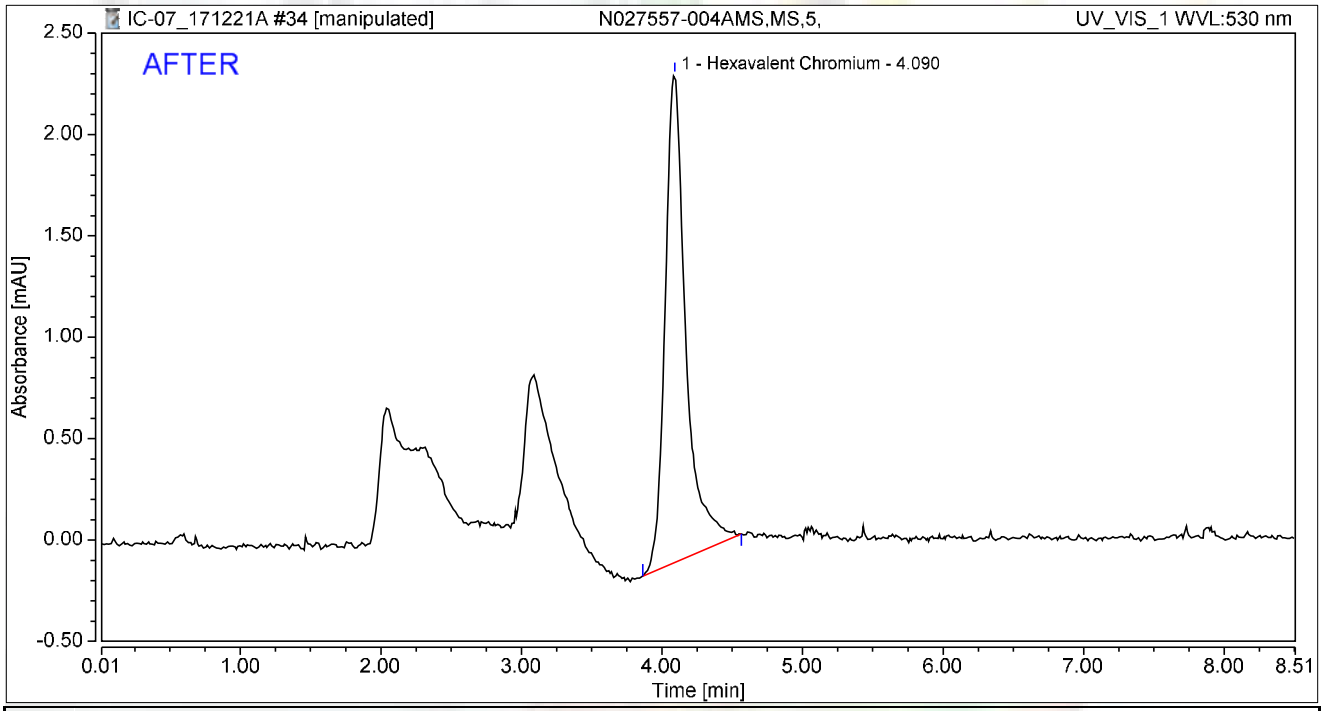
Chromatogram and Results

Injection Details

Injection Name:	**N027557-004AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 12:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.413	2.406	100.00	100.00	1.6432
Total:			**0.413**	**2.406**	**100.00**	**100.00**	

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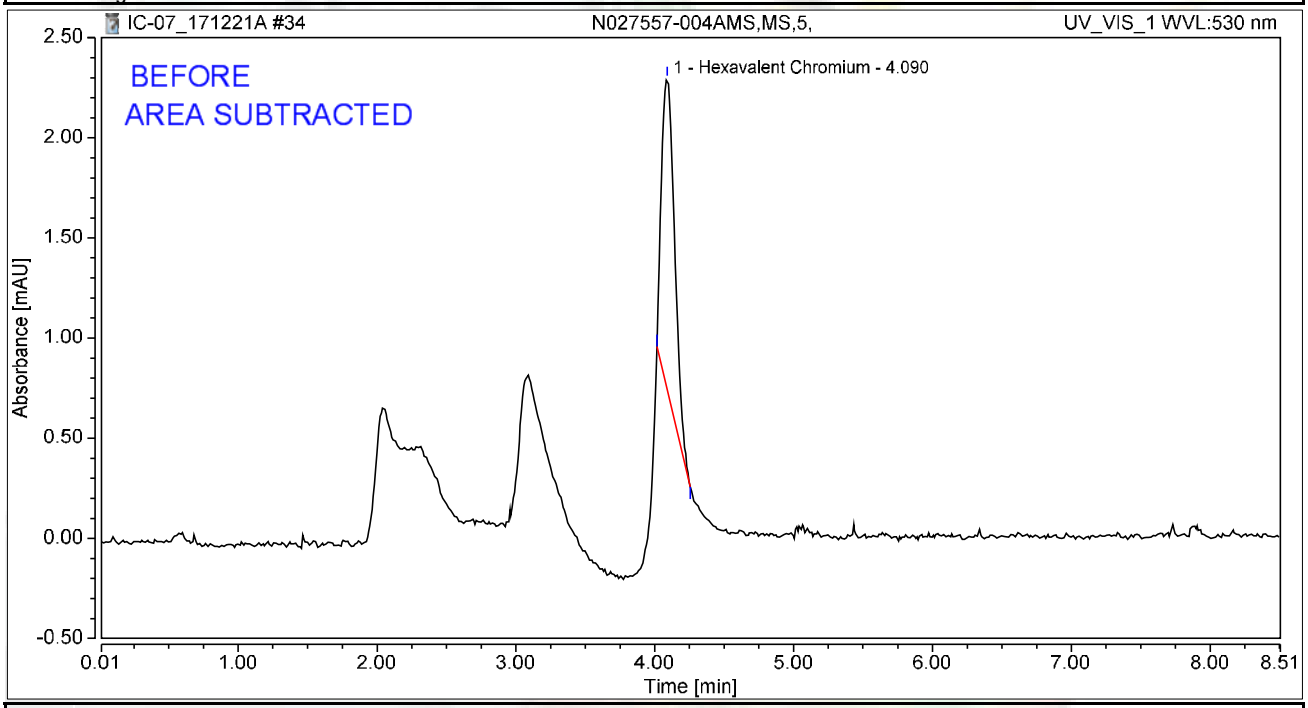
Chromatogram and Results

Injection Details

Injection Name:	**N027557-004AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 12:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.171	1.555	100.00	100.00	0.6817
Total:			**0.171**	**1.555**	**100.00**	**100.00**	

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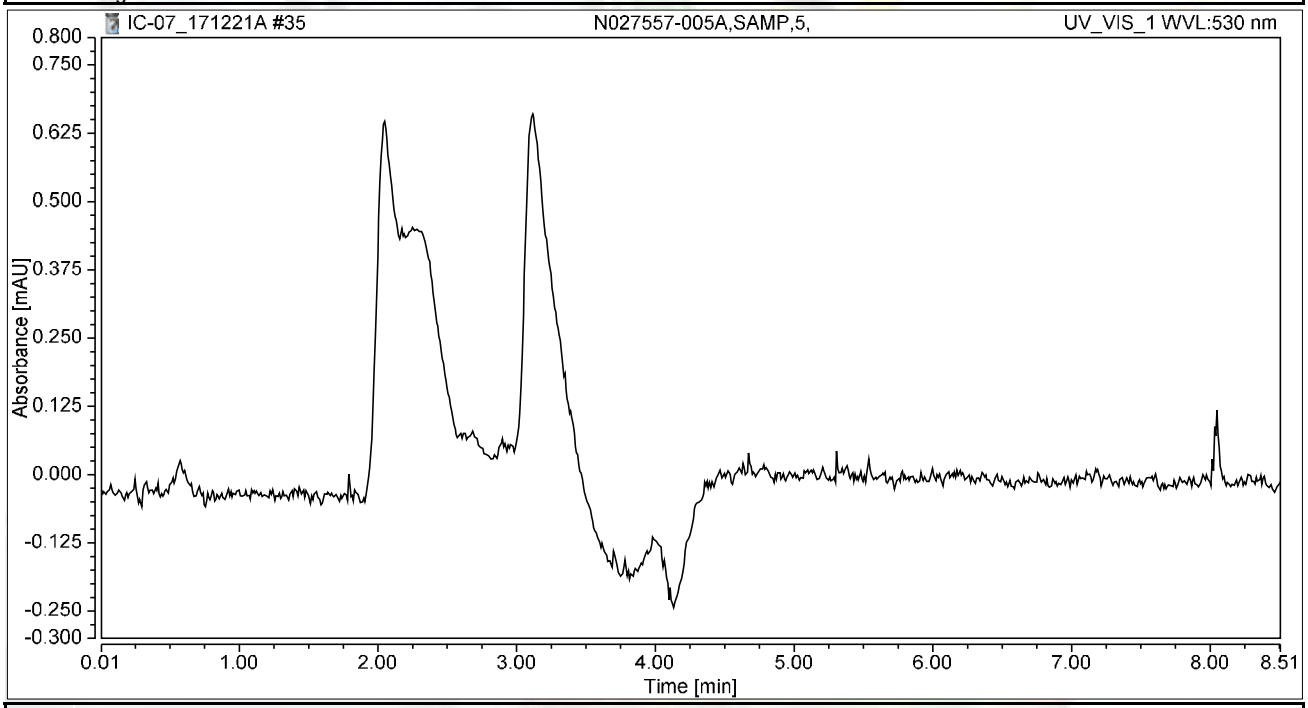
Chromatogram and Results

Injection Details

Injection Name:	**N027557-005A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 12:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

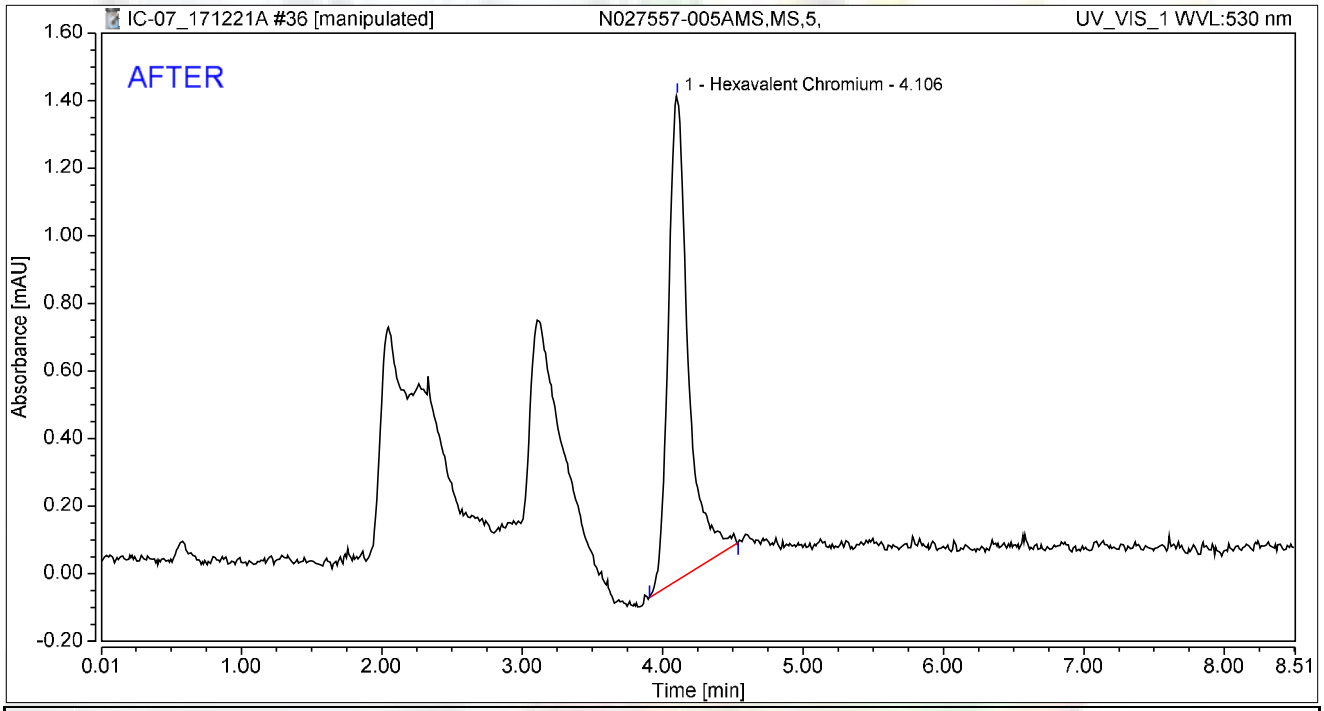
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027557-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 12:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.238	1.434	100.00	100.00	0.9492
Total:			**0.238**	**1.434**	**100.00**	**100.00**	

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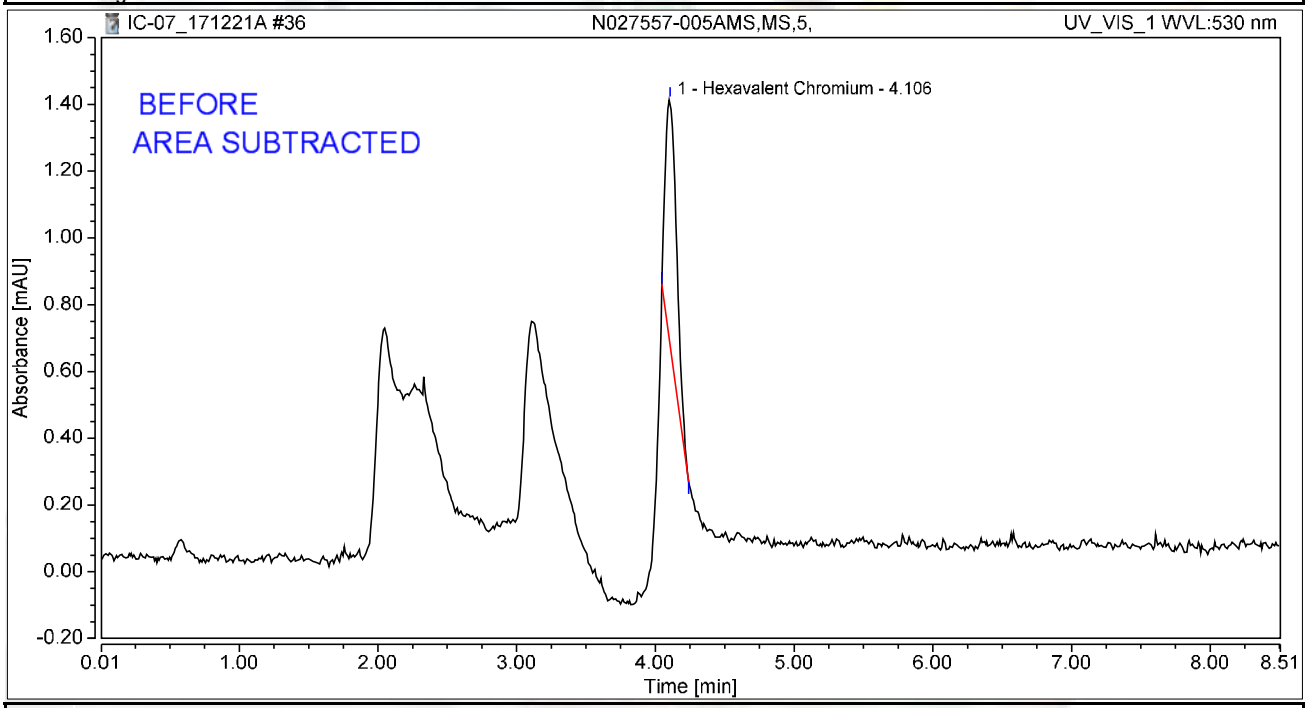
Chromatogram and Results

Injection Details

Injection Name:	**N027557-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 12:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.069	0.734	100.00	100.00	0.2742
Total:			**0.069**	**0.734**	**100.00**	**100.00**	

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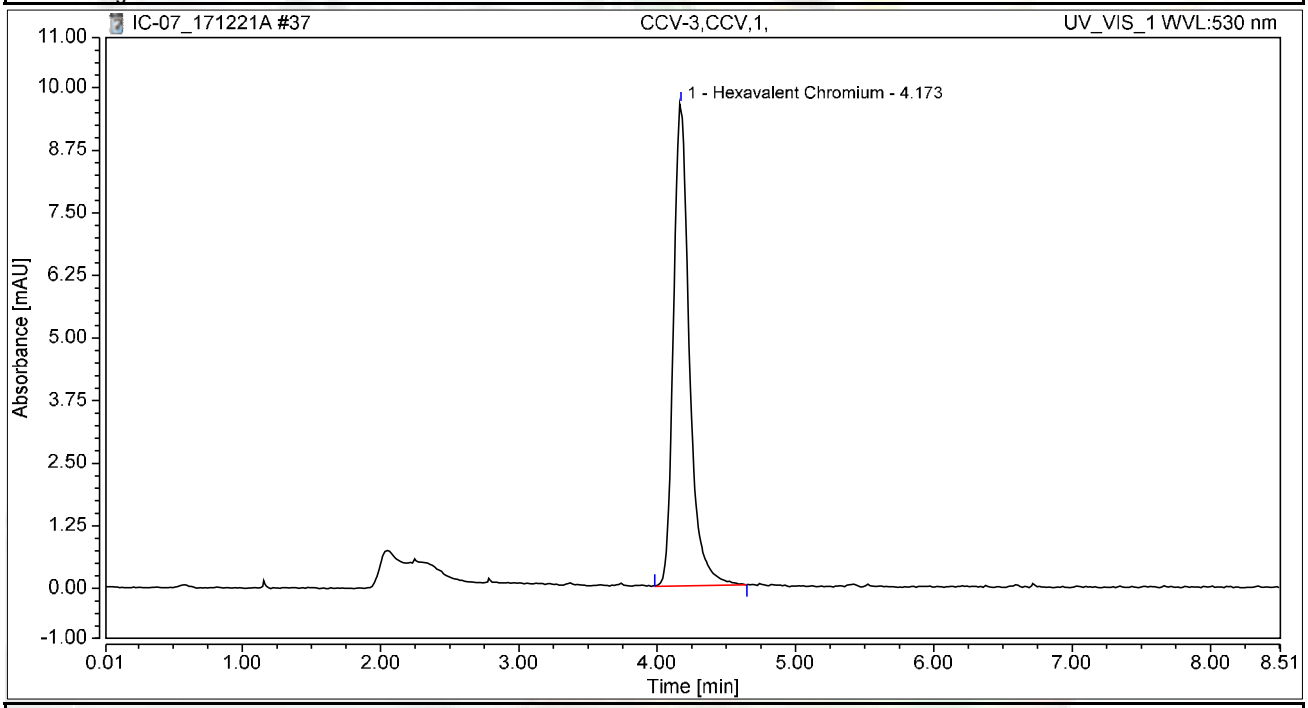
Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 13:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

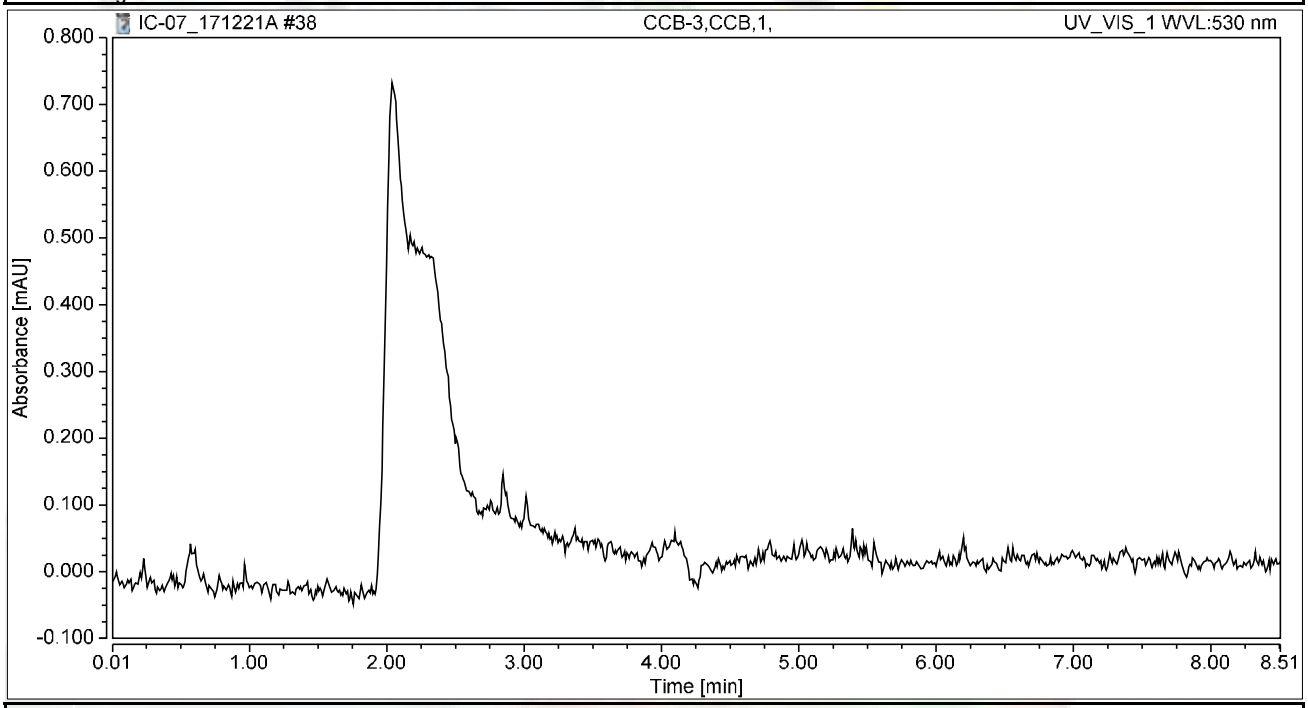
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.288	9.626	100.00	100.00	5.1280
Total:			**1.288**	**9.626**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 13:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

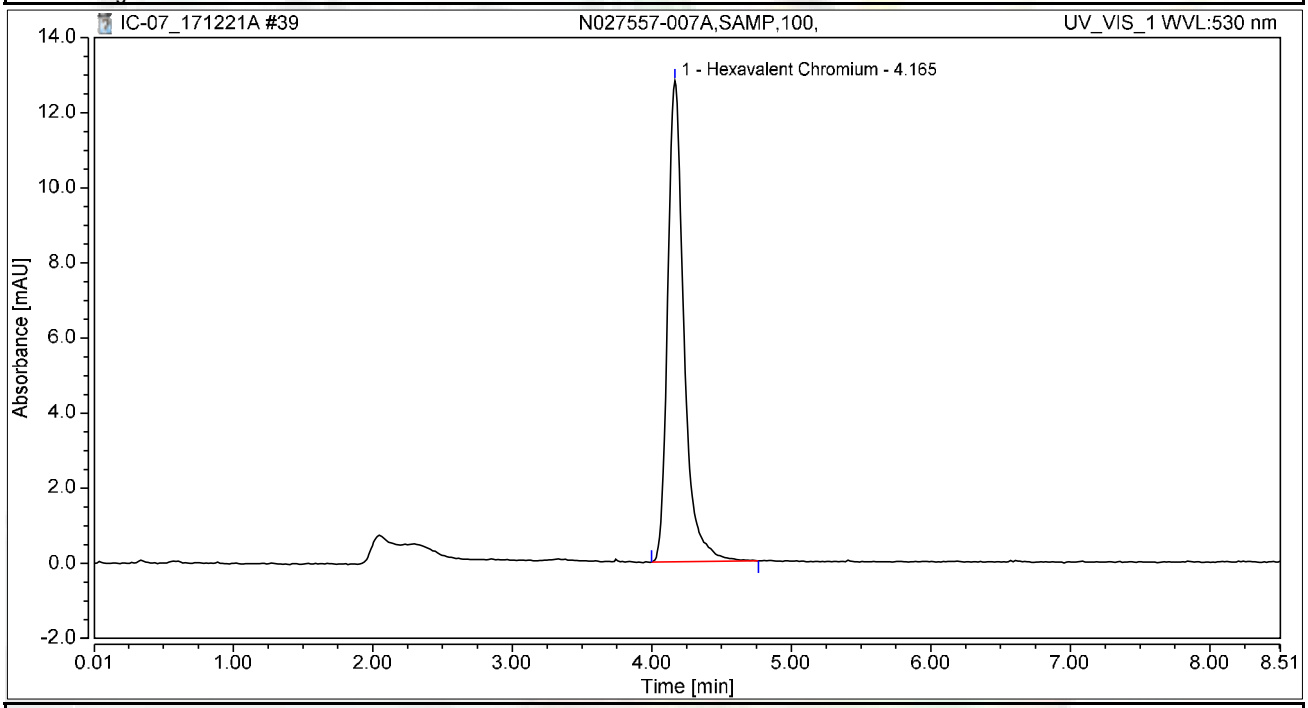
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027557-007A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 13:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

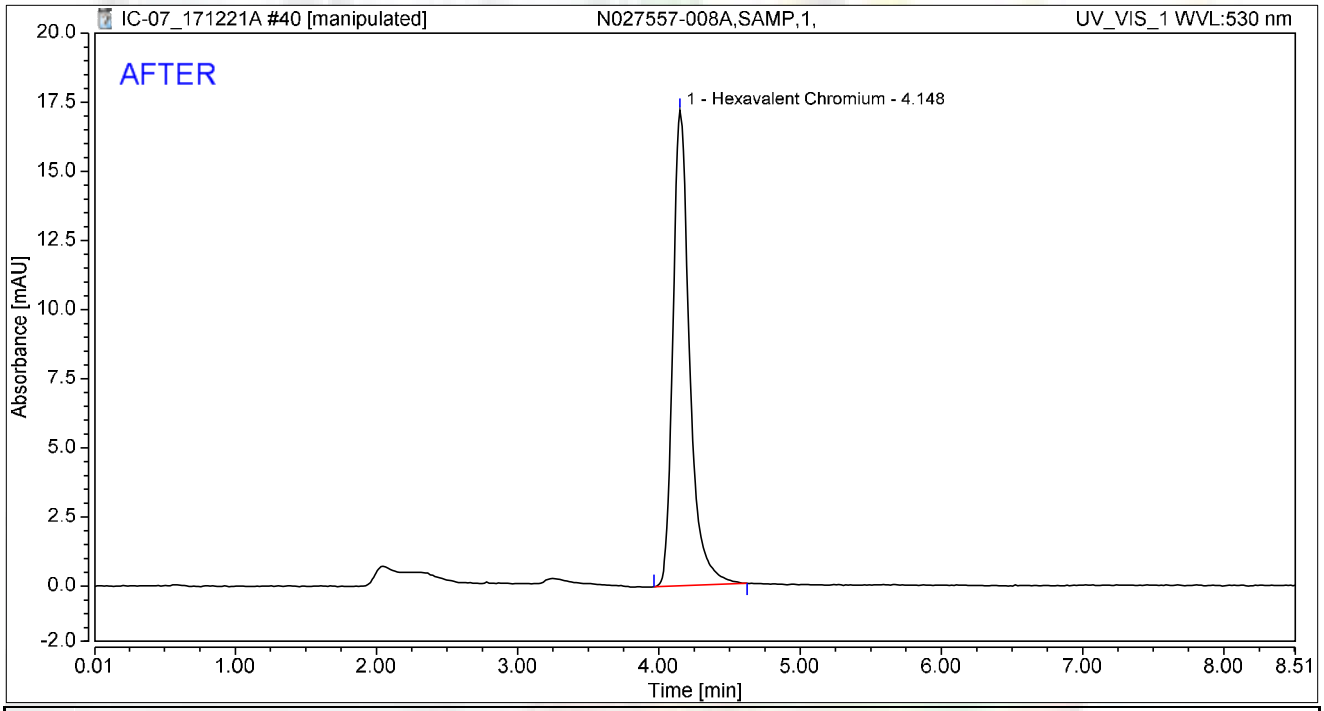
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.730	12.816	100.00	100.00	6.8906
Total:			**1.730**	**12.816**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027557-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 13:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.364	17.192	100.00	100.00	9.4133
Total:			**2.364**	**17.192**	**100.00**	**100.00**	

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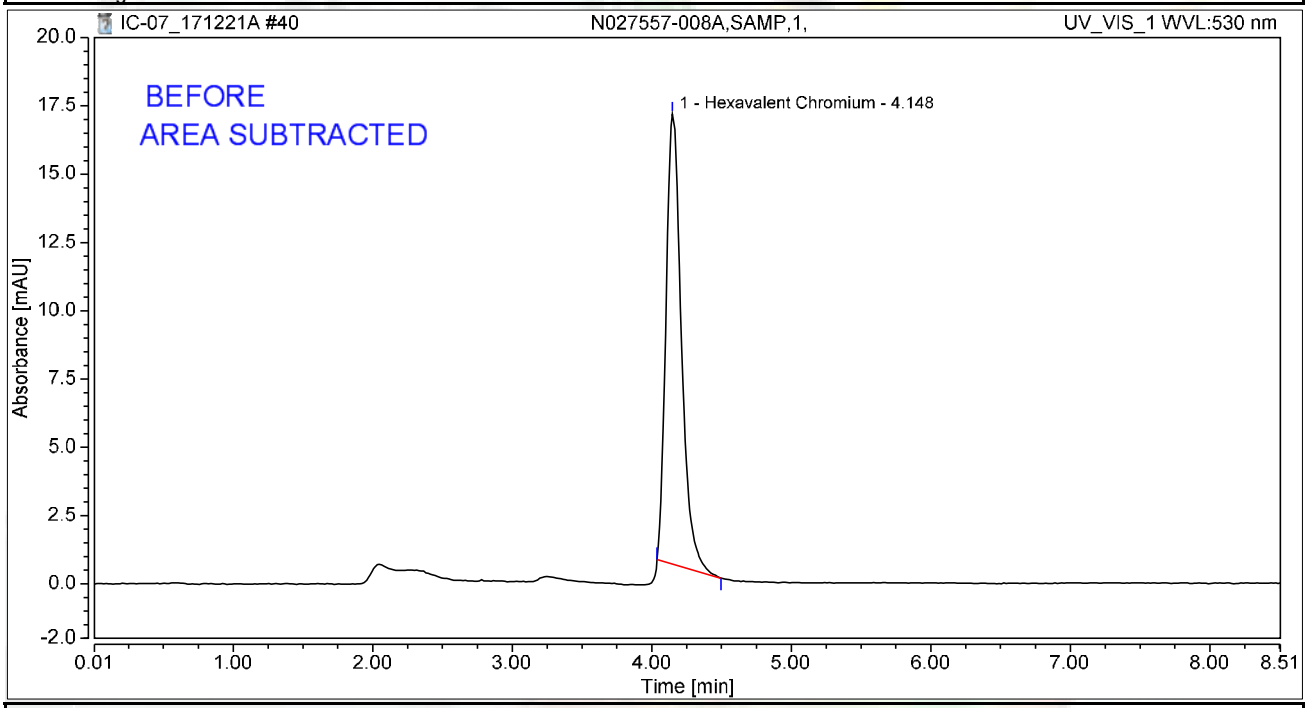
Chromatogram and Results

Injection Details

Injection Name:	**N027557-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 13:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.105	16.469	100.00	100.00	8.3851
Total:			**2.105**	**16.469**	**100.00**	**100.00**	

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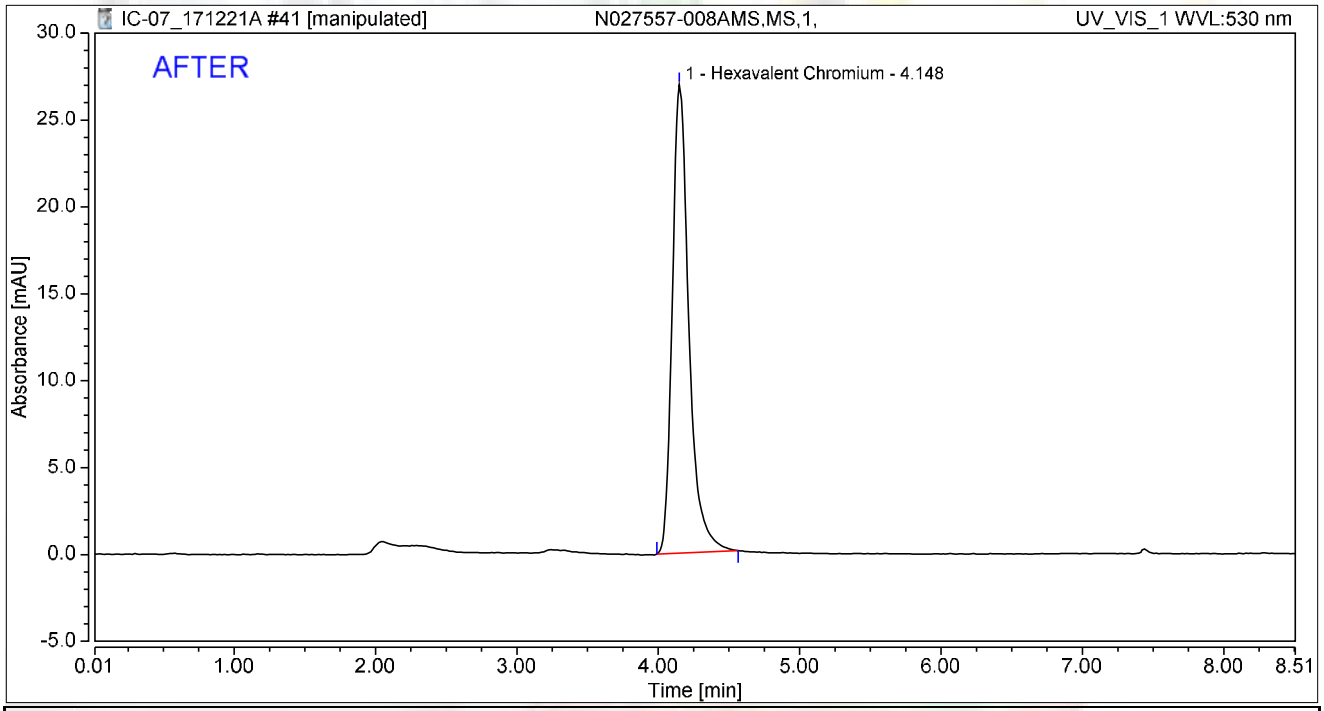
Chromatogram and Results

Injection Details

Injection Name:	**N027557-008AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 13:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	3.681	26.959	100.00	100.00	14.6580
Total:			**3.681**	**26.959**	**100.00**	**100.00**	

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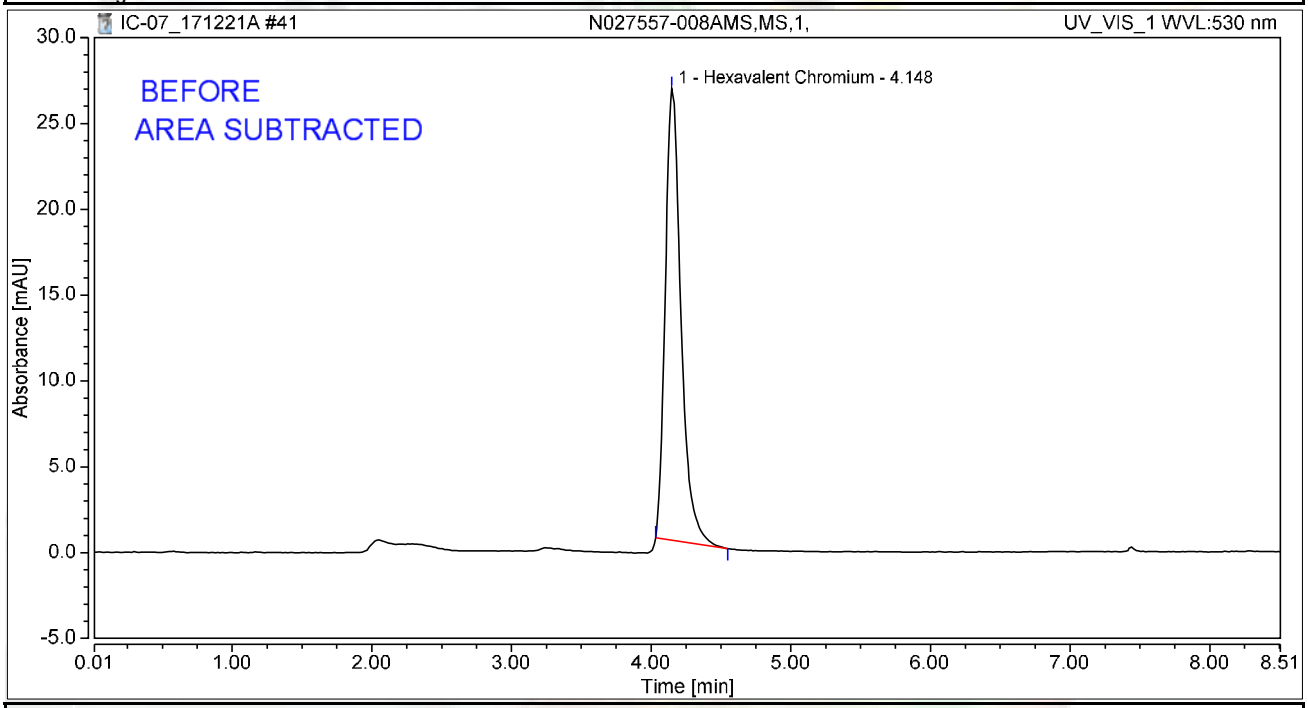
Chromatogram and Results

Injection Details

Injection Name:	**N027557-008AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 13:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	3.449	26.312	100.00	100.00	13.7345
Total:			**3.449**	**26.312**	**100.00**	**100.00**	

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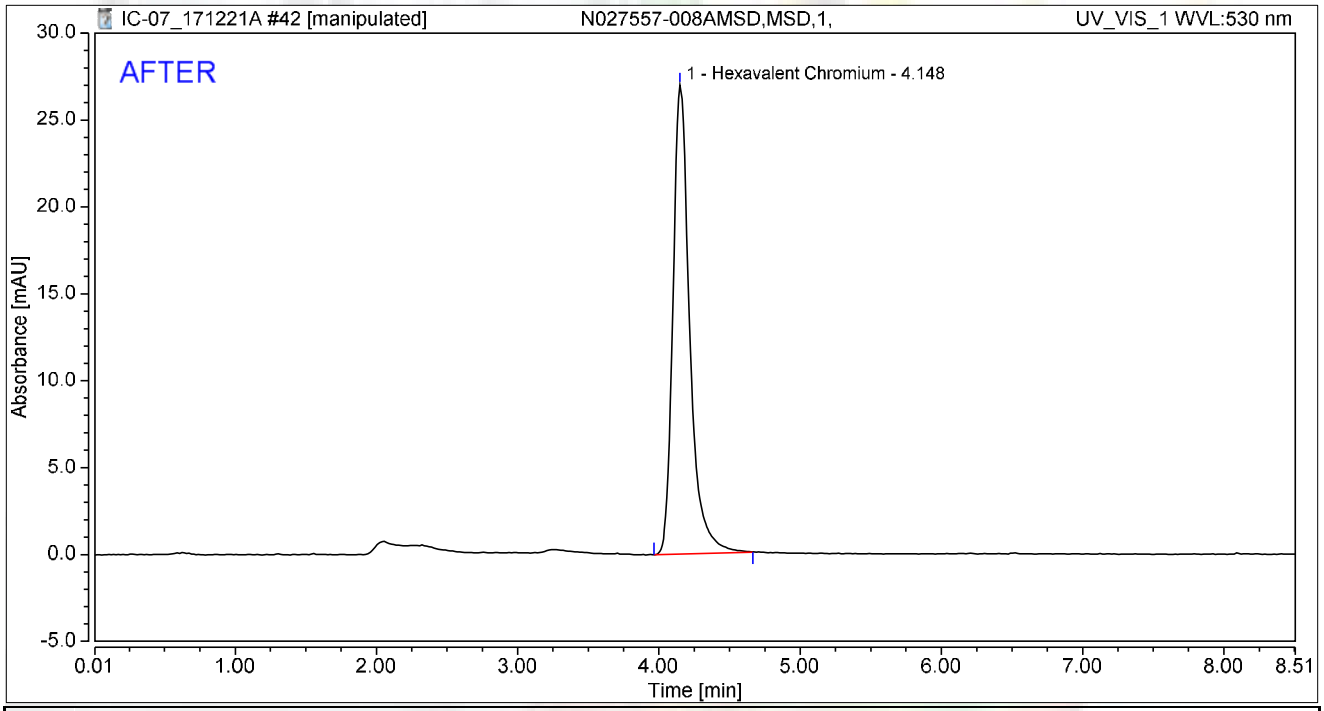
Chromatogram and Results

Injection Details

Injection Name:	**N027557-008AMSD,MSD,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 13:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	3.725	26.992	100.00	100.00	14.8359
Total:			**3.725**	**26.992**	**100.00**	**100.00**	

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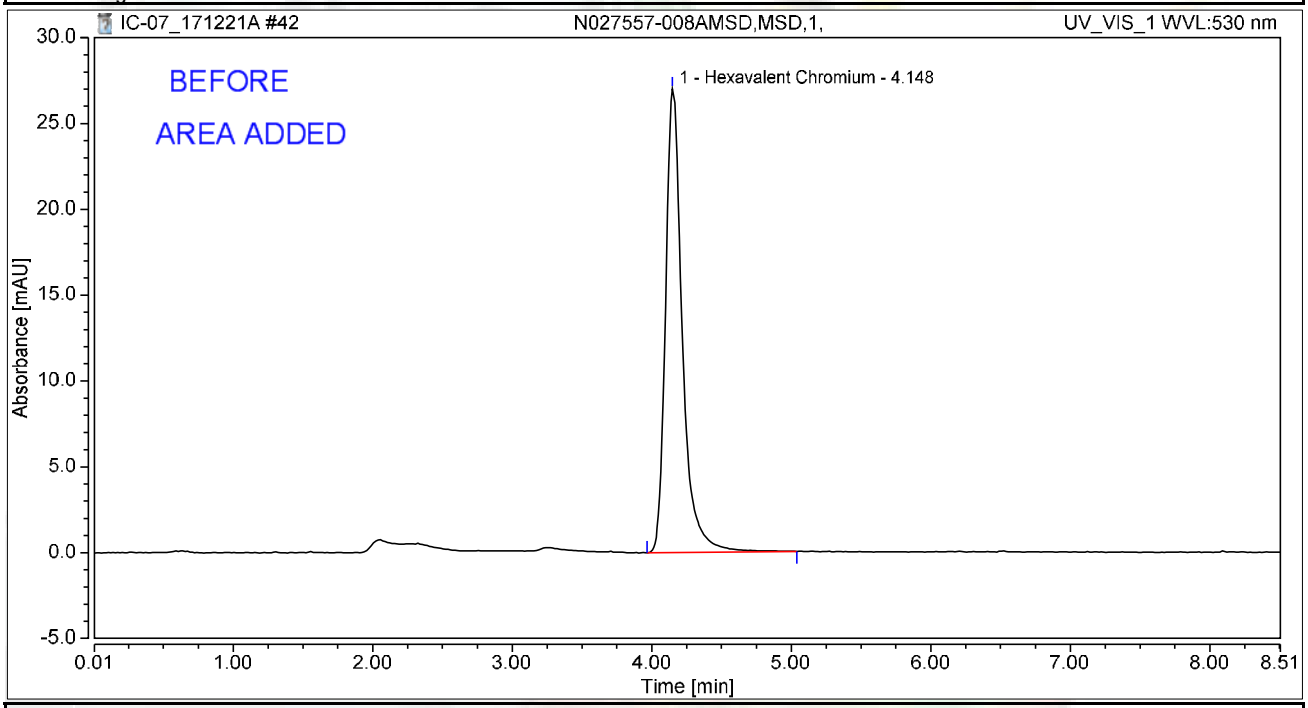
Chromatogram and Results

Injection Details

Injection Name:	**N027557-008AMSD,MSD,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 13:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	3.778	27.018	100.00	100.00	15.0461
Total:			**3.778**	**27.018**	**100.00**	**100.00**	

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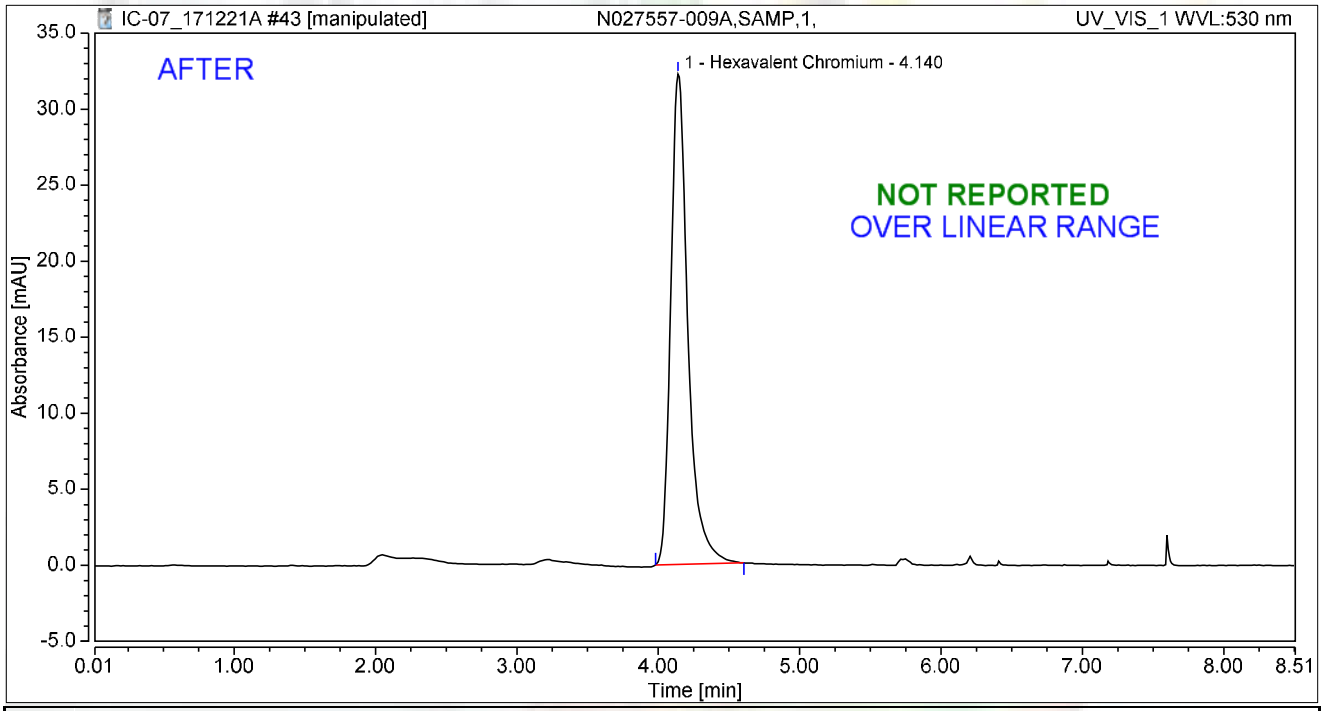
Chromatogram and Results

Injection Details

Injection Name:	**N027557-009A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 14:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	4.549	32.256	100.00	100.00	18.1184
Total:			**4.549**	**32.256**	**100.00**	**100.00**	

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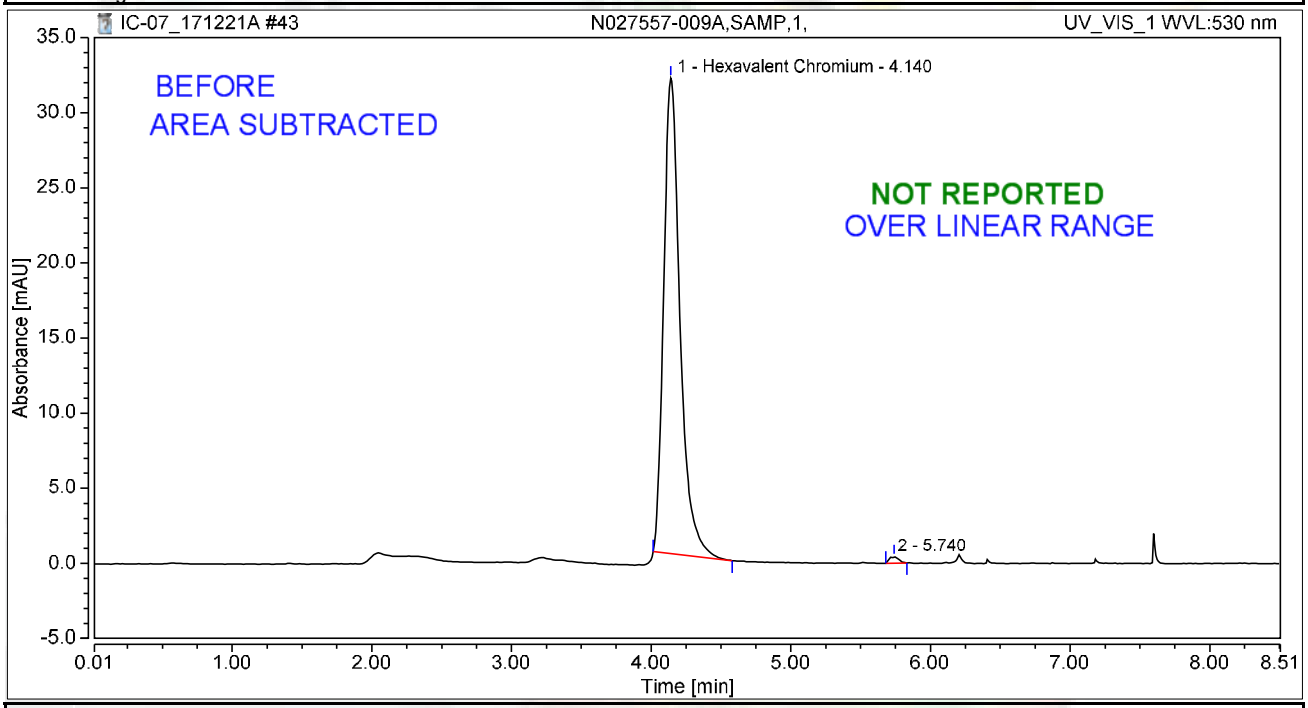
Chromatogram and Results

Injection Details

Injection Name:	**N027557-009A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 14:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	4.318	31.655	99.24	98.62	17.1951
2		5.740	0.033	0.443	0.76	1.38	n.a.
Total:			**4.351**	**32.099**	**100.00**	**100.00**	

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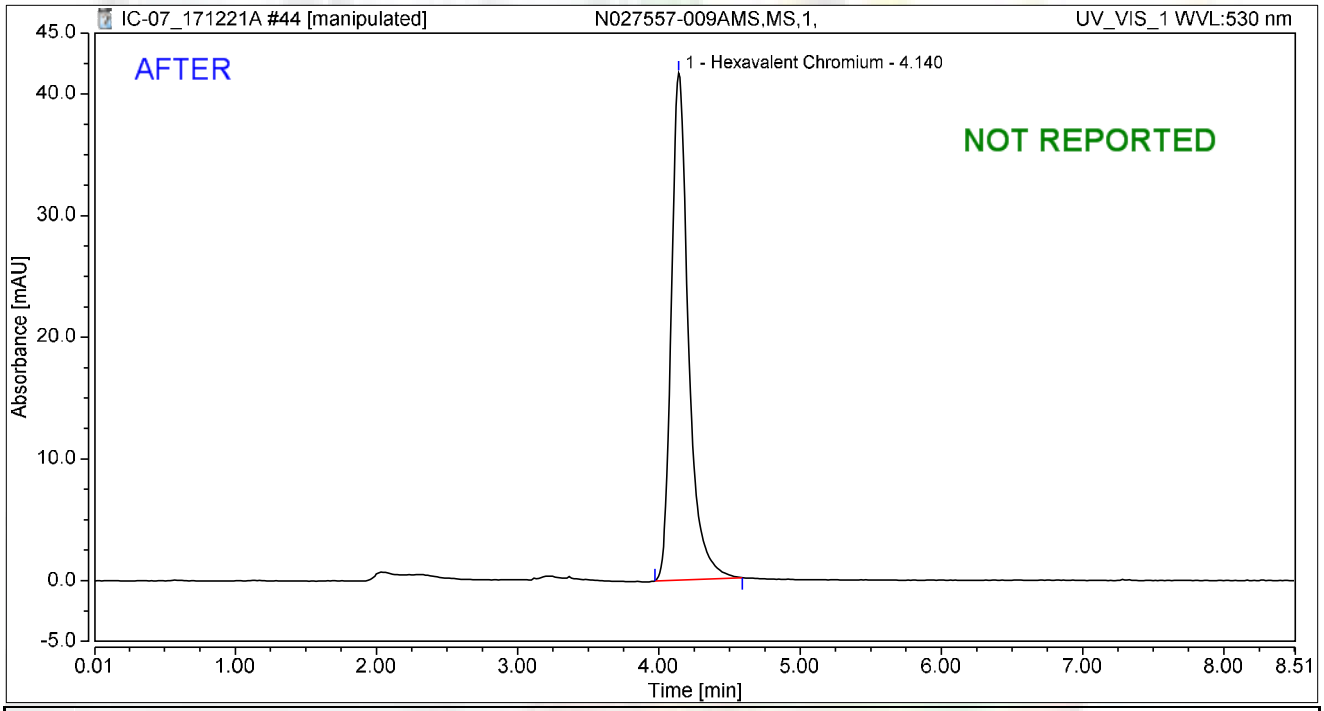
Chromatogram and Results

Injection Details

Injection Name:	**N027557-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 14:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	5.875	41.659	100.00	100.00	23.3966
Total:			**5.875**	**41.659**	**100.00**	**100.00**	

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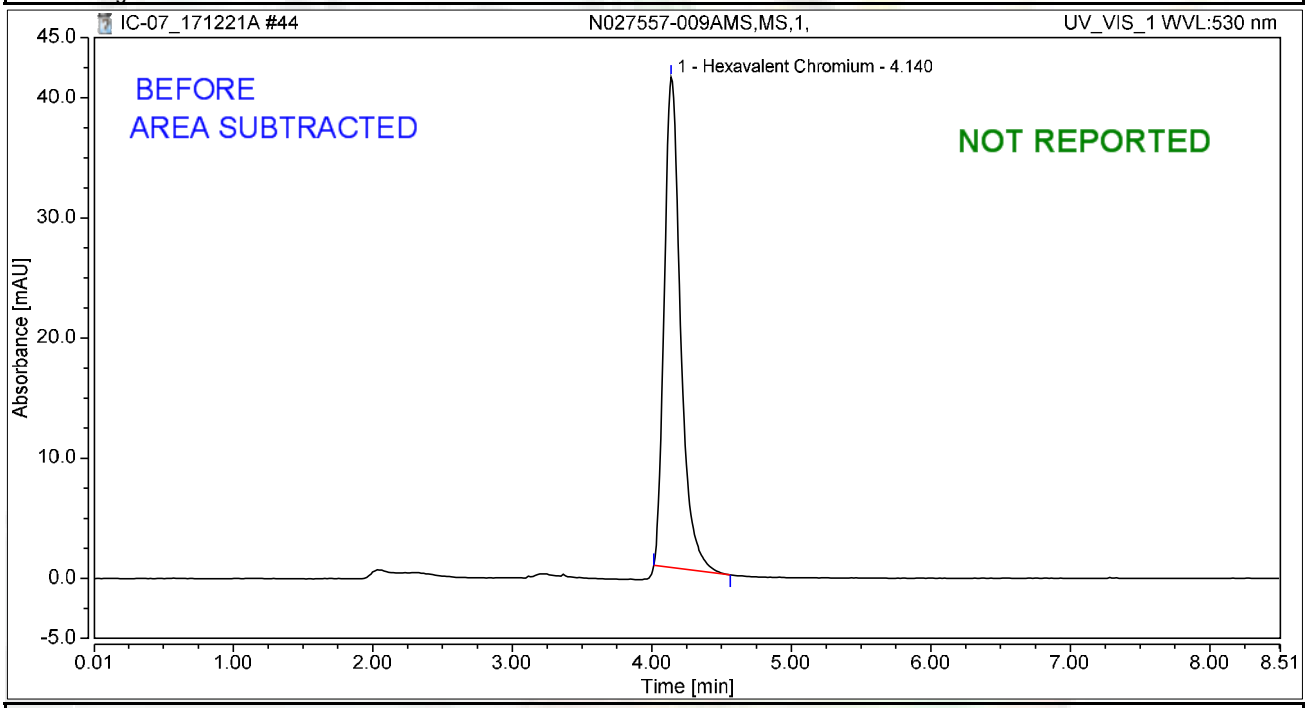
Chromatogram and Results

Injection Details

Injection Name:	**N027557-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 14:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	5.549	40.808	100.00	100.00	22.1004
Total:			**5.549**	**40.808**	**100.00**	**100.00**	

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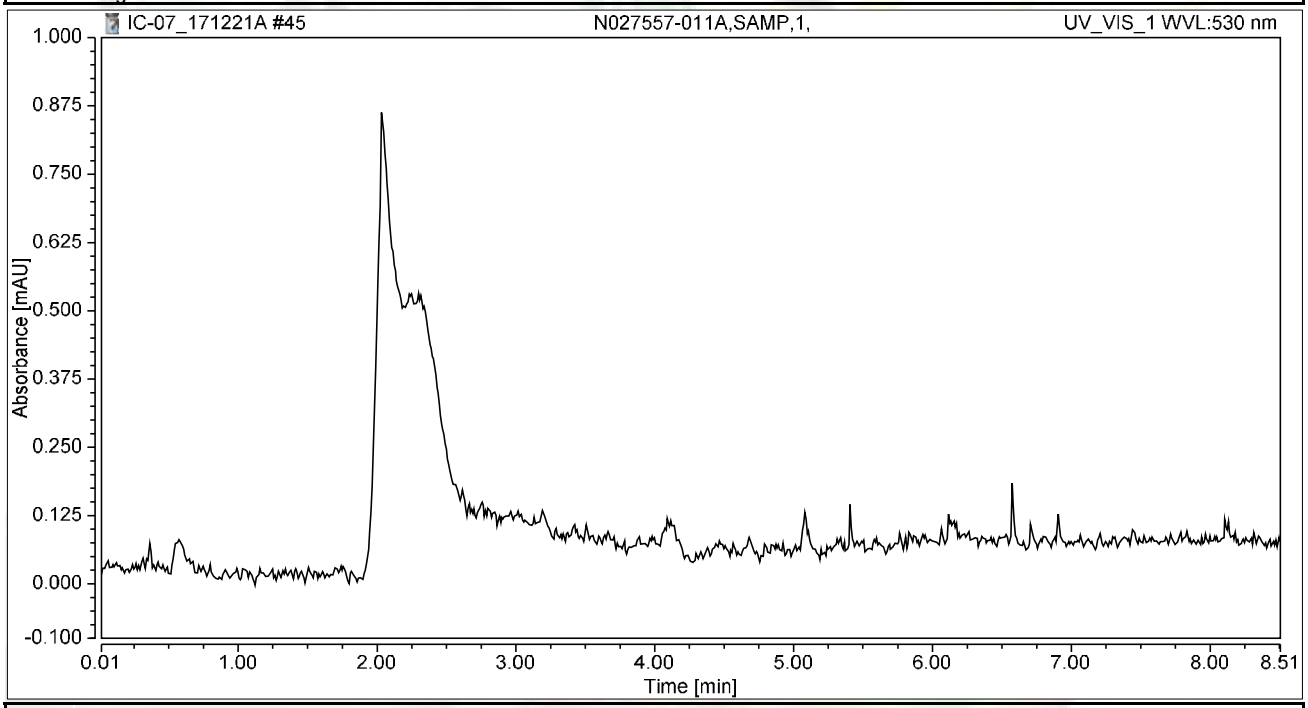
Chromatogram and Results

Injection Details

Injection Name:	**N027557-011A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 14:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

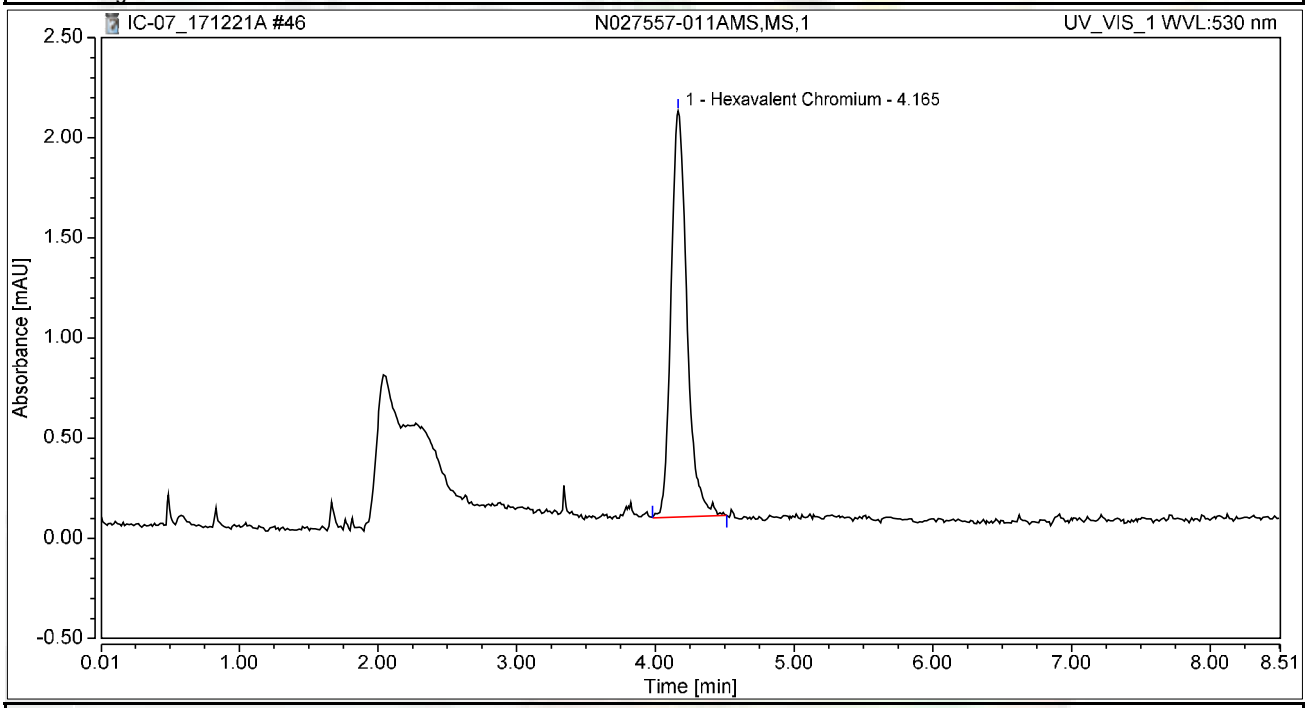
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027557-011AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 14:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

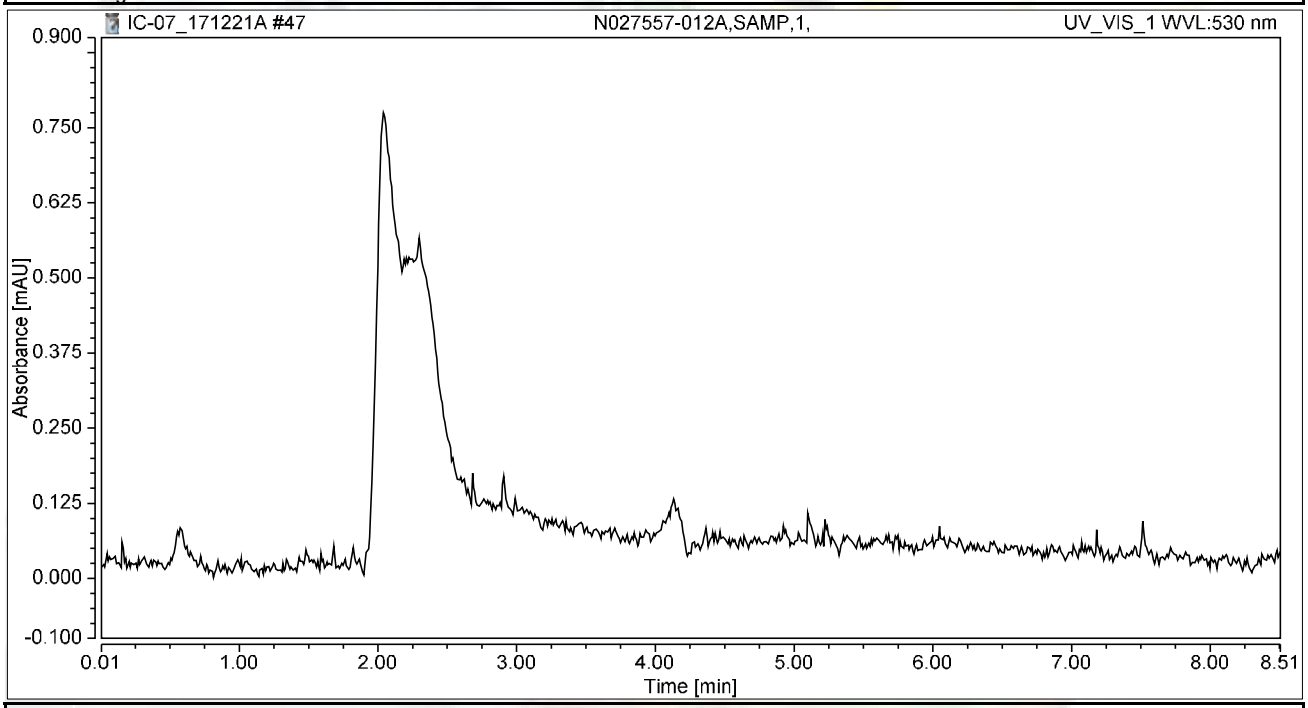
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.269	2.028	100.00	100.00	1.0723
Total:			**0.269**	**2.028**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027557-012A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 14:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

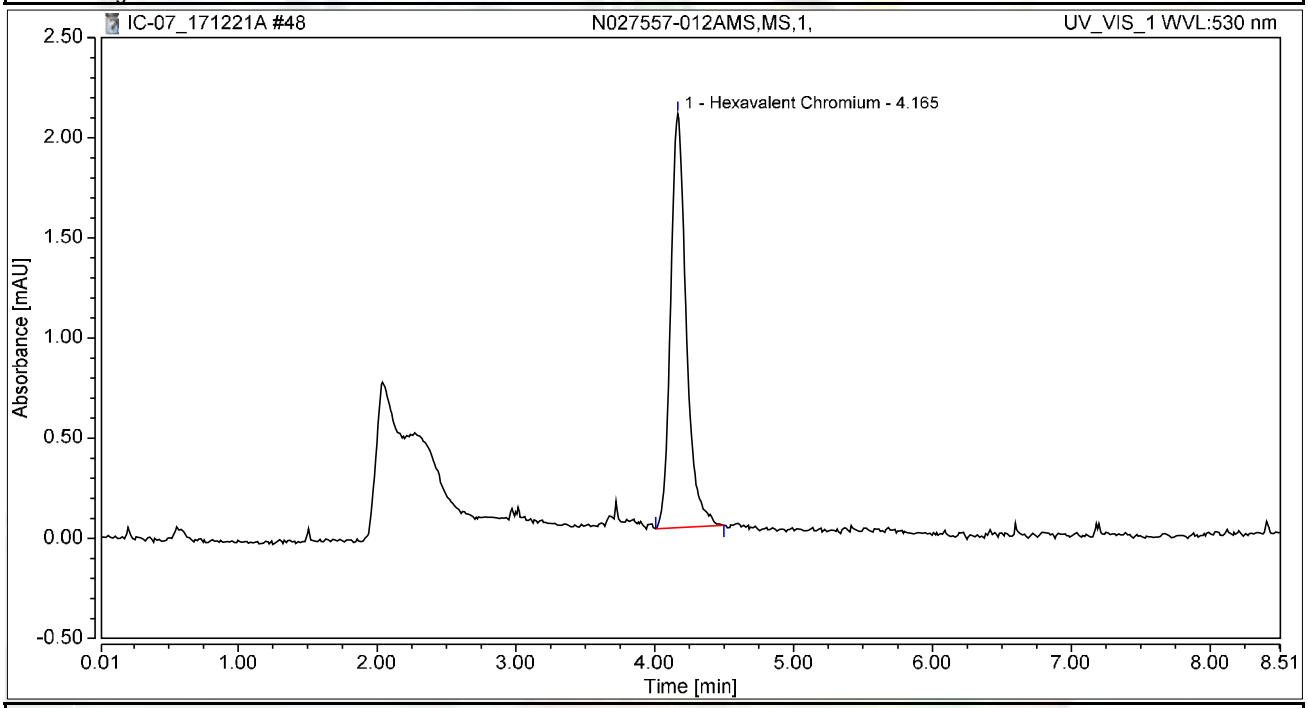
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027557-012AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 14:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

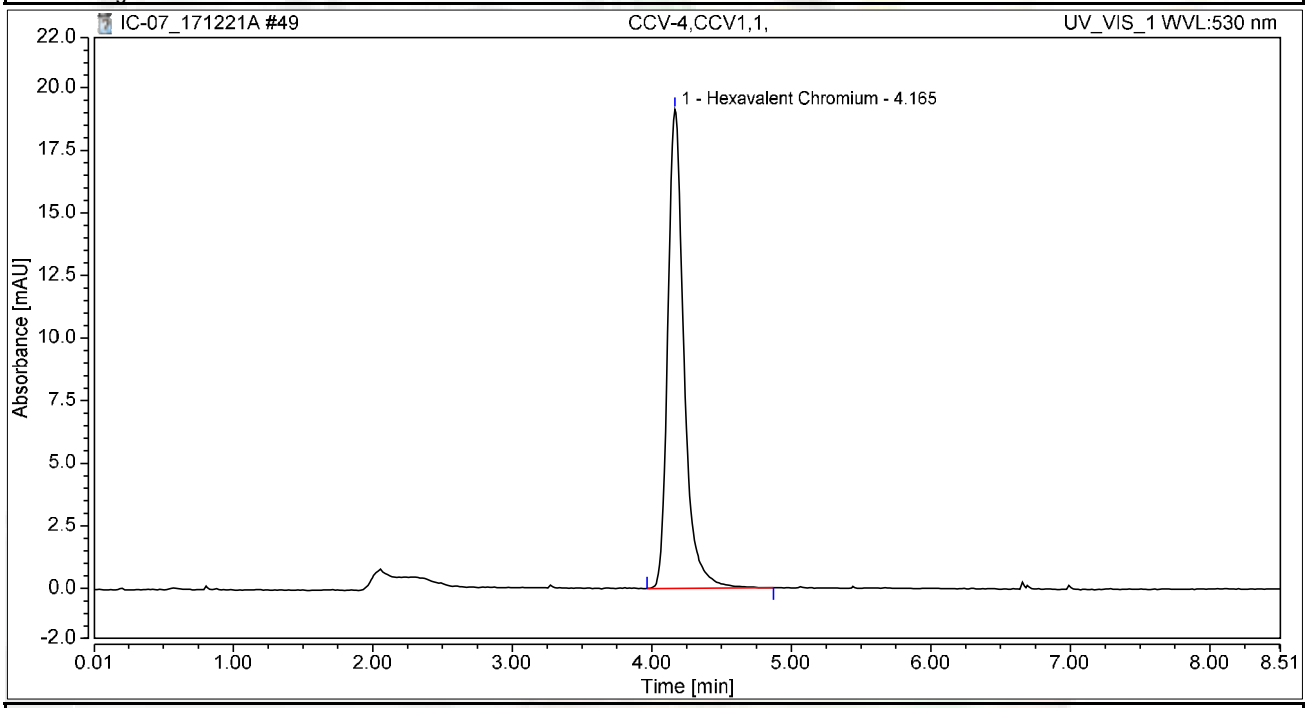
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.271	2.067	100.00	100.00	1.0777
Total:			**0.271**	**2.067**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 15:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

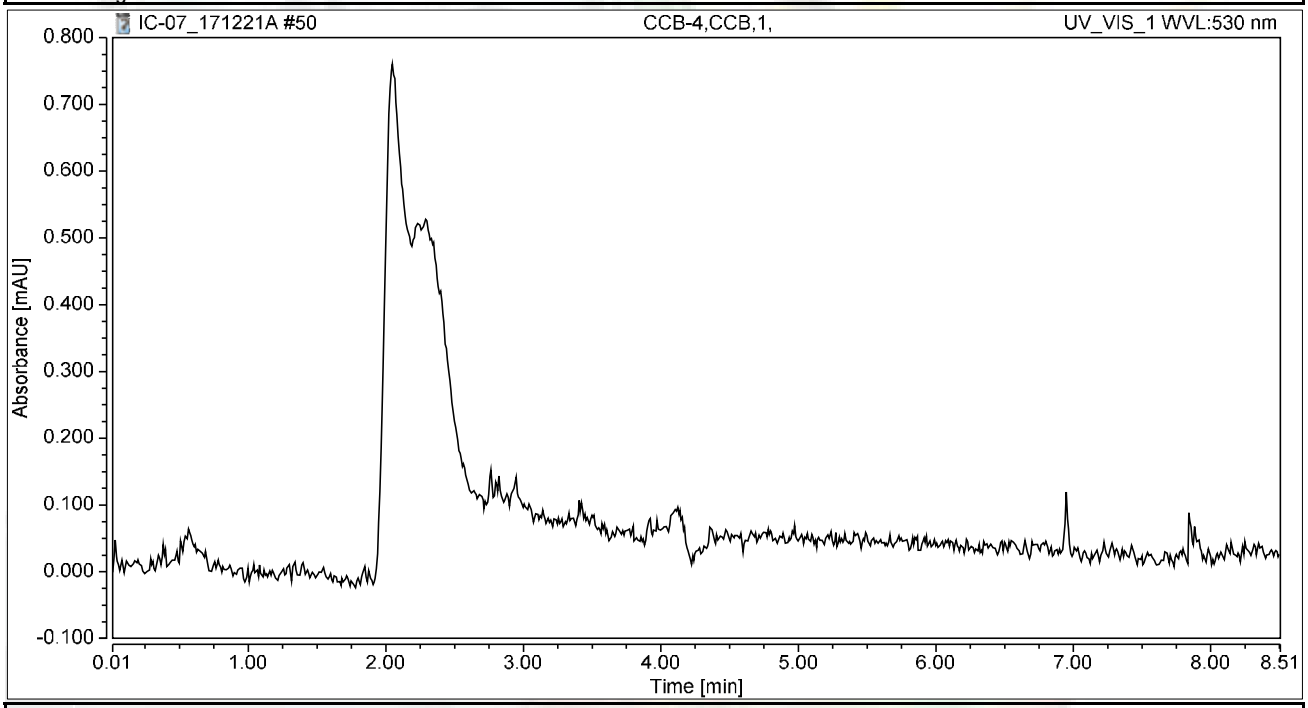
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.574	19.143	100.00	100.00	10.2524
Total:			**2.574**	**19.143**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 15:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

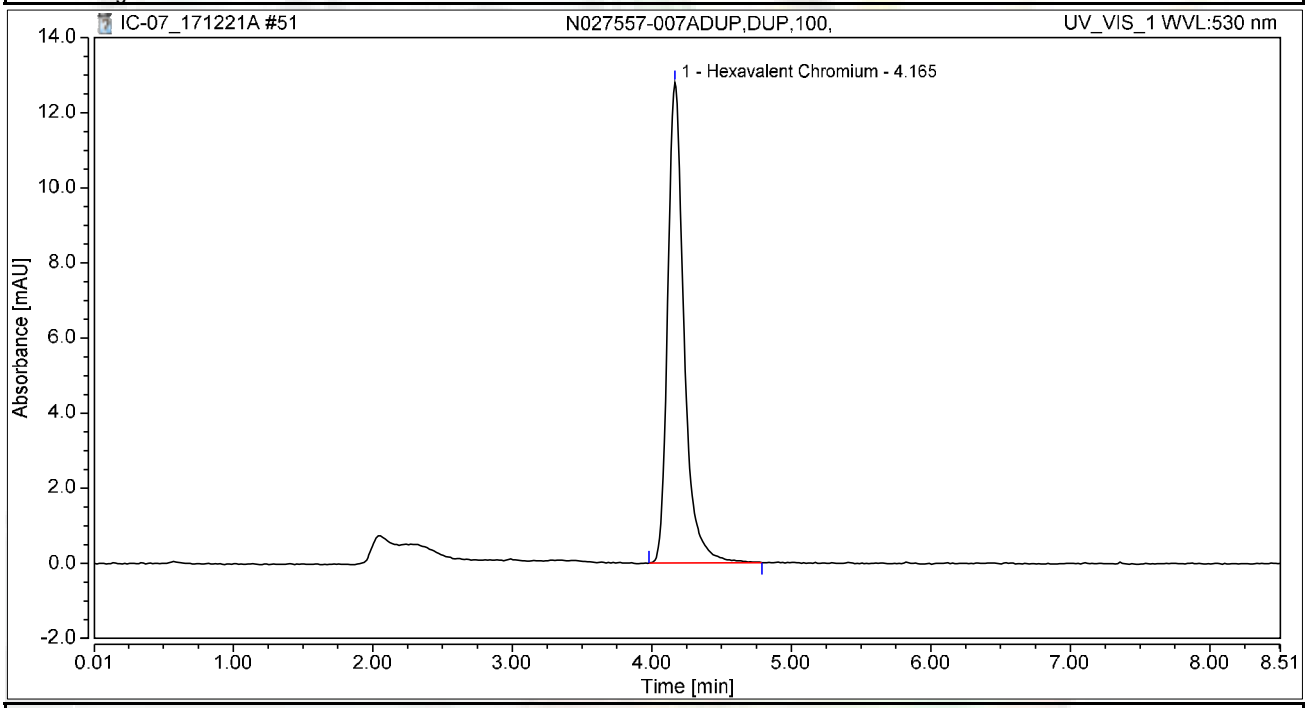
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027557-007ADUP,DUP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 15:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

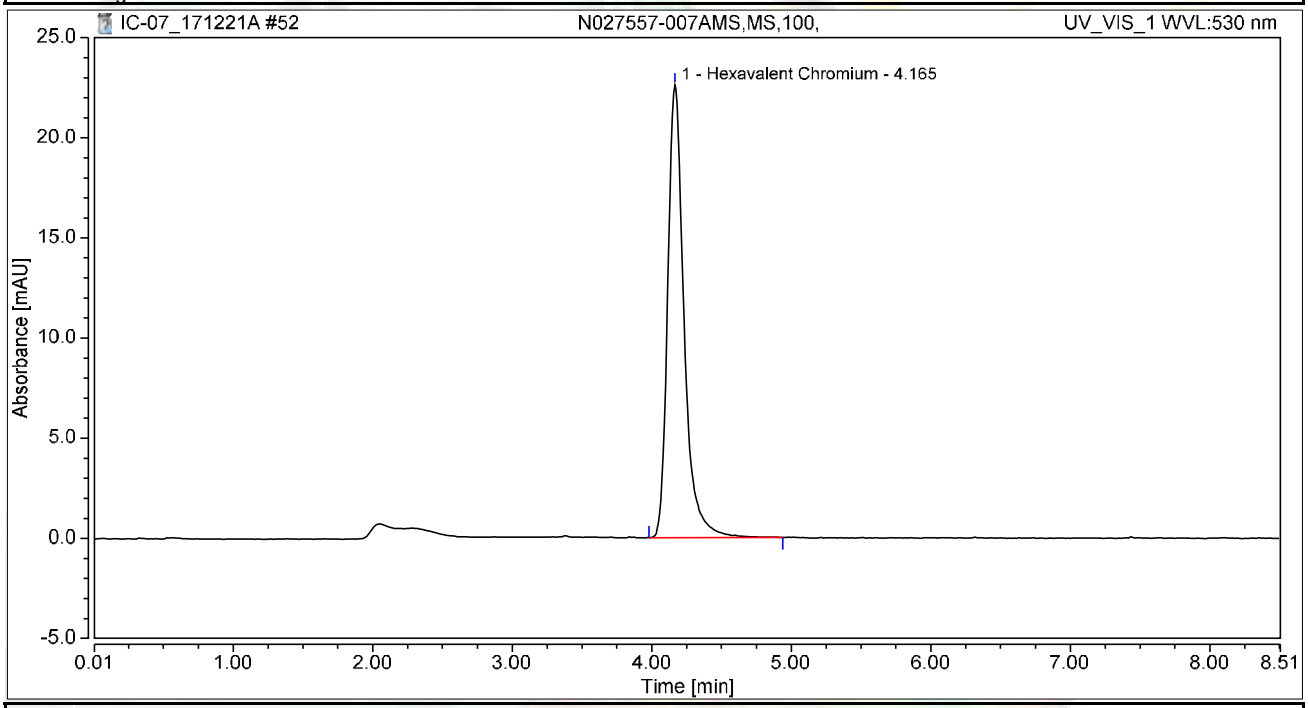
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.732	12.787	100.00	100.00	6.8961
Total:			**1.732**	**12.787**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027557-007AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 15:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

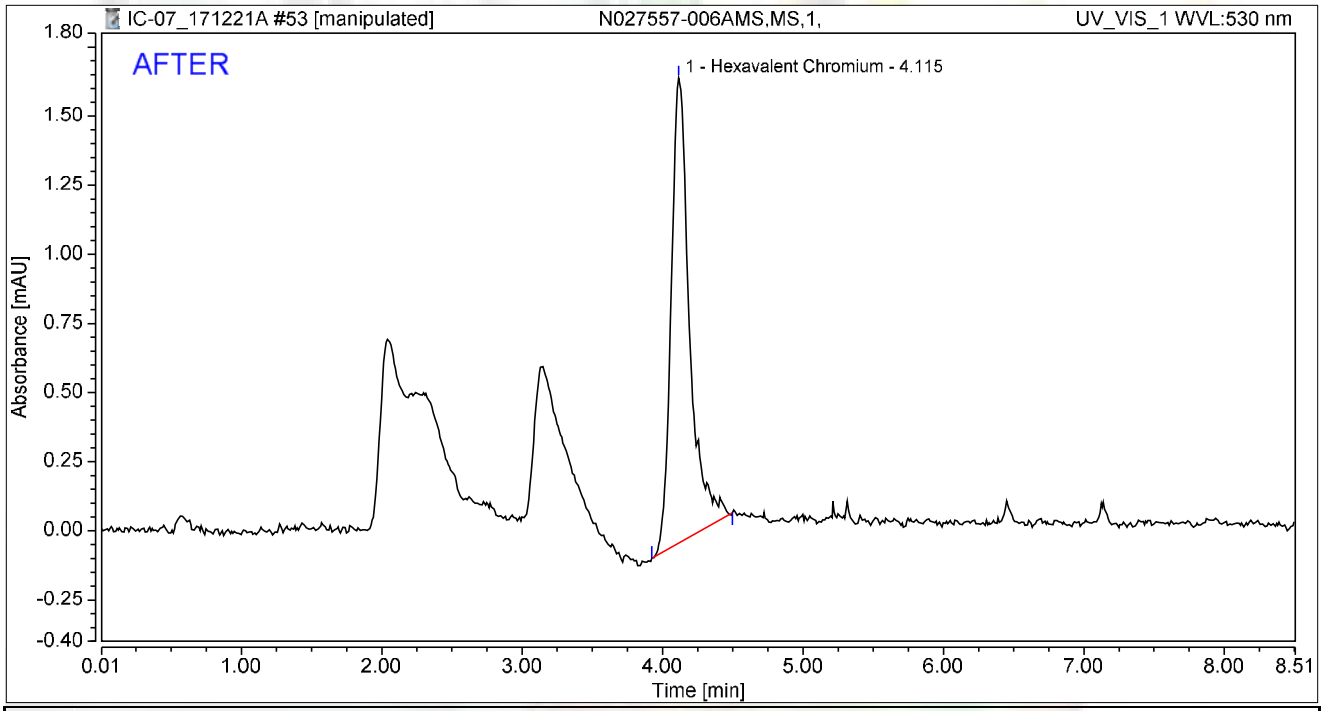
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	3.073	22.618	100.00	100.00	12.2382
Total:			**3.073**	**22.618**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027557-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 15:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.257	1.683	100.00	100.00	1.0229
Total:			**0.257**	**1.683**	**100.00**	**100.00**	

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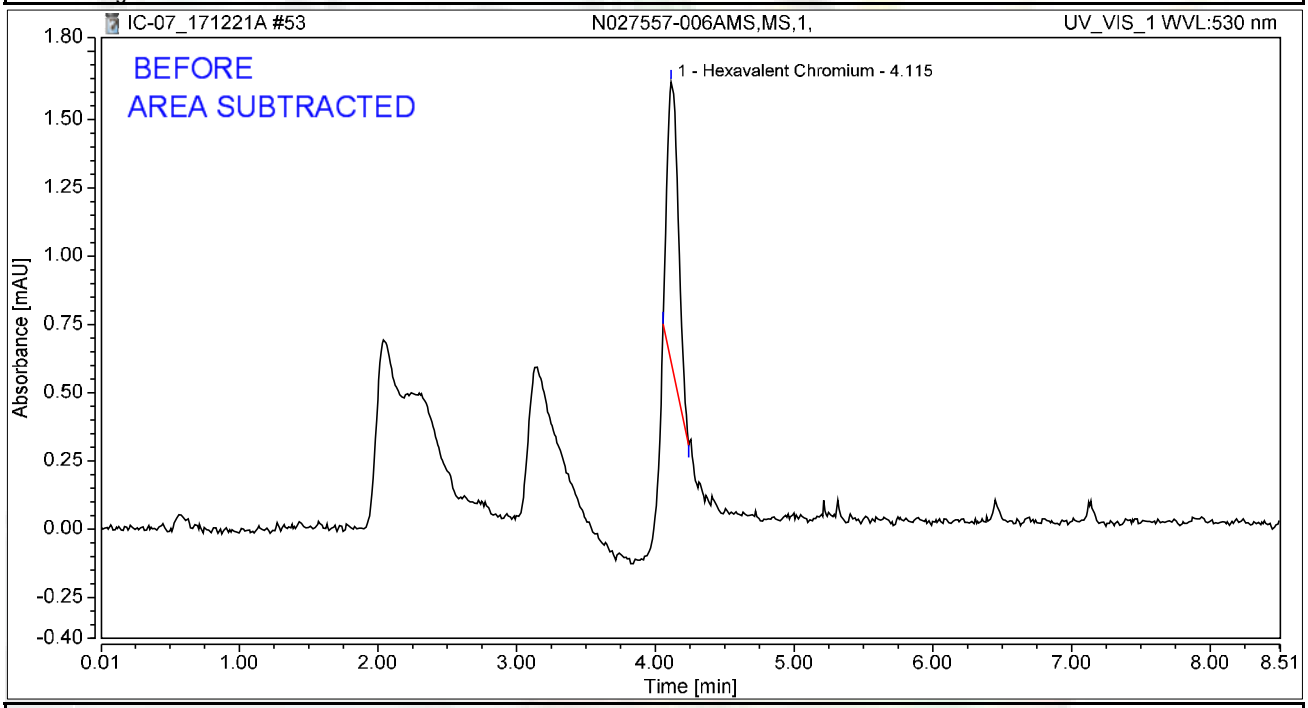
Chromatogram and Results

Injection Details

Injection Name:	**N027557-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 15:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.099	1.027	100.00	100.00	0.3958
Total:			**0.099**	**1.027**	**100.00**	**100.00**	

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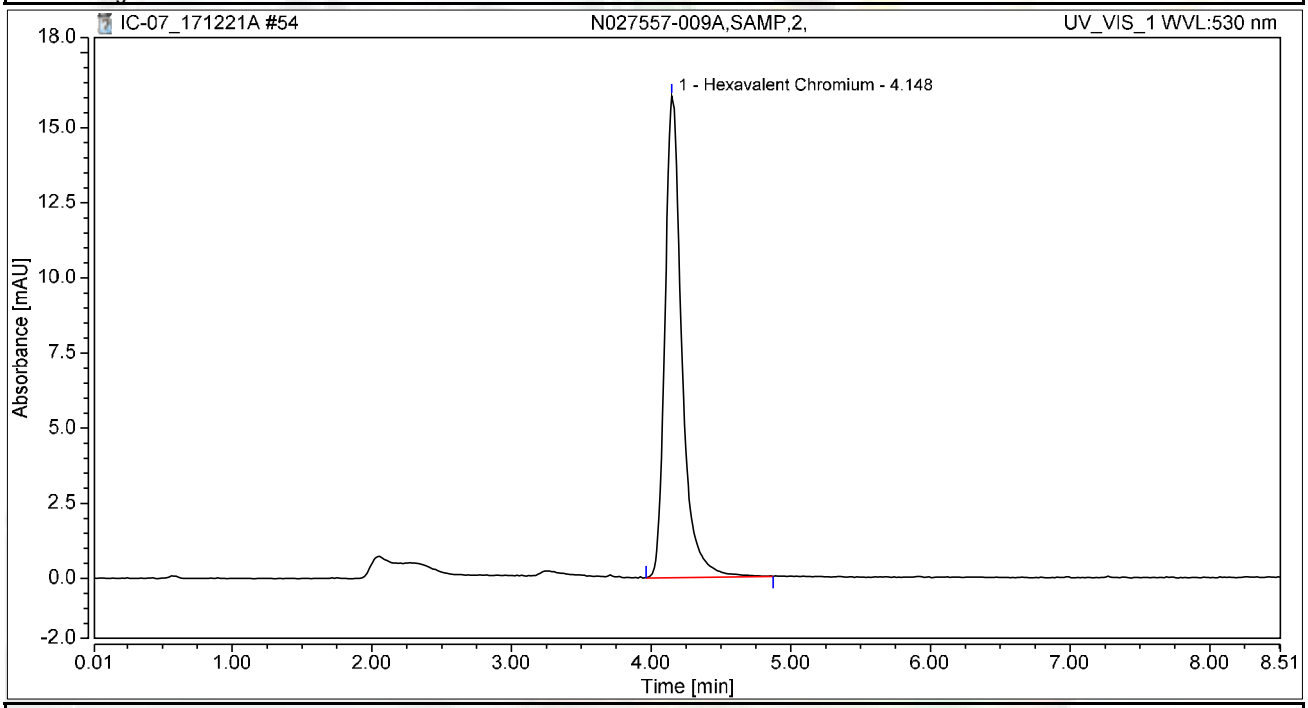
Chromatogram and Results

Injection Details

Injection Name:	**N027557-009A,SAMP,2,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 15:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

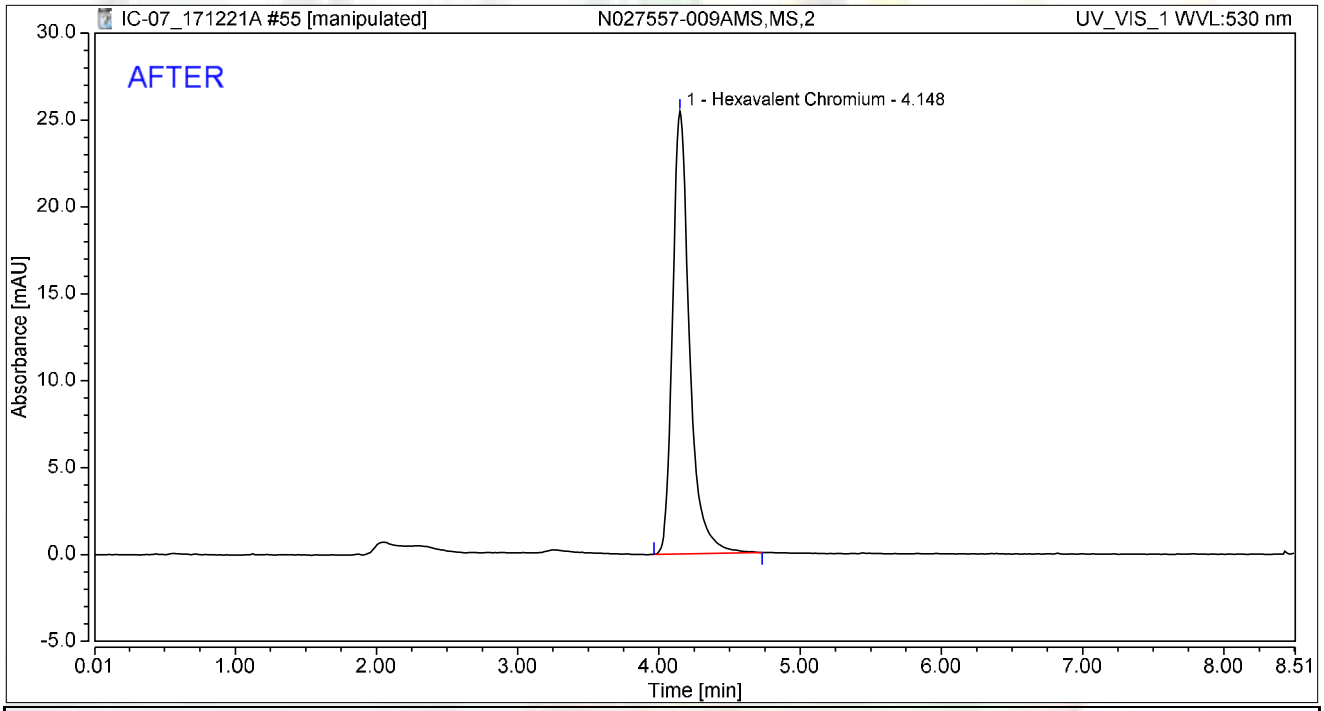
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.258	16.030	100.00	100.00	8.9936
Total:			**2.258**	**16.030**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027557-009AMS,MS,2**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 16:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	3.563	25.478	100.00	100.00	14.1881
Total:			**3.563**	**25.478**	**100.00**	**100.00**	

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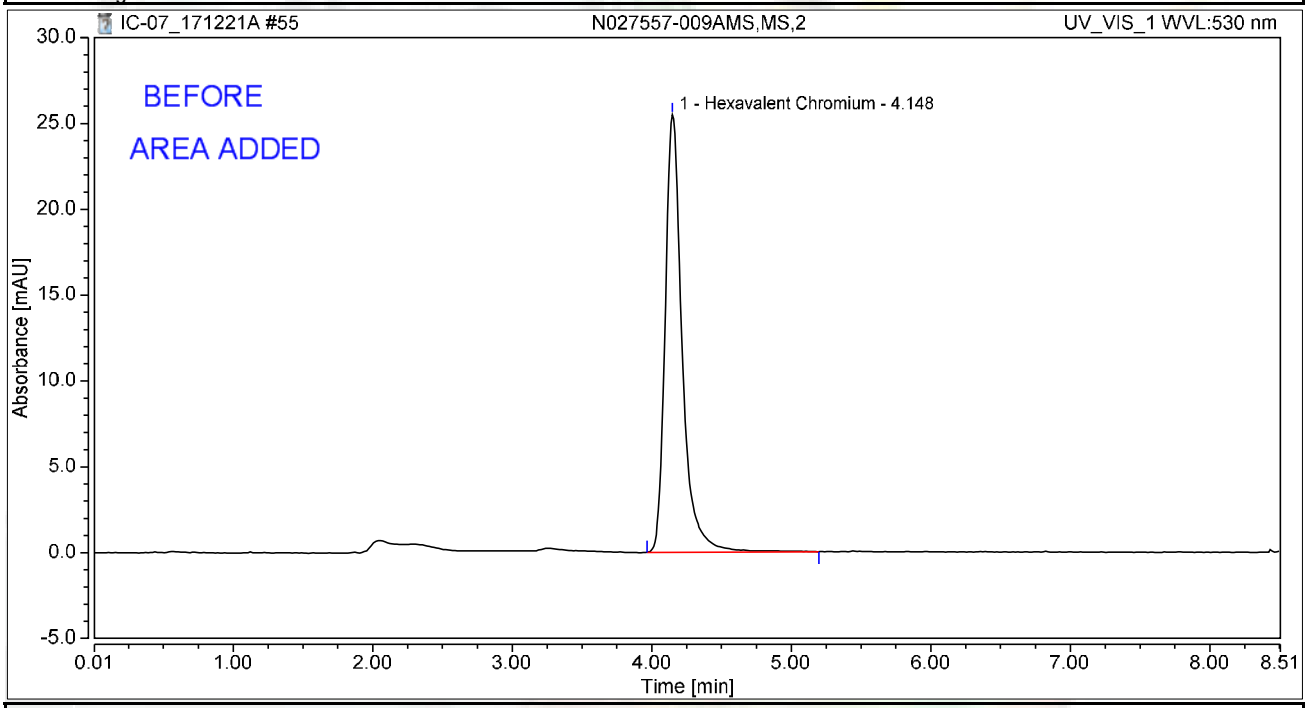
Chromatogram and Results

Injection Details

Injection Name:	**N027557-009AMS,MS,2**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 16:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	3.609	25.496	100.00	100.00	14.3743
Total:			**3.609**	**25.496**	**100.00**	**100.00**	

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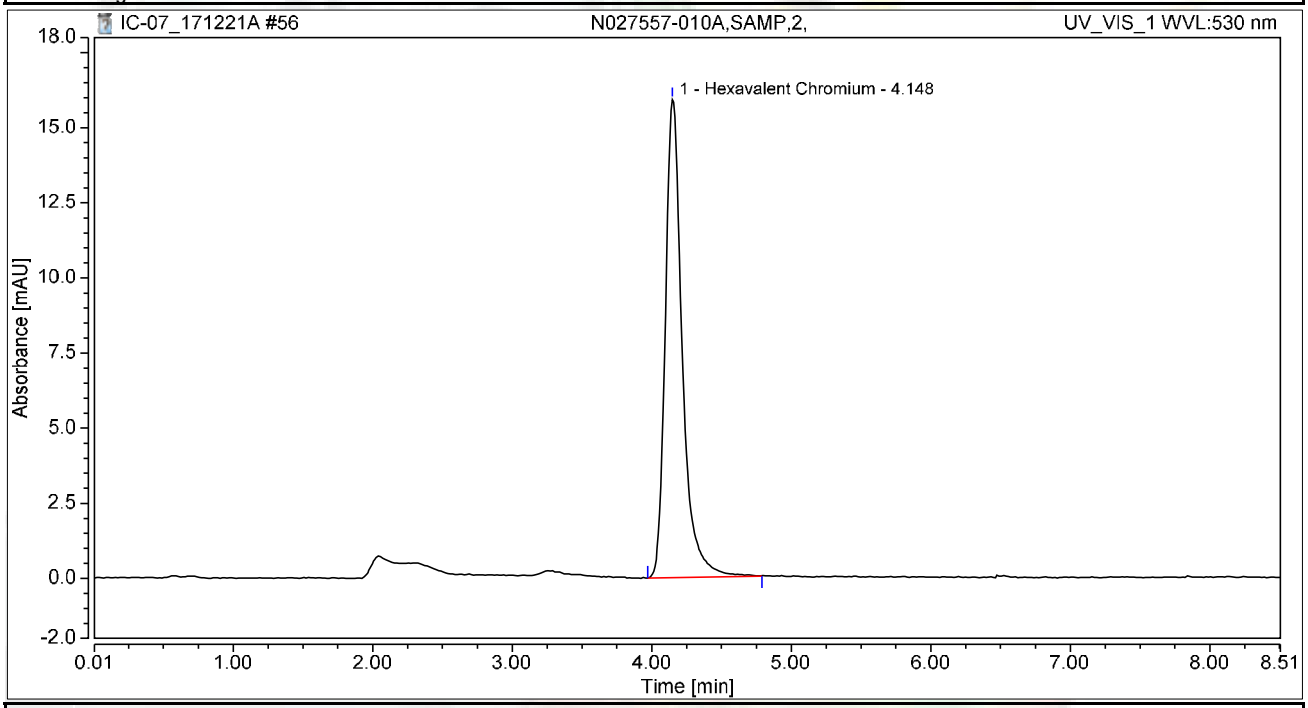
Chromatogram and Results

Injection Details

Injection Name:	**N027557-010A,SAMP,2,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 16:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

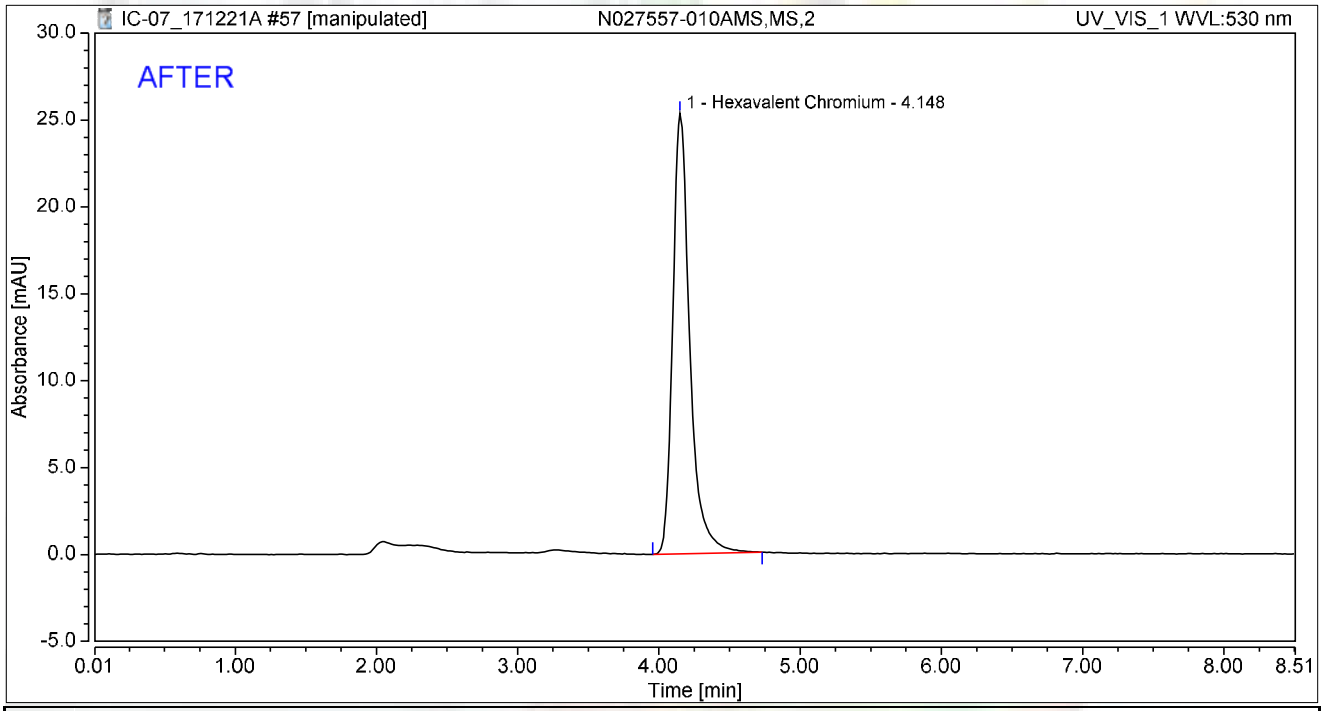
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.239	15.906	100.00	100.00	8.9183
Total:			**2.239**	**15.906**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027557-010AMS,MS,2**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 16:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	3.549	25.334	100.00	100.00	14.1327
Total:			**3.549**	**25.334**	**100.00**	**100.00**	

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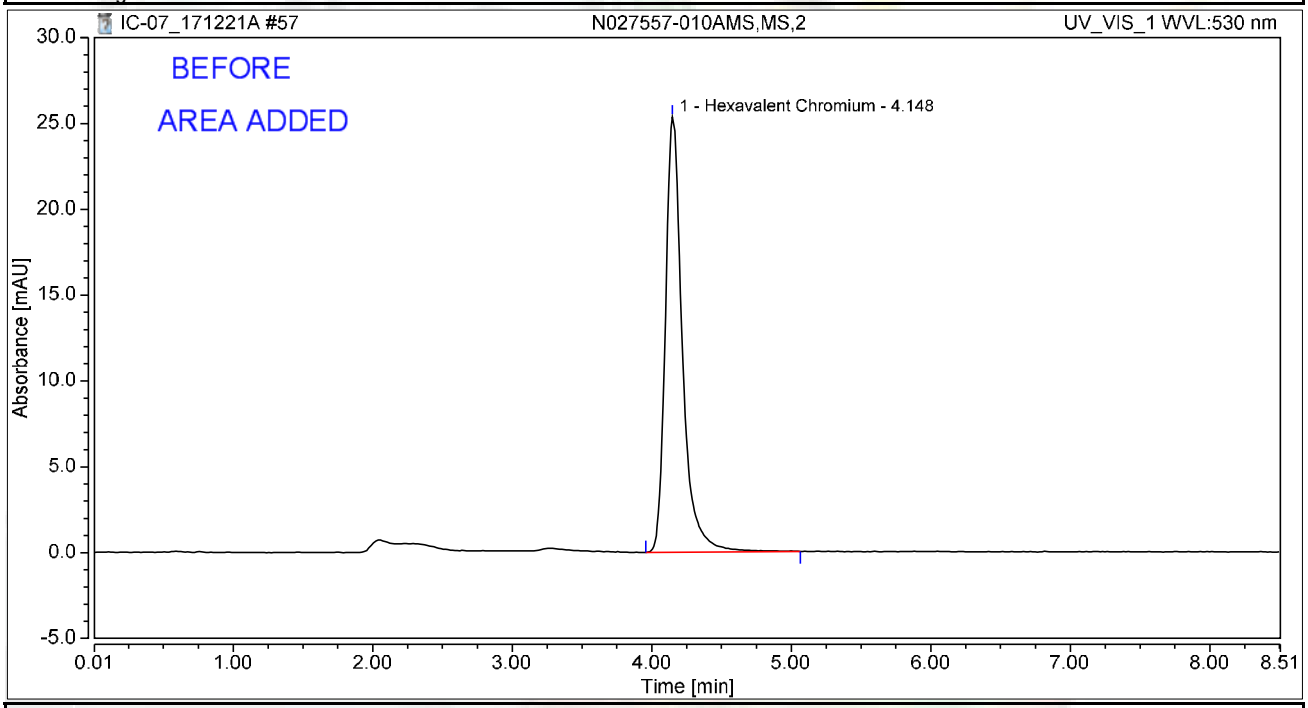
Chromatogram and Results

Injection Details

Injection Name:	**N027557-010AMS,MS,2**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 16:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	3.592	25.353	100.00	100.00	14.3073
Total:			**3.592**	**25.353**	**100.00**	**100.00**	

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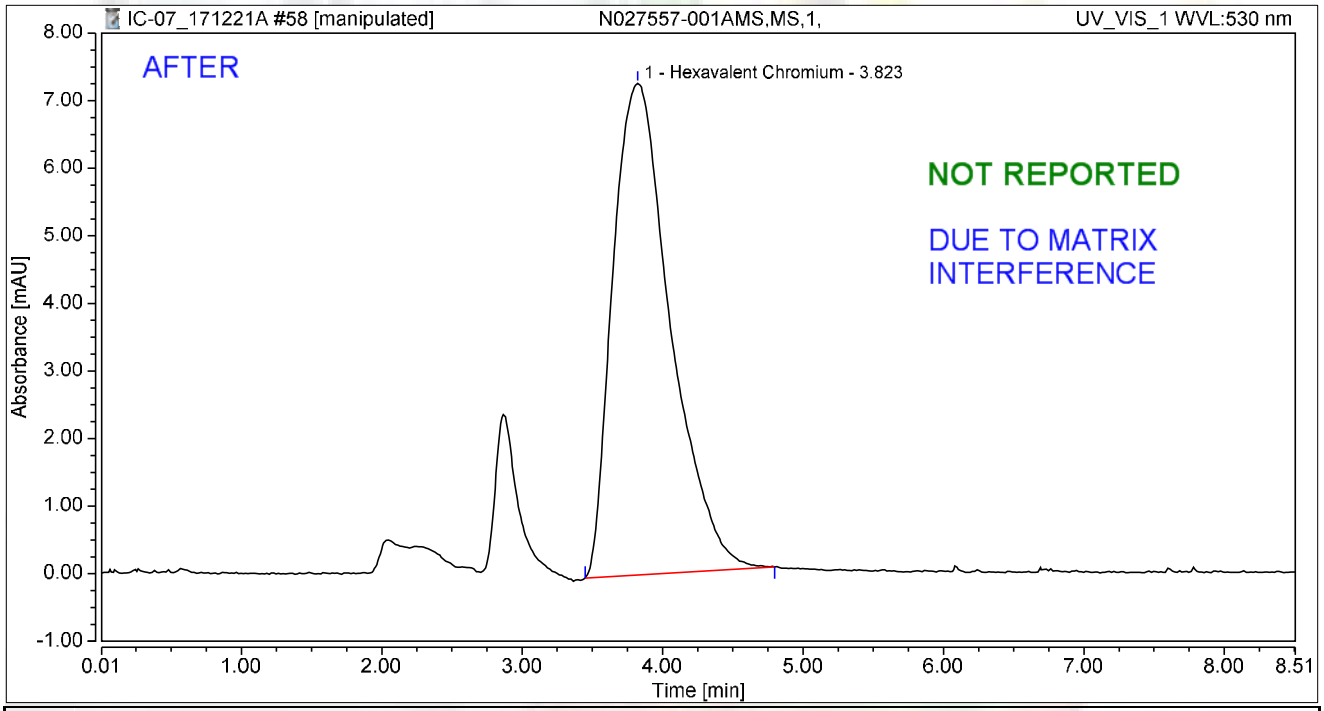
Chromatogram and Results

Injection Details

Injection Name:	**N027557-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 16:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.823	3.461	7.274	100.00	100.00	13.7840
Total:			**3.461**	**7.274**	**100.00**	**100.00**	

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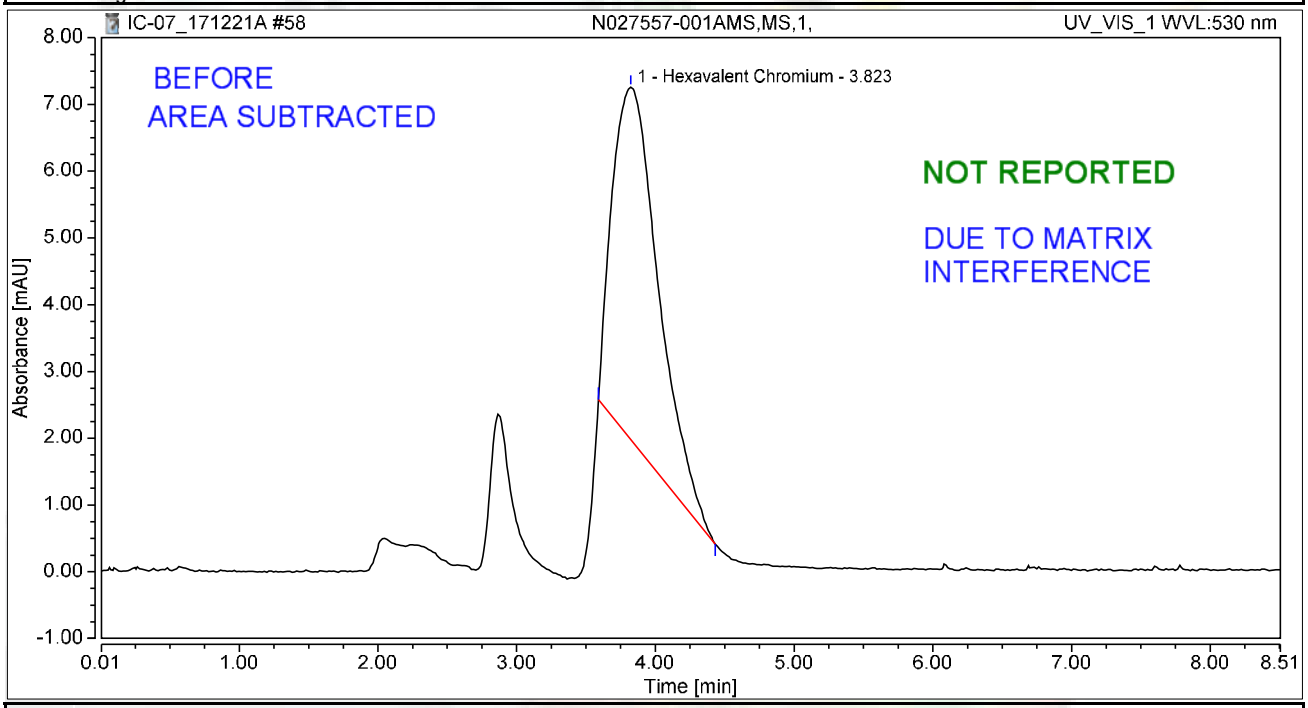
Chromatogram and Results

Injection Details

Injection Name:	**N027557-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 16:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.823	2.041	5.272	100.00	100.00	8.1267
Total:			**2.041**	**5.272**	**100.00**	**100.00**	

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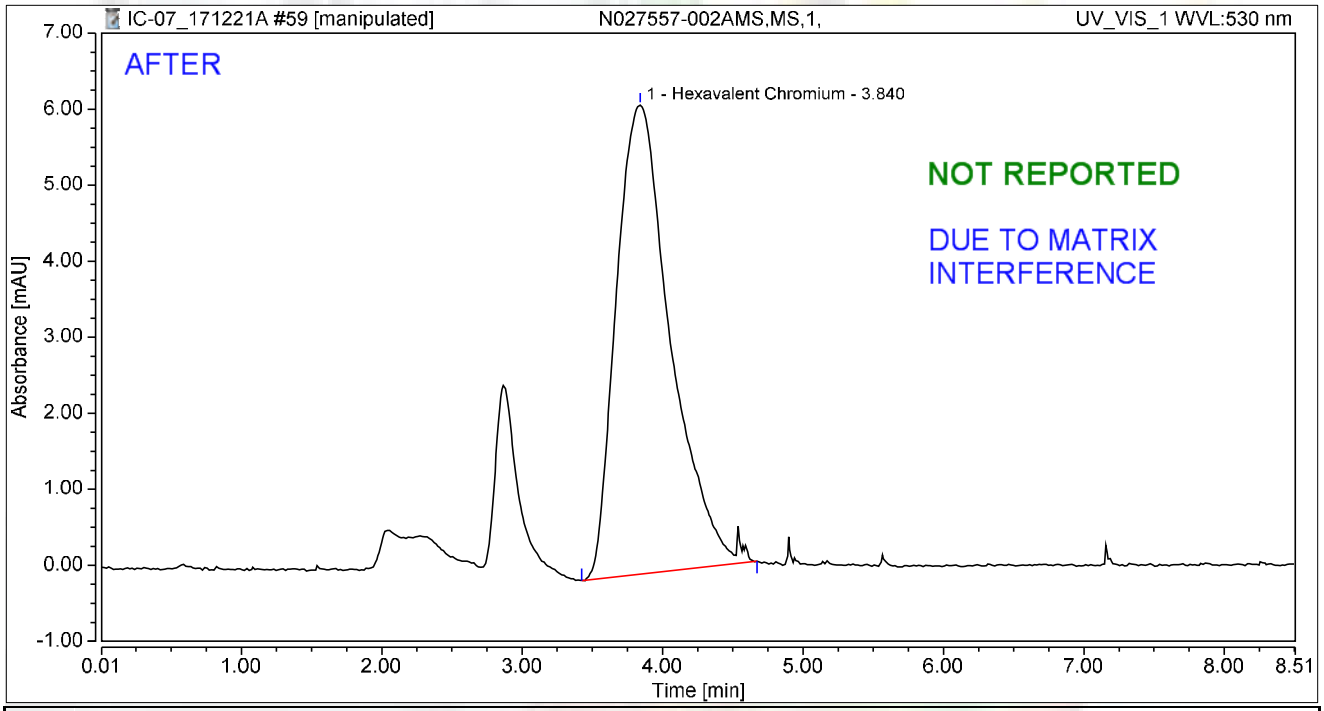
Chromatogram and Results

Injection Details

Injection Name:	**N027557-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 16:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.840	2.765	6.168	100.00	100.00	11.0120
Total:			**2.765**	**6.168**	**100.00**	**100.00**	

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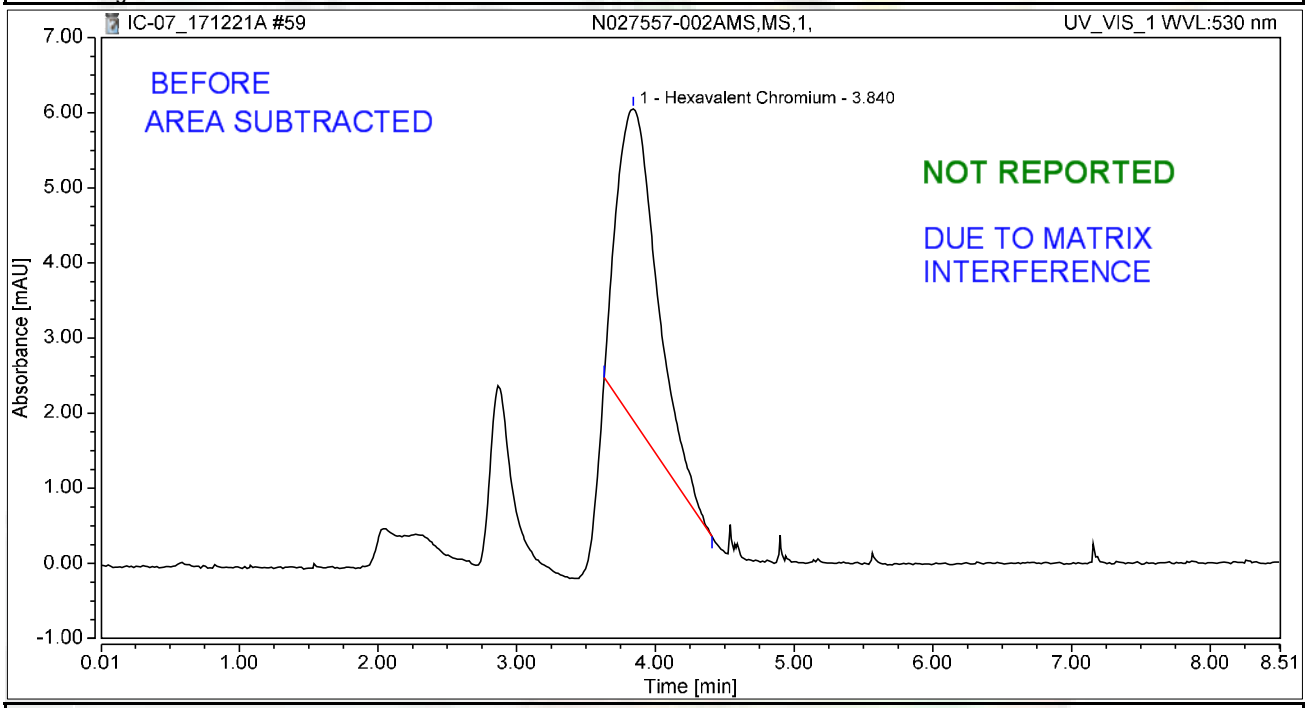
Chromatogram and Results

Injection Details

Injection Name:	**N027557-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 16:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.840	1.411	4.147	100.00	100.00	5.6204
Total:			**1.411**	**4.147**	**100.00**	**100.00**	

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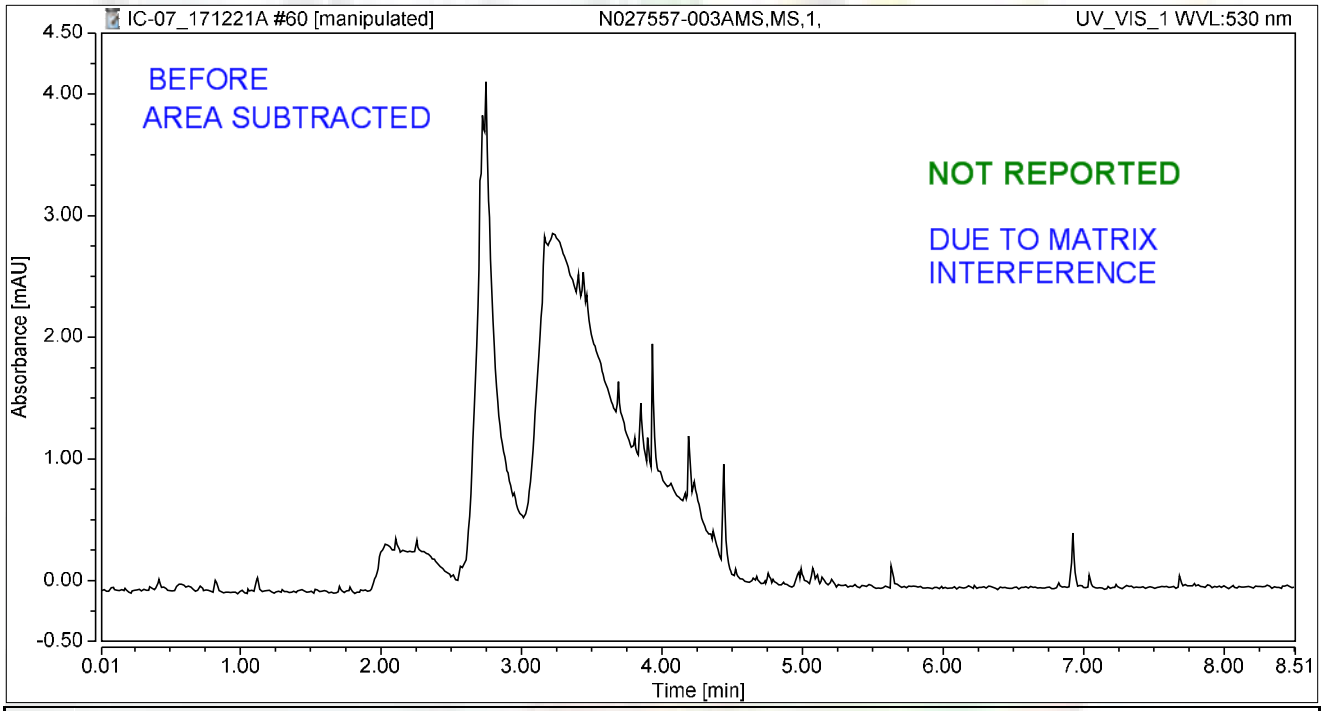
Chromatogram and Results

Injection Details

Injection Name:	**N027557-003AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 16:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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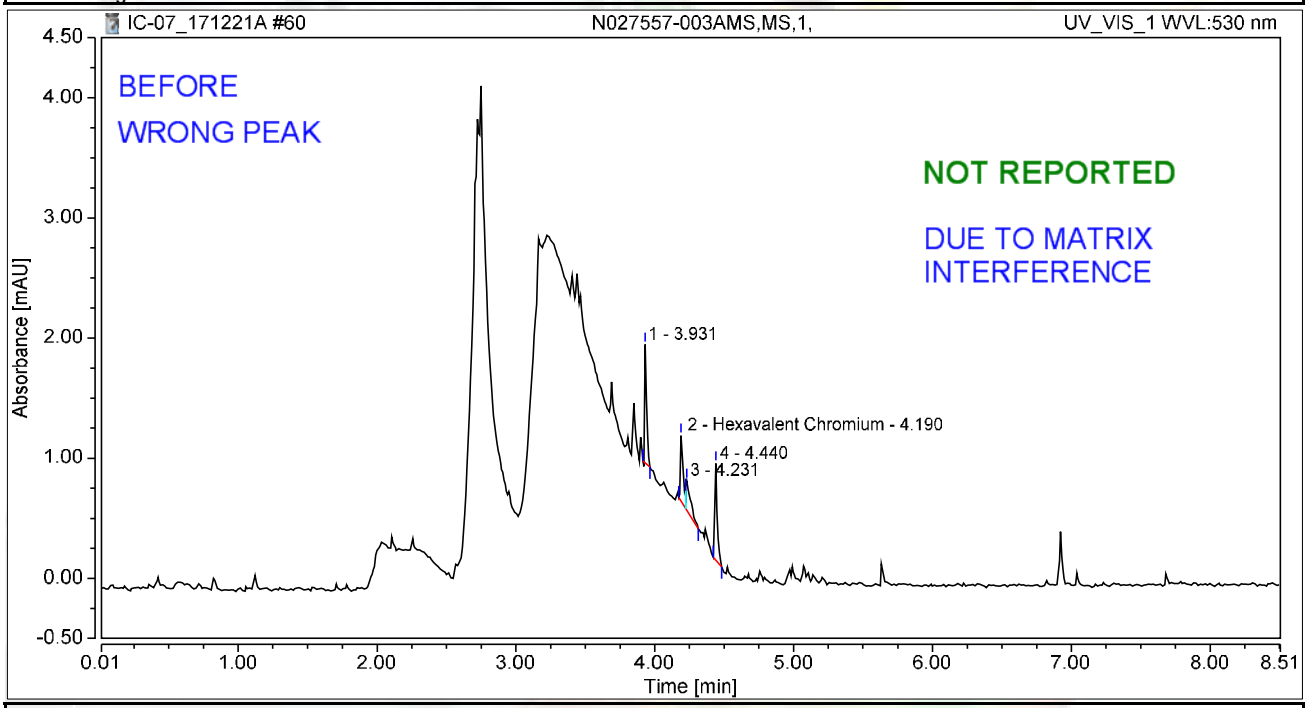
Chromatogram and Results

Injection Details

Injection Name:	**N027557-003AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 16:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.931	0.015	0.984	28.25	38.10	n.a.
2	Hexavalent Chromium	4.190	0.012	0.548	22.70	21.22	0.0477
3		4.231	0.010	0.247	18.26	9.55	n.a.
4		4.440	0.016	0.804	30.79	31.12	n.a.
Total:			**0.053**	**2.583**	**100.00**	**100.00**	

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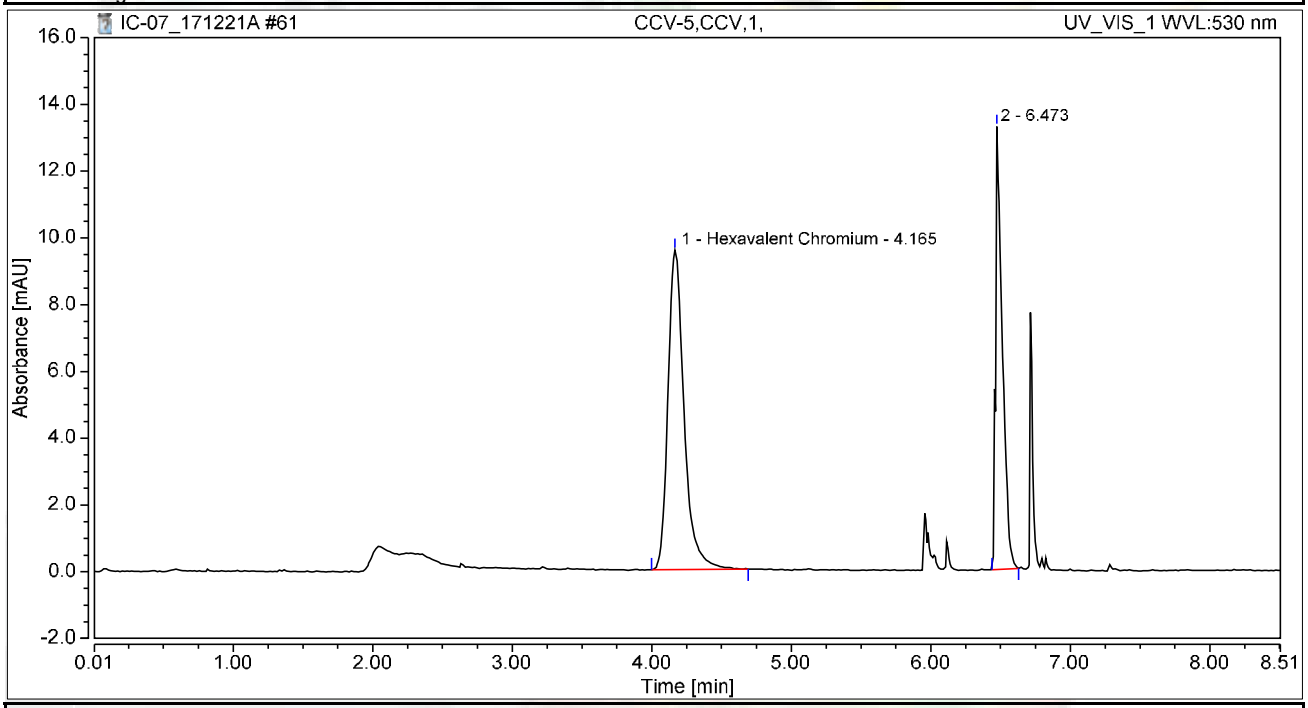
Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 17:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

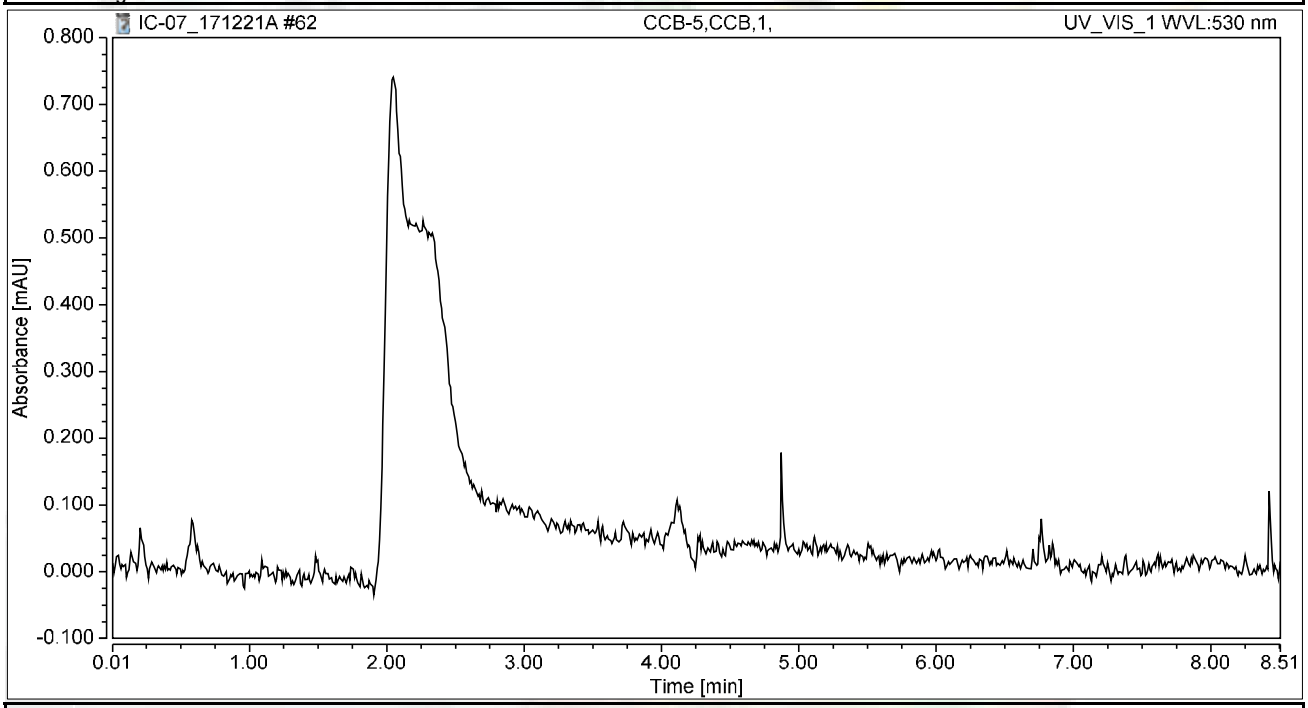
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.280	9.568	63.13	41.88	5.0991
2		6.473	0.748	13.279	36.87	58.12	n.a.
Total:			**2.028**	**22.848**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 17:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

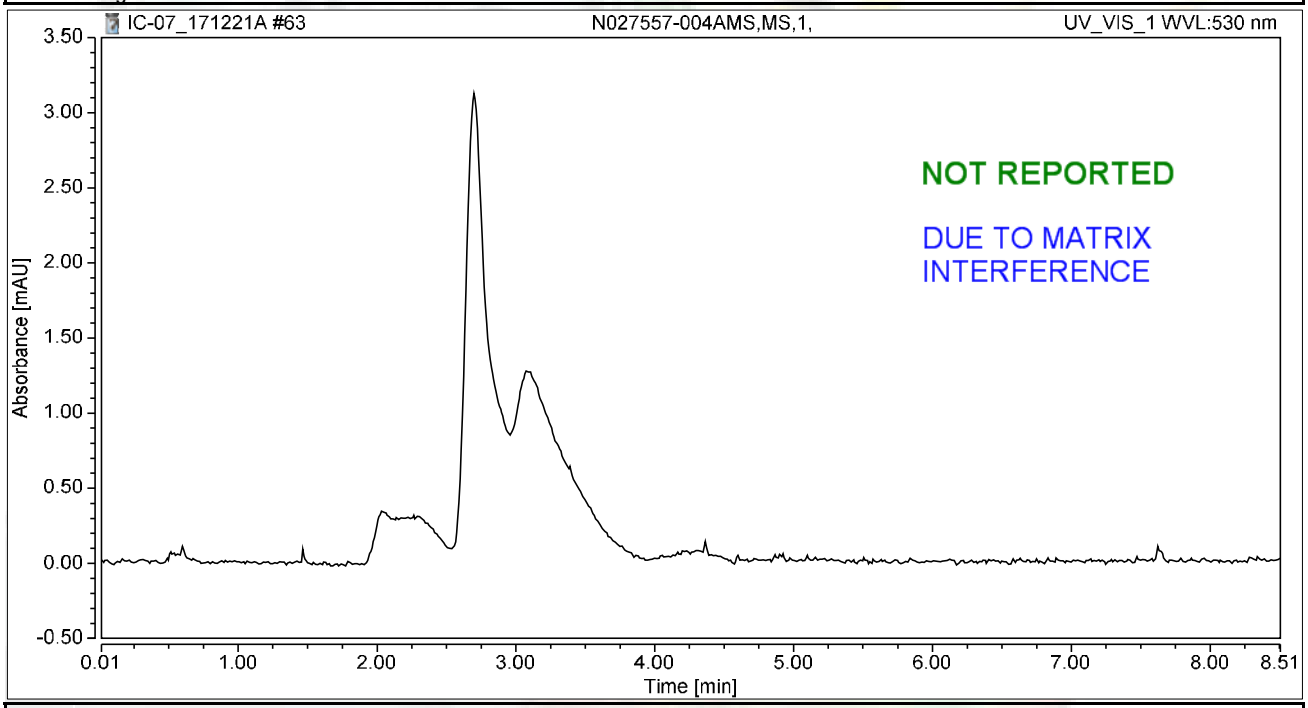
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027557-004AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 17:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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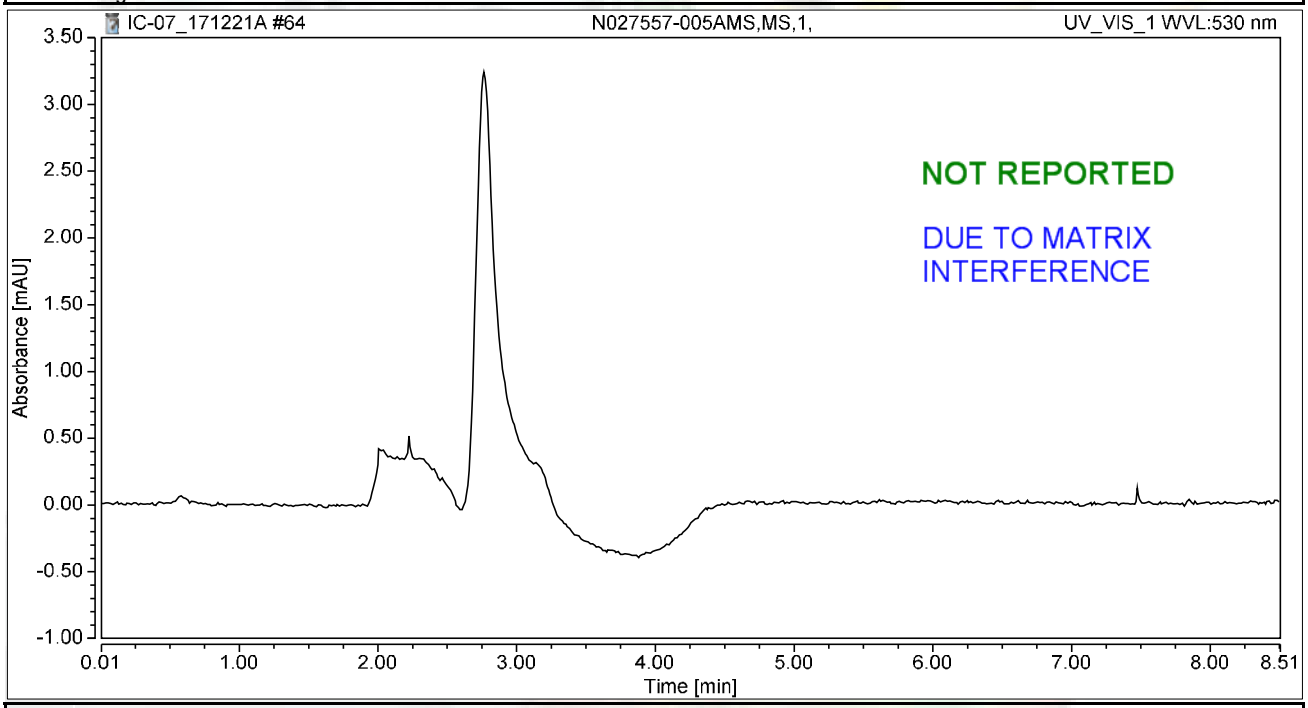
Chromatogram and Results

Injection Details

Injection Name:	**N027557-005AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 17:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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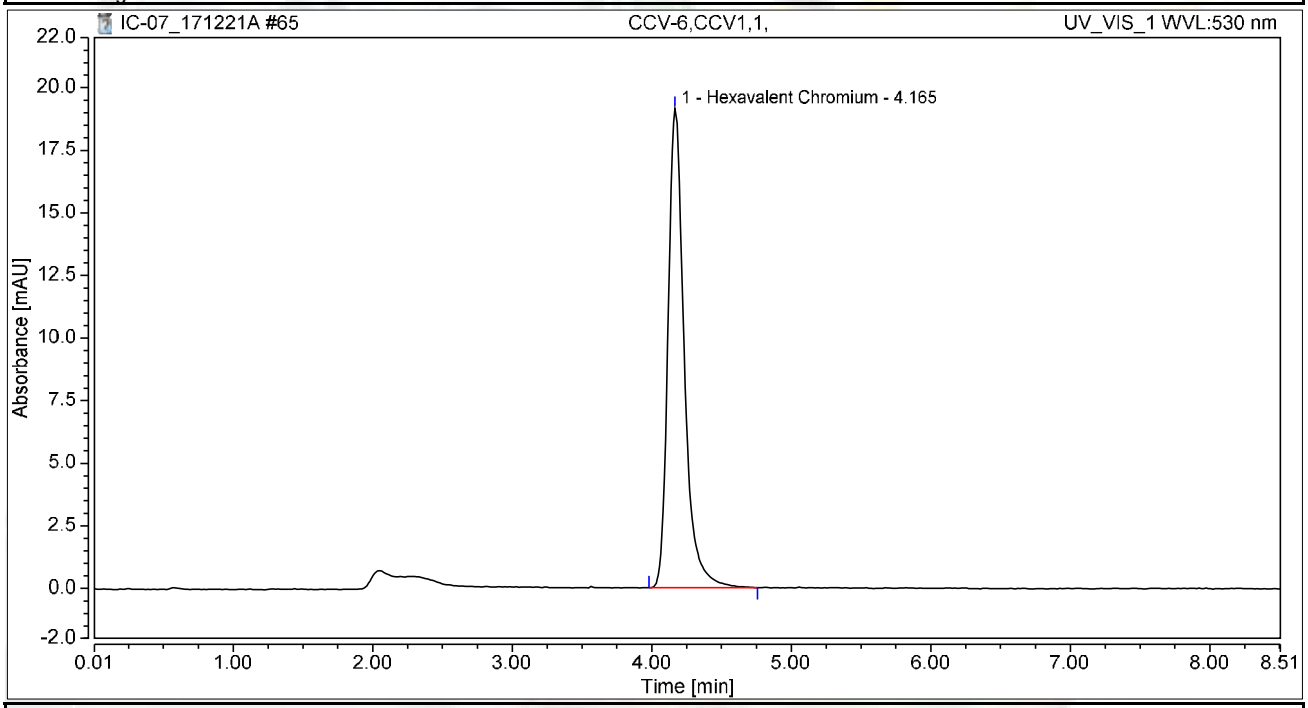
Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 17:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

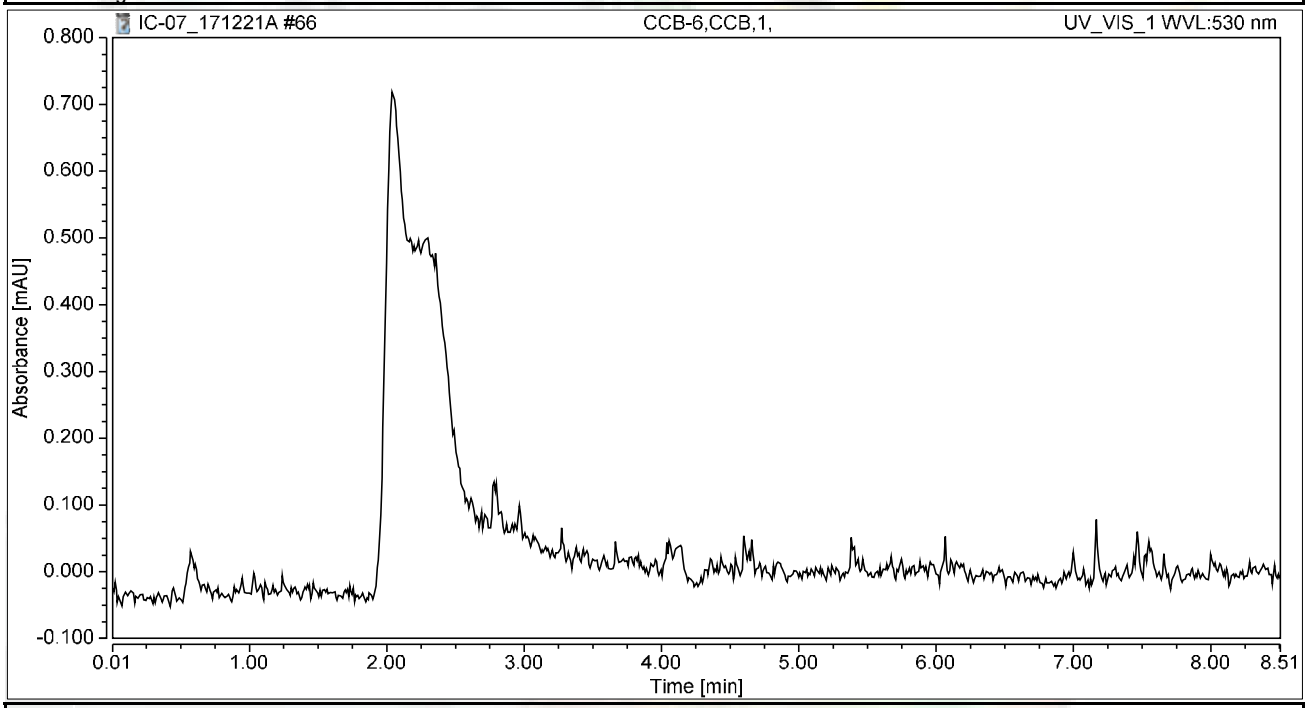
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.576	19.146	100.00	100.00	10.2607
Total:			**2.576**	**19.146**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**171128_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Dec/17 17:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

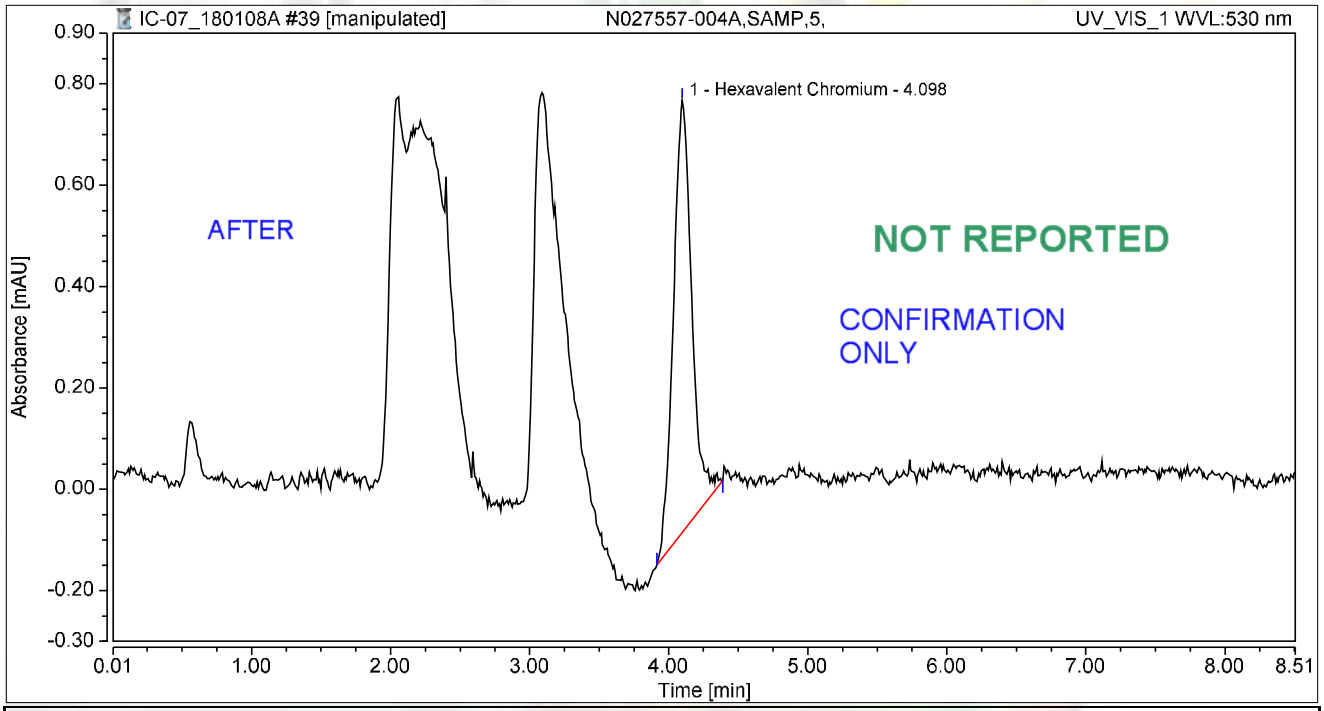
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027557-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.130	0.852	100.00	100.00	0.5084
Total:			**0.130**	**0.852**	**100.00**	**100.00**	

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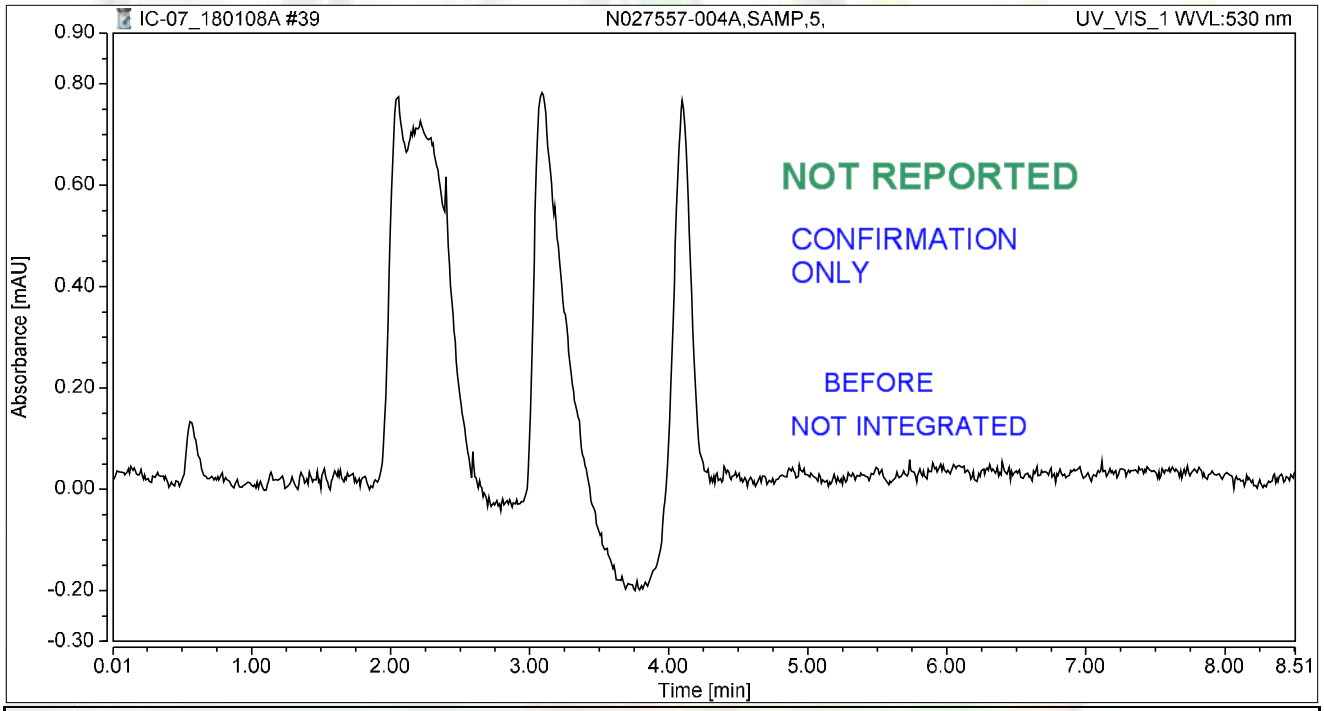
Chromatogram and Results

Injection Details

Injection Name:	**N027557-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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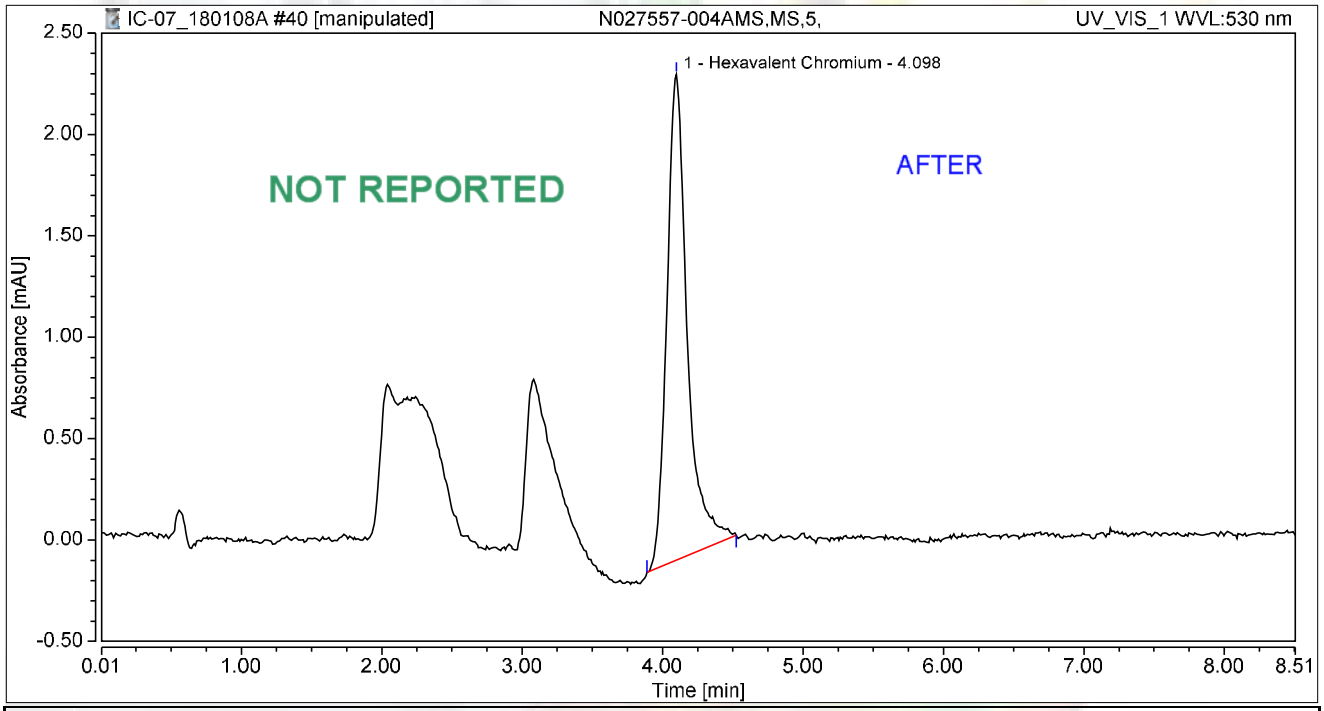
Chromatogram and Results

Injection Details

Injection Name:	**N027557-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.403	2.396	100.00	100.00	1.5776
Total:			**0.403**	**2.396**	**100.00**	**100.00**	

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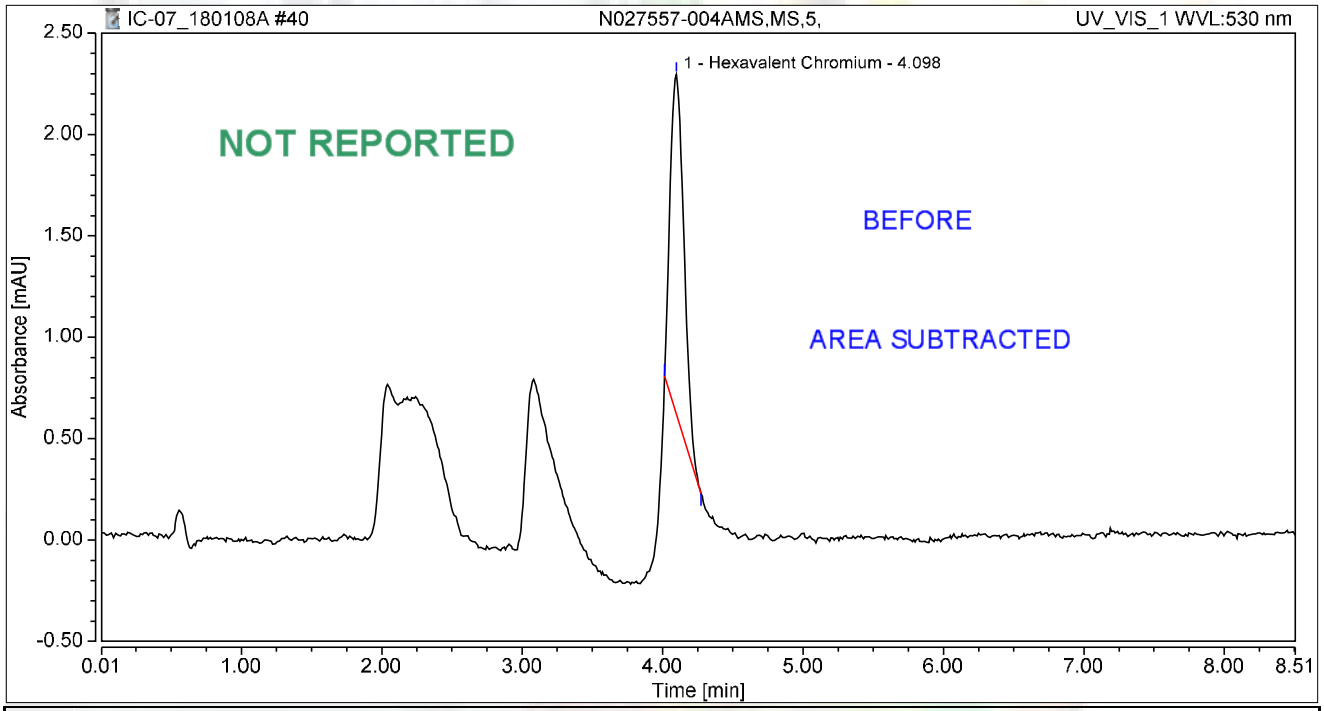
Chromatogram and Results

Injection Details

Injection Name:	**N027557-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.192	1.676	100.00	100.00	0.7495
Total:			**0.192**	**1.676**	**100.00**	**100.00**	

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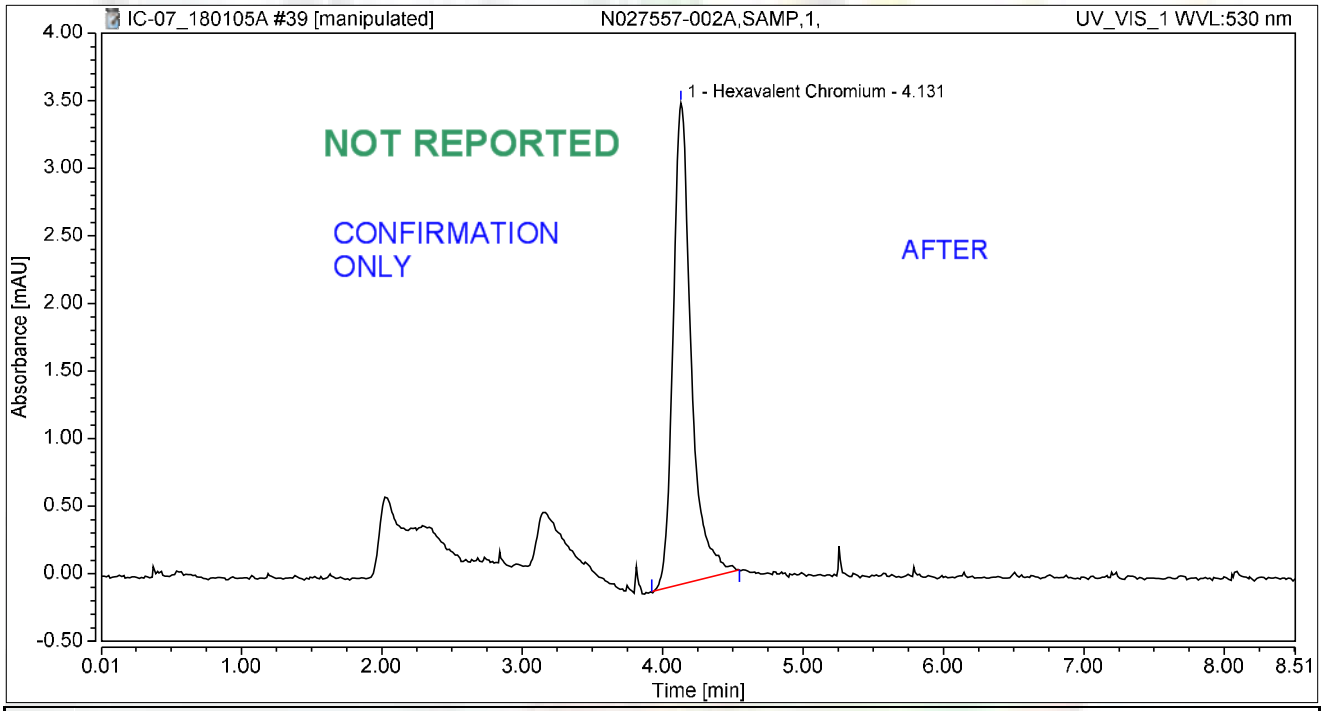
Chromatogram and Results

Injection Details

Injection Name:	**N027557-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 13:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.533	3.562	100.00	100.00	2.0832
Total:			**0.533**	**3.562**	**100.00**	**100.00**	

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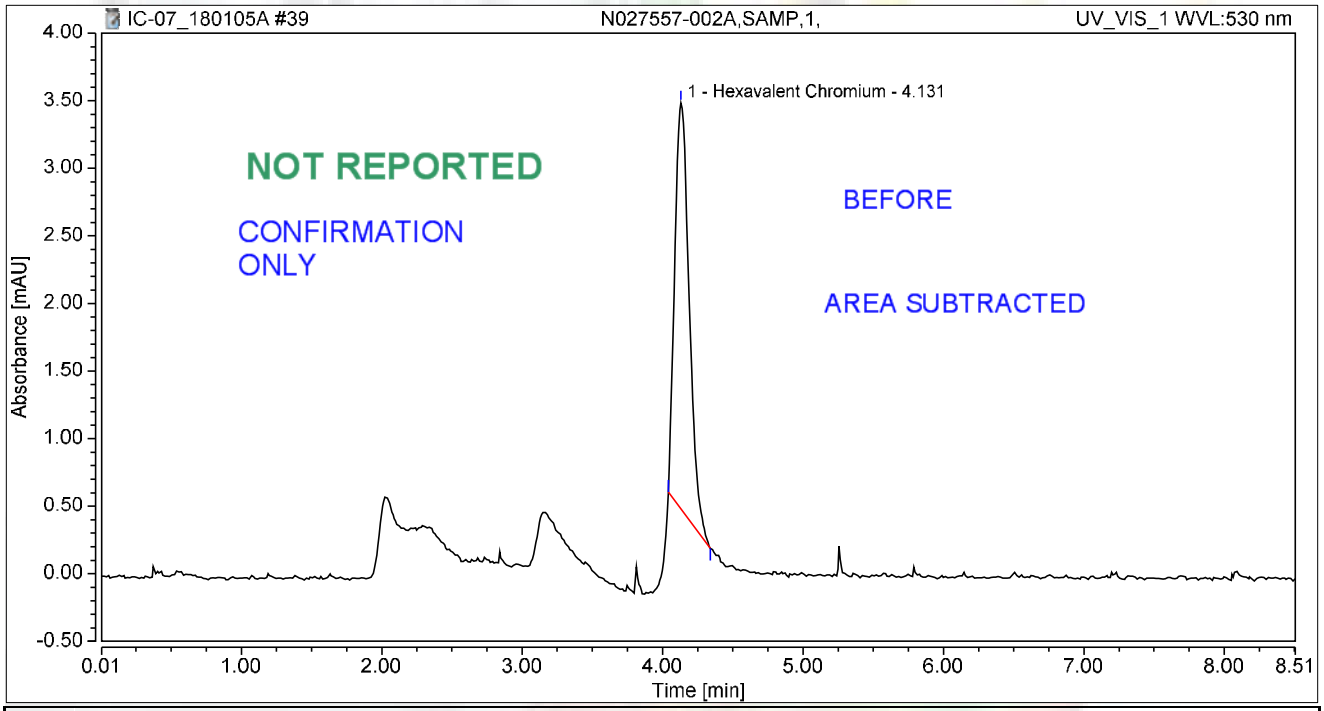
Chromatogram and Results

Injection Details

Injection Name:	**N027557-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 13:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.359	3.006	100.00	100.00	1.4038
Total:			**0.359**	**3.006**	**100.00**	**100.00**	

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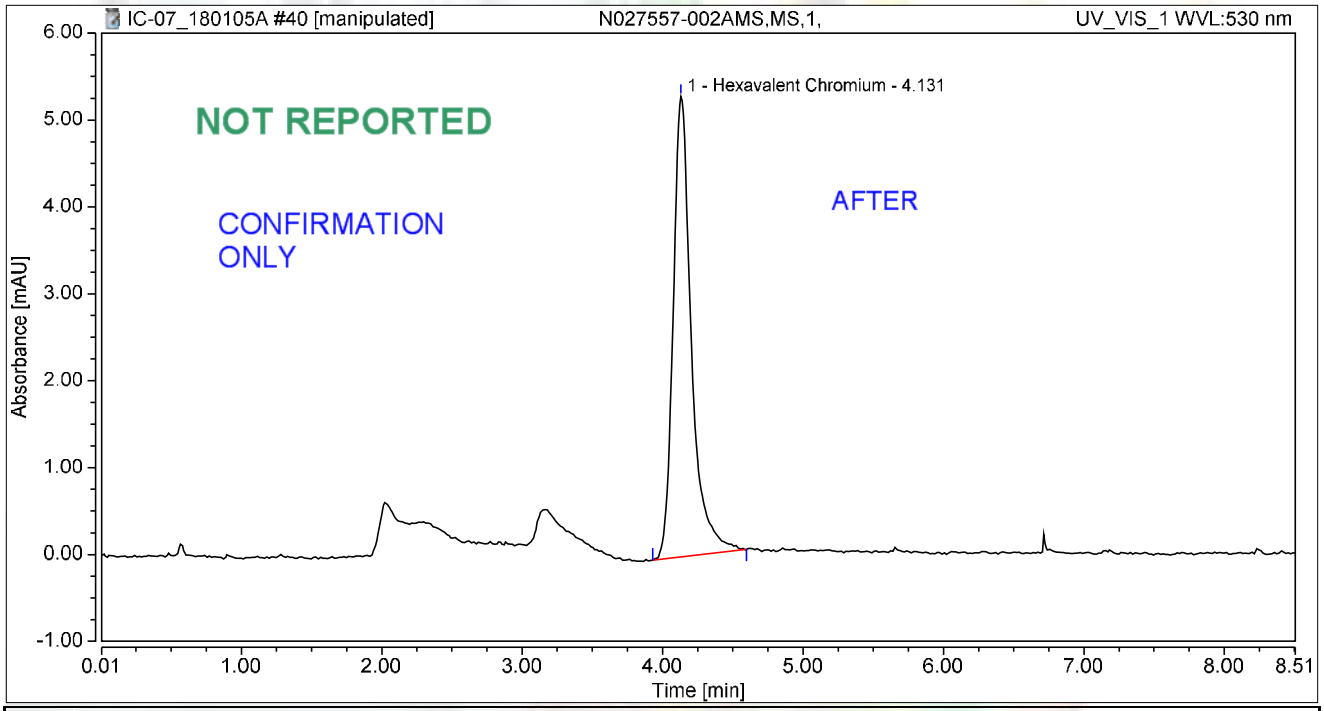
Chromatogram and Results

Injection Details

Injection Name:	**N027557-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 13:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.795	5.298	100.00	100.00	3.1084
Total:			**0.795**	**5.298**	**100.00**	**100.00**	

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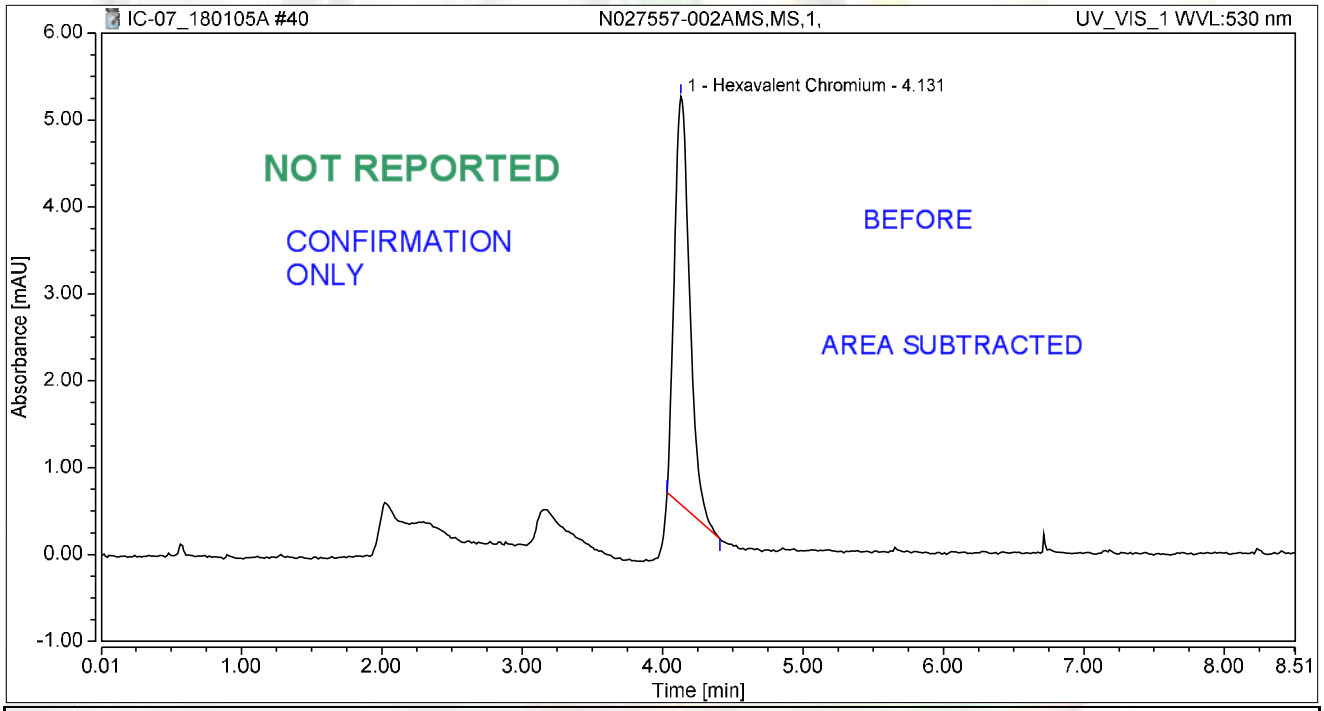
Chromatogram and Results

Injection Details

Injection Name:	**N027557-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 13:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.594	4.698	100.00	100.00	2.3239
Total:			**0.594**	**4.698**	**100.00**	**100.00**	

rba 1/5/2018

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121069 **Analyst:** LSR

ASSET #: N027557 **Date Analyzed:** 12/19/2017

Method: EPA 2320

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X			X		
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Silvia Ramit Date: 12/28/2017

2nd Level Reviewer RLB 01/08/2018 Date:

SAMPLE CALCULATION

Sample ID: **N027557-001C @ pH 7.68**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (11.80 mL)

= **0.02119 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (1.65) (0.02119 N) (1) * 1000

= 34.9635 mg**/L**

Reporting results in two significant figures,

= **35 mg/L** as CaCO3

Silvia Ramit 12/28/2017

RLB 01/08/2018

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02119 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (1.65 mL) (0.02119) (1) * 1000

= 34.9635 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 34.9635 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **35 mg/L**

Sukla Ramit 12/28/2017

RLB 01/08/2018

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.19	50	0.00	0.050	MBLK
LCS-1	8.21	50	0.00	4.70	LCS
N027546-008D	7.70	50	0.00	1.80	SAMP
N027546-009D	7.71	50	0.00	1.90	SAMP
N027546-010D	7.63	50	0.00	1.70	SAMP
N027556-001D	7.75	50	0.00	3.60	SAMP
N027556-002D	7.73	50	0.00	3.60	SAMP
N027556-003D	7.77	50	0.00	3.50	SAMP
N027556-006D	7.69	50	0.00	3.60	SAMP
N027557-001C	7.68	50	0.00	1.65	SAMP
N027557-002C	7.71	50	0.00	1.65	SAMP
N027557-003C	7.67	50	0.00	2.40	SAMP
N027557-004C	8.07	50	0.00	1.80	SAMP
N027557-005D	8.27	50	0.00	2.20	SAMP
N027557-006D	10.51	50	1.50	2.00	SAMP
N027557-007D	7.72	50	0.00	1.30	SAMP
N027557-008D	7.85	50	0.00	4.15	SAMP
N027557-009D	7.70	50	0.00	2.75	SAMP
N027557-010D	7.72	50	0.00	2.65	SAMP
N027583-001D	7.74	50	0.00	3.10	SAMP
N027583-002D	7.79	50	0.00	2.80	SAMP
N027583-003D	7.71	50	0.00	3.20	SAMP
N027557-001CDUP	7.69	50	0.00	1.70	DUP
N027583-001DMS	8.42	50	0.05	7.70	MS
N027583-001DMSD	8.41	50	0.05	7.70	MSD

Standardization:

Spike amt:	**5**	ml
Titrant used:	**11.800**	ml
N H2SO4	**0.02119**	Normal
Date Analyzed:	**12/19/17**	
Time:	**8:35 AM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-161205A**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R171214D**	

Silvia Ramit 12/27/2017

RLB 01/08/2018

Date Analyzed:	12/19/17		Reagents:					Standardization:					P = 0
Time Started:	8:35 AM			Sodium Carbonate:		CINV-161205A			Spike amt:	5	mL		P < 1/2 T
Analyzed By:	LSR			Hydrochloric Acid:		0			Titrant used:	11.8	mL		P = 1/2 T
				Sulfuric Acid:		R171214D							P > 1/2 T
									N H2SO4	0.02119	N		P = T

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.19				0.02119	0.00	0.05	0.05	1	0.00	1.06	
LCS-1	50	8.21				0.02119	0.00	4.70	4.70	1	0.00	99.58	
N027546-008D	50	7.7				0.02119	0.00	1.80	1.80	1	0.00	38.14	
N027546-009D	50	7.71				0.02119	0.00	1.90	1.90	1	0.00	40.25	
N027546-010D	50	7.63				0.02119	0.00	1.70	1.70	1	0.00	36.02	
N027556-001D	50	7.75				0.02119	0.00	3.60	3.60	1	0.00	76.27	
N027556-002D	50	7.73				0.02119	0.00	3.60	3.60	1	0.00	76.27	
N027556-003D	50	7.77				0.02119	0.00	3.50	3.50	1	0.00	74.15	
N027556-006D	50	7.69				0.02119	0.00	3.60	3.60	1	0.00	76.27	
N027557-001C	50	7.68				0.02119	0.00	1.65	1.65	1	0.00	34.96	
N027557-002C	50	7.71				0.02119	0.00	1.65	1.65	1	0.00	34.96	
N027557-003C	50	7.67				0.02119	0.00	2.40	2.40	1	0.00	50.85	
N027557-004C	50	8.07				0.02119	0.00	1.80	1.80	1	0.00	38.14	
N027557-005D	50	8.27				0.02119	0.00	2.20	2.20	1	0.00	46.61	
N027557-006D	50	10.51				0.02119	1.50	0.50	2.00	1	31.78	42.37	
N027557-007D	50	7.72				0.02119	0.00	1.30	1.30	1	0.00	27.54	
N027557-008D	50	7.85				0.02119	0.00	4.15	4.15	1	0.00	87.92	
N027557-009D	50	7.7				0.02119	0.00	2.75	2.75	1	0.00	58.26	
N027557-010D	50	7.72				0.02119	0.00	2.65	2.65	1	0.00	56.14	
N027583-001D	50	7.74				0.02119	0.00	3.10	3.10	1	0.00	65.68	
N027583-002D	50	7.79				0.02119	0.00	2.80	2.80	1	0.00	59.32	
N027583-003D	50	7.71				0.02119	0.00	3.20	3.20	1	0.00	67.80	
N027557-001CDU	50	7.69				0.02119	0.00	1.70	1.70	1	0.00	36.02	
N027583-001DMS	50	8.42				0.02119	0.05	7.65	7.70	1	1.06	163.14	
N027583-001DMS	50	8.41				0.02119	0.05	7.65	7.70	1	1.06	163.14	

Silvia Ramit 12/27/2017

RB 01/08/2018

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	12/19/17
Time:	8:35 AM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.06	1.06	1.06		P = 0
LCS-1	0.00	0.00	99.58	99.58	99.58		P = 0
N027546-008D	0.00	0.00	38.14	38.14	38.14		P = 0
N027546-009D	0.00	0.00	40.25	40.25	40.25		P = 0
N027546-010D	0.00	0.00	36.02	36.02	36.02		P = 0
N027556-001D	0.00	0.00	76.27	76.27	76.27		P = 0
N027556-002D	0.00	0.00	76.27	76.27	76.27		P = 0
N027556-003D	0.00	0.00	74.15	74.15	74.15		P = 0
N027556-006D	0.00	0.00	76.27	76.27	76.27		P = 0
N027557-001C	0.00	0.00	34.96	34.96	34.96		P = 0
N027557-002C	0.00	0.00	34.96	34.96	34.96		P = 0
N027557-003C	0.00	0.00	50.85	50.85	50.85		P = 0
N027557-004C	0.00	0.00	38.14	38.14	38.14		P = 0
N027557-005D	0.00	0.00	46.61	46.61	46.61		P = 0
N027557-006D	21.19	21.19	0.00	42.37	42.37		P > 1/2 T
N027557-007D	0.00	0.00	27.54	27.54	27.54		P = 0
N027557-008D	0.00	0.00	87.92	87.92	87.92		P = 0
N027557-009D	0.00	0.00	58.26	58.26	58.26		P = 0
N027557-010D	0.00	0.00	56.14	56.14	56.14		P = 0
N027583-001D	0.00	0.00	65.68	65.68	65.68		P = 0
N027583-002D	0.00	0.00	59.32	59.32	59.32		P = 0
N027583-003D	0.00	0.00	67.80	67.80	67.80		P = 0
N027557-001CDUP	0.00	0.00	36.02	36.02	36.02		P = 0
N027583-001DMS	0.00	2.12	161.02	163.14	163.14		P < 1/2 T
N027583-001DMSD	0.00	2.12	161.02	163.14	163.14		P < 1/2 T

Silvia Ramit 12/27/2017

RLB 01/08/2018

Alkalinity Preparation and Runlog

Book #6

Matrix: H_2O

Date Extracted: 12/19/17
Time Extracted:
Extracted By: LSR

Date Analyzed: 12/19/17
Time Analyzed: 835
Analyzed By: LSR

Reagent Lot # / Reagent ID
Sodium Carbonate: CINV161205A
Hydrochloric Acid: –
Sulfuric Acid: R171214D
Sodium Bicarbonate: CINV150601A

pH meter Calibration:
SLOPE: 97.7%
pH 7 - 6.97 CINV170615F
4 - 4.01 170615E
10 - 10.01 170888B

	Sample ID	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	A1	50mL	10.64	1WST171219A	5mL	0.05N	–	–	11.80	50/50	$N_{H_2SO_4} = \frac{(2.65g/L)(5mL)}{(53)(V\ titrant)}$	= 0.02118644
	A2		10.66				–	–	11.80			
1)	MBLIC	50mL	5.19	–	–	–	0.02119	0	0.05	50/50		
2)	LCS		8.21	1WST171219B	1mL	0.05N		0	4.70			
3)	N027546-8D		7.70					0	1.80			
4)	9D		7.71					0	1.90			
5)	10D		7.63					0	1.70			
6)	N027556-1D		7.75					0	3.60			
7)	2D		7.73					0	3.60			
8)	3D		7.77					0	3.50			
9)	6D		7.69					0	3.60			
10)	N027557-1C		7.68					0	1.65		$P = \frac{(V\ pH\ 8.3)(N\ H_2SO_4)(50,000)}{V_{SX}}$	
11)	2C		7.71					0	1.65			
12)	3C		7.67					0	2.40			
13)	4C		8.07					0	1.80		$T = \frac{(V\ pH\ 4.5)(N\ H_2SO_4)(50,000)}{V_{SX}}$	
14)	5D		8.27					0	2.20			
15)	6D		10.51					1.50	2.00			
16)	7D		7.72					0	1.30			
17)	8D		7.85					0	4.15			
18)	9D		7.70					0	2.75			
19)	10D		7.72					0	2.65			
20)	N027583-1D		7.74					0	3.10			
	MS 2D		7.79					0	2.80			
	~~MSD~~ 3D		7.71					0	3.20			
	~~LCS~~ N027557-1C DUP		7.69					0	1.70			
	N027583-1D MS		8.42	1WST171219B	1mL	0.05N		0.05	7.70			
	1D MSD		8.41					0.05	7.70			

Julia Ramit 12/27/2017

RB 01/08/2018

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R121065
ASSET #: N027546 / N027557

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/22/2017

Method:

[X] EPA 300.0
[ ] EPA 7199

[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

Several samples were diluted due to precipitate formed with eluent.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/27/2017

2nd Level Reviewer: RLB 01/08/2018 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R121079
ASSET #: N027557 / N027583

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 12/26/2017

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 12/28/2017

2nd Level Reviewer: RLB 01/08/2018 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Chloride concentration, in mg/L, in the orignal sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N027557-001C** concentration in mg/L is calculated as follows:

Chloride, mg/L = 4.3175 * 1000

= 4317.5

Reporting result in two significant values,

Chloride, mg/L = 4300

rba 12/28/2017

RLB 01/08/2018

ANALYSIS RUN LOG

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 73
Created: 12/19/2017 9:53:44 AM by IC-05
Last Update: 12/20/2017 8:57:58 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
3	Std - 0	Standard	1000.0	Anions Default	Anions_171219	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171219	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171219	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171219	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171219	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171219	Finished
9	ICV,ICV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
10	ICB,ICB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
11	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
12	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
13	N027459-001E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
14	N027459-002E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
15	N027459-003C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
16	N027459-004C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
17	N027459-005C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
18	N027459-006C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
19	N027459-007C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
20	N027459-008E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
21	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
22	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
23	N027459-001EMS,MS,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
24	N027459-001EMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
25	N027459-008EMS,MS,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
26	N027459-004CDUP,DUP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
27	N027459-009C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
28	N027459-010C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
29	N027459-011C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
30	N027459-012C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
31	N027459-013C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
32	N027459-014C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
33	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
34	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
35	N027459-015C,SAMP,2	Unknown	1000.0	Anions Default	Anions_171219	Finished
36	N027459-016E,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
37	N027459-017E,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
38	N027459-018C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
39	N027459-019C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
40	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
41	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 73
Created: 12/19/2017 9:53:44 AM by IC-05
Last Update: 12/20/2017 8:57:58 AM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	12/19/2017 9:54:19 AM	BLANK
2	BLANK,BLANK,1	12/19/2017 10:09:37 AM	BLANK
3	Std - 0	12/19/2017 10:24:55 AM	IBLANK
4	Std - 1	12/19/2017 10:45:27 AM	STD-LOW
5	Std - 2	12/19/2017 11:00:45 AM	STD
6	Std - 3	12/19/2017 11:16:03 AM	STD
7	Std - 4	12/19/2017 11:31:21 AM	STD
8	Std - 5	12/19/2017 11:46:39 AM	STD-HIGH
9	ICV,ICV,1	12/19/2017 12:03:52 PM	ICV
10	ICB,ICB,1	12/19/2017 12:19:10 PM	ICB
11	MB-H2O,MBLK,1	12/19/2017 12:34:28 PM	METHOD BLANK
12	LCS-H2O,LCS,1	12/19/2017 12:49:45 PM	LCS
13	N027459-001E,SAMP,5	12/19/2017 1:05:03 PM	SAMP,2>10mL
14	N027459-002E,SAMP,5	12/19/2017 1:20:21 PM	SAMP,2>10mL
15	N027459-003C,SAMP,10	12/19/2017 1:35:39 PM	SAMP,1>10mL
16	N027459-004C,SAMP,10	12/19/2017 1:50:57 PM	SAMP,1>10mL
17	N027459-005C,SAMP,5	12/19/2017 2:06:15 PM	SAMP,2>10mL
18	N027459-006C,SAMP,5	12/19/2017 2:21:33 PM	SAMP,2>10mL
19	N027459-007C,SAMP,1	12/19/2017 2:36:51 PM	SAMP,10mL
20	N027459-008E,SAMP,5	12/19/2017 2:52:08 PM	SAMP,2>10mL
21	CCV-1,CCV,1	12/19/2017 3:07:26 PM	CCV
22	CCB-1,CCB,1	12/19/2017 3:22:44 PM	CCB
23	N027459-001EMS,MS,5	12/19/2017 3:38:02 PM	MS,2>10mL
24	N027459-001EMSD,MSD,5	12/19/2017 3:53:20 PM	MSD,2>10mL
25	N027459-008EMS,MS,5	12/19/2017 4:08:38 PM	MS,2>10mL
26	N027459-004CDUP,DUP,10	12/19/2017 4:23:56 PM	DUP,1>10mL
27	N027459-009C,SAMP,5	12/19/2017 4:39:14 PM	SAMP,2>10mL
28	N027459-010C,SAMP,5	12/19/2017 4:54:31 PM	SAMP,2>10mL
29	N027459-011C,SAMP,1	12/19/2017 5:09:49 PM	SAMP,10mL
30	N027459-012C,SAMP,1	12/19/2017 5:25:07 PM	SAMP,10mL
31	N027459-013C,SAMP,5	12/19/2017 5:40:25 PM	SAMP,2>10mL
32	N027459-014C,SAMP,5	12/19/2017 5:55:43 PM	SAMP,2>10mL
33	CCV-2,CCV,1	12/19/2017 6:11:01 PM	CCV
34	CCB-2,CCB,1	12/19/2017 6:26:19 PM	CCB
35	N027459-015C,SAMP,2	12/19/2017 6:41:37 PM	SAMP,5>10mL
36	N027459-016E,SAMP,1	12/19/2017 6:56:54 PM	SAMP,10mL
37	N027459-017E,SAMP,1	12/19/2017 7:12:13 PM	SAMP,10mL
38	N027459-018C,SAMP,10	12/19/2017 7:27:30 PM	SAMP,1>10mL
39	N027459-019C,SAMP,1	12/19/2017 7:42:48 PM	SAMP,10mL
40	LCS-2,LCS,1	12/19/2017 7:58:06 PM	LCS
41	MB-2,MBLK,1	12/19/2017 8:13:24 PM	METHOD BLANK

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 73
Created: 12/19/2017 9:53:44 AM by IC-05
Last Update: 12/20/2017 8:57:58 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027485-008D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
43	N027485-008DMS,MS,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
44	N027485-008DMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
45	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
46	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
47	N027523-001C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
48	N027523-001CMS,MS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
49	N027523-002C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
50	N027523-002CDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
51	N027485-001D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
52	N027485-002D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
53	N027485-003D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
54	N027485-004D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
55	N027485-005D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
56	N027485-006D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
57	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
58	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
59	N027485-007D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
60	N027485-009D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
61	N027485-010D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
62	N027485-011E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
63	N027485-012E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
64	N027523-003C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
65	N027523-004C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
66	N027523-005E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
67	N027523-006D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
68	N027523-007D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
69	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
70	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
71	N027523-008D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
72	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
73	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 73
Created: 12/19/2017 9:53:44 AM by IC-05
Last Update: 12/20/2017 8:57:58 AM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027485-008D,SAMP,5	12/19/2017 8:28:42 PM	SAMP,2>10mL
43	N027485-008DMS,MS,5	12/19/2017 8:43:59 PM	MS,2>10mL
44	N027485-008DMSD,MSD,5	12/19/2017 8:59:17 PM	MSD,2>10mL
45	CCV-3,CCV,1	12/19/2017 9:14:35 PM	CCV
46	CCB-3,CCB,1	12/19/2017 9:29:53 PM	CCB
47	N027523-001C,SAMP,1	12/19/2017 9:45:11 PM	SAMP,10mL
48	N027523-001CMS,MS,1	12/19/2017 10:00:28 PM	MS,10mL
49	N027523-002C,SAMP,1	12/19/2017 10:15:46 PM	SAMP,10mL
50	N027523-002CDUP,DUP,1	12/19/2017 10:31:04 PM	DUP,10mL
51	N027485-001D,SAMP,1	12/19/2017 10:46:22 PM	SAMP,10mL
52	N027485-002D,SAMP,10	12/19/2017 11:01:39 PM	SAMP,1>10mL
53	N027485-003D,SAMP,10	12/19/2017 11:16:57 PM	SAMP,1>10mL
54	N027485-004D,SAMP,5	12/19/2017 11:32:15 PM	SAMP,2>10mL
55	N027485-005D,SAMP,5	12/19/2017 11:47:33 PM	SAMP,2>10mL
56	N027485-006D,SAMP,5	12/20/2017 12:02:51 AM	SAMP,2>10mL
57	CCV-4,CCV,1	12/20/2017 12:18:09 AM	CCV
58	CCB-4,CCB,1	12/20/2017 12:33:27 AM	CCB
59	N027485-007D,SAMP,5	12/20/2017 12:48:44 AM	SAMP,2>10mL
60	N027485-009D,SAMP,1	12/20/2017 1:04:02 AM	SAMP,10mL
61	N027485-010D,SAMP,5	12/20/2017 1:19:20 AM	SAMP,2>10mL
62	N027485-011E,SAMP,5	12/20/2017 1:34:38 AM	SAMP,2>10mL
63	N027485-012E,SAMP,5	12/20/2017 1:49:56 AM	SAMP,2>10mL
64	N027523-003C,SAMP,1	12/20/2017 2:05:14 AM	SAMP,10mL
65	N027523-004C,SAMP,1	12/20/2017 2:20:32 AM	SAMP,10mL
66	N027523-005E,SAMP,5	12/20/2017 2:35:49 AM	SAMP,2>10mL
67	N027523-006D,SAMP,5	12/20/2017 2:51:08 AM	SAMP,2>10mL
68	N027523-007D,SAMP,5	12/20/2017 3:06:26 AM	SAMP,2>10mL
69	CCV-5,CCV,1	12/20/2017 3:21:44 AM	CCV
70	CCB-5,CCB,1	12/20/2017 3:37:02 AM	CCB
71	N027523-008D,SAMP,5	12/20/2017 3:52:19 AM	SAMP,2>10mL
72	CCV-6,CCV,1	12/20/2017 4:07:37 AM	CCV
73	CCB-6,CCB,1	12/20/2017 4:22:55 AM	CCB

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 62
Created: 12/22/2017 10:31:12 AM by IC-05
Last Update: 12/22/2017 3:51:20 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
3	Std - 0	Standard	1000.0	Anions Default	Anions_171219	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171219	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171219	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171219	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171219	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171219	Finished
9	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
10	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
14	N027546-006D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171219	Finished
15	N027546-006DMS,MS,200	Unknown	1000.0	Anions Default	Anions_171219	Finished
16	N027546-006DMSD,MSD,200	Unknown	1000.0	Anions Default	Anions_171219	Finished
17	N027546-006D,SAMP,20	Unknown	1000.0	Anions Default	Anions_171219	Finished
18	N027546-006DMS,MS,20	Unknown	1000.0	Anions Default	Anions_171219	Finished
19	N027546-006DMSD,MSD,20	Unknown	1000.0	Anions Default	Anions_171219	Finished
20	N027546-001D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171219	Finished
21	N027546-001DDUP,DUP,500	Unknown	1000.0	Anions Default	Anions_171219	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
24	N027546-001D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
25	N027546-001DDUP,DUP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
26	N027546-002D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171219	Finished
27	N027546-002D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
28	N027546-003D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171219	Finished
29	N027546-003D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
30	N027546-004D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171219	Finished
31	N027546-004D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
32	N027546-005D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171219	Finished
33	N027546-005D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
34	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
35	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
36	N027546-007C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171219	Finished
37	N027546-007C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
38	N027546-008D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171219	Finished
39	N027546-008D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
40	N027546-009D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171219	Finished
41	N027546-009D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 62
Created: 12/22/2017 10:31:12 AM by IC-05
Last Update: 12/22/2017 3:51:20 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	12/19/2017 9:54:19 AM	BLANK
2	BLANK,BLANK,1	12/19/2017 10:09:37 AM	BLANK
3	Std - 0	12/19/2017 10:24:55 AM	IBLANK
4	Std - 1	12/19/2017 10:45:27 AM	STD-LOW
5	Std - 2	12/19/2017 11:00:45 AM	STD
6	Std - 3	12/19/2017 11:16:03 AM	STD
7	Std - 4	12/19/2017 11:31:21 AM	STD
8	Std - 5	12/19/2017 11:46:39 AM	STD-HIGH
9	CCV-1,CCV,1	12/22/2017 11:04:19 AM	CCV
10	CCB-1,CCB,1	12/22/2017 11:19:37 AM	CCB
11	CCB-1,CCB,1	12/22/2017 11:34:55 AM	CCB
12	MB-H2O,MBLK,1	12/22/2017 11:50:13 AM	METHOD BLANK
13	LCS-H2O,LCS,1	12/22/2017 12:05:31 PM	LCS
14	N027546-006D,SAMP,200	12/22/2017 12:20:49 PM	SAMP,0.05>10mL
15	N027546-006DMS,MS,200	12/22/2017 12:36:07 PM	MS,0.05>10mL
16	N027546-006DMSD,MSD,200	12/22/2017 12:51:25 PM	MSD,0.05>10mL
17	N027546-006D,SAMP,20	12/22/2017 1:06:42 PM	SAMP,0.5>10mL
18	N027546-006DMS,MS,20	12/22/2017 1:22:00 PM	MS,0.5>10mL
19	N027546-006DMSD,MSD,20	12/22/2017 1:37:18 PM	MSD,0.5>10mL
20	N027546-001D,SAMP,500	12/22/2017 1:52:36 PM	SAMP,0.02>10mL
21	N027546-001DDUP,DUP,500	12/22/2017 2:07:54 PM	DUP,0.02>10mL
22	CCV-2,CCV,1	12/22/2017 2:23:11 PM	CCV
23	CCB-2,CCB,1	12/22/2017 2:38:29 PM	CCB
24	N027546-001D,SAMP,100	12/22/2017 2:53:47 PM	SAMP,0.1>10mL
25	N027546-001DDUP,DUP,100	12/22/2017 3:09:05 PM	DUP,0.1>10mL
26	N027546-002D,SAMP,500	12/22/2017 3:24:23 PM	SAMP,0.02>10mL
27	N027546-002D,SAMP,100	12/22/2017 3:39:41 PM	SAMP,0.1>10mL
28	N027546-003D,SAMP,500	12/22/2017 3:54:59 PM	SAMP,0.02>10mL
29	N027546-003D,SAMP,50	12/22/2017 4:10:17 PM	SAMP,0.2>10mL
30	N027546-004D,SAMP,2000	12/22/2017 4:25:35 PM	SAMP,0.005>10mL
31	N027546-004D,SAMP,100	12/22/2017 4:40:52 PM	SAMP,0.1>10mL
32	N027546-005D,SAMP,2000	12/22/2017 4:56:10 PM	SAMP,0.005>10mL
33	N027546-005D,SAMP,100	12/22/2017 5:11:28 PM	SAMP,0.1>10mL
34	CCV-3,CCV,1	12/22/2017 5:26:46 PM	CCV
35	CCB-3,CCB,1	12/22/2017 5:42:03 PM	CCB
36	N027546-007C,SAMP,2000	12/22/2017 5:57:21 PM	SAMP,0.005>10mL
37	N027546-007C,SAMP,100	12/22/2017 6:12:39 PM	SAMP,0.1>10mL
38	N027546-008D,SAMP,2000	12/22/2017 6:27:57 PM	SAMP,0.005>10mL
39	N027546-008D,SAMP,100	12/22/2017 6:43:15 PM	SAMP,0.1>10mL
40	N027546-009D,SAMP,2000	12/22/2017 6:58:32 PM	SAMP,0.005>10mL
41	N027546-009D,SAMP,100	12/22/2017 7:13:50 PM	SAMP,0.1>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 62
Created: 12/22/2017 10:31:12 AM by IC-05
Last Update: 12/22/2017 3:51:20 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027546-010D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171219	Finished
43	N027546-010D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
44	N027557-008D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
45	N027557-008DDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
46	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
47	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
48	N027557-008DMS,MS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
49	N027557-008DMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
50	N027557-001C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
51	N027557-002C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
52	N027557-003C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
53	N027557-004C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
54	N027557-005D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
55	N027557-006D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
56	N027557-007D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
57	N027557-009D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
58	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
59	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
60	N027557-010D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
61	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
62	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 62
Created: 12/22/2017 10:31:12 AM by IC-05
Last Update: 12/22/2017 3:51:20 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027546-010D,SAMP,1000	12/22/2017 7:29:08 PM	SAMP,0.01>10mL
43	N027546-010D,SAMP,100	12/22/2017 7:44:26 PM	SAMP,0.1>10mL
44	N027557-008D,SAMP,1	12/22/2017 7:59:44 PM	SAMP,10mL
45	N027557-008DDUP,DUP,1	12/22/2017 8:15:02 PM	DUP,10mL
46	CCV-4,CCV,1	12/22/2017 8:30:19 PM	CCV
47	CCB-4,CCB,1	12/22/2017 8:45:37 PM	CCB
48	N027557-008DMS,MS,1	12/22/2017 9:00:55 PM	MS,10mL
49	N027557-008DMSD,MSD,1	12/22/2017 9:16:13 PM	MSD,10mL
50	N027557-001C,SAMP,5	12/22/2017 9:31:31 PM	SAMP,2>10mL
51	N027557-002C,SAMP,5	12/22/2017 9:46:49 PM	SAMP,2>10mL
52	N027557-003C,SAMP,5	12/22/2017 10:02:06 PM	SAMP,2>10mL
53	N027557-004C,SAMP,5	12/22/2017 10:17:24 PM	SAMP,2>10mL
54	N027557-005D,SAMP,10	12/22/2017 10:32:42 PM	SAMP,1>10mL
55	N027557-006D,SAMP,1	12/22/2017 10:48:00 PM	SAMP,10mL
56	N027557-007D,SAMP,5	12/22/2017 11:03:18 PM	SAMP,2>10mL
57	N027557-009D,SAMP,1	12/22/2017 11:18:36 PM	SAMP,10mL
58	CCV-5,CCV,1	12/22/2017 11:33:53 PM	CCV
59	CCB-5,CCB,1	12/22/2017 11:49:11 PM	CCB
60	N027557-010D,SAMP,1	12/23/2017 12:04:29 AM	SAMP,10mL
61	CCV-6,CCV,1	12/23/2017 12:19:47 AM	CCV
62	CCB-6,CCB,1	12/23/2017 12:35:06 AM	CCB

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 65
Created: 12/26/2017 9:09:47 AM by IC-05
Last Update: 12/26/2017 1:08:17 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
3	Std - 0	Standard	1000.0	Anions Default	Anions_171219	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171219	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171219	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171219	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171219	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171219	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
12	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
13	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
14	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
15	N027583-001D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
16	N027583-001DDUP,DUP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
17	N027583-001DMS,MS,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
18	N027583-001DMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
19	N027583-002D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
20	N027583-003D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
21	N027583-001D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171219	Finished
22	N027583-001DDUP,DUP,500	Unknown	1000.0	Anions Default	Anions_171219	Finished
23	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
24	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
25	N027583-001D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
26	N027583-001DDUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
27	N027583-002D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171219	Finished
28	N027583-002D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
29	N027583-003D,SAMP,500	Unknown	1000.0	Anions Default	Anions_171219	Finished
30	N027583-003D,SAMP,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
31	N027557-008D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
32	N027557-008DMS,MS,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
33	N027557-008DMSD,MSD,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
34	N027557-008D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
35	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
36	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
37	N027557-008DMS,MS,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
38	N027557-008DMSD,MSD,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
39	N027557-006D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171219	Finished
40	N027557-006DMS,MS,200	Unknown	1000.0	Anions Default	Anions_171219	Finished
41	N027557-006D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 65
Created: 12/26/2017 9:09:47 AM by IC-05
Last Update: 12/26/2017 1:08:17 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	12/19/2017 9:54:19 AM	BLANK
2	BLANK,BLANK,1	12/19/2017 10:09:37 AM	BLANK
3	Std - 0	12/19/2017 10:24:55 AM	IBLANK
4	Std - 1	12/19/2017 10:45:27 AM	STD-LOW
5	Std - 2	12/19/2017 11:00:45 AM	STD
6	Std - 3	12/19/2017 11:16:03 AM	STD
7	Std - 4	12/19/2017 11:31:21 AM	STD
8	Std - 5	12/19/2017 11:46:39 AM	STD-HIGH
9	BLANK,BLANK,1	12/26/2017 8:10:38 AM	BLANK
10	CCV-1,CCV,1	12/26/2017 8:25:57 AM	CCV
11	CCB-1,CCB,1	12/26/2017 8:41:15 AM	CCB
12	CCB-1,CCB,1	12/26/2017 8:56:33 AM	CCB
13	MB-H2O,MBLK,1	12/26/2017 9:14:45 AM	METHOD BLANK
14	LCS-H2O,LCS,1	12/26/2017 9:30:02 AM	LCS
15	N027583-001D,SAMP,5	12/26/2017 10:01:53 AM	SAMP,2>10mL
16	N027583-001DDUP,DUP,5	12/26/2017 10:17:11 AM	DUP,2>10mL
17	N027583-001DMS,MS,5	12/26/2017 10:32:29 AM	MS,2>10mL
18	N027583-001DMSD,MSD,5	12/26/2017 10:47:48 AM	MSD,2>10mL
19	N027583-002D,SAMP,5	12/26/2017 11:03:06 AM	SAMP,2>10mL
20	N027583-003D,SAMP,5	12/26/2017 11:18:23 AM	SAMP,2>10mL
21	N027583-001D,SAMP,500	12/26/2017 11:33:41 AM	SAMP,0.02>10mL
22	N027583-001DDUP,DUP,500	12/26/2017 11:48:59 AM	DUP,0.02>10mL
23	CCV-2,CCV,1	12/26/2017 12:04:17 PM	CCV
24	CCB-2,CCB,1	12/26/2017 12:19:35 PM	CCB
25	N027583-001D,SAMP,50	12/26/2017 12:34:53 PM	SAMP,0.2>10mL
26	N027583-001DDUP,DUP,50	12/26/2017 12:50:10 PM	DUP,0.2>10mL
27	N027583-002D,SAMP,500	12/26/2017 1:05:28 PM	SAMP,0.02>10mL
28	N027583-002D,SAMP,50	12/26/2017 1:20:46 PM	SAMP,0.2>10mL
29	N027583-003D,SAMP,500	12/26/2017 1:36:04 PM	SAMP,0.02>10mL
30	N027583-003D,SAMP,50	12/26/2017 1:51:22 PM	SAMP,0.2>10mL
31	N027557-008D,SAMP,100	12/26/2017 2:06:40 PM	SAMP,0.1>10mL
32	N027557-008DMS,MS,100	12/26/2017 2:21:58 PM	MS,0.1>10mL
33	N027557-008DMSD,MSD,100	12/26/2017 2:37:16 PM	MSD,0.1>10mL
34	N027557-008D,SAMP,10	12/26/2017 2:52:34 PM	SAMP,1>10mL
35	CCV-3,CCV,1	12/26/2017 3:07:52 PM	CCV
36	CCB-3,CCB,1	12/26/2017 3:23:10 PM	CCB
37	N027557-008DMS,MS,10	12/26/2017 3:38:28 PM	MS,1>10mL
38	N027557-008DMSD,MSD,10	12/26/2017 3:53:46 PM	MSD,1>10mL
39	N027557-006D,SAMP,200	12/26/2017 4:09:04 PM	SAMP,0.05>10mL
40	N027557-006DMS,MS,200	12/26/2017 4:24:23 PM	MS,0.05>10mL
41	N027557-006D,SAMP,10	12/26/2017 4:39:41 PM	SAMP,1>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 65
Created: 12/26/2017 9:09:47 AM by IC-05
Last Update: 12/26/2017 1:08:17 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027557-006DMS,MS,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
43	N027557-001C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171219	Finished
44	N027557-001C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
45	N027557-002C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171219	Finished
46	N027557-002C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
47	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
48	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
49	N027557-003C,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171219	Finished
50	N027557-003C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
51	N027557-004C,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171219	Finished
52	N027557-004C,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
53	N027557-005D,SAMP,2000	Unknown	1000.0	Anions Default	Anions_171219	Finished
54	N027557-005D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171219	Finished
55	N027557-007D,SAMP,1000	Unknown	1000.0	Anions Default	Anions_171219	Finished
56	N027557-007D,SAMP,100	Unknown	1000.0	Anions Default	Anions_171219	Finished
57	N027557-009D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171219	Finished
58	N027557-009D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
59	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
60	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
61	N027557-010D,SAMP,200	Unknown	1000.0	Anions Default	Anions_171219	Finished
62	N027557-010D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
63	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
64	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
65	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 65
Created: 12/26/2017 9:09:47 AM by IC-05
Last Update: 12/26/2017 1:08:17 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027557-006DMS,MS,10	12/26/2017 4:54:59 PM	MS,1>10mL
43	N027557-001C,SAMP,1000	12/26/2017 5:10:17 PM	SAMP,0.01>10mL
44	N027557-001C,SAMP,50	12/26/2017 5:25:34 PM	SAMP,0.2>10mL
45	N027557-002C,SAMP,1000	12/26/2017 5:40:52 PM	SAMP,0.01>10mL
46	N027557-002C,SAMP,50	12/26/2017 5:56:10 PM	SAMP,0.2>10mL
47	CCV-4,CCV,1	12/26/2017 6:11:28 PM	CCV
48	CCB-4,CCB,1	12/26/2017 6:26:46 PM	CCB
49	N027557-003C,SAMP,2000	12/26/2017 6:42:04 PM	SAMP,0.005>10mL
50	N027557-003C,SAMP,100	12/26/2017 6:57:23 PM	SAMP,0.1>10mL
51	N027557-004C,SAMP,1000	12/26/2017 7:12:40 PM	SAMP,0.01>10mL
52	N027557-004C,SAMP,100	12/26/2017 7:27:58 PM	SAMP,0.1>10mL
53	N027557-005D,SAMP,2000	12/26/2017 7:43:16 PM	SAMP,0.005>10mL
54	N027557-005D,SAMP,200	12/26/2017 7:58:34 PM	SAMP,0.05>10mL
55	N027557-007D,SAMP,1000	12/26/2017 8:13:52 PM	SAMP,0.01>10mL
56	N027557-007D,SAMP,100	12/26/2017 8:29:10 PM	SAMP,0.1>10mL
57	N027557-009D,SAMP,200	12/26/2017 8:44:27 PM	SAMP,0.05>10mL
58	N027557-009D,SAMP,10	12/26/2017 8:59:46 PM	SAMP,1>10mL
59	CCV-5,CCV,1	12/26/2017 9:15:03 PM	CCV
60	CCB-5,CCB,1	12/26/2017 9:30:22 PM	CCB
61	N027557-010D,SAMP,200	12/26/2017 9:45:40 PM	SAMP,0.05>10mL
62	N027557-010D,SAMP,10	12/26/2017 10:00:58 PM	SAMP,1>10mL
63	CCV-6,CCV,1	12/26/2017 10:16:16 PM	CCV
64	CCB-6,CCB,1	12/26/2017 10:31:34 PM	CCB
65	BLANK,BLANK,1	12/26/2017 10:46:52 PM	BLANK

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INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 12/19/2017

Initial Calibration:

Bromide	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.05	0.25	0.5	1.25	2.5	R^2
Area,mAU*min	0.0000	0.0046	0.0160	0.0327	0.0765	0.1579	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814D

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RLB 01/08/2018

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 12/19/2017

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0744	0.1486	0.2949	0.7826	1.6401	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.



01/08/2018

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 12/19/2017

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0529	0.2187	0.4526	1.1609	2.4307	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 01/08/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **ICV**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2879037**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.218	0.50	1.250	0	97.4	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCV**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2879039**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.271	0.50	1.250	0	102	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCV**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2879044**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.204	0.50	1.250	0	96.3	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCV**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2879046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.205	0.50	1.250	0	96.4	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCV**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2879050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.232	0.50	1.250	0	98.5	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCV**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2879062**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.219	0.50	1.250	0	97.5	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCV**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/23/2017**	SeqNo: **2879065**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.239	0.50	1.250	0	99.1	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **ICV**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2879568**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.982	0.50	2.000	0	99.1	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **CCV**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/26/2017**	SeqNo: **2879570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.920	0.50	2.000	0	96.0	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **CCV**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/26/2017**	SeqNo: **2879576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.933	0.50	2.000	0	96.6	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **CCV**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/26/2017**	SeqNo: **2879583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.942	0.50	2.000	0	97.1	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **CCV**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/26/2017**	SeqNo: **2879589**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.927	0.50	2.000	0	96.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **CCV**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/26/2017**	SeqNo: **2879596**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.934	0.50	2.000	0	96.7	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **CCV**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/26/2017**	SeqNo: **2879599**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.937	0.50	2.000	0	96.8	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **ICV**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2879601**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.950	0.50	4.000	0	98.8	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **CCV**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/26/2017**	SeqNo: **2879603**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.866	0.50	4.000	0	96.6	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **CCV**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/26/2017**	SeqNo: **2879607**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.972	0.50	4.000	0	99.3	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **CCV**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/26/2017**	SeqNo: **2879614**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.971	0.50	4.000	0	99.3	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **CCV**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/26/2017**	SeqNo: **2879622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.995	0.50	4.000	0	99.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **CCV**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/26/2017**	SeqNo: **2879629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.014	0.50	4.000	0	100	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **CCV**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/26/2017**	SeqNo: **2879632**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.957	0.50	4.000	0	98.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	**ICB**	SampType: **ICB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID:	**ICB**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2879038**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-1**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID:	**CCB**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2879041**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-2**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID:	**CCB**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2879045**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-3**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID:	**CCB**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2879047**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-4**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID:	**CCB**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2879051**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCB**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/22/2017**	SeqNo: **2879063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **121065**
Client ID: **CCB**	Batch ID: **R121065**	TestNo: **EPA 300.0**		Analysis Date: **12/23/2017**	SeqNo: **2879066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **ICB**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2879569**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **CCB**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/26/2017**	SeqNo: **2879571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **CCB**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/26/2017**	SeqNo: **2879577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **CCB**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/26/2017**	SeqNo: **2879584**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **CCB**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/26/2017**	SeqNo: **2879590**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **CCB**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/26/2017**	SeqNo: **2879597**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **CCB**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/26/2017**	SeqNo: **2879600**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **ICB**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2879602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **CCB**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/26/2017**	SeqNo: **2879604**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **CCB**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/26/2017**	SeqNo: **2879608**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **CCB**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/26/2017**	SeqNo: **2879615**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **CCB**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/26/2017**	SeqNo: **2879623**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **CCB**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/26/2017**	SeqNo: **2879630**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121079**
Client ID: **CCB**	Batch ID: **R121079**	TestNo: **EPA 300.0**		Analysis Date: **12/26/2017**	SeqNo: **2879633**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/22/2017

Sample Name		Retention Time	Evaluation
CCV-1	Bromide	5.897	
CCV-2	Bromide	5.897	
CCV-3	Bromide	5.907	
CCV-4	Bromide	5.887	
CCV-5	Bromide	5.890	
CCV-6	Bromide	5.890	
	Average	5.895	
	Applied RT Window	5.695 - 6.095	
MB-R121065_BR	Bromide	N.A.	N.A.
LCS-R121065_BR	Bromide	5.894	PASS
N027557-008D	Bromide	5.887	PASS
N027557-008DDUP	Bromide	5.884	PASS
N027557-008DMS	Bromide	5.893	PASS
N027557-008DMSD	Bromide	5.894	PASS
N027557-001C	Bromide	N.A.	N.A.
N027557-002C	Bromide	N.A.	N.A.
N027557-003C	Bromide	5.870	PASS
N027557-004C	Bromide	N.A.	N.A.
N027557-005D	Bromide	5.877	PASS
N027557-006D	Bromide	5.877	PASS
N027557-007D	Bromide	5.873	PASS
N027557-009D	Bromide	5.894	PASS
N027557-010D	Bromide	5.894	PASS

rba 12/28/2017

RLB 01/08/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/26/2017

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	10.077	
CCV-2	Sulfate	10.077	
CCV-3	Sulfate	10.077	
CCV-4	Sulfate	10.040	
CCV-5	Sulfate	10.033	
CCV-6	Sulfate	10.023	
	Average	10.055	
	Applied RT Window	9.855 - 10.255	
MB-R121079_SO4	Sulfate	N.A.	N.A.
LCS-R121079_SO4	Sulfate	10.080	PASS
N027583-001DDUP	Sulfate	10.080	PASS
N027557-008D	Sulfate	10.084	PASS
N027557-008DMS	Sulfate	10.087	PASS
N027557-008DMSD	Sulfate	10.084	PASS
N027557-006D	Sulfate	10.057	PASS
N027557-006DMS	Sulfate	10.047	PASS
N027557-001C	Sulfate	10.050	PASS
N027557-002C	Sulfate	10.047	PASS
N027557-003C	Sulfate	10.037	PASS
N027557-004C	Sulfate	10.040	PASS
N027557-005D	Sulfate	10.034	PASS
N027557-007D	Sulfate	10.037	PASS
N027557-009D	Sulfate	10.040	PASS
N027557-010D	Sulfate	10.030	PASS

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RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 12/26/2017

Sample Name		Retention Time	Evaluation
CCV-1	Chloride	4.304	
CCV-2	Chloride	4.293	
CCV-3	Chloride	4.297	
CCV-4	Chloride	4.293	
CCV-5	Chloride	4.290	
CCV-6	Chloride	4.290	
	Average	4.295	
	Applied RT Window	4.095 - 4.495	
MB-R121079_CL	Chloride	N.A.	N.A.
LCS-R121079_CL	Chloride	4.297	PASS
N027583-001DDUP	Chloride	4.297	PASS
N027557-008D	Chloride	4.297	PASS
N027557-008DMS	Chloride	4.297	PASS
N027557-008DMSD	Chloride	4.297	PASS
N027557-006D	Chloride	4.297	PASS
N027557-006DMS	Chloride	4.297	PASS
N027557-001C	Chloride	4.293	PASS
N027557-002C	Chloride	4.293	PASS
N027557-003C	Chloride	4.290	PASS
N027557-004C	Chloride	4.293	PASS
N027557-005D	Chloride	4.290	PASS
N027557-007D	Chloride	4.294	PASS
N027557-009D	Chloride	4.294	PASS
N027557-010D	Chloride	4.290	PASS

rba 12/28/2017

RJB 01/08/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 5/23/2017 ; 5/24/2017; 5/25/2017
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Datafile	170523A D36	170523A D37	170523A D38	170524A D17	170524A D18	170525A D45	170525A D46					
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**MDL**	**LOD**	**PQL**
Fluoride	0.020	0.022	0.021	0.020	0.023	0.026	0.024	0.020	0.0021	**0.0065**	0.020	0.10
Chloride	0.133	0.136	0.136	0.133	0.141	0.133	0.136	0.025	0.0029	**0.0091**	0.020	0.50
Nitrite	0.030	0.028	0.027	0.028	0.028	0.027	0.027	0.020	0.0010	**0.0030**	0.010	0.05
Bromide	0.037	0.042	0.043	0.038	0.040	0.032	0.025	0.040	0.0062	**0.0196**	0.040	0.20
Nitrate	0.035	0.034	0.033	0.033	0.033	0.031	0.030	0.020	0.0016	**0.0050**	0.010	0.05
Phosphate	0.047	0.051	0.049	0.046	0.052	0.047	0.059	0.040	0.0043	**0.0135**	0.030	0.10
Sulfate	0.213	0.199	0.208	0.216	0.199	0.201	0.198	0.050	0.0073	**0.0229**	0.050	0.50

MDL/LOD & PQL Verification 2017

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)** Matrix: **WATER**
Method Number: EPA Method 300.0 Unit: mg/L
Analysis Date(s): 5/26/2017
Analyst: Ria Abes

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0065**	0.020	0.024	0.10	0.0906	**91**
Chloride	**0.0091**	0.020	0.130	0.50	0.5635	**113**
Nitrite	**0.0030**	0.010	0.023	0.05	0.0581	**116**
Bromide	**0.0196**	0.040	0.048	0.20	0.194	**97**
Nitrate	**0.0050**	0.010	0.023	0.05	0.0599	**120**
Phosphate	**0.0135**	0.030	0.043	0.10	0.1111	**111**
Sulfate	**0.0229**	0.050	0.195	0.50	0.6178	**124**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121101 **Analyst:** QBM

ASSET #: N027546, N027556, N027557 **Date Analyzed:** 12/28/2017

Method: **4500_NO3**

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 1/8/2018

2nd Level Reviewer RB 01/08/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N027557-007C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.8169	*	1
	=	0.8169	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 0.82 mg/L

RLB 01/08/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

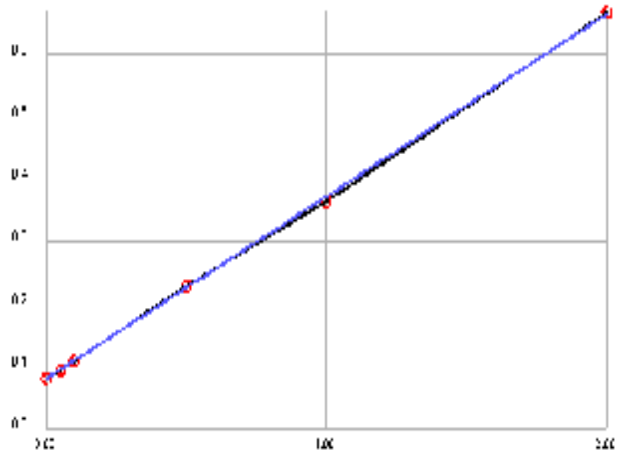
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.292x + 0.0792
Correlation	.999843

Calibrant	Energy	Set	Conc
1	0.0800	0.0000	0.0028
2	0.0940	0.0500	0.0507
3	0.1077	0.1000	0.0976
4	0.2296	0.5000	0.5152
5	0.3638	1.0000	0.9748
6	0.6657	2.0000	2.0089

Notes:

RB 01/08/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **ICV**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.521	0.050	0.5000	0	104	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **CCV**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880075**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.523	0.050	0.5000	0	105	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **CCV**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880086**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.503	0.050	0.5000	0	101	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **CCV**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.459	0.050	0.5000	0	91.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **ICB**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880065**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **CCB**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **CCB**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121101**
Client ID: **CCB**	Batch ID: **R121101**	TestNo: **SM4500-NO3**		Analysis Date: **12/28/2017**	SeqNo: **2880098**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 12-28-2017 15:52
Time end: 12-28-2017 18:51

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	18:09:36	-0.0020		0.0786
2	<BLANK>	18:10:30	0.0004		0.0793
3	<CAL1>	18:11:25	0.0028	[0]	0.0800
4	<CAL2>	18:12:27	0.0507	[0.05]	0.0940
5	<CAL3>	18:13:21	0.0976	[0.1]	0.1077
6	<CAL4>	18:14:22	0.5152	[0.5]	0.2296
7	<CAL5>	18:15:18	0.9748	[1]	0.3638
8	<CAL6>	18:16:13	2.0089	[2]	0.6657
9	,BLANK,BLANK,1, NOT REPORTED	18:17:14	0.0298		0.0879
10	,ICV,ICV,1,	18:18:09	0.5210		0.2313
11	,ICB,ICB,1,	18:19:05	0.0052		0.0807
12	,MB-H2O,MBLK,1,	18:20:05	0.0004		0.0793
13	,LCS-H2O,LCS,1,	18:21:00	0.5035		0.2262
14	,N027546-003C,SAMP,2,	18:21:56	0.8248		0.3200
15	,N027546-003CMS,MS,2,	18:22:57	1.4208		0.4940
16	,N027546-003CMSD,MSD,2,	18:23:52	1.4064		0.4898
17	,N027546-004C,SAMP,1,	18:24:47	0.0603		0.0968
18	,N027546-004CDUP,DUP,1,	18:25:49	0.0213		0.0854
19	,N027546-005C,SAMP,1,	18:26:43	0.0723		0.1003
20	,BLANK, NOT REPORTED	18:27:39	-0.0092		0.0765
21	,CCV-1,CCV,1, NOT REPORTED	18:28:40	0.4754		0.2180
22	,CCV-1,CCV,1,	18:29:36	0.5227		0.2318
23	,CCB-1,CCB,1,	18:30:30	0.0045		0.0805
24	,N027546-006C,SAMP,5,	18:31:32	0.6744		0.2761
25	,N027546-008C,SAMP,1,	18:32:27	0.4713		0.2168
26	,N027546-009C,SAMP,1,	18:33:29	0.4908		0.2225

RLB 01/08/2018

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N027546-010C,SAMP,1,	18:34:23	0.6566		0.2709
28	,N027556-001C,SAMP,5,	18:35:19	0.5789		0.2482
29	,N027556-002C,SAMP,5,	18:36:09	0.5501		0.2398
30	,N027556-003C,SAMP,5,	18:36:51	0.6124		0.2580
31	,N027556-004B,SAMP,5,	18:37:40	0.5484		0.2393
32	,BLANK, NOT REPORTED	18:38:22	-0.0055		0.0776
33	,CCV-2,CCV,1, NOT REPORTED	18:39:06	0.4919		0.2228
34	,CCV-2,CCV,1,	18:39:54	0.5025		0.2259
35	,CCB-2,CCB,1,	18:40:37	-0.0168		0.0743
36	,N027556-005B,SAMP,5,	18:41:27	0.5830		0.2494
37	,N027556-006C,SAMP,5,	18:42:09	0.5761		0.2474
38	,N027557-005C,SAMP,1,	18:42:52	0.0243		0.0863
39	,N027557-006C,SAMP,1,	18:43:34	0.0124		0.0828
40	,N027557-007C,SAMP,1,	18:44:24	0.8169		0.3177
41	,N027557-008C,SAMP,5,	18:45:06	0.6162		0.2591
42	,N027557-009C,SAMP,5,	18:45:49	0.4241		0.2030
43	,N027557-010C,SAMP,5,	18:46:37	0.4535		0.2116
44	,BLANK, NOT REPORTED	18:47:21	-0.0288		0.0708
45	,CCV-3,CCV,1, NOT REPORTED	18:48:04	0.4676		0.2157
46	,CCV-3,CCV,1,	18:48:52	0.4593		0.2133
47	,CCB-3,CCB,1,	18:49:35	-0.0017		0.0787

RB 01/08/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 12/28/2017
Time Analyzed: 3:47 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171220B
Color reagent: R171220C
2% Copper Sulfate: R171220A
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027546-003C		6.85							
N027546-004C		8.20							
N027546-005C		7.82							
N027546-006C		7.94							
N027546-008C		8.95							
N027546-009C		7.73							
N027546-010C		7.76							
N027556-001C		8.07							
N027556-002C		7.93							
N027556-003C		7.41							
N027556-004B		7.54							
N027556-005B		6.32							
N027556-006C		7.07							
N027557-005C		7.71							
N027557-006C		7.63							
N027557-007C		7.90							
N027557-008C		7.46							
N027557-009C		7.65							
N027557-010C		7.61							

Advanced Technology Laboratories, Inc.
Book # 1

RB 01/08/2018

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66082
ASSET #: N027557

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 12/19/2018

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)		X			X	
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.		X			X	
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X			X	
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of Ca in LLCCV2 failed failed, bias high, However Ca has high concentration, thus reported.
%Rec of Ca in N027557-001B MS/MSD & Fe in N027557-001B PS failed. However LCS passed criteria.
Dilution test failed Mg. However PS, passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/8/18

2nd Level Reviewer 01/08/2018 Date: ____

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66082
ASSET #: N027557

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 1/3/2018

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		X
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		X
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For Na run only.
%Rec of Na in N027557-002B MS/MSD failed. However LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/8/18

2nd Level Reviewer 01/08/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N027557-001B** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.02063 * 1 * (25/25) * 1000

Iron , ug/L = 20.63

Reporting results in two significant figures,

Iron , ug/L = 21

% RSD SUMMARY

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	B	0	0.26	15	PASS
Standard1	ICAL	1	B	0.1	1.13	15	PASS
Standard3	ICAL	1	B	1	1.19	15	PASS
Standard4	ICAL	1	B	2.5	0.29	15	PASS
Standard5	ICAL	1	B	3.75	0.44	15	PASS
Standard6	ICAL	1	B	5	0.45	15	PASS
Standard7	ICAL	1	B	10	0.59	15	PASS
ICV	ICV	1	B	5.1	0.28	15	PASS
ICB	ICB	1	B	0.032	8.5	15	PASS
LLICV	CCV1	1	B	0.11	1.62	20	PASS
ICSA1	ICSA	1	B	0.088	1.47	15	PASS
ICSAB1	ICSAB	1	B	1.17	0.43	15	PASS
CCV1	CCV	1	B	5.077	0.44	15	PASS
CCB1	CCB	1	B	0.041	16.48	15	<PQL
CCB1	CCB	1	B	0.013	11.56	15	PASS
CCV2	CCV	1	B	4.92	0.23	15	PASS
CCB2	CCB	1	B	0.031	17.11	15	<PQL
CCV3	CCV	1	B	5.2	0.21	15	PASS
CCB3	CCB	1	B	0.058	12.023	15	PASS
CCB3	CCB	1	B	0.021	7.91	15	PASS
CCV4	CCV	1	B	4.9	0.63	15	PASS
CCB4	CCB	1	B	0.0098	9.57	15	PASS
LLCCV1	CCV2	1	B	0.098	1.19	20	PASS
ICSA2	ICSA	1	B	0.084	1.79	15	PASS
ICSAB2	ICSAB	1	B	1.18	0.47	15	PASS
CCV5	CCV	1	B	5.13	0.54	15	PASS
CCB5	CCB	1	B	0.031	4.82	15	PASS
CCV6	CCV	1	B	4.93	0.59	15	PASS
CCB6	CCB	1	B	0.036	56.96	15	<PQL
CCV7	CCV	1	B	4.81	0.42	15	PASS
CCB7	CCB	1	B	0.028	6.54	15	PASS
CCV8	CCV	1	B	4.97	0.8	15	PASS
CCB8	CCB	1	B	0.032	9.49	15	PASS
LLCCV2	CCV2	1	B	0.1	3.18	20	PASS
ICSA3	ICSA	1	B	0.086	0.97	15	PASS
ICSAB3	ICSAB	1	B	1.15	0.53	15	PASS
MB-66082	MBLK	1	B	0.0042	26.88	15	<PQL
LCS1-66082	LCS	1	B	4.66	0.68	15	PASS
N027557-001B	SAMP	1	B	1.35	0.24	15	PASS
N027557-001B	SAMP	5	B	0.31	0.46	15	PASS
CCV9	CCV	1	B	4.87	0.67	15	PASS
CCB9	CCB	1	B	0.025	10.58	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027557-001B-PS	PS	1	B	5.95	0.62	15	PASS
N027557-001B-MS1	MS	1	B	5.97	0.79	15	PASS
N027557-001B-MSD1	MSD	1	B	5.96	0.48	15	PASS
N027557-002B	SAMP	1	B	1.41	0.42	15	PASS
N027557-003B	SAMP	1	B	1.93	0.51	15	PASS
N027557-004B	SAMP	1	B	2.07	0.4	15	PASS
N027557-005B	SAMP	1	B	3.23	0.58	15	PASS
N027557-006B	SAMP	1	B	1.3	1.86	15	PASS
N027557-007B	SAMP	1	B	1.74	0.27	15	PASS
N027557-008B	SAMP	1	B	0.22	1.66	15	PASS
CCV10	CCV	1	B	4.82	0.81	15	PASS
CCB10	CCB	1	B	0.035	8.23	15	PASS
N027557-009B	SAMP	1	B	0.27	1.28	15	PASS
N027557-010B	SAMP	1	B	0.25	0.72	15	PASS
CCV11	CCV	1	B	4.74	0.42	15	PASS
CCB11	CCB	1	B	0.046	7.74	15	PASS
CCB11	CCB	1	B	0.019	5.52	15	PASS
CCV12	CCV	1	B	4.85	0.53	15	PASS
CCB12	CCB	1	B	0.024	7.59	15	PASS
LLCCV3	CCV2	1	B	0.1	3.0087	20	PASS
ICSA4	ICSA	1	B	0.09	1.081	15	PASS
ICSAB4	ICSAB	1	B	1.13	0.64	15	PASS
CCV13	CCV	1	B	4.89	1.000094	15	PASS
CCB13	CCB	1	B	0.031	9.85	15	PASS
N027557-005B	SAMP	5	B	0.76	0.21	15	PASS
N027557-007B	SAMP	5	B	0.41	0.58	15	PASS
CCV14	CCV	1	B	4.96	0.56	15	PASS
CCB14	CCB	1	B	0.027	1.84	15	PASS
CCV15	CCV	1	B	4.83	0.61	15	PASS
CCB15	CCB	1	B	0.029	4.2	15	PASS
CCV16	CCV	1	B	4.8	0.77	15	PASS
CCB16	CCB	1	B	0.047	12.42	15	PASS
CCB16	CCB	1	B	0.02	4.068	15	PASS
CCV17	CCV	1	B	5.24	1.23	15	PASS
CCB17	CCB	1	B	0.06	11.74	15	PASS
LLCCV4	CCV2	1	B	0.12	1.54	20	PASS
LLCCV4	CCV2	1	B	0.079	0.74	20	PASS
ICSA5	ICSA	1	B	0.085	1.33	15	PASS
ICSAB5	ICSAB	1	B	1.22	0.32	15	PASS
ICSAB5	ICSAB	1	B	1.022	2.62	15	PASS
CalBlk	IBLK	1	Ca	0	4.61	15	PASS
Standard1	ICAL	1	Ca	0.2	11.24	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard2	ICAL	1	Ca	1	4.85	15	PASS
Standard3	ICAL	1	Ca	2	2.89	15	PASS
Standard4	ICAL	1	Ca	5	0.84	15	PASS
Standard5	ICAL	1	Ca	7.5	0.92	15	PASS
Standard6	ICAL	1	Ca	10	0.58	15	PASS
Standard7	ICAL	1	Ca	20	0.33	15	PASS
ICV	ICV	1	Ca	10.1	0.16	15	PASS
ICB	ICB	1	Ca	0.025	67.56	15	<PQL
LLICV	CCV1	1	Ca	0.23	11.41	20	PASS
ICSA1	ICSA	1	Ca	506.49	0.09	15	PASS
ICSAB1	ICSAB	1	Ca	555.54	0.11	15	PASS
CCV1	CCV	1	Ca	10.087	0.51	15	PASS
CCB1	CCB	1	Ca	-0.021	131.14	15	<PQL
CCB1	CCB	1	Ca	0.033	27.36	15	<PQL
CCV2	CCV	1	Ca	9.9	0.58	15	PASS
CCB2	CCB	1	Ca	0.0035	666.54	15	<PQL
CCV3	CCV	1	Ca	10.16	0.48	15	PASS
CCB3	CCB	1	Ca	0.00041	7555.71	15	<PQL
CCB3	CCB	1	Ca	0.018	110.92	15	<PQL
CCV4	CCV	1	Ca	9.88	0.11	15	PASS
CCB4	CCB	1	Ca	0.029	117.34	15	<PQL
LLCCV1	CCV2	1	Ca	0.22	13.79	20	PASS
ICSA2	ICSA	1	Ca	511.76	0.092	15	PASS
ICSAB2	ICSAB	1	Ca	558.43	0.18	15	PASS
CCV5	CCV	1	Ca	10.35	0.77	15	PASS
CCB5	CCB	1	Ca	0.0066	281.14	15	<PQL
CCV6	CCV	1	Ca	10.068	0.64	15	PASS
CCB6	CCB	1	Ca	-0.02	390.28	15	<PQL
CCV7	CCV	1	Ca	9.85	0.94	15	PASS
CCB7	CCB	1	Ca	0.031	61.44	15	<PQL
CCV8	CCV	1	Ca	10.064	0.5	15	PASS
CCB8	CCB	1	Ca	0.048	44.45	15	<PQL
LLCCV2	CCV2	1	Ca	0.27	8.72	20	PASS
ICSA3	ICSA	1	Ca	497.08	0.11	15	PASS
ICSAB3	ICSAB	1	Ca	543.69	0.18	15	PASS
MB-66082	MBLK	1	Ca	0.037	50.098	15	<PQL
LCS1-66082	LCS	1	Ca	9.58	0.18	15	PASS
N027557-001B	SAMP	1	Ca	341.56	0.2	15	PASS
N027557-001B	SAMP	5	Ca	67.94	0.15	15	PASS
CCV9	CCV	1	Ca	10.13	0.85	15	PASS
CCB9	CCB	1	Ca	0.061	16.2	15	<PQL
N027557-001B-PS	PS	1	Ca	352.63	0.064	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027557-001B-MS1	MS	1	Ca	346.44	0.46	15	PASS
N027557-001B-MSD1	MSD	1	Ca	345.28	0.18	15	PASS
N027557-002B	SAMP	1	Ca	339.56	0.22	15	PASS
N027557-003B	SAMP	1	Ca	384.87	0.15	15	PASS
N027557-004B	SAMP	1	Ca	174.19	0.34	15	PASS
N027557-005B	SAMP	1	Ca	792.83	0.26	15	PASS
N027557-006B	SAMP	1	Ca	31.1	0.15	15	PASS
N027557-007B	SAMP	1	Ca	539.11	0.052	15	PASS
N027557-008B	SAMP	1	Ca	84.9	0.38	15	PASS
CCV10	CCV	1	Ca	9.92	0.49	15	PASS
CCB10	CCB	1	Ca	0.063	30.0053	15	<PQL
N027557-009B	SAMP	1	Ca	100.45	1.37	15	PASS
N027557-010B	SAMP	1	Ca	98.059	0.34	15	PASS
CCV11	CCV	1	Ca	9.66	0.31	15	PASS
CCB11	CCB	1	Ca	0.049	17.31	15	<PQL
CCB11	CCB	1	Ca	0.053	25.75	15	<PQL
CCV12	CCV	1	Ca	9.88	0.73	15	PASS
CCB12	CCB	1	Ca	0.055	96.22	15	<PQL
LLCCV3	CCV2	1	Ca	0.26	4.53	20	PASS
ICSA4	ICSA	1	Ca	489.73	0.39	15	PASS
ICSAB4	ICSAB	1	Ca	536.67	0.25	15	PASS
CCV13	CCV	1	Ca	9.81	0.84	15	PASS
CCB13	CCB	1	Ca	0.061	71.21	15	<PQL
N027557-005B	SAMP	5	Ca	161.5	0.26	15	PASS
N027557-007B	SAMP	5	Ca	112.03	0.33	15	PASS
CCV14	CCV	1	Ca	10.006	0.81	15	PASS
CCB14	CCB	1	Ca	0.021	202	15	<PQL
CCV15	CCV	1	Ca	9.48	0.87	15	PASS
CCB15	CCB	1	Ca	0.038	117.27	15	<PQL
CCV16	CCV	1	Ca	9.47	0.34	15	PASS
CCB16	CCB	1	Ca	0.0024	667.76	15	<PQL
CCB16	CCB	1	Ca	0.044	46.61	15	<PQL
CCV17	CCV	1	Ca	10.46	0.51	15	PASS
CCB17	CCB	1	Ca	-0.019	142.64	15	<PQL
LLCCV4	CCV2	1	Ca	0.27	10.024	20	PASS
LLCCV4	CCV2	1	Ca	0.16	3.77	20	PASS
ICSA5	ICSA	1	Ca	511.39	0.15	15	PASS
ICSAB5	ICSAB	1	Ca	561.62	0.28	15	PASS
ICSAB5	ICSAB	1	Ca	464.82	0.11	15	PASS
CalBlk	IBLK	1	Fe	0	4.28	15	PASS
Standard1	ICAL	1	Fe	0.02	0.87	15	PASS
Standard2	ICAL	1	Fe	0.05	0.44	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard3	ICAL	1	Fe	2	0.44	15	PASS
Standard4	ICAL	1	Fe	5	0.75	15	PASS
Standard5	ICAL	1	Fe	7.5	0.33	15	PASS
Standard6	ICAL	1	Fe	10	1.027	15	PASS
Standard7	ICAL	1	Fe	20	0.18	15	PASS
ICV	ICV	1	Fe	10.27	0.25	15	PASS
ICB	ICB	1	Fe	0.00026	186.27	15	<PQL
LLICV	CCV1	1	Fe	0.022	2.86	20	PASS
ICSA1	ICSA	1	Fe	179.79	0.53	15	PASS
ICSAB1	ICSAB	1	Fe	187.59	0.075	15	PASS
CCV1	CCV	1	Fe	10.069	0.16	15	PASS
CCB1	CCB	1	Fe	-0.00017	84.95	15	<PQL
CCB1	CCB	1	Fe	0.00077	31.18	15	<PQL
CCV2	CCV	1	Fe	9.77	0.13	15	PASS
CCB2	CCB	1	Fe	0.0002	102.016	15	<PQL
CCV3	CCV	1	Fe	10.41	0.3	15	PASS
CCB3	CCB	1	Fe	-0.00038	191.48	15	<PQL
CCB3	CCB	1	Fe	-0.00056	180.67	15	<PQL
CCV4	CCV	1	Fe	9.84	0.095	15	PASS
CCB4	CCB	1	Fe	-0.00024	315.41	15	<PQL
LLCCV1	CCV2	1	Fe	0.023	3.26	20	PASS
ICSA2	ICSA	1	Fe	181.78	0.087	15	PASS
ICSAB2	ICSAB	1	Fe	188.99	0.08	15	PASS
CCV5	CCV	1	Fe	10.61	0.8	15	PASS
CCB5	CCB	1	Fe	-0.00035	70.82	15	<PQL
CCV6	CCV	1	Fe	9.94	0.081	15	PASS
CCB6	CCB	1	Fe	-0.00036	570.094	15	<PQL
CCV7	CCV	1	Fe	9.65	0.12	15	PASS
CCB7	CCB	1	Fe	-0.00011	510.0072	15	<PQL
CCV8	CCV	1	Fe	10.27	0.49	15	PASS
CCB8	CCB	1	Fe	0.0003	205.79	15	<PQL
LLCCV2	CCV2	1	Fe	0.023	0.9	20	PASS
ICSA3	ICSA	1	Fe	176.99	0.26	15	PASS
ICSAB3	ICSAB	1	Fe	184.65	0.061	15	PASS
MB-66082	MBLK	1	Fe	0.0017	21.51	15	<PQL
LCS1-66082	LCS	1	Fe	0.1	0.76	15	PASS
N027557-001B	SAMP	1	Fe	0.021	1.27	15	PASS
N027557-001B	SAMP	5	Fe	0.0038	8.39	15	PASS
CCV9	CCV	1	Fe	10.19	0.37	15	PASS
CCB9	CCB	1	Fe	0.00067	27.46	15	<PQL
N027557-001B-PS	PS	1	Fe	0.096	1.022	15	PASS
N027557-001B-MS1	MS	1	Fe	0.1	1.034	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027557-001B-MSD1	MSD	1	Fe	0.099	0.83	15	PASS
N027557-002B	SAMP	1	Fe	0.26	0.37	15	PASS
N027557-003B	SAMP	1	Fe	0.018	1.59	15	PASS
N027557-004B	SAMP	1	Fe	0.068	1.16	15	PASS
N027557-005B	SAMP	1	Fe	0.067	1.46	15	PASS
N027557-006B	SAMP	1	Fe	0.027	1.4	15	PASS
N027557-007B	SAMP	1	Fe	0.56	0.45	15	PASS
N027557-008B	SAMP	1	Fe	0.017	2.71	15	PASS
CCV10	CCV	1	Fe	10.15	0.17	15	PASS
CCB10	CCB	1	Fe	0.00061	54.82	15	<PQL
N027557-009B	SAMP	1	Fe	0.018	1.89	15	PASS
N027557-010B	SAMP	1	Fe	0.013	4.42	15	PASS
CCV11	CCV	1	Fe	9.7	0.18	15	PASS
CCB11	CCB	1	Fe	0.00057	19.74	15	<PQL
CCB11	CCB	1	Fe	0.00089	115.74	15	<PQL
CCV12	CCV	1	Fe	10.18	0.8	15	PASS
CCB12	CCB	1	Fe	0.0005	8.21	15	PASS
LLCCV3	CCV2	1	Fe	0.024	1.89	20	PASS
ICSA4	ICSA	1	Fe	175.82	1.053	15	PASS
ICSAB4	ICSAB	1	Fe	183.95	0.15	15	PASS
CCV13	CCV	1	Fe	10.15	0.56	15	PASS
CCB13	CCB	1	Fe	0.0011	103.41	15	<PQL
N027557-005B	SAMP	5	Fe	0.015	2.47	15	PASS
N027557-007B	SAMP	5	Fe	0.13	0.37	15	PASS
CCV14	CCV	1	Fe	10.17	0.018	15	PASS
CCB14	CCB	1	Fe	-0.00054	87.53	15	<PQL
CCV15	CCV	1	Fe	9.94	0.59	15	PASS
CCB15	CCB	1	Fe	-0.0011	9.77	15	PASS
CCV16	CCV	1	Fe	9.92	0.5	15	PASS
CCB16	CCB	1	Fe	0.00074	80.4	15	<PQL
CCB16	CCB	1	Fe	-0.0007	36.19	15	<PQL
CCV17	CCV	1	Fe	10.91	0.67	15	PASS
CCB17	CCB	1	Fe	-0.00067	75.16	15	<PQL
LLCCV4	CCV2	1	Fe	0.025	2.86	20	PASS
LLCCV4	CCV2	1	Fe	0.017	5.58	20	PASS
ICSA5	ICSA	1	Fe	187.83	0.26	15	PASS
ICSAB5	ICSAB	1	Fe	196.9	0.18	15	PASS
ICSAB5	ICSAB	1	Fe	200.61	1.075	15	PASS
CalBlk	IBLK	1	Mg	0	3.29	15	PASS
Standard1	ICAL	1	Mg	0.1	0.36	15	PASS
Standard2	ICAL	1	Mg	1	0.34	15	PASS
Standard3	ICAL	1	Mg	2	0.47	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard4	ICAL	1	Mg	5	0.56	15	PASS
Standard5	ICAL	1	Mg	7.5	0.35	15	PASS
Standard6	ICAL	1	Mg	10	1.06	15	PASS
Standard7	ICAL	1	Mg	20	0.26	15	PASS
ICV	ICV	1	Mg	10.26	0.12	15	PASS
ICB	ICB	1	Mg	-0.00057	102.75	15	<PQL
LLICV	CCV1	1	Mg	0.1	1.00022	20	PASS
ICSA1	ICSA	1	Mg	475.94	0.47	15	PASS
ICSAB1	ICSAB	1	Mg	503.56	0.34	15	PASS
CCV1	CCV	1	Mg	10.004	0.13	15	PASS
CCB1	CCB	1	Mg	-0.00046	52.94	15	<PQL
CCB1	CCB	1	Mg	-0.00092	99.41	15	<PQL
CCV2	CCV	1	Mg	9.75	0.24	15	PASS
CCB2	CCB	1	Mg	-0.0016	36.99	15	<PQL
CCV3	CCV	1	Mg	10.39	0.35	15	PASS
CCB3	CCB	1	Mg	-0.00072	141.5	15	<PQL
CCB3	CCB	1	Mg	-0.00061	50.2	15	<PQL
CCV4	CCV	1	Mg	9.82	0.3	15	PASS
CCB4	CCB	1	Mg	-0.00072	76.36	15	<PQL
LLCCV1	CCV2	1	Mg	0.11	0.71	20	PASS
ICSA2	ICSA	1	Mg	481.22	0.14	15	PASS
ICSAB2	ICSAB	1	Mg	506.62	0.41	15	PASS
CCV5	CCV	1	Mg	10.57	0.75	15	PASS
CCB5	CCB	1	Mg	-0.00024	141.97	15	<PQL
CCV6	CCV	1	Mg	9.88	0.051	15	PASS
CCB6	CCB	1	Mg	0.00095	296.93	15	<PQL
CCV7	CCV	1	Mg	9.68	0.057	15	PASS
CCB7	CCB	1	Mg	-0.001	43.7	15	<PQL
CCV8	CCV	1	Mg	10.41	0.51	15	PASS
CCB8	CCB	1	Mg	-0.0014	63.1	15	<PQL
LLCCV2	CCV2	1	Mg	0.1	1.16	20	PASS
ICSA3	ICSA	1	Mg	476.52	0.15	15	PASS
ICSAB3	ICSAB	1	Mg	500.6	0.69	15	PASS
MB-66082	MBLK	1	Mg	0.00008	234.8	15	<PQL
LCS1-66082	LCS	1	Mg	9.55	0.16	15	PASS
N027557-001B	SAMP	1	Mg	20.47	0.14	15	PASS
N027557-001B	SAMP	5	Mg	4.66	0.025	15	PASS
CCV9	CCV	1	Mg	10.32	0.48	15	PASS
CCB9	CCB	1	Mg	-0.0013	70.18	15	<PQL
N027557-001B-PS	PS	1	Mg	28.47	0.23	15	PASS
N027557-001B-MS1	MS	1	Mg	28.2	0.16	15	PASS
N027557-001B-MSD1	MSD	1	Mg	28.18	0.087	15	PASS

RSD SUMMARY: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N027557-002B	SAMP	1	Mg	19.18	0.35	15	PASS
N027557-003B	SAMP	1	Mg	33.83	0.18	15	PASS
N027557-004B	SAMP	1	Mg	5	0.4	15	PASS
N027557-005B	SAMP	1	Mg	16.019	0.5	15	PASS
N027557-006B	SAMP	1	Mg	1.23	1.35	15	PASS
N027557-007B	SAMP	1	Mg	17.084	0.32	15	PASS
N027557-008B	SAMP	1	Mg	16.83	0.65	15	PASS
CCV10	CCV	1	Mg	10.29	0.11	15	PASS
CCB10	CCB	1	Mg	-0.0014	65.99	15	<PQL
N027557-009B	SAMP	1	Mg	17.58	0.19	15	PASS
N027557-010B	SAMP	1	Mg	17.77	0.44	15	PASS
CCV11	CCV	1	Mg	9.82	0.36	15	PASS
CCB11	CCB	1	Mg	-0.0014	35.042	15	<PQL
CCB11	CCB	1	Mg	-0.0012	13.65	15	PASS
CCV12	CCV	1	Mg	10.34	0.82	15	PASS
CCB12	CCB	1	Mg	-0.00016	188.32	15	<PQL
LLCCV3	CCV2	1	Mg	0.1	0.81	20	PASS
ICSA4	ICSA	1	Mg	473.9	1.11	15	PASS
ICSAB4	ICSAB	1	Mg	500.15	0.67	15	PASS
CCV13	CCV	1	Mg	10.32	0.34	15	PASS
CCB13	CCB	1	Mg	0.00036	32.88	15	<PQL
N027557-005B	SAMP	5	Mg	4.091	0.029	15	PASS
N027557-007B	SAMP	5	Mg	4.2	0.24	15	PASS
CCV14	CCV	1	Mg	10.25	0.18	15	PASS
CCB14	CCB	1	Mg	-0.00055	32.68	15	<PQL
CCV15	CCV	1	Mg	10.007	0.51	15	PASS
CCB15	CCB	1	Mg	-0.00003	276.64	15	<PQL
CCV16	CCV	1	Mg	9.99	0.33	15	PASS
CCB16	CCB	1	Mg	0.00041	25.05	15	<PQL
CCB16	CCB	1	Mg	-0.00009	458.22	15	<PQL
CCV17	CCV	1	Mg	10.98	0.79	15	PASS
CCB17	CCB	1	Mg	-0.00063	95.52	15	<PQL
LLCCV4	CCV2	1	Mg	0.11	0.3	20	PASS
LLCCV4	CCV2	1	Mg	0.081	0.46	20	PASS
ICSA5	ICSA	1	Mg	504.98	0.32	15	PASS
ICSAB5	ICSAB	1	Mg	534.4	0.036	15	PASS
ICSAB5	ICSAB	1	Mg	447.75	1.72	15	PASS

RSD SUMMARY: 180103A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	38.46	15	<PQL
Standard1	ICAL	1	Na	0.1	5.37	15	PASS
Standard2	ICAL	1	Na	1	0.47	15	PASS
Standard3	ICAL	1	Na	5	0.35	15	PASS
Standard4	ICAL	1	Na	10	0.21	15	PASS
Standard5	ICAL	1	Na	20	0.11	15	PASS
Standard6	ICAL	1	Na	40	0.14	15	PASS
ICV	ICV	1	Na	9.97	0.32	15	PASS
ICB	ICB	1	Na	0.0031	68.95	15	<PQL
ICSA1	ICSA	1	Na	0.00057	457.55	15	<PQL
ICSAB1	ICSAB	1	Na	10.004	0.22	15	PASS
CCV1	CCV	1	Na	9.87	0.5	15	PASS
CCB1	CCB	1	Na	-0.021	21.93	15	<PQL
CCV2	CCV	1	Na	11.037	17.71	15	NR!
CCV2	CCV	1	Na	9.86	0.19	15	PASS
CCB2	CCB	1	Na	-0.011	30.77	15	<PQL
MB-66082	MBLK	1	Na	-0.012	24.67	15	<PQL
LCS2-66082	LCS	1	Na	20.3	0.15	15	PASS
N027557-001B	SAMP	100	Na	26.83	0.1	15	PASS
N027557-002B	SAMP	100	Na	27.22	0.66	15	PASS
N027557-003B	SAMP	100	Na	50.38	0.13	15	PASS
N027557-004B	SAMP	100	Na	48.19	0.3	15	PASS
N027557-005B	SAMP	100	Na	41.055	0.038	15	PASS
CCV3	CCV	1	Na	9.81	0.27	15	PASS
CCB3	CCB	1	Na	-0.011	30.71	15	<PQL
N027557-006B	SAMP	100	Na	5.88	0.17	15	PASS
N027557-007B	SAMP	100	Na	30.9	0.28	15	PASS
N027557-008B	SAMP	100	Na	1.62	0.98	15	PASS
N027557-009B	SAMP	100	Na	2.93	0.61	15	PASS
N027557-010B	SAMP	100	Na	2.83	0.99	15	PASS
N027557-002B	SAMP	500	Na	5.36	0.24	15	PASS
N027557-002B-PS	PS	100	Na	27.43	0.18	15	PASS
N027557-002B-MS2	MS	100	Na	27.79	0.15	15	PASS
N027557-002B-MSD2	MSD	100	Na	27.9	0.15	15	PASS
N027557-003B	SAMP	500	Na	10.099	0.1	15	PASS
CCV4	CCV	1	Na	10.097	0.35	15	PASS
CCB4	CCB	1	Na	-0.029	10.59	15	PASS
N027557-004B	SAMP	500	Na	9.67	0.33	15	PASS
N027557-005B	SAMP	500	Na	8.11	0.14	15	PASS
N027557-008B	SAMP	10	Na	15.84	0.13	15	PASS
N027557-009B	SAMP	10	Na	28.49	0.21	15	PASS
N027557-010B	SAMP	10	Na	27.58	0.24	15	PASS

RSD SUMMARY: 180103A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV5	CCV	1	Na	10.033	0.31	15	PASS
CCB5	CCB	1	Na	-0.034	14.26	15	PASS
ICSA2	ICSA	1	Na	-0.038	14.39	15	PASS
ICSAB2	ICSAB	1	Na	10.15	0.17	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 171219A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201K/MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201K/-171030G/-171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	12/19/2017	10:23:34 AM
2	Standard1	ICAL	1	12/19/2017	10:28:24 AM
3	Standard2	ICAL	1	12/19/2017	10:33:45 AM
11	Standard3	ICAL	1	12/19/2017	10:39:04 AM
12	Standard4	ICAL	1	12/19/2017	10:44:25 AM
6	Standard5	ICAL	1	12/19/2017	10:51:46 AM
7	Standard6	ICAL	1	12/19/2017	10:59:06 AM
8	Standard7	ICAL	1	12/19/2017	11:06:41 AM
9	ICV	ICV	1	12/19/2017	11:10:28 AM
1	ICB	ICB	1	12/19/2017	11:21:16 AM
2	LLICV	CCV1	1	12/19/2017	11:26:34 AM
4	ICSA1	ICSA	1	12/19/2017	11:40:02 AM
5	ICSAB1	ICSAB	1	12/19/2017	11:47:34 AM
122	N027429-010B	SAMP	5	12/19/2017	11:55:06 AM
123	N027430-015B	SAMP	5	12/19/2017	12:02:00 PM
108	MB-65991	MBLK	1	12/19/2017	12:08:53 PM
109	LCS1-65991	LCS	1	12/19/2017	12:13:44 PM
110	N027437-001A	SAMP	1	12/19/2017	12:21:07 PM
111	N027437-002A	SAMP	1	12/19/2017	12:26:28 PM
112	N027437-002A	SAMP	5	12/19/2017	12:33:22 PM
113	N027437-002A-PS	PS	1	12/19/2017	12:38:43 PM
114	N027437-002AMS1	MS	1	12/19/2017	12:45:38 PM
115	N027437-002AMSD1	MSD	1	12/19/2017	12:52:31 PM
7	CCV1	CCV	1	12/19/2017	12:59:24 PM
1	CCB1	CCB	1	12/19/2017	01:06:15 PM
1	CCB1	CCB	1	12/19/2017	01:14:21 PM
116	N027437-003C	SAMP	1	12/19/2017	01:19:09 PM
117	N027437-004A	SAMP	1	12/19/2017	01:24:04 PM
118	N027437-005A	SAMP	1	12/19/2017	01:29:27 PM
38	MB-65994	MBLK	1	12/19/2017	01:34:18 PM
39	LCS1-65994	LCS	1	12/19/2017	01:39:09 PM
40	N027459-001C	SAMP	1	12/19/2017	01:46:29 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
41	N027459-001C	SAMP	5	12/19/2017	01:53:19 PM
42	N027459-001C-PS	PS	1	12/19/2017	01:58:11 PM
43	N027459-001C-MS1	MS	1	12/19/2017	02:05:02 PM
44	N027459-001C-MSD1	MSD	1	12/19/2017	02:11:54 PM
7	CCV2	CCV	1	12/19/2017	02:18:46 PM
1	CCB2	CCB	1	12/19/2017	02:25:37 PM
45	N027459-002C	SAMP	1	12/19/2017	02:30:56 PM
46	N027459-003B	SAMP	1	12/19/2017	02:37:46 PM
47	N027459-004B	SAMP	1	12/19/2017	02:44:38 PM
48	N027459-005B	SAMP	1	12/19/2017	02:51:28 PM
49	N027459-006B	SAMP	1	12/19/2017	02:58:20 PM
50	N027459-007B	SAMP	1	12/19/2017	03:05:13 PM
51	N027459-008C	SAMP	1	12/19/2017	03:12:46 PM
52	N027459-009B	SAMP	1	12/19/2017	03:20:08 PM
53	N027459-010B	SAMP	1	12/19/2017	03:26:58 PM
54	N027459-011B	SAMP	1	12/19/2017	03:33:50 PM
7	CCV3	CCV	1	12/19/2017	03:40:40 PM
1	CCB3	CCB	1	12/19/2017	03:48:03 PM
55	N027459-012B	SAMP	1	12/19/2017	03:53:21 PM
1	CCB3	CCB	1	12/19/2017	03:58:33 PM
55	N027459-012B	SAMP	1	12/19/2017	04:03:22 PM
56	N027459-013B	SAMP	1	12/19/2017	04:08:43 PM
57	N027459-014B	SAMP	1	12/19/2017	04:15:34 PM
58	N027459-015B	SAMP	1	12/19/2017	04:22:24 PM
59	N027459-016C	SAMP	1	12/19/2017	04:29:17 PM
60	N027459-017C	SAMP	1	12/19/2017	04:36:09 PM
61	N027459-018B	SAMP	1	12/19/2017	04:43:02 PM
62	N027459-019B	SAMP	1	12/19/2017	04:50:27 PM
63	MB-66042	MBLK	1	12/19/2017	04:57:19 PM
64	LCS1-66042	LCS	1	12/19/2017	05:02:10 PM
7	CCV4	CCV	1	12/19/2017	05:09:31 PM
1	CCB4	CCB	1	12/19/2017	05:34:54 PM
2	LLCCV1	CCV2	1	12/19/2017	05:39:42 PM
4	ICSA2	ICSA	1	12/19/2017	05:45:03 PM
5	ICSAB2	ICSAB	1	12/19/2017	05:52:35 PM
65	N027485-001B	SAMP	1	12/19/2017	06:00:08 PM
66	N027485-001B	SAMP	5	12/19/2017	06:05:00 PM
67	N027485-001B-PS	PS	1	12/19/2017	06:10:22 PM
68	N027485-001B-MS1	MS	1	12/19/2017	06:17:41 PM
69	N027485-001B-MSD1	MSD	1	12/19/2017	06:24:34 PM
70	N027485-002B	SAMP	1	12/19/2017	06:31:26 PM
71	N027485-003B	SAMP	1	12/19/2017	06:38:18 PM
72	N027485-004B	SAMP	1	12/19/2017	06:45:10 PM
73	N027485-005B	SAMP	1	12/19/2017	06:52:03 PM
74	N027485-006B	SAMP	1	12/19/2017	06:58:55 PM
7	CCV5	CCV	1	12/19/2017	07:05:47 PM
1	CCB5	CCB	1	12/19/2017	07:15:36 PM
75	N027485-007B	SAMP	1	12/19/2017	07:20:24 PM
76	N027485-008B	SAMP	1	12/19/2017	07:27:16 PM
77	N027485-009B	SAMP	1	12/19/2017	07:34:47 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
78	N027485-010B	SAMP	1	12/19/2017	07:41:39 PM
79	N027485-011C	SAMP	1	12/19/2017	07:48:31 PM
80	N027485-012C	SAMP	1	12/19/2017	07:55:53 PM
81	N027523-001B	SAMP	1	12/19/2017	08:03:16 PM
82	N027523-002B	SAMP	1	12/19/2017	08:10:40 PM
83	N027523-003B	SAMP	1	12/19/2017	08:16:01 PM
84	N027523-004B	SAMP	1	12/19/2017	08:21:22 PM
7	CCV6	CCV	1	12/19/2017	08:26:44 PM
1	CCB6	CCB	1	12/19/2017	08:33:35 PM
85	N027523-005C	SAMP	1	12/19/2017	08:38:25 PM
86	N027523-006C	SAMP	1	12/19/2017	08:45:18 PM
87	N027523-007C	SAMP	1	12/19/2017	08:52:10 PM
88	N027523-008B	SAMP	1	12/19/2017	08:59:02 PM
14	N027459-003B	SAMP	5	12/19/2017	09:05:54 PM
15	N027459-004B	SAMP	5	12/19/2017	09:12:43 PM
16	N027459-006B	SAMP	5	12/19/2017	09:19:32 PM
17	N027459-018B	SAMP	5	12/19/2017	09:24:22 PM
89	MB-66081	MBLK	1	12/19/2017	09:31:12 PM
90	LCS1-66081	LCS	1	12/19/2017	09:36:14 PM
7	CCV7	CCV	1	12/19/2017	09:43:36 PM
1	CCB7	CCB	1	12/19/2017	09:53:44 PM
91	N027523-009B	SAMP	1	12/19/2017	09:58:31 PM
92	N027523-009B	SAMP	5	12/19/2017	10:05:24 PM
93	N027523-009B-PS	PS	1	12/19/2017	10:12:17 PM
94	N027523-009B-MS1	MS	1	12/19/2017	10:19:10 PM
95	N027523-009B-MSD1	MSD	1	12/19/2017	10:26:03 PM
96	N027523-012B	SAMP	1	12/19/2017	10:32:56 PM
97	N027546-001B	SAMP	1	12/19/2017	10:39:51 PM
98	N027546-002B	SAMP	1	12/19/2017	10:47:14 PM
99	N027546-003B	SAMP	1	12/19/2017	10:54:08 PM
100	N027546-004B	SAMP	1	12/19/2017	11:01:01 PM
7	CCV8	CCV	1	12/19/2017	11:07:54 PM
1	CCB8	CCB	1	12/19/2017	11:15:16 PM
2	LLCCV2	CCV2	1	12/19/2017	11:20:35 PM
4	ICSA3	ICSA	1	12/19/2017	11:25:54 PM
5	ICSAB3	ICSAB	1	12/19/2017	11:33:27 PM
101	N027546-005B	SAMP	1	12/19/2017	11:40:59 PM
102	N027546-006B	SAMP	1	12/19/2017	11:47:52 PM
103	N027546-007B	SAMP	1	12/19/2017	11:55:15 PM
104	N027546-008B	SAMP	1	12/20/2017	12:02:08 AM
105	N027546-009B	SAMP	1	12/20/2017	12:09:00 AM
106	N027546-010B	SAMP	1	12/20/2017	12:15:53 AM
107	MB-66082	MBLK	1	12/20/2017	12:22:46 AM
108	LCS1-66082	LCS	1	12/20/2017	12:27:38 AM
109	N027557-001B	SAMP	1	12/20/2017	12:35:02 AM
110	N027557-001B	SAMP	5	12/20/2017	12:41:54 AM
7	CCV9	CCV	1	12/20/2017	12:46:48 AM
1	CCB9	CCB	1	12/20/2017	12:54:10 AM
111	N027557-001B-PS	PS	1	12/20/2017	12:59:28 AM
112	N027557-001B-MS1	MS	1	12/20/2017	01:06:23 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
113	N027557-001B-MSD1	MSD	1	12/20/2017	01:13:17 AM
114	N027557-002B	SAMP	1	12/20/2017	01:20:11 AM
115	N027557-003B	SAMP	1	12/20/2017	01:27:03 AM
116	N027557-004B	SAMP	1	12/20/2017	01:33:56 AM
117	N027557-005B	SAMP	1	12/20/2017	01:40:49 AM
118	N027557-006B	SAMP	1	12/20/2017	01:47:42 AM
119	N027557-007B	SAMP	1	12/20/2017	01:54:34 AM
120	N027557-008B	SAMP	1	12/20/2017	02:01:28 AM
7	CCV10	CCV	1	12/20/2017	02:06:50 AM
1	CCB10	CCB	1	12/20/2017	02:14:12 AM
121	N027557-009B	SAMP	1	12/20/2017	02:19:30 AM
122	N027557-010B	SAMP	1	12/20/2017	02:26:54 AM
123	MB-66080	MBLK	1	12/20/2017	02:32:17 AM
124	LCS1-66080	LCS	1	12/20/2017	02:37:09 AM
125	N027524-001E	SAMP	1	12/20/2017	02:44:33 AM
126	N027524-001E	SAMP	5	12/20/2017	02:51:26 AM
127	N027524-001E-PS	PS	1	12/20/2017	02:56:47 AM
128	N027524-001E-MS1	MS	1	12/20/2017	03:03:41 AM
129	N027524-001E-MSD1	MSD	1	12/20/2017	03:10:35 AM
130	N027524-002E	SAMP	1	12/20/2017	03:17:29 AM
7	CCV11	CCV	1	12/20/2017	03:24:21 AM
1	CCB11	CCB	1	12/20/2017	03:31:12 AM
131	N027524-003E	SAMP	1	12/20/2017	03:36:30 AM
1	CCB11	CCB	1	12/20/2017	03:47:23 AM
131	N027524-003E	SAMP	1	12/20/2017	03:52:10 AM
132	N027524-004E	SAMP	1	12/20/2017	03:59:04 AM
133	N027524-005E	SAMP	1	12/20/2017	04:05:57 AM
134	N027524-006E	SAMP	1	12/20/2017	04:12:49 AM
135	N027524-007E	SAMP	1	12/20/2017	04:17:42 AM
136	N027524-008E	SAMP	1	12/20/2017	04:22:35 AM
137	N027524-009E	SAMP	1	12/20/2017	04:29:28 AM
138	N027524-010E	SAMP	1	12/20/2017	04:36:21 AM
139	N027524-011E	SAMP	1	12/20/2017	04:43:14 AM
140	N027524-011E-MS1	MS	1	12/20/2017	04:50:07 AM
7	CCV12	CCV	1	12/20/2017	04:57:01 AM
1	CCB12	CCB	1	12/20/2017	05:07:37 AM
2	LLCCV3	CCV2	1	12/20/2017	05:12:57 AM
4	ICSA4	ICSA	1	12/20/2017	05:18:16 AM
5	ICSAB4	ICSAB	1	12/20/2017	05:25:48 AM
141	N027524-012E	SAMP	1	12/20/2017	05:33:21 AM
142	N027524-013E	SAMP	1	12/20/2017	05:40:14 AM
143	N027556-001E	SAMP	1	12/20/2017	05:47:07 AM
144	N027556-002E	SAMP	1	12/20/2017	05:54:00 AM
145	N027556-003E	SAMP	1	12/20/2017	06:00:53 AM
146	N027556-004D	SAMP	1	12/20/2017	06:07:46 AM
147	N027556-005D	SAMP	1	12/20/2017	06:14:39 AM
148	N027556-006E	SAMP	1	12/20/2017	06:21:32 AM
18	N027485-002B	SAMP	5	12/20/2017	06:28:25 AM
19	N027485-003B	SAMP	5	12/20/2017	06:35:15 AM
7	CCV13	CCV	1	12/20/2017	06:42:05 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CCB13	CCB	1	12/20/2017	06:49:25 AM
20	N027485-010B	SAMP	5	12/20/2017	06:54:44 AM
149	N027523-009B	SAMP	25	12/20/2017	07:43:23 AM
150	N027523-009B-PS	PS	5	12/20/2017	07:48:17 AM
151	N027523-009B-MS1	MS	5	12/20/2017	07:55:12 AM
152	N027523-009B-MSD1	MSD	5	12/20/2017	08:02:06 AM
153	N027557-005B	SAMP	5	12/20/2017	08:05:46 AM
154	N027557-007B	SAMP	5	12/20/2017	08:12:39 AM
38	MB-66083	MBLK	1	12/20/2017	08:19:33 AM
39	LCS1-66083	LCS	1	12/20/2017	08:23:38 AM
40	N027524-001F	SAMP	1	12/20/2017	08:29:29 AM
7	CCV14	CCV	1	12/20/2017	08:34:48 AM
1	CCB14	CCB	1	12/20/2017	08:47:22 AM
41	N027524-001F	SAMP	5	12/20/2017	08:51:40 AM
42	N027524-001F-PS	PS	1	12/20/2017	08:56:29 AM
43	N027524-001F-MS1	MS	1	12/20/2017	09:01:50 AM
44	N027524-001F-MSD1	MSD	1	12/20/2017	09:07:11 AM
45	N027524-002F	SAMP	1	12/20/2017	09:12:32 AM
46	N027524-003F	SAMP	1	12/20/2017	09:17:54 AM
47	N027524-004F	SAMP	1	12/20/2017	09:23:15 AM
48	N027524-005F	SAMP	1	12/20/2017	09:28:37 AM
49	N027524-006F	SAMP	1	12/20/2017	09:33:59 AM
50	N027524-007F	SAMP	1	12/20/2017	09:39:21 AM
7	CCV15	CCV	1	12/20/2017	09:50:33 AM
1	CCB15	CCB	1	12/20/2017	10:04:37 AM
51	N027524-008F	SAMP	1	12/20/2017	10:09:24 AM
52	N027524-009F	SAMP	1	12/20/2017	10:14:46 AM
53	N027524-010F	SAMP	1	12/20/2017	10:20:08 AM
54	N027524-011F	SAMP	1	12/20/2017	10:25:39 AM
55	N027524-012F	SAMP	1	12/20/2017	10:31:01 AM
56	N027524-013F	SAMP	1	12/20/2017	10:36:21 AM
57	N027556-001F	SAMP	1	12/20/2017	10:41:41 AM
58	N027556-002F	SAMP	1	12/20/2017	10:47:03 AM
59	N027556-003F	SAMP	1	12/20/2017	10:52:24 AM
60	N027556-006F	SAMP	1	12/20/2017	10:57:45 AM
7	CCV16	CCV	1	12/20/2017	11:03:06 AM
1	CCB16	CCB	1	12/20/2017	11:08:59 AM
1	CCB16	CCB	1	12/20/2017	11:17:02 AM
61	N027556-008E	SAMP	1	12/20/2017	11:20:47 AM
62	N027556-009E	SAMP	1	12/20/2017	11:25:39 AM
63	N027556-010F	SAMP	1	12/20/2017	11:31:31 AM
7	CCV17	CCV	1	12/20/2017	11:40:26 AM
1	CCB17	CCB	1	12/20/2017	11:46:17 AM
2	LLCCV4	CCV2	1	12/20/2017	11:51:05 AM
2	LLCCV4	CCV2	1	12/20/2017	12:04:06 PM
4	ICSA5	ICSA	1	12/20/2017	12:08:54 PM
5	ICSAB5	ICSAB	1	12/20/2017	12:14:57 PM
5	ICSAB5	ICSAB	1	12/20/2017	12:24:11 PM

INJECTION LOG: 180103A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-170601A,0.025<50mL
Standard2	MWST-170601A,0.25<50mL
Standard3	MWST-170601A,1.25<50mL
Standard4	MWST-170601A,2.5<50mL
Standard5	MWST-170601A,5<50mL
Standard6	MWST-170601A,10<50mL
ICV	MWST-171030L
CCV	MWST-170601A,2.5<50mL
ICSA/ICSAB	MWST-170601L/MWST-170601B
Int. Std. (Sc):	MSST-171009C/B
PS Spike	MSST-130329D/E

MWST-171201R

MWST-171201R
MWST-171201P/ MWST-171201S

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	01/03/2018	06:39:20 AM
26	Standard1	ICAL	1	01/03/2018	06:42:39 AM
27	Standard2	ICAL	1	01/03/2018	06:45:55 AM
28	Standard3	ICAL	1	01/03/2018	06:49:43 AM
29	Standard4	ICAL	1	01/03/2018	06:53:33 AM
30	Standard5	ICAL	1	01/03/2018	06:57:26 AM
31	Standard6	ICAL	1	01/03/2018	07:01:30 AM
32	ICV	ICV	1	01/03/2018	07:05:49 AM
1	ICB	ICB	1	01/03/2018	07:09:44 AM
33	ICSA1	ICSA	1	01/03/2018	07:13:01 AM
34	ICSAB1	ICSAB	1	01/03/2018	07:16:19 AM
38	MB-66081	MBLK	1	01/03/2018	07:45:21 AM
39	LCS2-66081	LCS	1	01/03/2018	07:48:40 AM
40	N027523-009B	SAMP	100	01/03/2018	07:52:46 AM
41	N027523-012B	SAMP	100	01/03/2018	07:56:35 AM
42	N027546-001B	SAMP	100	01/03/2018	07:59:54 AM
43	N027546-002B	SAMP	100	01/03/2018	08:03:13 AM
44	N027546-003B	SAMP	100	01/03/2018	08:06:32 AM
45	N027546-004B	SAMP	100	01/03/2018	08:09:50 AM
46	N027546-005B	SAMP	100	01/03/2018	08:13:08 AM
47	N027546-006B	SAMP	100	01/03/2018	08:16:28 AM
29	CCV1	CCV	1	01/03/2018	08:19:47 AM
1	CCB1	CCB	1	01/03/2018	08:23:41 AM
48	N027546-007B	SAMP	100	01/03/2018	08:26:59 AM
49	N027546-008B	SAMP	100	01/03/2018	08:30:19 AM
50	N027546-009B	SAMP	100	01/03/2018	08:33:40 AM
51	N027546-010B	SAMP	100	01/03/2018	08:36:59 AM
52	N027523-012B	SAMP	500	01/03/2018	08:40:49 AM
53	N027523-012B-PS	PS	100	01/03/2018	08:44:07 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
54	N027523-012B-MS2	MS	100	01/03/2018	08:47:25 AM
55	N027523-012B-MSD2	MSD	100	01/03/2018	08:51:12 AM
54	N027523-012B-MS2	MS	100	01/03/2018	08:54:29 AM
56	N027546-007B	SAMP	500	01/03/2018	08:57:49 AM
29	CCV2	CCV	1	01/03/2018	09:01:08 AM
29	CCV2	CCV	1	01/03/2018	09:05:38 AM
1	CCB2	CCB	1	01/03/2018	09:09:31 AM
57	N027546-006B	SAMP	25	01/03/2018	09:12:49 AM
58	N027546-008B	SAMP	500	01/03/2018	09:16:38 AM
59	N027546-009B	SAMP	500	01/03/2018	09:19:59 AM
60	MB-66082	MBLK	1	01/03/2018	09:23:19 AM
61	LCS2-66082	LCS	1	01/03/2018	09:26:39 AM
62	N027557-001B	SAMP	100	01/03/2018	09:33:45 AM
63	N027557-002B	SAMP	100	01/03/2018	09:37:05 AM
64	N027557-003B	SAMP	100	01/03/2018	09:40:25 AM
65	N027557-004B	SAMP	100	01/03/2018	09:43:45 AM
66	N027557-005B	SAMP	100	01/03/2018	09:47:05 AM
29	CCV3	CCV	1	01/03/2018	09:50:24 AM
1	CCB3	CCB	1	01/03/2018	09:54:18 AM
67	N027557-006B	SAMP	100	01/03/2018	09:57:36 AM
68	N027557-007B	SAMP	100	01/03/2018	10:00:56 AM
69	N027557-008B	SAMP	100	01/03/2018	10:04:16 AM
70	N027557-009B	SAMP	100	01/03/2018	10:08:06 AM
71	N027557-010B	SAMP	100	01/03/2018	10:11:55 AM
72	N027557-002B	SAMP	500	01/03/2018	10:15:56 AM
73	N027557-002B-PS	PS	100	01/03/2018	10:19:16 AM
74	N027557-002B-MS2	MS	100	01/03/2018	10:22:36 AM
75	N027557-002B-MSD2	MSD	100	01/03/2018	10:26:28 AM
76	N027557-003B	SAMP	500	01/03/2018	10:30:18 AM
29	CCV4	CCV	1	01/03/2018	10:33:38 AM
1	CCB4	CCB	1	01/03/2018	10:37:33 AM
77	N027557-004B	SAMP	500	01/03/2018	10:40:50 AM
78	N027557-005B	SAMP	500	01/03/2018	10:44:11 AM
79	N027557-008B	SAMP	10	01/03/2018	10:47:31 AM
80	N027557-009B	SAMP	10	01/03/2018	10:51:22 AM
81	N027557-010B	SAMP	10	01/03/2018	10:55:13 AM
82	MB-66203	MBLK	1	01/03/2018	10:59:04 AM
83	LCS2-66203	LCS	1	01/03/2018	11:02:54 AM
84	N027689-001A	SAMP	1	01/03/2018	11:07:01 AM
85	N027689-001A	SAMP	5	01/03/2018	11:10:52 AM
86	N027689-001A-PS	PS	1	01/03/2018	11:14:42 AM
29	CCV5	CCV	1	01/03/2018	11:18:50 AM
1	CCB5	CCB	1	01/03/2018	11:22:44 AM
33	ICSA2	ICSA	1	01/03/2018	11:26:32 AM
34	ICSAB2	ICSAB	1	01/03/2018	11:30:22 AM
87	N027689-001A-MS2	MS	1	01/03/2018	11:34:17 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
88	N027689-001A-MSD2	MSD	1	01/03/2018	11:38:23 AM
89	MB-66126	MBLK	1	01/03/2018	11:42:29 AM
90	LCS2-66126	LCS	1	01/03/2018	11:46:19 AM
91	N027583-001E	SAMP	100	01/03/2018	11:50:26 AM
92	N027583-002E	SAMP	100	01/03/2018	11:53:46 AM
93	N027583-003E	SAMP	100	01/03/2018	11:57:06 AM
94	N027583-001E	SAMP	1	01/03/2018	12:01:37 PM
95	N027583-003E	SAMP	1	01/03/2018	12:06:51 PM
1	RINSE	RINSE	1	01/03/2018	12:13:14 PM
29	CCV6	CCV	1	01/03/2018	12:17:01 PM
1	CCB6	CCB	1	01/03/2018	12:20:55 PM
96	N027583-002E	SAMP	1	01/03/2018	12:24:42 PM
97	N027583-002E	SAMP	5	01/03/2018	12:29:55 PM
98	N027583-002E-PS	PS	1	01/03/2018	12:34:48 PM
99	N027583-002E-MS2	MS	1	01/03/2018	12:40:03 PM
101	N027583-002E	SAMP	500	01/03/2018	12:46:14 PM
102	N027583-002E-PS	PS	100	01/03/2018	12:49:33 PM
103	N027583-002E-MS2	MS	100	01/03/2018	12:52:55 PM
104	N027583-002E-MSD2	MSD	100	01/03/2018	12:56:17 PM
98	N027583-002E-PS	PS	1	01/03/2018	12:59:38 PM
99	N027583-002E-MS2	MS	1	01/03/2018	01:04:54 PM
29	CCV7	CCV	1	01/03/2018	01:10:10 PM
1	CCB7	CCB	1	01/03/2018	01:14:05 PM
100	N027583-002E-MSD2	MSD	1	01/03/2018	01:17:53 PM
29	CCV8	CCV	1	01/03/2018	01:23:08 PM
1	CCB8	CCB	1	01/03/2018	01:27:27 PM
33	ICSA3	ICSA	1	01/03/2018	01:30:44 PM
34	ICSAB3	ICSAB	1	01/03/2018	01:34:33 PM
29	CCV8	CCV	1	01/03/2018	01:47:43 PM
1	CCB8	CCB	1	01/03/2018	01:51:37 PM
33	ICSA3	ICSA	1	01/03/2018	01:55:24 PM
34	ICSAB3	ICSAB	1	01/03/2018	01:59:39 PM
34	ICSAB3	ICSAB	1	01/03/2018	02:21:06 PM
105	N027583-002E	SAMP	25	01/03/2018	02:29:43 PM
106	N027583-002E-PS	PS	5	01/03/2018	02:33:34 PM
107	N027583-002E-MS2	MS	5	01/03/2018	02:38:30 PM
108	N027583-002E-MSD2	MSD	5	01/03/2018	02:43:26 PM
29	CCV9	CCV	1	01/03/2018	02:48:21 PM
1	CCB9	CCB	1	01/03/2018	02:52:16 PM
33	ICSA4	ICSA	1	01/03/2018	02:56:04 PM
33	ICSA4	ICSA	1	01/03/2018	03:01:02 PM
34	ICSAB4	ICSAB	1	01/03/2018	03:04:21 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/15/2017 7:54:32**
Prep End Date: **12/15/2017 1:30:00**
Reviewed/ Date: 01/08/2018
Initials/ Date: for

Prep Batch **66082** Prep Code: **3010_W_DISS** Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-6**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-66082	Aqueous		25	☐	0	0	25	1.000		
LCS2-66082	Aqueous		25	☐	0	0	25	1.000		
MB-66082	Aqueous		25	☐	0	0	25	1.000		
N027557-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-007B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9602	NITRIC ACID
9611	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/15/2017 7:54:32**
Prep End Date: **12/15/2017 1:30:00**
Prep Batch **66082** Prep Code: **3010_W_DISS**

Reviewed/ Date: 01/08/2018
Initials/ Date: for
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-6**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027557-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-010B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9602	NITRIC ACID
9611	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 171219A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Boron								
CalBlk	12/19/2017	10:23:34 AM	B	249.677	5558	0.00	mg/L	
Standard1	12/19/2017	10:28:24 AM	B	249.677	3689	0.1000	mg/L	
Standard3	12/19/2017	10:39:04 AM	B	249.677	38154	1.000	mg/L	
Standard4	12/19/2017	10:44:25 AM	B	249.677	95676	2.500	mg/L	
Standard5	12/19/2017	10:51:46 AM	B	249.677	146881	3.750	mg/L	
Standard6	12/19/2017	10:59:06 AM	B	249.677	191523	5.000	mg/L	
Standard7	12/19/2017	11:06:41 AM	B	249.677	378948	10.000	mg/L	0.9999
Magnesium								
CalBlk	12/19/2017	10:23:34 AM	Mg	279.079	249	0.00	mg/L	
Standard1	12/19/2017	10:28:24 AM	Mg	279.079	1423	0.1000	mg/L	
Standard2	12/19/2017	10:33:45 AM	Mg	279.079	13161	1.000	mg/L	
Standard3	12/19/2017	10:39:04 AM	Mg	279.079	27739	2.000	mg/L	
Standard4	12/19/2017	10:44:25 AM	Mg	279.079	68479	5.000	mg/L	
Standard5	12/19/2017	10:51:46 AM	Mg	279.079	103673	7.500	mg/L	
Standard6	12/19/2017	10:59:06 AM	Mg	279.079	137290	10.000	mg/L	
Standard7	12/19/2017	11:06:41 AM	Mg	279.079	262216	20.000	mg/L	0.9997
Calcium								
CalBlk	12/19/2017	10:23:34 AM	Ca	227.546	-144	0.00	mg/L	
Standard1	12/19/2017	10:28:24 AM	Ca	227.546	62	0.2000	mg/L	
Standard2	12/19/2017	10:33:45 AM	Ca	227.546	278	1.000	mg/L	
Standard3	12/19/2017	10:39:04 AM	Ca	227.546	591	2.000	mg/L	
Standard4	12/19/2017	10:44:25 AM	Ca	227.546	1444	5.000	mg/L	
Standard5	12/19/2017	10:51:46 AM	Ca	227.546	2153	7.500	mg/L	
Standard6	12/19/2017	10:59:06 AM	Ca	227.546	2875	10.000	mg/L	
Standard7	12/19/2017	11:06:41 AM	Ca	227.546	5631	20.000	mg/L	0.9999
Iron								
CalBlk	12/19/2017	10:23:34 AM	Fe	273.953	-142	0.00	mg/L	
Standard1	12/19/2017	10:28:24 AM	Fe	273.953	491	0.0200	mg/L	
Standard2	12/19/2017	10:33:45 AM	Fe	273.953	1636	0.050	mg/L	
Standard3	12/19/2017	10:39:04 AM	Fe	273.953	44331	2.000	mg/L	
Standard4	12/19/2017	10:44:25 AM	Fe	273.953	109375	5.000	mg/L	
Standard5	12/19/2017	10:51:46 AM	Fe	273.953	165425	7.500	mg/L	
Standard6	12/19/2017	10:59:06 AM	Fe	273.953	218762	10.000	mg/L	
Standard7	12/19/2017	11:06:41 AM	Fe	273.953	417464	20.000	mg/L	0.9997

INITIAL CALIBRATION SUMMARY: 180103A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	01/03/2018	06:39:20 AM	Na	589.594	62	0.00	mg/L	
Standard1	01/03/2018	06:42:39 AM	Na	589.594	503	0.1000	mg/L	
Standard2	01/03/2018	06:45:55 AM	Na	589.594	4160	1.000	mg/L	
Standard3	01/03/2018	06:49:43 AM	Na	589.594	21022	5.000	mg/L	
Standard4	01/03/2018	06:53:33 AM	Na	589.594	42090	10.000	mg/L	
Standard5	01/03/2018	06:57:26 AM	Na	589.594	84190	20.000	mg/L	
Standard6	01/03/2018	07:01:30 AM	Na	589.594	167500	40.000	mg/L	1.0000

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872867**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5099.945	100	5000	0	102	90	110				
Calcium	10101.951	500	10000	0	101	90	110				
Iron	10265.234	20	10000	0	103	90	110				
Magnesium	10256.827	100	10000	0	103	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	107.330	100	100.0	0	107	80	120				
Calcium	225.252	500	200.0	0	113	80	120				
Iron	22.111	20	20.00	0	111	80	120				
Magnesium	101.031	100	100.0	0	101	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5077.114	100	5000	0	102	90	110				
Calcium	10087.496	500	10000	0	101	90	110				
Iron	10068.629	20	10000	0	101	90	110				
Magnesium	10003.649	100	10000	0	100	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4918.676	100	5000	0	98.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9904.520	500	10000	0	99.0	90	110				
Iron	9773.781	20	10000	0	97.7	90	110				
Magnesium	9754.873	100	10000	0	97.5	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5195.547	100	5000	0	104	90	110				
Calcium	10165.050	500	10000	0	102	90	110				
Iron	10413.547	20	10000	0	104	90	110				
Magnesium	10394.623	100	10000	0	104	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4895.955	100	5000	0	97.9	90	110				
Calcium	9876.655	500	10000	0	98.8	90	110				
Iron	9839.064	20	10000	0	98.4	90	110				
Magnesium	9818.277	100	10000	0	98.2	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **ZZZZZZ** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	98.336	100	100.0	0	98.3	70	130				
Calcium	220.353	500	200.0	0	110	70	130				
Iron	22.875	20	20.00	0	114	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	106.753	100	100.0	0	107	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872936**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5129.771	100	5000	0	103	90	110				
Calcium	10352.156	500	10000	0	104	90	110				
Iron	10606.001	20	10000	0	106	90	110				
Magnesium	10567.979	100	10000	0	106	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4927.431	100	5000	0	98.5	90	110				
Calcium	10068.129	500	10000	0	101	90	110				
Iron	9935.813	20	10000	0	99.4	90	110				
Magnesium	9882.452	100	10000	0	98.8	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872960**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4810.929	100	5000	0	96.2	90	110				
Calcium	9847.946	500	10000	0	98.5	90	110				
Iron	9653.480	20	10000	0	96.5	90	110				
Magnesium	9675.889	100	10000	0	96.8	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV8** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872972**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4965.895	100	5000	0	99.3	90	110				
Calcium	10063.850	500	10000	0	101	90	110				
Iron	10273.994	20	10000	0	103	90	110				
Magnesium	10406.273	100	10000	0	104	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **ZZZZZZ** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/19/2017** SeqNo: **2872974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	103.773	100	100.0	0	104	70	130				
Calcium	266.163	500	200.0	0	133	70	130				S
Iron	23.330	20	20.00	0	117	70	130				
Magnesium	103.517	100	100.0	0	104	70	130				

Sample ID **CCV9** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873638**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4872.771	100	5000	0	97.5	90	110				
Calcium	10125.639	500	10000	0	101	90	110				
Iron	10186.375	20	10000	0	102	90	110				
Magnesium	10324.037	100	10000	0	103	90	110				

Sample ID **CCV10** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873650**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4823.347	100	5000	0	96.5	90	110				
Calcium	9918.903	500	10000	0	99.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

01/08/2018

Ca on LLCCV2 is biased high however, samples for this analyte are greater than the regular CCV concentration which passed QC criteria.

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV10** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873650**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10147.604	20	10000	0	101	90	110				
Magnesium	10289.389	100	10000	0	103	90	110				

Sample ID **CCV11** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873662**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4737.324	100	5000	0	94.7	90	110				
Calcium	9659.769	500	10000	0	96.6	90	110				
Iron	9699.493	20	10000	0	97.0	90	110				
Magnesium	9819.285	100	10000	0	98.2	90	110				

Sample ID **CCV12** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873676**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4853.109	100	5000	0	97.1	90	110				
Calcium	9875.510	500	10000	0	98.8	90	110				
Iron	10180.551	20	10000	0	102	90	110				
Magnesium	10344.144	100	10000	0	103	90	110				

Sample ID **LLCCV3** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **ZZZZZZ** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873678**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	100.097	100	100.0	0	100	70	130				
Calcium	258.351	500	200.0	0	129	70	130				
Iron	23.915	20	20.00	0	120	70	130				
Magnesium	103.278	100	100.0	0	103	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV13** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873691**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4892.170	100	5000	0	97.8	90	110				
Calcium	9814.263	500	10000	0	98.1	90	110				
Iron	10150.534	20	10000	0	102	90	110				
Magnesium	10319.095	100	10000	0	103	90	110				

Sample ID **CCV14** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873703**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4956.354	100	5000	0	99.1	90	110				
Calcium	10006.400	500	10000	0	100	90	110				
Iron	10171.821	20	10000	0	102	90	110				
Magnesium	10251.213	100	10000	0	103	90	110				

Sample ID **CCV15** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4827.137	100	5000	0	96.5	90	110				
Calcium	9477.839	500	10000	0	94.8	90	110				
Iron	9936.651	20	10000	0	99.4	90	110				
Magnesium	10006.673	100	10000	0	100	90	110				

Sample ID **CCV16** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **120943**
Client ID: **CCV** Batch ID: **R120943** TestNo: **EPA 6010B** Analysis Date: **12/20/2017** SeqNo: **2873727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4799.843	100	5000	0	96.0	90	110				
Calcium	9474.062	500	10000	0	94.7	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV16**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9916.966	20	10000	0	99.2	90	110				
Magnesium	9990.379	100	10000	0	99.9	90	110				

Sample ID **CCV17**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCV**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873733**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5240.337	100	5000	0	105	90	110				
Calcium	10458.405	500	10000	0	105	90	110				
Iron	10912.185	20	10000	0	109	90	110				
Magnesium	10979.376	100	10000	0	110	90	110				

Sample ID **LLCCV4**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ZZZZZZ**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	79.427	100	100.0	0	79.4	70	130				
Calcium	164.854	500	200.0	0	82.4	70	130				
Iron	17.487	20	20.00	0	87.4	70	130				
Magnesium	80.638	100	100.0	0	80.6	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **ICV**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9974.235	500	10000	0	99.7	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCV**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9865.611	500	10000	0	98.7	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCV**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883329**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9855.700	500	10000	0	98.6	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCV**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883341**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9806.224	500	10000	0	98.1	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCV**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883353**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10096.655	500	10000	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCV**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883365**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10032.975	500	10000	0	100	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872868**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	31.928	100									
Calcium	25.289	500									
Iron	0.264	20									
Magnesium	-0.57117	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	13.483	100									
Calcium	33.130	500									
Iron	0.775	20									
Magnesium	-0.917742	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	30.699	100									
Calcium	3.457	500									
Iron	0.203	20									
Magnesium	-1.651536	100									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	21.321	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	17.578	500									
Iron	-0.562511	20									
Magnesium	-0.614019	100									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	9.787	100									
Calcium	29.385	500									
Iron	-0.242624	20									
Magnesium	-0.716168	100									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872937**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	30.912	100									
Calcium	6.563	500									
Iron	-0.349232	20									
Magnesium	-0.244004	100									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	36.370	100									
Calcium	-20.165979	500									
Iron	-0.362088	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	0.953	100									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	28.308	100									
Calcium	31.182	500									
Iron	-0.109383	20									
Magnesium	-1.026871	100									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	31.732	100									
Calcium	48.382	500									
Iron	0.302	20									
Magnesium	-1.353948	100									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873639**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	25.230	100									
Calcium	61.218	500									
Iron	0.666	20									
Magnesium	-1.306078	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873651**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	35.337	100									
Calcium	63.322	500									
Iron	0.612	20									
Magnesium	-1.400694	100									

Sample ID **CCB11**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	19.326	100									
Calcium	53.447	500									
Iron	0.887	20									
Magnesium	-1.219422	100									

Sample ID **CCB12**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873677**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	24.142	100									
Calcium	54.893	500									
Iron	0.497	20									
Magnesium	-0.155927	100									

Sample ID **CCB13**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873692**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	30.685	100									
Calcium	60.610	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB13**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873692**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.102	20									
Magnesium	0.364	100									

Sample ID **CCB14**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873704**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	27.482	100									
Calcium	21.048	500									
Iron	-0.54473	20									
Magnesium	-0.548792	100									

Sample ID **CCB15**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873716**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	29.200	100									
Calcium	37.689	500									
Iron	-1.097273	20									
Magnesium	-0.032286	100									

Sample ID **CCB16**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **CCB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873729**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	20.228	100									
Calcium	43.740	500									
Iron	-0.701584	20									
Magnesium	-0.088455	100									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCB17	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	120943
Client ID:	CCB	Batch ID:	R120943	TestNo:	EPA 6010B			Analysis Date:	12/20/2017	SeqNo:	2873734

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	59.735	100									
Calcium	-18.816967	500									
Iron	-0.670956	20									
Magnesium	-0.629145	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **ICB**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3.133	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCB**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883317**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-21.053637	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCB**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883330**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-11.230024	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCB**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883342**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-11.316633	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCB**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883354**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-28.545286	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **CCB**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-34.152588	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872870**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	498329.453	50	500000	0	99.7	80	120				
Boron	88.100	100									
Calcium	506490.713	500	500000	0	101	80	120				
Iron	179793.677	20	200000	0	89.9	80	120				
Magnesium	475935.929	100	500000	0	95.2	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSAB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	546782.249	50	500000	0	109	80	120				
Boron	1173.352	100	1000	0	117	80	120				
Calcium	555538.618	500	500000	0	111	80	120				
Iron	187588.653	20	200000	0	93.8	80	120				
Magnesium	503556.663	100	500000	0	101	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	505775.123	50	500000	0	101	80	120				
Boron	83.607	100									
Calcium	511760.390	500	500000	0	102	80	120				
Iron	181783.344	20	200000	0	90.9	80	120				
Magnesium	481219.806	100	500000	0	96.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSAB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	551426.519	50	500000	0	110	80	120				
Boron	1175.249	100	1000	0	118	80	120				
Calcium	558431.588	500	500000	0	112	80	120				
Iron	188992.776	20	200000	0	94.5	80	120				
Magnesium	506616.951	100	500000	0	101	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	494366.698	50	500000	0	98.9	80	120				
Boron	85.578	100									
Calcium	497081.940	500	500000	0	99.4	80	120				
Iron	176987.327	20	200000	0	88.5	80	120				
Magnesium	476524.153	100	500000	0	95.3	80	120				

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSAB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/19/2017**	SeqNo: **2872976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	541047.279	50	500000	0	108	80	120				
Boron	1146.351	100	1000	0	115	80	120				
Calcium	543688.104	500	500000	0	109	80	120				
Iron	184653.505	20	200000	0	92.3	80	120				
Magnesium	500595.553	100	500000	0	100	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873679**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	491037.277	50	500000	0	98.2	80	120				
Boron	90.141	100									
Calcium	489727.156	500	500000	0	97.9	80	120				
Iron	175817.995	20	200000	0	87.9	80	120				
Magnesium	473899.027	100	500000	0	94.8	80	120				

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSAB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873680**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	538707.628	50	500000	0	108	80	120				
Boron	1129.484	100	1000	0	113	80	120				
Calcium	536671.907	500	500000	0	107	80	120				
Iron	183946.460	20	200000	0	92.0	80	120				
Magnesium	500154.534	100	500000	0	100	80	120				

Sample ID **ICSA5**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSA**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	519089.326	50	500000	0	104	80	120				
Boron	85.383	100									
Calcium	511388.117	500	500000	0	102	80	120				
Iron	187834.978	20	200000	0	93.9	80	120				
Magnesium	504975.878	100	500000	0	101	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB5**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID: **ICSAB**	Batch ID: **R120943**	TestNo: **EPA 6010B**		Analysis Date: **12/20/2017**	SeqNo: **2873739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	473861.160	50	500000	0	94.8	80	120				
Boron	1022.046	100	1000	0	102	80	120				
Calcium	464818.220	500	500000	0	93.0	80	120				
Iron	200609.345	20	200000	0	100	80	120				
Magnesium	447746.521	100	500000	0	89.5	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **ICSA**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883304**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	0.570	500									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **ICSAB**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883305**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10004.420	500	10000	0	100	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **ICSA**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883367**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-37.59857	500									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID: **ICSAB**	Batch ID: **R121185**	TestNo: **EPA 6010B**		Analysis Date: **1/3/2018**	SeqNo: **2883368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10148.970	500	10000	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	98.9	65-125	PASS
Standard2	ICAL	1	1.053	105.31	65-125	PASS
Standard3	ICAL	1	1.046	104.59	65-125	PASS
Standard4	ICAL	1	1.074	107.38	65-125	PASS
Standard5	ICAL	1	0.99	98.63	65-125	PASS
Standard6	ICAL	1	0.93	93.39	65-125	PASS
Standard7	ICAL	1	0.95	94.61	65-125	PASS
ICV	ICV	1	0.94	94.18	65-125	PASS
ICB	ICB	1	1.015	101.49	65-125	PASS
LLICV	CCV1	1	1.034	103.35	65-125	PASS
ICSA1	ICSA	1	1.015	101.5	65-125	PASS
ICSAB1	ICSAB	1	0.82	81.74	65-125	PASS
CCV1	CCV	1	0.98	97.92	65-125	PASS
CCB1	CCB	1	1	99.98	65-125	PASS
CCB1	CCB	1	1.031	103.1	65-125	PASS
CCV2	CCV	1	1.03	102.97	65-125	PASS
CCB2	CCB	1	1.042	104.16	65-125	PASS
CCV3	CCV	1	0.98	97.7	65-125	PASS
CCB3	CCB	1	1.042	104.17	65-125	PASS
CCB3	CCB	1	1.022	102.22	65-125	PASS
CCV4	CCV	1	1.011	101.06	65-125	PASS
CCB4	CCB	1	1	99.81	65-125	PASS
LLCCV1	CCV2	1	1.033	103.33	65-125	PASS
ICSA2	ICSA	1	1.045	104.52	65-125	PASS
ICSAB2	ICSAB	1	0.84	84.43	65-125	PASS
CCV5	CCV	1	0.99	98.91	65-125	PASS
CCB5	CCB	1	1.0069	100.69	65-125	PASS
CCV6	CCV	1	1.028	102.84	65-125	PASS
CCB6	CCB	1	1.0096	100.96	65-125	PASS
CCV7	CCV	1	1.037	103.74	65-125	PASS
CCB7	CCB	1	1.037	103.7	65-125	PASS
CCV8	CCV	1	1.072	107.21	65-125	PASS
CCB8	CCB	1	1.094	109.41	65-125	PASS
LLCCV2	CCV2	1	1.15	115.04	65-125	PASS
ICSA3	ICSA	1	1.15	114.65	65-125	PASS
ICSAB3	ICSAB	1	0.9	90.38	65-125	PASS
MB-66082	MBLK	1	1.1	110.01	65-125	PASS
LCS1-66082	LCS	1	1.022	102.2	65-125	PASS
N027557-001B	SAMP	1	0.9	90.42	65-125	PASS
N027557-001B	SAMP	5	0.99	99.052	65-125	PASS

INTERNAL STANDARD: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCV9	CCV	1	1.075	107.45	65-125	PASS
CCB9	CCB	1	1.085	108.54	65-125	PASS
N027557-001B-PS	PS	1	0.92	92.36	65-125	PASS
N027557-001B-MS1	MS	1	0.9	89.52	65-125	PASS
N027557-001B-MSD1	MSD	1	0.89	89.17	65-125	PASS
N027557-002B	SAMP	1	0.89	89.089	65-125	PASS
N027557-003B	SAMP	1	0.84	84.39	65-125	PASS
N027557-004B	SAMP	1	0.86	85.64	65-125	PASS
N027557-005B	SAMP	1	0.86	85.6	65-125	PASS
N027557-006B	SAMP	1	1.014	101.35	65-125	PASS
N027557-007B	SAMP	1	0.88	88.5	65-125	PASS
N027557-008B	SAMP	1	1.096	109.64	65-125	PASS
CCV10	CCV	1	1.088	108.83	65-125	PASS
CCB10	CCB	1	1.11	110.82	65-125	PASS
N027557-009B	SAMP	1	1.052	105.25	65-125	PASS
N027557-010B	SAMP	1	1.042	104.15	65-125	PASS
CCV11	CCV	1	1.11	110.54	65-125	PASS
CCB11	CCB	1	1.095	109.54	65-125	PASS
CCB11	CCB	1	1.1	110.07	65-125	PASS
CCV12	CCV	1	1.079	107.91	65-125	PASS
CCB12	CCB	1	1.11	110.73	65-125	PASS
LLCCV3	CCV2	1	1.17	116.58	65-125	PASS
ICSA4	ICSA	1	1.16	115.81	65-125	PASS
ICSAB4	ICSAB	1	0.91	91.32	65-125	PASS
CCV13	CCV	1	1.073	107.34	65-125	PASS
CCB13	CCB	1	1.097	109.65	65-125	PASS
N027557-005B	SAMP	5	0.93	92.78	65-125	PASS
N027557-007B	SAMP	5	0.94	94.29	65-125	PASS
CCV14	CCV	1	1.074	107.42	65-125	PASS
CCB14	CCB	1	1.048	104.82	65-125	PASS
CCV15	CCV	1	1.029	102.92	65-125	PASS
CCB15	CCB	1	1.038	103.82	65-125	PASS
CCV16	CCV	1	1.033	103.32	65-125	PASS
CCB16	CCB	1	1.042	104.16	65-125	PASS
CCB16	CCB	1	1.043	104.26	65-125	PASS
CCV17	CCV	1	1.023	102.26	65-125	PASS
CCB17	CCB	1	1.012	101.22	65-125	PASS
LLCCV4	CCV2	1	1.12	111.89	65-125	PASS
LLCCV4	CCV2	1	1.047	104.73	65-125	PASS
ICSA5	ICSA	1	1.11	111.01	65-125	PASS
ICSAB5	ICSAB	1	0.88	87.76	65-125	PASS

INTERNAL STANDARD: 171219A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
ICSAB5	ICSAB	1	1.043	104.34	65-125	PASS

INTERNAL STANDARD: 180103A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	99.11	65-125	PASS
Standard2	ICAL	1	1.0002	100.02	65-125	PASS
Standard3	ICAL	1	0.98	97.82	65-125	PASS
Standard4	ICAL	1	0.96	95.77	65-125	PASS
Standard5	ICAL	1	0.95	95.12	65-125	PASS
Standard6	ICAL	1	0.94	94.22	65-125	PASS
ICV	ICV	1	0.96	95.99	65-125	PASS
ICB	ICB	1	1.0034	100.34	65-125	PASS
ICSA1	ICSA	1	1.0054	100.54	65-125	PASS
ICSAB1	ICSAB	1	0.96	96.016	65-125	PASS
CCV1	CCV	1	0.99	98.53	65-125	PASS
CCB1	CCB	1	1.045	104.49	65-125	PASS
CCV2	CCV	1	0.67	66.55	65-125	PASS
CCV2	CCV	1	0.99	98.59	65-125	PASS
CCB2	CCB	1	1.024	102.4	65-125	PASS
MB-66082	MBLK	1	1	99.64	65-125	PASS
LCS2-66082	LCS	1	1.033	103.29	65-125	PASS
N027557-001B	SAMP	100	0.99	98.53	65-125	PASS
N027557-002B	SAMP	100	0.99	99.027	65-125	PASS
N027557-003B	SAMP	100	0.97	97.4	65-125	PASS
N027557-004B	SAMP	100	0.98	98.14	65-125	PASS
N027557-005B	SAMP	100	0.97	97.3	65-125	PASS
CCV3	CCV	1	0.99	99.42	65-125	PASS
CCB3	CCB	1	1.034	103.42	65-125	PASS
N027557-006B	SAMP	100	1	99.61	65-125	PASS
N027557-007B	SAMP	100	0.99	98.97	65-125	PASS
N027557-008B	SAMP	100	1	99.72	65-125	PASS
N027557-009B	SAMP	100	1.0023	100.23	65-125	PASS
N027557-010B	SAMP	100	1.0042	100.42	65-125	PASS
N027557-002B	SAMP	500	1.011	101.09	65-125	PASS
N027557-002B-PS	PS	100	1.008	100.8	65-125	PASS
N027557-002B-MS2	MS	100	1.016	101.56	65-125	PASS
N027557-002B-MSD2	MSD	100	1.0076	100.76	65-125	PASS
N027557-003B	SAMP	500	1.021	102.13	65-125	PASS
CCV4	CCV	1	1.018	101.76	65-125	PASS
CCB4	CCB	1	1.071	107.15	65-125	PASS
N027557-004B	SAMP	500	1.024	102.45	65-125	PASS
N027557-005B	SAMP	500	1.028	102.83	65-125	PASS
N027557-008B	SAMP	10	1.035	103.54	65-125	PASS
N027557-009B	SAMP	10	1.026	102.65	65-125	PASS

INTERNAL STANDARD: 180103A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N027557-010B	SAMP	10	1.026	102.6	65-125	PASS
CCV5	CCV	1	1.024	102.42	65-125	PASS
CCB5	CCB	1	1.048	104.85	65-125	PASS
ICSA2	ICSA	1	1.073	107.25	65-125	PASS
ICSAB2	ICSAB	1	1.024	102.38	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N027557
Test Method: EPA 6010B
Analysis Date: 12/19/2017 & 1/3/2018

Matrix: Groundwater
Batch No.: 66082

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B & Fe. The calculated concentration is <25RL.
Dilution test failed for Mg. However, PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027557-001B DT 5X	Boron	ug/L	1544.768	NA	1351.326	14.31%	10
N027557-001B DT 5X	Calcium	ug/L	339716.9	PASS	341562.7	0.54%	10
N027557-001B DT 5X	Iron	ug/L	18.84702	NA	20.63284	8.66%	10
N027557-001B DT 5X	Magnesium	ug/L	23287.82	FAIL	20468.68	13.77%	10
N027557-002B DT 500X	Sodium	ug/L	2679145	PASS	2721936	1.57%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**N027557-001B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **120943**
Client ID:	**ZZZZZZ**	Batch ID: **66082**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **12/20/2017**	SeqNo: **2873640**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5947.017	100	5000	1351	91.9	80	120				
Calcium	352632.180	500	10000	341600	111	80	120				
Iron	95.959	20	100.0	20.63	75.3	80	120				S
Magnesium	28468.875	100	10000	20470	80.0	80	120				

Sample ID	**N027557-002B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121185**
Client ID:	**ZZZZZZ**	Batch ID: **66082**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/3/2018**	SeqNo: **2883349**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2742579.754	50000	20000	2722000	103	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

LOD & PQL VERIFICATION

Analytical Method: EPA 6010B / 200.7 **Matrix:** Water
Date of Analysis: 2/21/2017 **Units:** mg/L
Instrument Name: ICP2
Analyst: MI

Compound	MDL	LOD		PQL		
		Spike	Recovered	Spike	Recovered	% Recovery
Sodium	0.02621	0.10	0.08408	0.5	0.52080	104.2
Potassium	0.03815	0.10	0.13587	0.5	0.48231	96.5
Strontium	0.00545	0.02	0.02459	0.05	0.06052	121.0

Method Detection Limit

Analytical Method: EPA 6010B / 200.7
Digestion Method: EPA 3010A
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: mg/L

Analyte	1	2	3	4	5	6	7	SD	Ave	AMT SPIKED	%RSD	MDL	PQL
Potassium	0.15443	0.16201	0.14301	0.16141	0.16124	0.12965	0.14652	0.01215	0.15118	0.1000	8.0	0.03815	0.5
Sodium	0.11445	0.11459	0.11678	0.11286	0.11394	0.09515	0.10066	0.00835	0.10978	0.1000	7.6	0.02621	0.5
Strontium	0.02939	0.03046	0.0307	0.02962	0.03209	0.02708	0.02772	0.00174	0.02958	0.0250	5.9	0.00545	0.05

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66129
ASSET #: N027557

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 1/5/2018

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X			X	
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X			X	
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?		X			X	
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X	X		X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%RSD of Se in LLCCV2 & 4 failed > 20%. However %Rec of LLCCV2 & 4 passed criteria.
%RSD of Se in N027557-001B, 002B, 003B, 010B & As in 006B failed > 15%. For rerun.
%Rec of Mo in N027557-001B PS/MS/MSD failed. However LCS passed criteria.
For Confirmation:
N027557-002B (6020) = 13 ug/L :confirmation: 13.42 ug/L ; N027557-002A (218.6) = 10 ug/L :confirmation: 9.95 ug/L
N027557-004B (6020) = 4.0 ug/L :confirmation: 3.85 ug/L ; N027557-004A (218.6) = 2.8 ug/L :confirmation: 2.46 ug/L

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct	/		
3. Does batch meet QC requirements?	/		
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)	/		
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/9/18

2nd Level Reviewer 01/09/2018 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66129
ASSET #: N027557

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 1/8/2018

Method:

- [ ] EPA 6010B / 200.7
- [ ] EPA 7470A / 7471A/245.1
- [X] EPA 6020 / 200.8
- [ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			X
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .			X			X
24. LCS compounds within control limits.			X			X
25. MS/MSD, RPD's are within control limits			X			X
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For Se in N027557-001B, 002B, 003B, 004B, 010B & As in 006B rerun only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/9/18

2nd Level Reviewer 01/09/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N027557-001B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 12.2823 * 1 * (25/25)

Chromium , ug/L = 12.2823

Reporting results in two significant figures,

Chromium , ug/L = 12

% RSD SUMMARY

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	8.21	15	PASS	0.12	9.53	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.52	4.41	15	PASS	0.55	5.5	15	PASS
Std3-5/50 ppb	ICAL	1	5.14	2.72	15	PASS	5.38	2.38	15	PASS
Std4-10/100 ppb	ICAL	1	10.26	0.94	15	PASS	10.42	1.053	15	PASS
Std5-20/200 ppb	ICAL	1	20.35	0.82	15	PASS	20.73	1.28	15	PASS
Std6-40/400 ppb	ICAL	1	40.88	0.85	15	PASS	41.68	0.93	15	PASS
Std7-100/1000 ppb	ICAL	1	99.2	1.61	15	PASS	101.37	1.78	15	PASS
Std8-200/2000 ppb	ICAL	1	200.17	1.048	15	PASS	198.88	0.31	15	PASS
ICV	ICV	1	9.99	0.75	15	PASS	101.079	0.23	15	PASS
ICB	ICB	1	0.0011	473.23	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.03	3.65	20	PASS	0.52	5.79	20	PASS
ICSA1	ICSA	1	0.057	12.27	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.91	1.63	15	PASS	17.61	0.96	15	PASS
CCV1	CCV	1	20.62	1.32	15	PASS	20.64	1.54	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.36	2.3	15	PASS	20.98	1.65	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
MB-66129	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.27	1.78	15	PASS	20.84	2.27	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.036	2.27	20	PASS	0.55	10.19	20	PASS
ICSA2	ICSA	1	0.074	15.044	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	21.11	2.071	15	PASS	16.92	1.17	15	PASS
LCS-66129	LCS	1	10.1	1.51	15	PASS	98.45	1.16	15	PASS
N027557-001B	SAMP	1	12.28	1.2	15	PASS	2.22	2.15	15	PASS
N027557-001B	SAMP	5	2.72	1.78	15	PASS	0.46	1.88	15	PASS
N027557-001B	SAMP	25	0.55	1.66	15	PASS	0.079	18.76	15	<PQL
N027557-001B-PS	PS	1	22.049	1.45	15	PASS	98.25	1.41	15	PASS
N027557-001B-PS	PS	5	4.93	0.92	15	PASS	21.8	1.99	15	PASS
N027557-001B-MS	MS	1	22.58	0.83	15	PASS	97.83	1.61	15	PASS
N027557-001B-MS	MS	5	5.036	0.38	15	PASS	21.61	1.1	15	PASS
N027557-001B-MSD	MSD	1	22.66	0.42	15	PASS	98.33	0.19	15	PASS
N027557-001B-MSD	MSD	5	5.0082	1.33	15	PASS	21.62	2.52	15	PASS
CCV4	CCV	1	20.14	2.31	15	PASS	20.5	2.83	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027557-002B	SAMP	1	12.99	1.78	15	PASS	19.38	1.32	15	PASS
N027557-002B	SAMP	5	2.94	2.46	15	PASS	4.34	1.8	15	PASS
N027557-003B	SAMP	1	8.3	2.015	15	PASS	63.93	1.95	15	PASS
N027557-003B	SAMP	5	1.66	3.49	15	PASS	15.24	1.92	15	PASS
N027557-004B	SAMP	1	4.027	2.9	15	PASS	85.86	1.55	15	PASS

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027557-004B	SAMP	5	0.73	1.39	15	PASS	20.091	1.12	15	PASS
N027557-005B	SAMP	1	0.61	58.59	15	<PQL	610.71	1.35	15	PASS
N027557-005B	SAMP	5	0.088	10.68	15	PASS	126.96	0.24	15	PASS
N027557-006B	SAMP	1	<0.000	N/A	15	<PQL	49.96	1.66	15	PASS
N027557-006B	SAMP	5	<0.000	N/A	15	<PQL	10.52	1.4	15	PASS
CCV5	CCV	1	20.29	1.27	15	PASS	20.67	2.016	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027557-007B	SAMP	1	739.2	1.16	15	PASS	41.69	0.5	15	PASS
N027557-007B	SAMP	5	165.36	1.79	15	PASS	8.99	2.85	15	PASS
N027557-008B	SAMP	1	9.63	1.66	15	PASS	0.39	18.12	15	<PQL
N027557-008B	SAMP	5	1.98	2.23	15	PASS	0.045	42.65	15	<PQL
N027557-009B	SAMP	1	17.93	0.52	15	PASS	0.072	84.44	15	<PQL
N027557-009B	SAMP	5	3.65	2.12	15	PASS	0.0069	307.16	15	<PQL
N027557-010B	SAMP	1	17.93	1.51	15	PASS	<0.000	N/A	15	<PQL
N027557-010B	SAMP	5	3.77	2.68	15	PASS	<0.000	N/A	15	<PQL
CCV6	CCV	1	20.53	0.94	15	PASS	20.84	2.094	15	PASS
CCB6	CCB	1	0.0014	413.9	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	1.014	3.025	20	PASS	0.52	1.97	20	PASS
ICSA3	ICSA	1	0.085	17.69	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.19	1.16	15	PASS	17.57	1.76	15	PASS
CCV7	CCV	1	20.37	0.84	15	PASS	20.59	1.14	15	PASS
CCB7	CCB	1	0.0085	19.015	15	<PQL	<0.000	N/A	15	<PQL
CCV8	CCV	1	21.3	1.012	15	PASS	20.65	0.76	15	PASS
CCB8	CCB	1	0.0029	255.45	15	<PQL	<0.000	N/A	15	<PQL
CCV9	CCV	1	21.1	1.41	15	PASS	20.83	1.91	15	PASS
CCB9	CCB	1	0.0023	198.32	15	<PQL	<0.000	N/A	15	<PQL
CCV10	CCV	1	20.27	0.29	15	PASS	20.1	0.69	15	PASS
CCB10	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV3	CCV2	1	1.036	1.2	20	PASS	0.51	7.43	20	PASS
ICSA4	ICSA	1	0.071	15.61	15	<PQL	<0.000	N/A	15	<PQL
ICSAB4	ICSAB	1	20.31	0.52	15	PASS	17.63	1.84	15	PASS
CCV11	CCV	1	20.42	1.42	15	PASS	20.38	0.52	15	PASS
CCB11	CCB	1	0.034	21.81	15	<PQL	<0.000	N/A	15	<PQL
CCV12	CCV	1	20.49	0.9	15	PASS	20.4	0.53	15	PASS
CCB12	CCB	1	0.0067	158.5	15	<PQL	<0.000	N/A	15	<PQL
LLCCV4	CCV2	1	1.047	2.31	20	PASS	0.52	8.19	20	PASS
ICSA5	ICSA	1	0.095	14.8	15	PASS	<0.000	N/A	15	<PQL
ICSAB5	ICSAB	1	20.54	1.87	15	PASS	17.88	1.58	15	PASS

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	10.61	15	PASS	0.11	62.85	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.51	3.19	15	PASS	0.44	23.2	15	<PQL
Std3-5/50 ppb	ICAL	1	5.072	1.65	15	PASS	5.14	7.8	15	PASS
Std4-10/100 ppb	ICAL	1	10.31	1.49	15	PASS	10.076	4.94	15	PASS
Std5-20/200 ppb	ICAL	1	20.32	2.091	15	PASS	20.42	2.29	15	PASS
Std6-40/400 ppb	ICAL	1	40.6	0.52	15	PASS	40.71	0.52	15	PASS
Std7-100/1000 ppb	ICAL	1	99.41	1.075	15	PASS	100.49	1.12	15	PASS
Std8-200/2000 ppb	ICAL	1	200.12	1.041	15	PASS	199.56	2.038	15	PASS
ICV	ICV	1	9.97	2.29	15	PASS	9.85	2.6	15	PASS
ICB	ICB	1	0.021	46.53	15	<PQL	0.023	85.95	15	<PQL
LLICV	CCV1	1	0.11	4.013	20	PASS	0.47	15.5	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.011	99.87	15	<PQL
ICSAB1	ICSAB	1	20.9	0.27	15	PASS	20.13	1.2	15	PASS
CCV1	CCV	1	19.51	0.75	15	PASS	19.5	1.55	15	PASS
CCB1	CCB	1	0.0059	77.25	15	<PQL	0.01	100.041	15	<PQL
CCV2	CCV	1	19.6	1.15	15	PASS	20.19	0.67	15	PASS
CCB2	CCB	1	0.01	115.68	15	<PQL	0.024	49.037	15	<PQL
MB-66129	MBLK	1	0.0000022	191849.64	15	<PQL	0.0067	86.61	15	<PQL
CCV3	CCV	1	19.93	1.57	15	PASS	19.34	3.29	15	PASS
CCB3	CCB	1	0.0026	51.8	15	<PQL	0.014	113.79	15	<PQL
LLCCV1	CCV2	1	0.11	14.68	20	PASS	0.44	9.9	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.0067	173.21	15	<PQL
ICSAB2	ICSAB	1	20.15	1.86	15	PASS	20.86	1.58	15	PASS
LCS-66129	LCS	1	9.45	2.3	15	PASS	10.096	3.99	15	PASS
N027557-001B	SAMP	1	3.2	1.89	15	PASS	0.76	28.92	15	NR!
N027557-001B	SAMP	5	0.65	4.87	15	PASS	0.18	17.77	15	<PQL
N027557-001B	SAMP	25	0.14	7.43	15	PASS	0.045	53.15	15	<PQL
N027557-001B-PS	PS	1	14.074	0.63	15	PASS	11.066	8.59	15	PASS
N027557-001B-PS	PS	5	2.88	2.12	15	PASS	2.32	6.16	15	PASS
N027557-001B-MS	MS	1	13.94	0.79	15	PASS	11.51	0.98	15	PASS
N027557-001B-MS	MS	5	2.94	3.19	15	PASS	2.43	6.81	15	PASS
N027557-001B-MSD	MSD	1	13.98	2.11	15	PASS	11.24	6.6	15	PASS
N027557-001B-MSD	MSD	5	2.92	5.24	15	PASS	2.34	2.43	15	PASS
CCV4	CCV	1	19.64	2.26	15	PASS	20.034	0.51	15	PASS
CCB4	CCB	1	0.0092	46.82	15	<PQL	0.042	66.45	15	<PQL
N027557-002B	SAMP	1	3.15	2.97	15	PASS	0.7	22.084	15	NR!
N027557-002B	SAMP	5	0.67	5.9	15	PASS	0.12	28.2	15	<PQL
N027557-003B	SAMP	1	2.33	4.55	15	PASS	0.68	16.77	15	NR!
N027557-003B	SAMP	5	0.47	13.79	15	PASS	0.16	13.14	15	PASS
N027557-004B	SAMP	1	2.83	1.75	15	PASS	0.77	23.68	15	NR!

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027557-004B	SAMP	5	0.58	3.7	15	PASS	0.17	30.11	15	<PQL
N027557-005B	SAMP	1	2.96	3.3	15	PASS	0.035	64.18	15	<PQL
N027557-005B	SAMP	5	0.6	5.71	15	PASS	0.025	50.12	15	<PQL
N027557-006B	SAMP	1	0.12	22.28	15	NR!	0.011	0.8	15	PASS
N027557-006B	SAMP	5	0.014	59.7	15	<PQL	0.0035	173.21	15	<PQL
CCV5	CCV	1	19.62	1.77	15	PASS	19.45	0.79	15	PASS
CCB5	CCB	1	0.012	43.41	15	<PQL	0.018	91.86	15	<PQL
N027557-007B	SAMP	1	2.93	3.16	15	PASS	1.91	3.58	15	PASS
N027557-007B	SAMP	5	0.58	1.7	15	PASS	0.39	12.66	15	PASS
N027557-008B	SAMP	1	1.076	2.27	15	PASS	1.73	11.62	15	PASS
N027557-008B	SAMP	5	0.23	10.39	15	PASS	0.36	18.11	15	<PQL
N027557-009B	SAMP	1	0.45	14.75	15	PASS	1.34	5.69	15	PASS
N027557-009B	SAMP	5	0.092	6.75	15	PASS	0.31	59.83	15	<PQL
N027557-010B	SAMP	1	0.49	10.55	15	PASS	1.43	16.85	15	NR!
N027557-010B	SAMP	5	0.091	7.81	15	PASS	0.27	14.26	15	PASS
CCV6	CCV	1	19.69	1.87	15	PASS	19.97	0.95	15	PASS
CCB6	CCB	1	0.0089	31.99	15	<PQL	0.015	86.6	15	<PQL
LLCCV2	CCV2	1	0.095	15.25	20	PASS	0.56	23.51	20	NR!
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.0038	173.21	15	<PQL
ICSAB3	ICSAB	1	20.67	0.64	15	PASS	19.89	0.8	15	PASS
CCV7	CCV	1	19.24	0.86	15	PASS	20.75	1.53	15	PASS
CCB7	CCB	1	0.0045	98.34	15	<PQL	0.019	91.54	15	<PQL
CCV8	CCV	1	19.42	0.81	15	PASS	21.13	1.46	15	PASS
CCB8	CCB	1	0.015	59.4	15	<PQL	0.0045	173.21	15	<PQL
CCV9	CCV	1	19.59	1.06	15	PASS	20.93	0.73	15	PASS
CCB9	CCB	1	0.0065	157.076	15	<PQL	0.023	91.15	15	<PQL
CCV10	CCV	1	19.34	0.68	15	PASS	20.67	3.23	15	PASS
CCB10	CCB	1	0.01	61.43	15	<PQL	0.014	115	15	<PQL
LLCCV3	CCV2	1	0.11	12.21	20	PASS	0.5	21.62	20	<PQL
ICSA4	ICSA	1	<0.000	N/A	15	<PQL	0.015	173.21	15	<PQL
ICSAB4	ICSAB	1	20.22	1.061	15	PASS	20.43	2.17	15	PASS
CCV11	CCV	1	19.48	1.36	15	PASS	21.2	1.34	15	PASS
CCB11	CCB	1	0.0066	112.3	15	<PQL	0.019	34.87	15	<PQL
CCV12	CCV	1	19.43	0.32	15	PASS	21.73	5.21	15	PASS
CCB12	CCB	1	0.0027	186.057	15	<PQL	0.016	44.26	15	<PQL
LLCCV4	CCV2	1	0.097	9.98	20	PASS	0.55	38.98	20	NR!
ICSA5	ICSA	1	<0.000	N/A	15	<PQL	0.029	137.58	15	<PQL
ICSAB5	ICSAB	1	20.099	0.49	15	PASS	20.96	1.67	15	PASS

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	14.69	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.49	4.83	15	PASS
Std3-5/50 ppb	ICAL	1	4.96	0.57	15	PASS
Std4-10/100 ppb	ICAL	1	9.89	2.31	15	PASS
Std5-20/200 ppb	ICAL	1	19.86	0.91	15	PASS
Std6-40/400 ppb	ICAL	1	39.61	1.45	15	PASS
Std7-100/1000 ppb	ICAL	1	100.094	1.3	15	PASS
Std8-200/2000 ppb	ICAL	1	200.051	0.81	15	PASS
ICV	ICV	1	10.53	1.54	15	PASS
ICB	ICB	1	0.16	7.87	15	PASS
LLICV	CCV1	1	0.59	3.85	20	PASS
ICSA1	ICSA	1	0.087	11.49	15	PASS
ICSAB1	ICSAB	1	22.054	1.21	15	PASS
CCV1	CCV	1	19.5	1.29	15	PASS
CCB1	CCB	1	0.084	14.59	15	PASS
CCV2	CCV	1	19.77	0.95	15	PASS
CCB2	CCB	1	0.08	4.2	15	PASS
MB-66129	MBLK	1	0.015	8.36	15	PASS
CCV3	CCV	1	19.68	0.92	15	PASS
CCB3	CCB	1	0.068	13.026	15	PASS
LLCCV1	CCV2	1	0.53	4.49	20	PASS
ICSA2	ICSA	1	0.057	12.84	15	PASS
ICSAB2	ICSAB	1	21.86	1.44	15	PASS
LCS-66129	LCS	1	9.82	0.77	15	PASS
N027557-001B	SAMP	1	28.0047	2.6	15	PASS
N027557-001B	SAMP	5	5.77	1.54	15	PASS
N027557-001B	SAMP	25	1.18	3.3	15	PASS
N027557-001B-PS	PS	1	40.45	1.27	15	PASS
N027557-001B-PS	PS	5	8.34	0.76	15	PASS
N027557-001B-MS	MS	1	41.47	1.6	15	PASS
N027557-001B-MS	MS	5	8.4	0.87	15	PASS
N027557-001B-MSD	MSD	1	40.86	0.68	15	PASS
N027557-001B-MSD	MSD	5	8.57	1.57	15	PASS
CCV4	CCV	1	19.85	0.51	15	PASS
CCB4	CCB	1	0.091	12.4	15	PASS
N027557-002B	SAMP	1	31.44	0.67	15	PASS
N027557-002B	SAMP	5	6.31	0.98	15	PASS
N027557-003B	SAMP	1	64.57	1.64	15	PASS
N027557-003B	SAMP	5	12.77	1.41	15	PASS
N027557-004B	SAMP	1	113.63	0.34	15	PASS

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N027557-004B	SAMP	5	22.54	0.87	15	PASS
N027557-005B	SAMP	1	108.53	1.72	15	PASS
N027557-005B	SAMP	5	21.096	0.32	15	PASS
N027557-006B	SAMP	1	5.96	2.83	15	PASS
N027557-006B	SAMP	5	1.22	4.092	15	PASS
CCV5	CCV	1	19.87	0.43	15	PASS
CCB5	CCB	1	0.085	13.99	15	PASS
N027557-007B	SAMP	1	36.31	0.93	15	PASS
N027557-007B	SAMP	5	7.33	0.53	15	PASS
N027557-008B	SAMP	1	5.49	1.2	15	PASS
N027557-008B	SAMP	5	1.14	3.6	15	PASS
N027557-009B	SAMP	1	5.61	1.28	15	PASS
N027557-009B	SAMP	5	1.1	1.39	15	PASS
N027557-010B	SAMP	1	5.69	0.78	15	PASS
N027557-010B	SAMP	5	1.12	2.43	15	PASS
CCV6	CCV	1	19.7	1.052	15	PASS
CCB6	CCB	1	0.07	10.15	15	PASS
LLCCV2	CCV2	1	0.54	4.76	20	PASS
ICSA3	ICSA	1	0.058	14.48	15	PASS
ICSAB3	ICSAB	1	22.36	1.12	15	PASS
CCV7	CCV	1	19.45	0.91	15	PASS
CCB7	CCB	1	0.089	14.98	15	PASS
CCV8	CCV	1	19.24	0.34	15	PASS
CCB8	CCB	1	0.093	16.3	15	<PQL
CCV9	CCV	1	19.52	0.38	15	PASS
CCB9	CCB	1	0.078	16.34	15	<PQL
CCV10	CCV	1	19.79	1.42	15	PASS
CCB10	CCB	1	0.09	8.0034	15	PASS
LLCCV3	CCV2	1	0.55	0.73	20	PASS
ICSA4	ICSA	1	0.075	19.61	15	<PQL
ICSAB4	ICSAB	1	22.2	1.057	15	PASS
CCV11	CCV	1	19.77	0.48	15	PASS
CCB11	CCB	1	0.087	10.62	15	PASS
CCV12	CCV	1	19.9	0.75	15	PASS
CCB12	CCB	1	0.083	6.14	15	PASS
LLCCV4	CCV2	1	0.53	2.58	20	PASS
ICSA5	ICSA	1	0.053	20.31	15	<PQL
ICSAB5	ICSAB	1	22.2	1.15	15	PASS

PERCENT RSD SUMMARY: 180108A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	4.53	15	PASS	0.08	16.66	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.54	0.75	15	PASS	0.49	14.035	15	PASS
Std3-5/50 ppb	ICAL	1	5.094	1.016	15	PASS	5.31	0.83	15	PASS
Std4-10/100 ppb	ICAL	1	10.11	2.63	15	PASS	10.3	3.25	15	PASS
Std5-20/200 ppb	ICAL	1	21.32	1.5	15	PASS	21.79	1.76	15	PASS
Std6-40/400 ppb	ICAL	1	40.009	0.5	15	PASS	40.6	1.49	15	PASS
Std7-100/1000 ppb	ICAL	1	100.14	1.46	15	PASS	100.64	0.93	15	PASS
Std8-200/2000 ppb	ICAL	1	199.79	1.18	15	PASS	199.36	0.73	15	PASS
ICV	ICV	1	9.99	2.33	15	PASS	9.91	2.16	15	PASS
ICB	ICB	1	0.011	92.38	15	<PQL	0.028	59.34	15	<PQL
LLICV	CCV1	1	0.12	8.64	20	PASS	0.63	4.47	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.041	65.64	15	<PQL
ICSAB1	ICSAB	1	20.78	0.51	15	PASS	19.5	4.67	15	PASS
LLICV	CCV1	1	0.12	28.57	20	NR!	0.6	18.91	20	PASS
N027557-001B	SAMP	1	3.4	4.1	15	PASS	0.83	21.35	15	NR!
N027557-002B	SAMP	1	3.32	5.68	15	PASS	0.62	13.34	15	PASS
N027557-003B	SAMP	1	2.37	3.73	15	PASS	0.6	41.69	15	NR!
N027557-004B	SAMP	1	2.93	2.59	15	PASS	0.62	18.59	15	NR!
N027557-006B	SAMP	1	0.13	8.42	15	PASS	0.041	70.26	15	<PQL
N027557-010B	SAMP	1	0.51	8.93	15	PASS	1.37	14.47	15	PASS
N027557-001B	SAMP	1	3.18	1.91	15	PASS	0.65	6.71	15	PASS
N027557-003B	SAMP	1	2.42	1.37	15	PASS	0.68	20.32	15	NR!
N027557-004B	SAMP	1	2.9	0.95	15	PASS	0.64	11.94	15	PASS
N027557-003B	SAMP	1	2.3	3.81	15	PASS	0.68	13.41	15	PASS
CCV1	CCV	1	19.52	0.46	15	PASS	18.97	0.68	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0092	154.42	15	<PQL
CCV2	CCV	1	19.49	0.56	15	PASS	19.64	3.14	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.0072	290.86	15	<PQL
CCV3	CCV	1	19.58	0.99	15	PASS	19.63	2.78	15	PASS
CCB3	CCB	1	0.0061	92.69	15	<PQL	0.017	45.38	15	<PQL
CCV4	CCV	1	19.52	1.78	15	PASS	19.036	2.77	15	PASS
CCB4	CCB	1	0.0026	373.18	15	<PQL	0.036	19.15	15	<PQL
LLCCV1	CCV2	1	0.075	17.75	20	PASS	0.4	27.22	20	<PQL
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.021	107.33	15	<PQL
ICSAB2	ICSAB	1	20.49	0.97	15	PASS	19.3	2.28	15	PASS
CCV5	CCV	1	19.44	1.94	15	PASS	18.97	4.5	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.018	158.73	15	<PQL
LLCCV2	CCV2	1	0.098	10.79	20	PASS	0.51	21.32	20	NR!
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.0082	159.17	15	<PQL
ICSAB3	ICSAB	1	19.57	0.071	15	PASS	19.31	3.15	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0105001.D	RINSE	RINSE	1	01/05/18 11:43 AM
B0105002.D	Cal Blank	IBLK	1	01/05/18 11:49 AM
B0105003.D	Std1-0.1/1 ppb	ICAL	1	01/05/18 11:54 AM
B0105004.D	Std2-0.5/5 ppb	ICAL	1	01/05/18 12:00 PM
B0105005.D	Std3-5/50 ppb	ICAL	1	01/05/18 12:05 PM
B0105006.D	Std4-10/100 ppb	ICAL	1	01/05/18 12:11 PM
B0105007.D	Std5-20/200 ppb	ICAL	1	01/05/18 12:16 PM
B0105008.D	Std6-40/400 ppb	ICAL	1	01/05/18 12:22 PM
B0105009.D	Std7-100/1000 ppb	ICAL	1	01/05/18 12:27 PM
B0105010.D	Std8-200/2000 ppb	ICAL	1	01/05/18 12:33 PM
B0105011.D	ICV	ICV	1	01/05/18 12:38 PM
B0105012.D	ICB	ICB	1	01/05/18 12:44 PM
B0105013.D	LLICV	CCV1	1	01/05/18 12:49 PM
B0105014.D	ICSA1	ICSA	1	01/05/18 12:55 PM
B0105015.D	ICSAB1	ICSAB	1	01/05/18 1:00 PM
B0105016.D	N027546-010B	SAMP	1	01/05/18 1:06 PM
B0105017.D	N027546-010B	SAMP	1	01/05/18 1:12 PM
B0105018.D	MB-66269	MBLK	1	01/05/18 1:17 PM
B0105019.D	LCS-66269	LCS	1	01/05/18 1:23 PM
B0105020.D	N027817-006C	SAMP	1	01/05/18 1:28 PM
B0105021.D	N027817-006C	SAMP	5	01/05/18 1:34 PM
B0105022.D	N027817-006C-DUP	DUP	1	01/05/18 1:39 PM
B0105023.D	N027817-006C-PS	PS	1	01/05/18 1:45 PM
B0105024.D	N027817-006C-MS	MS	1	01/05/18 1:50 PM
B0105025.D	N027817-006C-MSD	MSD	1	01/05/18 1:56 PM
B0105026.D	CCV1	CCV	1	01/05/18 2:03 PM
B0105027.D	CCB1	CCB	1	01/05/18 2:08 PM
B0105028.D	MB-66130	MBLK	1	01/05/18 2:14 PM
B0105029.D	LCS-66130	LCS	1	01/05/18 2:20 PM
B0105030.D	N027583-001E	SAMP	1	01/05/18 2:25 PM
B0105031.D	N027583-001E	SAMP	5	01/05/18 2:31 PM
B0105032.D	N027583-002E	SAMP	1	01/05/18 2:36 PM
B0105033.D	N027583-002E	SAMP	5	01/05/18 2:42 PM
B0105034.D	N027583-003E	SAMP	1	01/05/18 2:47 PM
B0105035.D	N027583-003E	SAMP	5	01/05/18 2:53 PM
B0105036.D	N027557-008E	SAMP	1	01/05/18 2:59 PM
B0105037.D	N027557-008E	SAMP	5	01/05/18 3:04 PM
B0105038.D	CCV2	CCV	1	01/05/18 3:10 PM
B0105039.D	CCB2	CCB	1	01/05/18 3:15 PM
B0105040.D	N027557-008E	SAMP	25	01/05/18 3:21 PM
B0105041.D	N027557-008E-PS	PS	1	01/05/18 3:26 PM
B0105042.D	N027557-008E-PS	PS	5	01/05/18 3:32 PM

INJECTION LOG: 180105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0105043.D	N027557-008E-MS	MS	1	01/05/18 3:39 PM
B0105044.D	N027557-008E-MSD	MSD	1	01/05/18 3:45 PM
B0105045.D	N027557-009E	SAMP	1	01/05/18 3:50 PM
B0105046.D	N027557-009E	SAMP	5	01/05/18 3:56 PM
B0105047.D	N027557-010E	SAMP	1	01/05/18 4:02 PM
B0105048.D	N027557-010E	SAMP	5	01/05/18 4:07 PM
B0105049.D	MB-66129	MBLK	1	01/05/18 4:13 PM
B0105050.D	CCV3	CCV	1	01/05/18 4:18 PM
B0105051.D	CCB3	CCB	1	01/05/18 4:24 PM
B0105052.D	LLCCV1	CCV2	1	01/05/18 4:29 PM
B0105053.D	ICSA2	ICSA	1	01/05/18 4:35 PM
B0105054.D	ICSAB2	ICSAB	1	01/05/18 4:39 PM
B0105055.D	LCS-66129	LCS	1	01/05/18 4:45 PM
B0105056.D	N027557-001B	SAMP	1	01/05/18 4:51 PM
B0105057.D	N027557-001B	SAMP	5	01/05/18 4:57 PM
B0105058.D	N027557-001B	SAMP	25	01/05/18 5:02 PM
B0105059.D	N027557-001B-PS	PS	1	01/05/18 5:08 PM
B0105060.D	N027557-001B-PS	PS	5	01/05/18 5:13 PM
B0105061.D	N027557-001B-MS	MS	1	01/05/18 5:19 PM
B0105062.D	N027557-001B-MS	MS	5	01/05/18 5:25 PM
B0105063.D	N027557-001B-MSD	MSD	1	01/05/18 5:30 PM
B0105064.D	N027557-001B-MSD	MSD	5	01/05/18 5:36 PM
B0105065.D	CCV4	CCV	1	01/05/18 5:41 PM
B0105066.D	CCB4	CCB	1	01/05/18 5:47 PM
B0105067.D	N027557-002B	SAMP	1	01/05/18 5:52 PM
B0105068.D	N027557-002B	SAMP	5	01/05/18 5:58 PM
B0105069.D	N027557-003B	SAMP	1	01/05/18 6:03 PM
B0105070.D	N027557-003B	SAMP	5	01/05/18 6:09 PM
B0105071.D	N027557-004B	SAMP	1	01/05/18 6:14 PM
B0105072.D	N027557-004B	SAMP	5	01/05/18 6:20 PM
B0105073.D	N027557-005B	SAMP	1	01/05/18 6:26 PM
B0105074.D	N027557-005B	SAMP	5	01/05/18 6:31 PM
B0105075.D	N027557-006B	SAMP	1	01/05/18 6:37 PM
B0105076.D	N027557-006B	SAMP	5	01/05/18 6:42 PM
B0105077.D	CCV5	CCV	1	01/05/18 6:48 PM
B0105078.D	CCB5	CCB	1	01/05/18 6:53 PM
B0105079.D	N027557-007B	SAMP	1	01/05/18 6:59 PM
B0105080.D	N027557-007B	SAMP	5	01/05/18 7:05 PM
B0105081.D	N027557-008B	SAMP	1	01/05/18 7:10 PM
B0105082.D	N027557-008B	SAMP	5	01/05/18 7:16 PM
B0105083.D	N027557-009B	SAMP	1	01/05/18 7:21 PM
B0105084.D	N027557-009B	SAMP	5	01/05/18 7:27 PM

INJECTION LOG: 180105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0105085.D	N027557-010B	SAMP	1	01/05/18 7:32 PM
B0105086.D	N027557-010B	SAMP	5	01/05/18 7:38 PM
B0105087.D	MB-66251	MBLK	1	01/05/18 7:43 PM
B0105088.D	LCS-66251	LCS	1	01/05/18 7:49 PM
B0105089.D	CCV6	CCV	1	01/05/18 7:54 PM
B0105090.D	CCB6	CCB	1	01/05/18 8:00 PM
B0105091.D	LLCCV2	CCV2	1	01/05/18 8:05 PM
B0105092.D	ICSA3	ICSA	1	01/05/18 8:11 PM
B0105093.D	ICSAB3	ICSAB	1	01/05/18 8:17 PM
B0105094.D	N027812-010B	SAMP	1	01/05/18 8:22 PM
B0105095.D	N027812-010B	SAMP	5	01/05/18 8:28 PM
B0105096.D	N027812-011B	SAMP	1	01/05/18 8:33 PM
B0105097.D	N027812-011B	SAMP	5	01/05/18 8:39 PM
B0105098.D	N027812-012B	SAMP	1	01/05/18 8:44 PM
B0105099.D	N027812-012B	SAMP	5	01/05/18 8:50 PM
B0105100.D	N027812-013B	SAMP	1	01/05/18 8:56 PM
B0105101.D	N027812-013B	SAMP	5	01/05/18 9:01 PM
B0105102.D	N027812-014B	SAMP	1	01/05/18 9:07 PM
B0105103.D	N027812-014B	SAMP	5	01/05/18 9:12 PM
B0105104.D	CCV7	CCV	1	01/05/18 9:19 PM
B0105105.D	CCB7	CCB	1	01/05/18 9:25 PM
B0105106.D	N027812-015B	SAMP	1	01/05/18 9:31 PM
B0105107.D	N027812-015B	SAMP	5	01/05/18 9:36 PM
B0105108.D	N027812-001B	SAMP	1	01/05/18 9:41 PM
B0105109.D	N027812-001B	SAMP	5	01/05/18 9:47 PM
B0105110.D	N027812-001B	SAMP	25	01/05/18 9:52 PM
B0105111.D	N027812-001B-PS	PS	1	01/05/18 9:58 PM
B0105112.D	N027812-001B-PS	PS	5	01/05/18 10:04 PM
B0105113.D	N027812-001B-MS	MS	1	01/05/18 10:09 PM
B0105114.D	N027812-001B-MS	MS	5	01/05/18 10:15 PM
B0105115.D	N027812-001B-MSD	MSD	1	01/05/18 10:21 PM
B0105116.D	CCV8	CCV	1	01/05/18 10:27 PM
B0105117.D	CCB8	CCB	1	01/05/18 10:32 PM
B0105118.D	N027812-001B-MSD	MSD	5	01/05/18 10:38 PM
B0105119.D	N027812-002B	SAMP	1	01/05/18 10:43 PM
B0105120.D	N027812-002B	SAMP	5	01/05/18 10:49 PM
B0105121.D	N027812-003B	SAMP	1	01/05/18 10:54 PM
B0105122.D	N027812-003B	SAMP	5	01/05/18 11:00 PM
B0105123.D	N027812-004B	SAMP	1	01/05/18 11:05 PM
B0105124.D	N027812-004B	SAMP	5	01/05/18 11:11 PM
B0105125.D	N027812-005B	SAMP	1	01/05/18 11:16 PM
B0105126.D	N027812-005B	SAMP	5	01/05/18 11:22 PM

INJECTION LOG: 180105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0105127.D	N027812-006B	SAMP	1	01/05/18 11:28 PM
B0105128.D	CCV9	CCV	1	01/05/18 11:33 PM
B0105129.D	CCB9	CCB	1	01/05/18 11:39 PM
B0105130.D	N027812-006B	SAMP	5	01/05/18 11:44 PM
B0105131.D	N027812-007B	SAMP	1	01/05/18 11:50 PM
B0105132.D	N027812-007B	SAMP	5	01/05/18 11:55 PM
B0105133.D	N027812-008B	SAMP	1	01/06/18 12:01 AM
B0105134.D	N027812-008B	SAMP	5	01/06/18 12:06 AM
B0105135.D	N027812-009B	SAMP	1	01/06/18 12:12 AM
B0105136.D	N027812-009B	SAMP	5	01/06/18 12:18 AM
B0105137.D	MB-66250	MBLK	1	01/06/18 12:23 AM
B0105138.D	LCS-66250	LCS	1	01/06/18 12:29 AM
B0105139.D	N027789-003C	SAMP	1	01/06/18 12:34 AM
B0105140.D	CCV10	CCV	1	01/06/18 12:41 AM
B0105141.D	CCB10	CCB	1	01/06/18 12:47 AM
B0105142.D	LLCCV3	CCV2	1	01/06/18 12:52 AM
B0105143.D	ICSA4	ICSA	1	01/06/18 12:56 AM
B0105144.D	ICSAB4	ICSAB	1	01/06/18 1:02 AM
B0105145.D	N027789-003C	SAMP	5	01/06/18 1:08 AM
B0105146.D	N027789-003C	SAMP	25	01/06/18 1:13 AM
B0105147.D	N027789-001E	SAMP	1	01/06/18 1:19 AM
B0105148.D	N027789-001E	SAMP	5	01/06/18 1:24 AM
B0105149.D	N027789-001E	SAMP	25	01/06/18 1:30 AM
B0105150.D	N027789-001E-PS	PS	1	01/06/18 1:35 AM
B0105151.D	N027789-001E-PS	PS	5	01/06/18 1:41 AM
B0105152.D	N027789-001E-MS	MS	1	01/06/18 1:46 AM
B0105153.D	N027789-001E-MS	MS	5	01/06/18 1:52 AM
B0105154.D	N027789-001E-MSD	MSD	1	01/06/18 1:58 AM
B0105155.D	CCV11	CCV	1	01/06/18 2:03 AM
B0105156.D	CCB11	CCB	1	01/06/18 2:09 AM
B0105157.D	N027789-001E-MSD	MSD	5	01/06/18 2:14 AM
B0105158.D	N027789-002E	SAMP	1	01/06/18 2:20 AM
B0105159.D	N027789-002E	SAMP	5	01/06/18 2:25 AM
B0105160.D	CCV12	CCV	1	01/06/18 2:31 AM
B0105161.D	CCB12	CCB	1	01/06/18 2:36 AM
B0105162.D	LLCCV4	CCV2	1	01/06/18 2:42 AM
B0105163.D	ICSA5	ICSA	1	01/06/18 2:47 AM
B0105164.D	ICSAB5	ICSAB	1	01/06/18 2:53 AM

INJECTION LOG: 180108A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0108001.D	RINSE	RINSE	1	01/08/18 9:11 AM
A0108002.D	Cal Blank	IBLK	1	01/08/18 9:16 AM
A0108003.D	Std1-0.1/1 ppb	ICAL	1	01/08/18 9:22 AM
A0108004.D	Std2-0.5/5 ppb	ICAL	1	01/08/18 9:27 AM
A0108005.D	Std3-5/50 ppb	ICAL	1	01/08/18 9:33 AM
A0108006.D	Std4-10/100 ppb	ICAL	1	01/08/18 9:39 AM
A0108007.D	Std5-20/200 ppb	ICAL	1	01/08/18 9:46 AM
A0108008.D	Std6-40/400 ppb	ICAL	1	01/08/18 9:52 AM
A0108009.D	Std7-100/1000 ppb	ICAL	1	01/08/18 9:58 AM
A0108010.D	Std8-200/2000 ppb	ICAL	1	01/08/18 10:04 AM
A0108011.D	ICV	ICV	1	01/08/18 10:09 AM
A0108012.D	ICB	ICB	1	01/08/18 10:15 AM
A0108013.D	LLICV	CCV1	1	01/08/18 10:20 AM
A0108014.D	ICSA1	ICSA	1	01/08/18 10:29 AM
A0108015.D	ICSAB1	ICSAB	1	01/08/18 10:34 AM
A0108016.D	LLICV	CCV1	1	01/08/18 10:40 AM
A0108017.D	N027557-001B	SAMP	1	01/08/18 10:45 AM
A0108018.D	N027557-002B	SAMP	1	01/08/18 10:51 AM
A0108019.D	N027557-003B	SAMP	1	01/08/18 10:56 AM
A0108020.D	N027557-004B	SAMP	1	01/08/18 11:02 AM
A0108021.D	N027557-006B	SAMP	1	01/08/18 11:08 AM
A0108022.D	N027557-010B	SAMP	1	01/08/18 11:15 AM
A0108023.D	N027557-001B	SAMP	1	01/08/18 11:20 AM
A0108024.D	N027557-003B	SAMP	1	01/08/18 11:26 AM
A0108025.D	N027557-004B	SAMP	1	01/08/18 11:31 AM
A0108026.D	N027557-003B	SAMP	1	01/08/18 11:37 AM
A0108027.D	CCV1	CCV	1	01/08/18 11:43 AM
A0108028.D	CCB1	CCB	1	01/08/18 11:48 AM
A0108029.D	N027812-002B	SAMP	1	01/08/18 11:54 AM
A0108030.D	N027812-005B	SAMP	1	01/08/18 11:59 AM
A0108031.D	N027812-007B	SAMP	1	01/08/18 12:05 PM
A0108032.D	N027812-008B	SAMP	1	01/08/18 12:10 PM
A0108033.D	MB-66270	MBLK	1	01/08/18 12:16 PM
A0108034.D	LCS-66270	LCS	1	01/08/18 12:21 PM
A0108035.D	N027820-001B	SAMP	1	01/08/18 12:27 PM
A0108036.D	N027820-001B	SAMP	5	01/08/18 12:32 PM
A0108037.D	N027820-001B-PS	PS	1	01/08/18 12:38 PM
A0108038.D	N027820-001B-MS	MS	1	01/08/18 12:44 PM
A0108039.D	CCV2	CCV	1	01/08/18 12:49 PM
A0108040.D	CCB2	CCB	1	01/08/18 12:55 PM
A0108041.D	N027820-001B-MSD	MSD	1	01/08/18 1:00 PM
A0108042.D	N027820-002B	SAMP	1	01/08/18 1:06 PM

INJECTION LOG: 180108A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0108043.D	N027820-003B	SAMP	1	01/08/18 1:11 PM
A0108044.D	N027820-004B	SAMP	1	01/08/18 1:17 PM
A0108045.D	N027820-005B	SAMP	1	01/08/18 1:22 PM
A0108046.D	N027820-006B	SAMP	1	01/08/18 1:28 PM
A0108047.D	N027820-007B	SAMP	1	01/08/18 1:34 PM
A0108048.D	N027820-008B	SAMP	1	01/08/18 1:40 PM
A0108049.D	N027820-009B	SAMP	1	01/08/18 1:45 PM
A0108050.D	N027820-010B	SAMP	1	01/08/18 1:51 PM
A0108051.D	CCV3	CCV	1	01/08/18 1:56 PM
A0108052.D	CCB3	CCB	1	01/08/18 2:02 PM
A0108053.D	LCS-66270	LCS	1	01/08/18 2:08 PM
A0108054.D	N027820-011B	SAMP	1	01/08/18 2:13 PM
A0108055.D	N027820-012B	SAMP	1	01/08/18 2:19 PM
A0108056.D	N027820-013B	SAMP	1	01/08/18 2:25 PM
A0108057.D	N027820-003B	SAMP	1	01/08/18 2:30 PM
A0108058.D	N027557-002B	SAMP	1	01/08/18 2:38 PM
A0108059.D	N027557-002A	SAMP	1	01/08/18 2:44 PM
A0108060.D	N027557-004B	SAMP	1	01/08/18 2:51 PM
A0108061.D	N027557-004A	SAMP	1	01/08/18 2:56 PM
A0108062.D	N027583-001B	SAMP	1	01/08/18 3:03 PM
A0108063.D	CCV4	CCV	1	01/08/18 3:09 PM
A0108064.D	CCB4	CCB	1	01/08/18 3:15 PM
A0108065.D	LLCCV1	CCV2	1	01/08/18 3:20 PM
A0108066.D	ICSA2	ICSA	1	01/08/18 3:26 PM
A0108067.D	ICSAB2	ICSAB	1	01/08/18 3:31 PM
A0108068.D	N027583-001A	SAMP	1	01/08/18 3:37 PM
A0108069.D	N027583-002B	SAMP	1	01/08/18 3:42 PM
A0108070.D	N027583-002A	SAMP	1	01/08/18 3:48 PM
A0108071.D	N027583-003B	SAMP	1	01/08/18 3:53 PM
A0108072.D	N027583-003A	SAMP	1	01/08/18 3:59 PM
A0108073.D	N027820-012B	SAMP	1	01/08/18 4:05 PM
A0108074.D	CCV5	CCV	1	01/08/18 4:10 PM
A0108075.D	CCB5	CCB	1	01/08/18 4:15 PM
A0108076.D	LLCCV2	CCV2	1	01/08/18 4:21 PM
A0108077.D	ICSA3	ICSA	1	01/08/18 4:28 PM
A0108078.D	ICSAB3	ICSAB	1	01/08/18 4:33 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **12/19/2017 11:10:5**
Prep End Date: **12/19/2018 5:00:00**
Prep Batch **66129** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 01/09/2018
Initials/ Date: 01/09/2018
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.6**	**02-16**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66129	Aqueous		25	☐	0	0	25	1.000		
MB-66129	Aqueous		25	☐	0	0	25	1.000		
N027557-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027557-010B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 5 Jan 2018 09:19:59 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	271212.00	0.00	
24 Mg	1049440.00	0.00	
25 Mg	138898.00	0.00	
26 Mg	161197.00	0.00	
59 Co	1084180.00	0.00	
115 In	1544490.00	0.00	
206 Pb	403628.00	0.00	
207 Pb	351349.00	0.00	
208 Pb	869853.00	0.00	

RSD (%)

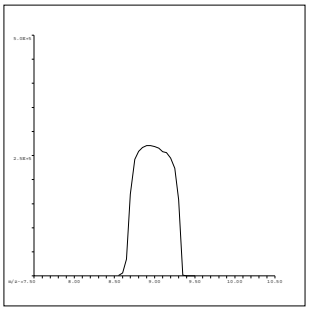
Element	Actual	Required	Flag
9 Be	0.37	5.00	
24 Mg	0.72	5.00	
25 Mg	0.49	5.00	
26 Mg	0.95	5.00	
59 Co	1.10	5.00	
115 In	0.56	5.00	
206 Pb	0.71	5.00	
207 Pb	0.92	5.00	
208 Pb	0.96	5.00	

Ion Ratio

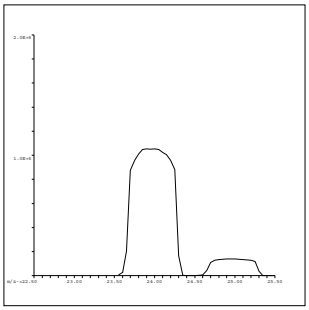
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

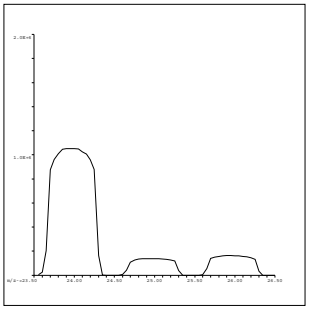
Element	Actual	Required	Flag



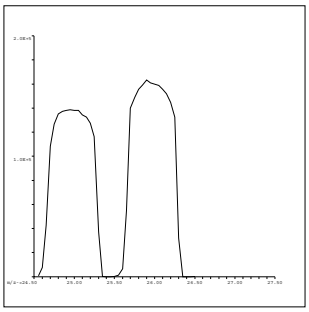
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



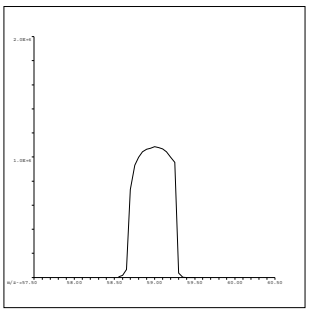
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



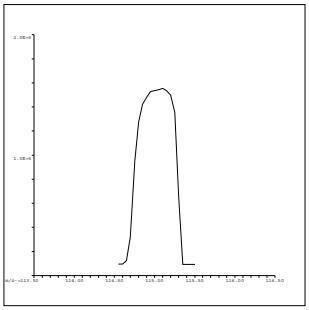
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



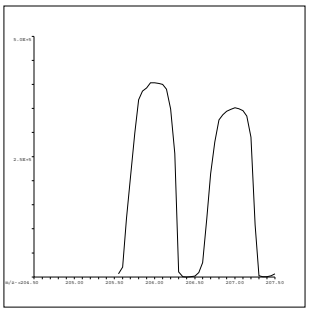
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



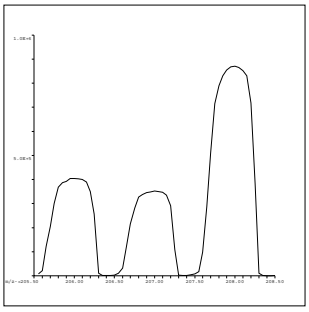
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



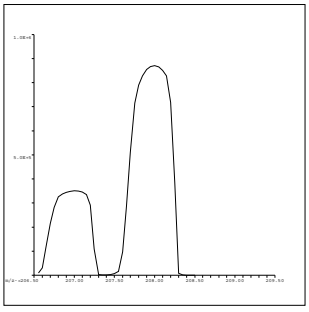
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

C:\ICPMH\1\7500\qctune.d

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 8 Jan 2018 08:55:40 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	96941.10	0.00	
24 Mg	416281.00	0.00	
25 Mg	54933.90	0.00	
26 Mg	64371.70	0.00	
59 Co	524831.00	0.00	
115 In	934224.00	0.00	
206 Pb	243715.00	0.00	
207 Pb	211485.00	0.00	
208 Pb	521909.00	0.00	

RSD (%)

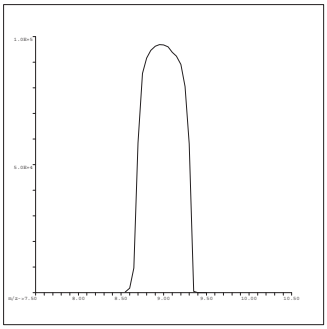
Element	Actual	Required	Flag
9 Be	1.32	5.00	
24 Mg	1.17	5.00	
25 Mg	1.12	5.00	
26 Mg	1.76	5.00	
59 Co	1.33	5.00	
115 In	1.01	5.00	
206 Pb	1.07	5.00	
207 Pb	0.57	5.00	
208 Pb	0.86	5.00	

Ion Ratio

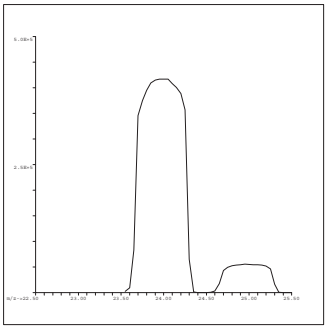
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

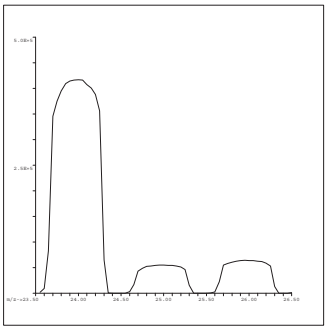
Element	Actual	Required	Flag



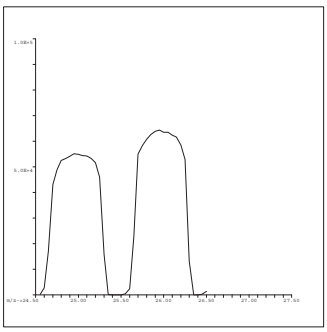
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



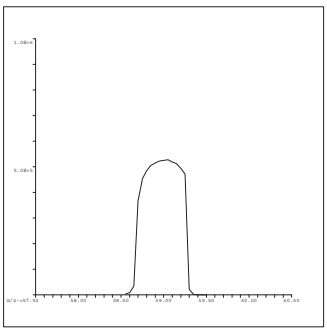
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



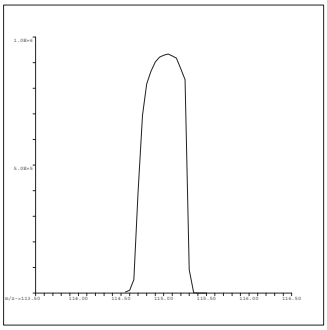
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



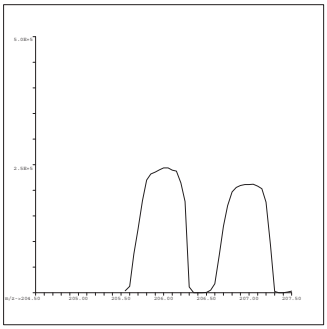
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



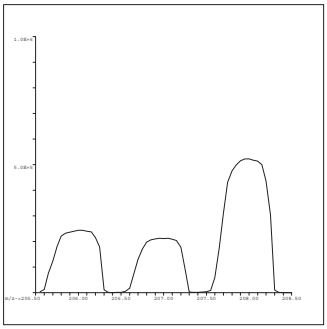
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



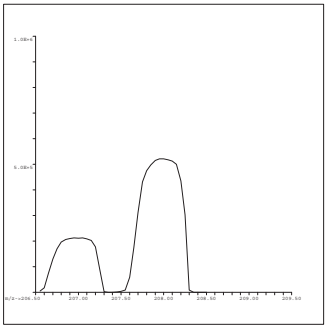
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.05
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180105B

Instrument ID: ICPMS-02

Analyte	Data File	B0105002.D	B0105003.D	B0105004.D	B0105005.D	B0105006.D	B0105007.D	B0105008.D	B0105009.D	B0105010.D	
	Acq. Date-Time	01/05/2018 11:49 AM	01/05/2018 11:54 AM	01/05/2018 12:00 PM	01/05/2018 12:05 PM	01/05/2018 12:11 PM	01/05/2018 12:16 PM	01/05/2018 12:22 PM	01/05/2018 12:27 PM	01/05/2018 12:33 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	98689.2		103014	103257.9	103971.1	104715.8	105546	106915	107843.3	
55 Mn [2]	CPS	337.9		2579.5	22159.5	42903.6	85590.8	173050.6	425701.3	842314.7	0.9999
52 Cr [2]	CPS	418.9		4875.2	44614.8	89300.4	177835	359660.9	883326.5	1797867.3	1.0000
72 Ge (ISTD) [1]	CPS	85800.3		87852.4	87543	88388.7	88069.4	88991.3	88217.8	90606.5	
78 Se [1]	CPS	0		128.9	1492.4	2952.6	5961.3	12010.4	29386.3	59937.9	1.0000
72 Ge (ISTD) [2]	CPS	69151.4	71094.1	71706.6	71535.9	70826.1	71065	71998.1	72904.2	71840.7	
75 As [2]	CPS	13.3	121.3	482.2	4645.2	9336.5	18445.7	37320	92510	183489.7	1.0000
103 Rh (ISTD) [2]	CPS	2266047.3		2354583.3	2338314.3	2314610	2315909.4	2339607.9	2318771.2	2318691.7	
95 Mo [2]	CPS	16.7		2633.7	26562.8	52431.1	105300.5	212144.5	531286.1	1061741.9	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 180108A

Instrument ID: ICPMS-02

Analyte	Data File	A0108002.D	A0108003.D	A0108004.D	A0108005.D	A0108006.D	A0108007.D	A0108008.D	A0108009.D	A0108010.D	
	Acq. Date-Time	01/08/2018 09:16 AM	01/08/2018 09:22 AM	01/08/2018 09:27 AM	01/08/2018 09:33 AM	01/08/2018 09:39 AM	01/08/2018 09:46 AM	01/08/2018 09:52 AM	01/08/2018 09:58 AM	01/08/2018 10:04 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
72 Ge (ISTD) [1]	CPS	62619.5		63563.5	63516.6	63395.8	52108.6	63322.2	61513.2	62853.8	
78 Se [1]	CPS	1.1		112.2	1202.3	2324.7	4042.9	9150.7	22034.5	44595.5	1.0000
72 Ge (ISTD) [2]	CPS	56839.8	59759	57844.2	57507.9	57904.7	51341.5	58383.9	57384.1	56845.4	
75 As [2]	CPS	22.7	98.2	410.2	3657.3	7285.7	13596	28998.2	71293.6	140904.2	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121243**
Client ID: **ICV** Batch ID: **R121243** TestNo: **EPA 6020** Analysis Date: **1/5/2018** SeqNo: **2886583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.971	0.10	10.00	0	99.7	90	110				
Manganese	101.079	0.50	100.0	0	101	90	110				
Molybdenum	10.533	0.50	10.00	0	105	90	110				
Selenium	9.846	0.50	10.00	0	98.5	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121243**
Client ID: **ZZZZZZ** Batch ID: **R121243** TestNo: **EPA 6020** Analysis Date: **1/5/2018** SeqNo: **2886585**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.114	0.10	0.1000	0	114	80	120				
Manganese	0.520	0.50	0.5000	0	104	80	120				
Molybdenum	0.593	0.50	0.5000	0	119	80	120				
Selenium	0.473	0.50	0.5000	0	94.5	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121243**
Client ID: **CCV** Batch ID: **R121243** TestNo: **EPA 6020** Analysis Date: **1/5/2018** SeqNo: **2886598**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.510	0.10	20.00	0	97.6	90	110				
Manganese	20.637	0.50	20.00	0	103	90	110				
Molybdenum	19.499	0.50	20.00	0	97.5	90	110				
Selenium	19.503	0.50	20.00	0	97.5	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121243**
Client ID: **CCV** Batch ID: **R121243** TestNo: **EPA 6020** Analysis Date: **1/5/2018** SeqNo: **2886610**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.604	0.10	20.00	0	98.0	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886610**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.976	0.50	20.00	0	105	90	110				
Molybdenum	19.769	0.50	20.00	0	98.8	90	110				
Selenium	20.189	0.50	20.00	0	101	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.934	0.10	20.00	0	99.7	90	110				
Manganese	20.840	0.50	20.00	0	104	90	110				
Molybdenum	19.679	0.50	20.00	0	98.4	90	110				
Selenium	19.337	0.50	20.00	0	96.7	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ZZZZZZ**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886624**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.112	0.10	0.1000	0	112	70	130				
Manganese	0.547	0.50	0.5000	0	109	70	130				
Molybdenum	0.527	0.50	0.5000	0	105	70	130				
Selenium	0.435	0.50	0.5000	0	87.0	70	130				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886637**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.642	0.10	20.00	0	98.2	90	110				
Manganese	20.499	0.50	20.00	0	102	90	110				
Molybdenum	19.849	0.50	20.00	0	99.2	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886637**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	20.034	0.50	20.00	0	100	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886649**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.620	0.10	20.00	0	98.1	90	110				
Manganese	20.667	0.50	20.00	0	103	90	110				
Molybdenum	19.866	0.50	20.00	0	99.3	90	110				
Selenium	19.446	0.50	20.00	0	97.2	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886661**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.689	0.10	20.00	0	98.4	90	110				
Manganese	20.837	0.50	20.00	0	104	90	110				
Molybdenum	19.695	0.50	20.00	0	98.5	90	110				
Selenium	19.969	0.50	20.00	0	99.8	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ZZZZZZ**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886663**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.095	0.10	0.1000	0	94.8	70	130				
Manganese	0.523	0.50	0.5000	0	105	70	130				
Molybdenum	0.542	0.50	0.5000	0	108	70	130				
Selenium	0.555	0.50	0.5000	0	111	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886676**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.242	0.10	20.00	0	96.2	90	110				
Manganese	20.585	0.50	20.00	0	103	90	110				
Molybdenum	19.450	0.50	20.00	0	97.3	90	110				
Selenium	20.754	0.50	20.00	0	104	90	110				

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886688**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.420	0.10	20.00	0	97.1	90	110				
Manganese	20.647	0.50	20.00	0	103	90	110				
Molybdenum	19.242	0.50	20.00	0	96.2	90	110				
Selenium	21.126	0.50	20.00	0	106	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886700**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.587	0.10	20.00	0	97.9	90	110				
Manganese	20.828	0.50	20.00	0	104	90	110				
Molybdenum	19.523	0.50	20.00	0	97.6	90	110				
Selenium	20.930	0.50	20.00	0	105	90	110				

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886712**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.339	0.10	20.00	0	96.7	90	110				
Manganese	20.105	0.50	20.00	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886712**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	19.790	0.50	20.00	0	99.0	90	110				
Selenium	20.672	0.50	20.00	0	103	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ZZZZZZ**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886714**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.110	0.10	0.1000	0	110	70	130				
Manganese	0.514	0.50	0.5000	0	103	70	130				
Molybdenum	0.549	0.50	0.5000	0	110	70	130				
Selenium	0.499	0.50	0.5000	0	99.8	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ICV**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888684**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.988	0.10	10.00	0	99.9	90	110				
Selenium	9.906	0.50	10.00	0	99.1	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ZZZZZZ**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888686**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.116	0.10	0.1000	0	116	80	120				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ZZZZZZ**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888689**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.596	0.50	0.5000	0	119	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCV**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888700**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.523	0.10	20.00	0	97.6	90	110				
Selenium	18.971	0.50	20.00	0	94.9	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCV**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888712**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.488	0.10	20.00	0	97.4	90	110				
Selenium	19.636	0.50	20.00	0	98.2	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCV**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888724**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.575	0.10	20.00	0	97.9	90	110				
Selenium	19.634	0.50	20.00	0	98.2	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCV**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.517	0.10	20.00	0	97.6	90	110				
Selenium	19.036	0.50	20.00	0	95.2	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ZZZZZZ**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888738**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.075	0.10	0.1000	0	75.4	70	130				
Selenium	0.400	0.50	0.5000	0	80.1	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCV**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888747**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.443	0.10	20.00	0	97.2	90	110				
Selenium	18.968	0.50	20.00	0	94.8	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ZZZZZZ**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888749**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.098	0.10	0.1000	0	98.4	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ZZZZZZ**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888749**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.514	0.50	0.5000	0	103	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ICV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886429**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.989	1.0	10.00	0	99.9	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ZZZZZZ**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886431**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.030	1.0	1.000	0	103	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886444**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.615	1.0	20.00	0	103	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886456**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.358	1.0	20.00	0	102	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.272	1.0	20.00	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ZZZZZZ**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.036	1.0	1.000	0	104	70	130				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.139	1.0	20.00	0	101	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.288	1.0	20.00	0	101	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.531	1.0	20.00	0	103	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ZZZZZZ**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.014	1.0	1.000	0	101	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.366	1.0	20.00	0	102	90	110				

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886534**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.301	1.0	20.00	0	107	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886546**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.100	1.0	20.00	0	106	90	110				

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886558**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.273	1.0	20.00	0	101	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ZZZZZZ**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886560**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.036	1.0	1.000	0	104	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886584**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.162	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886599**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.084	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.080	0.50									
Selenium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886623**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	CCB3	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	CCB	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886623

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	0.068	0.50									
Selenium	ND	0.50									

Sample ID	CCB4	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	CCB	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886638

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.091	0.50									
Selenium	0.042	0.50									

Sample ID	CCB5	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	CCB	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886650

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.085	0.50									
Selenium	ND	0.50									

Sample ID	CCB6	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	CCB	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886662

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.070	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886662**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886677**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.089	0.50									
Selenium	ND	0.50									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886689**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.093	0.50									
Selenium	ND	0.50									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886701**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.078	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB10** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121243**
Client ID: **CCB** Batch ID: **R121243** TestNo: **EPA 6020** Analysis Date: **1/6/2018** SeqNo: **2886713**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.090	0.50									
Selenium	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ICB**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888685**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCB**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888701**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCB**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888713**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Selenium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCB**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888725**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCB**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCB**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.036	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCB**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICB	SampType:	ICB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121242
Client ID:	ICB	Batch ID:	R121242	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886430

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB1	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121242
Client ID:	CCB	Batch ID:	R121242	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886445

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB2	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121242
Client ID:	CCB	Batch ID:	R121242	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886457

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB3	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121242
Client ID:	CCB	Batch ID:	R121242	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886469

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB4	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121242
Client ID:	CCB	Batch ID:	R121242	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886484

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886508**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886535**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886559**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICSA**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886586**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.087	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICSAB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886587**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.901	0.10	20.00	0	105	80	120				
Manganese	17.615	0.50	20.00	0	88.1	80	120				
Molybdenum	22.054	0.50	20.00	0	110	80	120				
Selenium	20.130	0.50	20.00	0	101	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICSA**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.057	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICSAB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886626**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.153	0.10	20.00	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICSAB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886626**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	16.923	0.50	20.00	0	84.6	80	120				
Molybdenum	21.858	0.50	20.00	0	109	80	120				
Selenium	20.860	0.50	20.00	0	104	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICSA**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886664**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.058	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICSAB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.675	0.10	20.00	0	103	80	120				
Manganese	17.572	0.50	20.00	0	87.9	80	120				
Molybdenum	22.358	0.50	20.00	0	112	80	120				
Selenium	19.890	0.50	20.00	0	99.4	80	120				

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICSA**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.075	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICSA**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICSAB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886716**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.218	0.10	20.00	0	101	80	120				
Manganese	17.635	0.50	20.00	0	88.2	80	120				
Molybdenum	22.201	0.50	20.00	0	111	80	120				
Selenium	20.435	0.50	20.00	0	102	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ICSA**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888687**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Selenium	0.041	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ICSAB**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888688**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.780	0.10	20.00	0	104	80	120				
Selenium	19.499	0.50	20.00	0	97.5	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ICSA**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Selenium	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ICSAB**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888740**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.486	0.10	20.00	0	102	80	120				
Selenium	19.304	0.50	20.00	0	96.5	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ICSA**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888750**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**ICSA3**	SampType:	**ICSA**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:		RunNo:	**121282**
Client ID:	**ICSA**	Batch ID:	**R121282**	TestNo:	**EPA 6020**			Analysis Date:	**1/8/2018**	SeqNo:	**2888750**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	**ICSAB3**	SampType:	**ICSAB**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:		RunNo:	**121282**
Client ID:	**ICSAB**	Batch ID:	**R121282**	TestNo:	**EPA 6020**			Analysis Date:	**1/8/2018**	SeqNo:	**2888751**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.573	0.10	20.00	0	97.9	80	120				
Selenium	19.315	0.50	20.00	0	96.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121242
Client ID:	ICSA	Batch ID:	R121242	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886432

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.057	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121242
Client ID:	ICSAB	Batch ID:	R121242	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886433

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.914	1.0	20.00	0	99.6	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121242
Client ID:	ICSA	Batch ID:	R121242	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886471

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.074	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121242
Client ID:	ICSAB	Batch ID:	R121242	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886472

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.112	1.0	20.00	0	106	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121242
Client ID:	ICSA	Batch ID:	R121242	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886510

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.085	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ICSAB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.193	1.0	20.00	0	101	80	120				

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ICSA**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886561**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.071	1.0									

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ICSAB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.310	1.0	20.00	0	102	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	98689.2	98689.2	100	PASS	70-125	69151.4	69151.4	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	103050.7	98689.2	104.42	PASS	70-125	71094.1	69151.4	102.81	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	103014	98689.2	104.38	PASS	70-125	71706.6	69151.4	103.7	PASS	70-125
Std3-5/50 ppb	ICAL	1	103257.9	98689.2	104.63	PASS	70-125	71535.9	69151.4	103.45	PASS	70-125
Std4-10/100 ppb	ICAL	1	103971.1	98689.2	105.35	PASS	70-125	70826.1	69151.4	102.42	PASS	70-125
Std5-20/200 ppb	ICAL	1	104715.8	98689.2	106.11	PASS	70-125	71065	69151.4	102.77	PASS	70-125
Std6-40/400 ppb	ICAL	1	105546	98689.2	106.95	PASS	70-125	71998.1	69151.4	104.12	PASS	70-125
Std7-100/1000 ppb	ICAL	1	106915	98689.2	108.34	PASS	70-125	72904.2	69151.4	105.43	PASS	70-125
Std8-200/2000 ppb	ICAL	1	107843.3	98689.2	109.28	PASS	70-125	71840.7	69151.4	103.89	PASS	70-125
ICV	ICV	1	110378.5	98689.2	111.84	PASS	70-125	75846.3	69151.4	109.68	PASS	70-125
ICB	ICB	1	100697.6	98689.2	102.04	PASS	70-125	70033.9	69151.4	101.28	PASS	70-125
LLICV	CCV1	1	110692.6	98689.2	112.16	PASS	70-125	76495	69151.4	110.62	PASS	70-125
ICSA1	ICSA	1	114002.4	98689.2	115.52	PASS	70-125	76105.4	69151.4	110.06	PASS	70-125
ICSAB1	ICSAB	1	123987.3	98689.2	125.63	NR!	70-125	81802.8	69151.4	118.3	PASS	70-125
CCV1	CCV	1	108740.1	98689.2	110.18	PASS	70-125	77358.1	69151.4	111.87	PASS	70-125
CCB1	CCB	1	111191.4	98689.2	112.67	PASS	70-125	79434.2	69151.4	114.87	PASS	70-125
CCV2	CCV	1	114371.9	98689.2	115.89	PASS	70-125	83285.7	69151.4	120.44	PASS	70-125
CCB2	CCB	1	108325.1	98689.2	109.76	PASS	70-125	78904.3	69151.4	114.1	PASS	70-125
MB-66129	MBLK	1	108065.6	98689.2	109.5	PASS	70-125	78486.4	69151.4	113.5	PASS	70-125
CCV3	CCV	1	110649.1	98689.2	112.12	PASS	70-125	80170.3	69151.4	115.93	PASS	70-125
CCB3	CCB	1	104844	98689.2	106.24	PASS	70-125	76781.7	69151.4	111.03	PASS	70-125
LLCCV1	CCV2	1	113176.7	98689.2	114.68	PASS	70-125	83467.5	69151.4	120.7	PASS	70-125
ICSA2	ICSA	1	118402.6	98689.2	119.98	PASS	70-125	83859.9	69151.4	121.27	PASS	70-125
ICSAB2	ICSAB	1	99365.8	98689.2	100.69	PASS	70-125	71146.5	69151.4	102.89	PASS	70-125
LCS-66129	LCS	1	109788	98689.2	111.25	PASS	70-125	80999.9	69151.4	117.13	PASS	70-125
N027557-001B	SAMP	1	100739.1	98689.2	102.08	PASS	70-125	66535	69151.4	96.22	PASS	70-125
N027557-001B	SAMP	5	111496.5	98689.2	112.98	PASS	70-125	78310	69151.4	113.24	PASS	70-125
N027557-001B	SAMP	25	114906.2	98689.2	116.43	PASS	70-125	82608	69151.4	119.46	PASS	70-125
N027557-001B-PS	PS	1	102997.5	98689.2	104.37	PASS	70-125	68300.2	69151.4	98.77	PASS	70-125
N027557-001B-PS	PS	5	110628.9	98689.2	112.1	PASS	70-125	78408.3	69151.4	113.39	PASS	70-125
N027557-001B-MS	MS	1	102567.8	98689.2	103.93	PASS	70-125	67857	69151.4	98.13	PASS	70-125
N027557-001B-MS	MS	5	110166.7	98689.2	111.63	PASS	70-125	77987.3	69151.4	112.78	PASS	70-125
N027557-001B-MSD	MSD	1	102026.8	98689.2	103.38	PASS	70-125	67701.9	69151.4	97.9	PASS	70-125
N027557-001B-MSD	MSD	5	110256.6	98689.2	111.72	PASS	70-125	77043.8	69151.4	111.41	PASS	70-125
CCV4	CCV	1	115953.5	98689.2	117.49	PASS	70-125	83906.5	69151.4	121.34	PASS	70-125
CCB4	CCB	1	107055	98689.2	108.48	PASS	70-125	78630.6	69151.4	113.71	PASS	70-125
N027557-002B	SAMP	1	98203	98689.2	99.51	PASS	70-125	64530.4	69151.4	93.32	PASS	70-125
N027557-002B	SAMP	5	105879.1	98689.2	107.29	PASS	70-125	75148.4	69151.4	108.67	PASS	70-125
N027557-003B	SAMP	1	90729.9	98689.2	91.93	PASS	70-125	58655.9	69151.4	84.82	PASS	70-125
N027557-003B	SAMP	5	106242.8	98689.2	107.65	PASS	70-125	73696.6	69151.4	106.57	PASS	70-125
N027557-004B	SAMP	1	91770.1	98689.2	92.99	PASS	70-125	58861	69151.4	85.12	PASS	70-125

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027557-004B	SAMP	5	106477.7	98689.2	107.89	PASS	70-125	74953.5	69151.4	108.39	PASS	70-125
N027557-005B	SAMP	1	92601.4	98689.2	93.83	PASS	70-125	61871	69151.4	89.47	PASS	70-125
N027557-005B	SAMP	5	100903.8	98689.2	102.24	PASS	70-125	72109.4	69151.4	104.28	PASS	70-125
N027557-006B	SAMP	1	106936.7	98689.2	108.36	PASS	70-125	75368.9	69151.4	108.99	PASS	70-125
N027557-006B	SAMP	5	110404.3	98689.2	111.87	PASS	70-125	79874.1	69151.4	115.51	PASS	70-125
CCV5	CCV	1	111272	98689.2	112.75	PASS	70-125	81560.6	69151.4	117.94	PASS	70-125
CCB5	CCB	1	104154.1	98689.2	105.54	PASS	70-125	77234.8	69151.4	111.69	PASS	70-125
N027557-007B	SAMP	1	92007.9	98689.2	93.23	PASS	70-125	61328.1	69151.4	88.69	PASS	70-125
N027557-007B	SAMP	5	101574	98689.2	102.92	PASS	70-125	72387.4	69151.4	104.68	PASS	70-125
N027557-008B	SAMP	1	100201.3	98689.2	101.53	PASS	70-125	74090.6	69151.4	107.14	PASS	70-125
N027557-008B	SAMP	5	104900.5	98689.2	106.29	PASS	70-125	77225.1	69151.4	111.68	PASS	70-125
N027557-009B	SAMP	1	96578	98689.2	97.86	PASS	70-125	72105	69151.4	104.27	PASS	70-125
N027557-009B	SAMP	5	102735.9	98689.2	104.1	PASS	70-125	76773	69151.4	111.02	PASS	70-125
N027557-010B	SAMP	1	98991.4	98689.2	100.31	PASS	70-125	72776.1	69151.4	105.24	PASS	70-125
N027557-010B	SAMP	5	102166.3	98689.2	103.52	PASS	70-125	75393.1	69151.4	109.03	PASS	70-125
CCV6	CCV	1	103721.2	98689.2	105.1	PASS	70-125	76352.2	69151.4	110.41	PASS	70-125
CCB6	CCB	1	97483.5	98689.2	98.78	PASS	70-125	72572.8	69151.4	104.95	PASS	70-125
LLCCV2	CCV2	1	105876.5	98689.2	107.28	PASS	70-125	79029.1	69151.4	114.28	PASS	70-125
ICSA3	ICSA	1	105668.4	98689.2	107.07	PASS	70-125	76893.5	69151.4	111.2	PASS	70-125
ICSAB3	ICSAB	1	116478.7	98689.2	118.03	PASS	70-125	82413.4	69151.4	119.18	PASS	70-125
CCV7	CCV	1	110760.7	98689.2	112.23	PASS	70-125	82495	69151.4	119.3	PASS	70-125
CCB7	CCB	1	104079.4	98689.2	105.46	PASS	70-125	78104.8	69151.4	112.95	PASS	70-125
CCV8	CCV	1	92648.3	98689.2	93.88	PASS	70-125	69267.6	69151.4	100.17	PASS	70-125
CCB8	CCB	1	89859	98689.2	91.053	PASS	70-125	68202.2	69151.4	98.63	PASS	70-125
CCV9	CCV	1	93102.8	98689.2	94.34	PASS	70-125	70310.9	69151.4	101.68	PASS	70-125
CCB9	CCB	1	87502.7	98689.2	88.66	PASS	70-125	67746.2	69151.4	97.97	PASS	70-125
CCV10	CCV	1	113424.7	98689.2	114.93	PASS	70-125	81841.8	69151.4	118.35	PASS	70-125
CCB10	CCB	1	107836.2	98689.2	109.27	PASS	70-125	80231.6	69151.4	116.02	PASS	70-125
LLCCV3	CCV2	1	115378.3	98689.2	116.91	PASS	70-125	85608.6	69151.4	123.8	PASS	70-125
ICSA4	ICSA	1	111428.3	98689.2	112.91	PASS	70-125	81672	69151.4	118.11	PASS	70-125
ICSAB4	ICSAB	1	118794.2	98689.2	120.37	PASS	70-125	84601.1	69151.4	122.34	PASS	70-125
CCV11	CCV	1	116248.9	98689.2	117.79	PASS	70-125	84112.2	69151.4	121.63	PASS	70-125
CCB11	CCB	1	104478.4	98689.2	105.87	PASS	70-125	78744.5	69151.4	113.87	PASS	70-125
CCV12	CCV	1	114451.4	98689.2	115.97	PASS	70-125	84158	69151.4	121.7	PASS	70-125
CCB12	CCB	1	103837	98689.2	105.22	PASS	70-125	78071.3	69151.4	112.9	PASS	70-125
LLCCV4	CCV2	1	109195.9	98689.2	110.65	PASS	70-125	80695	69151.4	116.69	PASS	70-125
ICSA5	ICSA	1	104675.6	98689.2	106.07	PASS	70-125	77635.7	69151.4	112.27	PASS	70-125
ICSAB5	ICSAB	1	112996.2	98689.2	114.5	PASS	70-125	82518.2	69151.4	119.33	PASS	70-125

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	85800.3	85800.3	100	PASS	70-125	2266047.3	2266047.3	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	88563	85800.3	103.22	PASS	70-125	2356418.7	2266047.3	103.99	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	87852.4	85800.3	102.39	PASS	70-125	2354583.3	2266047.3	103.91	PASS	70-125
Std3-5/50 ppb	ICAL	1	87543	85800.3	102.03	PASS	70-125	2338314.3	2266047.3	103.19	PASS	70-125
Std4-10/100 ppb	ICAL	1	88388.7	85800.3	103.02	PASS	70-125	2314610	2266047.3	102.14	PASS	70-125
Std5-20/200 ppb	ICAL	1	88069.4	85800.3	102.64	PASS	70-125	2315909.4	2266047.3	102.2	PASS	70-125
Std6-40/400 ppb	ICAL	1	88991.3	85800.3	103.72	PASS	70-125	2339607.9	2266047.3	103.25	PASS	70-125
Std7-100/1000 ppb	ICAL	1	88217.8	85800.3	102.82	PASS	70-125	2318771.2	2266047.3	102.33	PASS	70-125
Std8-200/2000 ppb	ICAL	1	90606.5	85800.3	105.6	PASS	70-125	2318691.7	2266047.3	102.32	PASS	70-125
ICV	ICV	1	94889.9	85800.3	110.59	PASS	70-125	2429288.5	2266047.3	107.2	PASS	70-125
ICB	ICB	1	88646.8	85800.3	103.32	PASS	70-125	2277136.3	2266047.3	100.49	PASS	70-125
LLICV	CCV1	1	95674	85800.3	111.51	PASS	70-125	2476349.8	2266047.3	109.28	PASS	70-125
ICSA1	ICSA	1	95132.7	85800.3	110.88	PASS	70-125	2228839	2266047.3	98.36	PASS	70-125
ICSAB1	ICSAB	1	102558.6	85800.3	119.53	PASS	70-125	2398520.7	2266047.3	105.85	PASS	70-125
CCV1	CCV	1	89281.5	85800.3	104.06	PASS	70-125	2451986.8	2266047.3	108.21	PASS	70-125
CCB1	CCB	1	96172.1	85800.3	112.09	PASS	70-125	2458066.8	2266047.3	108.47	PASS	70-125
CCV2	CCV	1	102059.8	85800.3	118.95	PASS	70-125	2580842.4	2266047.3	113.89	PASS	70-125
CCB2	CCB	1	98424.6	85800.3	114.71	PASS	70-125	2472755.3	2266047.3	109.12	PASS	70-125
MB-66129	MBLK	1	99139	85800.3	115.55	PASS	70-125	2431420	2266047.3	107.3	PASS	70-125
CCV3	CCV	1	101738.4	85800.3	118.58	PASS	70-125	2506826.9	2266047.3	110.63	PASS	70-125
CCB3	CCB	1	97514.6	85800.3	113.65	PASS	70-125	2392061.7	2266047.3	105.56	PASS	70-125
LLCCV1	CCV2	1	105588.8	85800.3	123.06	PASS	70-125	2612894.2	2266047.3	115.31	PASS	70-125
ICSA2	ICSA	1	100313.3	85800.3	116.91	PASS	70-125	2383562.2	2266047.3	105.19	PASS	70-125
ICSAB2	ICSAB	1	69571.9	85800.3	81.086	PASS	70-125	2106431.4	2266047.3	92.96	PASS	70-125
LCS-66129	LCS	1	89967.6	85800.3	104.86	PASS	70-125	2550058	2266047.3	112.53	PASS	70-125
N027557-001B	SAMP	1	79238.7	85800.3	92.35	PASS	70-125	1775194.4	2266047.3	78.34	PASS	70-125
N027557-001B	SAMP	5	94614.7	85800.3	110.27	PASS	70-125	2226656.1	2266047.3	98.26	PASS	70-125
N027557-001B	SAMP	25	103066.2	85800.3	120.12	PASS	70-125	2402059.4	2266047.3	106	PASS	70-125
N027557-001B-PS	PS	1	78893.1	85800.3	91.95	PASS	70-125	1818872.7	2266047.3	80.27	PASS	70-125
N027557-001B-PS	PS	5	93010.9	85800.3	108.4	PASS	70-125	2216479.8	2266047.3	97.81	PASS	70-125
N027557-001B-MS	MS	1	77242.9	85800.3	90.026	PASS	70-125	1810419.9	2266047.3	79.89	PASS	70-125
N027557-001B-MS	MS	5	93009.2	85800.3	108.4	PASS	70-125	2230647.8	2266047.3	98.44	PASS	70-125
N027557-001B-MSD	MSD	1	75391	85800.3	87.87	PASS	70-125	1828503.8	2266047.3	80.69	PASS	70-125
N027557-001B-MSD	MSD	5	91701.2	85800.3	106.88	PASS	70-125	2199731.2	2266047.3	97.073	PASS	70-125
CCV4	CCV	1	103304.4	85800.3	120.4	PASS	70-125	2565999	2266047.3	113.24	PASS	70-125
CCB4	CCB	1	96884.5	85800.3	112.92	PASS	70-125	2436101.4	2266047.3	107.5	PASS	70-125
N027557-002B	SAMP	1	72544.8	85800.3	84.55	PASS	70-125	1742808.2	2266047.3	76.91	PASS	70-125
N027557-002B	SAMP	5	90008.7	85800.3	104.9	PASS	70-125	2182016.7	2266047.3	96.29	PASS	70-125
N027557-003B	SAMP	1	65262.1	85800.3	76.063	PASS	70-125	1545549.8	2266047.3	68.2	NR!	70-125
N027557-003B	SAMP	5	86264.4	85800.3	100.54	PASS	70-125	2104274.9	2266047.3	92.86	PASS	70-125
N027557-004B	SAMP	1	65311.2	85800.3	76.12	PASS	70-125	1529702.3	2266047.3	67.51	NR!	70-125

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027557-004B	SAMP	5	85599.7	85800.3	99.77	PASS	70-125	2092603.3	2266047.3	92.35	PASS	70-125
N027557-005B	SAMP	1	66080.4	85800.3	77.017	PASS	70-125	1585765.2	2266047.3	69.98	NR!	70-125
N027557-005B	SAMP	5	81869.7	85800.3	95.42	PASS	70-125	2018123.6	2266047.3	89.059	PASS	70-125
N027557-006B	SAMP	1	87964.4	85800.3	102.52	PASS	70-125	2173410.6	2266047.3	95.91	PASS	70-125
N027557-006B	SAMP	5	95561.2	85800.3	111.38	PASS	70-125	2337901.3	2266047.3	103.17	PASS	70-125
CCV5	CCV	1	98339.7	85800.3	114.61	PASS	70-125	2535829.2	2266047.3	111.91	PASS	70-125
CCB5	CCB	1	92389.6	85800.3	107.68	PASS	70-125	2395777.1	2266047.3	105.72	PASS	70-125
N027557-007B	SAMP	1	67445.5	85800.3	78.61	PASS	70-125	1648360.3	2266047.3	72.74	PASS	70-125
N027557-007B	SAMP	5	82278.3	85800.3	95.9	PASS	70-125	2068462.6	2266047.3	91.28	PASS	70-125
N027557-008B	SAMP	1	89157.6	85800.3	103.91	PASS	70-125	2126824.3	2266047.3	93.86	PASS	70-125
N027557-008B	SAMP	5	92582.6	85800.3	107.9	PASS	70-125	2285819	2266047.3	100.87	PASS	70-125
N027557-009B	SAMP	1	87069.6	85800.3	101.48	PASS	70-125	2048907.1	2266047.3	90.42	PASS	70-125
N027557-009B	SAMP	5	92871.4	85800.3	108.24	PASS	70-125	2226097	2266047.3	98.24	PASS	70-125
N027557-010B	SAMP	1	88330.6	85800.3	102.95	PASS	70-125	2069377.2	2266047.3	91.32	PASS	70-125
N027557-010B	SAMP	5	93202.7	85800.3	108.63	PASS	70-125	2233043.9	2266047.3	98.54	PASS	70-125
CCV6	CCV	1	92386.4	85800.3	107.68	PASS	70-125	2413024.1	2266047.3	106.49	PASS	70-125
CCB6	CCB	1	88619	85800.3	103.29	PASS	70-125	2311369.5	2266047.3	102	PASS	70-125
LLCCV2	CCV2	1	95427.5	85800.3	111.22	PASS	70-125	2497701.8	2266047.3	110.22	PASS	70-125
ICSA3	ICSA	1	88680.3	85800.3	103.36	PASS	70-125	2215131.8	2266047.3	97.75	PASS	70-125
ICSAB3	ICSAB	1	97458.4	85800.3	113.59	PASS	70-125	2356727.5	2266047.3	104	PASS	70-125
CCV7	CCV	1	94187.9	85800.3	109.78	PASS	70-125	2564739.7	2266047.3	113.18	PASS	70-125
CCB7	CCB	1	88458.3	85800.3	103.1	PASS	70-125	2437447.6	2266047.3	107.56	PASS	70-125
CCV8	CCV	1	70488.1	85800.3	82.15	PASS	70-125	2248494.5	2266047.3	99.23	PASS	70-125
CCB8	CCB	1	74042.6	85800.3	86.3	PASS	70-125	2210410.4	2266047.3	97.54	PASS	70-125
CCV9	CCV	1	78288.9	85800.3	91.25	PASS	70-125	2271253.3	2266047.3	100.23	PASS	70-125
CCB9	CCB	1	73219.1	85800.3	85.34	PASS	70-125	2193079	2266047.3	96.78	PASS	70-125
CCV10	CCV	1	88289.7	85800.3	102.9	PASS	70-125	2579473.3	2266047.3	113.83	PASS	70-125
CCB10	CCB	1	93399.6	85800.3	108.86	PASS	70-125	2518397.4	2266047.3	111.14	PASS	70-125
LLCCV3	CCV2	1	96745.6	85800.3	112.76	PASS	70-125	2668964	2266047.3	117.78	PASS	70-125
ICSA4	ICSA	1	90769.3	85800.3	105.79	PASS	70-125	2344851.2	2266047.3	103.48	PASS	70-125
ICSAB4	ICSAB	1	92153.7	85800.3	107.4	PASS	70-125	2421483	2266047.3	106.86	PASS	70-125
CCV11	CCV	1	95503.3	85800.3	111.31	PASS	70-125	2602634.3	2266047.3	114.85	PASS	70-125
CCB11	CCB	1	88653.8	85800.3	103.33	PASS	70-125	2458113.7	2266047.3	108.48	PASS	70-125
CCV12	CCV	1	93373.1	85800.3	108.83	PASS	70-125	2592648.8	2266047.3	114.41	PASS	70-125
CCB12	CCB	1	86339.3	85800.3	100.63	PASS	70-125	2446745.1	2266047.3	107.97	PASS	70-125
LLCCV4	CCV2	1	88921.8	85800.3	103.64	PASS	70-125	2570650.7	2266047.3	113.44	PASS	70-125
ICSA5	ICSA	1	81087.1	85800.3	94.51	PASS	70-125	2239398.9	2266047.3	98.82	PASS	70-125
ICSAB5	ICSAB	1	89051.6	85800.3	103.79	PASS	70-125	2370124.8	2266047.3	104.59	PASS	70-125

INTERNAL STANDARD: 180108A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	56839.8	56839.8	100	PASS	70-125	62619.5	62619.5	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	59759	56839.8	105.14	PASS	70-125	65940.2	62619.5	105.3	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	57844.2	56839.8	101.77	PASS	70-125	63563.5	62619.5	101.51	PASS	70-125
Std3-5/50 ppb	ICAL	1	57507.9	56839.8	101.18	PASS	70-125	63516.6	62619.5	101.43	PASS	70-125
Std4-10/100 ppb	ICAL	1	57904.7	56839.8	101.87	PASS	70-125	63395.8	62619.5	101.24	PASS	70-125
Std5-20/200 ppb	ICAL	1	51341.5	56839.8	90.33	PASS	70-125	52108.6	62619.5	83.21	PASS	70-125
Std6-40/400 ppb	ICAL	1	58383.9	56839.8	102.72	PASS	70-125	63322.2	62619.5	101.12	PASS	70-125
Std7-100/1000 ppb	ICAL	1	57384.1	56839.8	100.96	PASS	70-125	61513.2	62619.5	98.23	PASS	70-125
Std8-200/2000 ppb	ICAL	1	56845.4	56839.8	100.01	PASS	70-125	62853.8	62619.5	100.37	PASS	70-125
ICV	ICV	1	62142	56839.8	109.33	PASS	70-125	68295.6	62619.5	109.06	PASS	70-125
ICB	ICB	1	53218.7	56839.8	93.63	PASS	70-125	57903.4	62619.5	92.47	PASS	70-125
LLICV	CCV1	1	52860.9	56839.8	93	PASS	70-125	57110.5	62619.5	91.2	PASS	70-125
ICSA1	ICSA	1	55801.8	56839.8	98.17	PASS	70-125	55013.5	62619.5	87.85	PASS	70-125
ICSAB1	ICSAB	1	65369.2	56839.8	115.01	PASS	70-125	69228.5	62619.5	110.55	PASS	70-125
LLICV	CCV1	1	61105.2	56839.8	107.5	PASS	70-125	69055.2	62619.5	110.28	PASS	70-125
N027557-001B	SAMP	1	51108.6	56839.8	89.92	PASS	70-125	56198.8	62619.5	89.75	PASS	70-125
N027557-002B	SAMP	1	52166.4	56839.8	91.78	PASS	70-125	58633.4	62619.5	93.63	PASS	70-125
N027557-003B	SAMP	1	48985.4	56839.8	86.18	PASS	70-125	53927.5	62619.5	86.12	PASS	70-125
N027557-004B	SAMP	1	47232.5	56839.8	83.098	PASS	70-125	53020.1	62619.5	84.67	PASS	70-125
N027557-006B	SAMP	1	64575.9	56839.8	113.61	PASS	70-125	75317.1	62619.5	120.28	PASS	70-125
N027557-010B	SAMP	1	61776.2	56839.8	108.68	PASS	70-125	68712.8	62619.5	109.73	PASS	70-125
N027557-001B	SAMP	1	54985.5	56839.8	96.74	PASS	70-125	61364.6	62619.5	98	PASS	70-125
N027557-003B	SAMP	1	48992	56839.8	86.19	PASS	70-125	56072.6	62619.5	89.54	PASS	70-125
N027557-004B	SAMP	1	47923.3	56839.8	84.31	PASS	70-125	53678.9	62619.5	85.72	PASS	70-125
N027557-003B	SAMP	1	48023.5	56839.8	84.49	PASS	70-125	52236.6	62619.5	83.42	PASS	70-125
CCV1	CCV	1	54515.1	56839.8	95.91	PASS	70-125	61540.9	62619.5	98.28	PASS	70-125
CCB1	CCB	1	56014.8	56839.8	98.55	PASS	70-125	66459	62619.5	106.13	PASS	70-125
CCV2	CCV	1	64589.3	56839.8	113.63	PASS	70-125	77852.2	62619.5	124.33	PASS	70-125
CCB2	CCB	1	62952	56839.8	110.75	PASS	70-125	75901	62619.5	121.21	PASS	70-125
CCV3	CCV	1	60626.3	56839.8	106.66	PASS	70-125	74193	62619.5	118.48	PASS	70-125
CCB3	CCB	1	57955.7	56839.8	101.96	PASS	70-125	71460	62619.5	114.12	PASS	70-125
CCV4	CCV	1	55535.1	56839.8	97.7	PASS	70-125	62815.9	62619.5	100.31	PASS	70-125
CCB4	CCB	1	62785.4	56839.8	110.46	PASS	70-125	76461.3	62619.5	122.1	PASS	70-125
LLCCV1	CCV2	1	59904.8	56839.8	105.39	PASS	70-125	73233.4	62619.5	116.95	PASS	70-125
ICSA2	ICSA	1	61317.9	56839.8	107.88	PASS	70-125	73354.5	62619.5	117.14	PASS	70-125
ICSAB2	ICSAB	1	62723.2	56839.8	110.35	PASS	70-125	74704	62619.5	119.3	PASS	70-125
CCV5	CCV	1	54940.9	56839.8	96.66	PASS	70-125	61305.7	62619.5	97.9	PASS	70-125
CCB5	CCB	1	56722.4	56839.8	99.79	PASS	70-125	68273.1	62619.5	109.03	PASS	70-125
LLCCV2	CCV2	1	55424.8	56839.8	97.51	PASS	70-125	67471.9	62619.5	107.75	PASS	70-125
ICSA3	ICSA	1	56800.8	56839.8	99.93	PASS	70-125	70782.4	62619.5	113.04	PASS	70-125
ICSAB3	ICSAB	1	55555	56839.8	97.74	PASS	70-125	67964.9	62619.5	108.54	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N027557
Test Method: EPA 6020
Analysis Date: 1/5/2018 & ~~1/6/2018~~ 1/8/18

Matrix: Groundwater
Batch No.: 66129

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr, Mn & Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027557-001B DT 5X	Arsenic	ug/L	3.229103	PASS	3.19648	1.02%	10
N027557-001B DT 5X	Chromium	ug/L	13.60614	NA	12.28233	10.78%	10
N027557-001B DT 5X	Manganese	ug/L	2.317557	NA	2.217244	4.52%	10
N027557-001B DT 5X	Molybdenum	ug/L	28.84422	PASS	28.00473	3.00%	10
N027557-001B DT 5X	Selenium	ug/L	0.885323	NA	0.651313	35.93%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N027557-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ZZZZZZ**	Batch ID: **66129**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/5/2018**	SeqNo: **2886631**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.074	0.10	10.00	3.196	109	80	120				
Manganese	98.253	0.50	100.0	2.217	96.0	80	120				
Molybdenum	40.447	0.50	10.00	28.00	124	80	120				S

Sample ID **N027557-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ZZZZZZ**	Batch ID: **66129**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/5/2018**	SeqNo: **2888825**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	11.066	0.50	10.00	0.6513	104	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027557
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N027557-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121242
Client ID:	ZZZZZZ	Batch ID:	66129	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886477

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	22.049	1.0	10.00	12.28	97.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101